The impact of changing workforce patterns in emergency and urgent out-of-hours care on patient experience, staff practice and health system performance

Final report for the National Institute for Health Research Service Delivery and Organisation programme

March 2010

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Contents

Acknowledgements ............................................................. 9

A note on the structure of the report ........................................ 9

Executive Summary ............................................................ 10

1 Background ......................................................................... 18
   1.1 The importance of health care workforce reform .............. 18
   1.2 The NCCSDO Workforce Research Programme ............... 19
   1.3 Evidence of the impact of health care workforce reform ....... 20
   1.4 Established concepts in workforce research ...................... 21
   1.5 Concepts and terms used in this study .............................. 23
   1.6 Urgent out-of-hours care as the study context .................. 25
      1.6.1 Urgent Care .......................................................... 26
      1.6.2 Out-of-hours care ..................................................... 27
   1.7 The urgent care policy context ........................................ 28
   1.8 Summary ...................................................................... 29
   1.9 The proposed research ................................................... 29

2 Plan of investigation ......................................................... 31
   2.1 Introduction .................................................................. 31
   2.2 Aims and objectives ...................................................... 31
   2.3 Research questions ...................................................... 32
   2.4 Study propositions ...................................................... 33
   2.5 The main research components ...................................... 34
   2.6 Research components and research questions .................. 36

3 Methods ............................................................................. 38
   3.1 Introduction .................................................................. 38
   3.2 Assessment of local delivery plans for skill mix change in out-
      of-hours care .................................................................. 38
   3.3 Literature review .......................................................... 40
      3.3.1 Identification and review of key policy documents ....... 41
   3.4 Case studies of observed workforce change ...................... 42
      3.4.1 Selection of case studies ........................................... 43
      3.4.2 Contextualising the case studies ................................. 43
      3.4.3 Local Reference Groups ........................................... 43
      3.4.4 Observation in out-of-hours settings ......................... 44
      3.4.5 Interviews with staff ............................................... 44
      3.4.6 Interviews with senior executives .............................. 47
      3.4.7 Systems dynamics modelling .................................... 47
3.5 A study of patient experience and satisfaction ......................... 50
  3.5.1 Pilot study 1 ............................................................ 50
  3.5.2 Pilot study 2 ............................................................. 52
  3.5.3 The main study ......................................................... 53
3.6 Approach to analysis of case study data .................................... 57

4 Observed examples of workforce change ......................... 58
  Summary ................................................................................ 58
  4.1 Introduction and aim .......................................................... 59
    4.1.2 The case studies ....................................................... 59
    4.1.3 The qualitative system maps ......................................... 61
  4.2 The ED-med case study .......................................................... 62
    4.2.1 Overview of the urgent care service, its origins and partner organisations ................................................ 62
    4.2.2 Observed examples of workforce and skill mix change .... 62
    4.2.3 Distinctive system features: access and integration ...... 63
  4.3 The Centre-med case study ..................................................... 66
    4.3.1 Overview of the urgent care service, its origins and partner organisations ................................................ 66
    4.3.2 Observed examples of workforce and skill mix change .... 66
    4.3.3 Distinctive system features: access and integration ...... 68
  4.4 The Community-med case study ................................................. 71
    4.4.1 Overview of the urgent care service, its origins and partner organisations ................................................ 71
    4.4.2 Observed examples of workforce and skill mix change .... 72
    4.4.3 Distinctive system features: access and integration ...... 73
  4.5 The Hub-med case study .......................................................... 75
    4.5.1 Overview of the urgent care service, its origins and partner organisations ................................................ 75
    4.5.2 Observed examples of workforce and skill mix change .... 77
    4.5.3 Distinctive system features: access and integration ...... 77
  4.6 The PCT-med case study .......................................................... 80
    4.6.1 Overview of the urgent care service, its origins and partner organisations ................................................ 80
    4.6.2 Observed examples of workforce and skill mix change .... 81
    4.6.3 Distinctive system features: access and integration ...... 82
  4.7 The County-med case study ..................................................... 84
    4.7.1 Overview of the urgent care service, its origins and partner organisations ................................................ 84
    4.7.2 Observed examples of workforce and skill mix change .... 85
    4.7.3 Distinctive system features: access and integration ...... 85
  4.8 The District-med Case Study ..................................................... 87
    4.8.1 Overview of the urgent care service, its origins and partner organisations ................................................ 87
    4.8.2 Observed examples of workforce and skill mix change .... 88
    4.8.3 Distinctive system features: access and integration ...... 90
  4.9 The Walk in-med Case Study ..................................................... 92
4.9.1 Overview of the urgent care service, its origins and partner organisations ................................................92
4.9.2 Observed examples of workforce and skill mix change ....92
4.9.3 Distinctive features: access and integration...................93
4.10 Diversity in the organisation and development of urgent care systems ........................................................................... 95
4.10.1 First point of contact variation ...................................95
4.10.2 Variation in service provision and co-location ...............96
4.10.3 Variation in new role development in urgent care .........97
4.10.4 Understanding the sources of local diversity ............97

5 Antecedents and drivers of workforce change..... 99
Summary ...............................................................................99
5.1 Introduction and aim ........................................................100
5.2 Study propositions ........................................................... 100
5.3 External drivers that have shaped the changing configuration of workforce patterns........................................................... 101
5.3.1 UK health policies ....................................................101
5.3.2 Integrated models of primary care out-of-hours services: Policy and evaluation evidence.......................... 103
5.3.3 Role innovation and substitution: policy and evaluation evidence......................................................... 108
5.3.4 Conclusions from policy and evaluative evidence........ 111
5.4 Internal drivers that have shaped the changing configuration of workforce patterns........................................................... 112
5.4.1 Internal drivers for change at ED-med ........................112
5.4.2 Internal drivers for change at Centre-med................... 113
5.4.3 Internal drivers for change at Community-med............ 114
5.4.4 Internal drivers for change at Hub-med ......................115
5.4.5 Internal drivers for change at PCT-med.......................116
5.4.6 Internal drivers for change at County-med ............... 117
5.4.7 Internal drivers for change at District-med.................118
5.4.8 Internal drivers for change at Walk in-med.................. 119
5.5 The importance of networks in influencing workforce change.. 120
5.5.1 The 'professional' network........................................120
5.5.2 The 'executive' network............................................121
5.5.3 The 'commercial' network .........................................122
5.5.4 The 'public administrative’ network............................123
5.6 Discussion....................................................................... 123
5.7 Revised study proposition.................................................. 125

6 Impact on staff practice ....................................126
Summary ............................................................................. 126
6.1 Introduction and aim ........................................................127
6.2 Study propositions ........................................................... 127
6.3 Impact on the content and organisation of work ...............127
6.3.1 Responding to and prioritising new demands ............127
6.3.2 Making decisions and managing clinical risk .................. 132
6.3.3 Referrals to other practitioners or services .................. 137
6.3.4 Prescribing practice ............................................... 141
6.3.5 Sharing resources .................................................... 143
6.4 Recruiting new staff ..................................................... 145
6.5 Concern with the quality of care .................................... 147
   6.5.1 Meeting the needs of patients ................................. 148
   6.5.2 Timeliness as an indicator of the quality of care ....... 149
   6.5.3 The need for feedback and peer review .................... 150
6.6 Concern with staff experience and staff development ....... 152
   6.6.1 Formal preparation courses and in-house training ...... 153
   6.6.2 Trainers and mentors to the urgent care workforce .... 157
   6.6.3 Self-directed learning ............................................ 160
6.7 Discussion ............................................................... 161
6.8 Revised study propositions .......................................... 163

7 Impact for patients ....................................................... 165
   Summary ....................................................................... 165
7.1 Introduction ............................................................... 166
7.2 Study propositions ....................................................... 166
7.3 Findings from the main questionnaire survey and interview data ....................................................... 168
   7.3.1 Survey response rates, characteristics of respondents and case mix considerations ............................... 168
   7.3.2 Telephone interviews with patients or their carers ...... 170
   7.3.3 Access to care, expectations and management of calls .. 172
   7.3.4 Patient and caller experience of contact with staff ...... 177
   7.3.5 Characteristics of the service ................................... 182
   7.3.6 Qualitative analysis of free text comments ............... 187
   7.3.7 Summary of findings from the main questionnaire survey and interviews ............................................... 187
7.4 Experiences of the carers of palliative care patients ......... 190

8 Impact for health systems ................................................. 196
   Summary ....................................................................... 196
8.1 Introduction and aim ..................................................... 197
8.2 Study propositions ....................................................... 197
8.3 Synthesising learning from qualitative system dynamics modelling ....................................................... 198
8.4 Local anticipation of the impact of change on the health system ....................................................... 200
8.5 Positive consequences of workforce and skill mix change for the system ....................................................... 201
   8.5.1 Improved system responsiveness ............................. 201
   8.5.2 Increased pressure for service integration .................. 203
8.6 Challenging consequences of workforce and skill mix change for the system ....................................................... 205
   8.6.1 Developing team working across partner organisations 205
8.6.2 Delivering staff development ........................................ 207
8.6.3 Improving information sharing...................................... 208
8.7 Developing the influence diagram.................................... 209
  8.7.1 Feedback loops...................................................... 209
  8.7.2 Causal chains......................................................... 214
8.8 Implications for change management................................. 216
8.9 Evidence in relation to the study propositions................. 218

9 Reflections on the study methods ................. 220
9.1 Limitations of the study.............................................. 220
  9.1.1 Systems modelling............................................... 220
  9.1.2 Local factors influencing the study ......................... 221
  9.1.3 Survey of patient experience and satisfaction .......... 222
  9.1.4 Interview methods.............................................. 223
  9.1.5 Service user involvement.................................... 223
9.2 Conduct of mixed methods research .................... 224

10 Discussion and conclusions .................... 226
10.1 Summary and discussion of the main findings in relation to the
    research questions................................................... 226
  10.1.1 A decade of change in urgent care: the main trends ... 226
  10.1.2 System characteristics and workforce change in the case
        studies................................................................. 230
  10.1.3 The impact of changing workforce patterns for staff
        practice.............................................................. 232
  10.1.4 The impact of changing workforce patterns for patients233
  10.1.5 The impact of changing workforce patterns for health
        systems................................................................. 237
  10.1.6 The efficiency of skill mix in integrated systems ....... 238
10.2 Applicability of findings to other settings.................... 240
10.3 Implications........................................................... 241
  10.3.1 Implications for urgent care policy........................ 241
  10.3.2 Implications for urgent care commissioning ............. 243
  10.3.3 Implications for urgent care teams and managers ....... 246
  10.3.4 Implications for professional regulation............... 247
  10.3.5 Implications for research.................................... 248
10.6 Recommendations .................................................. 250
  10.6.1 Recommendations for policy................................. 250
  10.6.2 Recommendations for practice.............................. 251
  10.6.3 Recommendations for research.............................. 252
10.7 Conclusion.............................................................. 252

References .............................................................. 255

Appendix 1 Literature Review materials .............. 267
Appendix 2 Observation and Interview Schedules .... 272
Appendix 3 Analytical coding framework ............. 278
Appendix 4 Introduction to Systems Dynamics modelling ............................................................... 286
Appendix 5 Quantitative analysis of activity data from Hub-med .......................................................... 290
Appendix 6 Patient questionnaire ........................................... 292
Appendix 7 Patient pathway study documents....... 301
Acknowledgements

We would like to thank the many individuals and organisations that assisted in the research:

The patients who participated by completing questionnaires and taking part in telephone interviews

The staff that enabled us to have access to observe the work of their departments and those who took part in interviews

The local case study leaders who were the main point of contact with the research team

Members of the case study local reference groups, including service user representatives

Sonia Bryant in the Research Support Office, School of Health Sciences for her assistance

Urgent care lead staff in SHAs and Primary Care Organisations

Adastra Ltd and Hampshire Medical Services Ltd for their assistance throughout the study

The Primary Care Trusts and Local Health Boards that granted research governance approval for the conduct of this research

Those who gave expert advice to the study including Dr David Carson, Dr Nicholas Reeves and Dr David Morris.

A note on the structure of the report

Please note that as recommended the report has a thematic structure. Research methods are described in set out in section 3 and thereafter research findings are brought together to address the research questions in later sections (rather than a conventional introduction, methods, results and conclusions section in relation to each method).
Executive Summary

**Background**

The development of the health care workforce is considered to be an essential component of reforming health services so that care is better organised around the needs of patients. A key consideration is the mix of staff within a multi-disciplinary team that is needed to deliver health care, but there has been uncertainty about the impact of new ways of working that involve changing the mix of staff. Proposed benefits of an optimal skill mix include improving the cost effectiveness of service delivery, addressing skills shortages and improving patient outcomes by ensuring that people see staff with appropriate expertise.

**Aims**

By investigating examples of workforce change and skill mix in the context of emergency and urgent out-of-hours care, we aimed to describe, understand and compare the impact of these changes for patients, staff and health systems in different settings.

**About this study**

This study was designed to address a specific commissioning brief entitled ‘Who cares? The impact of changing workforce patterns upon staff practice and patient care’ (SDO/WK2A). Other calls for proposals within the Workforce Research Programme were commissioned to address the impact of workforce change on health outcomes and patient experiences (SDO/WK2B); the use of target ratios in workforce planning (SDO/WK2C) and the costs and outcomes of changing workforce patterns (SDO/WK2D).

We set out to make the examination of patient and staff experience of service delivery the central focus of the study. There was a requirement to ‘map’ patient experience within one or more organisational settings and for this we used health care case studies as the main research approach and systems dynamics modelling as the method by which we could capture the ways in which new workforce and skill mix arrangements were overlaid on different service delivery models and how these influenced patient pathways through urgent care in each setting. The study was not designed as a comparative evaluation of the effectiveness and cost effectiveness of different urgent care systems.

Eight case studies (six in England and two in Scotland for international comparison) were purposively selected to provide maximum variation in observable change in skill mix following assessment of data provided by primary care organisations, English Strategic Health Authorities and Scottish...
Health Boards. Criteria for case study selection included evidence of recent or imminent planned change and geographical variation. Each case study had a Local Reference Group and a local case study leader who was the main link with the research team.

The following research methods were employed to address the research questions:

**Assessment of local plans for skill mix change in out-of-hours care:** Local delivery plans for out-of-hours care were requested from all PCTs in England and Health Boards in Scotland in order to compile a baseline description of services and to identify recent or planned change. Telephone interviews with urgent care leads in English Strategic Health Authorities and Scottish Local Health Boards revealed localities where there was evident innovation and workforce development and areas where there had been little change and where little was planned.

**A review of the literature:** A structured review of literature was completed to identify key factors that shaped changing workforce patterns out-of-hours. Relevant evidence included policy documents as well as published research and these informed the picture of external drivers that shaped change in the case study sites.

**Observation in out-of-hours settings:** After 3-5 days orientation in each case study to describe local service arrangements and to develop a preliminary sketch of patient pathways through each system, non-participant observation in practice environments was undertaken to describe the different skill mix in each case study, to describe how staff work together and to observe examples of delegation and substitution.

**Interviews with staff and senior executives:** In-depth interviews were conducted with 160 staff across the eight case studies with direct experience of the changes under study. Participants were clinicians, team leaders and managers engaged in new or extended roles. We explored how everyday work had changed, how roles had developed and how staff had experienced the changes. In each interview we used influence diagram techniques to refine a qualitative system map of the local urgent care system from the perspective of the interviewee. In interviews with senior executives we explored the local drivers for change and the characteristics of local leadership.

**Systems dynamics modelling:** The fundamental principle of systems dynamics is that structure determines behaviour: in other words, the way that the separate components of any system relate to and affect each other determines the emergent behaviour of the system as a whole. Qualitative system maps were developed for each case study, depicting the patient journey from the point at which a decision is made to contact an urgent care service, through to a defined end-point (ranging from self-care advice through to admission to hospital). The maps were drawn up collaboratively by the site researchers and the modellers; an iterative process over the course of many months, as the maps were refined during successive interviews and local reference group meetings. A high level influence
diagram was developed to expound the issues facing decision-makers when planning workforce or system change in this context.

**A questionnaire survey and follow up interviews of patient experience:** In four of the case studies we examined patient experience and satisfaction with service delivery across an entire care pathway under different workforce and skill mix arrangements. Patients invited to participate were selected based on the presenting problem (five clinical scenarios) so that as far as possible, observed differences in patient pathways reflected differences in care provision rather than differences between cases. Survey respondents were invited to take part in an interview with a researcher so that the team could learn about the ‘whole story’ of contact with an out of hours service from the patient perspective. Interviews explored what happened in the period leading up to the decision to contact an out-of-hours service; aspects of decision making; the staff the caller had contact with, how long the patient had to wait at each stage in their pathway and what aspects of the care received were most important to them.

**Key findings**

In relation to the main research questions, the findings were as follows

**Factors that influenced workforce change in the case studies:** Government policy relating to emergency and urgent care together with aspects of regulation had clearly influenced local planning, but the way in which localities responded to policy was mediated by senior management style and the characteristics of local urgent care networks. We developed a typology of networks, characterised as ‘executive’, ‘administrative’, ‘professional’ and ‘administrative’ to explain this. The diversity of drivers (including local management, geography and previous history) was very complex in the out-of-hours arena and quite unstable at the time of the study in England as PCTs took over responsibility for commissioning services and faced restructuring themselves. Economic considerations and an anticipated shortage of medical resource once GPs were allowed to opt out of 24 hr responsibility for out-of-hours care were the main local drivers for change.

**Access and integration in urgent care systems:** We identified three main structural differences between the urgent care systems in the case studies based on the system maps. First, patient flows were more complex in systems that had evolved over time than in those subjected to strategic redesign. Complexity could indicate greater patient choice, but it may also indicate reduced efficiency and the potential for confusion amongst the public about the services that are available and how to use them. Second, initial telephone access was more streamlined in some case sites than others, especially in the Scottish sites where NHS 24 was the first point of contact. Third, there was wide variety in how face to face treatment was organised in different localities: in the types of settings, the extent to which services were co-located and how home visits were delivered. The different
mix of skills in each case study were embedded within these structural differences.

The examples of workforce and skill mix change: A wide range of new roles were observed for nurses and allied health professionals. Although there were differences in how these were deployed in each case study, the majority were examples of non-medical professionals substituting for GPs in telephone triage and assessment; out-of-hours home visiting; face to face consultations with patients in treatment centres; prescribing medicines and admitting patients directly to hospital in an emergency. In the main, these were extended scope of practice activities and were delegated substitutes for GP inputs rather than adding to the range of services provided by the care team. With the exception of telephone triage and assessment which was wholly delegated to others in some case studies, GPs continued to carry out their usual practice alongside other staff, but focused on more complex cases. Support staff substituted for nurses in call handling and prioritisation and there were examples of horizontal substitution whereby receptionists, health care assistants and drivers worked flexibly and interchanged roles to respond to demand.

The impact on staff practice: Developing the skill mix had led to reported service improvements. These included making the urgent care service more responsive, and establishing new referral of patients between non-medical professionals to best meet patients’ needs without referral to a doctor. Co-locating staff did not guarantee interdisciplinary collaboration, however. Many staff worked across different provider organisations and found a lack of integrated governance systems meant that they needed to be familiar with different policies and procedures. Access to patient information to inform decision making was limited. To some extent therefore, organisational and technical obstacles were holding back realising the full potential of skill mix. Local plans for developing skill mix were often beset by recruitment and retention challenges.

It is not unusual in out-of-hours care for staff not to know the outcome for individual patients, but for staff in new or extended roles this feedback was important for self assessment of the appropriateness of their decision making. Planned, professional conversations about the care of individual patients and event auditing were valued but there was scope to develop more systematic approaches to learning, including through case review.

Training and education to support skill mix was often provided in house, but because of financial constraints this was sometimes limited to mandatory training. Staff skilled in minor injury management required training in minor illness management and vice versa to be fully effective in treatment centres. Staff described exceptional personal efforts to manage their own learning and training provided by GPs was highly valued. Clinical leadership by nurses and AHPs was developing but there were few consultant level staff and a need to develop career pathways in urgent care.

The impact for patients: We did not find that the number of staff patients had contact with had an impact on overall satisfaction with care. Almost all respondents were satisfied or very satisfied with care provided by different
types of staff encountered. More respondents were very satisfied with contact with a nurse on the telephone than with a doctor, and this may reflect better training in triage techniques and telephone communication. Patients did not always know the roles of staff that had treated them and a third underestimated the number of staff they had contact with during their episode of care.

Callers were kept informed about what would happen next; had enough time to discuss their problem; felt things were explained in a way they could understand; that staff had listened to what they had to say; thought their problem had been resolved and agreed that contact with the service had been worthwhile. Most were better able to understand their health problem and to cope with it and felt reassured after contact with the service. However, one half had repeated their story to different members of staff, but most agreed that information was passed onto the next member of staff at each stage. Rates of re-consultation about the same problem were similar across the clinical condition groups and the case studies, but those who were less satisfied with the overall service were more likely to re-consult.

Satisfaction with urgent care was not influenced so much by the precise details of service and staff configuration but by adherence to more generic service standards (professionalism of staff, communication, having good access by telephone and signage and parking at treatment centres and hospitals; short waiting times and being kept informed of waiting times).

**Impact for health systems:** A high level influence diagram that could be applied to all the case studies was developed to show some of the implications of system design decisions. A number of feedback loops were identified that showed the central importance of workload management in the system to avoid difficulties in retention and recruitment of staff (associated with stress and reduced staff satisfaction); to avoid incorrect triage of calls with consequences for missing serious cases, thereby increasing the volume of genuine clinical need causing additional workload through further calls to the hub or patient self referrals to the emergency department or to 999 services. This suggests that in urgent care, new workforce and skill mix patterns most likely to have enduring success are those which deliberately focus on effective demand management. We observed that where one organisation employed the majority of staff working in the system, the system was able to ‘flex up’ to meet demand more effectively.

**Applicability of the findings**

Evidence in this study was drawn from eight UK urgent care systems, selected as exemplars of having introduced skill mix change, rather than as ‘typical’ systems. Case study boundaries were similarly circumscribed in relation to the inclusion of national (NHS Direct / NHS 24) and regional services (ambulance and emergency departments) and case study descriptions addressed aspects of access to care and service integration.
Detailed descriptions are intended to enable readers to judge the extent to which the settings and the findings relate to their own context.

Conclusions
The need for person centred services that are responsive and which can safely and effectively differentiate potentially life threatening problems from those that are less urgent have been longstanding priorities in UK urgent care policy. A new contract that allowed GPs to opt out of their 24 hour responsibility for patients accelerated local initiatives to develop skill mix in urgent care. Our task was to understand ‘who cares for patients’ and the impact of changing workforce patterns and skill mix at different levels. We found a multi-disciplinary approach to delivering urgent care in each case study in which non-medical professionals were frequently substituting for general practitioners, though GPs remained a vital part of the service. There were many examples of bespoke roles with locally inspired titles and functions which responded to the needs of local services.

Strategic approaches to system redesign had produced less complex pathways for patients and more effective management of the first point of contact with the system. In the context of skill mix, this was important in ensuring that patients were routed to an appropriate member of staff. For patients, overall satisfaction with the service was not directly related to the number of staff they had contact with during an episode of care or to local skill mix but to more generic qualities of service provision such as the quality of communication (including how to access services) and length of waiting time. The cost effectiveness of new skill mix models is therefore a priority for further research.

Main recommendations for policy:

1. There is a need to reduce the confusion that members of the public have about how to make contact with urgent health services, especially out-of-hours. Proposals for a new ‘three digit number’ for non-emergency health care have potential to greatly improve this for people who are uncertain what to do. Currently there are multiple access points, which improve choice but do not automatically redirect patients to the right service for their needs.

2. The public need to understand what types of staff they will have contact with in urgent care and what they can expect from them. Because callers are unclear about this, they may make assumptions about the level of experience staff have and their competencies. There may be scope to make this clearer in public information nationally and locally.

3. We observed systems which had different approaches to initial triage and assessment, undertaken by different types of staff with different levels of experience and training. Decision support systems for non-medical staff were not in use in every case study. Given the
importance of initial triage in determining both the level of urgency (a question of safety) and the appropriate service or staff member to meet the patients’ needs (a question of efficiency), policy makers should consider requiring other call handling services to introduce active decision support systems already approved for use in the NHS for prioritisation, assessment and triage.

4. Non-medical health professionals are making a key contribution to the delivery of urgent care. Their perspectives need to be taken into account in policy development.

5. Given the scale of education and training needed to sustain the current the urgent care workforce, consideration should be given to effective ways of delivering this and ensuring that localities are able to sustain investment in staff development despite the need for cost containment overall.

6. Progress towards integrating information systems in urgent care is needed to enable better use of NHS data for performance monitoring and reporting; to enable patient information to be available to support staff making clinical decisions and to be able to track the pathways of individual patients across the system. There were similar challenges across the case studies, suggesting that local resources alone may be insufficient to improve this greatly.

7. Urgent Care Commissioning in England and leadership roles in England and Scotland have grown rapidly as specialist areas of management practice. We heard from Local Reference Groups that primary care organisations would welcome ‘master class’ opportunities and networking with others in similar roles. Focus could usefully include strategies for change and system redesign and analysing and using NHS data for performance management.

**Main recommendations for practice:**

1. Given that many patients are not sure which type of staff they have had contact with, staff should endeavour to explain what their role is and what this means to patients.

2. Reducing the number of times someone has to tell their story and reducing waiting times may improve patients’ experience of urgent care.

3. Simplified system maps may be helpful for the public and new staff to understand how the local system works.

4. Clinical leadership, particularly in the non-medical professions is needed along with career pathways in urgent care. This should be the subject of local and national discussion.

5. Where services are co-located (for example GP out-of-hours and emergency department minor illness and injury) there is often further
scope to use the staff resource more flexibly to reduce patient waiting times.

6. Strategies for promoting learning in practice need to be strengthened. GPs make an important contribution but this is unlikely to be sustainable or sufficiently comprehensive for non-medical professionals.

7. In our models, effective management of demand and workload was particularly important. Staff needed to have sufficient time and resources to treat patients and have access to patient information.

**Main recommendations for research:**

Future research should focus on:

1. Investigating the effectiveness and cost effectiveness of skill mix as an 'active ingredient' of health care delivery, with potential consequences for patient outcomes. Although comparative studies, especially trials, are difficult to execute (and costly) there is little evidence to show what the costs and consequences are of substituting a mix of health professionals for doctors in this setting.

2. The development of NHS data systems to support data analysis that can inform system improvement and can enable quantitative systems dynamics modelling of the kind we had proposed to do in this study.

3. The development and evaluation of effective strategies for professional learning in everyday practice.
The Report

1 Background

1.1 The importance of health care workforce reform

The development of the health workforce is currently regarded by the World Health Organisation as an essential step in achieving the reform of service delivery and as one of the four most important contemporary challenges for primary health care (WHO, 2008). Key objectives of reform include re-organising health services around the needs and expectations of service users in ways which improve the quality of care and produce better outcomes. ‘Bringing care closer to the people’ by re-thinking entry points to the health system are further essential steps in achieving this reform. One of the major challenges for most health care organisations and health systems in the developed world, however, lies in determining and delivering the optimum mix of personnel to best effect (Buchan and Dal Poz, 2002) in conditions of significant complexity and uncertainty (Rosenhead and Mingers 2001). Historical factors such as the funding of health care systems, the roles of professional organisations, patient needs and expectations and approaches to professional education and training have all shaped established workforce patterns.

In the last ten years, the UK NHS has been working to deliver an ambitious programme of modernisation and development (NHS Plan, 2000) which included establishing its own ‘Changing Workforce Programme’. The programme embodied common elements of system redesign strategies, namely a focus on the patient or customer and the quality of their experience as well as an emphasis on the patient process or pathway (Locock, 2003) and has been followed by a more recent emphasis on modernising working practices, including systems and processes of care (Hyde et al, 2005). Certainly, UK health policy since 2000 has steered providers towards making decisions about change from the patient perspective rather than, as in the past, from the perspective of organisations and professionals.

The proposed benefits of developing the skill mix in health care are based on improving the cost effectiveness of service delivery, addressing skills shortages and improving patient outcomes by ensuring that people see staff with appropriate skills. In addition to benefits for service users, it is proposed that benefits to the health workforce may be secured by role redesign through improved workload management, job satisfaction and the opportunity to specialise, whilst benefits to organisations may be derived from improved retention and flexibility. Indeed, the premise on which the NHS Changing Workforce Programme was based almost ten years ago was
that new ways of working could improve performance of the NHS by improving access, reducing waiting times and improving service quality.

Yet at a local level, changing workforce patterns and skill mix may be a first line response to overcoming resource limitations. Sibbald (2004) observes that changing the skill mix of the workforce is often regarded as the primary solution to contemporary constraints, such as skills shortages and the need to reduce health care costs, and in response to opportunities to maximise the benefits to patients from new treatments and programmes. Adjusting the practice of professional staff (within existing regulations) and developing new ways of working can be seen as pragmatic and responsive ways of managing demand. Typically however, staff involved in direct care may have little insight into the impact of their new ways of working on the wider system (Brailsford and Lattimer, 2005) or into the extent to which their individual contribution to patient care forms part of the therapy to which patients are exposed. Different perspectives on how to achieve system reform exemplify what Locock (2003) describes as the contrasting theories of re-engineering (top-down simultaneous transformation of the whole system) and total quality management (bottom-up, incremental improvement). Currently, however, in the absence of a well developed evidence base that can inform workforce development (Black et al, 2004) uncertainty remains about the impact and sustainability of new ways of working. It is this uncertainty that the NCCSDO Workforce Research Programme and this study aimed to address.

1.2 The NCCSDO Workforce Research Programme

Workforce issues emerged as a top research priority for SDO in a national listening exercise carried out in 2002. Three scoping studies (Elliott et al, 2004; Hewitt et al, 2004; Carr-Hill et al, 2003) informed the development of a commissioning strategy for health workforce research (Black et al, 2004). These studies highlighted the lack of empirical studies to date and though some previous research had begun to explore the perspectives of health professionals, there had been relatively little attention to the impact of changing workforce patterns from the patients’ perspective. The Workforce Research Programme now comprises a substantial cluster of empirical studies commissioned under the workforce theme.

The commissioning brief for this study required an examination of the impact on the patient experience of service delivery as a consequence of changing workforce configurations – an investigation of ‘who cares’ for patients. The requirements included ‘mapping’ the patient experience within one or more organisational settings and examining the impact of workforce changes on staff and patient experience of care. An ideal context for this study was therefore one in which workforce issues were major and immediate and where there was an opportunity to investigate newer areas of workforce change, and especially those involving health care workers other than doctors or nurses, which had been insufficiently studied. Individual patient and staff experience, as well as the wider impacts of skill
mix change on the health care system were key aspects of the commissioning brief.

1.3 Evidence of the impact of health care workforce reform

In approaching the published evidence about the impact of workforce reform in health care, reasonable questions to pose would be in relation to the impact for patients, for staff and for organisations. Carr-Hill et al (2003) describe a considerable literature relating to the health care workforce but observe that most of it constitutes ‘general debate over what was actually meant by skill mix’ (p7) including quite a large literature about the potential for delegation and substitution both between professional groups and across professional boundaries. They report relatively little published material relating to empirical work (p 14).

There is some important evidence on which to build in relation to substitution, however. Laurant et al (2004) completed a systematic review of studies reporting substitution of nurses by doctors in primary care with the objective of evaluating the impact on patient outcomes, the process of care and resource use including costs. Patient outcomes included morbidity, mortality, compliance, preference and satisfaction. The review included five studies of nurses having responsibility for first contact urgent care (in-hours and out-of-hours). Taken together, patient health outcomes were similar for nurses and doctors, but satisfaction was greater with nurse-led care. The reviewers conclude that the findings suggest that appropriately trained nurses can produce care of a quality that is as high as that provided by doctors. Nurses tended to provide longer consultations, provide patients with more information and recall patients more frequently than doctors.

Hewitt et al (2005) concluded that evidence of the outcomes of workforce change for patients was limited to some evidence of better health outcomes linked to higher doctor-patient and nurse-patient ratios and increased patient satisfaction related to staff collaboration and co-ordination, but that little could be concluded from studies that had examined substitution, skill mix or specialisation, an observation also made by Buchan et al (2001). Evidence of the consequences of skill mix change for staff other than doctors and nurses, or the wider health system is particularly limited (Richardson, 1998; Buchan, 2002; Sibbald et al, 2004).

Previous work has tended to focus on secondary care or, to a lesser extent, daytime primary care generally but does not sufficiently address the context in which the work was placed. This may underestimate ways in which a similar intervention applied in different settings may have different impacts on patients, other health professionals and on other parts of the health care system. The patient population, previous workforce structures, even professional identity (Haddow, 2007) may all impact on how a reconfiguration of the workforce may be implemented. Research based evidence about the allocative efficiency of different skill mix models in
particular contexts also remains very limited (Sergison, 1999; Sibbald, Shen and McBride 2004) and few studies have reported on role or skill, using grade, qualification or job title as a proxy for these (Buchan and Dal Poz, 2002).

Research in the field of human resources management (HRM) has begun to suggest a relationship between a range of HRM practices within organisations and organisation level outcomes (Boxall and Purcell, 2003; Eaton, 2000; West et al, 2002) but a key challenge for research in this area is that of the generalisability of research findings. Buchan (2002) has suggested that the results of studies of changing skill mix cannot necessarily be applied to a different setting, organisation or health system. Rather they are true only for the time and place from which they are derived, so that it is impossible to describe a ‘universal ideal mix of health personnel’. Research must therefore have the ‘capacity to analyse the context, identify appropriate solutions and manage sustained change within the system’ (p.578). The organisational change literature suggests that other than the simplest of changes, the potential impacts of change are multiple, and not always predictable.

1.4 Established concepts in workforce research

Given the limited empirical evidence on which to draw, this study needed to take account of the general debate in relation to skill mix and to develop a working terminology.

Skill mix has been defined simply as the mix or combination of staff required in the workforce (Richardson, 1998; Richards, 2000; Jenkins-Clarke, 2001) or as a more dynamic entity, such that we should be less concerned with the mix of numbers or types of staff and rather more with the way in which those staff interact with each other, enhancing or substituting for each other:

“…. The term “skill mix” is usually used to describe the mix of posts, grades or occupations in an organization (strictly speaking, this is more accurately referred to as “grade mix”). It may also refer to the combinations of activities of skills needed for each job within the organization.” (Buchan, 2002, p 1661).

From this perspective, while grade mix is important, it is the interaction of roles that is of greater interest to policymakers today.

Intervening to engineer new ways of working, or changing the skill mix is generally considered to involve aspects of delegation or substitution. For example, Sibbald et al (2004) articulated ways in which skill mix change may be brought about:

- Enhancement: where the depth of a job is increased by extending the role or skill of a particular group of workers.
- Substitution: where the breadth of a job is expanded, by working across professional divides or by exchanging one type of worker for another.
Delegation: where a task is moved up or down a traditional unidisciplinary ladder.

Innovation: where new jobs are created through the introduction of a new type of worker

and proposed that service delivery considerations also influence skill mix change, for example through the mechanisms of transfer, relocation and liaison:

Transfer: where the provision of a service is moved from one sector to another for example by substituting community care for hospital care.

Relocation: where the venue for a service is moved from one health care sector to another, without changing the personnel delivering the service, e.g. moving a clinic from a hospital setting to a general practice setting.

Liaison: where specialists from one health care setting educate and support staff working in another sector, e.g. hospital outreach workers working within primary care.

Arguing that the health care professions have never been static in terms of their own disciplinary boundaries, Nancarrow and Borthwick (2005) point to wider historical, professional and economic influences for change, not least developments in technology and the evidence base for health care, the impact of staffing shortages in the NHS, particularly those experienced ten years ago and the growing emphasis on user-centred care. Drawing on the sociological literature around professions and professional boundaries, they describe four ways in which the workforce can change:

Diversification: where a task not previously owned by a professional group is taken on by a particular professional group. This might be a new task or a new way of performing or delivering an existing task and may involve delivery in new settings; use of new technologies, therapies or medicines; or new ways of delivering existing services.

Specialisation: the adoption of increasing levels of expertise within a profession, often by a particular sub-group of the profession. This is legitimatized through the use of specific titles, specific training and membership of a closed sub-group.

Horizontal substitution: when professionals with similar levels of training and expertise, but from different professional backgrounds, undertake roles that are normally undertaken by a different disciplinary group. This could also be regarded as “role overlap”.

Vertical substitution: the adoption or delegation of tasks across disciplinary or professional boundaries, between professionals with different levels of training or expertise. This crossing of disciplinary boundaries distinguishes vertical substitution from specialisation, which remains within a profession.

The lack of literature examining the impact of workforce change, together with the lack of consideration of context led us to consider conducting a theoretically-driven and focused literature review that addressed these
considerations in the proposed study context and which drew on re-
analyses of recent policy documents and evaluations of key service re-
design models in the UK.

1.5 Concepts and terms used in this study

Skill mix

In this study, ‘skill mix’ refers to the different combinations of staff required to provide patient care within a multidisciplinary team (Richards, 1998), including support staff, so that patients receive care from a clinician that is best able to meet their needs.

Changes in skill mix can be seen to alter care provision by enabling the delegation or substitution of tasks, enabling organisations to diversify by enhancing the skills and capabilities of existing staff or by recruiting new staff (Sergison, 1999; Nancarrow and Borthwick, 2005).

Workforce patterns

We use the term ‘workforce patterns’ to refer to how staffing is configured at the level of the organisation.

Local health economy

The local context within which organizations are embedded (Exworthy and Frosini 2008)

Integrated care

“Integrated Care is a concept bringing together inputs, delivery, management and organisation of services related to diagnosis, treatment, care, rehabilitation and health promotion. Integration is a means to improve services in relation to access, quality, user satisfaction and efficiency” (WHO, 2001).

Grone and Garcia-Barbero (2001) differentiated between strategies for integration which aim to develop multi-professional teams by linking services on the same level (horizontal integration) and strategies which aim to bring together services operating at different levels (vertical integration).

In the context of urgent care, both levels of integration are relevant. Making access to urgent care as simple and straightforward as possible requires systems that can effectively assess and prioritise urgency and divert individual cases to the level of care needed. The Department of Health (2000) proposed that callers should be able to make one telephone call proving effective and timely advice and, where necessary a face to face consultation at a time and place agreed with the patient and that all professionals involved in the delivery of urgent care work together to deliver the service (horizontal integration).
Skill mix and efficiency

Questions about the different combinations of staff required to provide patient care may also be considered from an economic frame of reference, that is, whether a particular skill mix is an efficient use of resources. Decisions about optimum skill mix require evidence from economic evaluation studies which enable choices to be made between alternative interventions, by relating the health outputs (benefits) of an intervention to the resources that are consumed (cost effectiveness analysis). Kernick and Scott (2002) underline the importance of both technical efficiency (concern with ‘the most efficient mix of inputs (ie doctors or nurses) to achieve a specific output’ and allocative efficiency ‘the most efficient mix of services provided’ (p44). Davies et al (2005) highlight the social value aspect of allocative efficiency because this raises further questions about the most desirable mix of products (as well as producing the right mix of outputs using a cost-effective combination of inputs). Beyond technical efficiency, other factors (patient preferences for example) may influence how ‘fundable’ various options are.

Organisational change

Changes to workforce patterns are conceptualised within a framework of organisational development in which change can be characterised and described in different ways: planned versus emergent; episodic versus continuous; developmental, transitional and transformational change (Isles and Sutherland, 2001). Planned rather than emergent approaches to workforce change may be associated with greater role clarity, higher morale amongst staff and reduced stress. Continuous change is infrequently achieved (Orilowski, 1996) but most associated with the degree of organisational evolution likely to be necessary to implement current NHS policies.

Organisational culture

The human resources management culture in health care organisations has been observed to have positive effects on facilitating workforce change. Observable aspects of a positive culture include concern with staff satisfaction and staff development (despite limited resources) concern with the quality of care; a strategically and systematically planned large scale skill mix change implemented at one point in time in which as many staff as possible are retained and redeployed (Adams et al, 2000).

Health care networks

Health care organisations are viewed as ‘learning organisations’, responding to and shaping their environments and also operating within complex networks and systems. The dynamics of these systems can be analysed by examining underlying structures of flows, delays, information and feedback.
(Rosenhead and Mingers, 2001) and the interface between individuals (staff and patients) and the health care system is therefore centrally important.

Access to health care

Different dimensions of access in the health care context are relevant for this study where our interest is in both the potential ability of an individual or population to enter a health care system (“having access”) or to the process of utilising a service (“gaining access”) as described by Gulliford, 2002. For example, centralisation of out-of-hours services in a rural area may limit the ability of those living on the periphery to access the service due to increased travel times. Equally, the re-development of a service with a new skill mix model may restrict the ability of individuals able to access the service itself to see the health care professional of their choice, for example a GP rather than a nurse. In this situation, an individual's utilisation of the service may be reduced. With this in mind, the theoretical framework selected to encompass these different considerations was that of Penchansky and Thomas (1981) who proposed that the concept of access should describe the degree of “fit” between the users and the health care system. Underlying this are five dimensions of access: availability; accessibility; accommodation; affordability and acceptability.

1.6 Urgent out-of-hours care as the study context

In order to be able to address the commissioning brief it was important to work with health communities in which workforce and skill mix change had been introduced. NHS emergency and urgent care services offered a compelling context in which to conduct such a study as they had been the locus of considerable workforce change brought about not only by numerous policy imperatives to improve the quality of care provided for patients (including improving responsiveness, simplifying patient journeys, ensuring that the patient is seen by the professional that is best able to meet their needs and reducing waiting times) but also by a new general medical services contract introduced in 2004 which provided new governance and incentive arrangements for general practice (Peckham, 2007), enabled general practitioners to opt out of their 24 hour responsibility for patients (NHS Confederation, 2003) and required primary care organisations to re-think their strategies for urgent care service delivery. The range of staff involved in service provision in different localities grew to include, for example, emergency care practitioners, paramedics, call handlers and dispatchers, social workers, health information advisers and community pharmacists and provided an opportunity to extend the research evidence hitherto limited largely to that concerning nurses and doctors. The collaborators had previously conducted research in the emergency and urgent care field and were aware of considerable workforce change that could provided a valuable context for the study as well as contrasting examples between England and Scotland.
1.6.1 Urgent Care

Urgent care is described in a recent government consultation as ‘the range of responses that health and care services provide to people who require – or who perceive the need for – urgent advice, care, treatment or diagnosis (Department of Health, 2006)

People using urgent care services and carers are to expect 24/7 consistent and rigorous assessment of the urgency of their care need and an appropriate and prompt response to that need. A wide range of primary and secondary health and care services and staff is commonly involved in the urgent care remit including GP and nurse-led services, dentistry and social and mental health acute crisis teams. Emergency care is also generally included under the urgent care umbrella, representing the highest priority 24-hour critical response to emergency problems. This response employs a range of specialist resources such as ambulance and other mobile units operating with paramedic practitioners and hospital emergency departments. Out-of-hours care during the evenings and weekends when routine primary care services are closed are recognised as a distinct part of the urgent care service.

Different models of urgent care provision are emerging to meet the requirement to provide a 24-hour emergency and urgent care service. Urgent care now aims to function in a more integrated way with secondary care and the independent sector. For example, telephone triage assessment and advice are being used to stream less urgent cases through the system in cooperation with NHS Direct and NHS 24 services. Such integration is expected to assist the acute response to focus on more urgent cases. Whilst urgency of need has been viewed as the most important factor in urgent care provision according to the policy literature, in practice, other factors such as funding and skill mix may also be influencing service models as the case studies in the Direction of Travel for Urgent Care suggest (Department of Health 2001; 2004; 2006). Such locally driven factors may make it increasingly difficult to maintain and monitor a standard definition of urgent care in accordance with government directives. Moreover, the challenges facing service users in trying to understand local urgent care services and to access care in the way that they wish to do so may be considerable.

The process and system related outcomes of care

For the purpose of the study, patient pathways through the urgent care system were described as having three main aspects. First a ‘contact’ phase in which initial access to the system by telephone or in person and by the patient themselves or someone contacting the service on their behalf was prioritised and assessed. Local variation was anticipated in the approaches to triage and the types of staff involved. Next, a ‘treatment’ phase in which a definitive clinical consultation or case management took place. This could involve a patient being seen by a clinician at home, in a treatment centre setting or being managed over the telephone. Finally, an ‘outcome’ phase in which the patient’s pathway is concluded or referred beyond the urgent care
service. Outcomes might include home management, advice to attend an emergency department admission to hospital or referral to a specialist service. New skill mix contributed to the contact and treatment phases.

**Figure 3.1 Patient pathways in urgent care**

![Patient pathways in urgent care diagram]

### 1.6.2 Out-of-hours care

The NHS has traditionally differentiated between primary care provided to patients during ‘in hours’ and ‘out-of-hours’ periods (defined as the period beginning at 6.30pm on any day from Monday to Thursday and ending at 8am on the following day; the period between 6.30pm on Friday and 8am on the following Monday and Public Holidays: Department of Health 2004) and between primary and secondary care. These distinctions are becoming less helpful as the policy emphasis shifts towards understanding the importance of having better systems in place to respond to patient needs for ‘unscheduled’ care across the 24 hour period (Department of Health NHS Plan, 2000). In the out-of-hours setting, providers are increasingly working in partnership to this end; including those which have delivered only out-of-hours care in the past (such as GP co-operatives and commercial deputising services); the first contact NHS services located within secondary care such as Emergency Departments; Ambulance Services which have provided 24 hour care; nurse-led telephone triage and advice lines (NHS Direct in England & Wales, NHS 24 in Scotland); and NHS Walk-in-Centres and Minor Injuries Units. Emergency care ‘systems’ are complex and adaptive and are vulnerable to rising or changing patterns of demand, with consequences for the acute hospital sector in particular (Brailsford and Lattimer, 2004; Lattimer at al, 2004). Based on a combined population of 55 millions for England and Scotland in mid 2003 (Office for National Statistics) and assuming an average out-of-hours call rate of 160 calls per 1,000 population (Salisbury et al, 2000) some 9 million out-of-hours calls each year are made to general practitioners after surgery hours. A Health Select Committee report on GP Out-of-Hours Services (2004) identified several areas with innovative developments in skill mix (p10), but it supported calls for ‘better use of skill mix to deliver out-of-hours care’ (p.35) in order to deliver a better quality of service to patients, noting that the service is complex to provide and that there will be training needs associated with the changing workforce.
1.7 The urgent care policy context

An emphasis on new or redesigned roles had been evident in policy focussed on the delivery of out-of-hours emergency and urgent care. Much of the focus within these strategic documents was to streamline the patient journey and to provide ready access to services when required. For example, “Primary care: The Future” (1996) stated that ‘Primary care must be available 24 hours a day every day for emergency care” (p316). This commitment to ready access to urgent and emergency care out-of-hours continued after the election of the Labour administration, with patient access as and when required becoming a driving force of health policy. As well as The NHS Plan, urgent and emergency care was included in several policy papers and reviews including “Raising standards for patients. New partnerships in out-of-hours care” (Department of Health, 2000), an independent review of general practice out-of-hours services in England; “Reforming emergency care” (Department of Health, 2001) and “Keeping the NHS local – A new direction of travel” (Department of Health, 2004).

The 2004 GMS contract was not however the start of reform of urgent primary care in the UK. Within general practice, there had already been substantive changes to the way in which services were provided in the out-of-hours period, with many GPs providing care within out-of-hours co-operatives. These professionally led and managed organisations had developed in the mid-1990s when GP dissatisfaction with providing their own out-of-hours care had escalated as a result of growing patient demand (Hurwitz, 1994; Heaney, 1998). An agreement between the government and the General Medical Services Committee in 1995 had allowed GPs to transfer responsibility for night visits to another GP principal and allowed them to decide (on clinical grounds) where care should be provided. A development fund, established to cover the start up and running costs of organisations which could provide out-of-hours care above the level of individual practices stimulated the rapid development of out-of-hours GP-led co-operatives, particularly in urban areas (Hallam, 1999; Payne, 1997). However, in general, these organisations were staffed predominantly by GPs, with little evidence of new skill-mix configurations or extended roles for other health care professionals. The new contract, together with the effects of the implementation of the European Union Working Time Directive (Directive 93/104/ec) which limited doctor’s working hours and a strong policy steer to improve access to urgent care all appeared to be precursors of change.

When considering the impact of policy on workforce configurations within the NHS, it is necessary to acknowledge that health care is now devolved to the four administrations of the UK: England, Scotland, Wales and Northern Ireland (Exworthy, 2001). This has led to the suggestion that “devolution provides a series of natural experiments in which the NHS model is adapted according to local preferences and circumstances” (quotation from Chris Ham, cited in Exworthy, 2001 p1215). According to Greer, these natural experiments have led to a distinctly different policy and managerial ethos across the four countries of the UK, exemplified in England by a market-
based approach, whilst in Scotland NHS development has been influenced by a strong ethos of professionalism and a rejection of market-driven approaches (Hudson, 2001; Greer, 2004; Greer, 2008). Operationally, these changes have become manifest in different structures and organisations designed to deliver primary care services. So, for example, in England, the purchaser-provider split was retained and competition has been favoured as a way of introducing private providers into primary care delivery. The organisational unit for primary care is that of the Primary Care Trust (PCT), these having power to commission services for both in hours and out-of-hours services. In contrast, Scotland abolished the purchaser-provider split and integrated all of health care into area-based Health Boards. The organisational unit for the delivery of primary care was Local Health Care Co-operatives, which although voluntary were often GP-led. These have, however, been replaced by Community Health (and Care) Partnerships, with boundaries co-terminous to Local Authorities and a closer integration of health and social care (Talbot-Smith, 2006). In addition, the Scottish Government has rejected the concept of private providers in primary care (BBC News, 2008).

Devolution has impacted on the organisation of urgent and emergency care too, particularly in the out-of-hours period. Both countries developed a nurse-led telephone triage service, NHS Direct in England and NHS 24 in Scotland, which patients could contact in daytime and out-of-hours periods. In England, NHS Direct developed as a franchised model, located in different organisational settings (for example Primary Care Trusts, Ambulance Service Trusts). However, in the out-of-hours period, NHS Direct remained separated from the care delivery unit of out-of-hours GP-led co-operatives. In contrast, NHS 24 in Scotland was established at a national level (as a Special Health Board), integrated with GP-led out-of-hours co-operatives and linked to both the Scottish Ambulance Service and Emergency Departments (EDs). However, the on-going impact of devolving models of health services on urgent and emergency care has yet to be documented.

1.8 Summary

Development of the healthcare workforce is key to the delivery of effective service delivery reform. Little is known about the impact of changing patterns of workforce and skill mix and the literature focuses strongly on conceptual aspects. In the meantime, major changes involving the workforce proceed without the benefits of needed evidence. The urgent care context, particularly out-of-hours has been a locus of considerable and rapid workforce change and provides a useful context in which to conduct an empirical study to examine the central question of ‘who cares for patients’.

1.9 The proposed research

This study was designed to address a specific commissioning brief entitled ‘Who cares? The impact of changing workforce patterns upon staff practice
and patient care’ (SDO/WK2A). Other calls for proposals within the Workforce Research Programme were commissioned to address the impact of workforce change on health outcomes and patient experiences (SDO/WK2B); the use of target ratios in workforce planning (SDO/WK2C) and the costs and outcomes of changing workforce patterns (SDO/WK2D).

We set out to make the examination of patient and staff experience of service delivery the central focus of the study. Given the requirement to ‘map’ patient experience within one or more organisational settings we used health care case studies as the main research approach and systems dynamics modelling as the method by which we could capture the ways in which new workforce and skill mix arrangements were overlaid on different service delivery models and how these influenced patient pathways through urgent care in each setting. An important facet of each setting would be the way in which access to care and service integration were achieved.

The study was not designed as a comparative evaluation of the effectiveness or cost effectiveness of different skill mix models in urgent care. However, we were interested in how integration affected how and where staff practiced in relation to the system structure and their experience of working across traditional boundaries. For example, co-locating members of the multidisciplinary team has been one approach to accelerating service integration.

The responsiveness of the systems was explored by investigating patient reported experience of speed of response in relation to perceived urgency of the presenting problem, the range of services available and aspects of communication. These are amongst the important dimensions of responsiveness contained within the World Health Organisation conceptualisation of health system responsiveness described by Gostin et al, 2003. We aimed to collect activity data in one to two health care systems to develop a quantitative computerised systems dynamics model which would generate learning about system performance.
2 Plan of investigation

This section of the report details the aims and objectives of the study, the research questions and the study propositions and the relationships between them. An overview of the plan of the research is presented together with an introduction to the research components within the study and their relationship to the research questions. The methods are explained in detail in section 3.

2.1 Introduction

In addressing the main areas for investigation from the commissioning brief, important aspects to include were the service delivery changes produced by new configurations and skill mix, the impact of these changes on patient care, on staff and on the wider health system.

A framework of enquiry was developed to guide the focus of the study. Aims and objectives were linked closely to the commissioning brief. Their purpose was to set the overall scope and limits of the study and to act as a point of reference for measuring overall progress. They also ensured that the project remained connected to the importance of generating learning for the health service.

Within the overall scope and focus of the study, particular research questions were posed. Questions originated in part from the brief, but also from the initial review of evidence and what was known about the subject at the outset. The research questions needed to relate to the overall objectives and the methods of investigation were those considered best able to provide evidence in relation to the research questions.

A further level of enquiry was pursued by developing study propositions. Framed as positive statements which encapsulated what had been observed in previous research, these extended the ‘how’ and ‘why’ of the study questions by pointing to what should be examined within the scope of the study. Data from the study were used to test and refine the original propositions.

2.2 Aims and objectives

The aim of the study was to describe how changing workforce configurations in emergency and urgent out-of-hours care systems in the NHS are having an impact on staff practice, patient experience of service delivery and health system performance.

The objectives were:
• To investigate the scale and scope of changing workforce configurations in emergency and urgent out-of-hours care across England and Scotland as the basis for (a) detailed baseline description (b) selection of case studies

• To undertake an in-depth study of planned and emergent change in up to eight emergency and urgent out-of-hours care ‘systems’ from the perspective of patients, staff, organisations and health economies; selected on the basis of the scale and scope of workforce change and geographical location

• To explain the antecedents, impact and consequences of changing workforce configuration in this context with reference to key conceptual and theoretical frameworks and existing evidence

• To synthesise learning from the study for policy makers, commissioners, organised providers of out-of-hours care, patient representatives, practitioners and researchers

• To disseminate learning derived in local health economies more widely and where possible to other national, European and international health care contexts.

2.3 Research questions

The study was commissioned to address the following research questions:

a) What changes to working patterns have already taken place within emergency and urgent out-of-hours care systems in the UK in the past ten years?

b) What have been the social, political, historical, environmental and economic influences on changing working patterns in this context?

c) How is unscheduled care being commissioned and delivered since the new GMS contract?

d) What changes can be observed in the content and organisation of the workforce?

e) What are the consequences of changing workforce patterns for patients, including vulnerable patients?

f) What are the consequences of changing workforce patterns for staff?

g) What are the consequences of changing workforce patterns at the health system level?
2.4 Study propositions

Through debate and discussion of the wider literature, we developed nine initial propositions which would guide data collection and analysis and, in the light of evidence from the study, could be revised and developed:

1. The main internal drivers for changing the skill mix of the workforce are local skills shortages and the need to reduce health care costs. External (universal) drivers for change include government policy requirements and recommendations.

2. The human resources management culture in health care organisations affects the facilitation of workforce change. Observable aspects of a positive culture include concern with staff satisfaction and staff development (despite limited resources) and concern with the quality of care.

3. In general, planned rather than emergent approaches to workforce change are associated with greater role clarity, higher morale amongst staff and reduced stress. In particular, strategically and systematically planned large scale skill mix change implemented at one point in time in which as many staff as possible are retained and redeployed will be most successful in maximizing the benefits to patients.

4. Continuous change is infrequently achieved but most associated with the degree of organisational evolution likely to be necessary to implement current NHS policies.

5. Changes in skill mix alter care provision by enabling the delegation or substitution of tasks, or by enabling the organisation to diversify through enhancing the skills and capabilities of existing staff or by recruiting new staff.

6. Improved skill mix will be that which is described to positively affect patient pathways through the urgent care system in terms of: (a) shorter pathways (number of steps, duration and waiting times) (b) contact with fewer staff able to contribute definitive care or onward referral (c) satisfaction with the experience of care.

7. Though impossible to describe a universal ideal mix of health personnel, an optimal mix of personnel for out-of-hours urgent care can be described for typical case mix (all else assumed to be equal).

8. Health care organizations operate within complex networks and systems. The dynamics of these systems and the impact of workforce and skill mix change on such systems can be analysed by examining underlying structures of flows, delays, information and feedback.

9. Workforce and skill mix change that is incorporated in more integrated arrangements is more likely to offer evidence of greater allocative efficiency and sustainability over time.
2.5 The main research components

The design of the study was influenced by the commissioning requirement to map patient experience within one or more organisational settings as well as by the research questions to be addressed. The plan for this study was to use a multiple case study design in which the ‘cases’ were observable examples of workforce change, purposively selected to achieve maximum variation. Local emergency and urgent care systems bounded by natural area definitions (such as 999 ambulance trust boundaries, emergency department catchment areas or GP co-operative boundaries) were the units of analysis and the time boundaries were set in relation to an index date for the introduction of change. Case studies included one or more embedded units of analysis where discrete workforce change had occurred in one part of the system. Prior to the selection of case studies, changes in this setting were known to involve staff across the ‘front door’ services including paramedics and ambulance drivers, call handlers, medical receptionists and dispatchers. In circumscribing a similar context for each case study we aimed to overcome the potential problems of cases appearing to be idiosyncratic. This approach was also intended to focus the research on workforce and skill mix change rather than changing patterns of service delivery.

Research methods comprised a review of the literature and contact with urgent care leads and commissioners in order to inform the selection of case studies. In relation to the key questions of impact, within the case studies the impact on patients was studied in a questionnaire survey of patients or their carers with recent experience of out-of-hours care and in telephone interviews. The impact on staff was informed by observation in the study sites and explored in semi-structured interviews to explore how working patterns and practices had changed, how roles had developed and the impact of changes on the experience of staff and their practice and to develop a conceptual map of patient pathways through each system showing how patient pathways were influenced by changing workforce patterns. The impact on health systems was studied through qualitative system dynamics modelling of patient pathways and flows in each case study and through the development of high level influence diagrams to synthesise the learning from the eight models and to inform further system development.

The overall plan of investigation for the study showing the sequence of methods together with their importance within the study is shown in figure 2. Data from the early stages of the study informed the development of later methods. For example the literature review shaped the development of study propositions; periods of observation informed the development of the patient survey and localisation of materials and the development of system maps; staff interviews provided the basis for initial system mapping.
Figure 2.1 Plan of investigation showing the sequence of methods of data collection and their priority within the study

Plan of Investigation

1. Assessment of PCO out-of-hours plans
2. Contact with Urgent Care Leads in SHAs and Health Boards
3. Literature Review

Inform selection of 8 case studies

Development of case study propositions and testing through subsequent methods*

In 8 case studies, each with a local reference group

4. Observation
5. Staff Interviews*
6. Qualitative SD models*
7. Stakeholder interviews*

Pilot studies of patient survey and interview methods

In 4 case studies

8. Survey of patient experience and satisfaction and patient pathway interviews*
9. Quantitative SD model/high level influence diagram*

Centrally important methods without which the main research questions could not be addressed

Complementary methods which added important insights
### Table 2.1 How research questions link to the research components

| What changes to working patterns have already taken place within emergency and urgent out-of-hours care systems in the UK in the past ten years? | ▪ Assessment of out-of-hours plans and telephone survey of SHA Urgent Care Leads  
▪ Literature Review |
| What have been the social, political, historical, environmental and economic influences on changing working patterns in this context? | ▪ Literature Review  
▪ Interviews with staff, senior managers and commissioners |
| How is unscheduled care being commissioned and delivered since the new GMS contract? | ▪ Interviews with staff, senior managers and commissioners |
| What changes can be observed in the content and organisation of the workforce? | ▪ Observation  
▪ Interviews with staff |
| What are the consequences of changing workforce patterns for patients, including vulnerable patients? | ▪ Questionnaire survey of patients  
▪ Telephone interviews with patients and carers |
| What are the consequences of changing workforce patterns for staff? | ▪ Observation  
▪ Interviews with staff |
| What are the consequences of changing workforce patterns at the health system level? | ▪ System dynamics modelling |

### 2.6 Research components and research questions

Each research component within the study links to one or more of the research questions set out in section 2.4. This relationship is shown in table 2.1.

The framework devised by Mingers and Brocklesby (1997) guided the sequence of the study and the plan of analysis. The project phases were **appreciation** of the situation by attending to the experiences of those involved, collecting essential data using a variety of methods followed; analysis of the data in order to be able to understand and build explanations (in terms of possible mechanisms or structures) for what has been observed; **assessment** of the ways in which the explanations or the situation could be different; **action** to disseminate the findings and to facilitate ongoing local development by providing feedback and supporting
ongoing organisational learning (in the six months following completion of the study). Ethics Committee and Local Research Governance approval were obtained for all aspects of the study.
3 Methods

3.1 Introduction

In this section each research component and its method of data collection and analysis are described. In outline these are:

- Assessment of local delivery plans for out-of-hours care
- Literature review
- Case studies of observable workforce change
  - Observation in out-of-hours settings
  - Interviews with staff and stakeholders
  - System dynamics modelling
  - Local reference groups
  - A study of patient experience and satisfaction

3.2 Assessment of local delivery plans for skill mix change in out-of-hours care

At the time the study commenced, all primary care organisations in England and Scotland were required to have written plans for the development of services including out-of-hours care. Copies of these local delivery plans, developed in partnership with other NHS bodies and local authorities were requested from all PCTs in England (n=302) via the SHAs Health Boards in Scotland (n=15). Our objective was to use these plans as a baseline description of the local out-of-hours arrangements in place on 1st April 2005 and to identify recent or planned workforce changes and the timetable for any change. Documented plans varied considerably in the extent to which they made reference to out-of-hours care (from a few sentences to externally commissioned workforce reviews) and it quickly became clear that local delivery plans would not provide sufficient information for our purposes. Instead, the urgent care leads in SHAs and Health Boards were contacted directly during October and November 2005 and provided information to the research team by telephone. A database of information gathered from these contacts was initiated and further developed through the addition of available web based information. (For example, some urgent out-of-hours providers had their own web sites and some had provided material to the Department of Health that publicise exemplars of good practice in out-of-hours care.)
SHAs that contributed information were Avon, Gloucestershire and Wiltshire; Bedfordshire and Hertfordshire; Birmingham and Black Country; Cheshire and Merseyside; County Durham and Tees; Cumbria and Lancashire; Dorset and Somerset; Essex; Greater Manchester; Hampshire and Isle of Wight; Kent and Medway; Leicestershire, North and East Yorkshire and North Lincolnshire; Northamptonshire and Rutland; North Central London; North East London; Norfolk, Suffolk and Cambridgeshire; Northumberland, Tyne and Wear; South Yorkshire; South East London; Shropshire and Staffordshire; South West London; South West Peninsula; Thames Valley; Trent and West Yorkshire. Health Boards that contributed information were Dumfries and Galloway; Grampian; Highland; Lanarkshire; Lothian; Orkney; Shetland and Tayside.

In Scotland, a national model for out-of-hours care was in place whereby all patients making contact with the service were routed via NHS 24 for initial prioritisation and triage. This required formal arrangements with GP providers (such as GP co-operatives) and coverage was consistent in this regard across the country. Opportunities for workforce and skill mix innovation were plentiful beyond this initial call management model. In England a similar initiative for NHS Direct to provide initial call prioritisation assessment for out-of-hours care had been a recommendation of the Carson Review (2000), but subsequent piloting revealed that the scale of the service would be too great for NHS Direct to deliver. Initial call management arrangements in England are more varied in consequence.

This key difference accepted, contact with Urgent Care Leads in SHAs and Health Boards revealed that there were areas in both countries where there was evident innovation and development of the workforce and skill mix, and areas where there had been little change and where little was planned. Why health communities appear to respond differently to the same external influences (such as health policies) was an issue that we undertook to explore in the case studies. Our particular interest was to find examples of innovation and though we considered the merits and limitations of recruiting a case study where there had been little change, concluded that this would not have served the purpose of the research.

Data collected were compiled and reviewed by the research team as part of the process of case study selection described in 3.3.1 below. A synthesis of the trends in the development of urgent health care and commissioning is presented in section 4.

Available documentation at the level of primary care organisations proved to be of variable detail and insufficient alone to be a reliable source of information about planned workforce development. Discussions with SHA and Local Health Board staff with leadership roles in urgent care proved to be more fruitful and enabled the team to make contact with key individuals in PCOs. This study was conducted at a time of considerable change at SHA and PCO level. New Strategic Health Authority configurations were introduced in July 2006. In October 2006, merger of PCTs in England not only reduced the number of organisations (in one case study for example from five PCTs to one) but brought major change in staffing arrangements.
and responsibilities. The process of selecting case studies involved appraisal of this early data as well as work to determine how cases should be defined (this is described in more detail in section 4).

In each case study, the first phase of data collection centred on staff practice (observation in practice settings, interviews will staff and construction of first pass qualitative system maps) and on workforce aspects of out-of-hours urgent care commissioning and corporate governance through interviews with senior managers. Key products of this phase of the study were a synthesis of key changes in workforce patterns and skill mix in relation to the qualitative system maps (so that it was possible to detail the changes with reference to where these appeared to have impact within each system) and an emergent typology of urgent care networks. This typology informed the selection of four of the eight case studies for the second phase of the study which explored the impact of workforce and skill mix change on patient experience.

### 3.3 Literature review

A structured review of the published literature since 1994 was undertaken with the primary purpose of providing a working resource for the duration of the project by exploring key factors that have shaped the changing configuration of working patterns over time. Existing collections of relevant literature in the field of out-of-hours care including literature on professional roles and scopes of practice held by the collaborators were assimilated as a first step. This collection reflected the broad conceptual and practical knowledge of the project team, who had together conducted several large evaluations of workforce reconfigurations in the emergency and urgent out-of-hours setting. These included evaluations of an out-of-hours nurse telephone consultation service (Lattimer, 1998) NHS Walk-in Centres in England (Salisbury, 2002), the integrated out-of-hours exemplar programme (Lattimer, 2005) and a nurse-led telephone consultation and triage service in Scotland (Heaney, 2005).

The scope of the planned review was broadened to include policy documents which could describe policy makers’ expectations. The work was informed by the approach of realist synthesis (Pawson, 2004; Pawson 2005) which acknowledges that health policy programmes, such as the re-design of workforce configurations, are complex entities with many multi-faceted interventions contained within them (Pawson, 2006). Realist synthesis recognises the complexity of the natural world, in which the same mechanism can produce different outcomes depending on the context in which it is operating. This would allow us to ask how certain mechanisms (for example introduction of a new nurse role) operating in a particular context (such as an emergency department) might lead to a particular outcome (reduction in waiting times). Particularly because of our interest in the system level effects of change, evidence of intended and unintended consequences of change and insights into why particular interventions did or did not work were prioritised over decision making about the absolute effectiveness of one approach over another. Hence, in conducting this work,
we did not seek to carry out an exhaustive systematic review, but rather identified key questions that would inform the conduct and analysis of the review and, from that, to review the evidence base which would best answer those questions. The review therefore followed three stages: (i) identification and refinement of questions to be considered by the review and of underpinning concepts (see appendix 1) (ii) identification and review of policy documents and relevant evaluation reports (iii) comparison of findings from policy documents and evaluation reports with empirical data collection on out-of-hours workforce changes across the UK. The review findings contribute to the overall report and are reported substantially in section 5.

### 3.3.1 Identification and review of key policy documents.

Key policy documents were identified by searching the websites of the Department of Health, England and the then Scottish Executive Health Department (now Scottish Government) and by drawing on the knowledge of the project team (see appendix 1). Other documents included in the review were those from the National Audit Office, reviews commissioned by the NHS and reports from House of Commons Committees into both emergency and out-of-hours care. Policy documents were included if they dealt with the delivery of primary care medical services, particularly in the out-of-hours period; the delivery of urgent or unscheduled care or the delivery of emergency care, particularly minor illness or injuries services. Policy documents dealing with health and health care delivery at a macro-level were also included, for example the NHS Plan in England and its Scottish equivalent. A full list is contained in Appendix 1. Evaluation reports were included from the Department of Health and Scottish Executive Health Department commissioned evaluations of new services and roles in urgent and unscheduled care. In particular these included evaluations of NHS Direct in England and NHS 24 in Scotland, Walk-in Centres, the Exemplar Programme and evaluations of Emergency Care Practitioners.

**Mapping of policy timelines**

As this project was concerned with the impact of new models of skill-mix and workforce configurations, only documents published since 1994 were included. This time point was selected as it marked the beginning of a period of major change in the provision of out-of-hours care, including the development of GP-led co-operatives, a new contractual agreement with GPs for funding out-of-hours visits and the establishment of the Out-of-Hours Development Fund to support new models of care above the level of individual GP practices (Beecham, 1995; Hurwitz, 1995).

Drawing on the knowledge of the project team, and the publication dates of both policy documents and evaluation reports, a timeline was established which identified key service developments in urgent and emergency care and mapped these to the publication of policy documents and the generation of evidence from national evaluations of service developments.
This was supplemented by the addition of research papers identified by the project team as key papers in aiding our understanding of the skill-mix and workforce changes that had occurred in urgent and emergency care since 1994.

Data extraction and synthesis

The identification of key questions and concepts allowed the development of a data extraction pro-forma, which was used to interrogate both the policy documents and evaluation reports. Developed by COD, in collaboration with the team, this pro-forma focussed on whether a new model or models was described within each document; key features of the model; the setting in which it was operating; staff involved; predefined outcomes; and unintended consequences. The pro-forma also mapped the models to our pre-defined frameworks of skill-mix, access; outcome; and integration. Data were extracted from relevant policy documents by COD and presented to the study team for discussion and refinement.

The findings of the literature review are included as a strand throughout the report in relation to the main themes. Information about the current organisation of out-of-hours urgent care was obtained from three sources: a review of the literature focussed on recent health policy documents and evaluation reports; the written out-of-hours plans of primary care organisations and personal contact with urgent care leads in SHAs and Local Health Boards (Scotland). This information informed the selection of case studies.

3.4 Case studies of observed workforce change

An important criticism of the existing evidence base for the effects of workforce and skill mix change identified in section 1 was the limited extent to which the study context tends to be explored. Consequently, at the start of the study, little could be said with reference to research evidence about the relationship between workforce and skill mix change and the conditions in which it arises. For example, to what extent the health communities that make radical and sustained changes to workforce and skill mix are also those which respond early to external drivers for change, such as health policy initiatives. Case study research provided a framework in which to examine the context in which workforce and skill mix was occurring and the formative social, political, historical, economic and cultural factors.

A number of case studies were required for the research in order to capture the variation in changing workforce patterns and skill mix that had been identified through contact with SHA’s and Health Boards, though it was clear that a wide range of attributes could be encompassed within a few cases. At the outset it was clear that variation could include differences in the origins of the workforce change; examples of new or enhanced roles; organisational approaches to change; congested versus sparse patterns of service provision and the extent of emergency and primary care co-location; population characteristics; the mix in the health economy of NHS and non-
NHS providers, integrated health and social care, Foundation Trusts, single or multiple PCTs and the strength of local leadership. Arguably, common attributes between sample cases and one or more populations of interest may form the basis for generalisation.

3.4.1 Selection of case studies

The main criteria for the selection of case studies were (i) evidence of recent or imminent planned change in at least two urgent care services (ii) geographical variation so that at least one case study will be located in Scotland, one in Northern England or the Midlands, one in Southern England and one in the South West; each supported by one of the collaborating research teams. Final selection of the sites was discussed with SDO. Willingness to take part in the study, including nominating a local case study leader and establishing a Local Reference Group were requirements of participation.

3.4.2 Contextualising the case studies

In relation to the preliminary concepts in 3.3.1 we determined that in describing the context for each case study, three dimensions would be important to describe. These were:

Access

The processes for patient access via key ‘front door’ services to urgent care in a geographical area, from first contact to completion (including admission). Including those in fixed locations and accessible to patients (for example Emergency Departments, NHS Walk-in Centres and Primary Care Centres); those which are accessible by telephone (such as NHS Direct and GP provider services) and mobile services that go out to patients at home (ambulance services and GP providers of home visits).

Integration

The characteristics of service integration, both vertical and horizontal; the extent to which services are co-located as well as integrated and how integration affects patient pathways through the urgent care system.

Drivers for change

How leadership of the service was manifested, how human resources were managed, how external drivers for change were responded to, how widely key stakeholders in the service are involved and enabled to impact on shaping the service and how clinical networks were used to underpin the structure.

3.4.3 Local Reference Groups

The permission of Chief Executives of each PCO with commissioning responsibility for out-of-hours care was sought to convene a local reference
group for each case study. Membership included the Out-of-Hours Leads and representation from a range of stakeholders including members of emergency care networks and user representatives. The research team, led by the senior academic in each site, arranged a first meeting of each local group to discuss the project aims and design and to develop a local plan to obtain the following information: the overall workforce skill mix in each case study (the different types of staff employed that have direct contact with patients (and their role titles), the ratio of senior to junior staff at different times of the day and night; those having first contact with patients entering the system); areas where there have been difficulties in recruiting or retaining staff and examples of innovative approaches to skill mix change. Access to visit innovative services was negotiated. Meetings with the reference groups provided the team with an opportunity to gather a variety of perceptions of the local workforce issues in out-of-hours care. The reference groups were asked to nominate staff who could be approached to be interviewed. Later in the project, the groups were invited to take part in validating their local system map.

3.4.4 Observation in out-of-hours settings

Orientation visits (over approximately three to five days) were undertaken by researchers in order to describe local service arrangements and to develop a preliminary sketch of patient pathways through each urgent care system. Plans for observation visits were developed with each case study lead and included making preliminary contact with local service managers with whom access to care environments needed to be negotiated. A written report of each visit was completed and contributed to the preparation of detailed case reports and informed the preparation case study descriptionas and conceptual maps.

Non-participant observation in practice environments (approximately 4-5 days capturing different times of day and days of the week/weekend) was undertaken to describe the different skill mix in each case study, to describe how staff work together and to observe examples of delegation and substitution and the proportion of hours not involved in direct patient contact. Also observed were the ways in which patients gained access to out-of-hours care. Researchers were based in waiting room (public) areas, were not be seeking to observe direct patient care and withdrew from the area if a sensitive issue for a patient or member of the public was being discussed. Researchers were introduced to the staff team on each visit and posters and general information leaflets providing information about the project were displayed in waiting areas and staff rooms so that patients and staff were aware of the study, that they were not ‘assessing’ staff practice. Field notes were written up discretely, normally away from the environment. A copy of the observation guide is in Appendix 2.

3.4.5 Interviews with staff

Semi-structured interviews were conducted with a range of staff (approximately twenty) working in different services in each of the eight
case studies who had direct experience of the changes under study. This included practitioners engaged in new or extended roles.

**Recruitment**

Senior staff (for example commissioning managers, operational managers and senior clinicians including GPs – eight individuals in each case study) were identified with the assistance of the local reference groups and approached by e-mail or telephone to take part in an interview. Those responding positively were sent an information pack in the post to their work address containing an invitation letter, participant information sheet and an interview guide describing the areas to be explored in the interview. One week after sending out information packs, a researcher e-mailed or telephoned again to ask if the individual was interested in taking part and to arrange a convenient time and place at the individual’s place of work.

With the assistance of the local reference groups, the relevant service manager for clinical and support staff (such as nurses, pharmacists, physiotherapists, paramedics, ECPs, receptionists, call handlers and drivers) was contacted during the orientation visits to arrange a meeting with the research team to discuss the plans for recruiting and interviewing staff. Managers were asked to think about the staff that would be important to include in the study and to identify the roles of the individuals (not their identity) to the researcher so that a profile of staff to be approached was built up. Each manager was supplied with sufficient information packs (as above) to be able to address one to each person they had identified. Those interested in taking part were able to make further arrangements via their manager or by direct contact with the research team.

**Interview conduct**

Interviews were held in a quiet room at the individual’s place of work. Individual written consent was obtained for the interview and its recording. Participants were encouraged to ask any questions they had about the study or their involvement and to stop the interview at any time. The focus of the interviews was adjusted to reflect the experience and seniority of each person but addressed two main tasks (a) based on the preliminary sketches of patient pathways in each case study to develop influence diagrams of patient pathways through the system and how they are altered as a consequence of changing workforce patterns and/or of organisational change (b) to explore how working patterns and practices have changed for the individual (or for senior staff what they have observed overall); what the antecedents of the changes are considered to have been; how roles have been modified through enhancement, substitution, delegation or innovation and with what support; what proportion of time was thought to be spent in direct contact with patients and the impact of changes on morale, stress and collaboration. Interviews were digitally recorded with consent and transcribed. A copy of the interview schedule is in Appendix 2.
**Analysis**

Qualitative data sources contributed to a large body of data comprising between observation reports, interview transcripts and a number of additional documents. The data needed to be analysed in a way which would meet the aims and objectives of the study, specifically the research questions associated with this phase of the study (research questions d) What changes can be observed in the content and organisation of the workforce and f) What are the consequences of changing workforce patterns for staff (new and/or extended roles, delegation, substitution and handover, managing clinical risk, time spent in direct contact versus other tasks, use of time freed-up by substitution, impact on relationships (moral, stress, collaboration) training needs) and enable integration of all of the data sources in the analysis. To inform the final stages of the analysis, a summary of both mainly (but not necessarily exclusively) descriptive data and a summary representing how staff experienced the changes would be required. The approach aimed to be systematic and transparent and to meet the Lincoln and Guba (1985) quality criteria (‘credibility’; ‘transferability’, ‘dependability’, and ‘confirmability’).

**Framework approach**

Tape-recorded interviews were transcribed verbatim as soon as possible after completion and were anonymised to conceal all identifying information, both organisational and individual. Interview transcripts were imported into a qualitative analysis software package, Using Atlas-ti 5.2, for coding purposes. From approaches available to analyse qualitative data (Strauss and Corbin, 1998; Miles and Huberman, 1994; Lincoln and Guba, 1989) the ‘Framework’ analysis approach was chosen as the most appropriate. The ‘Framework’ analysis approach described by Ritchie and Spencer (1994) was developed principally for applied policy research and provides a methodical system for analysing rich interview data. The method involves five stages: familiarisation, identifying the thematic research and provides a methodical system for analysing rich interview data. The method involves five stages: familiarisation, identifying the thematic framework, indexing, mapping and charting to display the process (as analytical typologies are developed) and interpretation.

In the familiarisation phase a sub-set of transcripts were subjected to close reading by a the researchers involved in conducting the interviews (JB, SD, SB, FK) and three of the wider research team (AB, MC, VL). Each analyst was tasked to make notes on the range of responses, recurrent themes and emergent issues raised by the interviewees or observations. Drawing upon these inductive emergent themes and deductively drawing upon the research questions, theoretical frameworks, propositions, interview questions and case the observation guide an index of themes and codes was created (Appendix 3).

Once the coding framework had been discussed and refined, an instructional dictionary (after Weber, 1990) was constructed, comprising the themes and category/code names with definitions and rules for their assignment. This was helpful given the number of researchers involved in coding (n=5) and in facilitating transparency in the process of analysis. For each interview
transcript, extracts that related to the coding framework were marked using Atlas-ti. The functionality of Atlas-ti was used to create code families with reference to the study propositions, to create primary document families for the coded transcript that allowed analysis of data by staff type and to facilitate mapping of the data. Inter-coder reliability was tested amongst the wider team using a sub-sample of transcripts. As the index of themes was created from a sub-set of the data, identification of any new themes with their definitions was via the method of super codes in Atlas-ti and shared with the other analysts as they arose and updated in the shared ‘dictionary’. Areas of emerging consensus in the data were counterbalanced by a search for contrary evidence. Verification of this indexing stage was achieved by using a second coder (analyst) based on a random sample of each site’s data sources to check that that indexing was standard across all analysts and all sites.

### 3.4.6 Interviews with senior executives

In addition to interviews with staff, one of the team (GM) arranged to interview as many senior executives as possible in the case studies that had responsibility for strategic commissioning and corporate governance. Although the main focus of the study was on operational and clinical staff and their work with patients, it was clear at an early stage of the study that workforce change also featured at management and strategic levels. Furthermore, only more senior staff were likely to be able to provide information in relation to the antecedents and drivers of change in each locality. A modified version of the interview schedule was developed for this purpose. Interviews were not recorded but detailed notes were made of the interview content and these were shared with the wider research team.

### 3.4.7 Systems dynamics modelling

System Dynamics (SD) is an analytical modelling approach whose foundations were laid in the 1950’s at MIT by Jay Forrester in his pioneering work on “industrial dynamics” (Forrester 1960, 1961). The fundamental principle of SD is that structure determines behaviour: in other words, the way that the separate components of any system relate to and affect each other determines the emergent behaviour of the system as a whole. SD has two distinct aspects; one qualitative and one quantitative. The qualitative aspect involves the construction of causal loop or influence diagrams, which depict graphically the way in which the system elements are related. These are typically developed through discussions with problem owners and other stakeholders to represent the identified system elements diagrammatically. For quantitative SD modelling, causal loop diagrams are converted to a stock-flow diagram. An introduction to SD modelling is included in Appendix 4

**Process flow mapping**

Process flow mapping is a very useful addition to the toolbox of more traditional qualitative and quantitative approaches in SD. A process flow
map represents the “workflow” of people, material or information, showing the possible entry points to a system, subsequent pathways, decision or branch points, and exits. The method can be used to map existing processes or design new ones. This approach is widely used in manufacturing industry and underlies the concept of clinical pathways. A process flow map can be annotated to show bottlenecks, resource constraints, decision criteria, and so on. The procedure for obtaining a process flow map is very similar to that for a causal loop diagram, namely a series of interviews with stakeholders from all parts of the system in order to construct, iteratively, a diagram which represents an agreed understanding of the system. Where data are available, flow volumes along the different pathways can be shown.

In the Nottingham Urgent Care project (Brailsford et al, Lattimer et al, 2004) a combination of process flow mapping and causal loop diagramming was used to develop a conceptual model of the entire emergency care system in Nottingham. Having drawn up a preliminary map of patient flows during a brief orientation visit, interviews were conducted with about 30 stakeholders from all parts of the system. The interviewees were shown this map and were allowed to annotate, modify and amend it as necessary, showing where they felt their own influence extended and where (and why) they considered bottlenecks existed. One of the interesting, but maybe unsurprising findings was the relatively low level of understanding of the system as a whole by many individuals: they were all experts in their own particular part of the system but often did not know how other parts worked, or understand how the different parts connected up. Participants were asked to describe political or historical factors which had led to the development of their part of the system in a particular way, and where possible these were incorporated into the final quantitative model. However, the key output from this process was the conceptual model which represented the whole system. This was then used as the basis for a quantitative model, which was used to conduct experiments using different hypothetical change scenarios or interventions, for example longer opening hours for the nurse-led Walk-in Centre, or increased out-patient diagnostic facilities.

The main benefits of modelling are twofold. Firstly, the process of qualitative modelling facilitates discussion between researchers and stakeholder participants, allowing insights and information to be obtained in a structured way. This is especially helpful when using a multiple case study methodology, since it greatly assists consistency between the different units of analysis and the different researchers. From a practical perspective, viewing a project as consultancy rather than academic research, the outcomes from this phase of the modelling are often of most help to the client organisation(s). The consensus-building aspects of the system model development enable stakeholders to understand each others’ perspectives and see the “big picture”. Secondly, the use of a validated computer model can allow risk-free experimentation with different strategies, without the need to test such interventions in the real world system. The model itself
can act as a catalyst for discussion in the client organisation(s) as well as a test-bed for potential strategic changes.

The modelling approach used in this project was very similar to that used in (Brailsford et al, Lattimer et al, 2004). Based on the success of this modified SD approach in Nottingham, system maps were developed for each of the eight case studies in the current project, depicting the patient journey from the point at which a decision is made to contact an urgent care service, through to a defined end-point (ranging from self-care advice through to admission to hospital). As described below, a consistent notation was used, so that structural and other variations between the sites might rapidly be identified. For example one would expect the system map for a site with a strongly centralised organisational structure to look very different from a site with a more devolved or dispersed OOH system. Since the aim of this project was to look at the effect of workforce change, this was obviously a key theme of the interviews carried out by the researchers and where possible, the system maps were annotated to show the role of the staff at various points along the patient journey.

The eight system maps were drawn up collaboratively by the site researchers and the modellers. This was an iterative process over the course of many months, as the maps were refined during successive interviews and group meetings at each site. Several common conventions and notations were used in order to achieve consistency. Each map was arranged in three different sectors: ‘contact’, ‘treatment’ and ‘outcome’ as described in 3.3.1 above. The software used for drawing the maps was Dia, a free software/open source general-purpose diagramming package similar to Microsoft Visio, but with fewer restrictions. Dia uses special objects to draw entity-relationship models, UML diagrams, flowcharts, and network diagrams. Symbols and connectors from many categories can be placed together. Dia loads and saves diagrams to a customised XML format and can print very large diagrams that span multiple pages, useful in this project given the size of some of the system maps. Dia can be downloaded at: http://downloads.sourceforge.net/dia-installer/dia-setup-0.96.1-3.exe

Further detail about how to read the system maps is given in section 4 where the maps are presented.

Activity data

With the assistance of one of the case sites (Hub-med) and Adastral Ltd we obtained activity data for the year 1st April 2007 to 31st March 2008. We did not need any patient-identifiable data, and therefore we requested information solely on data fields which would allow us to map the pathways taken by patients through the Hubmed system, to see which type of staff triaged and treated them, where patient waits (if any) occurred, and what the final outcome of each call was. Our aim was to be able to identify from the data which type of staff had had contact with every patient at each point in their pathway of care. The Hub-med database contained the names of some 500 staff but not their role type. A small number of clinical staff were recognisable (through GMC and other codes) as GPs or nurses but for
reasons of confidentiality, Hub-med would have had to undertake to recode
the data by going through the names one by one. The Hub-med case study
had already contributed a great deal of resource to the study by taking part
in the administration and follow up of the patient survey (below).

The quantitative analyses of Hub-med activity data are included for
reference in Appendix 5.

3.5 A study of patient experience and satisfaction

We aimed to examine patient experience and satisfaction with service
delivery across an entire care pathway under different workforce and skill
mix arrangements within four case studies. Although some patients
experienced short pathways through urgent care (managed through a single
telephone call for example), others had longer pathways involving contact
with a number of services and practitioners. The different skill mix
arrangements in the case studies suggested that there may be differences
in the number and types of staff patients had contact with. Whether these
differences had an impact on experience of ease of access to care,
experience of the pathway of care, overall satisfaction and self reported
health outcome including re-consultation needed to be examined.

Two main methods were used - a questionnaire survey of patients and
callers who had contacted urgent care services and in depth telephone
interviews with patients to explore their pathway in more detail. Elements of
the patient study were piloted. In the first pilot study 1 the feasibility of a
prospective, manual method of case ascertainment was tested as well as
the process of recruitment to the interview study and the interview process.
In the second pilot study a retrospective, computerised method of case
ascertainment and the methods in relation to the administration of the
questionnaire survey were tested.

3.5.1 Pilot study 1

Case ascertainment - selecting pre-defined clinical problems

The aim of the study of patient experience and satisfaction was to elicit
understanding about how different local health care systems (with different
workforce arrangements and skill mix patterns) assess and manage the
care of patients with similar presenting problems. In order to make such
comparisons it was important to contain the otherwise widely
undifferentiated urgent care case mix so that as far as possible, observed
differences in patient pathways reflected differences on care provision
rather than differences between cases. Such cases needed to be reliably
identified from definable characteristics in the history, sufficiently frequent
to allow identification of sufficient numbers over a short time period and
reflect the typical case mix of an out-of-hours provider. There should be a
possibility of variation in the pathway in order that variation could be
studied. The interest was not focused on clinical diagnosis and outcome but
on the initial assessment pathway and referral patterns and the patient or
carer’s account of this. For example right iliac fossa pain might not necessarily be appendicitis but timely and appropriate assessment of the pain should still be apparent from the patient’s account.

A set of potential clinical scenarios for inclusion in the pilot study were developed with reference to these criteria. The purpose of the pilot study was to test a reasonably broad range in order to determine feasibility. The preliminary clinical scenarios were (i) acute wheezing in a child aged over 5 years (ii) fever in a child aged 5 years or younger (iii) adult with chest pain (iv) over 80 years fallen or collapsed in own home (v) adult with breathlessness (vi) adult with abdominal pain. Discussions with the pilot site indicated that cases (i) (v) and (vi) were likely to account for 40% of calls to the service and thus efficient handling of these calls is vitally important to the service provider.

The pilot study was conducted in collaboration with an out-of-hours service provider in the south west of England that was not one of the case studies. Providing care for a population of approximately 200,000 people, the service received approximately 300 calls each week.

**Recruitment and patient interviews**

Ten callers in each of six clinical categories (n=60) were identified using a prospective (manual) method of case identification developed in collaboration with the service. After review by the service manager (including death notification status), a final list of patients to be invited to take part in the study was faxed to practices for checking. Letters of invitation were mailed by the service and ten patients returned reply slips to the research team. Two wished not to take part. Of the remaining eight, four agreed to be interviewed at home and four on the telephone. These patients received the full set of materials designed for use in the main study including an interview discussion guide, consent form and ‘pathway map.’ The pathway map was designed to be used by patients prior to the interview if they wished to note the sequence of events in relation to their out-of-hours episode of care (see appendix 2).

**Key points of learning from pilot study 1**

Methods of case ascertainment and recruitment worked well in a busy out-of-hours setting. Call centre staff were able to identify cases in all categories. The additional step of faxing practices so that they could notify the provider of patients not to include in the study was effective, but practices wished for 48hrs in which to do this. Formative feedback from patients was that written materials were understandable and that the pathways map helped patients to reconstruct the sequence of events out-of-hours. The response rate was lower than anticipated but could have been improved by daily rather than batched mailing of materials to patients. Telephone and in person interviews were equally preferred by patients but in person interviews were resource intensive, requiring two researchers and considerable travelling time. Data quality from telephone interviews was equally good, suggesting that this should be the data collection method of...
choice for the pathways element of the main study. Most interviews were completed in 30 minutes. When asked, patients were willing to stay in touch with the project as patient representatives. Category (iv) person over 80 years with a change in condition was omitted from the main study on the basis that in older people matching the case characteristics the clinical antecedents of the presenting problems were often multivarious. It was more difficult therefore to identify the influence of the staff on the patient pathway. Older people featured in the other specific clinical scenarios.

3.5.2 Pilot study 2

Questionnaire Survey Design

The questionnaire was designed to elicit satisfaction with types of staff that patients or callers may encounter during their episode of care. The questionnaire had four main sections addressing (i) circumstances of the call and caller expectations of the service (ii) their experiences of contacting the service (iii) the ‘types’ of staff the caller and patient had contact with on the telephone or in person and satisfaction with these and (iv) their overall experience of care.

This pilot study was conducted in a site neighbouring one of the case studies participating in the main study. This service also used ADASTRa for their patient record system, but unlike our first pilot study site, required compulsory symptom coding. By first developing a list of ADASTRa Read codes in relation to the clinical scenarios it was possible to produce reports in ADASTRa (one for each clinical condition) to allow retrospective identification of clinical scenarios. The list of clinical codes was developed with input from medical clinicians on the team (CS, MM, JD). Reports also provided additional anonymous call record information (for example age and sex of patient and call outcome). To minimise the time between contact and receipt of a questionnaire, the reports only selected contacts made in the previous seven days.

Four of the original six ‘marker’ conditions were included. Ninety-six questionnaires were mailed to patients contacting the out-of-hours service during one week in August 2007. Patients or their carers received a letter and enclosures from the out-of-hours provider within four days of the call containing a covering letter from the out-of-hours service, an information leaflet, a questionnaire with unique study number and a freepost reply envelope addressed to the research team. Consent to participate in the survey was implied by completion and return of a questionnaire. Those invited to take part in the survey had the opportunity to ‘opt out’ of the questionnaire survey and ensuring no further contact from the research team by returning a blank questionnaire. In total 27 completed questionnaires were received from a valid sample of 93 packs mailed (3 questionnaires were returned blank, indicating their wish to decline to participate), a response of 30.1% without a follow-up mailing. An on-line version of the questionnaire was developed.
Key points of learning from pilot study 2

Given the intended scale of the main survey and the need to support staff in the collaborating organisations to conduct the survey it was important to determine the extent to which case selection could be initiated via the ADASTRA database. The reports designed by ADASTRA were specific enough to correctly identify suitable cases for each of the clinical conditions. Questionnaires were well completed with little evidence of misinterpretation or misunderstanding. Three further improvements were made, however. First, terminology in the questionnaires for the main study was ‘localised’ in collaboration with the case studies to reflect local names for staff roles, services and places. Prior to analysis, data would be re-coded against generic terms. Second, respondents were offered choice of responding to the survey on-line as well as by post or by telephone. Third, the invitation to take part in an interview was incorporated into the questionnaire survey.

3.5.3 The main study

Four case studies were able to take part in the patient survey and three were able to support the recruitment of patient to the interview component. The research team met with the operational manager in each case site to discuss the practical aspects of the study, what support they might need for the administration of the survey and reimbursement of costs. The questionnaire was revised as described in the pilot study results and an example is given in Appendix 5. Two versions were created, identical except for the presence or absence of an invitation to telephone interview. Site-specific questionnaires were designed. Three modes of completion were also offered: by post, by telephone and on-line.

Sampling frame

Building on the sampling frame developed and tested in the pilot study, Table 3.1 shows the case characteristics that will informed the inclusion criteria for the survey. Following discussion with several of the case studies and after piloting the methods, the carers of patients receiving palliative care were included in the main study.

Sample size

The objective was to conduct telephone interviews with ten people with each marker condition in each of the three sites participating in the telephone interviews (a total of 150 patients or their carers). In total 2550 questionnaires were mailed based on a 35% response rate to the questionnaire and 20% rate to the telephone interviews. Also, 925 questionnaires were distributed in the “survey only” fourth case study. This sample size was also seen to be adequate to allow comparison between marker conditions (likely numbers between 150-200 per condition) and, where sensible, generic comparison between sites (likely numbers 150-200 per site), but unlikely to provide sufficient cases to compare between sites while controlling for marker condition.
Administration of the survey

The patient survey took place during a five month period between October 2007 and February 2008. Three of the four participating sites used ADASTRA to maintain their electronic records of patient contacts. This meant that with guidance, the report templates successfully developed during the pilot study could be re-used. The start date for each site was staggered by two-three weeks to allow on site research support resources and offer maximum support to each site within the first two weeks of starting the survey. Patients in the five clinical scenario groups were surveyed in parallel in each case study. Recruitment took 6-10 weeks in each site (rate of accrual varied by condition).

Each week lists of potential cases for inclusion were checked by a manager or clinician to ensure notification of death had not been received. For calls relating to children, survey packs were addressed to the parents or guardians. Patients received a covering letter from the out-of-hours service, an information leaflet, a questionnaire with a unique study number and a freepost reply envelope for return of the completed questionnaire to the research team.

Consent to participate in the survey was implied by completion. Those not wishing to take part could opt out by returning a blank questionnaire. By returning a completed reply slip, survey participants provided further information to allow the research team to make contact about taking part in the interview study.
Table 3.1 Clinical scenarios for inclusion in the main study of patient experience and satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Specificity</th>
<th>Frequency &amp; presentation</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Unwell and suspected fever as the main concern (Age ≤ 10 yrs)</td>
<td>Specific although many causes possible</td>
<td>Frequent</td>
<td>Limited variation since is likely to be assessed in primary care centre</td>
</tr>
<tr>
<td>(ii) Acute wheezing (Age ≤ 5 yrs)</td>
<td>Specific</td>
<td>Likely to be sufficiently frequent and usually present to OOH provider</td>
<td>Possible variation in pathway</td>
</tr>
<tr>
<td>(iii) Adult with breathlessness (Age &gt; 18 yrs)</td>
<td>Good specificity of symptoms but wide variation of underlying condition</td>
<td>Frequent</td>
<td>Variation possible</td>
</tr>
<tr>
<td>(iv) Adult with abdominal pain (Age &gt; 18 yrs)</td>
<td>Good specificity of symptoms but wide variation of potential underlying condition</td>
<td>Frequent</td>
<td>Variation possible</td>
</tr>
<tr>
<td>(v) Adult with advanced cancer requiring assistance with pain relief (Age &gt; 18 yrs)</td>
<td>Specific</td>
<td>Likely to be sufficiently frequent. OOH provider not the only source of help but commonly used</td>
<td>Variation possible</td>
</tr>
</tbody>
</table>

**Participation in telephone interviews**

Completed reply slips were separated from the paper questionnaires on receipt or on completion over the telephone by a researcher and stored separately and securely. On-line reply slips were printed out and similarly stored for reference. Respondents expressing interest in taking part in an interview were sent (i) a letter from the research team advising the patient or caller to read the information carefully before deciding whether to take part in the study (ii) an information leaflet (iii) a consent form and freepost reply envelope (iv) a ‘Discussion Guide’ containing the questions the researcher will plan to ask and a description of what to expect during the interview (v) ‘My Pathway’ a pathway map (completion optional) on which the participant could trace their own pathway for the call in question in advance of the interview. Copies of these documents are in Appendix 7.

Three to four days after having mailed this information, researchers contacted potential participants using their preferred mode of contact. A maximum of five attempts to make contact were made. The purpose of the contact was to thank the respondent for their interest in the study, to confirm that further information had arrived in the post, to offer to answer any questions (now or at any time), to advise careful reading of materials, decision making and return of consent form and to make a provisional date.
and time for interview (allowing sufficient time for completion and return of their consent form) or to arrange to re-contact to discuss further if this is preferred. Once an appointment had been made, participants received a letter confirming the date and time of the call and the name of the researcher who would be contacting them. On receipt of their completed consent form a copy of the consent form was returned to the patient/caller for their records.

**Interview conduct**

At the start of the interview the researcher confirmed that the participant was content for the interview to be recorded. Recordings were not transcribed but were used by the researchers to complete a summary of the interview and were available during the analysis if needed to revisit details of the patient’s account. Participants were assured that anything they said (in writing, on the telephone or face to face) would be anonymised and stored in a safe place. Only members of the research team had access to the interview recordings and the researcher’s notes. The researcher ensured that patients are clear that if, at any stage, they decided that they do not wish the interview materials to be used in the study, they could request that the data collection be halted and / or erased, and their participation in the study retracted without consequence for any subsequent care they received.

During the interview, the patient and or carer were asked to tell the story of their contact with the system (with reference to the ‘My Pathway’ map if they had completed it.) Using a copy of the ‘My Pathway’ map, the interviewer noted the sequence of events, annotating the pathway where appropriate (e.g. “waited an hour for the ambulance to arrive”), from the first point of contact, triage and consultation, and where appropriate emergency hospital admission and discharge. At each point in the pathway (transfer to another provider), the staff the patient had contact with, what each member of staff contributed to the pathway and the approximate ‘dwell time’ (time spent with each provider) was noted. The end of the pathway was defined as the last intervention provided by an urgent care provider prior to admission to hospital (or for patient is not admitted; the last intervention prior to self care advice or referral to routine general practice care) for the presenting problem.

**Preparation of the research team**

Training events were organised to support the research team in conducting the methods related to this aspect of the study. These included aspects of lone working (during the pilot studies when patients were interviewed at home), conflict avoidance, interview techniques and procedures for reporting challenging calls and regular de-briefing on the experience of telephone interviews. Further research team training days aimed to standardising methods of data collection. Interviews with the carers of palliative care patients were conducted by experienced clinicians (MM, VL).
Analysis of survey data

Responses to open questions and all comments were tabulated in ‘Word’. Returned questionnaires were batched and sent for data punching (double data entry) of responses to coded (closed) questions. Given the numbers of questionnaires to be returned the intention was to undertake some analyses quantitatively, where we felt it was justified to combine site data or condition data. However, some specific analyses within site and/or condition we would only be able to describe the available results, and use them alongside the telephone interview data. No patient identifiable information was passed to the research team. However the reports run by each site, allowed calculation of response rates using the unique study ID. The patient survey included a section at the end inviting respondents to express their views in free text. With reference to guidance by O’Cathain and Thomas (2004) it was decided a-priori that comments would be tabulated and subjected to content analysis.

Analysis of interview data

The data collected during telephone interviews comprised (i) annotated pathway maps of patient pathways (ii) tape recordings and anonymised summaries of interviews. Using the annotated maps, patient pathways were examined to identify which member(s) of staff (by type) cared for the patient; place (where the definitive consultation took place); contact type (what each member of staff contributed to the pathway, for example taking details of the patient, physical assessment, advice, prescribing), time (for how long: approximate duration of each contact. Also of importance were factors other than skill mix that may have had a bearing on the patient’s pathway, for example understanding whether or not the patient had access to transport.

3.6 Approach to analysis of case study data

Eisenhardt (2006) recommends becoming intimately familiar with each case as a stand-alone entity so that the unique patterns of each case emerge before generalising patterns across cases. Three key stages are (i) analysis within each case first (ii) Linking data to the study propositions and to the theoretical framework (iii) Generalising patterns across cases.

In section 4 the case studies are described in more detail and the observed examples of workforce change in each, presenting an analysis by case study. Some new roles were novel and occurred only in one location. Each section begins with a re-introduction of the relevant study propositions and concludes with an appraisal of the extent to which the evidence from the study addresses these.
4 Observed examples of workforce change

Summary

Patient pathways through urgent care systems in eight case study sites were mapped using systems dynamics modelling techniques. System maps were built using information gathered from interviews with staff and with input from a local reference group in each area. The maps were refined with each case study site and were transposed into a common format for ease of comparison.

The maps have elements in common. All represent the contribution of key providers such as ambulance services, NHS Direct, NHS 24 and emergency departments and show the complexity inherent in urgent care systems for example.

The maps reveal three important aspects of diversity between the systems. First, patient flows were observed to be more complex in systems that had evolved over time than in those subjected to strategic redesign. Complexity may signal reduced efficiency but may reflect greater patient choice (or potential for confusion about how to use services). Second, arrangements for initial contact by telephone are more streamlined in some case sites than others, especially where NHS 24 was the first point of contact. Third, there was wide variety in service provision in relation to home visiting and treatment centres and the extent to which services were co-located. This highlighted the importance of understanding the extent to which diversity in the models was a function of local context and or a local response to external factors.

New workforce arrangements and skill mix in each case site are described in relation to each system.
4.1 Introduction and aim

In this section of the report a summary of the eight case studies is presented together with the qualitative systems maps developed and refined in conjunction with the Local Reference Groups. The research question addressed in this section is ‘what changes can be observed in the content and organisation of the workforce?’ A secondary aim was to examine the relationship between policy and commissioning and how these were enacted. Material in this section draws on evidence from interviews with staff and stakeholders and qualitative system dynamics modelling.

4.1.2 The case studies

Each case study was selected for inclusion because it offered the opportunity to research one or more new or extended roles alongside the typical skill mix within an urgent care service. An introduction to each case study is presented which draws on data from site visits, observation and interviews with staff and with senior managers. Pseudonyms for each case study are used for ease of reference and to confer anonymity. Each reflects a salient, though not necessarily mutually exclusive, feature of each system:

- **ED-med** (so called because of its co-location with an Emergency Department)
- **Centre-med** (so called because of its co-location with a primary care centre)
- **Community-med** (so called because of its use of community hospitals)
- **Hub-med** (so called because of its large, integrated communications hub)
- **PCT-med** (so called because a PCT managed the urgent care system)
- **County-med** (so called because of its county wide service)
- **District-med** (so called because of its co-located out-of-hours and Emergency Department in a District Hospital)
- **Walk in-med** (so called because of its co-located NHS Walk-in Centre and out-of-hours service)

A summary of the key characteristics of each case study is shown in Table 4.1.
Table 4.1 General characteristics of the case studies

<table>
<thead>
<tr>
<th>Case studies</th>
<th>PCT-med*</th>
<th>Centre-med</th>
<th>Walk in-med</th>
<th>Hub-med*</th>
<th>County-med</th>
<th>Community-med*</th>
<th>District-med</th>
<th>ED-med*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>Rural &amp; City</td>
<td>Urban</td>
<td>Town &amp; rural</td>
<td>Rural &amp; town</td>
<td>Rural &amp; urban</td>
<td>Rural &amp; city</td>
<td>Rural</td>
<td>Town</td>
</tr>
<tr>
<td>Area population</td>
<td>687,200</td>
<td>210,000</td>
<td>163,400</td>
<td>701,000</td>
<td>575,200</td>
<td>540,000</td>
<td>110,000</td>
<td>674,000</td>
</tr>
<tr>
<td>Initial call Handling OOH</td>
<td>Ambulance service</td>
<td>OOH service</td>
<td>OOH service</td>
<td>Ambulance service</td>
<td>Ambulance service</td>
<td>NHS 24</td>
<td>NHS 24</td>
<td>OOH service</td>
</tr>
<tr>
<td>Call database</td>
<td>Bespoke</td>
<td>Adastra</td>
<td>Adastra</td>
<td>Adastra</td>
<td>Adastra</td>
<td>Adastra</td>
<td>NHS</td>
<td>Adastra</td>
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<tr>
<td>CDSS±</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Cases: key roles providing the observed examples of workforce and skill mix change

<table>
<thead>
<tr>
<th>Nurse Practitioners</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Care Practitioners</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>General Practitioners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Receptionist/call handlers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

* The four case studies which took part in the patient study – phase 2 ethics approval. (Centre-med volunteered on the basis of Phase 1 only; Walk in-med service was re-commissioned prior to Phase 2; delays with research governance approval excluded County-med; limitations of NHS database precluded District-med’s participation in Phase 2.
4.1.3 The qualitative system maps

Qualitative maps of patient flows through the urgent care system are included in each case study account. The system maps show a number of important features that would be difficult to capture in text alone. They show the boundaries of each system as we have defined them in relation to the included services; the extent to which services and staff are centralised or co-located; where new workforce and skill mix arrangements are functioning within the system and all the ways in which patients can make contact with urgent care by telephone or in person (both initially and thereafter what the range of possible pathways could be). They represent a ‘snapshot’ of local arrangements during 2007 and illustrate where the introduction of new roles or skill mix change occurred in relation to patient pathways, starting with access to the urgent care system.

General comments about interpreting the system maps

In order to simplify the presentation of the system maps, some common terms and symbols are used by convention. In the following explanation, the term “node” is used to denote a rectangle (representing a service, a person or an outcome) in the map, and “arc” denotes an arrow connecting two rectangles. Coloured lines are used to differentiate flows of information from flows relating to movements of people or to contacts by telephone versus in person.

(i) In general, a system with a small number of nodes, and arcs flowing predominantly from left to right in a streamlined way, is likely to be highly planned and centralised. A system with many nodes and arcs going in various directions is likely to be one which has developed in a more devolved, distributed way over time. We are not necessarily making any value judgements about which is better. However it is interesting to see how this is reflected across the various study sites.

(ii) The degree of connectedness of a node is useful in gaining an appreciation of the key points in a system. Thus a highly-connected node (one which has many arcs leading into and out of it) is likely to be very important. However such a node is also more robust, in the sense that if one of the arcs were removed, there are still alternative ways of reaching, or leaving, that node. A node with only one “in” or “out” arc can still be critical, but is vulnerable if that arc breaks down. Both types of node need to be considered in the analysis.

(iii) The number of initial contact options available to the patient is reflected in the number of arcs leaving the “Patient” oval on the left. Generally speaking, the more arcs of the same colour, the more confusing one might expect this to be (e.g. if different services have different opening hours), but it could also reflect greater patient choice and could be interpreted as a benefit. Thus if the number of same-colour arcs is large, this may indicate a potential impact for
patients. The same is true of all highly-connected nodes, although this may refer to staff choices rather than patient choices.

4.2 The ED-med case study

4.2.1 Overview of the urgent care service, its origins and partner organisations

At the centre of the ED-med model is an Emergency Care Centre based in an acute hospital. The centre was the product of a collaboration between the acute NHS Trust, PCT, Ambulance Trust and the GP out-of-hours service to achieve a hospital based, integrated 24 hour unscheduled care service. The concept of the centre as a single location for urgent and out of hours services arose in 2003, partly in response to the availability of funding from the Department of Health for new NHS Walk-in Centre initiatives and also as a way to put into practice the concept of a single, hospital based front door for these services. The design of the service was informed by a working group with clear clinical leadership from across the partner agencies. Department of Health funding was awarded in 2003 and further funding for the development was provided by the Strategic Health Authority and the collaboration, enabling the redesign of the hospital emergency department to incorporate a base for the out-of-hours GP provider as well as a nurse-led Walk-in Centre. The new service commenced in November 2004. Aims of the initiative centred on achieving a more cohesive and integrated unscheduled care service.

Behind the development of the new Emergency Care Centre lay a broader vision of a new approach to shaping the workforce in order to improve patient pathways through urgent care. The aim was for patients to be dealt with by an appropriate health professional and to achieve separation of the treatment of those with serious illness from patients with minor ailments, sick children and people with mental health problems. Management of minor illness and injury was designed to enable patients to feel more at ease by reflecting the ‘feel’ of a primary care centre. Redesign also offered the opportunity to bring physical co-location to diagnostic services, such as X-ray for minor injuries.

4.2.2 Observed examples of workforce and skill mix change

Prior to the establishment of the Emergency Care Centre, the partner organisations employed a range of staff who continued to work in the new setting. The hospital employed emergency nurse practitioners (ENPs) managing minor injuries in the ED alongside ED consultants, junior doctors and health care assistants, with nurses undertaking face to face triage. The GP out-of-hours service provided care across a wide geographical area and the Emergency Care Centre (ECC) was one of the localities in which its staff (GPs and nurse practitioners undertaking telephone triage and seeing patients face to face) treated patients. It employed a core of six salaried GPs as well as local
GPs who formed the majority of the doctor resource. Some of its GPs also worked in the ED on weekdays as part of a separate programme to reduce emergency hospital admissions.

Several new roles were introduced as part of the initiative. A new rotational nurse navigator role was devised for senior nurses working in the ED. One Nurse Navigator was on duty at all times to assess and signpost ambulant patients to the appropriate practitioner for further care.

Emergency care practitioners (ECPs) were developed by the Ambulance Trust with the aim of treating more patients at home and thus reducing admissions to hospital. Three ECPs served the area at the time of the study. Initial plans were for them to undertake some GP home visits but this aspect of the role did not develop initially as further opportunities for training were considered necessary.

Musculoskeletal practitioners were introduced to support the management of patients with minor injuries. This represented an extended scope of practice role for Physiotherapists. A community triage facilitator role was also developed to arrange timely ‘step up’ care for patients not requiring acute intervention but at risk of emergency admission. This role was shared by a social worker and an occupational therapist based in the ECC.

4.2.3 Distinctive system features: access and integration

The qualitative system map developed for ED-med is shown in Figure 4.1.
Figure 4.1 ED-med system map
The boundaries of the case study are defined as those provided by the co-located urgent out of hours services based at the hospital Emergency Care Centre (ECC). The partner providers cover patients beyond this locality and are thus considered outwith the boundaries of the case study. A highly planned approach is strongly reflected in the simplicity of the system map. The fact that services are co-located is shown by the large grey rectangle depicting the ECC which (uniquely among the 8 study site maps) overlaps all three zones: Contact, Treatment/Assessment and Outcome. The only contact or treatment nodes outside this rectangle are essentially the ambulance service and NHS Direct (since the mobile ECP service is still currently managed by the ambulance service).

The ECC reception has a high degree of centrality, with 7 “in” arcs and 2 “out” arcs. The large number of “in” arcs reinforces its co-ordinating function as the principal recipient of direct patient contacts. For out-of-hours general practice patients these contacts are all intended to be by telephone, and mainly come via the out-of-hours call management system. Out-of-hours general practice patients are not meant to walk in to the ECC or call it directly, and if they do, they may be asked to call the out-of-hours service in order to be formally logged on to the system. The only out-of-hours general practice patients allowed to walk in to the ECC in person are registered mental health patients, who are considered a special case. The other ECC “in” arcs correspond to referral by other health professionals. The only out-of-hours patient contacts which do not pass through the ECC node are telephone calls made to NHS Direct or GP out-of-hours for minor complaints which do not require an urgent face to face consultation, or 999 calls which lead to direct admission to the Majors & Resuscitation area the A&E (at the opposite end of the acuity spectrum).

The two “out” arcs from ECC reception correspond to the division between staff employed by the PCT, and staff employed by the hospital. These distinctions are clear on the map, but raise the question as to whether they are always clear to patients, since patients can see each other waiting. One arc, the hospital branch, goes to the nurse navigator and the other goes to the GP/nurse clinician. The nurse navigator has a single “in” arc but 4 “out” arcs, including one to the GP/nurse clinician (technically the wrong destination but happens informally in practice with minor cases when the ED minors area is busy). Interestingly, one of the nurse navigator’s “out” arcs leads to self-care. Hence although intended to be a very integrated model, there remain two parallel flows of patients. Management of capacity and waiting times within the centre relies on informal mechanisms between staff and good will, such that patients who initially arrived as walk-in patients at the ED will be seen by an out-of-hours GP and that on occasions these doctors are available to support the extended role practitioners in the minors unit of the ED.
The ED-med map shows clearly how its Clinical Decision Unit forms a buffer before admission or discharge for both minor and major ED cases. Another more innovative node in ED-med is community triage, an in-hours service which links with Social Services and brings social work and allied health professional skills to bear on the prevention of unnecessary hospital admissions. The role of the ECP is also unusual in ED-med. Apart from referring patients to the ECC or to the ED, the map shows visually how ECPs are in effect able to bypass the hospital system (and the GP out-of-hours service) and either treat patients at home or refer them directly to community services such as community triage or in-hours primary care. The map clearly depicts this lack of integration between the ECP's and the out-of-hours service, and indeed with the hospital system at all: only two arcs link the ECP node to the grey hospital rectangle. At the time of the study, only 3 ECPs were employed, meaning that they could not provide a 24/7 service.

4.3 The Centre-med case study

4.3.1 Overview of the urgent care service, its origins and partner organisations

The focus of the Centre-med case study locality is the main primary care centre in the city, a shared facility to which, in 2003, the nurse-led NHS Walk-in Centre and the GP co-operative relocated from different sites. At the primary care centre a new, integrated service was established in 2004 with the PCT providing the out-of-hours service. The Ambulance Service was contracted to supply ECP cover for evenings and weekends. The out-of-hours system served patients of some practices beyond its catchment, with consequences for the PCT’s resources once Department of Health funding of Walk in Centres ended. The local population is increasing, in part because of the availability of lower cost housing and the city’s status as an asylum dispersal centre. The population therefore included a substantial proportion of non-English speakers including Polish, Portuguese and people with community languages such as Punjabi. An estimated 50% of patients seen at Centre-med do not have English as their first language.

4.3.2 Observed examples of workforce and skill mix change

The establishment of Centre-med and its integrated model for providing urgent care required staff previously used to working more independently, with clearly defined patient groups and conditions and working practices, to work together to serve the Walk-in Centre and out-of-hours requirements. The centre provided an opportunity to learn how staff undertaking more traditional roles, such as GPs, nurse practitioners and health care assistants made this transition as well as the opportunity to examine how new and extended roles were introduced and to what effect. While most staff have experienced role change
since the establishment of Centre-med, the greatest impact has been on community night nurses.

**Community night nurses (CNNs)** have developed new skills and experienced an increase in their responsibility and the range of activities and types of patients with whom they work. CNNs are trained to assess patients at home and some have advanced prescribing skills. As well as visiting patients with traditional scheduled and unscheduled community nursing needs, they assess patients, including those with acute conditions and urgent needs through telephone triage and also in face to face settings. From midnight to 06.00am when there is no GP on duty, CNNs treat patients at the centre and at home, and can admit them to hospital. An on-call GP is available for advice and for home visits if necessary. Overnight, CNNs have a high level of responsibility for diagnosis, treatment and managing risk. During this period they are effectively substituting for GPs. The CNN role is a considerable enhancement of a traditional community nurse's role and central to the provision of out-of-hours urgent care. Three CNNs are on shift each night, one being allocated to each of i) community nursing ii) out-of-hours home visits and iii) triage.

**Nurse practitioners** have advanced practitioner skills as assessors and /or prescribers. This group can substitute or partially substitute for GPs or when visiting patients in their own homes. When conducting home visits, they also have authority to admit patients to hospital, though in practice, most home visits out-of-hours are undertaken by CNNs. Nurses’ patient group directives (PGDs) are determined by their qualifications and training. Band 5 nurses treat patients at the centre but seek confirmation on diagnosis and discharge from a more senior nurse. All nurses have enhanced or extended roles as they see patients with acute conditions and exercise assessment skills. Nurses are unable to substitute for GPs in the care of children under the age of 2 years because this group is not covered by their PGDs. Some Walk-in Centre nurses also do shifts on telephone triage.

**Emergency Care Practitioners** based at Centre-med undertake most of the home visits during weekday evenings and at weekends, enabling GPs to focus their work with patients attending the Centre. GPs conduct all home visits between 10.30pm and midnight after which CNNs take over until 6am. ECPs cannot prescribe drugs, although they can administer some medicines such as antibiotics, pain relief according to their PGDs and can revert to their paramedic role if a patient needs emergency care. ECPs may seek advice from a GP at base or suggest that a patient attends the centre for a GP consultation. The ECP role is an enhancement of the paramedic’s role in several respects. Paramedics do not work to PGDs and give drugs only in life threatening situations. They attend patient groups with emergency needs, provide treatment for minor injuries at home or take them to casualty. In contrast, ECPs manage chronic conditions as well as diagnosing and treating acute and emergency cases and confirming death. They can also refer patients to other services such as the rapid response (intermediate district nursing team), and
can admit patients to hospital wards. ECPs help with telephone triage when they are at the centre and without other work.

Health care assistants who work in the Walk-in Centre are trained to undertake tasks delegated to them by a nurse such as simple dressing or venepuncture, blood pressure measurements and routine ECGs, without direct supervision. In some circumstances they may first consult a nurse. They independently identify patients they can attend to from patient data on the computer screen. HCAs also cover Walk-in Centre reception during busy periods and when reception staff need breaks.

4.3.3 Distinctive system features: access and integration

The qualitative system map for Centre-med is shown in Figure 4.2.
Figure 4.2 Centre-med system map
The physical co-location of the integrated Walk-in Centre and the out-of-hours primary care centre is depicted by the grey rectangle in the Contact zone. It is quite clear in this map that the PCC is totally separate from the ED, shown as a small node, which makes it appear almost unimportant, in the centre of the Treatment zone.

The choices facing the patient seem particularly clear in the Centre-med map. Irrespective of whether they call the out-of-hours number direct, their own GP or NHS Direct, they will be routed through to the Centre-med call centre. Alternatively, they can of course walk in, or call 999. The thicker arcs (and nodes) show the main patient flows, showing that the majority of patients call the out-of-hours number direct or walk in. Walk-in patients will then either see a nurse or a GP. The map does not explicitly show the phenomenon of the “last hour” effect in the Walk-in Centre, when some patients are said to aim to arrive after 9pm, knowing that they will be seen by a doctor then.

One notable aspect of the Centre-med map is the inclusion of the pharmacist node and two dental care nodes in the Treatment zone. Together, these have the effect of making the treatment zone look more complicated than some of the other study sites. Without these, the patient flow would appear more streamlined, as depicted by the thicker arcs. This is almost certainly a reflection of the emphasis placed on these aspects by the local participants during the process of developing the map, rather than anything specific or unusual about dental care or pharmacist advice at Centre-med.

The key role played by CNNs and ECPs is reflected not only in the centrality of this node (one “in” arc and 13 “out” arcs) but also in the fact that three of these arcs are thick and the node itself has a thick border. The single “in” arc is a thick black dotted line, representing referral by another health professional, i.e. the out-of-hours reception. In fact the arc connecting out-of-hours reception and the CNN/ECP node is double-headed, reflecting the very close integration between these two areas. The CNNs and ECPs have a very large number of treatment and referral options, all depicted by the “out” arcs. The same group of healthcare professionals also play a key role in the outcome zone, in making home visits which can lead to direct hospital admission or referral on to other services, including in-hours GP care and social services. There are a large number of green arcs in the outcome zone, denoting domiciliary visits or nursing home visits by the CNN or ECP.

The map also shows visually how the role of the GP in this system is relatively marginal. Apart from the “base visits” to the centre during the evening hours when a GP is located at the centre, the GPs do not play a major role in this system. They are available on-call for telephone advice (the node “GP advice”
in the outcome zone) or emergency home visits, as shown in the “Home Visit” node in the middle of the outcome zone. Another striking aspect of the Centre-med map is the lack of a social care node, although social services are mentioned in the referral outcome node (which is essentially referral to in-hours services).

### 4.4 The Community-med case study

#### 4.4.1 Overview of the urgent care service, its origins and partner organisations

The focus of the Community-med case study is its regional out-of-hours service. Prior to its establishment in November 2004, this part of the region was served by two GP co-operatives based in the main population centres. Serving a resident population of just over half a million people (529,889) its primary city generates 80-85% of the 130,000 per year out-of-hours contacts. Much of the surrounding region is rural with low population density outside the main towns.

A number of factors also influenced the structure and organisation of Community-med. The location of existing community hospitals was crucial in setting up an accessible network of out-of-hours centres enabling patients to be seen, allowing a maximum travel time for patients of one hour in fair weather conditions. Simulation modelling informed plans for the staffing levels across the service but in one area patient views secured GP cover for a few hours at weekends in addition to a nurse-led out-of-hours centre. Variation in hospital admission procedures also influenced service design. In the city, patients are admitted directly to a ward whereas in an outlying town admission is through the ED, the latter route means it is easier for non-medical practitioners to admit patients. Hospital based ‘satellite’ out-of-hours primary care emergency centres located throughout the region will see walk-in patients.

Important partner organisations include NHS 24 and the Scottish Ambulance Service (SAS). District nursing teams operate out-of-hours, organised by the community health partnerships and there is a dental service. There are five minor injuries units (MIUs) at the community hospitals and a community psychiatric nursing service.

The change from a GP led co-operative to a Health Board run out-of-hours service is evident in the management structure and accountability mechanisms. Decisions are now made through a general manager’s committee and clinical governance committee with clear accountability for performance and finance. Doctors no longer work independently within a not-for-profit organisation but are employed by the Health Board and are developing into out-of-hours
specialists, responsible for delivering a more consistent standard of care, alongside other practitioners to a wider range of patients.

4.4.2 Observed examples of workforce and skill mix change

The Community-med communications hub is staffed by doctors, traffic controllers and receptionists, all of whom man the various telephone lines. There are professional to professional lines for calls from hospitals and nursing homes, or from NHS 24, alerting staff to dual response situations (when both an ambulance and GP are sent to the patient) or for other NHS 24 enquiries. There are also lines for district nurses (DN) and community psychiatric nurses (CPNs). Doctors primarily give patient advice over the telephone. The traffic controllers have contact with drivers, doctors and practitioners in the cars. They co-ordinate and manage their movements and the patient visits and monitor the availability of medical cover at the community hospitals in the out-of-hours network; they also liaise with the police and ambulance service. The receptionists arrange centre appointments for patients and inform them of transport arrangements where appropriate; they also work with the Traffic Controllers.

Innovation in the workforce skill mix at the time of the study included paramedic practitioners, first responders, nurse practitioners, a physicians assistant and a pharmacist practitioner working alongside the out-of-hours doctors to assess, diagnose, treat and discharge patients. Most worked independently with support from doctors when needed, with some restrictions on the types of cases they could manage and on the prescribing of medicines. These roles were examples of substitution, enabling the service to function with fewer doctors. Some 20 salaried doctors worked in the service as well as sessional local GP principals and there were plans to further develop the current training environment for GP registrars. Nurses working in the MIUs had minor injuries training.

**Paramedic practitioners** in the service had completed minor illness training and had a dual role when on duty, also responding to category one calls from the Ambulance Service. At the time of the study there was also a first responder paramedic practitioner (a senior practitioner) working out-of-hours who carried out home visits as well as centre consultations and was able to see, treat and discharge patients. Although not able to prescribe, they used the ambulance service patient group directives (PGDs) to dispense drugs to patients. The initial eight week training scheme was created in conjunction with NHS Education for Scotland is now university based and accredited. When on out-of-hours duty the first responder paramedic worked solely for Community-med.

A **pharmacist practitioner** who had minor illness training worked at weekends seeing, treating and advising patients and oversaw medicines
management and policy. A limited range of drugs could be prescribed for patients but only through the use of patient group directives. The role was primarily to provide a pharmacy lead and involved drug management and policy. As part of a Scottish Executive pilot a number of physicians assistants were recruited from the United States to work in the health service and one of these was based in the out-of-hours service. A medical model of training enabled them to take case histories, assess patients, diagnose and prescribe, though restrictions on prescribing in the UK mean they do not conduct home visits.

First responder nurse practitioners were senior nurses working in a centre outside the city providing care to patients in the community as well as to patients who attended a centre. They could travel 30 to 40 miles to see a patient. Patient group directives were used for dispensing drugs unless the nurse had completed a nurse prescribing course. Nurse practitioners worked in the centres. Support was provided to all practitioners on duty by the out-of-hours doctors both for patient safety and practitioner education. The nurses working in nurse led units received telephone support from the doctors and also had access to telemedicine facilities enabling them to consult with doctors.

4.4.3 Distinctive system features: access and integration

The qualitative system map for Community-med is shown in Figure 4.3
Figure 4.3 Community-med system map
One of the features of this geographically large and rural area was that care was provided in a large number of different sites. There were MIUs at 13 small community hospitals, mainly staffed by nurses or Nurse Practitioners, with GP advice available by telephone. This geographical complexity is not reflected in the system map. It is important when interpreting the maps to understand that they are a conceptual map of how the system works, rather than a literal map showing the locations of the different sites and patient flows between them. It is perhaps a limitation of the mapping approach that to some extent, this geographical aspect cannot always be clearly represented. It is less of a problem in the urban sites, but is also a limitation of the Hub-med and PCT-med maps.

From a patient perspective, the two main contact methods are telephone calls to NHS 24 or walk-ins to the city A&E or any of the various MIUs in the area. In addition they can call 999. Patients do not appear to have a very confusing range of choices, but it is true that the only way to access the out-of-hours service by telephone is via NHS 24, which can lead to a perception that the patient journey is longer than necessary. Patients were not able to telephone the call centre directly. The map shows clearly the key role played by NHS 24 in this system, with one “in” arc and six “out” arcs which route calls to other destinations.

The call centre and the main communications hub are depicted by the grey box which overlaps the contact and treatment/assessment zone. It is interesting to observe that the two different parts, the PCC and the call centre (the “hub”), appear from the map to be quite separate, the former dealing with face-to-face consultations and the latter dealing with telephone calls. In reality, however, both were highly connected, and the hub had a number of double-headed arcs representing two-way information flow to and from health care professionals. This is more apparent in this map than some of the urban sites, and probably reflects the increased use of telephone communication in a rural area.

### 4.5 The Hub-med case study

#### 4.5.1 Overview of the urgent care service, its origins and partner organisations

The focus of the Hub-med case study locality is an integrated emergency and urgent out-of-hours care service managed by an Ambulance Service Trust and serving a rural county covering 1024 square miles. The Ambulance Service also provides out of hours care in a neighbouring county as well as for regional military and prison services. Formed in 2006, almost half of Hub-med’s
701,000 population is located in two urban centres. The remaining areas are mostly rural and have a low population density. A high proportion of the population are elderly.

The Ambulance Trust had managed the local out-of-hours service since 2004, when many members of the GP co-operatives opted out of 24-hour responsibilities within the terms of the new GP contract. A need for change and an opportunity to integrate emergency and urgent care influenced the way services were delivered including starting to train ECPs, active engagement of GPs (most of whom returned to work in the service), developing alternative care pathways and setting up a new control centre. The brisk pace of change initiated in 2006 culminated during the study in the building and staffing of a new, integrated communications hub co-locating 999 ambulance, NHS Direct and Urgent Care with support from health professionals (doctors, paramedics, nurses) on site to triage calls.

Hub-med had eleven primary care treatment centres with a further two units which opened seasonally or for strategic purposes. Three treatment centres were based in major hospitals and the remaining were located in community hospitals and Minor Injury Units. A combination of GPs, ECPs (based in primary care) and Nurse Practitioners staff the various treatment centres across the county. The service provided a mobile service of clinicians, GPs and ECPs, who undertook home visits, although most of the clinicians operated from one of the county’s treatment centres. Visiting GPs had dedicated drivers who acted as an additional operational resource to enable GPs to focus on clinical issues. Visiting ECPs worked alone.

Call receivers based at the communication centre were normally the first point of contact for patients. Dispatchers, also based at the communications centre, provided the strategic link between call handlers and clinicians, directing the patients and clinicians to make the most efficient use of available resources. There was dedicated GP triage during periods of peak demand which operated either from the main communications hub or one of the treatment centres. Outside these periods triage was covered on a regional basis by GPs at the treatment centres. The Ambulance Service also contracted out triage to a nursing team based in a distant minor injuries unit to provide support during busy periods. Nursing staff also managed treatment centres co-located with MIUs in some of the smaller community hospitals across the region.

The service model was designed to confer ownership by the Ambulance Service of the whole pathway, its staff and facilities such as call handling, the treatment centres, mobile units, the GPs, receptionists and ECPs. It directly employed most of the operational staff in the system which appeared to enable a high degree of control over planning and introducing change. This led to capacity to redistribute staff around the system and aimed to deliver real time responsiveness to demands. Most GPs were employed by Hub-med on a sessional basis. ECPs, communication hub staff, receptionists and some nurse practitioners were also all directly employed. Some nurse practitioners and
district nurses were employed by the PCT and nurse practitioners at one hospital were employed by an NHS Trust. System responsiveness could enable a GP in a car to respond to a 999 emergency call if they were close to the scene. Positive relationships with PCTs in managing risk were described as being important in reducing the duplication of services and in extending involvement of third sector and local authority social services.

4.5.2 Observed examples of workforce and skill mix change

The Hub-med urgent care service had developed the skill mix involved in out-of-hours care by employing over 30 ECPs (mainly with backgrounds in paramedic practice) and nurse practitioners. Three core operational areas of the service can be described, each with a different skill mix. The communication hub was staffed by call receivers, dispatchers, GPs and ECPs; the treatment centres were staffed by GPs, nurse practitioners, ECPs and receptionists and GPs with drivers, together with ECPs, provided the mobile service. The key role which featured in the development of skill mix in this site, however, was the ECP. The service employed ECPs in two main areas, visiting patients in their homes and attending to patients at treatment centres. The service aimed to make effective use of the GP resource by freeing them up from some home visits, where considerable time was spent travelling, and using them as a point of triage and face to face contact at Treatment Centres.

**Emergency care practitioners** were organised in ‘cells’ approximating to the location of ambulance stations (there are fewer ECPs in rural areas) but were deliberately based in primary care in order to build up their experience of caring for primary care patients. They had an agreement to refer directly to some specialist teams and to admit patients directly to two community hospitals. They also had access to some diagnostic services such as simple X rays. As well as contributing to the provision of urgent care, ECPs were required to respond to Category A 999 ambulance calls. ECPs could arrange a GP home visit for a patient they had seen via the dispatchers in the hub, and could arrange support from social services or mental health teams directly by telephone.

The service had expanded to include Minor Injuries Units in the two urban centres. Each had nurse practitioners with extended role prescribing qualifications.

4.5.3 Distinctive system features: access and integration

The qualitative system map for Hub-med is shown in Figure 4.4
Figure 4.4 Hub-med system map
This is a site where there are two very distinct key components of the system (or three, if the distant MIU is counted as separate from the other primary care centres). The first is in the Contact zone, which contains a Communications Hub in which quite a lot of detail is shown. The front end of this system is managed by the Ambulance Trust, and the level of detail in the Hub box may reflect the emphasis placed on this aspect by the interviewees. In addition to the out-of-hours call centre, the grey Hub rectangle contains NHS Direct, since these services are co-located.

The other distinct component is the Primary Care Centre rectangle, which actually depicts 11 centres, three of which are located within general hospitals (with EDs). This gives the Hub-med map a very simple structure, which reflects the integrated nature of the system. The distant MIU, although shown in a grey box as it is co-located with the Dental Centre, was not a major part of this system compared with the other two grey boxes, in terms of activity or patient flow by volume.

In the Hub-med system, it can be seen that dispatchers acted as an interface between the call handlers and the clinical staff. These were GPs, NPs or ECPs based elsewhere in the region (one of the 11 PCCs or the MIU). There was also a mobile GP or ECP in a car, operating out of the base. All calls coming into the Hub went first to the call handlers and are then routed to the dispatchers, shown by the thick dotted black line. In fact this system contains many dotted black lines, which depict information flow between health professionals. A great deal of telephone triage activity was described, depicted by the large oval marked ‘T’. This was mainly by GPs at the PCCs, but in busy periods some triage was undertaken by nurses at the MIU.

From the patient perspective, this system appears very simple and the arcs leaving the oval patient node are distinct. A patient may either walk in to one of the PCCs, to ED or to the MIU, or may telephone NH Direct or the Hub (a single number for the whole of the area). The dispatchers then connect the call to a clinician for triage. Patients requiring a home visit would receive this from the mobile GP/ECP, but the majority (depicted by the thick black line) would be asked to attend their local PCC. Information flow arcs are backwards, showing how triage information carried out by telephone at the PCCs was then transferred back to the hub to direct the patient onwards to the next stage. Apart from this, flows are from left to right and thus depict a streamlined system. The most highly connected nodes in this system are the PCCs, the call handlers and the dispatchers.
4.6 The PCT-med case study

4.6.1 Overview of the urgent care service, its origins and partner organisations

Out-of-hours urgent care in PCT-med is an example of a directly managed service. To some extent a product of its origins in previous models operated by 5 PCTs, work towards a county-wide, integrated out-of-hours service that was capable of remaining sensitive to differences in local populations, geography, service usage and labour markets had begun in April 2004. Serving a county-wide population of approximately 687,200, the PCT-med area is characterised by villages and small to medium-sized towns and is in general considered to be affluent. The high cost of local housing had for some time impacted on the recruitment of suitably qualified and experienced health care staff.

Within the county areas, different factors had influenced the extent that new skill mix was introduced. In the north and in the main city, GPs were willing to continue providing out-of-hours care and largely chose not to opt out of 24 hour responsibility in 2004. With one of the highest ratios of GPs per head of population in the country there was little need for new ways of working. In the north a company formed by local GPs provided out-of-hours services in the evenings and at weekends, with a commercial deputising service contracted to cover the overnight periods. Within the city, a GP-led model operated working with the community nursing service. In the south and in the city, local GPs held honorary contracts and worked on a sessional basis. In contrast, in the south of the county, GPs opted out of 24 hour responsibility and there was therefore an opportunity as well as the necessity to design a new service model and skill mix. The focus of the case study is therefore in the more rural south of the county.

Direct management of the service was via the provider services directorate of the PCT. It provided some of the services and some of the staff, for example the out-of-hours centres, an emergency dental service and nurses and receptionists. The remaining elements were contracted out to GP-run companies and (through semi-direct contracts) to individual GPs and to the Ambulance Service Trust which provided handling in the communications hub as well as primary care paramedics and ECPs and their vehicles and equipment to cover home visiting. The computer system used to manage the system was commercially contracted via the Ambulance Trust. This technology, initially applied within one of the PCTs, developed a county-wide function and conferred to the system a new level of information about real time functioning. Tracking of the volume and location of calls, identifying where and how long patients are waiting for triage, base or home visits, and reallocating clinical staff from low to high activity areas became possible. Generation of detailed performance and activity reports also assisted monitoring. The communications hub was located on a hospital campus alongside the ambulance trust’s emergency operations.
centre (EOC), which handled 999 calls. Medical calls were triaged on the telephone by GPs and emergency nurse practitioners based in the out-of-hours centres. In returning calls, triage staff prioritised patients based in their area, but assisted with the triage of patients from other areas at busy times. The emergency dental service was fully integrated into the system.

4.6.2 Observed examples of workforce and skill mix change

Skill mix innovation was most apparent in the south of the county where a range of practitioner roles were introduced.

Emergency care practitioners and emergency nurse practitioners conducted home visits, were able to prescribe within patient group directives and could arrange hospital admissions. Emergency nurse practitioners worked in the minor injuries units and the out-of-hours service.

The role of primary care paramedic was introduced locally as a ‘stepping stone’ to becoming a qualified ECP. Whilst emergency care paramedics worked independently to diagnose and treat patients in order to maintain them at home where possible, primary care paramedics work under the supervision of GPs based at an out-of-hours centre, where they undertook some 50% of home visits under GP supervision.

A new role of emergency nursing assistant was introduced to support emergency nurse practitioners to ‘book’ patients into the MIU and, along with receptionists, to manage the flow of patients. Some duties such as taking a history from MIU patients, making a visual assessment of patients’ condition, and giving painkillers and dressing wounds under supervision, were delegated by ENPs.

At the whole system level, centralised call handling introduced a new group of non-clinician workers, some with previous call handling experience, to screen and prioritise calls using a protocol. Emergency operations centre operators, typically recruited from ambulance road staff were trained to use a formal algorithm-based tool rather than professional judgement to prioritise calls and some contributed to paramedic despatch. Dental nurses, traditionally employed to provide chair-side support dentists, provided telephone triage of dental calls. A regular core of agency employed locum GPs supported the provision of medical care.
4.6.3 Distinctive system features: access and integration

The qualitative system map for PCT-med is shown in Figure 4.5

The reader’s first impression on seeing this map is one of “spaghetti”. Reflecting a system which has evolved over time, this is the most complex system of observed in the case studies. Despite the fact that the same method of simplification has been adopted (combining all the PCCs into a single node), there are still many nodes, several of which are highly connected, and a multitude of arcs of all colours going in all directions. For example, the communications hub has five “in” arcs and nine “out” arcs. This is not unreasonable for a hub, but even the “treat at home” node, which one might have imagined to be very straightforward, has four “in” arcs and nine “out” arcs. Multiple providers and a variety of different locations, opening hours and facilities are evident.

Another striking feature of the map is the large number of distinct nodes in the outcome zone, although part of this is because of the inclusion of dental and palliative care (not shown explicitly in every site map). However, even these nodes are connected.

It is hard to say from the map where the heart of this system is, other than the communications hub, which clearly plays a central role in receiving telephone calls and transferring information on to other parts of the system, but there are almost as many arcs entering and leaving the out-of-hours bases and the MIU rectangles.

The main patient flows in terms of volume are shown in thick lines and consist of telephone calls to the hub, followed by a base visit or a home visit and then discharge or treatment at home. However, some patients walked in to the MIU, or one of the 7 out-of-hours centres (shown by thin blue lines), though this was not encouraged.

The district nurses appeared to have a key role as there are a variety of different nodes involving them, mainly lying on a single pathway but with a number of different eventual outcomes.
Figure 4.5 PCT-med system map
4.7 The County-med case study

4.7.1 Overview of the urgent care service, its origins and partner organisations

The focus of the County-med case study was the out-of-hours urgent care service provided jointly by the ambulance service and the PCT. The ambulance service provided staff at the communication hub, the IT and telephone communication and the mobile primary care resources across the county. The PCT operated and staffed the region’s nine primary care centres and the MIUs. This joint provision of out-of-hours care had been in place since the change to the GP contract in October 2004; prior to this date 8 GP co-operatives across the county had provided the service. County-med covered 1025 square miles, predominantly a rural county with a strong tradition of farming and forestry and had a population of 575,200. The county’s two major urban sites were located near the centre of the county within 15 miles of each other. The main point of contact for patients using the service was the ambulance service communications hub. Of the nine primary care treatment centres, two were in the major urban hospitals and the others are located in community hospitals alongside MIUs, where they existed.

The introduction of a county wide system of triage along with the restructuring of the PCT attempted to address geographical variation in demand by pooling all triage requests and resources in the system. Centralised GP telephone triage operated after 23:00 during the week from the communications hub. At other times clinicians at the primary care centres provided both telephone triage (county wide) and face to face consultations (call receivers loaded patient details into an advice pool which was visible to all the treatment centres around the county). They were responsible for balancing real time performance against the national 20 min call back target for clinical triage and numbers of patients waiting to be seen in the centres. There was also a clear differentiation between the mobile and centre based provision. Clinicians working in the mobile service carried out home visits only whilst those in the treatment centres were dedicated to providing face to face consultations and clinical triage. This gave rise to a clear organisational structure with clinicians having clearly defined roles. The model minimised the input needed from the central communication hub as there were no dedicated dispatch staff directing clinicians between treatment centres and home visits. The triage officer managed the workload of the mobile GPs without having to be concerned about the withdrawal of clinical staff from treatment centres.

District nursing cover varied across the county and district nurses were contacted by a telephone message link system, either directly by a clinician or via the communication hub. At the time of data collection plans for a county wide integrated district or community nursing service were close to
implementation. Mental health crisis teams were also contacted via phone and message link service, although their availability varied across the county. A social care co-ordinator in the hub worked with the team to find alternatives to hospital admission.

4.7.2 Observed examples of workforce and skill mix change

The three core operational areas of the County-med service were the communications hub (staffed by call receivers, a triage officer, care coordinator and triage GP) the treatment centres (staffed by GPs, Nurse Practitioners and Receptionists) and the mobile clinicians (GPs, care technicians and drivers). The care coordinator provided a link between GPs and the local authority adult social care directorate. When the mobile GPs visited a patient who they felt required social rather than medical support, they could contact the hub where the care coordinator would take appropriate action to either initiate a change to a patient’s pre existing care plan or provide temporary respite care at a residential home while a care plan was initiated, thus in some situations avoiding unnecessary admission to hospital. During evenings and the weekend daytime periods a triage officer was based at the hub. Triage officers had a paramedic background and provided clinical support to the call receivers in the hub, oversaw the coordination and caseloads of mobile GPs, monitored system demand and were the first point of contact for primary care staff in relation to IT and communication systems.

The most significant skill mix change was the use of nurse practitioners in the two larger urban treatment centres. Working independently, many of them could prescribe and they normally saw and triaged an undifferentiated range of patients. The number of nurse practitioners involved in delivering the service appeared small (between 2 to 4 across the county at any one time compared with between eight and fifteen GPs (not including mobile GPs). However, they appeared to have a substantial impact on the organisation and delivery of care. Staffing levels at the two large urban hospitals changed on weekday evenings, so that where there were normally two GPs and one nurse practitioner at the treatment centres, the ratio changed to one GP and one nurse practitioner. At the time of the study there were no ECPs routinely available for out-of-hours care, though an informal arrangement allowed an ambulance service ECP to be dispatched to a home visit, if capacity allowed.

4.7.3 Distinctive system features: access and integration

The qualitative system map for County-med is shown in Figure 4.6
Figure 4.6 County-med system map
It is very clear from the map that this is a predominantly GP based system. The map also shows the key role played by the communications hub (the most highly connected node, 4 “in” arcs and 7 “out” arcs) in receiving patient phone calls (red line) and then directing these calls onwards to a variety of places for triage (dotted black line). The place of triage is time-dependent and this is depicted in the map on the corresponding nodes. The hub is separate from the PCCs, and the PCCs are separate from A&E, which is depicted as a separate, small node in the contact zone, for patients who walk in.

The main impression from this map is of a logically coordinated, streamlined service, but one which does not have an easily identifiable geographical centre. There is only one grey box, used in our notation to denote co-located services, representing the nine PCCs in County-med which provided county-wide triage as well. However these were are only open from 18.30 to 23.00, and the mobile, geographically dispersed nature of out-of-hours care after 23.00 was captured by means of four nodes, highlighted with bold text, in the assessment/treatment zone. These represented mobile GPs, mobile district nurses, and also psychiatric and palliative care services.

From the patient perspective, accessing the service appeared straightforward. There are 8 “out” arcs from the Patient oval node, clearly differentiated by the type of service (ambulance, dental, NHS Direct, ED etc) and patients who initially access the “wrong” service are routed onwards (shown as a dotted black or solid black arc) to the appropriate place.

In the Assessment/Treatment zone, the mobile GP team clearly play a key role. This node has two “in” arcs (dotted black line) representing referral by a GP at the hub or the PCC. The node has 6 “out” arcs representing mainly (thickest arc) a home visit, or direct admission to hospital, or smaller numbers of referrals to social services (before 23.00), district nursing, palliative care or psychiatric services. In this zone, there are quite a lot of “upwards” and “downwards” arcs as well as from left to right, representing referrals and communication between services before an actual outcome node is reached.

A striking feature in this map is the link between the ambulance service and social services; this does not appear in any of the other maps, not to say that there is no such link elsewhere but clearly the County-med participants considered it was important.

### 4.8 The District-med Case Study

#### 4.8.1 Overview of the urgent care service, its origins and partner organisations

The focus of the District-med case study is its emergency and urgent care service. The population of the Health Board area was 110,247 spread over 4,723 square kilometres of hilly and sparsely populated countryside. The
largest town had a primary care emergency centre and a population of just under 15,000 and the town in which the district general hospital was based had a population of 16,713. Prior to the establishment of District-med a GP co-operative provided the out-of-hours service. All of the local GPs indicated they wanted to opt out of out-of-hours care delivery and it was evident that few would want to opt back in to work on a sessional basis. Within these constraints a viable service, supported by a small number of salaried doctors and nurses with extended roles had been developed.

From the inception of the new model it was planned to have an integrated unscheduled care service; out-of-hours care was now much more part of the main stream health board services and had strong links with the ED. District-med was based in a general hospital. Reception and waiting areas were co-located with those of the ED and the communications hub which housed dedicated telephone lines for care homes, the community hospitals, palliative care patients and other professionals such as the police. The out-of-hours receptionists, who handled the calls, provided support for District-med and the ED.

There were peripheral centres with Primary Care Emergency Centres at four of the region’s community hospitals. Each also had a nurse run MIU which operated 24/7. Overnight GP cover was available only at the hospital base from where the region was covered by one GP and two out-of-hours nurses. Nurses could see patients at home or in the centre. The IT system used to manage patient information was an in-house NHS system which had limited capabilities (the system was not updated in real time and could provide only limited management information).

### 4.8.2 Observed examples of workforce and skill mix change

The core of the District-med service comprised salaried doctors and a team of community nurses, all of whom who delivered care at the primary care emergency centres and in patients’ homes. Local GPs provided limited cover as a backup. They were supported by receptionists working the hospital base, drivers, administration staff, and were managed by a manager who had a remit for unscheduled care, a lead clinician, and a lead nurse manager.

**Salaried out-of-hours GPs** were skilled in emergency care and had training in child protection, emergency medicine and CPR. They also had the opportunity to work in the ED on day shifts to further their training and advance the integration of the two services. When on out-of-hours duty they carried out home visits, centre consultations and provided cover for community hospital inpatients. The ED was primarily an orthopaedic department and had doctors for that speciality but no dedicated medical cover. The GPs typically attended minor cases, cases not appropriate to the orthopaedic doctors or cases the emergency nurse practitioners were uncertain about admitting.
Several types of nursing service operated out-of-hours. ‘Evening nurses’ (district nurses) provide planned care between 6pm and 11pm. **Out-of-hours nurses** provided unplanned care throughout the out-of-hours period. **Community hospital nurses** who work on the wards and staffed the MIU’s 24/7 and **emergency nurse practitioners** worked in the ED. Only the evening nurses and out-of-hours nurses were managed by District-med. The evening nurses are based at five localities. They were managed by the daytime district nursing service but have now been integrated into the emergency service. Although their remit was to remain as planned care and they would still receive their work primarily from the daytime team they may do some of the less complex unplanned interventions such as catheter management. Further training, for example triage and minor injuries, was a possibility to extend their roles and advance their integration into unscheduled care.

The ‘out-of-hours nurses’ were based at the hospital. Historically required to have a district nursing qualification or be working towards one, emergency nurse practitioner training (minor illness and injury) was considered locally to be more appropriate for the delivery of out-of-hours care and consequently there was a move to achieve this; future training might also include prescribing. At the time of the study the nurses did not prescribe, however if they were out on-call they could consult with the duty GP via telephone and dispense medication as advised. When this happened, the GP provided a prescription on their return to the centre.

**Emergency nurse practitioners** had undergone training in minor illness and injuries and are able to assess, treat and discharge or refer patients coming to A&E with specific conditions (as specified by written protocols). The ENP role was introduced because of the reduction in working hours for junior doctors. They were able to take more responsibility than the ED nurses, managing the less acute cases which were a lower priority for the ED medical team and facilitating timely progress of these patients through the system. ENPs interacted with District-med staff to enable the transfer for ED patients with primary care needs where appropriate.

The nurses working in the MIUs had training to enable them to work in a role that extended beyond their work on the community hospital wards. For example in one ward in an outlying hospital all of the registered nurses have done training in minor illnesses and injury and Manchester triage. Some of the nurses may assist the out-of-hours doctor by triaging and helping with treatment.

**Paramedics**: For a limited period Pathfinder paramedics shadowed the out-of-hours GPs to gain experience. District-med was keen for them to participate in the delivery of out-of-hours care however at the time of this study their future in the service was unclear.
4.8.3 Distinctive system features: access and integration

The qualitative system map for District-med is shown in Figure 4.7

The integration between out-of-hours primary care and ED is evident in this map, which shows ED and District-med in a single grey box sitting across the contact and treatment assessment zones. The possibility of patient flows between these two services is shown by the double-headed black arc joining these areas. It can be seen from the thick blue line that the majority of walk-in patients are for the ED, whereas access to District-med is via telephone (thick red line) and NHS 24. The only other access routes are the prison and police services, obviously both involving small numbers of patients. The key role played by NHS 24 is apparent from its central position in the contact zone, and the fact that the arcs entering and leaving it are thick. NHS 24 mainly routes patients either to ED or to District-med, apart from those patients who need only self-care advice or referral to in-hours primary care. The four outlying primary care emergency centres and MIU’s are shown as a single node for simplicity. The system appears very simple and streamlined, with relatively few arcs, hardly any of which are “backward”. The impression from this map is of a very coordinated and integrated system, where the options available to patients are clear but flexible.

The most highly connected node in this system is the District-med hub, which (like NHS 24) acts as a channel with over ten “out” arcs. No other node has anything approaching this number of arcs.
Figure 4.7 District-med system map 1
4.9 The Walk in-med Case Study

4.9.1 Overview of the urgent care service, its origins and partner organisations

The focus of this case study locality was the Walk in-med out-of-hours service provided in partnership with the PCT, acute NHS Trust and Ambulance Service Trust and replacing the service provided by the local GP co-operative prior to 2004. Walk-in minor injuries and out-of-hours care services for the district were managed by the same provider under the financial umbrella of the PCT and co-located in the same site near to the town centre. A nurse-led Walk-in Centre, open 365 days a year during the day was co-located with an out-of-hours call and treatment centre which operated during out-of-hours periods. Within this integrated model, skill-mix strategies such as multi-tasking and multi-disciplinary team working were developed to a high degree to meet PCT cost controls and increasing demand on the service.

The Walk-in Centre dealt with minor injuries and minor illness. It also provided routine dressings and phlebotomy services for patients. Its hours of opening overlapped with the out-of-hours period and at these times some formal and informal shared working took place so that GPs worked in the walk-in centre in support of nurse practitioners.

4.9.2 Observed examples of workforce and skill mix change

The co-location of the out-of-hours and walk-in centre services was exploited as much as possible by Walk in-med as they strove to provide safe and effective clinical services which met the increasing demands of an expanding population. Strategies of flexible multi-tasking and role delegation were used with different staffing groups to create a closely integrated workforce model which had considerable impact upon the skills, working dynamics and job satisfaction of staff.

A flexible multi-tasking model was developed across the non-clinical staff groups to meet financial cost savings enforced by the PCT and to maximise the effectiveness of staff resources in meeting the demands of the service at peak times. As well as extending the skills of staff across the non-clinical roles and fostering flexible delegation of tasks, the multi-tasking strategy was described within the service as an innovative concept because it entailed development of a fresh approach to work including co-operative teamwork and a 'can-do' attitude. The strategy chiefly involved drivers, receptionists and call handlers who worked flexibly across each other's roles and across the walk-in centre and out-of-hours services as the need arose. Since 2004, the aim was to develop the nurse practitioner workforce to take over much of the GP role in the out-of-hours service as well as within the walk-in centre. Nurse practitioners
carried out telephone triage and face to face consultations with patients at the centre with the available support of a GP.

4.9.3 Distinctive features: access and integration

The qualitative system map for Walk in-med is shown in Figure 4.8

Three features strike the reader when looking at the Walk in-med system map. Firstly, the large grey box in the centre, which (like ED-med) overlaps all three zones: Contact, Assessment/Treatment, and Outcome. This contains the two key co-located services, the walk in centre and the out-of-hours service. Very little activity seems to take place outside this rectangle.

Secondly, the ED is relegated to a tiny node right down at the bottom of the page in this map, and is clearly seen as a totally separate component of the system. The only arcs entering or leaving A&E are ambulance arrivals and walk-ins, and discharge/admission; there is no interface with the out-of-hours system at all.

Thirdly, a bewildering range of options (12 “out” arcs) appear to face the patient when first contacting the system. Most of these involve some kind of telephone contact, or self-care advice which bypasses the Treatment zone entirely. However when looked at more closely, these are a fairly discrete range of choices, specific to particular patient groups. A number of telephone options remain, however, such as calling the out-of-hours number, NHS Direct, and the patient’s own GP. All of these end up with the out-of-hours call handlers.
Figure 4.8 Walk-in med system map
4.10 Diversity in the organisation and development of urgent care systems

Although each urgent care system depicted in the system maps above contains common elements (each has an emergency department, a 999 Ambulance Service and a form of GP out-of-hours provision for example) there is also clear evidence of diversity in local provision. There are three main sources of this diversity (i) how the first point of contact for patients is organised (ii) the range of services provided and the extent to which these are co-located and integrated (iii) the relative complexity of patient flows. Table 4.2 shows how each system was categorised in relation to these aspects.

<table>
<thead>
<tr>
<th>CASE STUDIES</th>
<th>Telephone access</th>
<th>Co-location across zones</th>
<th>System dynamics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single call</td>
<td>Multiple call options</td>
<td>3 zones</td>
</tr>
<tr>
<td>ED-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Centre-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Community-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hub-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PCT-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>County-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>District-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Walk in-med</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

4.10.1 First point of contact variation

In two of the case study sites (Community-med and District-med) the main point of contact was via NHS 24. All telephone contacts were routed through NHS 24 and passed, where appropriate, to other services for further management. Although for patients the option to dial 999 or to walk in to an ED remained, the intention was to provide consistent and safe assessment and
triage of all telephone contacts. In the other case study sites there were wider options for telephone contact including special telephone numbers for out-of-hours care, NHS Direct and the patient’s own GP surgery number (from where the call was either automatically diverted to the local out-of-hours service) or the caller was given another number to call. This difference was clearly visible in the system maps. For patients receiving care from district nursing or palliative care there were examples of direct call facilities to those services out of hours and some case study sites provided dental telephone triage.

Whether or not urgent care services are best organised with a single point of contact continues to be a source of debate in the UK. In the wake of the Carson Report (2000) proponents argued that people with an urgent need for health care should have access to the same timely, high quality assessment and triage wherever they are in the UK. In England a pilot study to make NHS Direct the first point of contact for all out-of-hours calls revealed that it would need considerably enhanced capacity to manage the demand (Lattimer et al, 2005). The achievement of the single call access model in Scotland via NHS 24 is arguably in part a function of lower call volumes overall. The net effect however is that in England compared with Scotland, people have greater choice in how to seek help but also potentially greater confusion about which service they need. An important question is the extent to which individuals are able to refer themselves to the ‘right’ service for their needs. Previous studies of attendance at Minor Injuries Units for example have revealed that patients tend to present appropriately without the need for signposting. Ease of access, the urgency of the request for help, what callers wanted from their contact the adequacy of communication and further contact with health care services were explored in the patient survey and interviews (section 7) comparing user experience of a case study sites with and without single point of telephone access via NHS 24.

4.10.2 Variation in service provision and co-location

Urgent care health policy in England in recent years has encouraged commissioners to be more responsive to local needs whilst attaining high standards of care quality (Department of Health, Direction of Travel for Urgent Care, 2006). The system maps show which local services contribute to patient pathways through urgent care as described in section 1.7.1 above and different nomenclature for services is evident, for example in how treatment centre facilities are described. A major difference between the case study sites can be observed in the extent to which there is physical co-location of services, represented by the grey boxes in the system maps. ED-med (population 674,000) and Walk in-med (population 163,400) were the most strongly co-located systems. Co-location appeared to offer potential to optimise the deployment of staff across walk in and out-of-hours appointment systems.
4.10.3 Variation in new role development in urgent care

The system maps also show to some extent how the development of new workforce patterns, new roles and skill mix is strongly influenced by local systems. Consequently there are a number of new roles that we observed only in one site (Table 4.2). The strongest examples of changing skill mix with multiple examples across the case studies involved nurse practitioners, community nurses, emergency care practitioners, general practitioners, receptionists and call handlers. These examples formed the ‘cases’ within the study.

<table>
<thead>
<tr>
<th>Role title</th>
<th>Nursing</th>
<th>Allied Health Professionals</th>
<th>General Practice</th>
<th>Support staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Practitioner1-8</td>
<td>ECP 1,2,3,4,5,7</td>
<td>Salaried GP1,7</td>
<td>Receptionist/Call Handler1-8</td>
<td></td>
</tr>
<tr>
<td>First Responder Nurse Practitioner3</td>
<td>Triage Officer6</td>
<td></td>
<td>Emergency Nurse Assistant5</td>
<td></td>
</tr>
<tr>
<td>Community Night Nurse2</td>
<td>Musculo-skeletal practitioner1</td>
<td></td>
<td>Health Care Assistant2</td>
<td></td>
</tr>
<tr>
<td>District Nurse5,7</td>
<td>Primary Care Paramedic5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECP 1,2,3,4,5,7</td>
<td>Paramedic Practitioner3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Nurse Practitioner 5,7</td>
<td>Physicians Assistant3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Navigator1</td>
<td>Community Triage Practitioner1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pharmacist Practitioner3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = ED-med; 2 = Centre-med; 3 = Community-med; 4 = Hub-med; 5 = PCT-med; 6 = County-med; 7 = District-med; 8 = Walk in-med

4.10.4 Understanding the sources of local diversity

Previous research on the NHS suggests that both external and internal contexts affect the way organisations and those within them work (Pettigrew and Ferlie, 2002; Sheaff et al, 2004). There is also a problem in identifying what local organisations, or individual professionals within them are being responsive to. For example, there are tensions between responsiveness to individual consumer choices, wishes expressed by groups in local communities and service delivery needs. Local services may respond to internal or external factors. This being so, the question arises whether the diversity between the
case study sites reflects local contextual diversity or internal responses to similar problems. These issues have characterised much recent debate about health policy in the UK. The next section of the report addresses the particular antecedents and drivers of workforce change, the influence of local leadership and the relationship between commissioning, policy and service delivery.
5 Antecedents and drivers of workforce change

Summary

Mapping patient flows through urgent care systems revealed potentially important differences between case study sites in initial access to the system, in the choices available to the public and in the complexity of the different systems. Systems may be developed in response to local needs and preferences and in response to external influences such as health policies.

A review of the external drivers for change in urgent health care in the last decade highlighted key health policies and evidence from evaluations of policy implementation. English and Scottish administrations intervened to facilitate the patients' journey through the system, reduce fragmentation; reduce waiting times in emergency departments and to address the potential gaps in service provision when GPs opted out of 24-hour responsibility. A lack of clarity as to whether these services were providing urgent care only, or addressing all unscheduled care needs, impacted on the types of service model implemented and commissioned. The need for integrated service provision, sensitive to local needs and settings and the further development and expansion of roles other than those of nurses were also themes.

Commissioned evaluations identified how local sites tailored national initiatives, with different skill mix solutions evident. Professional issues, the impact of new models of service provision on existing services and on the sense of professional identity evident within GP co-operatives, were unacknowledged entities in all of the policy-level documents but would easily facilitate or destabilise skill mix configuration in the urgent care workforce. There was little evidence to suggest that any integrated service or new role has an impact on existing services – indeed, every new role appeared to generate its own patient base, rather than reduce demand elsewhere.

How urgent and emergency care policy was implemented at a local level and the internal drivers shaping that process was explored in interviews with senior executives in the case studies. Economic considerations, anticipation of skills shortages, local context and culture, challenges of rurality and distance were important stimulants for workforce change. External drivers for change included government policy, but also included regulatory and legislative factors. The characteristics of local urgent care networks within the case studies appeared to influence responsiveness to policy.
5.1 Introduction and aim

The developments observed in the re-configuration of the urgent care workforce have not occurred in a vacuum but, rather, have developed in response to a range of drivers, operating both nationally and locally. In order to understand the developments within each of our case studies it was first necessary to identify and map these drivers and then to understand how these operated in different settings. The research question addressed in this section is “what have been the social, political, historical, environmental and economic influences on changing working patterns in this context?”

The aim was identify and understand the range of drivers to which organisations have had to respond and how these related to urgent care commissioning, particularly in England. This was addressed in three stages: (a) a review and critique of macro-level health policy relating to urgent care out-of-hours; (b) a similar review and critique of the major evaluations of new models of urgent care undertaken in the previous decade (principally, though not exclusively by, members of the current research team); (c) interviews with senior managers and commissioners within each case study.

5.2 Study propositions

The proposition addressed in this section is:

P1. The main internal drivers for changing the skill mix of the workforce are local skills shortages and the need to reduce health care costs. External drivers for change include government policy requirements and recommendations.
5.3 External drivers that have shaped the changing configuration of workforce patterns

5.3.1 UK health policies

A key external driver was political imperative, as outlined in a succession of policy documents addressing out-of-hours care and emergency care, as well as macro-level health policy. However, health policy was itself responding to particular drivers, notably maintaining the patient at the centre of the health system journey, keeping patient waiting times to a minimum and dealing with the impact of the 2004 GMS contract, when many GPs opted out of 24-hour responsibility for their patients.

Policy documents were generally long on rhetoric, but short on evidence. Those dealing with health care provision at the macro-level did not generally deal with out-of-hours or unscheduled care workforce changes in any detail. Primary Care: The Future (NHS Executive, 1996) stated that primary care must be available 24/7 for emergency care and highlighted the need for multi-professional working. It acknowledged that GP co-operatives were developing innovative, high quality services, but that out-of-hours medical care needed to be flexible, depending on the geographical context of the area served. Choice and Opportunity (Department of Health, 1996) released by the Health Departments of Scotland, Wales and Northern Ireland, also mentioned the need for local flexibility in service delivery, but did not explicitly mention out-of-hours, emergency or unscheduled care.

The NHS Plan (Department of Health, 2000) detailed several case studies of service re-design, incorporating workforce changes. These included examples of substitution (emergency department nurses using computerised decision support systems to triage patients instead of doctors); mixed models of enhancement, substitution and delegation of roles (multi-professional rapid response teams providing emergency care in patients’ homes to prevent hospital admissions); and role enhancement in emergency departments (extension of nursing and radiographer roles allowing the creation of community based nurse led accident services connected to the hospital through a telemedicine link). However, in only one example was there evidence of role changes leading to the achievement of a pre-defined outcome: use of emergency department nurses to triage patients reduced waiting times from 3-4 hours to an average of 36 minutes.

The equivalent Scottish document, Our National Health (Scottish Executive, 2000) described two models pertinent to urgent care: NHS 24 and the extension of pharmacists’ roles. NHS 24 built on the experience of NHS Direct in England to provide a telephone- triage, advice and consultation service led by nurses. This model, now implemented across Scotland, was an example of an innovative role development in Scotland, although based on the enhancement
of pre-existing nursing roles for telephone triage in GP out-of-hours co-operatives and daytime surgeries. While extended roles for pharmacists were also proposed, there was no explicit mention of extending this into emergency or urgent out-of-hours care.

Definitions

Before reviewing the service models proposed, it was helpful to review the definitions of out-of-hours, urgent and unscheduled care contained with the policy literature.

There was a clear definition of the “out-of-hours” period: care provided from 6.30pm until 8.00am on weekdays, all weekend, Bank holidays and Public holidays (House of Commons Health Committee, 2004; National Audit Office, 2006). What was not clearly defined was whether such services should be dealing with urgent care or unscheduled care. This was particularly problematic for primary care-based services in England, where a lack of definition from the Department of Health was held responsible for the difficulties faced by Primary Care Trusts to plan or commission services appropriately (House of Commons Committee, 2007). This was dealt with more explicitly in Scotland, there was a clear definition of unscheduled care in use:

"NHS care which cannot reasonably be foreseen or planned in advance of contact with the relevant healthcare professional, or is care which, unavoidably, is outwith the core working period of NHS Scotland. It follows that such demand can occur at any time and that services to meet this demand must be available 24 hours a day." (NHS Scotland, 2005; p92).

This lack of clarity regarding whether services were dealing with urgent or unscheduled care may have impacted on the type of workforce configurations set in place.

The “problem”

Implicit in most policy documents was the notion of a “problem” to be addressed. In 2000, Raising Standards for Care (known colloquially as the Carson report, after the leader of the review team Dr David Carson), acknowledged that while there had been many innovative developments in the provision of out-of-hours care, the patients’ journey was often disjointed and involved multiple, disconnected service providers (Department of Health Independent Review of GP Out-of-Hours Services in England, 2000). Carson recommended that proposed models of service development should meet the needs of patients, rather than patients having to fit the service model. In addition, the Review Team questioned whether the NHS was getting best value from the money spent on out-of-hours services, or whether the money could be better targeted.

A second problem area in urgent and unscheduled care was identified within emergency departments, where a reduction in waiting times was a clear
Government target (Department of Health, 2000) along with the view that patients with minor illness and injuries needed to be dealt with differently in emergency departments.

The final problem area followed the implementation of the new GMS contract in 2004, when up to 90% of GP practices chose to opt-out of 24-hour responsibility for their patients (National Audit Office, 2006). Primary Care Trusts and Health Boards thus became responsible for the provision of patient care in the out-of-hours period and had to make contractual arrangements to fulfil this obligation within a short period and with little time to develop new services.

The "solution"

To address these issues, a number of solutions were proposed within the policy documents. However, critical analysis of these solutions showed that they fell into two major paradigms:

**Service integration**: Principally integrated approaches to delivering out-of-hours care and/or co-location of primary care services beside or within emergency departments.

**Role innovation and substitution**: New or enhanced roles, particularly for nurses including telephone consultation and triage, and emergency care practitioners located within emergency departments.

These were not independent entities but rather inextricably linked with service integration only able to occur alongside the development of new and extended roles for nurses and other professional groups. However, there were two rather distinct sets of policy and evaluative literature: one set dealing with the integration of primary care out-of-hours services; the other set dealing with workforce developments in the A&E setting.

### 5.3.2 Integrated models of primary care out-of-hours services: Policy and evaluation evidence.

As previously described in Section 2, the provision of out-of-hours urgent care had undergone radical change in the 1990s, when GPs formed out-of-hours cooperatives and the model of 24-hour responsibility for patients began to disappear. However, in essence these systems did not encompass any great change in workforce configuration as the principal provider of care remained the GP. Of greater relevance here was the development, in England, of NHS Direct. Proposed by the new Labour Government in 1997 in *The new NHS: Modern, dependable* (Department of Health, 1997), NHS Direct was to be nurse-led and aimed to provide the public with health care advice 24 hours a day, helping patients to either self-care at home or to know where to seek appropriate help. An additional aim, however, was to reduce demands on other services such as out-of-hours and A&E departments and the ambulance
service. Three Wave 1 sites were established in 1998, in Lancashire, Milton Keynes and the North East serving a population of 1.3 million and were evaluated by the Medical Research Unit, University of Sheffield (Munro, 1998; Munro, 2000).

NHS Direct was a nurse-led telephone triage service, which demonstrated both role innovation (nurses trained in telephone triage) and substitution (nurses substituting for GPs in the provision of health care advice and triage), both particularly apparent in the out-of-hours period. Early evaluation found that service use was lower than expected, although this did increase over time. (Munro, 1998; Munro, 2000; Munro, 2001). The interim reports showed that there were more calls for women (57% of total calls); call rates were highest for the under-5s and lower than expected for the over-65s; and most calls were in the out-of-hours period (71%). However, NHS Direct appeared to struggle to meet its principal outcomes: up to one-third of callers received advice on self-care, which may have been less than originally anticipated. There was no discernable impact on either ambulance service or ED activity. However, in areas were NHS Direct was operating, the previous trend of increasing use of GP out-of-hours co-operatives appeared to decline although a lack of control areas meant that a true attribution of this effect to NHS Direct could not be made. While patient satisfaction with the service was high, some callers complained that NHS Direct was an additional service layer, and that they then had to make another call to contact the service provider they really required. This was particularly true for patients requiring to be seen by an out-of-hours primary care service. In addition, the nurses were not co-located with any other services in any meaningful way, other than (in some sites) sitting in an emergency department. Thus, there was little or no service integration with other providers and few opportunities to truly develop this new role.

It was recognition of this stand-alone nature of NHS Direct which led the Carson report (Department of Health, 2000) to outline plans for greater integration of out-of-hours care within geographical areas. This report described more detailed proposals of workforce change, both potential and actual, including the development of existing out-of-hours co-operatives, with and without telephone triage; exemplar sites integrating NHS Direct with existing co-operatives; walk-in centres; and triage within emergency departments by GPs and nurses to identify primary care cases. In most examples, the principal staff groups considered were GPs and nurses. Integrated models were proposed in which nurses could develop their skills and competencies in order to triage patients and conduct face-to-face consultations without reference to a GP, although co-location of GPs and nurses was recommended. Predefined outcomes were identified as faster, more convenient access for patients and improved patient satisfaction.

Two examples of a more integrated approach were the exemplar sites in England and NHS 24 in Scotland.
The Exemplar Programme was a result of the Carson review, which recommended a single, integrated out-of-hours system in which all the patient’s needs could be dealt with through a single call. (Lattimer, 2004). The service had two principles: first, that patient access to out-of-hours care was simplified and dealt with in one call; second, that all the professionals involved in the delivery of that care would work together. There were 34 exemplars, located across England and implemented between November 2001 and March 2002. As well as the role for NHS Direct nurses, three of the exemplars had developed innovative nurse roles, particularly in triage, face-to-face consultations with patients in primary care centres and, in one site, nurses carrying out home visits. However, patients’ views of these roles were not reported. Only 19/31 (61%) of the exemplars achieved full integration with NHS Direct in the out-of-hours period. Nine/31 (29%) achieved single call access from their practice (i.e. patient calling practice, being automatically routed to NHS Direct, then passed to an out-of-hours service, if required); a further 13 (42%) had single call access from some practices, while others provided a second number for patients to call.

The impact of the exemplars on other services was difficult to monitor. There was a reduction in total out-of-hours calls in both exemplar and control sites. ED demand rose in all sites, but this did not appear to be due to integration. There was also an increase in 999 patient transports, which reached statistically significance in two case studies. The authors suggested this might be due to patients circumventing the service and calling 999 directly, but could not prove or disprove that. Patients were satisfied with the service (>80% satisfied or very satisfied), although this was higher if looking for advice or information only or if patient needed only one call to contact the service.

Staff reported challenges in developing new working relationships, especially between GPs and nurses - exacerbated by geographical distance between NHS Direct and the co-operatives, which were not always helped by co-locating staff in "spoke" arrangements. Some of this was due to technical issues regarding systems and data exchange, but also due to a feeling that co-operatives were losing a role when telephone triage was taken over by NHS Direct. Staff did think that there were potential benefits for patients and that, in the future, out-of-hours care would be provided by multi-professional teams.

NHS 24 was established in May 2002 as a national service (Heaney, 2005). It was set up as a special Health Board, with a remit to “front-end” all out-of-hours calls and to fully integrate with established out-of-hours co-operatives. Indeed one its principal aims was to provide a “one and done” service, with patient needs dealt with in one telephone call. Like NHS Direct, NHS 24 also aimed to reduce demands on out-of-hours and emergency departments and
the ambulance service, as well as provide self-care advice. It too was a nurse-led telephone triage and consultation line, with nurses based in NHS 24’s own call centres, distant from the other provider services. Implementation of this service was more difficult than originally anticipated, with IT difficulties and a lack of technological readiness in the co-operatives. The proportion of calls in the out-of-hours period was much greater than anticipated, at 90% of total calls, and the call volume rapidly escalated, leading to the use of call-back. Although patient satisfaction was initially high, this reduced as call-back times increased and out-of-hours service provision changed due to the implementation of the new GMS contract. There was less self-care advice given to patients than originally expected. Like NHS Direct, ED and ambulance services did not see any reduction in demand; total contacts with GP out-of-hours co-operatives, however, did decrease as they no longer had to deal with telephone advice calls. However, the professional identity of the GP co-operatives were damaged, leading to resentment and a lack of confidence in this nurse-led service, possible exacerbated by the lack of physical co-location (Haddow, 2007).

This issue of professional confidence, in particular that of the GPs in out-of-hours co-operative having confidence in the nurses ability to conduct telephone triage arose in both the Exemplar Programme and in NHS 24 (Lattimer, 2004; Heaney, 2005). The nurses were often perceived to be more risk averse and therefore triaged “safely”, being more likely to pass patients onto the out-of-hours service than to provide self-care advice, although work exploring NHS 24 nurses’ views of risk was unable to prove or disprove this assertion (O’Cathain, 2007).

The next major, external driver was the hand-over of responsibility for out-of-hours primary care services from GPs to primary care organisations (PCTS in England and Health Boards in Scotland) as a result of the 2004 GMS contract. This led to a number of reviews of the provision of out-of-hours primary care services, in both England and Scotland. The first of these, by the House of Commons Health Committee, acknowledged “the crucial importance of skill mix in delivering high quality and cost-effective out-of-hours services” but also proposed that the (then) imminent hand-over of out-of-hours responsibility from GPs to PCTs was an excellent opportunity to design new models of care around patient need and to dovetail these with existing unscheduled care provision (House of Commons Health Committee, 2004). However, it was also acknowledged that out-of-hours organisations were likely to remain heavily dependent on doctors for at least three years, until other appropriately trained health professionals were ready. Drawing on evidence from several case studies, the report outlined examples of nurses substituting for GPs and enhancing their own role (e.g. where a GP co-operative was collaborating with an NHS walk-in centre to provide care); nurse practitioners taking on a triage
role in a community hospital; community based nursing or mental health teams co-located with GP out-of-hours services; and the training of nurses and paramedics to work as emergency care practitioners, integrated into out-of-hours services. In general, the aims of such re-designs were not clearly stated, but appeared to include a reduction in GP out-of-hours workload and the development of new roles to substitute for GPs. Such new models of service provision were also outlined in a Scottish document, Decide to admit v admit to decide (Centre for Change & Innovation) which described similar models of service re-design.

The National Audit Office reviewed out-of-hours care in England in 2006 (National Audit Office, 2006) with a particular remit to look at the impact of the hand-over of responsibility to PCTs. Key findings included the lack of clarity as to whether out-of-hours care was restricted to urgent care or encompassed unscheduled, non-urgent care. Unlike the Carson recommendation of an integrated care pathway, the NAO found that there was a divergent market developing with multiple providers providing different elements of the service and that integration was proceeding at a much slower rate than originally recommended. Although a GP-led model still predominated, different models of skill mix were becoming apparent. Examples included the introduction of small numbers of nurses, emergency care practitioners and paramedics into services to carry out specific tasks, e.g. call handling, telephone triage or home visits. However, such models were generally small scale and often increased service costs in the short-term. The NAO concluded that no single professional could replace a GP because of the wide range of skills and competencies that they bring. There was also little or no comment on the impact of new models of skill mix on patient outcomes and experience.

In 2006, the Department of Health again reviewed urgent care provision, developing a conceptual model for the delivery of urgent care (Department of Health, 2006). Again, an integrated model was proposed with the view that, a far as possible, a patient’s urgent care needs should be met at the first point of contact through the physical co-location of services, e.g. urgent care and emergency departments services. However, it was recognised that service reconfiguration should meet local needs, with the right mix of workforce skills and facilities for the local setting. The on-going need for a new and clear definition of urgent care was also acknowledged.

The House of Commons Public Accounts Committee scrutinised English out-of-hours care in 2007 (House of Commons Committee of Public Accounts, 2007). It too commented on the failure of the Department of Health to define whether out-of-hours care was an urgent or unscheduled service as a major concern. Quality requirements, particularly those relating to access, were not being met
and the increased use of staff other than GPs was viewed as a cost reducing measure, although there was no evidence as to whether or not this had been the case.

Audit Scotland reviewed provision of out-of-hours care in Scotland. (Audit Scotland, 2007). While they acknowledged that most patients remained satisfied with the service provided, the continued reliance on GPs to staff out-of-hours services was unsustainable in the long-term. They recommended that new skill mix models need to be developed, including the use of salaried GPs and expanded roles for nurses and paramedics.

5.3.3 Role innovation and substitution: policy and evaluation evidence.

Integrated services led to new and enhanced roles for nurses, where they substituted for out-of-hours doctors, triaging calls and providing advice. However, new and innovative roles were also being developed elsewhere, with the development of walk-in centres and particularly in emergency care where role innovation affected other professional groups as well.

Walk-in centres for England were announced by the Department of Health in 1999 and set up in 2000. Key features of the service were: wide opening hours (typically 7am to 10pm); immediate walk-in access with no appointment necessary; convenient city/town centre locations; the provision of information, self-care advice and treatment for minor conditions. Walk-in centres were designed to build on, not compete with or duplicate, existing services and to maximise role of nurses, with CDSS support.

Evaluation of the walk-in centres (Salisbury, 2002) found that they did indeed increase access to services, with a higher proportion of young adults, men and more affluent members of the population using them compared with general practices. However, although they had extended opening hours, most attended between 9am and 4pm. Patients were very satisfied with their care. They used the centres as they were more convenient, with faster access and were generally unconcerned about lack of continuity of care. Indeed, walk-in centres were viewed as an alternative provider for less serious problems. This was borne out by the low level of referrals: 13% of patients were referred on to a GP and 6% to A&E, and the centres had no impact on activity of nearby emergency departments, out-of-hours providers or general practices. However, other health care professional groups were not always as supportive, with ED consultants and GPs most critical of the concept. Walk-in centres also appeared to be less cost effective, with the mean cost of a visit modelled at £18.36, compared to £15.00 for a GP consultation or £7.00 for a practice nurse consultation.
Emergency care has also been the focus of several policy documents, which progressed from policy ideas, through implementation to reporting on outcomes through selected case studies.

Reduction of waiting times in emergency departments was first detailed in the NHS Plan and accompanying Implementation Programme (Department of Health, 2000). Although no workforce model was proposed to achieve this, other than that a range of health professionals should be utilised. Following this, Reforming Emergency Care outlined a range of models designed to ensure that patients were seen by the most appropriate health care professional and to reduce waiting times in emergency departments for minor illness and injury (Department of Health, 2001). These included the development of nurse-led minor injuries services co-located in emergency departments; role substitution within emergency departments (GPs replacing emergency departments consultants; nurse practitioners and paramedics replacing GPs and trainees); and greater use of NHS Direct’s Clinical Assessment System to allow nurses to triage patients. The intended outcomes were clearly stated and included a reduction in waiting times and in hospital admissions.

This was followed by an implementation document, which reiterated many of the points made in Reforming Emergency Care including a commitment to recruit 600 additional emergency departments nurses to allow the separation of services for patients with minor illness/injuries from those with more serious conditions (Department of Health, 2002).

In each of these models, there appeared to be scope for role enhancement for nurses (e.g. in developing triage and face-to-face consultations); substitution (again, nurses substituting for GPs); and innovation in the development of new nursing roles. However, the potential for involving other professional groups such as paramedics was not clear.

Transforming Emergency Care in England, issued in 2004 (Department of Health, 2004) reviewed developments in emergency departments staffing and the extended roles of staff. As well as increased numbers of emergency department consultants and emergency care practitioners, there was evidence of extended roles for both nurses and allied health professionals. Examples included “See & Treat”, where a patient presenting with a minor complaint could be assessed, treated and discharged by a single clinician, thus removing delays in triage and in waiting times. This model, rolled out by the Emergency Services Collaborative, used a range of clinicians including emergency nurse practitioners. Other examples were the implementation of Unscheduled Care Networks and the development of Emergency Care Practitioner programmes.
However, evidence of outcomes relating to these initiatives were generally missing.

A report dedicated to the innovative role of emergency care practitioners (ECPs) (NHS Modernisation Agency, 2004) described how this would be tested in three environments: the acute setting (emergency departments and minor injuries units); pre-hospital setting working within the ambulance service; and in primary care out-of-hours services (e.g. by providing home visits). Working as autonomous practitioners, ECPs were expected to complement existing clinical teams and to work across traditional boundaries. Expected outcomes included a reduction in emergency department attendances and waiting times; a reduction in waiting times in out-of-hours care, particularly for a GP home visit; and a reduction in referrals to acute care.

The ECP role was the subject of a dedicated evaluation (Mason, 2004). The first phase, a broad descriptive study of 14 of the 17 ECP sites, found that ECPs were working in a range of settings, but mainly in the ambulance service, EDs, minor injuries units, out-of-hours primary care and walk-in centres. Training was in place, but varied in length from 12 to 27 weeks. The second phase focussed on three sites: 2 in rural locations and 1 in an urban setting. Most ECPs came from a paramedic background, but there were some from primary care and ED nursing. There was variation in how ECPs were deployed, with some working mainly with 999 response calls or the out-of-hours service, others located within walk-in centres of emergency departments. A controlled observation study was conducted, comparing ECPs with the equivalent other professional in each setting (e.g. a paramedic or A&E nurse). Fewer ECP patients underwent investigations (e.g. fewer ECGs or blood tests); advice, drug treatments and wound treatments were given more frequently by ECPs; and more patients were discharged to home by ECPs. From the patient perspective, patients in the ECP group more satisfied and there was no difference in 28-day outcome or in self-reported health. The mean length of episode was significantly longer for ECP group (1h, 29min, 39sec in ECP group vs 1h, 1min, 42sec in control group), although it was suggested that one reason for this might be that some patients were initially under care of paramedic crew, then handed onto the ECP. However, ECP costs were also lower (£360 per ECP-treated patient vs £651 per paramedic-treated patient). It must be added, however, that some of these differences may have been attributable to different case mix.

Some additional evidence about the ECP role was included in The ECP Report – Right Skill, Right Time, Right Place (NHS Modernisation Agency, 2004) suggesting that ECPs transferred fewer patients to emergency departments than traditional ambulance services; that there was a reduction in emergency
departments attendances; and that waiting times for an out-of-hours home visit were reduced. However, investment in training and equipment meant that anticipated efficiency savings would take longer to achieve than anticipated and that increased demand on the service might not result in the hoped for reduction in total service costs.

The National Audit Office also reviewed emergency care in England (National Audit Office, 2004). They reported that “See and Treat” had been implemented in some form by 30% of the 126 Trusts responding to their survey, with evidence of a reduction in emergency departments waiting times. (e.g. In Epsom and St Helier NHS Trust, average journey time for patients with minor illness/injuries reduced from 2 hr 49 minutes to 90 minutes.) ECPs appeared to have reduced trips to emergency departments, at least in London, although there was no clarity or consistency around the training needs of these new staff. The NAO also reported that there should be greater integration between NHS Direct and emergency departments.

5.3.4 Conclusions from policy and evaluative evidence

Review of policy documents over the past decade identified clear drivers from both the English and Scottish administrations, which pushed Health Authorities and Boards to re-configure their workforce. These were focussed on the need to facilitate the patients’ journey through the system, reduce fragmentation; reduce waiting times in emergency departments and to address the potential gaps in service provision when GPs opted out of 24-hour responsibility. However, the lack of clarity as to whether these services were providing urgent care only, or addressing all unscheduled care needs, impacted on the types of service model implemented and commissioned. The need for integrated service provision, sensitive to local needs and settings and the further development and expansion of roles other than those of nurses were also themes. However, this literature operated at a national level and, while the need to be aware of and sensitive to local needs, was acknowledged many times, this was not the role of these macro-level policies.

Commissioned evaluations were able to unpick some of these locality issues. These identified the extent to which local sites tailored national initiatives, with different skill mix solutions evident. This interplay of professional issues, in particular the impact that new models of service provision had on existing services and on the sense of professional identity evident within GP co-operatives, were unacknowledged entities in all of the policy-level documents but would easily facilitate or destabilise skill mix configuration in the urgent care workforce. There was also a lack of evidence to suggest that any integrated service or new role has an impact on existing services – indeed,
every new role appeared to generate its own patient base, rather than reduce demand elsewhere.

To fully understand the way in which urgent and emergency care policy was implemented at a local level and the internal drivers shaping that process, it was necessary to explore these issues with key stakeholders in the case studies.

5.4 Internal drivers that have shaped the changing configuration of workforce patterns

Interviews with senior executives in each case study with responsibility for strategic commissioning and corporate governance (see section 3.4.6). From these interviews a picture emerged of local leadership and the relationships between commissioners, policy makers and managers that also exerted an influence on the shape of local services.

Detailed and repeated reading of the interview records from the stakeholder interviews identified five main themes as the principal sources of data regarding the drivers for change. They were

- National policy
- Local and historic factors
- Economic factors (strongly influential in each site)
- Geographic factors
- Regulatory and legislative factors

The first four themes were to some extent anticipated in the interview topic guide and the schedule of standard interview questions used in each location. No other set of factors could be identified from the interviews as a potential omission from this schedule, although in each location the personal influence of particular individuals was clearly apparent.

5.4.1 Internal drivers for change at ED-med

Leadership in the ED-med case study exemplified a social marketing approach, combining collaboration and competition in ways designed to ensure that there was a genuine stakeholding created in the change agenda for urgent health care. The influence of locally commissioned management consultants was apparent in a PCT approach which sought to incorporate long established agencies as much as it did novel forms of service delivery. National policy making was a trigger for action around commissioning and was synonymous with an underlying theme of change management. This permeated the approach to all the designated targets for specialist commissioning in the PCT,
including urgent health care, as well as the terms of reference for the Joint Commissioning Board established in 2007 with the unitary local authority. ED-med’s newly merged PCT itself had the philosophy of a change agency, regarding itself as a conduit for a future health care system based on the independent regulation of combined health and social care, a mixed economy of service providers, and devolution to emerging practice based commissioning models. As in Centre-med below, the influence of successful social services outsourcing was strong and for urgent care now, as for mental health, intermediate care and adult services previously, there was a clear appreciation that in-house NHS resources were no longer sufficient.

In PCT managerial terms all of these influences were brought together under the Director of Commissioning with a common priority of enhanced ‘Unscheduled Care’ that complied with national performance standards and clinical guidelines. Each specialist PCT manager was encouraged to look beyond conventional organisational and geographic boundaries and to develop effective tactical alliances. Both were evident in urgent health care developments, from the commissioning of the not-for-profit GP out-of-hours service with PCTs from within another Strategic Health Authority, to the pairing of PCT and LA managers with local GP leaders in the three territorial commissioning teams that relate to the Joint Commissioning Board. The need to maintain professional and public confidence was a key leadership influence.

### 5.4.2 Internal drivers for change at Centre-med

Integration and partnership were strong themes in the Centre-med health community where, since October 2006, the boundaries of the PCT had been coterminous with those of the City and its Council. As a result, lateral relationships were the principal vehicle for local leadership. All directors had direct service responsibilities and the commissioning function was effectively taken forward as an amalgam of identified best practice developments drawn from right across the health and care sectors. The local authority had historically been particularly progressive in establishing pooled budgets and parallel planning cycles for adult care, inter-professional teams and intermediate care, the influence of a civic ‘modus operandi’ was significant. In the translation of national policy for urgent health care this became an expectation that development would depend on the third sector, which is regarded generally as the most promising source of innovation and positive change. Accordingly, the Joint Commissioning Board was chaired by the PCT Director of Care Pathways during the formative period of urgent healthcare initiatives to ensure that a consistent operational approach was adopted, regardless of the host agencies involved. Past local authority ‘best value’ tendering arrangements provided the successful point of reference for the contemporary drive towards market diversity in the supply side.

Centre-med was based in a growth city where many commercial and charitable organisations had their national headquarters. The currency of development
was that of ‘collaborative advantage’, ‘shared risk’ and ‘venture finance’. This appeared to apply across the private and public service sectors and saw them come together in combined investment initiatives as a part of the preventive and community based urgent health care network. The presence of third sector services allowed the commissioning of urgent health care to be located by the PCT in primary care rather than local acute settings, despite what was seen as an overall weakness in general medical practice because of the relatively high number of small, peripheral and under developed surgery sites. The local control exercised by the PCT of shared facilities was illustrated by the contracting in of emergency care practitioners from the super-regional NHS ambulance trust at the city’s main primary care centre, where the on-call doctors and nurse-led walk-in services were based.

Centre-med epitomised the way in which central policy was converted into local action in its locality. Commissioning and service delivery were a single, combined process in which there was little distinction of function. In relation to urgent health care the approach was to use all available resources, regardless of proprietorship. This aimed to obtain the flexibility, diversity and integration of both services and, if necessary, organisations which can enable, in NHS terms, effective decentralised management at PCT level. The result was a primary care team approach to urgent care at a new (210,000) population level, rather than for the traditional health centre catchment areas, which exploited new roles and premises for extended community nurses and social workers, ECPs and health care assistants, and above all their counterparts in the local private, voluntary and independent (PVI) sector.

5.4.3 Internal drivers for change at Community-med

The Scottish NHS region in which Community-med was placed had a history of pioneering urgent care and primary care innovation. GP fundholding was adopted in the region long before anywhere else in Scotland. Internationally innovative telemedicine links were established between the ED and a network of community hospitals to deliver urgent care locally. Two well established and co-ordinated general practice co-operatives covered almost all the 350,000 population of the region, and this meant early involvement in the introduction of NHS 24. In 2004 all the GPs in region opted out together. The result has been a pioneering, directly managed Primary Care Emergency Centre and a network of treatment centres in Community Hospitals, supported by an innovative skill mix that includes GP employees practising alongside nurse practitioners, plus in situ, a trained community pharmacist and paramedic emergency care provider.

Policy in the devolved Scottish parliament was focussed on joint planning, a trust in professionalism, and a rejection of commissioning and market approaches to service delivery. NHS Scotland was seen as the service delivery mechanism. This led to a standardised nature of provision nationally, through the direction of the Scottish Parliament. Hence, NHS 24 was designed as the
integrated front end of all out of hours contact, providing a single centralised communications hub and triage service across the nation. Almost all GPs, except some in the most remote locations, opted out and all health board areas took responsibility for the delivery of out of hours care. In the Community-med region the NHS Board is, to some degree, distant from the political power bases of the central belt of Scotland. Perhaps because of the legacy of independent pioneering leadership described above, Community-med constituted a coordinated and planned programme of service planning and delivery.

Accordingly, the eight designated satellite emergency care centres under its control can be counted as an authentic, strategically managed change. Substitution and new skill mix occurred within this framework, subject to national quality standards. The way was paved for a concerted shift over time towards an integrated and co-ordinated service populated by a sustainable team-based workforce.

5.4.4 Internal drivers for change at Hub-med

Since 2005, urgent health care in the Hub-med region had been consistent with and long established pattern for service development. This pattern had fixed points: strict adherence to national policy and performance requirements; line management control and direction of organisational change; a reliance on in-house NHS preferred providers for the introduction of novel interventions, and a principle of minimum disturbance to frontline patient and primary care relationships. The early recognition by the Strategic Health Authority in 2005 that Urgent Health Care was emerging as both an authentic and distinct commissioning and provider specialism, was balanced by an awareness that the skills and competencies required for the functions of this specialism would require a considerable period of time and input of developmental resources to acquire. This perspective confirmed the need again for strong central leadership and an institutional approach.

Accordingly, by the time of the initial telephone interviews with lead SHA/PCT representatives in October 2005, Hub-med could be identified as a leading example of a national trend for major transfers of call handling and direct care services to NHS Ambulance Trusts, frequently at the expense of NHS Direct and such agencies as Primecare. This trend was evident across England as the first significant changes in urgent healthcare workforce went in parallel with direct SHA management of the commissioning process and emergent PCT relationships with providers. By 2007 its urgent health care Joint Commissioning Board had absorbed into its membership, not just nine PCTs (in July 2005), but the County Council and all its PVI sector agents, the Mental Health Trust and providers, plus the Ambulance Service Trust. In January 2008 the latter was the hub for virtually all urgent health care communications: a position obtained through its role as the commissioning change agent of the joint Board and original strategic partner of the senior management in the SHA.
By this date the Ambulance Trust had subsumed two county ambulance trusts, two minor injury units, a range of local GP cooperatives and dental out-of-hours services, with the communications hub also including NHS Direct.

The effective use of hierarchic NHS leadership and its most powerful institutional relationships to deliver national policy does not preclude further changes in both commissioning and provider arrangements in the future. Moreover such changes were anticipated to stretch beyond conventional NHS boundaries, although still subject to NHS performance requirements. The past experience of primary, nursing and palliative care developments were cited locally by both the PCT and the Ambulance Trust. In each case there were a diversity of providers, often drawn from the private and voluntary sectors; and in several instances these are associated with additional payment and more flexible purchasing arrangements. The centralist model of Hub-med can be understood as seeking to create NHS leadership of the whole care system and not just its institutions; and urgent health care developments can be seen as one part of this management led movement.

5.4.5 Internal drivers for change at PCT-med

By 2007/2008 this PCT was subject to a strategic health authority which was strongly committed to exploring the potential for radical improvements arising from the post-millennium modernising reforms of the NHS. The new emphasis on cross-sector collaboration meant a focus on ‘whole systems’ and a more holistic view of what might constitute ‘public health gain’. The Director of Public Health was a joint NHS and local authority appointment and PCT senior management were active participants in externally facilitated learning sets involving national leaders, other PCTs, international contributors and business. In this context urgent health care was regarded as a likely candidate for major change involving new forms and ownership of provision and its configuration.

This conceptual clarity at executive level, however, coincided with a more complex situation at the level of operational practice. The relationship between central policy, local commissioning and service delivery required an extended period of exploration. During the research period, commissioning had not fully developed as a formal management function, and as a result the commissioning of urgent health care had remained a prospective third tier role which it was anticipated could be undertaken after the formal division of commissioning and provider agencies. Accountability appeared to lie with the Director of Systems Reform, with four local service managers responsible for the out-of-hours services.

In 2007/2008 the service delivery of urgent health care remained reliant on the emergency facilities of acute health care providers, NHS Direct, and a network of linked GPs prepared to undertake out of hours work in designated centres, following the decline of the original five area based GP/PCT and Primecare cooperatives in the county. The residual arrangements were derived significantly from past kinship and professional ties, and included not just
doctors but their practice mangers and support staff as well. At the PCT, the contracts and allocations for the urgent health care provided through these informal network enterprises were finally negotiated and agreed by the Director of Finance. For the patient it is unlikely that very much change or visible improvement will have been apparent, especially as funding for the services was reduced with local redundancies, resulting in a loss of experience and expertise.

The relationship between policy and service delivery seems to have been characterised by distance, without the presence of commissioning as an intermediary function. Local leadership had, on the one hand, been strategic about development and opportunistic at the grassroots service user level, but constrained by limited authority to act in parts of the system. Ultimately the opt out of general practitioner resource together with strong individual leadership of developments within the PCT harnessed the enthusiasm and commitment of local clinicians to build an integrated service in a large part of the region, manifested by the establishment of multiple steering groups and their transition to performance management groups over time. A coherent overall pattern has been hard to discern however.

5.4.6 Internal drivers for change at County-med

The most immediately striking feature of the approach to the urgent health care policy agenda in this case study is that both change and continuity were automatically seen as belonging to primary care. This was a long established local convention with its roots in pre-GP fund holding days. In 2008 it was comprehensively demonstrated by the exceptional reliance on direct GP decision making in the reformed arrangements for new triage officers (whose role includes the monitoring of GP workloads); the deployment of ECPs, the Adastra software and mobile vehicle units and the staffing of the county’s nine primary care centres. At the PCT the lead executive responsibility for urgent health care was with the Director of Primary Care ‘and Commissioning’. In the county the stability of general practices and their personnel continued to be seen as the foundation of public trust in the NHS. Their local relationships were respected as pivotal, and this evaluation is reflected in the number and distribution of the nine centres that succeeded the original eight GP co-operatives. The bedrock outlook led to a deliberately incremental leadership style with innovations now available through the commissioning function introduced by the PCT in a step-by-step fashion.

This outlook also pointed to a clear delineation between primary and secondary care. Current urgent health care policies challenge this. All the resources of the health (and social) care system should now be deployed to respond to frontline referrals more appropriately. Accordingly the PCT recognised that a one dimensional approach would be insufficient, and that, from first tier level down, a corporate executive stance was essential if integrated services were to be achieved through altering the mindsets of previously proprietorial NHS
institutional providers. Accordingly, the PCT commissioning strategy for urgent health care had as its first stage the development of new partnerships with the ambulance trust because it was seen as the critical source of the key workforce changes in terms of, for example, new developments in emergency care practice, telemedicine, rapid response and new technologies. Its second stage also represented a new collaboration with the hospital trust on demand management with the co-option of an influential ED consultant to the leadership of a joint commissioning board in 2007 for urgent health care. This board was inter-agency and inter-professional, including local authority representation, and operated to NHS-wide (not hospital) parameters in terms of its performance objectives and milestones. The third stage of this incremental management approach was to ensure that community based health and social services maximised the capacity of, for instance, intermediate and domiciliary care schemes for preventive interventions with county council partners. The awareness and scale of this collaboration was said to have increased as a result of the major floods in the county in 2007 which commanded an inter-agency response.

In County-med, as elsewhere, in 2007-2008, despite the historic strengths of general practice based primary care, there was no expectation that comprehensive urgent health care strategies and the workforce changes they require could be effected through practice based commissioning. Indeed a fear of the latter being exploited commercially by one-off GP business ventures strengthened the case for directive PCT management of service developments. Integrated care has been seen to depend on integrated management at all levels, with clinical and executive leaders closely aligned, as illustrated by the composition of the joint commissioning Board for urgent health care. The local medical leaders had significant political power and, in this environment, the role of the ambulance service trust was essentially a technical one as the communications hub. As a signal of control over the strategic direction of travel, as well as an indicator of local relationships it was important that the PCT had directly employed as staff the GPs in the local centres, and the ambulance trust in the mobile units.

5.4.7 Internal drivers for change at District-med

In a Scottish Health Board area characterised by a series of small towns, large rural hinterlands and a location midway between the borders of England and the Scottish capital, the leadership of District-med was driven by the desire to maintain the responsibility for service delivery within the area. The context for policy was as stated above for the other Scottish case study, features being: joint planning, a trust in professionalism, and a rejection of commissioning and market approaches, the NHS seen as the delivery mechanism, national standards, and NHS 24 as the first point of contact for out of hours care. All GPs opted out of out of hours provision, and the local Health Board took responsibility for the delivery of the service.
The challenge for the local leadership was to deliver a locally appropriate and sustainable service across large distances for a relatively small population given these national constraints. In this context an innovative approach to workforce was a necessity rather than a choice.

5.4.8 Internal drivers for change at Walk in-med

The organisational context for urgent health care in this case study and its developments may be understood as that of an NHS internal market. The main characteristics of this were provider competition, self regulation, recurring efficiency drives, anti-monopoly practices and a commercial orientation. In behavioural terms the interactions in the local case study were the most complex of any in this study and the operational pressures the most intense. Dynamic change, as epitomised by short term contracts, staff turnover and the continuous pursuit of improved skill mix, is the life blood of a county which began with no fewer than 13 NHS Primary Care Trusts.

The Strategic Health Authority promoted a coordinated approach to local strategies between these PCTs through a county wide review, designed to share best practice and standardise monitoring systems. Walk in-med’s early development of nurse practitioners, and collaboration with the local ambulance trust and university on the curriculum design for ECPs found a following elsewhere in the county. By 2005/2006 a quarter of the local out-of-hours service was provided directly by nurse practitioners and the lead urgent health care commissioning responsibility at the PCT resided with an Assistant Director (Commissioning) who was also a lead professional nurse. At board level the executive responsibility for commissioning and strategic development have been brought together, while by contrast during the period of the research, the main management responsibility for providers’ services has had ‘interim’ status, as supply side contract tenures for out-of-hours services rapidly changed hands leading to the break up of the original five GP led co-operatives operating when there were 13 PCTs.

The evolution of the local NHS market seemed to have been strongly influenced by fears of inertia on the one hand, in terms of the negative effects of defensive GP co-operatives in nearby areas and, on the other, the dramatic scale of workforce developments in the regional ambulance service trust. By the beginning of 2007 this trust was already on schedule to have 120 ECPs in three local operational teams covering 60 per cent of the county 16 hours a day, every day. Moreover these were not merely back-up personnel. Their six month training covered long term conditions and pharmacology as well as assessment, minor injuries and illnesses. Their qualification enabled post holders to administer treatment in domestic settings and to make the full range of clinical referrals (including for admissions) in their own right. This scale of innovation has clearly provided a local stimulus to other urgent health care providers operating locally including commercial GP out-of-hours and GP co-operatives. By 2008 the PCTs were ready, if necessary, to commission and
contract beyond the county and conventional NHS boundaries converting this stimulus into something between a challenge and a threat to existing providers. Such initiatives did not lack SHA support.

5.5 The importance of networks in influencing workforce change

Through the exploration of internal drivers for workforce change it was clear that there were similarities and differences in the prevailing networking arrangements between the multiple organisations and services that contributed to the delivery of urgent health care in each case study. Decision-making about urgent health care arrangements appeared to be related to a prevailing pattern of largely lateral network relationships across the boundaries of individual organisations.

Four types of network could be discerned amongst the case studies, characterised here as ‘professional’, ‘executive’, ‘commercial’ or ‘administrative’. These were strongly exemplified by some case studies, others exemplified characteristics of more than one network type.

To the extent that networks enable system level responsiveness (Turner et al, 2007) they could be seen as important in mediating the extent to which the case studies responded to the external drivers identified in 5.3. All had potential to be highly successful in delivering sustainable workforce change.

Drawing on interviews with key stakeholders in the case studies with operational accountability for urgent health care provision and commissioning in each setting, the ways in which different networks evidenced their responsiveness to external drivers (particularly urgent care policy) balanced against local priorities were examined. In each site, the key change agent interviewed represented the prevailing network at play within the case study. Thus, in Hub-med (which was predominately an executive network) the key individual was the Strategic Health Authority Chief Executive; in County-med (a professional network) the key change agent was the GP Medical Director of the local ambulance trust.

5.5.1 The ‘professional’ network

County-med exemplified the professional network. Here the prevailing and most influential relationships were those between GPs. Stable general practices appeared to have the confidence of both the community and commissioners and changes in urgent health care were typically led from conventional surgery settings by individual GPs who themselves made a central contribution to the urgent care workforce and were responsible for most of the triage.

In the professional networks, context and culture tended to overwhelm all the other influences in relation to new national policies for urgent health care and their implementation. Local and historic factors decided the way in which things
were done, in particular the needs and differences of individual localities and the importance of preserving particular personal relationships between health care professionals and the public, especially between GPs and their patients.

Economic factors were significant in relation to cost containment. Examples included frustration that the costs of providing ‘a GP heavy service’ were exacerbated by reduced ability to make quick cost savings because of the particular need for local sensitivity and differential service planning when the professional agenda included no overall loss of business income. A PCT was compelled to achieve a “spend and save” balance through what it described as the use of more cost-effective skill mix configurations, but this was tempered by an awareness that it would take “at least twelve months to win over hearts and minds” in the professional network and local communities.

The PCT managers recognised that institutional partnerships and national policy did not, of themselves, offer the prospect of sufficient legitimacy with the prevailing professional network to deliver radical change. Cultural congruence and compliance were also essential. For example an ambulance trust was described as not having “had a particularly good reputation locally”, while there was a consensus from the early planning stages that NHS Direct, although a nationally supported organisation, was not going to be greatly involved at a local level. At County-med, the drivers for workforce change were shaped by local patterns of relationships and the desire to make urgent services an integral part of person centred primary care. Urgent health care was not divided into the separate conditions and their evidential sources, as occurred at the other case studies. As a result while new skills mix and substitution were still important challenges, addressing the centrally communicated policy values of choice and diversity were not. A professional network setting for urgent health care appeared to be intrinsically conservative.

5.5.2 The ‘executive’ network

The strongest example of an executive type network was observed at Hub-med. A tradition of strong corporate leadership from the statutory agencies appeared to have generated comprehensive systems wide control. For urgent health care, this was evidenced by influential and powerful multi-agency commissioning boards. Large scale call centre developments used major capital and technological investment through a regional ambulance service to cater for multi agency health and social care contacts and referrals. By contrast, the professional network type relied on systems of data collection overwhelmingly geared to the requirements of general medical services.

The drivers for workforce change at Hub-med, where an executive network operated, seemed altogether much simpler where support, vision and enthusiasm at Chief Executive level was clearly essential. This positional authority appeared to be used to the full in pursuit of total resource management. The replacement of fixed site GPs by mobile ECPs was firmly and consistently postulated as the pivotal point in the new workforce developments,
and the case for change was unequivocally presented. As a result the economic
drivers for urgent health care developments were constituents in a cost benefit
approach that applied to the whole health system. Urgent health care was
perceived to be everybody’s business, with acute units themselves seen as
central players in the proposed changes. This local style was explicitly aiming to
offer ‘national leadership’ in the NHS.

Board level joint commissioning at Hub-med ensured that all parts of the NHS,
social care and other relevant sectors were ‘on side’ with the workforce
changes required. Critically, the regional ambulance trust provided a unifying
communications hub to which both health and social services subscribed
without question. Here, interviewees made no mention of central regulatory or
legislative developments as drivers of change. The drivers were entirely defined
as the combination of local factors and national policies. Together they
represented a confidence in NHS performance management, on the simple
premise of integrating emergency and urgent health care in modern primary
health service settings wherever practicable.

5.5.3 The ‘commercial’ network

The commercial features of this network type appeared to stem from a market
orientation which included private sector providers of urgent health care
services with NHS Primary Care Trusts and clusters of GPs and nursing practice
units also exploring ways of moving to a more autonomous business format,
with at least quasi-independent sector status. Exemplified by the ED-med case
study, the principle of collaborative advantage (Huxham, 1996) applied to this
network type, which appeared to lead to greater diversity of innovations in
urgent health care. These included, for example, a mixture of specialist on call
clinics and telephone consultation facilities at a variety of venues with different
opening times.

Drivers for workforce change were identified by local interviewees as principally
regulatory and economic. Regulatory and legislative factors were identified
much more frequently as drivers for change than local, historic and geographic
factors. The presence of central political pressures was acutely felt at times,
especially in relation to the perceived need for 100% compliance in relation to
the targets for ED triage and overall waiting times.

Several actual and potential supply side agencies, from both the public and
private sectors, were referred to in ED-med (e.g. Macmillan charity, external
NHS ambulance trust, ‘Liverpool Care Pathway’ agencies). Respondents spoke
of huge inefficiencies in previous NHS and GP provision with the subsequent
need to ‘drive’ the operation of out-of-hours care as a business” and avoid the
potential risk of breakdown associated with single call centre hubs. It was also
important to these respondents that future quality be defined from a patient
perspective as “seeing the right person in the right place at the right time.”
Economic drivers were for individual cost savings and visible better value for money through a more general reduction in expenditure. Both the public and politicians were viewed as powerful drivers of the latter. The principal focus of individual cost savings or wider reductions related typically to skill mix configurations: in one interviewee’s words, “particularly the clinical input in our services”; and specifically where a referral “can be dealt with very efficiently and effectively by a nurse practitioner”. Hence in the commercial network, the PCT replacement of GPs by alternative nursing roles was a continuous theme. The latter appear to be viewed as cheaper, more controllable and more susceptible to competitive contractual pressures.

5.5.4 The ‘public administrative’ network

In direct contrast to the commercial network type, in the public administrative networks the most powerful horizontal relationships were between politicians and officials. In Community-med and District-med, the influence of the new devolved bureaucracy of Scotland was to some extent reflected in the consistency in the urgent care system derived from situating NHS 24 as the first point of contact for all patients. Whilst it might be anticipated that a restricted capacity for contributions to urgent health care from locally sited practitioners, managers, professionals and external agencies would apply, the challenges of rurality, distance and supply of GPs generated novel examples of workforce change nonetheless.

Although none of the stakeholders interviewed were from the public administrative networks, the in-depth case studies were operating in public administrative network mode, where the power in urgent health care decision making is exercised through a central political elite (as in Scotland). As the detailed case study accounts in Section 4 demonstrate, historic and geographic factors can play a significant role in the tactics of policy implementation; but for the formulation of urgent health care strategies and service delivery options it is national policy and legislation that almost exclusively holds sway. The combination of external and local factors is weighted heavily in favour of the former, and planned as opposed to emergent change is most apparent in the administrative network setting as a result. Conversely emergent change, in less predictable forms is most in evidence in the looser relational patterns of the professional and, in particular, the commercial networks.

5.6 Discussion

Together with data collection to support the descriptions of the case studies presented in section 4, evidence from the literature review and interviews with key stakeholders in the case studies has in this section been brought to bear on the proposition that the main internal drivers for changing the skill mix of the workforce are local skills shortages and the need to reduce health care costs.
and that external drivers for change include government policy requirements and recommendations.

Economic considerations emerged in stakeholder interviews as strongly influential internal drivers of change. Cost containment featured in the professional networks because of the costs of a model of delivery which depended on GP resource. Considerations of both cost and benefit featured in the executive networks where the ambition was to achieve control of resources across the health system, including acute and primary care. In the commercial networks, the potential for cost savings and better value for money that could be achieved through contracting with third sector and commercial providers and by substitution or replacement of GP by nursing roles appeared to be a key motivation for change.

Anticipation of skills shortages because of the likely widespread opt-out of GPs from out-of-hours responsibilities and because of local labour market factors meant that all the case studies had to some extent developed new roles and new ways of working to offset the effects of this. By the time of the main data collection for the study in 2006-7 the NHS had received considerable additional resources in response to calls to address widespread concerns about workforce shortages. The return of GPs who had ‘opted out’ as sessional workers within urgent care, for example in Hub-med, was nonetheless highly valued by the service.

There were other important factors, beyond economics and skill mix shortages that appeared to have been internal drivers of workforce change. These were the influence of local context and culture, the particular needs of local communities and sensitivity to preserving local relationships, including those with patients. Local health communities and their leaders had ambitions for service development that encompassed person centred primary care but also reflected a sense of local values. The challenges of rurality and distance also appeared to play a part in stimulating workforce change. External drivers for change did include government policy, but also included regulatory and legislative factors.

It is in the nature of case studies to emphasise the importance of local context and cultures. In this investigation, however, the significance for policy implementation of what has been termed ‘sense of place’ seemed overwhelming. The most challenging operational issues were encountered throughout this study in PCOs where this ‘sense’ was either missing or misdirected. The PCT-med account illustrates this well with a real dissonance seeming to exist between county level leaders and local service outlets for urgent health care. In such settings the main obstacle to change was not the absence of effective networks per se – because each of the networks described here had the capacity to be successful vehicles for workforce change - but the absence of effective decentralised structures and processes for the integration of services and multi-professional and new practitioner inputs. In this research, accordingly, decentralisation and integration emerged as principles for
contemporary urgent health care that were as powerful as the more often cited values of quality and choice. This analysis pointed to a direct antecedent relationship between the network typology and separate clusters of drivers for workforce change.

5.7 Revised study proposition

The study findings broadly supported the original study proposition:

P1. The main internal drivers for changing the skill mix of the workforce are local skills shortages and the need to reduce health care costs. External drivers for change include government policy requirements and recommendations.

In the light of evidence from the study it could be improved as follows:

P1a The main internal drivers for changing the skill mix of the workforce are economic (concern for cost containment or reduction; best value and system level resource management) and local (local context and networks, culture and priorities; real or anticipated skills shortages and geography). External drivers for change include government policy requirements and recommendations and regulatory and legislative factors.
6 Impact on staff practice

Summary

Examples of substitution of non-medical professionals for aspects of GP care, included nurses and ECPs seeing patients in treatment centres, making home visits out-of-hours; prescribing medicines and admitting patients directly to hospital for emergency admission. Call handlers prioritised the urgency of calls and receptionists, health care assistants and drivers worked flexibly and interchangeably to generate capacity.

There were new patterns of patient referral between non-medical practitioners and co-opting a second opinion had emerged. New ways of working required agreement about how to manage clinical risk and whether a GP needed to be present at a centre overnight (versus available on the telephone). GPs had confidence in the competence of nurses and AHPs to provide care when they had been involved in their training. Scheduling of out-of-hours medical work was increasingly undertaken by others, there being a trade-off between the potential that a visit or appointment may not have been necessary with efficiencies gained from appointments being arranged directly for patients who were likely to need to see a doctor. As nurses became co-workers with GPs in treatment centres there could be competition for consulting space and resources.

Individual staff found it difficult to gather feedback on the appropriateness of their decision making and on the quality of care they provided beyond occasionally checking the database to see what had happened to patients or receiving direct feedback from another professional involved in the care. Planned, professional conversations about the care of individual patients and event auditing were valued but there was scope to develop more systematic and learning orientated approaches to case review.

Training and education to support skill mix was often provided in house, but because of financial constraints this was limited to mandatory training in some case studies. Staff skilled in minor injury management required training in minor illness management and vice versa to be fully effective in treatment centres. Staff described exceptional personal efforts to manage their own learning including and training provided by GPs was highly valued. Clinical leadership by nurses and AHPs was developing but there were few consultant level staff and a need to develop career pathways in urgent care.

Skill mix ambitions in urgent care were tempered by difficulties in recruiting staff with the right skills, labour supply issues, lack of access to education and training for existing staff or adequate finance to resource this as well as the risk of losing skilled staff to other posts, especially daytime general practice.
6.1 Introduction and aim

The focus of this section is on how day to day practice has changed for staff in case studies where there has been substantial workforce and skill mix change as described in section 4. The research question addressed in this section is ‘what are the consequences of changing workforce patterns for staff?’ Evidence is drawn from interviews with staff directly involved in providing care and their managers and is illustrated excerpts from interview transcripts. In total, 120 staff were interviewed across the eight case studies (see section 3.4.5 for details of the collection and analysis of data). Interviews with operational staff focused on their changing role in the organisation; what was involved in day to day aspects of work and the staff they worked closely with; the proportion of time spent in direct contact with patients and opportunities for professional development.

6.2 Study propositions

The propositions addressed in this section are as follows:

P2 The human resources management culture in health care organisations affects the facilitation of workforce change. Observable aspects of a positive culture include concern with staff satisfaction and staff development (despite limited resources) and concern with the quality of care

P5 Changes in skill mix alter care provision by enabling the delegation or substitution of tasks, or by enabling the organisation to diversify through enhancing the skills and capabilities of existing staff or by recruiting new staff.

6.3 Impact on the content and organisation of work

The main themes that emerged from the interview data centred on the way in which skill mix had changed aspects of the content and organisation of work. These were (i) responding to and prioritising new demands (ii) making decisions and managing clinical risk (iii) referral to other practitioners or services (iv) prescribing practice and (v) sharing resources.

6.3.1 Responding to and prioritising new demands

There were three main scenarios in which skill mix change was described as having had an impact on the way services responded to and prioritised new demand (i) receiving calls in the call centre or communications hub (ii) responding to priorities in the field and (iii) receiving patients arriving at treatment centres.
Receiving calls

A variety of call prioritisation and triage systems operated in the case studies. In the five case studies where initial call handling was undertaken by GP out-of-hours services or NHS Direct / NHS 24 a decision support system had been introduced. In the three case studies where ambulance services provided initial call management, call handlers referred to protocols or guidelines and would seek advice from colleagues in the communications hub where necessary.

In County-med, a key aspect of service improvement had been targeted at increasing the number of protocols and guidelines that ambulance control assistants could use in order to ‘deal with patients right at the very beginning much more quickly and much more effectively’ [Manager, CM2: 17]

(Call handler) Certain things like chest pain have a protocol. There’s not much in our protocols that would call for an ambulance. I think urinary retention is one of them, heart attacks and obviously, chest pain, but sometimes you can, if you know with experience, certain things you think oh, that’s not right, because we don’t have a protocol for strokes, but obviously strokes should be an ambulance. [CM19: 158]

Uncertainty on the part of the call handler in this example was managed by asking the Triage Officer on duty for guidance. Also at County-med, an experienced nurse practitioner described their reliance on a personalised approach to history taking and assessment without decision support:

(Nurse Practitioner) I think I’ve been doing it so long now I hit almost a remote button, especially a lot this time of year with vomiting and diarrhoea with children and you say are they drinking, have they wet their nappy … you go into an automatic spiel, I think it’s almost like your own algorithm and I’ve got a system of working of taking history, you go into allergies, drug history, previous medical history, social history and it’s a way of … its just automatic now so I cover all the points so it’s a lot easier now. [CM3:286]

In ED-med, call handlers could ask nurses how to manage certain calls [E01:35] and in Centre-med, the new skill mix led to ECPs and receptionists having more interaction in relation to urgent calls:

(ECP) We work with receptionists closely because they’re the ones that are saying Oh I think this one is actually… this one sounds unwell. This one sounds… you know they’re the ones that will actually say I’ve put this
through as an urgent because I don’t like the sound of him. So they’re very important the receptionists. [B5-20:125]

In the absence of decision support, local urgent care systems appeared to rely on the experience of individuals receiving calls and the existence of good working relationships between staff. Arguably, subjective interpretation of urgency based on experience needs to be balanced by a more rigorous objective assessment and interpretation of elicited information in order to overcome inconsistency, biases and potential ‘unconscious incompetence’ that could lead to inappropriate triage decisions.

**Responding to priorities in the field**

As part of their regular work attending urgent care patients, ECPs typically also remain on call for Category A 999 calls. In this way ECPs continue to support the ambulance service in reaching patients needing emergency care and in achieving response time targets. In practice, therefore, they may be interrupted during consultations with urgent care patients and need to leave quickly to respond to the new emergency situation.

An ECP at Hub-med reported that ‘frequently we are called out and it leaves them [patients] in the lurch. And we all feel uncomfortable about that, none of us feel happy about it.’ [HM7:147] Another describes the context in which a Category A call might arise:

*(ECP)* So if you’re asking to go into a surgery and sit with a GP and you’re developing your skills and talking to the patient, or whatever and suddenly the phone goes and you’ve got to shoot out the door. The same with minor injuries; you’re halfway through a patient, trying to develop your skills. The patient’s got your confidence and everything, and then an emergency comes in and you’ve got to go. [HM17:68]

ECPs taking part in the study differed in their approach to managing these conflicting priorities. Some regularly declined to leave the patient whose care they were already involved in, telling the control centre that they were unavailable, but most left their urgent care patient as best they could, planning to return subsequently, to respond to the incoming emergency. This regular occurrence appeared to be source of frustration for other team members:

*(GP)* You can’t rely on them because the next minute, they’re off on a cat-A call. You’ve passed them a call and then suddenly this comes in as a priority...They like the cat-A calls because it’s part of their skills and you don’t actually particularly want to take that away from them because that’s
part of the reason they do the job, because it’s multi-skilled, so I’ve learned to understand that aspect but it is extremely annoying as a doctor, when you’re working in a very busy evening, to find they’ve disappeared. You can’t find them, they’re out on the road doing a cat-A and you’re then stockpiling the patients, so that’s when, personally, I feel the system falls flat [HM10:49]

For ECPs, the cognitive dissonance that this competing demand produced appeared to be one of the few dissatisfying aspects of the role.

Receiving patients attending treatment centres

Many patients requiring a face to face consultation out-of-hours were invited to attend a treatment centre. In the past, it would not have been uncommon for treatment centres to be staffed only by GPs and receptionists. Receptionists at a Hub-med treatment centre were kept very busy handling faxed patient referrals until the introduction of a computerised system. Quiet times for reception staff prompted a Nurse Practitioner to describe how she would like to be able to manage these staff differently:

(Nurse Practitioner) I would replace those with nursing auxiliaries straightaway. I’d say right what are we doing with Receptionists, you know why don’t we put people in who’ve got some nursing experience which we can pay the same rate of pay who can actually do some observations, go and fetch the equipment, do some stock control, you know all these other things that can be done when the place is empty instead of reading a newspaper. [HM15:46]

Elsewhere, receptionists, call handlers and drivers were increasingly considered part of the skill mix of busy treatment centres. At County-med, receptionists were given the opportunity to undertake additional training to become nursing auxiliaries and these staff worked with the reception team, as they might in some Minor Injuries Units, to receive and book patients onto the system and to carry out a range of other interventions including managing waiting patients and doing simple dressings. The strategy at Walk in-med was to develop call handlers, drivers and receptionists to be able to substitute for each other (except those unable to drive). Health care assistants employed principally to undertake phlebotomy on weekdays also ‘took a turn’ at call handling, this was considered to have made their roles more interesting (SC06). So much so that Walk-in med staff will elect to exchange roles to experience more variety in their day to day work:
(Manager. Walk-in med) ...particularly at weekends when it’s just intense. There’s just people coming in, and the phones are going, but you know someone will say "let’s swap for an hour" and a call handler will go out on the front desk and a Receptionist will go out and call handle, and you know it just makes it a bit more varied as well. [SC06:81]

The receptionists at Walk in-med wanted to keep patients as well as staff informed about the patients that are waiting. Although questions of confidentiality arise in relation to this example, the interviewee reveals awareness of patients’ needs for recognition and a willingness to step out from behind the desk to make a public announcement (speaking out to those waiting) in order to ensure the smooth running of the centre.

(Receptionist, Walk-in med) We are the first point of call particularly on the Walk-in Side for the patients and I think we do interface quite nicely with the nurses [...] we will stand up and we'll say "just to let you know on the Walk-in Side we've got" and we list the names of people, "and waiting to see a doctor we've got" people, and I think you must do that just so they hear their name and they know they haven't been forgotten. [ ]

A receptionist at Centre-med indicates that they would welcome a broader role but doubted that this will be forthcoming, or that this would be linked to career progression:

(Receptionist) It’s a shame because within the out-of-hours role there isn’t really any progression. You know you’re employed as call handler receptionist and that’s really what you stay as. In an ideal world it would be great to be able to sort of for me to do a bit of health care, you know start the training for that. [...] because there’s occasions here when the health care... you know they’re short staffed for those. And that would great. Because then I’d be able to sort of say yeah well I’m actually available. I can cover my shift and come on and do that. But again that’s not something that I don’t think will be set up and sort of offered. Because it’s budgets and things like that I suppose. [B8:251-267]

The extent to which non-clinical support staff were prepared for their roles in call handling is not clear but the question arises whether the potential benefits to some aspects of service delivery derived from role flexibility as well as increased staff morale could be considered to be offset by increased clinical risk and the potential failure to identify serious cases.
6.3.2 Making decisions and managing clinical risk

In urgent care settings, the way in which clinical risk is construed and managed reflected different philosophies of care and informed the staffing strategies for the service. The importance of ruling out urgency evident in 999 ambulance services and in emergency departments contrasts with the approach in primary care, characterised by one senior doctor in this study as ‘a more pragmatic approach to the management of clinical risk’. A senior nurse in PCT-med reflected on the difference between acknowledging and managing risk in acute versus primary care settings:

(Senior Nurse, PCT-med) For years and years GPs have been seeing patients who just inexplicably deteriorate post their assessment and in some cases [...] died as a result and that’s a kind of an acknowledged part of general practice. It just happens and GPs have known that that has happened for years. [For] practitioners and paramedics or...you know...emergency care practitioners. That’s new. They never had to think about that in the past so of course, that sort of whole aspect of risk management and trying to prevent slipping into the real risk adverse nature of some parts of urgent care that means...you know...that you investigate out your risk and admit everything. That’s been a real, real sort of change in culture. [A4:153]

Given that urgent care services recruit staff from both primary care and emergency care backgrounds, we might expect to see these different perspectives played out in staff views as well as in more practical strategies. This senior nurse recognised the different perspectives within their team:

(Senior Nurse, PCT-med) Those who’ve come from primary care have been well used to [...] acknowledging risk in the past because they’ve grown in a culture where their GP colleagues have done it all the time. They’ve just acknowledged risk and taken a balanced view on it and common things happen commonly and invariably on very, very few occasions it goes wrong. Those who come...nurse practitioners and that who come from an acute background are used to working in an environment where risk is acknowledged and then managed out and it’s managed out through a process of admission and investigation and that’s the culture that they’ve grown in. [A4:153]

In this example, an emergency nurse practitioner compared how a case was handled during the daytime in the absence of a GP in the A&E department:

(ENP) I had a child who had a persistent cough. ... had a listen to the chest, and the chest was clear and everything, and found that I was reassuring
Mum, but Mum was convinced that the child needed antibiotics: “I think he needs antibiotics”. It was in the daytime so there wasn’t any GP’s there. I feel if a GP had been there, they would have reiterated my advice and the patient... the child would have gone home. The child was well, and I spoke with one of the A&E Doctors and he ordered a chest x-ray and blood tests, and things like that, and I feel that a GP wouldn’t have done that. A&E Doctors will, sort of, eliminate all the risk that there is ... And maybe sometimes over-investigate people whereas GP’s seem happier to take a little bit of risk and be, maybe, sometimes more sensible about things. [E05:509]

GPs and nurses spoke about how they witnessed approaches to risk management by the different professions. In this extract a Nurse Practitioner summarises doctor’s views of their skills in relation to risk management:

(Nurse Practitioner, County-med) ..and as doctors keep pointing out to me, they’re trained to take risks and we’re trained to follow protocols, and they’re much more used to it, and much more comfortable with taking the risk and saying, and phone back in an hour if you’re not alright, whereas we’d be a bit like, “oh no, please come down and see us just to make sure.” [CM14: 241]

Despite the differing perceptions about the capabilities of non-medical staff in managing clinical risk, skill mix changes in several of the case studies in urgent out-of-hours care require staff other than GPs to be responsible for definitive clinical assessment and management in patient’s homes and in treatment centres.

**Team working and home visits**

In recent years the proportion of patients visited at home in the UK has gradually reduced, but home visits remain an important aspect of the service, particularly for older patients and those with complex health needs including for palliative care. Within the eight case studies very different approaches to this were observed. Centre-med described itself as a ‘GP light’ service. This meant that after midnight one GP was on call at home for the service (there was no GP home visiting service in any case) and all home visits were undertaken by community night nurses (district nurses). Contact with the GP overnight was infrequent. In District-med and PCT-med a hybrid approach was observed where nurses and primary care practitioners were dispatched to undertake home visits but remained in contact with a doctor at the base to discuss the patient and the plan of action, this approach described as ‘being the eyes and ears’ of the doctor. These staff were able to administer needed medication and assessed whether or not a doctor needed to visit (SDO15:212).
In Community-med, senior nurses working as first responders also called the centre to talk about their decisions with a doctor. The opportunity for supported decision making was seen to afford a learning opportunity for staff working at a distance from the service base:

(Manager, Community-med) *We have brought in a kind of support system for the nurses because we felt that they were exposed to greater risk because when you are out visiting patients you are on your own so we have asked the nurses to phone in and just share the decision making process with a doctor in the centre...for two reasons: one the patient safety issue we wanted to ensure that those nurses were supported in their decision making by the experience of a doctor at the end of a phone and secondly an educational aspect of that to allow the nurse to build on her skills as she went so obviously if you have to phone in and discuss cases with doctors you learn a lot just by discussing it so the next time you see a similar patient you are all ready for it.* [COM4:165]

Within the case studies then, in response to a broadly similar case mix, the resource allocated to home visits ranged from non-medical practitioners working alone with the option to call a GP, to one in which this contact was a prerequisite for decision making to services where only GPs undertook home visits.

Opportunities for discussing assessment and treatment decisions were more plentiful in the treatment centres, but here also, established perceptions about preferred approaches to managing risk appeared to influence the way in which staff co-operated.

**Team working and treatment centre consultations**

Evidence from the interviews with staff suggests that the opportunity for securing a second opinion is universally welcomed. During the early stages of introduction the nurse practitioner role at County-med a nurse described how they checked all decisions with a doctor for the first six months:

(Nurse Practitioner) *I mean, from the word go, just about every patient you saw you were going to have to check with the doctor before you could let them go and they were going to have to come and double check everything with you.* [CM14:159]

For some GPs, working alongside nurses who consult with patients has been a new experience. Their confidence in the capabilities of nurses appeared to be
greater where they had had involvement in their training and development. This doctor with experience as a trainer nonetheless linked the assessment of competence to the number of years in practice:

(GP, County-med) And I’m quite happy with the nurses, I know the nurses are very good there, but it’s just a general concern as to where does that end - how far do you devolve work to people who don’t have ten, fifteen years of training. They have one year, and what is somebody who’s experienced ... if you ask a member of the public are you experienced if you’ve done nothing but out of hours for two years, is that experienced, or do you have to have done it for ten years. [CM17:38]

The concern with number of years in practice relates not only to the relative rarity of uncommon and serious problems, but also uncommon presentations of relatively frequent but potentially severe problems that may be ‘missed cases:

(Nurse Practitioner, County-med) I’m sure if you’ve done it for two years, you’re experienced in the common things but you won’t be experienced in the uncommon things, and that’s the danger, is that people will miss, who, who aren’t experienced, the, the rarer things. And I have examples of people have ... some of my nursing colleagues who have asked me to, to look at things and they’ve been quite shocked to find it was something else. [CM17:38]

In contrast however, the same GP was reassured by their experience of working alongside Nurse Practitioners in daytime general practice. Expounding the practice observed during the day and the quality of their record keeping meant that on balance these reservations were overcome. Nurses working in the treatment centres appeared to have insight into the preconceptions of medical colleagues and patients and demonstrated different methods of overcoming them:

(Nurse Practitioner, County-med) You can usually quite often with a child or a parent, pick up very quickly whether or not they’re going to be happy with just seeing you and then you always go and get a doctor, just to reconfirm what you’ve said, and sometimes it’s good to get them to, because if they re-say what you’ve said, the next time they attend, they’re more happy to sort of see that a nurse has done it. [CM14:195]
However patients were also said to be becoming more accustomed to seeing NPs in daytime practice, which improved the acceptability of that role on the out-of-hours setting:

*(Nurse Practitioner)* And I think if you’re up front with them, you know, my goodness, a lot of them are now seeing the nurse practitioners who are specialists at the practice, like for diabetes, for epilepsy, for ... and I think that really helps. [CM16:130]

Another senior nurse took opportunities to make visible the tacit clinical reasoning that had informed their decision making, offering it up for scrutiny in the confidence that this would reassure medical colleagues:

*(Senior nurse)* But what I find useful is when we have a lull or a quiet time is going in and saying to ... you know one of the GP colleagues and they’re all good at this and you know they really, they really are all good at it. I had this, what do you think, this is what I did and that’s useful for me because I learn from that as well but you know I think it’s also useful for them because I think it allows them to see that we are thinking about things, we are more analytical [CM5:95]

In this instance, the method appeared to be reciprocated by doctors seeking the view of the nurse, though notice the element of surprise in ‘they have actually called me’:

*(Senior nurse)* Some of my GP colleagues have actually called me and said what do you think which is good, it’s nice you know, it’s nice to be ... because I suppose for us ... from a nursing perspective it’s nice to think that oh well actually you know they’re utilising us as well. I mean it might be a wound, it might be something else you know they’ll call us in and say well what do you think about this you know which is healthy, because we’re utilising each other’s skills [CM5:45]

Other factors influencing interaction between staff working in the treatment centres included the introduction of new technology. A GP working sessions for Centre-med mainly doing telephone triage suggested that the introduction of computerisation to out-of-hours care had changed staff dynamics and had reduced the amount of contact between staff:

*(GP, Centre-med)* ...the introduction of [computer system] has actually made us more isolated. [ ...] I’m in my room looking at the computer screen dealing with patients. So I’ve got no personal contact. Whereas with the other system, the paper system, we all used to congregate, talk about "Oh
I’ve got a problem with this patient” [...] here you’ve actually got to make an effort because you’re constantly checking. Especially at busy times [...] your aim is to get through the list rather than come back to base and get the next piece of paper to see the next patient. And whilst you’re doing that you’re having a chat with the nurses, you’re having a chat with the admin staff. But here all you get... and because I’m only doing a shorter shift, sometimes you can go and do that short shift without somebody even noticing that you’ve ever been in. [B9:103]

6.3.3 Referrals to other practitioners or services

A frequently occurring theme within the interview data was the way in which the changing workforce patterns and skill mix created new opportunities for referring patients to other practitioners and services. The potential for more complex pathways as evidenced by the qualitative system maps in section 4 may reflect improvements for patient pathways and possibly more choice, but there were important disabling factors that appeared to limit the potential for these new referral pathways to deliver benefits to patients and to the health system.

Referrals between practitioners

There were many examples of staff taking the initiative to harness the resource of another professional in the patients’ interests. In this example from Hub-med a senior ECP lists the professionals and services that could be available to the ECP to draw on, but suggested that, ultimately, the individual ECP had to be motivated to make these connections:

(ECP) At the moment, but there’s the new role of Community Matrons that the ECPs can be working with and District Nurses, Palliative Care Nurses and there’s Occupational Health, Physiotherapy all in the one surgery. You’ve got the MIU units, you’ve got the Falls Teams, you’ve got the A&E departments, so all of those are all accessible now to the ECPs. You know, they’ve all got honorary contracts where they can walk in and start seeing a patient if they want to. So it is down to the individual now to re-motivate themselves.[HM6:92]

This way of working reflects well the vision that ambulance trust managers had of ECPs working in a ‘navigator’ role and illustrates the shared vision at executive and operational level that was typically observed in Hub-med:

(Manager) It’s not just about ECPs, it’s about the ECPs working with community matrons, district nurses, palliative care teams as a navigator as
well, that I think so many of the patients could actually be dealt with by a non-medical practitioner. [HM4:34]

There were also examples of professionals drawing on the different expertise that another professional group could offer. At Walk in-med, a District Nurse gave an example of how a Nurse Practitioner might approach them for advice out-of-hours

(District Nurse) "Look I’ve just had a call from so and so a minute ago [...] she was in her 80’s but [...] bright as a button when I visited her but for some reason had given herself too much insulin as a for her evening dose and had rung up for advice and was really concerned about it, and the Nurse Practitioner was a bit anxious, and so she said “you know would it be possible?” and I said “well yes it’s not a problem at all” so it was just a case of popping out and checking the lady's blood sugar and making sure that she was okay and to some extent putting my colleague's mind at rest because she was obviously a bit concerned. [SC13:368]

Referrals to hospital

In several of the case studies, the new skill mix had begun to challenge existing arrangements for securing the admission of patients to hospital. Increasingly it seems, clinical staff other than doctors are taking on this role. ECPs are often able to refer patients for hospital admission without referral to a GP. However, as even direct admissions to hospital by GPs tend to be under scrutiny for evidence of necessity, it may not be surprising that other staff encounter resistance to their recommendations. In Community-med the service was working towards practitioners being able to admit patients to hospital, but some hospital clinicians were said to be cautious. Considerable progress had been made in Walk in-med, but Nurse Practitioners encountered different responses from specialties within the same acute Trust, being able to admit a patient directly into a medical, elderly care, orthopaedic, ophthalmology or gynaecology bed but not paediatrics or general surgery (SC09).

This observation was confirmed by general practitioners:

(GP, County-med) You know we have certain doctors in hospitals that will not take referrals from nurses. Now that, we’re working on and I’ve spoken to the medical director and he agrees with me. That’s just a pompous ass scenario, to be honest, you know ... we had one the other week where [practitioner] had seen a lady with abdominal pains and she did absolutely everything by the book, perfect and the surgical SHO said you know are you a doctor then, and she said no, and he said well, I’m not accepting this patient until I’ve spoken to the doctor. Now [practitioner] is very good because [she’s] very relaxed about this so she just sort of said well, fine, I’ll just get him, you know, and brought me over and I just reiterated what
she’s said, but you know, it doesn’t ... it’s not good for teamwork, is it really. You know, and it’s getting less, but it’s still there a bit. [CM6: 123]

Here, an ECP described that they were ‘getting better’ at putting their point of view across and that the development of community resources was reducing the numbers of patients for whom hospital admission was the only option:

(ECP) When we speak to medics [...] they say "well, why isn’t the GP looking at this patient?” But I have to say that that is getting less, possibly because as we get more experienced, we don’t refer as many in and with the better support building as well in the community, we don’t have to refer so many in, and also because we’re getting better at knowing that as long as you’re absolutely sure about what you’re saying and you know, then they won’t refuse your referral if you’re absolutely sure. We get better at doing it, in other words, really. [HM7:66]

The view of the Medical Director at Centre-med where nurses carried out home visits and (in the main) were able to admit patients to hospital was that this had not affected emergency hospital admission rates locally. From the patient perspective, being able to have an appropriate hospital admission expedited without waiting to be seen by a doctor has potential benefits, but resistance of hospitals may be having an impact on access to care.

**Managing the work of doctors**

In the new directly managed urgent care services, co-location may not automatically lead staff to ‘help’ each other at busy times, but in Centre-med management intervention had secured a new, integrated way of working and of managing GP workload:

(Manager, Centre-med) ...there were large numbers of patients on a Saturday and the Walk-in Centre would be run off it’s feet and the GPs (in the out-of-hours service) would be sitting in the coffee room drinking coffee because they only had two or three patients and why should they see anybody from the Walk-in Centre? So there were considerable problems. Once the PCT took it over a gradual integration occurred and [...] we’ve reached a point where if the Walk-in Centre gets too busy it just transfers patients across to the GPs. Provided the GPs aren’t that busy. And I think the system works much better than it ever did. [...] I also have nurses who will go out and see patients at home. And who will do doctor shifts. So... sometimes the nurses do take patients off doctors if the doctors are particularly busy. So we’ve reached a point where there is probably full integration of the service now. [B2:132]
One consequence of this integration of services is that time freed up by substitution is gainfully re-deployed elsewhere in the service. In some systems, initial triage by nurses informs a schedule of home visits to which GPs are allocated. With the support of a driver, their entire effort for the shift is focused on home visits and, unless they call the patient themselves, they have to accept the schedule they are given. At Walk in-med a GP had experienced situations in which they had ultimately felt the visit to be unnecessary but would do the visit rather than contradict information that a nurse had already given to the patient:

(GP, Walk in-med) There’s a slight drawback when it’s triaging a home visit because a nurse might triage something as a home visit and when the doctor gets there, realises that if they’d, if they’d given the information over the phone they could have avoided the home visit but the last thing we often do is ring a patient twice because it’s bad for the, it’s not very pleasant for the patient if they’re told one thing by one person and another by and another thing by another so I wouldn't, I wouldn't want to overrule somebody else's decision. [SC10:280]

In routine general practice, however, a proportion of home visits assessed by a doctor as appropriate could be reassessed as non-urgent with hindsight. The example however, reveals something of a trade-off between accepting the judgement of another practitioner for the benefit of the overall system, or the more straightforward process of ‘just’ doing visits.

In PCT-med non-clinical staff may need a manager’s support to persuade a GP to co-operate with an aspect of the care process:

(Co-ordinator, PCT-med) you can have a grumpy GP who is [....] refusing to do what I’ve maybe asked them to do with regard to booking appointments or something like that. You can tell the receptionists to tell the GP until they’re blue in the face, but the GP will not necessarily listen to a receptionist. Receptionists do not have the confidence to push a GP because they’re doctors and all the rest of it, so the receptionists need somebody in a situation like that to phone and say ‘Look he’s not doing it’, whereas myself [and others] have the where with all and I suppose the authority to phone that GP and to (say)... ‘Look, you are actually working for us and this is what we want, this is how you do it. If you don’t like it, tough.’ They might not like it and we might get the grief for it, but why should the band 2 receptionists and drivers get it? It’s not their responsibility. [A16:175]

This extract illustrates the way in which services have changed from being GP managed to directly managed services in which doctors, as well as other staff, are required to work to a common plan.
6.3.4 Prescribing practice

A substantial proportion of out-of-hours consultations involve the prescribing of medicines. Increasing the capability of nurses to prescribe medicines has an important consequence for the extent to which they can conclude a consultation with a patient without referral to a doctor. County-med have worked to develop the number of nurse practitioners working in out-of-hours primary care centres as nurse prescribers as 'trying to have a nurse working in out of hours who’s non prescribing is a real difficulty' [Manager, CM1: 266].

The prospect of having nurses who could prescribe within the service raised concerns that costs would escalate, but local evidence in County-med appears to have been to the contrary:

(GP, County-med) The LMC, quite interestingly, had a real go about prescribing and they were talking about, you know, the prescriptions for antibiotics would go through the roof and whatever [right] but all the evidence is the opposite, actually, and it's very interesting. Because nurses, because of the way nurses are trained, nurses follow protocols and guidelines far better than doctors do, because doctors tend to be, you know, a little bit more autonomous as it were [CM6:67]

ECPs also have an important role to play in urgent care in relation to prescribing. A Hub-med GP describes how their prescribing practice developed to the benefit of patients, albeit with time consuming associated documentation:

(GP, Hub-med) I mean, when they first started, they couldn’t prescribe. They were very limited and well, it was pointless them even seeing a patient, because I couldn’t send them out to somebody who was throwing up, they couldn’t even give them an injection, so it was pointless. So again, you see the huge change over two years. They’ve got a nice little repertoire of drugs they can use, so in most situations that we’re going to ask them to go and see, they’ve got the drugs, and bit by bit we’re adding things to them... they probably want some more, and they’ll get some more and they follow very strict guidelines as to how to prescribe and their paperwork, as you know, unfortunately, is very, very time consuming and extensive at this stage, which slows them down. [HM10:127]

Occasionally a practitioner may find themselves in a dilemma, having medication to hand which technically they are not allowed to administer, but an experienced GP says that they will take responsibility for advising the ECP to
administer it and will document this on the medical record. In a situation where the practitioner knows that the patient urgently needs the medication, and where if they decline to give the drug a doctor may have to visit, one ECP reflects on the factors that have to be taken into account:

(ECP) I find that I am putting myself in probably a risky situation on occasions, because I know a patient needs medication, which I can’t give. I’ve got it, but I can’t give it, because my PGD doesn’t cover me to give it, and then you’re in the; is it more negligent not to give it or is it negligent to give it? And so then you end up having to find a GP to write a prescription for it and do it that way round, just to stay within the law, and it’s a nonsense. [HM7: 99]

With some thirty-five drugs on their PGD list, the same ECP describes conflicting guidance in their local guidance and the published formulary:

(ECP) I mean, on my PGD it’ll say that I can’t give a specific drug when a person’s got this condition. If you look it up in the BNF, it doesn’t exclude it, it’s only a caution, so this poor patient ends up not getting the drug they need because of a poor PGD and I think that needs to go. You know, if we’re going to do this professionally, we’ve got to stop this, we’ve got to, we’ve got to be doing the job properly. [HM7:105]

ECPs who had previously practiced as Paramedics were able to administer a range of emergency medicines that were not typically administered by nurses. Consequently, nurses who become ECPs have questions about the guidelines as they apply to them.

Partial reliance on medical support for prescribing was evident in District-med. When out-of-hours nurses visit patients at home, the salaried GPs at the base will agree for a medicine to be dispensed, issuing a prescription on their return and the nurse records this in their log. (SDO37). One disadvantage of the Centre-med ‘GP light’ skill mix was the availability of support for newly qualified nurse prescribers:

(Nurse) I think to be honest in some ways although I’m very proud that this is a nurse-led service [...] it would be extremely helpful to have a medic mentor in the building for getting people through these courses. Whilst we’re getting everyone up to speed, prescribing… just because you’ve done the prescribing qualification doesn’t mean you can prescribe everything. It takes time to build up confidence and competence. [B6:313]
In District-med an out-of-hours nurse qualified as an ENP (one of four qualified at the time of the study) illustrated how limitations in prescribing capability meant that although able to diagnose and treat, a doctor still had to be involved in the consultation:

(ENP, District-med) Yes but I see patients who come in and have developed a rash and could be seen by me and I could say 'right you've got shingles, I need to prescribe some medication for you' and I would have to go to the (duty) doctor then and say 'I've got this patient, blah de blah de blah,’ they may come in, cast an eye over them and then write a prescription out for them. [SDO36:62-66]

The process of preparing practitioners to play a key part in administering medicines under local Patient Group Directives or to become extended nurse prescribers was viewed as a long term project in the case studies. There is likely to be increasing pressure for Emergency Care Practitioners to extend their roles in this domain and clear examples here of how patient pathways could be enhanced if this were to be more fully achieved.

6.3.5 Sharing resources

As well as sharing responsibility for decision-making, practitioners contributing to the new skill mix also increasingly share consulting space and other resources. The impact of this is visible in treatment centres and in co-located settings, especially in hospital based facilities. Some treatment centres used out-of-hours were used during the day for other purposes such as out-patient clinics. In County-med a fracture clinic served as a treatment centre out-of-hours. In such circumstances it was not always possible to rely on the environment being clean and ready for use.

Remnants of historical ownership of key tasks were made visible when nurses took equal responsibility for patients and needed their own consulting space. Expectations about what remained the nurses’ domain, whatever extended practices had been taken on by them are illustrated in this example:

(Nurse Practitioner, Centre-med) One of the doctors was seeing a patient the other night and, and I wasn’t at that stage and he asked me for a particular dressing and I said “oh, I’ll nip round to A&E and get you one”, thinking I would just pass it back, and I came into the room and he said “well okay, there you go” [indicating for the nurse to finish the procedure] so sometimes you think oh … I don’t mind doing that, but that, that’s interesting that they perceive you still in that role, or if there’s something messy to be done, like cleaning up vomit or, you know, then, then that’s the nurse’s role, that’s not the GP’s role. [CM16:10]
In contrast, a GP faced with a spillage problem took responsibility for the situation themselves:

(GP) [there was] a significant amount of blood on the floor. So I thought ‘oh great!. So I tried to get a cleaner to come and clean the blood up. ‘Oh no, that’s a nurses job if it’s blood. We’ll come and do a secondary clean’. I thought ‘I’m not going to go and ask the nurse’ so I did it myself. I thought ‘oh for goodness sake !’. And no cleaner did turn up to do a secondary clean.

These rather mundane aspects of managing the working environment illustrate the question of who takes on tasks left behind when practitioners takes on new areas of work. As nurses begin to see patients in consulting rooms, they join the struggle to secure resources. In County-med, nurse practitioners had to negotiate access to equipment to undertake physical assessment and in ED-med, just securing a room in which to see patients was a priority for nurses and doctors alike:

(Nurse, ED-med) I dislike having to fight for a room, because sometimes that’s such a pain. Someone (in A& E) nicks your room when your back’s turned, which doesn’t happen frequently but does happen. One of the A & E doctors goes in your room and then ...you’ve got nowhere to see someone. [E01:47]

A manager at ED-med drew a comparison between the facilities that GPs had available during the day and those available out-of-hours:

(Manager, ED-med) ..the doctors find it very stressful keep coming out and nipping back. They’ll nip out to get something and they come back and their room is being used, you know...it’s not like a normal practice where they’ve got their room, they’ve got it all set up. [E03]

In frustration, a GP resorted to a subtle strategy to resolve their situation amidst the prevailing competition for space:

(GP, ED-med) And find a room to work in! What I do now - I mean I used to stick my name on a door, and think ‘oh great’ but someone else would still pinch it. So what I do now if I’m not in the room, I close the door and that seems to keep most of them out. [E09:312]
Developing the skill mix by broadening the range of practitioners that can assess and treat patients appeared to produce a new kind of internal competition for resources that appeared not to have been anticipated in some case studies. The examples also illustrate something of the intensity of the care setting, where the key focus on the practitioner – patient encounter and decision making under pressure prevents those involved from seeing the service level perspective and acting in a corporate way.

6.4 Recruiting new staff

Faced with the need to staff an urgent care service, managers frequently considered whether to develop existing staff or recruit to new posts. One manager describes how they tried to concentrate thinking about the skills needed to deliver the service:

(Manager) I think if you were [...] starting from scratch around looking at the night time community nursing service, you may argue, do we want district nurses during that night time period or do we need ECPs or do we need nurse practitioners, what do we need? I’m not totally convinced it matters what label you attach to them, it’s what job they are doing and what skills they have, so I can see, for example, those night time community nurses, who will be seeing largely unscheduled care work, probably potentially putting them through on an ECP course. I’m quite passionate about the fact that out there, you still need a nurse... a lot of it is nursing care they need, but I think we get hooked up on titles and backgrounds and I actually don’t think any of that really matters. [CM1:148]

A manager in County-med suggests that skills and competencies are more important than particular professions being involved in delivering care:

(Manager) I think ... to a degree, I don’t, I don’t think it matters which, which of them it is in terms of profession; whether it’s a nurse or an ECP, I think what you’re looking for is an autonomous practitioner that’s, that has certain skills and competencies. Now, whether that’s a nurse or an emergency care practitioner or a paramedic, I think you need a mix of ... I think it might be provided by a mix of them. [CM4:57]

This view is echoed by a GP who sees merit in a competency based approach to training with exit points at a variety of levels:

(GP) Well, it’s nurses isn’t it? It’s as simple as that. As far as ... I have some concerns over ... and again, this is about having a holistic approach really, because I know.. for example, they’re talking about you know,
emergency care practitioners and then you’ve got emergency nurse practitioners and you’ve got advanced nurse practitioners and nurse consultants and it can be a bit confusing and I think what we ought to do really is to just have a sort of, a training programme that lets people get to whatever level they feel is their competence, and I know that the nurse consultant is keen on that as well. [CM6:65]

Unscheduled care services increasingly require nurses to work in the service with a key range of skills. It can be difficult to recruit staff already prepared to the level needed and with sufficient prior experience. A nurse manager suggests how this should be managed:

(Nurse manager, County-med) It is difficult to recruit nurses into this role, to get nurses equipped with all the knowledge and skills that you would require to be up and running straightaway...and it’s difficult to recruit nurses who’ve worked primarily in secondary care or in A&E to come equipped with all of those skills. So you either invest in ... you either pay more for staff who have all those skills and have worked in a similar role already and that comes expensive, or you invest in staff who don’t possess all the skills and put in a training package for them. [CMS:66]

In District-med where a new out-of-hours service was being configured and there were to be out-of-hours nurses, the first plan was to develop the District Nursing workforce. In time, the prevailing view came to be that a more appropriate skill set was that of the ENP, skilled in the management of minor illness and minor injury. Having had the opportunity to design a new model of service in PCT-med, the challenge was in filling the shifts for the new skill mix:

(Manager, PCT-med) So you know we do have skill mix [...] but it was very much through necessity, not through some ideal I don’t think, and in actual fact you know [...] we’re now in the situation where I’m trying to find GP’s to fill some of those nursing shifts you know you can draw it on paper and it looks a wonderful plan, but if you physically don’t have the relevant staff with the relevant experience and interest, it doesn’t matter how wonderful it looks on paper, if you haven’t got you know emergency nurses to fill those shifts then you have to revert to GP’s. [A5:61]

Similarly in Centre-med the service had eight nurse practitioner vacancies. The service would like to have recruited four more ECPs with a view to undertaking GP home visits during the day if it could, but these staff were not available to recruit locally (B2:196). Although there was said to be considerable interest in the nurse practitioner posts it was difficult to find nurses sufficiently skilled:
(Nurse Manager, Centre-med) There’s a lot of people after the same sort of nurses. Walk-in Centres up and down the country, general practices up and down the country and finding these nurses with these skills... we’ve been extremely proactive in putting people through advanced clinical assessment courses. We’ve put quite a few of the night staff through... I think about five night staff have gone through the advanced clinical assessment. Probably the same number for prescribing. We really pushed the Walk-in centre side. But there’s a lot of demand. There is a lot of demand for these staff. And you find that sometimes you train them up and they get poached. [B6:19]

Development of the urgent care skill mix appears to have been constrained in some case studies by local labour supply factors, by the availability of education provision for existing staff and finance to be able to release them. Practitioners with skills in illness and minor injury management were particularly prized but also prone to being recruited into other posts, including daytime general practice. As GPs returned to the out-of-hours services to offer sessional work, having opted out of the responsibility for 24 hour care, it was they that in some instances covered the shortfall in availability of nurses and ECPs.

In addressing the second proposition, we now examine the extent that there was evidence of concern regarding the quality of care and with staff experience and training.

6.5 Concern with the quality of care

National Quality Requirements for out-of-hours care in England and Scotland since 2000 have provided the basis for continuous monitoring of service performance, including the performance of individual clinicians through the auditing of a small proportion of cases. Local clinical governance arrangements further ensure interest in the quality of care. In Community-med, there was a view that as out-of-hours care emerged as a specialism this would have a positive effect on quality over time:

(Manager, Community-med) ..the new work force are becoming specialised in out of hours care so I would say that our salaried out of hour doctors are now delivering a higher more consistent standard of out of hours care than was previously the case simply because we have become specialists at it. I am not saying we are higher standard than everybody what I am saying is that we are consistently at a higher standard than previously which I think is good and what’s more I think those standards are being achieved by non doctors as well as doctors. [COM:200]

Staff in day to day practice have less connection with quality measurement and organisational targets than their managers, but our interest was in understanding the extent to which concern with quality was reflected across
the partner organisations in the case studies. Two aspects of care appear to feature strongly within the interviews with staff in relation to the quality of care. The first concerned the capacity of an individual practitioner to address all or as many of the needs of patients as possible. The second concerned the relationship between quality of care and the length of time taken for staff to complete a consultation.

6.5.1 Meeting the needs of patients

In Hub-med, there was evidence that the cases assigned to ECPs were selected by GPs to be those that they were likely to be able to manage unaided or with telephone support. The availability of contact with the communications hub also meant that a patient could be assigned in order to expose the ECP to a new learning experience with remote support. Nonetheless, because many ECPs were continuing to learn new skills, occasions arose where the practitioner had to decide whether they were ready and safe to perform a recently acquired skill, generating self questioning about the quality of care that could be provided:

(ECP, Hub-med) There are quite often occasions where there is tremendous pressure to carry out a procedure, which you’re fairly confident that you can do, but you know there’s always that element of doubt because you’re not that experienced yet and because of the fact that the patient needs it doing and you know, so you have to weigh up obviously, whether it would be more negligent not to do it than it is to do it with your lack of experience and, and again, that’s where you miss having other ECPs around, because you’re so isolated. You’re on your own, and you’re doing it and you go home with it, you know, you go and think ‘God, should I have done that?’, and so there’s still those sort of areas. [HM7:46]

Hence there is a tension between GPs selecting cases that are likely to be within scope of practice of ECPs, and ECPs starting to become more self-confident in their limited knowledge base which, most of the time suffices. It is only when something goes wrong – albeit rarely - that the GP and the ECP both realise that the ECP did not know as much as was thought.

Fear of missing an important sign was reported as commonplace amongst new ECPs, ameliorated over time by exposure to the reality of clinical practice, by learning that ‘common things are common’ and that most patients will get better on their own. This realization expressed by a Hub-med ECP:

(ECP, Hub-med) We suddenly thought, you know, we might have had a couple of weeks on general medicine, examining the abdomen, examining the chest, this sort of thing and you used to go to these initially and think,
you know, you went in with the first thing that "I’m going to miss something and they’re all going to die" and you suddenly realise that it’s, it’s a fraction of a percentage that will actually die and that the rest will probably ... most of them will get better on their own anyway. Some of them will need some intervention. There are a few you need to recognise and admit, so when you relax and realise that all your patients weren’t going to die on you just because it was general medicine, then you relaxed and you developed that role. [HM17:92]

6.5.2 Timeliness as an indicator of the quality of care

Whilst allowing sufficient time in a consultation for a patient to have their concerns understood might be considered a virtue from the service user perspective, clinical peers appeared to regard the length of time spent in consultation as a marker of effectiveness. The practice of all types of practitioner had the potential to be characterised as ‘slow’. In this example, a call handler found a way of managing the expectations of patients to explain away the slow work rate of a doctor:

(Call handler, Community med) We do sometimes have to pretend that, you know, it’s been really busy when it’s not. We’ve just got some slow doctors in, but I don’t think [...] a patient would appreciate me saying I’m sorry our doctor’s just really slow so we’ll get to you when we can, you know. So sure, little white lies. [CM19:67]

With GPs typically allocated ten minute appointments in a treatment centre setting, however, other practitioners can appear to be much less efficient with their time:

(ECP, Hub-med) Certainly, the GPs that we have at the weekend, the rate that they go through the patients, they’ll clear a waiting room while I’m doing two patients..’ [HM16:30]

GPs appeared to be generally understanding of the need for other clinicians to develop their skills but ‘slowness’ in any practitioner was not necessarily well tolerated, irrespective of the content of the consultation:

(GP, Hub-med) If they’re around and you get a good ECP, it’s excellent. If they’re around and you get a slow, really slow ECP, you might as well not have them; waste of time. [HM10:99]
A GP at Community-med drew a comparison between the way in which paramedics and nurses were trained to manage consultations, suggesting that there were differences in the approach to assessment which explained some of this variation:

(GP, Community-med) And also when we’re here, we’re trained to do 10-minute appointments so we can get through maybe 6 people in an hour whereas nurse practitioners are, and the paramedics, because they’re trained to do a completely different way to us, they’re tending to do maybe two people in an hour. So, it’s a false economy because yes, we cost more, but we can do more work. [COM24:636]

In contrast, another GP appeared to value reliability over speed:

(GP, Hub-med) Now, if I’m on at night, for example [name] I mean, I’m laughing if I’m on with him, I know he’ll just take anything. His speed is not as fast as mine but he’s very … he’ll do one to every of my two; he’s very, very good, and I know that he’ll, he’ll tackle anything and if there’s any problem, he’ll call me. But he’s really a hundred percent reliable. If we had loads of that quality ECP, you could, you could reduce the GP numbers, but we’re not there yet and we won’t be there for a number of years.[HM10:110]

But the economic considerations of employing ECPs to see fewer patients and who might admit more of them to hospital is a concern to some doctors, even though there is good agreement that there is scope for the role:

(GP, Community-med) the finances have yet to be looked at properly, you know, because I think at the moment, it’s assumed that these ECPs will come in and do twelve jobs in a twelve hour shift and admit nobody. But there’s a place, you know, there’s no need for all the cases that we do to be seen by a doctor, there’s no doubt about that. They could be seen by a nurse practitioner, a paramedic, an ECP. [CM10:73]

6.5.3 The need for feedback and peer review

Because patient pathways in urgent care may involve several staff and different providers it can be very difficult for staff to gather feedback on the care they provided. A nurse at Centre-med summarises the sense of frustration:

(Nurse, Centre-med) I think the thing that I dislike most about it is not getting feedback from [...] patients that I’ve seen today and I’m saying I’m not sure, you need to see your doctor about this. Not getting feedback from
what’s wrong with them and what the doctor thought. And they’ve looked at various schemes you know but nothing’s ever got off the ground. So that’s one of the most frustrating things. Because it would benefit us enormously if we’re not sure to be able to find out you know what the doctor thought or what the doctor did. [B7:45]

In County-med, a Nurse Practitioner working in a treatment centre regularly checked the system to see what had happened to patients:

(Nurse Practitioner, County-med) And it’s like to almost re-confirm that you did the right thing [...] because you can click in and look and see what happened and just think oh, I was right, oh, that’s okay then. [CM14: 235]

In the absence of direct feedback, staff appeared to take the opportunity to talk though cases with colleagues through which they could derive a sense of validation in relation to decision making:

(ECP, Hub med) And they’ve always [GPs] been amenable to, when you go back, discussing the patient you’ve had, which gives you a little bit of confidence because “on yeah, I think I got that right” [HM16: 88]

Suggestions for developing the quality of care included the conduct of more frequent audits but emphasised the importance of planned, professional conversations about the care of individual patients. One Nurse Practitioner in County-med was eager to see more of this:

(Nurse Practitioner, County-med) We don’t have any significant event audit going on. You know, there’s no reason why we shouldn’t have the doctors coming in at twenty past six one night and bringing a case that they found particularly tricky and having a discussion about it. It doesn’t have to be a couple of hours long, just to highlight, well, like the person I took blood from, you know, should we you know ... but we don’t have any of that, and that’s not good because we’re all learning and we all learn from each other. [CM9:162]

And another Nurse Practitioner valued the day to day opportunities for peer review over team meetings:

(Nurse Practitioner, County-med) ..the only type of peer review there is is when our manager comes on, once a month and we have the evening sort of meeting, which ... it, it can be difficult because you’re not as open on once
a month when you meet somebody as you might be at another time if you were working with them, so yeah, that’s difficult. [CM16:88]

The extent to which the lack of natural feedback in the system is an impediment to learning may be an important question, particularly for staff who work exclusively in out-of-hours care. The analysis of interview data revealed concern about the quality of care, most strikingly amongst practitioners themselves whose strategies for seeking peer review appear to be in part a response to organisational cultures which have not developed systems for addressing quality of care issues.

6.6 Concern with staff experience and staff development

The second proposition to be considered is the extent to which observable aspects of a positive organisational culture included concern with staff satisfaction and staff development, despite limited resources. Within some of the case studies, individuals were given lead responsibility for staff education and preparation. In Community-med for example, a senior nurse at Director level had leadership of the non-medical team and a brief to ensure support for the wider team as this developed. In this case study attention was evident to the need for a ‘training plan’ that anticipated likely retirements of very skilled staff and that was proactive in developing younger and less experienced staff.

Whilst there had been benefits in Scotland derived from some central funding for staff development, this was not anticipated to continue. The practical challenge that would emerge is that there was likely to be insufficient capacity to ‘back fill’ staff being released for training.

In a number of case studies, the need to establish a new service quickly in the light of the new GMS contract meant that education and training had of necessity been provided in house in the early stages. There was evidence of investment and support of staff to develop specific skills and of progress in terms of pay and grade ‘banding’ with reference to Agenda for Change. As well as the formal preparation of ECPs, some nurses had been supported to complete degree programmes and undertake courses in first contact care, but there was evidence of contraction in the provision of in-house development to include only mandatory aspects of training because of financial constraints. A comment from a manager captures the local sense of the importance of education:

(Manager, District-med) No, but there’s, there’s concerns I have about ensuring that everybody’s got the right training; and ensuring that
everybody has the right support; and ensuring that everybody has the right information; and I always make good resolutions like have a weekly ward meeting and a monthly trained staff meeting. These things, I don’t know if my goals are realistic or not, but sometimes they are not achievable. For a while we were not allowed to do any training, extra, except mandatory training. And I really feel that with personal development, I think any issues that I have are around getting [...] more staff and just ensuring that the staff that I’ve got are nurtured and well supported, and have the right training and information. [SDO35:541-2]

6.6.1 Formal preparation courses and in-house training

Most ECPs spoke positively about their university based preparation, be it the original sixteen week course or the current modular part time programme. Their concerns were focused more on how continuing development could be provided, describing at times a sense of isolation that arose from the way in which they worked. Some had set about organising local team meetings, others said that these had been difficult to attend because of shift patterns and that they saw more potential in on-line resources:

(ECP, Hub-med) We’ve set up our own team meetings...for the local ECPs....so we meet up on a regular basis and go through some of the issues that are plaguing us, but that’s an informal thing, done without any management support or supervisory support at all. We’ve had invited speakers in to give us talks on COPD, asthma and the management of that, so a lot of the stuff, well, all the stuff that we’ve done has been funded by ourselves independently or has been through goodwill gestures from other healthcare professionals. [HM18: 51]

One legacy of the way in which emergency and urgent care has been organised in the past is that staff have tended to specialise in either minor illness or minor injury. Now that Walk-in Centres, Minor Injuries Units, GP out-of-hours services and Accident and Emergency Departments are increasingly co-located, considerable flexibility can be achieved if staff have competencies in both domains. This interviewee drew attention to the different skills and knowledge needed to assess and treat minor illness in comparison with minor injuries:

(Senior Nurse, ED-med) What I couldn’t get through to them for whatever reason was that actually they can’t [...] compare a sprained ankle to an ear ache, and seeing minor illness is hugely more complicated than seeing a minor injury, and I’ve come from an ENP background... so I was very good at what I did there .... And I had a learning curve like this when I came into Primary Care [E06:1314]
This was a particular issue for Emergency Nurse Practitioners. A senior doctor at the same site has doubts about whether ENPs are fully yet able to manage minor illness:

_(Doctor, ED-med) I think there is quite a lot of professional mistrust of the capabilities of the staff here, and who are mostly minor injury trained to deal with what is usually quite significant primary care illness, it’s been triaged to attend so the numbers are OK, but [...] a large part of our workload is hot kids. And you have to have quite a lot of clinical confidence to discharge a hot child, and we’re not convinced [...] we would very much like to have more teaching input into the ENP’s and get them much more (all of them) skilled up in Minor illness. And not necessarily Minor illness but illness rather than injury. [E10:557]_

And a senior manager highlights the importance of adequate training:

_(Manager, ED-med) Minor Illness is much more fraught. ... When you consider it takes a minimum of 9 years before a GP is let loose on Minor Illness and probably another few more years before they’re any good at it. These Nurses were put on a 4 day Minor Illness course and then told to get on with it, which is crazy! [E12:500]_

In Hub-med, ECPs had recently begun to work in A&E Departments during the day as part of the resuscitation team alongside Emergency Nurse Practitioners. This was to enable then to contribute to the management of clinically unwell patients and at quiet times to provide care for other patients and at the same time develop their skills. One ECP saw this to be a consequence of managers not being sure what to do with ECPs during the day and was perplexed by an instruction they thought they had received not to start anything in the ED that would slow down response to an emergency:

_I: So anything that’s going to take more than two minutes then?_

_R: Yeah, you can’t do, which means I daren’t put anybody on a commode, I can’t, because I’d have to leave her and then that could be a dangerous practice, do you know, unless you can find someone to say “look, behind this curtain, I’ve got a lady on a commode, but I’ve got to go”, so it’s a very dangerous working practice, because you’re in A&E, you might start to take bloods and your phone goes; you’ve got to go but you look round and there’s nobody to do a handover to. [HM13:320]_

Similarly, working in MIUs is considered an important way of retaining skills in minor injury examination and assessment. In this way, NHS services benefit from access to ECPs at quiet times and practitioners have opportunity to
practice key skills. A possible disadvantage, as before, is in the potential disruption resulting to response to a 999 Category A call.

In County-med investment was being focussed on developing MIU nurses in the management of minor illness so that they could contribute more to out-of-hours care, including telephone triage. This mirrored the approach in Hub-med – with training and development taking individuals from paramedic or nurse to ECP and from nurse to nurse practitioner. Also, a triage officer based at the communications hub was being supported to undertake further training in triage designed for nurses to be better able to develop call centre triage and is spending time in practice settings. [CM 11: 95; CM5:45]

In contrast at ED-med an Emergency Nurse Practitioner reported little formal preparation for their role and was concerned that a lack of training and clinical supervision hampered their development:

(ENP, ED-med) So you do a week’s course to allow you to be an autonomous practitioner [...] and then you’re left to just learn on the job. As I said at the beginning, we are encouraged to see everything and only when we get to a point when we think we can’t see them then refer them on. And I think that’s quite dangerous. And I think if you compare the training that they have (GPs), and how much their hands are held when they consult with patients [...] they watch the GP for months on end and then they, the GP, watches them and they have video training [...]and I know we’re not GP’s but we still deal with patients completely on our own, and I think our training is really poor…… So, in theory, we are only now allowed to have mandatory training, which is fine, cardiac arrest, which is not ENP training and a lot of our training [...] we do in our own time [E04:276-284]

Other models included that in District-med, where salaried GPs were able to take advantage of in-house education provided by the hospital and although this tended to have an acute care focus it was regarded positively. Evening district nurses in PCT-med received a learning book setting out training opportunities available to them, though training was undertaken in their own time. GPs in Community-med could join a scheme called ‘Career Start’, primarily aimed at relatively newly qualified GPs in collaboration with NHS Education for Scotland. Approximately 50% of their time is employed in an educational programme and the remainder in daytime general practice. Experience doing out-of-hours or wider emergency care work may be part of a personal development plan.
A key area of training need identified for support staff was in basic life support skills. At Centre-med, drivers and receptionists were trained in CPR. This was identified as potentially valuable at District-med also given that drivers carried resuscitation equipment and it could be valuable for them to be able to assist in an emergency. Similarly a driver at PCT-med would have liked to have the opportunity do a course in basic life support skills [A21:27] and a receptionist at PCT-med saw the need for training in managing emergency situations that might arise in the waiting room:

(Receptionist, PCT-med) The only thing I’ve said in my appraisal last summer was that I did feel that we needed [……] some sort of training on the situation in the waiting room to deal with that and who to call to if a situation arose.

I: What sort of situation is that?
R: Somebody collapsing, somebody coming in being verbally or physically abusive or aggressive - not necessarily just to us but to patients, somebody who was drunk, I mean there have been situations where people have collapsed in there, you know? [A10-20:221]

An ECP at Centre-med reported good opportunities for development:

(ECP, Centre-med) We have been really very lucky in the last few years. Since my emergency care practitioner course and being in an environment now in surgeries and here, there’s so much training put up on boards and with the reps. Because we have the reps that we get involved with now and the surgeries. I’ve been off and done my… well all three of us now… I went first and did my asthma diploma. So I’ve got a chronic disease management under my belt as well. We then did our research. We then… we do… we’ve done all our child protections and we basically do what we want to do. It’s quite… it’s so much broader than we ever had as paramedics. Because we were maybe not so privy to all of this. But we certainly now can… we do a lot in our own time as well the three of us. We do do a lot. And last year we did so many courses. I mean they might only be one day courses, but we did so many last year. [B5-20:197]

A treatment centre receptionist also reported having had good opportunities for training –

(Call handler/receptionist, Centre-med) And we’re always going on different training sessions. We’ve done lots of different, you know, we’ve done a, a sort of a child protection one, we’ve done conflict resolution, conflict resolution on the telephone, lots of different bits and pieces, how to handle different situations and stuff so yeah, they’re always sort of telling us about extra courses and stuff that are going on so yeah, it’s good. [CM15:84]
6.6.2 Trainers and mentors to the urgent care workforce

A key external driver for skill mix change in urgent care was the anticipated shortage of GPs through natural wastage and as a consequence of the 2004 GMS contract. Across the case sites by 2007 there was evidence that GPs had gradually returned to the out-of-hours services and that there was often internal competition for shifts. Clear examples of this were in Hub-med and ED-med. This presence of GPs in call centres and treatment centres placed them in the position of trainers to some extent:

(Nurse Practitioner, County-med) That’s a change. I think they’ve gradually ... as it’s settled down, they’ve all gradually sort of come back to doing it and there’s also been a core group of doctors who do feel quite dedicated to out of hours and I think as they’ve cut the numbers down, the shifts are a bit sparser for them to get hold of, so they tend to do, be staffed by local doctors. [CM14: 37]

In Hub-med there was good evidence to suggest that GPs willingly took on aspects of support, supervision and development of ECPs and nurse practitioners. There was support in relation to individual cases that GPs passed to ECPs for management and also a longer term commitment to enable ECPs to gain experience alongside GPs in their practices where they were based. Support with particular cases extended from simple reminders that ‘we’re always at the end of a ‘phone’, to ‘you call us if you’ve got problems and come back to me for any advice’ [HM10:29] to a more systematic approach:

(GP, Hub-med) Every call that I pass onto them, I ask them if they’re happy to go out and do it and I usually give them some advice on what I think may be happening and maybe tell them what to look out for, and if there’s any problems, give us a call back [HM19:42]

In the treatment centre setting, ECPs will call on doctors for advice as needed. Working in a treatment centre is considered to be a good way of gaining experience alongside doctors: “If they’re at the treatment centres, they’re sitting with the doctors all the time, so their experience is far better than those left on the peripheral clinics” [GP, HM10:45]

but opportunities for learning can be constrained in busy centres, even when doctors are willing to help:

(ECP, Hub-med) I’ve not had a problem with anybody, they’ve all been willing to show, and give me the time to teach me. The only time that the
teaching goes downhill a bit is if we’re in the treatment centre, particularly on a Saturday, it’s so, so busy and there’s quite often only one doctor one and they haven’t got the time, because they’ve got to get through the patients. [HM12:65]

Similarly, nurse practitioners working in treatment centres with their own case loads describe working alongside GPs and gaining very good support and advice from them when needed:

(Nurse Practitioner, Hub-med) If I want to go through something, I’ll say can I go through this patient with you, can we talk about it, they’re more than happy to do that, they’ll bring papers in and you know you get, you get the very keen ones who are very for the service, want to see it develop and will sit down for hours and explain whatever you want and then you get the other ones that are just there to do the job, they’re there and that’s the end of it. But over the time the locals are very much more like this is their service, it’s their area and they want to support it. [HM15:147]

A nurse working in the ECC at ED-med took the opportunity to learn from doctors handling more complex conditions:

(Nurse, ED-med) Sometimes if I haven’t got patients to see, I will link with one of the doctors and see patients with them, because there are more complex conditions that we don’t deal with, but are still quite interesting. So if there’s something come in that I think is quite interesting, even though I can’t actually do it myself, I will go in and listen from - to their consultation and start to learn things from their consultations. [E01:35]

But an ENP working in a busy ED commented that “in the evening...they only have a couple of Doctors and one is often out on visits, and they get very busy and they don’t want to be pulled out [to give advice about a patient]” [E04:419] Some doctors appeared to be less content with the idea of having an impromptu consultation with another practitioner. This example is confirmed by a senior doctor in A&E who is concerned about lack of support for ENPs:

(Doctor, ED-med) And the other I think really important part of the job is to support the ENPs who are woefully unsupported at the moment. I mean they really don’t have anybody they can ask. Unfortunately the Casualty Officers are often not very experienced and you know, they’ve probably got less experience than the nurses, so that’s a big problem for them. So supporting them is important. [E09:7]
A GP in County-med who already made a substantial contribution to GP and medical student training found that ‘being asked to mentor and train nurses out-of-hours is difficult’ [CM17:28] Having not been involved in the training programmes, but then asked to ‘sign off’ on their achievements in a short timeframe was not very satisfactory, but this was overcome because of the commitment to make the local service a success. Not all doctors are said to make this kind of contribution however:

(GP, County-med) Having said that, there’s a continuous process of training and I try and show them new things, if there’s any interesting things, I, I will show them. I do that ethically, because I believe in the out of hours system locally and want it to work. I also like my nursing colleagues and want them to learn and it makes it work better, but it is difficult when you’re expertise is, is being borrowed, because that’s how it feels sometimes and you’re not recompensed for that additional skill, compared to say another colleague who wouldn’t do that and wouldn’t have the skills [CM17:29]

One potential effect of the close involvement of GPs in developing staff is that those who can function like doctors are highly rated:

(Nurse, ED-med) Certainly we have the best... I would say some are among the best, face-to-face nurses in out-of-hours that you could have ... Because they’ve been taught by GP’s to think and work like GP’s [E06:11]

A positive impact arising from the appointment of a Nurse Consultant for Urgent Care in County-med was said to have been in relation to organising training and liaising with local Higher Education Institutions:

(GP, County-med) One of the really good things about having a nurse consultant of course is because that’s a training post, she will liaise with [the Universities] and begin to pull that together, whereas I think before, we were floundering a little bit, you know and we were tending to say to the nurses well, go and find a course somewhere, which is slightly unfair, isn’t it [CM6:106]

This was regarded as one of the most important appointments made to date, not least because it offered the prospect that in the future GPs would not be the only source of training:

(Manager, County-med) I found probably one of the, the most important appointments we have made is probably actually our nurse consultant. That was a very, very good appointment, because it was all very well starting to
say oh, we want all these nurses coming in and developing them and everything else, but we found they were coming in and actually, the only people we had to develop them and train them were GPs. Now, GPs manage patients very differently to nurses and it’s very interesting to sort of compare how a nurse came that came in in the very early stages and who was managed and assessed and mentored by a GP, compares to a nurse who’s now come in in the later stages and is managed and supervised and assessed by the nurse consultant. I’m not saying one’s better than the other, but it’s quite a sort of, a difference really, so by appointing that nurse consultant, it’s put that high level clinical development role in place that I felt we were truly lacking and bearing in mind the high level risk attached to making a decision about a patient over the telephone, which is largely what the job involves, it puts that security blanket in really. [CM1:166]

A key factor in securing the sustainability of new workforce patterns and skill mix in urgent care is likely to be whether new clinical leaders, particularly nurses and ECPs are able to assume responsibility for the future development of their staff.

6.6.3 Self-directed learning

Evidence from interviews with Hub-med ECPs revealed a high level of individual awareness of their own learning needs and a pro-active approach to attending to these needs by seeking out the other professionals best able to help them and by making time to accompany patients to the next step in their treatment pathway to learn the skills associated with that aspect of care:

(ECP, Hub-med) Some choose to stick rigidly to what they are told they can do and so you may find a different answer from different ECPs as to what they’re willing to do. I figure a twelve hour shift is going to go a lot faster if I’m doing something for everybody really, even the minor injuries units that are not yet under our jurisdiction, I’ll work closely with because I know that if during the day I have something that I want to use as a learning opportunity, I can just pop the patient down there and say “look, I’m not quite sure how to do this, you know, can I watch you do it?” [HM17:38]

In another example, the same ECP viewed district nurses as a source of learning and a resource to be drawn on in relation to how to care for patients with particular needs:

(ECP, Hub-med) [District Nurses] were a good learning opportunity for us because that’s where I learned my catheter skills and all those sorts of things […] and another development opportunity, their skills are you know, dressings, wound dressings and that sort of thing; these are the people to talk to, so sometimes I will get called to somebody, say a leg wound or
something that I want to dress and I might, might do it and just confirm with them that that’s the way that they’d like it dressed and that they will call and, and follow up over the next couple of days, so we will work with them and we’re working more and more closely. [HM17:129]

Similarly in ED-med, a nurse working in the ECC spoke in terms of trying to ‘build a store of knowledge’:

(Nurse, Ed-med) Whereas at the moment, I tend to think ‘oh no, I’ll leave that one for the GP’s. I’ll deal with this tonsillitis, because I’m not confident. So I’m actively getting information each shift (there’s always an asthma). I always get to go in, listen to or poach information from the GP’s. ‘what did you do with that? How did manage it? Why did you do that?’ so I’m always asking lots of questions. I go in with them, they come in with me, so I’m gradually building up a store of asthma knowledge, so for me ... ultimately then the more complicated asthma’s I’ll deal with. [E01:461]

But there were obstacles to be overcome in achieving individual goals. Staff might be asked to negotiate placements on their own behalf:

(ECP manager, Hub-med) I am putting the onus back onto them to say "If you want an update on Paeds or you want to go and work in a GP surgery that’s fine". You’ve got to find the GP surgery and come to me and tell me. If you’ve got a course in palliative care that you want to go to that’s fine, do it, find it. Come back and if we feel as a Trust we can actually support that; that learning is going to be beneficial to your role, to you and to the patients then it can be considered because there is a budget out there for it, you know, education. [SD6:96]

Practitioners who worked at least for part of the time in daytime primary care appeared to have an advantage in being able to access learning opportunities more easily. A GP working in PCT-med highlighted a potential difference in professional development needs for doctors only working in out-of-hours and the importance for them of having a personal development plan. (A17-20:124) and a Nurse Practitioner in County-med said ‘It is difficult. I think [...actually it’s quite a good idea that we do work in the daytime, in a proper place.’ [CM9:175]

6.7 Discussion

In summary, changes in skill mix were revealed to have had an impact on key areas of practice. There was clear evidence of the substitution of key responsibilities - for the entirety of patient care in some settings as well as for specific tasks.
As shown in table 6.1 below, in the main, nurses and ECPs were carrying out extended scope of practice activities that were delegated substitutes for GP inputs rather than enhancing the range and volume of services provided by the care team. With the exception of telephone triage and assessment which was wholly delegated to others in some case studies, GPs continued to carry out these activities alongside other staff, focusing on more unwell patients and children.

The greatest potential for organisational diversification appears to be in the potential for the new skill mix delivering urgent out-of-hours care to extend its potential to the management of same day requests for appointments in general practice and attendances at the existing range of walk-in facilities, thus extending to become a 24 hour urgent care service. The place of person centred primary care, already challenged by out-of-hours services that have functioned beyond the practice boundary for almost twenty years, would be further challenged by such a development. Other potential for diversification can be seen in the engagement of urgent health care providers in new areas of provision, for example in prisoner health and the care of military personnel.

<table>
<thead>
<tr>
<th><strong>Table 6.1 Delegated substitutes for GP inputs undertaken by nurses (usually Nurse Practitioners) and ECPs</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telephone triage, assessment and advice</strong></td>
</tr>
<tr>
<td>Seeing patients face to face in treatment centres: physical assessment, arranging diagnostics eg X-ray;</td>
</tr>
<tr>
<td><strong>Home visiting</strong></td>
</tr>
<tr>
<td><strong>Prescribing medication</strong></td>
</tr>
<tr>
<td><strong>Confirmation of death</strong></td>
</tr>
<tr>
<td><strong>Arranging admission to hospital / identifying alternatives to admission</strong></td>
</tr>
<tr>
<td><strong>Referral to other services eg mental health, social care, rapid response teams, district nursing</strong></td>
</tr>
</tbody>
</table>

Whilst commissioners and service managers might develop new skill mix models, the observed response to staff development and training appeared to have mixed success, with financial constraints often restricting availability to mandatory, in-house courses. The interview data revealed considerable commitment by staff working in urgent care to develop new skills, often in their own time (which was inevitably constrained by an out-of-hours shift pattern) and with partial support (typically either funding or time) from employers.
Those having the opportunity to attend University based programmes, notably but not exclusively for ECP training, were consistently positive about their experiences. Being based in a hospital setting or in day time general practice appeared to confer valuable opportunities to engage in informal learning. Mobile practitioners used their network of contacts in the health community to seek out answers to questions and to create learning opportunities for themselves whenever they could. In the end, however, it is the General Practitioner whose contribution to training and support is most visible within the system and is, in the main, highly valued. Paradoxically then, we observe apparent medical ‘resistance’ to change in a system in which the contribution of the General Practitioner to positive change is indispensable. This ‘resistance’, however, features concerns around patient safety, organisational effectiveness and efficiency associated with skill mix and varying levels of training, experience, competence, and capability across the workforce involved in providing care.

In as far as discourse moves forward through clashes, it is possible to see this resistance as part of an essential dynamic in which new practice is intelligently developed. At this stage in the development of urgent care services, and as long as urgent care remains in the primary care domain, the General Practitioner emerges as the specialist Primary Medical care consultant, accepting the most challenging cases and providing clinical leadership and support. With the emergence of new leaders in nursing, particularly Nurse Consultants and Community Matrons, future leadership of the multi-disciplinary team will not need to rely as heavily as it currently appears to do on the support of general practitioners. In the short to medium term, however, the continued role of the GP as trainer and mentor is likely to remain a highly valued one.

### 6.8 Revised study propositions

The study findings supported the original study proposition in relation to the human resource management culture and therefore leave this unchanged:

**P2** The human resources management culture in health care organisations affects the facilitation of workforce change. Observable aspects of a positive culture include concern with staff satisfaction and staff development (despite limited resources) and concern with the quality of care

Further insight was obtained into how changes in skill mix alter care provision. The original study proposition P5 is revised and extended (P5a):

**P5** Changes in skill mix alter care provision by enabling the delegation or substitution of tasks, or by enabling the organisation to diversify through
enhancing the skills and capabilities of existing staff or by recruiting new staff.

**P5a** Changes in skill mix alter care provision by changing the responsiveness of the service to prioritising and managing demand and changing the way in which staff work together including how clinical decisions are made; how clinical risk is contained; how care is delivered by enabling the delegation or substitution of tasks; how referral of patients between staff and to other services is achieved and how resources are shared in the interests of patients.
7 Impact for patients

Summary

With the assistance of four case study sites we conducted a postal questionnaire survey and follow up telephone interviews with patients who had contacted urgent care services out-of-hours in order to elicit understanding about how different local health care systems with different workforce arrangements and skill mix assess and manage the care of patients with similar presenting problems and to examine their experience and satisfaction with service delivery and contact with different staff across an entire care pathway. Questionnaires used local terms for facilities and staff.

There was no evidence from the survey that the number of staff a patient had contact with had an impact on overall satisfaction with care. Almost all respondents were satisfied or very satisfied with care provided by different types of staff encountered. More respondents said they were very satisfied when in relation to their contact with nurses on the telephone than with doctors, but there were no differences in the proportion of those who were very satisfied with their contact with a nurse or doctor in person. Interviews suggested that patients did not always know the roles of staff that had treated them and a third underestimated the number of staff contacts.

The great majority of respondents agreed or strongly agreed with the statements that they were kept informed about what would happen next; had enough time to discuss their problem; felt things were explained in a way they could understand; that staff had listened to what they had to say; thought their problem had been resolved and agreed that contact with the service had been worthwhile. Most were better able to understand their health problem and to cope with it and felt reassured after contact with the service.

One half of respondents had repeated their story to different members of staff, but most agreed that information was passed onto the next member of staff at each stage. Re-consultation rates were similar across the four clinical conditions and in each case study. Those who said they were neutral, unsatisfied, or very unsatisfied with the overall service were more likely to re-consult. Those who had seen a doctor were no less likely to do so.

Satisfaction with urgent care was related to having good access (by telephone and adequate signage and parking at treatment centres and hospitals); short waiting times and being kept informed time to wait; good communication between staff and different parts of the service and the professionalism of staff.
7.1 Introduction

With reference to the key health policies reviewed in section 5, ways of improving the quality of care provided for patients include improving responsiveness, simplifying patient ‘journeys’, ensuring that patients are seen by the professional that is best able to meet their needs and reducing waiting times. New roles may benefit patients directly, but because many patients experience a ‘pathway’ of care involving contact with different community and hospital staff, it is important to understand how patients are affected by these changes throughout their pathway. This study aimed to investigate how new roles and changes in the way that staff work together had an impact on patient experience, satisfaction and perceived outcome of care and to examine how people with similar health problems were managed in different organisational arrangements. As described in Section 3, patients in four of the case studies were asked about their experience of recent contact with the service. Material in this section is drawn from the questionnaire survey of patients and telephone interviews with patients.

Patients were involved in this part of the study as participants and as members of the local reference groups. The main research question to be addressed was: “What are the consequences of changing workforce patterns for patients, including vulnerable patients?” We draw on findings from the main methods used to address this question in the study: a questionnaire survey of patients in four of the eight case studies and interviews with a sub-sample of survey respondents. The results from the thematic analysis of interview data from those subsequently interviewed are drawn on where it relates to the survey findings. Qualitative findings from interviews with staff are also referenced, as staff had views about the impact of changes for patients based on their experiences.

7.2 Study propositions

At the outset of the study it was proposed that improved skill mix would have a number of effects on patient experience:

P6 Improved skill mix will be that which is described to positively affect patient pathways through the urgent care system in terms of: (a) shorter pathways (number of steps, duration and waiting times) (b) contact with fewer staff able to contribute definitive care or onward referral (c) satisfaction with the experience of care in comparison with ‘before’ data in the cases if available.)
In order to develop the plan of analysis for the survey, the following hypotheses were drawn up by the research team prior to data collection:

(i) That there would be differences between the selected clinical conditions and between the case studies in terms of access, outcomes and experience.

(ii) That patients would not always know what type of staff had treated them.

(iii) That patient perception of consultation would be better after having seen any member of staff rather than having been given telephone advice.

(iv) That time spent with patients has no visible impact on patient experience or outcome.

(v) That patient perception of their consultation would be higher after contact with a doctor rather than another AHP/nurse.

(vi) That re-consultation rates would be lower after having seen a doctor rather another AHP/nurse.

(vii) That patients whose expectations are met, would have higher satisfaction levels.

(viii) That there would be differences between patient and service definitions of urgency.

(ix) That the commissioning model would not impact directly on patient experience.
7.3 Findings from the main questionnaire survey and interview data

7.3.1 Survey response rates, characteristics of respondents and case mix considerations

A total of 2,722 questionnaires were sent to callers contacting the out-of-hours service at Hub-med, Community-med, ED-med and PCT-med for help or advice in relation to one of the following four clinical scenarios over a period of ten weeks:

- Unwell child and suspected fever as the main concern (Age $\leq 10$ yrs)
- Child with acute wheezing (Age $\leq 5$ yrs)
- Adult with breathlessness (Age $\geq 18$ yrs)
- Adult with abdominal pain (Age $\geq 18$ yrs)

A total of 342 responses were excluded from the final valid sample: returned to sender or not at this address, $n=135$; patients since deceased, $n=20$; second questionnaire sent in error, $n=52$; responses meeting study exclusion criteria defined in Section 3, $n=135$. Questionnaires ($n=158$) were also sent to carers of patients receiving palliative care who contacted the services. The defined clinical scenario was:

- Adult with advanced cancer requiring assistance with pain relief (Age $\geq 18$ yrs)

The anticipated response rate for this group was lower than that expected for the main patient groups and analysis of these questionnaires is reported separately below.

Responses to the main survey are shown in Table 7.1
Table 7.1 Survey response rates. Number of responses by site and by clinical scenario (% of total questionnaires posted)

<table>
<thead>
<tr>
<th>Clinical scenario</th>
<th>Case study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCT-med (n=682)</td>
</tr>
<tr>
<td>Adult with abdominal pain (n=655)</td>
<td>53 (30.3)</td>
</tr>
<tr>
<td>Adult with breathlessness (n=598)</td>
<td>50 (33.8)</td>
</tr>
<tr>
<td>Child with fever (n=603)</td>
<td>34 (16.7)</td>
</tr>
<tr>
<td>Child with wheezing (n=535)</td>
<td>43 (27.6)</td>
</tr>
<tr>
<td>Total responses for each case study (n=2380)</td>
<td>180 (26.4)</td>
</tr>
</tbody>
</table>

In Community-med and Hub-med, the response rate was similar at 32.6% and 34.4% but lower in PCT-med (26.4%) which was unable to send out reminders. In ED-med the response rate was similar to Community-med and Hub-med (30.7%) but a smaller sample was achieved as a result of difficulties experienced by the site in attaining numbers for certain clinical conditions and mailing of some questionnaires by the site to incorrect addresses, which were subsequently therefore excluded. Total responses to the survey include seven questionnaires completed by telephone and fifteen completed on-line.

Table 7.2 is derived from Table 7.1 and is important in determining the validity of generic inter-site comparison. Ideally all sites would have a similar case-mix across the four marker conditions, as patients with each condition are likely to report differing experiences. There is some variation between sites, with PCT-med and Hub-med the closest pairing. Community-med has a greater...
proportion of children. The fourth site is skewed by the very small numbers of children with fever.

Table 7.2 Case-mix: proportion of each clinical scenario per site (%)

<table>
<thead>
<tr>
<th>Clinical scenario</th>
<th>PCT-med (n=682)</th>
<th>Hub-med (n=659)</th>
<th>Community-med (n=671)</th>
<th>ED-med (n=368)</th>
<th>Per scenario, all case studies (n=2380)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult with abdominal pain (n=655)</td>
<td>0.29</td>
<td>0.29</td>
<td>0.27</td>
<td>0.39</td>
<td>0.30</td>
</tr>
<tr>
<td>Adult with breathlessness (n=598)</td>
<td>0.28</td>
<td>0.27</td>
<td>0.20</td>
<td>0.35</td>
<td>0.26</td>
</tr>
<tr>
<td>Child with fever (n=603)</td>
<td>0.19</td>
<td>0.25</td>
<td>0.28</td>
<td>0.06</td>
<td>0.22</td>
</tr>
<tr>
<td>Child with wheezing (n=535)</td>
<td>0.24</td>
<td>0.19</td>
<td>0.25</td>
<td>0.20</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Characteristics of respondents and non-respondents

Most questionnaires were completed by patients themselves (74.0%) or by the person contacting the service (83.5% including completions by carer). Most callers were female (82.3%) and the great majority of patients (94.5%) indicated that they were ‘white’ in response to the question about ethnicity. Less than half of patients were male (44.3%) and the ages of patients reflected the clinical scenarios selected (<1yr (13.7%); 1-5yrs (27.4%); 6-10 yrs (3.3%); 18-65 yrs (32.1%); over 65 years of age (23.5%). Adult responders were significantly older than non responders (mean [SD] – 48.3 [22.2] years versus 58.4 [18.7] years – p<0.001). Responders were also more likely to be female than non-responders (67.1 % versus 61.5% p)

7.3.2 Telephone interviews with patients or their carers

A total of 129 survey respondents across three case studies took part in telephone interviews. Of these 35.0% were adults contacting the out-of-hours service about themselves, 48.0% were parents making contact about a child and the remaining 17.0% were adults contacting the service about another adult. The majority of interviewees were female (82.9%).

Table 7.3 shows interviews by condition and site. Recruitment to interview was lower in Ed-med in light of the lower survey response rates.
Table 7.3  Number of interviews with patients or carers conducted in each case study

<table>
<thead>
<tr>
<th>Clinical scenario</th>
<th>Case studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hub-med (n=52)</td>
</tr>
<tr>
<td>Adult with abdominal pain</td>
<td>13</td>
</tr>
<tr>
<td>Adult with breathlessness</td>
<td>15</td>
</tr>
<tr>
<td>Adult receiving palliative care</td>
<td>2</td>
</tr>
<tr>
<td>Child with fever</td>
<td>11</td>
</tr>
<tr>
<td>Child with wheezing</td>
<td>11</td>
</tr>
</tbody>
</table>

Over three quarters (79.2%) of telephone interviews were completed within 3-7 weeks of receipt of the questionnaire, however 11.2% of telephone interviews took over twelve weeks to arrange. The length of interviews ranged between five to forty-five minutes (mean 16.5, SD 7.1 minutes).

During the interview participants were asked how they knew to which service to contact. Nearly half reported that they either had the number to hand either from noting down during a previous contact with the service or in the form of a distributed leaflet (46.2%). Others called their GP surgery for the number (30.3%) or had to look up the telephone number (16%). Interview participants were also asked “What made them decide to contact the out-of-hours service?” to determine what led up to them contacting the out-of-hours service. The reasons that interviewees had contacted the out-of-hours service appeared to fall into one of four broad categories: (i) they wanted advice or reassurance for themselves or about someone they cared for, (ii) they were advised to contact the out-of-hours by another health professional or someone else, (iii) they or someone they cared for had suddenly become unwell and they were concerned, or (iv) they or someone they cared for was already unwell or perhaps recovering from illness or surgery and their condition had worsened. It was apparent from the accounts of those falling into the latter two categories that in many cases the patient or their carer had made considerable efforts to self-medicate or self-manage the condition for anything from a few hours to a few days prior to making the decision to contact the out-of-hours service.
7.3.3 Access to care, expectations and management of calls

Ease of access to out-of-hours care

Differences between sites in methods of access to out-of-hours care are reflected in Table 7.3. In Community-med, where initial contact was through a centralised nurse triage service, 178 of 216 respondents (82.4%) reported contact with an NHS helpline. The picture from respondents in the other case studies is of a more distributed pattern of first contact, with a substantial proportion of people calling their GP practice (226 of 511:44.2%) to access out-of-hours services.

Table 7.4 Responses to the question ‘how did you first get in touch with the service’. Number (%) [95% CI]

<table>
<thead>
<tr>
<th>First contact</th>
<th>Case study</th>
<th>PCT-med (n=176)</th>
<th>Hub-med (n=224)</th>
<th>Community-med (n=216)</th>
<th>ED-med (n=111)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Called special number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>57 (32.4)</td>
<td>79 (35.3)</td>
<td>0 (0.0)</td>
<td>33 (29.7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[25.5 – 39.3]</td>
<td>[29.0 – 41.5]</td>
<td>[21.2 – 38.2]</td>
<td></td>
</tr>
<tr>
<td>Called NHS helpline</td>
<td></td>
<td>30 (17.0)</td>
<td>53 (23.7)</td>
<td>178 (82.4)</td>
<td>12 (10.8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[11.5 – 22.6]</td>
<td>[18.1 – 29.2]</td>
<td>[77.3 – 87.5]</td>
<td>[5.0 – 17.0]</td>
</tr>
<tr>
<td>Called GP surgery</td>
<td></td>
<td>84 (47.7)</td>
<td>82 (36.6)</td>
<td>27 (12.5)</td>
<td>60 (54.1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[40.3 – 55.1]</td>
<td>[30.3 – 42.9]</td>
<td>[8.1 – 16.9]</td>
<td>[44.8 – 63.3]</td>
</tr>
<tr>
<td>Something else*</td>
<td></td>
<td>5 (2.8)</td>
<td>10 (4.5)</td>
<td>11 (5.1)</td>
<td>6 (5.4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.4 – 5.3]</td>
<td>[1.8 – 7.2]</td>
<td>[2.2 – 8.0]</td>
<td>[1.2 – 9.6]</td>
</tr>
</tbody>
</table>

727 valid cases, 12 missing cases
* `something else` includes treatment centre walk-ins and sheltered housing calls

However, ease of access to Community-med (which is by NHS24) was rated marginally more difficult. On a five point scale of very easy to very difficult, 10.2% of Community-med respondents rated ease of access as neutral to very difficult, compared with 6.9%, 4.0% and 7.2% of respondents who had contacted PCT-med, Hub-med and ED-med, respectively. Overall, 78.5% of respondents reported having access to a vehicle at the time of their request for medical help or advice. The proportion with a car was lower in Community-med and ED-med than in Hub-med and PCT-med (74.2%, 76.1%, 80.5% and 82.9%, respectively). However, analysis suggested that vehicle access was
unrelated to overall satisfaction, perceived match with expectations about the service or likelihood of re-consultation.

Perceived urgency of the call and the responsiveness of out-of-hours services

Respondents were asked to rate how urgent they considered their initial contact with the service to have been. Almost half rated their contact as urgent (335 of 711: 46.8%) but one fifth rated their contact as an emergency (144 of 711: 20.4%). When asked to judge the extent to which their contact had been managed with appropriate urgency by the service provider, the great majority (over 83%) reported that their contact had, in fact, been completely or mostly managed in this way (Table 7.5).

<table>
<thead>
<tr>
<th>Call managed with appropriate urgency?</th>
<th>Caller perceived urgency</th>
<th>An emergency (n=144)</th>
<th>Urgent (n=335)</th>
<th>Less urgent (n=122)</th>
<th>Advice or information (n=110)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completely</td>
<td></td>
<td>93 (64.6) [56.8 – 72.4]</td>
<td>200 (59.7) [54.4 – 65.0]</td>
<td>78 (63.9) [55.4 – 72.4]</td>
<td>74 (67.3) [58.5 – 76.0]</td>
</tr>
<tr>
<td>Mostly</td>
<td></td>
<td>27 (18.8) [12.4 – 25.1]</td>
<td>86 (25.7) [21.0 – 30.4]</td>
<td>29 (23.8) [16.2 – 31.3]</td>
<td>22 (20.0) [12.5 – 27.5]</td>
</tr>
<tr>
<td>To some extent</td>
<td></td>
<td>13 (9.0) [4.4 – 13.7]</td>
<td>24 (7.2) [4.4 – 9.9]</td>
<td>11 (9.0) [3.9 – 14.1]</td>
<td>9 (8.2) [3.1 – 13.3]</td>
</tr>
<tr>
<td>A little</td>
<td></td>
<td>3 (2.1) [-0.3 – 4.4]</td>
<td>11 (3.3) [1.4 – 5.2]</td>
<td>1 (0.8) [-0.8 – 2.4]</td>
<td>5 (4.5) [0.7 – 8.4]</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td>8 (5.6) [1.8 – 9.3]</td>
<td>14 (4.2) [2.0 – 6.3]</td>
<td>3 (2.5) [-0.3 – 5.2]</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

711 valid cases, 28 missing cases

In contrast, survey respondents typically rated their request for medical help or advice to be more urgent than did the out-of-hours service. Only 2.3% of survey respondents that described their request as an emergency were subsequently classified as an emergency by the out-of-hours service and only 1.4% contacts (n=6) were classified as an emergency by the out-of-hours services (Table 7.6).
Table 7.6 Level of urgency at the first point of contact. Number (%) [95% CIs]

<table>
<thead>
<tr>
<th>Urgency assessed by services</th>
<th>Caller assessment of urgency at time of call</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An emergency (n=88)</td>
</tr>
<tr>
<td>Emergency</td>
<td>2 (2.3) [2.3] [-0.8 – 5.4]</td>
</tr>
<tr>
<td>Urgent</td>
<td>51 (58.0) [47.6 – 68.3]</td>
</tr>
<tr>
<td>Less Urgent</td>
<td>32 (36.4) [26.3 – 46.4]</td>
</tr>
<tr>
<td>Non urgent</td>
<td>3 (3.4) [-0.4 – 7.2]</td>
</tr>
</tbody>
</table>

433 valid cases, 12 missing cases (cases are from Hub-med and Community-med only)

Expectations of contact with the out-of-hours service

Respondents were asked what they had expected from their contact with the out-of-hours service. Table 7.7 presents these results by clinical scenario and reveals some differences in expectations. In particular, that those calling about children were less likely to expect a home visit.
### Table 7.7 Caller expectation of how their call would be managed (all case studies) grouped by clinical scenario. Number (%) [95% CIs]

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Clinical scenario</th>
<th>Adult with abdominal pain (n=219)</th>
<th>Adult with breathlessness (n=187)</th>
<th>Child with fever (n=159)</th>
<th>Child with wheezing (n=158)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(36.1) [29.7 – 42.4]</td>
<td>(36.4) [24.5 – 43.3]</td>
<td>(9.4) [4.9 – 14.0]</td>
<td>(8.9) [4.4 – 13.3]</td>
</tr>
<tr>
<td>Home visit</td>
<td></td>
<td>79 (36.1) [29.7 – 42.4]</td>
<td>68 (36.4) [24.5 – 43.3]</td>
<td>15 (9.4) [4.9 – 14.0]</td>
<td>14 (8.9) [4.4 – 13.3]</td>
</tr>
<tr>
<td>Treatment centre</td>
<td></td>
<td>37 (16.9) [11.9 – 21.9]</td>
<td>60 (32.1) [25.4 – 38.8]</td>
<td>57 (35.8) [28.4 – 43.3]</td>
<td>79 (50.0) [42.2 – 57.8]</td>
</tr>
<tr>
<td>Telephone advice</td>
<td></td>
<td>91 (41.6) [35.0 – 48.1]</td>
<td>43 (23.0) [17.0 – 29.0]</td>
<td>80 (50.3) [42.5 – 58.1]</td>
<td>56 (35.4) [28.0 – 42.9]</td>
</tr>
<tr>
<td>Something else*</td>
<td></td>
<td>12 (5.5) [2.5 – 8.5]</td>
<td>16 (8.6) [4.6 – 12.6]</td>
<td>7 (4.4) [1.2 – 7.6]</td>
<td>9 (5.7) [2.1 – 9.3]</td>
</tr>
</tbody>
</table>

*“Something else” includes A&E, Walk-in Centre, Minor Injury Unit, repeat prescription

In total, 137 of 704 respondents (19.5%) received a home visit, 335 of 704 (47.8%) received a treatment centre appointment; 145 of 704 (20.2%) received telephone advice and 87 of 704 (12.5%) received something else. Differences between caller expectations of call management and reported method of management are shown in Table 7.8.
### Table 7.8 Caller expectation of call management (all case studies) compared with disposition (n=704) Number (%) [95% CIs]

<table>
<thead>
<tr>
<th>Outcome (consultation received)</th>
<th>Expectation (consultation desired)</th>
<th>Number (%)</th>
<th>95% CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Home visit (n=171)</td>
<td>111</td>
<td>(64.9)</td>
</tr>
<tr>
<td></td>
<td>Treatment centre (n=230)</td>
<td>3</td>
<td>(1.3)</td>
</tr>
<tr>
<td></td>
<td>Telephone advice (n=262)</td>
<td>21</td>
<td>(8.0)</td>
</tr>
<tr>
<td></td>
<td>Something else* (n=41)</td>
<td>2</td>
<td>(4.9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home visit</td>
<td>30</td>
<td>(17.5)</td>
</tr>
<tr>
<td></td>
<td>Treatment centre</td>
<td>192</td>
<td>(83.5)</td>
</tr>
<tr>
<td></td>
<td>Telephone advice</td>
<td>89</td>
<td>(34.0)</td>
</tr>
<tr>
<td></td>
<td>Something else*</td>
<td>24</td>
<td>(58.5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home visit</td>
<td>12</td>
<td>(7.0)</td>
</tr>
<tr>
<td></td>
<td>Treatment centre</td>
<td>9</td>
<td>(3.9)</td>
</tr>
<tr>
<td></td>
<td>Telephone advice</td>
<td>120</td>
<td>(45.8)</td>
</tr>
<tr>
<td></td>
<td>Something else*</td>
<td>4</td>
<td>(9.8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home visit</td>
<td>18</td>
<td>(10.5)</td>
</tr>
<tr>
<td></td>
<td>Treatment centre</td>
<td>26</td>
<td>(11.3)</td>
</tr>
<tr>
<td></td>
<td>Telephone advice</td>
<td>32</td>
<td>(12.2)</td>
</tr>
<tr>
<td></td>
<td>Something else*</td>
<td>11</td>
<td>(26.8)</td>
</tr>
</tbody>
</table>

704 valid cases, 35 missing cases

* "Something else" includes A&E, Walk-in Centre, Minor Injury Unit, repeat prescription

Nearly two thirds (64.9%) of those who expected a home visit received one and over three quarters (83.5%) of those expecting to be offered an appointment to be seen at a treatment centre received that outcome. Less than half (45.8%) of those who initially expected their call to be managed by telephone advice reported having their contact concluded in this way.

Of 53 identified respondents that reported that ‘something else’ had happened, most (44, 77.2%) had attended a treatment centre. The various terms for treatment centre (which may be in ED’s, community hospital, MIUs or WIC)s. This may indicate confusion about which service had been attended.

Mismatched expectations was one of the themes to emerge from the interview data with most of the comments relating to a preference for a home visit:

*When the caller first got in touch with the service she had been expecting a doctor to come out to her and although she was satisfied with the subsequent advice, she did indicate she was slightly disappointed not to get a visit from a doctor* (DW 88192)

Many also commented in a more general way about the perceived greater difficulty of obtaining a home visit:

*She did not feel that this particular episode was a serious one, although she had had bad experiences in the past when her son was younger and no-one
would come out to him ("they only come out if someone is dying").

(DF81404)

Even though people would have preferred a visit this did not necessarily impact on their satisfaction with the service

actually called wanting a home visit, but received telephone advice, despite this she said that service received completely met her expectations.

(DB83863)

**Re-consultation with health care services after contact with out-of-hours care**

Respondents were asked if they re-consulted services after their contact with the out-of-hours service. In total, 33% were advised to and a further 22% decided to do so. A substantial proportion (45%) of respondents contacted their GP the next working day, 1% contacted the practice nurse, 6% contacted NHS Direct or NHS 24. Re-consultation rates were similar across the four clinical conditions (range 53.2%-56.9%) and for all patients by case study. Respondents who were neutral, unsatisfied, or very unsatisfied with the overall service they received were more likely to re-consult (72%) than those who were satisfied or very satisfied (53%). Respondents who had seen a doctor were no less likely to re-consult that those who had seen a nurse or other AHP.

**7.3.4 Patient and caller experience of contact with staff**

**The number of staff having contact with patients**

Respondents were asked to count how many members of staff they remembered seeing or speaking to during their out-of-hours episode. Other than those calling about a child, very few respondents reported seeing or speaking to five or more staff. Table 7.9 shows the number of staff reported as having contact with patients in the different clinical scenario groups (all case studies) and Table 7.10 presents the numbers by case study (all patients).
### Table 7.9 Number of staff patients reported contact with by clinical scenario. Number (%) [95% CIs]

<table>
<thead>
<tr>
<th>Number of staff</th>
<th>Clinical Scenario</th>
<th>Adult with abdominal pain (n=213)</th>
<th>Adult with breathlessness (n=184)</th>
<th>Child with fever (n=156)</th>
<th>Child with wheezing (n=160)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>12 (5.6) [2.5 – 8.7]</td>
<td>13 (7.1) [3.4 – 10.8]</td>
<td>7 (4.5) [1.3 – 7.8]</td>
<td>5 (3.1) [0.4 – 5.8]</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>86 (40.4) [33.8 – 47.0]</td>
<td>87 (47.3) [40.1 – 54.5]</td>
<td>48 (30.8) [23.7 – 38.3]</td>
<td>33 (20.6) [14.4 – 26.9]</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>71 (33.3) [27.0 – 39.7]</td>
<td>55 (29.8) [23.3 – 36.5]</td>
<td>32 (20.5) [14.3 – 27.0]</td>
<td>58 (36.3) [28.8 – 43.7]</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>33 (15.5) [10.6 – 20.4]</td>
<td>23 (12.5) [7.7 – 17.3]</td>
<td>40 (25.6) [18.9 – 32.7]</td>
<td>47 (29.4) [22.3 – 36.4]</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>6 (2.8) [0.6 – 5.0]</td>
<td>3 (1.6) [-0.2 – 3.5]</td>
<td>22 (14.1) [8.7 – 19.7]</td>
<td>8 (5.0) [1.6 – 8.4]</td>
</tr>
<tr>
<td>6 or more</td>
<td></td>
<td>5 (2.3) [0.6 – 5.0]</td>
<td>3 (1.6) [-0.2 – 3.5]</td>
<td>6 (3.8) [0.8 – 6.9]</td>
<td>9 (5.6) [2.1 – 9.2]</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>2.77 (1.03)</td>
<td>2.59 (0.97)</td>
<td>3.26 (1.27)</td>
<td>3.29 (1.12)</td>
<td></td>
</tr>
</tbody>
</table>

712 valid cases, 27 missing cases
Table 7.10 Number of staff patients reported contact with by case study. Number (%) [95% CIs]

<table>
<thead>
<tr>
<th>Number of staff</th>
<th>Case study</th>
<th>Hub-med (n=223)</th>
<th>Community-med (n=210)</th>
<th>ED-med (n=108)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>(4.7) [1.5 – 7.9]</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>78</td>
<td>(45.6) [38.1 – 53.1]</td>
<td>36</td>
<td>47</td>
</tr>
<tr>
<td>3</td>
<td>57</td>
<td>(33.3) [26.3 – 40.4]</td>
<td>64</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>24</td>
<td>(14.0) [8.8 – 19.3]</td>
<td>67</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>(1.8) [-0.2 – 3.7]</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>6 or more</td>
<td>1</td>
<td>(0.6) [-0.6 – 1.7]</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>2.64 (0.89)</td>
<td>2.72 (1.10)</td>
<td>3.52 (1.16)</td>
<td>2.78 (1.07)</td>
</tr>
</tbody>
</table>

712 valid cases, 27 missing cases

Respondents were asked to indicate the different staff that they had had contact with. Table 7.11 highlights some differences between case studies that reflect differences in the skill mix. That most patients in all case sites report contact with a call handler reflects the predominance of contact by telephone as the main means of access. Contact with a receptionist could by telephone, but more typically would be on arrival at a treatment centre. The high proportion of respondents that recalled contact with a nurse on the telephone (80.3%) were at Community-med, where patients spoke to a triage nurse initially. Subsequent contact with a nurse in this site could take place in treatment centre settings or in patient’s homes. In stark contrast at PCT-med, a small proportion of respondents reported contact with a nurse on the telephone (15.6%) or in person (5.6%), where GPs rather than nurses were key staff group. Other than at Community-med, most patients (over 50%) had
contact with a doctor on the telephone. Relatively few patients reported contact with an ECP.

Table 7.11 The types of staff that patients were reported to have had contact with. Number (%)

<table>
<thead>
<tr>
<th>Member of Staff</th>
<th>Case Study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCT-med</td>
</tr>
<tr>
<td></td>
<td>(n=171)</td>
</tr>
<tr>
<td>Call handler</td>
<td>123 (68.7)</td>
</tr>
<tr>
<td>Receptionist</td>
<td>54 (30.1)</td>
</tr>
<tr>
<td>Nurse over the telephone</td>
<td>28 (15.6)</td>
</tr>
<tr>
<td>Nurse in person</td>
<td>10 (5.6)</td>
</tr>
<tr>
<td>Doctor over the telephone</td>
<td>126 (70.4)</td>
</tr>
<tr>
<td>Doctor in person</td>
<td>75 (41.9)</td>
</tr>
<tr>
<td>Paramedic</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Driver</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Emergency Care Practitioner</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

Other = Pharmacist, Physician’s Assistant

In 39 of 129 (30.2%) interviews subsequently conducted with survey respondents, the patient was reported to have had contact with more staff than they had been indicated in their questionnaire. Contacts with drivers, call handlers and other auxiliary staff were commonly omitted rather than contacts with clinical staff.

One of the themes to emerge from the interview data related to the professional identity of those dealing with their problem, particularly where contact was by telephone. It is likely that the questionnaire response both underestimated the true number of staff contacts and that some professional groups are under represented simply because respondents were not aware of their role titles:
The interviewee was not clear about who she spoke during the triage process, she was clear that it was not a doctor as she was told that there were no doctors available at that time (interviewee took this to mean that there were no doctors to visit but it could have meant that there were no doctors available to speak to over the phone at that moment (DW88192)

Call went straight through with no delay and she spoke to a woman whose role she did not know. (DW41050)

She called OOH number and spoke to a woman. Had no idea of her job title. She explained problem and symptoms to this person and was told to go straight to OOH service at the hospital (DF43376)

The patient's wife spoke to 'an operator' or 'receptionist' who advised her of the service she had contacted, then she was put through to a 'qualified person' (the patient thought this might be a nurse) who asked about the patient's symptoms and previous history (GA40351)

### Satisfaction with care provided by different staff

There appeared to be no direct evidence that the number of staff the patient had contact with had an impact on overall satisfaction with care (Table 7.12).

<table>
<thead>
<tr>
<th>How many staff</th>
<th>Satisfaction Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very satisfied</td>
</tr>
<tr>
<td>1-2 (n=275)</td>
<td>166 (60.4)</td>
</tr>
<tr>
<td>3-4 (n=341)</td>
<td>189 (55.4)</td>
</tr>
<tr>
<td>5 or more (n=57)</td>
<td>34 (59.6)</td>
</tr>
</tbody>
</table>

701 valid cases, 28 missing cases, Chi square=1.6 (ns)

Overall levels of satisfaction measured using the survey instrument were high in all four case studies, with the percentage of very satisfied or satisfied ranging from 88.0% to 93.7% respectively. The percentage of very satisfied respondents ranged from 54.2% to 62.2% across the case studies. When asked to rate their satisfaction with the care received by the different types of staff patients encountered during their care, almost all were satisfied or very satisfied (Table 7.13).
Across the four case studies, 250 (61.1%) of those seen face-to-face by a health care professional indicated they were very satisfied, compared with 165 (52.1%) of those receiving telephone advice.

Table 7.13 Number of patients who were very satisfied with their contact with different members of staff (%)

<table>
<thead>
<tr>
<th>Member of Staff</th>
<th>Case Study</th>
<th>PCT-med</th>
<th>Hub-med</th>
<th>Community-med</th>
<th>ED-med</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>71</td>
<td>104</td>
<td>110</td>
<td>57</td>
</tr>
<tr>
<td>Call handler</td>
<td></td>
<td>(58.7)</td>
<td>(66.7)</td>
<td>(58.5)</td>
<td>(66.3)</td>
</tr>
<tr>
<td>Receptionist</td>
<td></td>
<td>24</td>
<td>32</td>
<td>37</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(49.0)</td>
<td>(55.2)</td>
<td>(45.7)</td>
<td>(54.8)</td>
</tr>
<tr>
<td>Nurse over the phone</td>
<td></td>
<td>22</td>
<td>41</td>
<td>122</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(75.9)</td>
<td>(73.2)</td>
<td>(70.9)</td>
<td>(72.0)</td>
</tr>
<tr>
<td>Nurse in person</td>
<td></td>
<td>5</td>
<td>16</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(62.5)</td>
<td>(76.2)</td>
<td>(64.7)</td>
<td>(75.0)</td>
</tr>
<tr>
<td>Doctor over the phone</td>
<td></td>
<td>68</td>
<td>80</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(57.1)</td>
<td>(72.7)</td>
<td>(51.2)</td>
<td>(60.3)</td>
</tr>
<tr>
<td>Doctor in person</td>
<td></td>
<td>48</td>
<td>69</td>
<td>94</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(62.3)</td>
<td>(80.2)</td>
<td>(67.6)</td>
<td>(72.2)</td>
</tr>
</tbody>
</table>

None of the differences between case studies were significantly different (chi square)

Respondents were also asked whether the service they received had met their expectations. Over half (58.8%) of respondents felt that the service had ‘completely’ met their expectations.

7.3.5 Characteristics of the service

With reference to a five point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree), respondents were asked to respond to statements about the out-of-hours service. Table 7.14 shows the proportions of respondents strongly agreeing and agreeing with each statement.
Most positive characteristics of the service

The great majority of respondents agreed or strongly agreed with the statements that they were kept informed about what would happen next; had enough time to discuss their problem; felt things were explained in a way they could understand; that staff had listened to what they had to say; thought their problem had been resolved and agreed that contact with the service had been worthwhile. Most were better able to understand their health problem and to cope with it and felt reassured after contact with the service.

Less positive characteristics of the service

A less positive finding was that over half of respondents reported that they had to repeat their story to different members of staff. Table 7.14 shows that this did not extend to being given contradictory information by staff, as only 41(6.2%) reported that one member of staff ‘told them one thing while another told them something quite different’. In comparison with the most positive service characteristics, fewer respondents (range 53.2% to 70.3%) considered that that information was passed onto the next member of staff at each stage. The relatively strong response to this statement (70.3% agree or strongly agree) originates from Community-med where, arguably, the in-built requirement for NHS 24 to transfer calls to out-of-hours providers serves as an additional test of the system’s capability for information transfer.
### Table 7.14 Level of agreement with service characteristics. Number (%) agree or strongly agree

<table>
<thead>
<tr>
<th>Service characteristic</th>
<th>Case study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCT-med(n=)</td>
</tr>
<tr>
<td>'I was kept informed about what would happen next at each stage'</td>
<td>148 (88.1)</td>
</tr>
<tr>
<td>'I found that I had to repeat my story to different members of staff'</td>
<td>70 (43.5)</td>
</tr>
<tr>
<td>'Information was passed on to the next member of staff at each stage'</td>
<td>84 (53.2)</td>
</tr>
<tr>
<td>'One member of staff told me one thing while another told me something quite different'</td>
<td>13 (8.2)</td>
</tr>
<tr>
<td>'I had enough time to discuss my problem'</td>
<td>158 (94.0)</td>
</tr>
<tr>
<td>'The person I saw or spoke to explained things in a way I could understand'</td>
<td>155 (92.8)</td>
</tr>
<tr>
<td>'The staff I had contact with listened to what I had to say'</td>
<td>156 (92.9)</td>
</tr>
<tr>
<td>'My problem was resolved'</td>
<td>126 (77.3)</td>
</tr>
<tr>
<td>'Contact with this service was worthwhile'</td>
<td>150 (89.3)</td>
</tr>
<tr>
<td>'I was better able to understand my health problem'</td>
<td>110 (68.3)</td>
</tr>
<tr>
<td>'I was better able to cope with my health problem'</td>
<td>116 (71.6)</td>
</tr>
<tr>
<td>'After contact with this service I felt more reassured'</td>
<td>140 (82.4)</td>
</tr>
</tbody>
</table>

* The statement is negative

Various themes relating to positive and negative aspects of the service arose from the interview data. A large number of interviewees were positive about regarding their experiences with the service and appreciated that sometimes delays were inevitable due to workload pressures.

The patient indicated that the service was very good but expressed again how awful the hour wait had been (said it felt like 2 hours) but fully understood that others in more urgent need had to be attended to as well. She rationalised that the GP who received her call would have known that her problem was not connected with her heart and prioritised her accordingly. She said she knew the service would have called her back sooner if they had felt it was a more serious problem.
One positive theme emerged regarding continuity of care despite multiple staff involvement. Some reported positive experiences when the system worked well:

*When they got to the out-of-hours centre at this hospital they were met by a receptionist and then saw a nurse. The nurse took them straight through for an examination and then got the doctor who examined the baby. There was no waiting and the staff seemed to know them and what the problem was (DW806363)*

*Described adviser as very thorough and very professional. Described contact with triage doctor positively, patient commented that doctor already had the information she’d given to the ‘adviser’ so it was not like starting all over again, the patient felt positive that the her information was being communicated well within the out-of-hours service (DB90323)*

When communication was ineffective this appeared to have an adverse effect on patient experience both within the service and between the service and their own practice. Complaints about communication often centred on repetition of information to different staff members and repetition emerged as a separate theme from the analysis:

*It was frustrating to have to repeat things to different people when just wanted to see a doctor. Would prefer to call straight through to a doctor (GF53156)*

*Lack of continuity of information between OOH services and own GP resulting in mother having to remember & relay clinical details of treatment to GP (GF53156)*

One theme related to reassurance. Interviewees valued the reassurance of contact about worrying symptoms even if only by telephone. People were given the confidence to take further action regarding symptoms:

*Father was satisfied with the contacts he had during the episode. It was very helpful being able to speak to the nurse on the phone to get advice and reassurance if things were not serious and to be pointed in the right direction afterwards (GW78848)*

*Interviewee felt reassured that the person who triaged the call was able to listen to the patient’s breathing down the phone, the interviewee was advised to call an ambulance by the triaging clinician, having this advice gave the interviewee the confidence to call for ambulance.(DW88192)*
Staff roles and conflicting advice

Despite the focus of the interviews, few comments were elicited specific to staff roles, probably reflecting the level of awareness of service users about the identity of different staff. Both positive and negative comments were recorded:

*The doctor said he would send someone to help and about an hour later someone arrived, who was not a doctor or a paramedic saw the patient but was maybe something between these roles. The patient was quite frightened but was reassured by this person and given morphine for pain relief and an ambulance was called as it was decided that further investigation was needed.* (DA94113)

*Caller not impressed because one of the First Responders asked colleague how to take a pulse.* (GA38723)

Most negative comments related to the perceived attitudes of doctors rather than other staff:

*Best part of service was the nurse because she listened and did not make patient feel she was taking up her time. In contrast, felt that the doctor was rushing to finish the call with her. Felt it would have been better if the doctor had given her a bit more time. Appreciated he was probably busy and she explained to him that she knew it was a 24 hour bug but he made her feel very rushed.* (MA377359)

Another theme related to staff roles was being given conflicting advice about the same problem. This did not appear to be related to particular professional groups but rather simply reflected contact with multiple professionals:

*Seeing four lots of health care professionals (3 if not all 4 were doctors) and being told different things – the child had gastro-enteritis and in addition one doctor said the she had a sore throat, A&E staff said she didn’t and that the child shouldn’t be given antibiotics and the GP said she did.* (GF34355)

Generic service characteristics

A number of other themes arose from the data but are not germane to the focus of this report. These are largely relevant to generic qualities necessary in an acute health care delivery system which would improve patient satisfaction. The themes arising from the data including those mentioned above were largely independent of staff roles.

In summary these were:

- **Access:** Good access to the service is important, for example by telephone and provision of parking and signage at treatment centres and hospitals.
• Waiting times: Keeping waiting times to a minimum and when delays are anticipated keeping the patient informed at all times
• Communication: Good communication between staff and different parts of the same service is appreciated
• Continuity: Using appropriate systems to support communication and avoid repetition for the patient and conflicting advice
• Professional behaviour: Maintaining high profession standards good communication skills amongst individual practitioners

7.3.6  Qualitative analysis of free text comments

Many respondents that wrote free text comments took the opportunity to thank the service and their staff for the good care they had received. The comments often added further detail describing the patient pathway, for example times of appointments and distances travelled. Those that described having used the out-of-hours service more than once typically made comparisons with previous experiences of the service both better and worse. Some comments were case study specific. For example in Community-med factors producing delays in the patient pathway were a common feature of the free text comments including repetitive questioning or use of computer algorithms. Lack of transport and distances to travel were also a focus for remote and rural Community-med. There were also several comments made by parents of children and babies from the Community-med area and the general consensus here seemed to be that the home visiting pathway would have better suited their circumstances. Unusually, a number of Hub-med respondents referred to role titles, for example nurse practitioner or paramedic, suggesting that Hub-med patients were perhaps more aware of some of the new types of health professional working within the out-of-hours services, perhaps as a result of staff making an effort to introduce themselves.

7.3.7 Summary of findings from the main questionnaire survey and interviews

Summary of findings

While there were relatively large numbers of questionnaires distributed in this survey, response rates were similar to those observed in the pilot study and measures introduced to improve response rates appeared not to have been additionally effective, including providing alternative modes of completion was ineffectual. The low response made it problematic to analyse data by clinical condition within case studies.

The overall impression from the survey is that those who responded were highly satisfied with the care received, whatever the different workforce and
skill mix patterns were in the different case studies. In large measure, the findings of the questionnaire survey confirm the findings of earlier studies:

- Patients and carers tend to rate the urgency of their contact with the out-of-hours service more highly than do health care providers
- Satisfaction with care is related to prior expectations
- Patients who are less satisfied with the care they receive are more likely to re-consult about the same health problem.

The survey was designed to be more than a general survey of patient experience and satisfaction by introducing the rating of satisfaction with different types of staff. It was clear from the outset that the efficacy of this approach would be constrained by the respondent’s ability to recollect whom the patient had contact with and to be able to differentiate between the roles of different staff. Although the majority of patients provided identical accounts of the numbers of staff they had seen or spoken to when interviewed in comparison with questionnaire responses, around a third of patients or callers who were subsequently interviewed recalled more contacts with staff. These were typically support staff rather than health professionals. Nonetheless, there appeared to be no direct evidence that the number of staff the patient had contact with had an impact on overall satisfaction with care. This impression was confirmed by the telephone interviews. Few comments were elicited specific to staff roles whilst much information was gained regarding the generic standards required for effective delivery of an out-of-hours service.

The extent to which the survey could capture exposure to the different skill mix in the case studies and in particular the roles where greatest change had been observed needs to be considered. With the help of the case studies, the role titles in the questionnaire was adapted to reflect local terminology and roles (and were subsequently re-coded to more generic titles). Thus contact with a nurse in one case study might mean contact with a nurse practitioner, in another a community nurse. All the case studies that participated in the survey had a novel skill mix encompassed by the range of options characterised by contact with a nurse or doctor on the telephone or in person. An alternative approach would have been to have purposively sampled patients who were known to have had contact with certain types of staff. This would have overcome the limitations that arose in the survey of small numbers of patients reporting having had any contact with ECPs for example, but would have complicated the already very challenging process of case ascertainment by requiring manual re-coding by the case studies of names of staff to role types.

It is interesting to reflect that although the case of the ECP as an example of a new role is compelling by virtue of its novelty, very few patients overall reported contact with an ECP as part of their care pathway. This may partly
reflect under-recognition of novel staff roles as the interview data revealed considerable uncertainty regarding precise staff professional status.

In limiting the population sample to patients presenting with particular clinical scenarios, it was possible to observe some differences in what patients or callers wished to happen as a consequence of their call. Carers of children were less likely to expect a home visit.

Whilst a high proportion of patients reported being kept informed about what would happen next (seemingly a key improvement since the Carson Review in 2000) and most considered that information about them was passed on to other staff at each stage, over half reported having to repeat their story to different members of staff. A similar pattern emerged from the interview data. Differences in experience were identified by site and clinical scenario, although satisfaction remained high. Patients in Community-med had different triage, more contacts with staff, were more likely to be seen face-to-face and were more likely to have to repeat their story. They were also less likely to report that their contact was worthwhile, that they were better able to understand their health problem, better able to cope with my health problem, or that they felt reassured. Their satisfaction levels with different types of staff was also tends to be marginally lower than in the other sites. This appears to be linked to NHS 24 as the first point of contact rather than the service itself.

An important finding appears to be that the number of staff that patients have contact with did not affect their overall satisfaction. Despite the interviews seeking out information regarding staff roles the majority of themes were relevant to generic service standards rather than concern over professional roles. Returning to the specific hypothesis outlined at the start of this chapter, Table 7.15 documents the evidence collected for each hypothesis generated.

### Table 7.15 Results against original hypotheses

<table>
<thead>
<tr>
<th>Original hypothesis</th>
<th>Evidence from patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) That there would be differences between the selected clinical conditions and between the case studies in terms of access, outcomes and experience.</td>
<td>Differences in experience were identified by site and clinical scenario, although satisfaction remained high and it was not possible to attribute differences in experience to differences in satisfaction</td>
</tr>
<tr>
<td>(ii) That patients would not always know what type of staff had treated them.</td>
<td>Evidence from the interviews that patients often did not know what type of staff had treated them, especially for newer staff roles</td>
</tr>
<tr>
<td>(iii) That patient perception of consultation would be better after having seen any</td>
<td>There was an association between patient perception of consultation and</td>
</tr>
<tr>
<td>Member of staff rather than having been given telephone advice.</td>
<td>Face-to-face contact</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>(iv) That time spent with patients has no visible impact on patient experience or outcome.</td>
<td>No direct evidence</td>
</tr>
<tr>
<td>(v) That patient perception of their consultation would be higher after contact with a doctor rather than another AHP/nurse.</td>
<td>There was no identified difference in patient perception of their consultation after contact with a doctor rather than another AHP/nurse.</td>
</tr>
<tr>
<td>(vi) That re-consultation rates would be lower after having seen a doctor rather another AHP/nurse.</td>
<td>There was no evidence that re-consultation rates were lower after having seen a doctor rather another AHP/nurse.</td>
</tr>
<tr>
<td>(vii) That patients whose expectations are met, would have higher satisfaction levels.</td>
<td>Yes, where expectations were met, patients had higher satisfaction levels.</td>
</tr>
<tr>
<td>(viii) That there would be differences between patient and service definitions of urgency.</td>
<td>Yes, patients rated their contact as more urgent than services did.</td>
</tr>
<tr>
<td>(ix) That the commissioning model would not impact directly on patient experience.</td>
<td>Commissioning may have been associated with patient experience. In the Scottish site, where there was no commissioning, respondents reported service provision as more complex, less easy to access, and reported a marginally less good experience of the service. Extreme rurality rather than the service model may explain some of the observed difference, however.</td>
</tr>
</tbody>
</table>

### 7.4 Experiences of the carers of palliative care patients

As part of the patient experience and satisfaction survey, the views of adult palliative care patients and their carers were sought, because urgent out-of-hours care services provide important support for this patient group, particularly in the management of pain and other acute problems. In total, 158 questionnaires were sent to patients receiving palliative care in 4 of the case sites: Hub-med, Community-med, Ed-med and PCT-med. Sixteen of the 30 palliative care questionnaires that were received contained free comments (n=10 from Community-med and n=6 from Hub-med). The relevance of these data is as qualitative material from which respondents’ unique voices can be heard in their own words explaining what was important to them and how satisfied they were when they contacted the out-of-hours service for help. Identification of key issues from this small sample from two of the case sites...
may provide some contextual detail from the patient perspective and suggest avenues for further analyses of the services.

**Method of analysis**

The 16 sets of free text comments from the palliative respondents were extracted from the survey questionnaires and typed up in a word document under the Community-med and Hub-med case site headings. They were then read independently by two researchers and subjected to a simple content analysis to identify key issues relating to the palliative patients and carers' contact with the out-of-hours services. The researchers discussed the relevance of their individual findings and a list of five issues were agreed upon. These were: 'speed of response'; 'clinicians taking time with patients'; 'key lifeline-support for carers'; 'lack of professionalism'; 'lack of continuity of information'. The meaning of the different issues will be discussed using illustrative excerpts from the data to build a picture of the patients' experiences in the out-of-hours systems, to learn what worked and what did not from their perspective.

**Speed of response**

Patients and carers commented upon the importance of speed in the way the services responded to their initial calls for help. The palliative patient may need more than one contact with the service as their terminal care needs may be protracted over a period of time and in this situation, the speed of the initial response could be important:

*My partner was terminally ill for 6 months. During this time I phoned NHS24 4-5 times due to emergency situations and each time received prompt attention, either by a doctor phoning back, visiting in person or calling an ambulance." (Community-med; 42568)*

*The speed with which I was able to see a doctor at the [OOH] centre ... was, I felt very quick. I placed my original call with NHS24 at midday and had a phone call from the [OOH] centre within the hour and saw a doctor within 90 minutes of that call (Community-med; 71526)*

A timely response might also reinforce the perception of the doctor's professionalism in dealing with the case and contribute somewhat to alleviating anxiety:

*The visiting doctor that attended to me was prompt, extremely professional and diagnosed my condition exactly. He prescribed medication, which*
worked and as well as being prompt and patient really made me feel relaxed. Also my daughter was made to feel less anxious. (Hub-med; 96834)

Some respondents reported that their call was met with less urgency at night, a time when distress may be more acute for patients and family members:

We found ourselves in a difficult position of caring at home for my father who was diagnosed with a brain tumour. During this time we found ourselves calling upon doctors in out-of-hours service, particularly at night when my father was at his worst. We were horrified to find this service appalling !! at one time we waited over 2 hours for anyone to arrive at which point my father was distraught. (Hub-med; 95866)

The problem of having to wait was rationalised by some respondents. One suggested that the necessity of having to speak to a receptionist first could entail a longer wait to speak to a nurse, contrasting with the pre-GMS contract system where one’s own GP seemed to call almost immediately (Community-med; 41318). Others noted that the systems seemed to have too few resources to deal with the high demand from patients and this could result in unacceptable waiting times:

We were satisfied with the competence of the individuals with whom we had contact, but it is the time lapses which are at fault. This is because there are far too few personnel to cover too large an area. (Community-med; 41318).

GP was fantastic when she arrived approx 2.5 hours after initial phone call....GP was faultless but was unable to attend sooner as there were so many demands on her time. (Hub-med; 85139)

From the case site descriptions in section 4 it can be seen that the rural situation of Community-med and Hub-med may be a major factor affecting the speed of response to all patients. The two excerpts above suggest that palliative patients are aware that the services can sometimes struggle to meet demand and this is why they might have to wait. However, despite this knowledge and despite the high quality of direct care, if the response is slow, the system is felt to have let them down.
Clinicians taking time with patients

In addition to a prompt initial response, palliative patients indicated that it was important for clinicians not to rush consultations and to take time with patients as this created calmness and reassurance which was much appreciated:

*I was very pleased with the home visit. They took their time and that helped me with the situation.* (Community-med; 52691)

*I found the service to be very useful. In particular my nurse adviser (name) was extremely helpful. He kept me calm and talked me through what was going to happen very patiently.* (Community-med; 71526)

Key 'lifeline-support' for carers

The out-of-hours service was very important to palliative care patients at a time when they needed help and reassurance. Other data suggest that the service contributes invaluable support for carers managing the task of looking after a dying relative at home:

*My mother in law (patient) has now passed away but the care she received from the out of hours doctors and nurses was first class. It made a huge difference to us (her carers) and meant she could be at home surrounded by family! The care and support we received from the [name] health centre was superb!! Again without their compassion and support every day we would not have managed to have my mother in law at home.* (Community-med; 43311)

However, some comments revealed aspects of services provision which were less successful in meeting needs and some difficult problems are still evident which should be addressed.

Perceived lack of professionalism

Some carers described situations in which staff had seemed unprofessional. In one example there was concern about a visiting doctor's lack of knowledge about drugs, which ultimately led to the family distrusting the care given:

*On a second visit by (the GP) we were totally horrified by his lack of knowledge and professionalism. I even found myself having to advise him on my father's drugs and how to administer them!! He left us feeling*
totally distressed and lacking in the confidence he should have given us a qualified GP!! (Hub-med; 95866)

In another case, the clinician's attitude was interpreted as rudeness:

The doctor who arrived to check my wife over was very rude. He made my wife turn over whilst in great pain she screamed out, he just pushed her over. No compassion at all. I think he was German. No bedside manner at all (Hub-med; 96284)

Poor communication also seems to have been the underlying problem where a receptionist was felt to have effectively ignored the patient who attended a Centre for treatment by continuing to read her magazine (Community-med; 71526). These data suggest that staff were not aware of the impact their behaviour was having on the patients, whether they were intending to be unprofessional or not. However, one carer's experience suggested that staff's professionalism changed when they learned that they were dealing with a palliative care patient:

I was very pleased with the service I received. The only thing I could say was that when it was disclosed that my wife was terminally ill the staff I spoke to changed their tone and became really helpful. (Community-med; 73132)

This carer expressed satisfaction with the care received but all these examples of perceived un-professionalism suggest that staff may not be sufficiently prepared or trained to deal with the needs and concerns of palliative patients. There is a sense that the priorities and expectations of staff and patients and their carers in the out-of-hours palliative care encounter are very different and that more explicit information on what is wanted and what can be provided is needed to facilitate a more shared approach to care. However, this confusion may also be influenced by the lack of coordination of information generally in the consultation.

**Lack of continuity of information**

Continuity of information was found to be a problem for some within the different systems. In one example, the implications of the lack of continuity of patient clinical history between the GP and the out-of-hours service were highlighted:
On the evening of calling the doctor I knew my medical history and was able to try and explain to them what the problem was in my own terminology. But the duty doctor has not or cannot carry everyone's medical notes with them so perhaps there may be a system eventually where this information was available on-line which would help both the patient and GP. (Hub-med; 79524)

Another patient was given contradictory information about drugs over different visits which made things difficult:

Each of the professionals involved appeared keen to assist in resolving our situation but as it was necessary to call on a number of occasions over a period of days the sometimes conflicting advice and views of medication was concerning. (Community-med; 73390)

Information management within the out-of-hours systems may be an important issue for all patients using the service.

Summary

Although limited in number, the free text comments analysed from the Community-med and Hub-med patient survey data show that palliative patients and their carers did encounter difficulties in the out-of-hours service process. Patients and service providers can have conflicting perceptions of the urgency of calls whilst lack of professionalism and sensitivity from service providers can increase the distress of patients and carers. Time with the clinician is also evidently important for palliative patients and carers during out-of-hours periods and may impact on satisfaction with the service.

The issues of lack of urgency, lack of professionalism and lack of sensitivity with the services were identified in both of the case sites. However, with the limited data, it is difficult to determine clearly whether common factors in the sites may have been responsible for this. Both Community-med and Hub-med services cover large rural populations and it is possible that this may have contributed to pressure on home visit response times which were evidently a crucial part of the service for palliative patients and carers, particularly at night. It is evident that further research is needed to clarify the needs and expectations of palliative care patients in the out-of-hours period and the reasons why urgent care services might have difficulty in supporting the priorities of this vulnerable group.
8 Impact for health systems

Summary

Multi-agency involvement and service user engagement in the planning development of services was the norm in the case studies. Some public resistance to change was anticipated as was concern by EDs and ambulance services that new skill mix could have a potentially de-stabilising effect for them. There were successful examples of planned and emergent change in the same site. Successful workforce was strongly rooted in an appreciation of the dynamics of the local health system.

A Vensim influence diagram and a number of feedback loops were identified that showed the central importance of workload management in the system to avoid difficulties in retention and recruitment of staff associated with stress and reduced staff satisfaction; to avoid incorrect triage of calls with consequences for missing serious cases, increasing the volume of genuine clinical need causing additional workload through further calls to the hub or patient self referrals to the emergency department or to 999 services. This suggests that in urgent care, new workforce and skill mix patterns most likely to have enduring success are those which deliberately focus on effective demand management.

The model identifies a chain of influence for the parameter ‘quality of staff mix’ which suggests that in any comparative future evaluation of skill mix models in urgent care it will be important to determine the number of correctly and incorrectly triaged calls (including missed serious cases and inappropriate hospital referrals); staff satisfaction and retention; and patient satisfaction and outcomes of care.

When one organisation employed the majority of urgent care staff it was possible to move resources more effectively around the system. For example, where ambulance services employed staff, the nearest person to the scene could be dispatched to a category A 999 call, this might be a GP. Partnerships with social care were important in providing alternatives to admission.

Co-location did not generate conditions sufficient for collaboration and teamwork, nor was it a necessary pre-condition for effective collaboration. Where payment followed patients, staff were unable to treat patients opportunistically if they did not ‘belong’ to their part of the service even though they may have had capacity to do so.
8.1 Introduction and aim

The development of qualitative system dynamics models of patient flows through the urgent care systems enabled observed examples of workforce change to be contextualised and understood in terms of their likely influence on patient pathways. New roles and new skill mix arrangements at the first point of contact, for example, influenced the experience of most patients encountering the system. Having explored the impact of workforce change for patients and for staff practice, the research question addressed in this section is 'what are the consequences of changing workforce patterns at the health system level?' The aim was to produce a single, high level influence diagram that synthesised the learning from the eight models, that could serve as a tool to inform further system development and that could inform an assessment of the implications for change management in urgent health care. Material in this section is drawn from the system dynamics modelling and from interviews with staff and stakeholders.

8.2 Study propositions

The propositions addressed in this section are:

P3 In general, planned rather than emergent approaches to workforce change are associated with greater role clarity, higher morale amongst staff and reduced stress. In particular, strategically and systematically planned large scale skill mix change implemented at one point in time in which as many staff as possible are retained and re-deployed will be most successful in maximizing the benefits to patients.

P4 Continuous change is infrequently achieved but most associated with the degree of organisational evolution likely to be necessary to implement current NHS policies.

P8 Health care organizations operate within complex networks and systems. The dynamics of these systems and the impact of workforce and skill mix change on such systems can be analysed by examining underlying structures of flows, delays, information and feedback.
8.3 Synthesising learning from qualitative system dynamics modelling

Building on the qualitative system maps of each case study presented in Section 4 we developed a high-level qualitative model, in the form of an influence diagram, which could be applied to any of the sites (Figure 8.1). While this model was based loosely on Hubmed (and hence the model contains a variable called "Calls to Hub"), this model could be used more generally to focus thinking around the issues facing decision-makers when planning workforce or system change in unscheduled care where many of the system elements are important but very difficult to quantify. In this model, political pressures and supply-led demand influence the contact rate, as well as genuine clinical need. This in turn is affected by demographic and socio-economic change. The staff mix, in terms of roles and qualifications, affects the triage and treatment processes, potentially leading to desirable outcomes such as correctly triaged calls, correctly treated patients, and better health outcomes. On the other hand, getting the staff mix wrong leads to incorrectly triaged calls, potentially "missed serious cases" and greater pressure on in-hours services, or inappropriate use of services at the other end of the spectrum. There are two feedback loops here; some of these missed serious cases will end up again as emergency "calls to hub" requiring urgent care, either in the short term (i.e. the same day) or at a later date, due to the effects of reduced quality of in-hours care due to this extra pressure on in-hours staff. Increased workload at the hub leads to more incorrectly triaged calls (another feedback loop) and also, staff stress, loss of job satisfaction and higher staff turnover. Although this is of course a very high-level conceptual model, it does capture the broad issues in a way which provokes discussion of these aspects.
Figure 8.1 First influence diagram showing some of the implications of system design decisions
This influence diagramming approach encourages users to take a “whole systems” view. The whole aim of qualitative system dynamics is to allow stakeholders to understand the emergent behaviour of a system which arises from the inter-relations between the component parts. Taking the interview data in conjunction with the system maps, we can identify areas in each case study where a deliberate, top-down, planned change has taken place. Equally, we can see some evidence in all eight sites that change has occurred on a more evolutionary or incremental basis. Even though some systems (Hub-med, ED-med) lie clearly very much more towards the planned end of the spectrum, whereas others are closer to the emergent end (County-med, District-med), in reality all eight share some elements of both. Qualitative SD analysis provides a means of trying to understand what emergent behaviour or unanticipated features might arise from a planned change programme. Conversely, change which takes place gradually and locally can lead to a system which behaves in an adaptive, self-organising way, almost as if it were designed. The SD model provides a context within which to understand the effects of evolutionary change and to explore potential “end points” to which such systems may eventually evolve and then settle down.

We used this influence diagram as a point of reference in the analysis of data from staff interviews (our primary data source in relation to the research question) to explore the themes that emerged in relation to views on the impact of workforce change at the system level. In turn, the interview data enabled us to add further influences to the diagram (see Figure 9.2 below).

8.4 Local anticipation of the impact of change on the health system

In all of the case studies there was evidence that commissioning and provider managers and others with overall responsibility for the delivery of urgent care had sought multi-agency involvement and the engagement of service users in planning for service developments. Interviewees described ongoing engagement via internal committees as well as public meetings to explain the plans for reform. Awareness of the potential impacts on the health system of introducing change appeared to be high. For example, the team at Hub-med anticipated and encountered some public resistance to the re-distribution of treatment centre resource around its area to match known patterns of demand; Community-med engaged experts to undertake systems modelling to enable it to predict necessary staffing levels across its service and operational staff at PCT-med reported real enthusiasm and excitement at being involved in planning committees working to re-design the service. A prevailing concern, more explicit in some case sites than others, was that the new skill mix could potentially de-stabilise the system and that if that happened, the effects would be felt keenly by hospital emergency departments and by ambulance services.
The most likely de-stabilising influence was considered to be the gradual substitution of GPs by other staff leading to negative impacts that could change how patients used the system:

*If you, if you destabilise the service, or change it, will that result in a negative impact somewhere else, because patients will go somewhere else. And obviously, you know, the Foundation Trust, the acute services, were very concerned [...] and saying as soon as you implement this change, it’s not going to work and everybody’s going to pitch up at A&E.. [CM12:164]*

This concern appeared to be not unreasonably rooted in the awareness that the system is ultimately exposed to patient choice about self-referral to urgent care. The concern that patients may ‘vote with their feet’ (that is decide to go to the ED or call for an ambulance if waiting times are prolonged or if they are dissatisfied with the response of the service) has been demonstrated previously (Lattimer et al, 2005) and examples of observed system level impacts were evident in the interviews with staff.

### 8.5 Positive consequences of workforce and skill mix change for the system

#### 8.5.1 Improved system responsiveness

There were three main ways in which changing the skill mix was described to have contributed to the responsiveness of health systems: first, in improving response to 999 emergency dispatch; second in revealing the important contribution that community nursing services can make to urgent care and third, in contributing to the development of alternatives to emergency admission to hospital. The benefits to the system of having staff with capabilities in the management of minor illness as well as minor injuries could also be seen to offer benefits across the system and was discussed in Section 6.

**Responding to emergencies**

In the case studies where ambulance services played a central role in the organisation of urgent out-of-hours care, the new skill mix offered the potential of increased responsiveness to 999 ambulance calls. With GPs and ECPs now part of the team, the clinician nearest to an incident could be asked to respond to the emergency. In PCT-med, this new functionality was built in at the system design stage:
(ECP Lead, PCT-med) ...the vehicles are fully marked up as ambulance cars, blue lights, emergency warning systems, radios and all the other bits of communications, so they’re identical to our solo response cars that we use in the service. [...] From day one [...] the ambulance service would always have the ability to use these clinicians if there was an emergency within their eight minute response time, given their location anywhere in the county, because we didn’t want to get into the scenario of...you know, God forbid, an emergency call coming in at one end of the street and one of our clinicians delivering out-of-hours service at the other end of the street, but not being aware or not being called to give aid...you know, in an emergency situation. [A6-20:5]

As awareness of this benefit became more widely appreciated within the health economy, a disparity between the skill mix available in hours and out-of-hours became apparent. In this example, a potential benefit is anticipated for urgent care in-hours were a similar skill mix also to be available then:

(ECP Lead, PCT-med) Our local GPs are [...] asking the question 'Well, why can’t we access the ambulance service and those clinicians in hours?' If I’m in the middle of a clinic as a doctor and I’ve got twenty or thirty patients waiting outside and Mrs. Jones is a chronic sufferer and rings up for a home visit that I really need to get to within the next half an hour to an hour to be able to give her a fair assessment and decide what treatment or whether the patient needs to be admitted, I haven’t got that ability and the decision will either be that the patient has to wait, or I instigate an admission but is the admission appropriate? I need a clinician out there to assess the patient for me and to decide on the appropriate treatment at the time. Why can’t I use a paramedic like I did last night when I was working out-of-hours? [A6:20:41]

Realising the potential of the community nursing resource

There was variation in the extent to which district nursing services were available in the out-of-hours period, but also in the scope of work that they undertook and in the ways in which they engaged with the wider multidisciplinary team. A clear sense emerges from the data that the contribution of district nurses is highly valued and that there is potential to develop this contribution further. At Centre-med, community night nurses (district nurses) were essentially the lead clinicians for all out-of-hours care after midnight. They provided telephone triage and were responsible for home visits with just one GP on call for the area, based at home. PCT-med had developed a palliative care nursing service, and although its future was uncertain at the time of the study, the examples of the important contribution that district nurses made to patients at the end of life were numerous. At Walk in-med the co-location of the district nursing service was experienced as mutually beneficial for the nurses and the wider team as it made possible
informal professional conversations about patient care and facilitated referrals. Here, as at Centre-med there was evidence of strong local leadership of district nursing. These successes perhaps point to a need not to overlook potential, within long established roles, to contribute to urgent care in new ways.

**Developing alternatives to admission to hospital**

Rising demand for emergency admission to hospital has been a key concern within the NHS since the seasonal winter pressures of the 1990’s became an all year round concern. Although from this study we do not have evidence of the effectiveness of the alternative to admission schemes that had been introduced in the case studies, there was evidence of collaborative working between health and social care within the urgent care system to provide patient orientated alternatives to admission. At ED-med, a social worker and an occupational therapist had a base within the emergency department from where they carried out a ‘community triage’ function and at County-med, as elsewhere, a social worker was employed within the communications hub. The more substantial engagement of social care and the co-location of urgent care services within acute hospitals reflects a transfer of operational responsibility and control from primary care to secondary care based services and appears to have its origins in a strategic shift towards comprehensive urgent care provision and commissioning.

**8.5.2 Increased pressure for service integration**

As might be anticipated, the introduction of new roles and new ways of working required reconsideration of workflows to support practice, for example to secure safe referral of patients between staff and services. There were many examples of how new ways of working highlighted prevailing dysfunctional arrangements between services that appeared to have negative consequences for patients and which staff were eager to overcome. The origins of this dysfunction were sometimes said to lie in the unwanted effects of a health policy such as ‘Payment by Results’ or in ingrained protectionism in parts of the system. In these examples the sense of ‘one NHS’ appear to be far from reality. However, workforce change appeared to be a new and vital stimulus for expressing impatience with these inadequacies and generating energy for service improvement:

*(Nurse Practitioner, County-med)* ..I know everyone very well and know the system and we’re gradually sorting it out between us. The problem is with the funding, the way it’s done. If a patient turns up to A&E and actually past the reception and gets booked in we’ll get a bill for it [...] so we’re trying to discourage that, so the receptionists were quite happy to send what they
thought was appropriate straight round here and that works very well. Then I think there was a bit of hoo-ha that they were losing too much money so they’re now saying well they have to book in and the triage nurse will decide if they need to come round, but for a reduced fee. But then there were things like sore throats and silly little things and they were being booked in to be seen when it was totally unnecessary and the receptionists say well why … anyway, so long and short of it, a mixture of the two is happening now. (CM3:154)

The question that arises from this example is whether operational staff have the resources and leverage to find lasting resolutions to problems such as these, or whether what emerges are temporary workable compromises. This example was reported by a nurse practitioner as an adverse event at County-med, so concerned were they about the consequences of disagreement about which team this patient ‘belonged to’ on the time spent waiting for a simple investigation that was a pre-requisite to treatment:

(Nurse Practitioner, County-med) I had a patient in who I had to refer to the orthopaedic people. The orthopaedic SHO came down and said ‘oh I need an X-ray’ and the problem is the X-ray department refused to serve us. But the orthopaedic surgeon had actually accepted the patient so really […] they should have accepted the X-ray off of her (the SHO). Well she (the patient) went off to the X-ray and they said no, they refused to do an X-ray even though she had been accepted under the orthopods and the patient then had to go, after wasting all that time, […] from here (the treatment centre) round to A&E to book in to have an X-ray. So now we’ve got an extra bill. [CM3:243]

Where difficulties such as these were taken up by those with commissioning and corporate governance responsibilities, there appeared to be more potential for system level resolution. In this example the dialogue reflected awareness of organisational responsibility for effective partnership working:

(Manager, Hub-med) I think one of the areas that has held us back in certain aspects has been the lack of integrated governance or reluctance by some organisations […] You know, sometimes some of the bureaucracy has actually inhibited the partnership working and we’ve developed honorary contracts and things like that but it has been quite complicated. Say, when you’ve got an ECP working in an MRU alongside a nurse practitioner, both have got different PGDs to work against, because […] PGDs are very much owned by the organisation that takes responsibility, so that’s been a bit strange to work through. [HM4:190]

It also draws attention to the challenges faced by staff whose skills enable their contribution to the patient’s pathway to span a range of NHS services but who
have to practice with reference to different guidelines in different localities. The vision expressed here for integrated governance would appear to be a key priority for the further development of urgent health care.

8.6 Challenging consequences of workforce and skill mix change for the system

As well as potential benefits to the health care system of workforce and skill mix change it was possible to discern ways in which the new arrangements presented additional challenges that would have to be addressed before these benefits could be fully realised. Difficulties in recruiting staff were highlighted in section 4 and in some case studies a full complement of staff had not been achieved at the time of the study. Centre-med had permanently unfilled vacancies and was unable to recruit ECPs locally and PCT-med’s vision for its skill mix was hampered by local labour market conditions. Three further challenges appeared to be common to all the case studies: how to develop team working between staff in partner organisations in the interests of patients; how to provide and resource staff development and how to improve the sharing of information about patients to enable continuity of care.

8.6.1 Developing team working across partner organisations

Within the case studies there were several examples of co-located services. Centre-med and Walk in-med had co-located their GP out-of-hours service with nurse-led NHS Walk-in Centres; ED-med and District-med had co-located their GP out-of-hours service with the ED. Yet it was clear that by itself, co-location could not generate the conditions sufficient for collaboration between staff, nor was it a necessary pre-condition for effective collaboration. Examples of well developed, co-operative working were found in case studies where facilities were geographically more dispersed. ED-med and County-med appeared to have particular challenges in this area: and so whilst the developments at ED-med were said to have brought service provision together,

(GP, ED-med) The primary and secondary care service is much better dovetailed, simply by virtue of the location now [ED9:116]

it did not always follow that staff worked together, especially if they were employed by different organisations. In this example, a doctor working in an ED drew attention to the potential that waiting times may simply be a product of the choice of door through which a patient entered the system:
(Registrar, ED-med) So you are left with a slightly paradoxical situation sometimes where someone might come in with a child with a rash or a fever or something, is reasonably well, and the GP’s sitting in the (out-of-hours) centre and they won’t see them, and this child will have to wait three hours in the Minor Injuries Unit to see a more junior doctor. [ED19:39]

In contrast at District-med, the salaried GPs described good outcomes from their co-location with the hospital ED:

(Salaried GP, District-med) You cover A&E which is good, you’ve got a team there, you’ve got close working relationships with the other doctors in the hospital so referring people to and fro is very easy but also you’ve got a working knowledge of how the community works so you can prevent admissions, so A&E will come to you as opposed to going to one of the medical doctors and ask you to see the patient who would have otherwise been admitted to hospital and that’s hugely important because the amount of admissions we prevent I think is incredible. [SDO31:135]

Failures at co-located and adjacent services to secure equal access to care for patients were described. For example, patients seeking help from their GP out-of-hours but who walk in to treatment centres without having telephoned first may be accommodated (as at Hub-med) though calling first is advocated, but it appears not uncommon for people who do this to be asked to find a telephone and call the out-of-hours service before they will be seen. The scenario of patients returning to their cars to telephone in to the service to which they have just travelled is difficult to comprehend. In the example below, access to care is not so much delayed by unnecessary circumnavigation of the system but denied, depending on whether they are considered to ‘belong’ to primary care or the acute hospital:

(Manager, County-med) At the moment, we’ve also got a ridiculous scenario which you actually can’t believe exists really, where obviously you’ve got A&E here and out-of-hours next door. If a patient at the moment walks into the A&E door, they have access to what we call a psychiatric liaison service [...] it’s still not a twenty-four hour service, but it’s a good service that’s been set up. Walk into the primary care door and you don’t have access to this service and you can’t use that service so there’s much more work that needs to be done around saying if the service is out there, surely we need to open it up to other areas. It, it’s a minefield, and as I say, we’re meeting about it tomorrow to start trying to bottom out some of these issues really. [CM1:162]
The apparent disconnection between some co-located services is occasionally revealed by how one service displays little awareness of the effects of its actions on another:

(Nurse Practitioner, County-med) So the other frustrating thing about this system that I’ve seen is that accident and emergency maybe at ten-thirty at night, or if they’re very busy, instead of letting us know and asking for some support and saying “are you guys busy, maybe you could pop round and give us a bit of a hand”, anything, which I’d be willing to do, they just send these patients round that shouldn’t come round, you know, potential fractures or, patients for admission that don’t need to be here and that you can’t deal with in a short space of time. [CM:16:39]

Beyond fixing obvious inequalities such as this within co-located services, staff in the case studies could see potential to make their skills available beyond the walls of the institutions in which they worked:

(Manager, County-med) Our major mental health hospital sits a two minute walk from our primary care centre. Now [...] if you were staffed accordingly and we had a mental health issue within our primary care centre, could you not send a nurse across to do that mental health assessment, make a decision, etc? But at the moment, none of that relationship exists really. So it’s a bit of a black hole and [...]from a clinician’s point of view, probably one of the largest frustrations in out of hours. [CM1:164]

Overcoming the organisational and cultural barriers to team work appears to require strategies beyond co-location. Whilst these barriers remain, it is clear that the potential gains from new workforce and skill mix arrangements are being constrained.

### 8.6.2 Delivering staff development

The NHS organisations that are establishing new workforce patterns and skill mix in urgent care face a daunting challenge in delivering the scale of staff education and development required. Whilst the eagerness of staff to seek learning opportunities described in Section 6 constitutes valuable discretionary effort, alone it is insufficient to meet the needs of the service. There has been investment in formal programmes for health professionals including ECP training and nurse practitioner development including advanced history taking and physical assessment and nurse prescribing. Some services had little time
to prepare staff before taking over responsibility for out-of-hours urgent care and the challenges of releasing staff to attend courses is costly:

(Manager, Community-med) Now all of that work is expensive, development of staff because it’s taking them out of the day job almost, putting them into practices during the day for 8 weeks then they’re back on camp here for a month, two or three months at various different blocks, back into practice, back here, back into practice. [SDO1:82]

Emerging clinical leaders in urgent care from nursing and paramedic backgrounds were beginning to have contact with higher education institutions and to influence the approach to purchasing education and training locally. The need for investment in long term workforce development strategies with additional, ring fenced financial support was made plain. Ad hoc, local and improvised staff development appeared unlikely to be sufficient to prepare staff, many of whom work unsupervised in the community caring for patients with urgent health needs. Clinical supervision was rarely mentioned by staff in speaking about their day to day practice and the reality of limited feedback on the outcomes for patients of their interventions was a source of concern as well as a rate limiting factor in learning from experience.

8.6.3 Improving information sharing

Arguably, the new skill mix arrangements and in particular the extended scopes of practice have increased the potential for an individual member of staff to complete the definitive assessment and treatment of patients without onward referral. Continuity of care does, however, depend on appropriate sharing of information about patients. The discontinuity of care that patients experience if asked to tell their story several times is one example of this. Primary care records have not traditionally been available to staff caring for patients during out-of-hours periods. There may for regular users of the service have been built up a record of contacts and there may be ‘special notes’ in place for patients with particular needs, but this falls short of a comprehensive care record that can inform clinical decision making out-of-hours. Practitioners often speak about ‘going in blind’ to assess patients. Here, a manager at Hub-med puts this in the context of managing clinical risk:

(Manager, Hub-med) Sharing of information is still an issue, certainly between mental health and ourselves when out of hours, you know, continuity of care is dependent on the sharing of information and again, we’ve done well with in hours GPs, with palliative care and special patients, in that they send in information and we can put it onto our [...] system and
pick up the baton, if you like, but we are inhibited I think, by a lack of sharing of information and probably lack of resources from our point of view to be able to run more sophisticated searches on patients. And I think if both the doctors and the ECPs had access to records then they could manage that clinical risk more effectively, because I think in the absence of that, they are likely to sort higher, so roll on the patient electronic record...[HM4:190]

When the care of vulnerable adults is involved who may have frequent contacts with a number of health and social care services, the practitioner caring for the patient could be better prepared, especially at times when mental health services may not be available:

(Emergency Care Practitioner, Hub-med)...there’s community rehab teams and crisis response teams and things like that. Crisis response deal with acute mental health problems but again, I’ve not found...although they’re very sympathetic and very helpful in that respect, the reality is that there’s not much they can do if they haven’t got a CPN that can come out straight away, there’s nothing they can do. So we’re often left holding the baby, there. [HM7:149]

This information deficit also extends to system level intelligence about patient pathways. The capacity of urgent health care providers to monitor their effectiveness is limited by not having access to data on which patients re-consulted elsewhere in the NHS or attended hospital.

8.7 Developing the influence diagram

The first version of the diagram served as a source of reference during the qualitative analysis of staff interview data and in identifying enabling and challenging consequences of workforce and skill mix change in the case studies. A second version of the influence diagram was developed to incorporate the findings of this analysis and to inform an assessment of the implications for change management in urgent health care.

8.7.1 Feedback loops

The revised diagram has been slightly simplified (for example, some of the direct effects of increased calls to the hub have been removed and are reflected simply in the added workload). However, following the analysis of the interview data, new system constructs have been included, both desirable and undesirable, namely: continuity of care; the effects of co-located services with different access arrangements; system responsiveness; recruitment issues; pressure on A&E and ambulance services; team working across partner organisations; staff development opportunities; and service integration.
Figure 8.2 Second influence diagram incorporating insights from qualitative analysis of interview data
In addition to considering the direct effects of these factors, further more detailed analysis is possible. Vensim allows the user to identify all feedback loops, which may be positive or “vicious circles” (with an even number of minus signs) or negative or balancing (with an odd number of minus signs). In the following analysis, recall that the syntax "A → +B" means “as A increases, so does B”. Conversely, “A → –B” means “as A increases, B decreases”. Thus the interpretation of a loop in which all the signs are positive is straightforward, but a loop containing minus signs is less immediately intuitive and requires careful thought to decode. It can be easier to understand the notation if instead of a plus sign, the letter S (for Same) is used, meaning that A and B change in the same direction: as A goes up, B goes up. By the same token, using a letter O (for Opposite) instead of a minus sign means that A and B change in opposite directions: as A goes up, B goes down. Two minuses make a plus, leading to a spiral effect or vicious circle.

**Feedback loop 1**

Workload → + Stress on Staff → – Staff satisfaction → +Recruitment to new roles → –Workload

(Two minus signs, an overall positive feedback loop)

This loop initially reflects the fairly obvious fact that as workload increases, so does staff stress (a plus sign, the same direction). This leads to a reduction in staff satisfaction, depicted by a minus sign (the opposite direction). Increasing staff satisfaction would lead to increasing recruitment (a plus sign, the same direction), but since we actually have decreasing staff satisfaction, the knock-on effect is decreasing recruitment. Increasing recruitment would lead to decreasing workload (opposite direction, a minus sign), but as we actually have decreasing recruitment, we end up with increasing workload – a vicious circle. By the same token, staff retention could also have been included here as a factor influenced by job satisfaction.

In plain English, as workload increases, stress levels increase and staff satisfaction decreases. Hence recruitment and/or retention both get more difficult and the workload on those staff who remain increases.

**Feedback loop 2**

Workload → +Incorrectly triaged Calls → +Missed serious cases → +Genuine clinical need → +Calls to hub → +Workload

(Zero minus signs, an overall positive feedback loop).
Again, it is fairly obvious that increasing workload increases the chances of incorrectly triaging calls, resulting in missed serious cases which lead to genuine clinical need and ultimately, more calls to the hub which means more work. This loop shows the short-term effect, i.e. patients who call back on the same day because they are concerned about their condition and unhappy about the outcome.

**Feedback loop 3**

\[ \text{Workload} \rightarrow - \text{Correctly triaged Calls} \rightarrow + \text{Correctly treated patients} \rightarrow + \text{Better health outcomes} \rightarrow + \text{Staff satisfaction} \rightarrow + \text{Recruitment to new roles} \rightarrow - \text{Workload} \]

(Two minus signs, an overall positive feedback loop)

This is similar to Loop 1, but reflects the fact that another consequence of increased workload is fewer correctly treated patients and worse health outcomes, leading to a reduction in staff satisfaction, difficulty in recruiting to the new roles, and ultimately increasing workload.

**Feedback loop 4**

\[ \text{Workload} \rightarrow + \text{Incorrectly triaged Calls} \rightarrow + \text{Missed serious cases} \rightarrow + \text{Pressure on in-hours Staff} \rightarrow - \text{Quality of in-hours care} \rightarrow - \text{Genuine clinical need} \rightarrow + \text{Calls to hub} \rightarrow + \text{Workload} \]

(Two minus signs, an overall positive feedback loop)

This loop is similar to Loop 2 but over a longer timescale. In this case, the “missed serious cases” present in-hours, increasing the workload of in-hours staff and reducing the quality of care these patients receive, and thus they ultimately end up requiring urgent care again at some later point in time.

**Feedback loop 5**

\[ \text{Workload} \rightarrow - \text{Correctly triaged calls} \rightarrow + \text{Correctly treated patients} \rightarrow + \text{Patient satisfaction} \rightarrow - \text{Pressure on A&E and ambulance service} \rightarrow - \text{Staff satisfaction} \rightarrow + \text{Recruitment to new roles} \rightarrow - \text{Workload} \]

(Four minus signs, an overall positive feedback loop)
This loop demonstrates that as workload increases, fewer patients are correctly triaged, treated and satisfied, and so they “vote with their feet” and go to A&E or call an ambulance; in turn this reduces staff satisfaction, with the knock-on effects on recruitment noted in Loop 3.

8.7.2 Causal chains

Feedback loops are generally of principal interest because they explain why a system exhibits spiralling, uncontrolled behaviour due to the existence of vicious circles, and they show the stabilising effect of balancing loops. However, it is also possible to identify causal chains, where there is no linking back to the initial element but a chain of influence can be identified: A leads to B leads to C. Vensim allows the user to plot a “Uses Tree” which shows the knock-on effects from each element, although it only shows second-order effects (i.e., only two “generations” of effects) and it does not depict whether these are positive or negative (same or opposite). For example, clearly for this study, “Quality of staff mix” is a key parameter, and Vensim gives the following Uses Tree:

**Figure 8.3 ‘Vensim Uses Tree’**

```
Quality of staff mix
  ├── Correctly triaged calls ─── Correctly treated patients
  │   └── Incorrectly triaged calls └── Inappropriate hospital referrals
  │       └── Patient satisfaction └── Missed serious cases
  │           └── Service integration (Staff satisfaction)
  │               └── Recruitment to new roles
  │                   └── Staff satisfaction
  │                           └── Staff turnover
  │                               └── Stress on staff (Staff satisfaction)
  │                                   └── System responsiveness
  │                                       └── Better health outcomes
  │                                           (Patient satisfaction)
```

Here, the elements Staff Satisfaction and Patient Satisfaction appear at both levels, first as a direct effect and again as a second-order effect, where they are shown in parentheses. The actual net effect of the causal chain can only be derived by referring to the original influence diagram: for example, higher quality staff mix leads to higher staff satisfaction (plus sign), which leads to lower staff turnover (minus sign).

However other longer causal chains can be identified by eye, for example
Training of staff $\Rightarrow$ + quality of staff mix $\Rightarrow$ + patient satisfaction $\Rightarrow$ - pressure on A&E and ambulance service $\Rightarrow$ + inappropriate hospital referrals $\Rightarrow$ + workload of hospital staff

This shows that improved quality of staff mix in unscheduled care ultimately results in lower workload for hospital staff (the effect of the minus sign). A vast number of these chains can usually be identified, and thus it is useful to be able to filter out the less important ones by means of the Uses Tree.

Another relevant Uses Tree for this study is the following, which shows that increased workload in unscheduled care can lead to more inappropriate hospital referrals (two plus signs) and lower staff satisfaction (one plus, one minus).

In addition, a “Cause Tree” can be plotted, which shows those elements which affect a given element: for Quality of staff mix, this is:

Thus better defined new job roles and better training will improve the quality of the staff mix.
8.8 Implications for change management

The overall experience from the eight case studies suggests that concepts of planned and emergent change does not fully capture the development perspective required for delivering improvements in local health systems. The complexity of the latter, the deep rooted character of many of the frontline relationships between health care professionals, and the importance of local cultural context together mean that all planned changes, however meticulous, have unexpected effects; and that it is appropriate to think of planned and emergent change as complimentary rather than as contrasting approaches.

The range of staff involved in managing change in urgent health care has grown as the traditional executive role has expanded into several new management roles, concerned with both strategic and operational decision-making and managing urgent health care systems. These include primary care centre managers, out-of-hours administrators, information and management technology managers, commissioning managers, urgent care contracts managers, and urgent care medical directors, plus joint planning officers in those systems which are closely integrated with emergency departments or located within hospitals.

Accordingly, even at Hub-med with its senior executive-led standard model of urgent health care, the presence of a potentially all embracing communications hub in the NHS ambulance trust, as shown in the systems diagram, meant that while most local agencies joined up some of the independent sector providers reacted by emphasising their separate status and arrangements. This response was not planned; it emerged through the local political discourse of change. Similarly, at PCT-med the call management database for the local call centres emerged through the local business and personal connections of individual doctors and practice managers. The result there has been a collaborative and entrepreneurial private enterprise which contrasts with the strategic partnerships envisaged in the Strategic Health Authority’s conceptual approach to systems reform and improvement.

Planned change must accommodate and allow for emergent change: this is a key message from the study for urgent health care. Moreover, the notion that planned change should be identified with top-down management and emergent change with grassroots professionals is seen to be false. Neither particularly favours one set of stakeholders in local health systems. Clinic-med and Walk in-med both clearly illustrate how, in these cases, it is the novel management arrangements for both providing and commissioning – even more than the new practitioner roles - that emerge through a mix of managed market initiatives,
while the lead GPs are most in evidence as planners of the new primary care centres and cooperatives. These examples also demonstrate the general need for effective combinations of key contributors across all the sectors of a health system. Modern urgent health care cannot proceed as the property of one profession or in a uni-disciplinary fashion. Even at County-med, where the GP political control of direction was strongest, the eventual model of care was as inter-professional as elsewhere, although subject to a protracted and often difficult negotiation regarding the relative status and roles of new nurse and emergency care practitioners:

(Manager, County-med) I think we, we’re on the cusp with the skill mix, particularly around the out of hours nurses. We’ve dipped our toe in the water and [...] we’ve tested it, and I think it’s established, but we now need to consolidate that and be a bit more adventurous and a bit stronger, and move that more proactively, but there’s an issue there about capacity at the moment, to deliver that in terms of management and support and training and development, that sort of stuff...[...] this is just a personal reflection. I’ve really noticed in the last month, maybe two months, it’s been really difficult to maintain forward momentum. [CM12:221]

The number of decision making stages at the Contact stage of the County-med systems diagram clearly illustrates the complexity of the local context in this case example.

For the future successful development of urgent health care the contrasting use of the terms ‘planned’ and ‘emergent’ change would not, therefore, seem to be either accurate or helpful, not least because of their connotations of control by different partisan interest groups. From this study it has become apparent that effective improvements can be delivered in very different ways according to the needs of different contexts. The incremental approach was appropriate in County-med just as much as the ‘Big Bang’ approach suited Walk in-med. Successful recent change, with real innovations in the urgent health care workforce, has been rooted in genuine appreciations of the local health system, its dynamics, its political discourses, and its resources and potential for change. This appreciation should clearly encompass both plans and events as equally significant sources for the future policy development of urgent health care.

The influence diagram points to the many subtle nuances that apply in all urgent health care contexts, and indicates the universal need for a balanced and reflective approach to change management even in settings where change is required expeditiously. It suggests that the embedded relationship patterns of urgent health care are such that the modern contrasting of (positive) transformational leadership with (negative) transactional management is rather simplistic. Indeed it is the latter which would seem to have more to offer.
8.9 Evidence in relation to the study propositions

The evidence from this aspect of the study addresses three of the original propositions. The first, that health care organizations operate within complex networks and systems; that the dynamics of these systems and the impact of workforce and skill mix change on such systems can be analysed by examining underlying structures of flows, delays, information and feedback is supported. The complexity of local systems was exemplified in the qualitative systems maps and the construction of these revealed underlying flows and bottlenecks. Networks, as observed in section 5 had inherent characteristics which appeared to be were important determinants of the receptiveness of systems to external drivers for change.

The second proposition could not be supported. We did not observe that planned rather than emergent approaches to workforce change were associated with greater role clarity, higher morale amongst staff or reduced stress. There were examples of successful large scale skill mix change implemented at one point in time, but in the light of the study findings, differentiating between planned and emergent change is somewhat simplistic. Rather, planned change must allow for emergent change and success appears to be rooted in detailed appreciation of the local situation. Given the pace of developments in the case studies it was not possible to determine whether anything other than continuous change would be most associated with the degree of organisational evolution likely to be necessary to implement current NHS policies.

The original propositions did not lead us to anticipate system level benefits of workforce and skill mix change. In addition to the potential increase in clinical responsiveness at the point of care brought by developing the skill mix, at the system level this translated into responsiveness amongst services. Because staff were able to work across the varied domains (patients’ homes, treatment centres, emergency departments) this could overcome previous limitations of separate services. In the urgent care setting where time to definitive clinical consultation is important, flexibility in being able to deploy different types of staff can improve response times.

Features of local urgent care systems could, however, have a disabling effect on the potential of skill mix development. There were sometimes contested understandings about to whom or to which service the patient ‘belonged’, rooted in an underlying concern about which service should bear the costs of care. For patients, this affected first contact care (so that patients presenting to the ‘wrong’ service were required to re-contact) and their access to acute specialist services such as mental health care.

Limitations in information systems and the lack of data on the outcomes of care meant that staff often described how it was difficult to judge whether or not their intervention had been appropriate. Without information about patients’
previous medical history (unless the patient has special notes) staff were from the outset working with limited information. Regular or formalised clinical supervision was rarely mentioned in interviews with staff, though this would, in the circumstances, appear to be an important mechanism for reflecting on and reviewing practice. The separate databases held by provider services also appeared to limited their capacity to derive intelligence about their effectiveness, for example in knowing the number of patients who re-consulted elsewhere.

The lack of integrated governance arrangements in partner organisations was the third factor which impeded staff who, by virtue of their developing roles, needed to working across different NHS organisations and variability in the approach to providing practitioner education was considerable. Strategies for developing strong clinical leaders in nursing and the allied health professions to support the developing skill mix appear to be greatly needed.
9 Reflections on the study methods

In this section we comment on the limitations of the study methods, their use within a mixed methods design and implications for interpreting the study findings.

9.1 Limitations of the study

9.1.1 Systems modelling

The original intention was to develop a quantitative system dynamics model of the unscheduled care system in one selected study site, similar to that developed for Nottingham (Brailsford et al, 2004). The plan was to populate the model with historical activity data (from Adastra) and then use it for a series of “what-if” experiments to identify bottlenecks and investigate the effects of further change. Whereas in the Nottingham project we had had to collect data from a diverse range of providers, in this case the Adastra database would (in theory) provide all the necessary data from first telephone contact through to disposition. Unfortunately, this did not prove possible, although we did obtain and analyse one year’s worth of data, as described below. Therefore, our analysis of the impact of workforce change on health care systems themselves was based on a synthesis of the study data and the system maps, with some additional insights from a generic, high-level influence diagram.

The Adastra dataset

In Section 3 we described the work undertaken with one of the case sites to obtain data to enable us to develop a quantitative mode and the characteristics of the dataset received. Reflecting on this experience, a number of lessons can be drawn. We were originally sent a small sample of data and a full set of the Adastra field headings, from which we selected those fields which were relevant to this study. These initial samples led us to believe that it would be relatively straightforward to identify the staff roles at various key stages along each patient pathway, exactly as was required for the quantitative modelling. However the reality proved to be different, when we finally received the full dataset (which in itself took much longer than expected, for various unanticipated technical and administrative reasons). The Hubmed staff had already been extremely generous with their time and we did not feel we could impose on them further by asking them to trawl through a long list of names and identify the staff type for each one.
With hindsight this illustrates a not uncommon and much more general problem, namely that massive amounts of data are routinely collected in the NHS for administrative and performance monitoring purposes, data which have enormous potential for further analysis - including, but not limited to, modelling. Ferlie and Shortell (2001) argued that information systems within most health care organisations lack the ability to integrate financial and clinical data and process and outcome data. Even today, a major obstacle to evaluating system performance is the inability to track individual patient pathways through different organisations within the system. Certainly the data analysis methodologies used in other industrial sectors for commercial benefit are not currently as widely used within the healthcare sector. For example, supermarkets routinely “mine” the data obtained through loyalty cards to exploit customers’ purchasing history. We are very keen to work with Adastra to identify ways in which the data collection process within their own system can be further developed, in order to utilize these data more effectively. One very positive outcome of this project has been the excellent relationship established with both Adastra and Hubmed, both of whom have expressed a keen desire to continue this work and to fully exploit the Hubmed dataset.

Unfortunately, these difficulties with the staffing data meant that we were not able fully to complete the development of a quantitative version of the Hubmed system map. Although we would have been able to model the initial contact and the outcome, the sections of the patient pathway in between could not be populated. However, we have maintained excellent contacts with the Hubmed site and plan to continue working with them to develop such a model, although this may involve prospective data collection by adapting the Adastra database to collect the required job role data. This would then enable us to track patient flows through the system and identify bottlenecks and other problem areas. The full benefits of such a model for gaining understanding of the system and carrying out some experimental scenario analyses could then be realised. On reflection, the construction of such a quantitative model was a very challenging task in the time available, and perhaps a step too far in the context of this project. However, it raises some very exciting possibilities for further research and an opportunity to work jointly with Adastra and the Hubmed site to develop models which would be widely applicable at all Adastra sites.

### 9.1.2 Local factors influencing the study

Difficulty in securing recruitment to new roles was an area of difficulty in some case studies. For example in PCT-med, local labour supply issues influenced by high housing costs meant that it proved impossible staff the service as intended. GPs were used to cover shifts that could have been staffed by nurses or allied health professionals. At Centre-med, difficulty in recruiting ECPs to the service constrained potential to expand the ECP scheme locally.

Two of the four case studies taking part in the patient survey were severely affected by flooding in England during 2007, such that the administration of the
survey had to be delayed until local people had returned to their homes and emergency and urgent care services had returned to more typical patterns of activity.

9.1.3 Survey of patient experience and satisfaction

Four case studies took part in the survey: PCT-med, Hub-med, Community-med and ED-med and Hub-med, Community-med and ED-med callers took part in telephone interviews. Other case studies had various reasons for not participating in the patient study. For example, District-med, though very willing to take part did not have the IT capacity to perform case ascertainment electronically, nor was this feasible via NHS24. Centre-med had decided at the outset of the study that it did not wish to take part in the patient survey.

Response to the survey and to the invitation to take part in an interview.

There were 739 valid responses to the survey from the four case studies (PCT-med: 180 [26% with no reminder]; Hub-med: 227 [34%]; Community-med 219 [33%]: 219; ED-med:113 [31%]). We had planned for a 35% response to the survey and although this was almost achieved at Hub-med and Community-med, PCT med were unable to send reminders and at there were administrative difficulties at ED-med that contributes to the response rates in this site (see section 9).

Participation in telephone interviews exceeded our expectation that 20% of respondents would agree to take part in two of the 3 case studies. Participation rates were: Hub-med 52 of 227: 23%; Community-med 59 of 219: 27%; ED-med 18 of 113: 16%.

The response rate to the patient survey was similar to that achieved in the pilot study and this limited the scope of the planned statistical analysis. The approach to case ascertainment and all process aspects of survey administration had been piloted, all materials were pre-packaged ready for final addition of study numbers and one of our team (AB) worked closely with local administrators to produce specific step by step guidance on the administration process. This included close working to monitor the return of completed questionnaires and mailing of reminders. Higher response rates than had been achieved in the pilot study were anticipated because then, questionnaires had been mailed out in batches, rather than daily. It has been suggested that the ‘one off’ nature of urgent care contacts means that service users may feel less investment in service development in comparison, for example, with their own general practice and there is a view that non-conditional financial incentives now need to be considered. Over the years, response rates to postal surveys appear to have been falling, other than in situations where it has been possible to gain the agreement of the patient at the end of the telephone contact to complete a questionnaire. The on-line version of the questionnaire was little
used and a small number of respondents made contact to complete the questionnaire over the telephone.

Response rates to survey administration in treatment centres have typically been higher, especially if completed in the waiting room, but as the treatment centre consultation may not have been the end of the pathway (and patients managed on the telephone or at home would have been missed) this also had limitations. Where there were small numbers of staff involved in new roles in the case studies, a purposive approach to seeking out patients who had had contact with them could have been considered, though this would primarily have added qualitative information which arguably the telephone interviews captured more comprehensively.

Subsequent telephone interviews revealed that 30% of those interviewed under-estimated the number of staff they had had contact with, though largely the under-reported contacts were with non-clinical staff.

9.1.4 Interview methods

The study drew considerably on interview methods and caution needs to be taken not to over-rely on data from interviews ‘which cannot necessarily be read as literal descriptions of an external reality’ (Allen, 2007). Several strategies were employed to counterbalance this. The development of system maps, although relying on work with the interviewee to annotate and develop it further was iterative. Contested versions of reality were talked through in subsequent interviews and with local reference groups. Observation in the care settings helped to provide a further check on emerging descriptions and accounts of how services were organised and how staff worked together.

9.1.5 Service user involvement

The primary method of service user involvement was by involvement in the local reference groups. In four of the case studies (District-med; Community-med; PCT-med and Hub-med) service users were already involved in local governance committees for out-of-hours care. In establishing local reference groups, we encouraged the case studies to draw on these groups as the core, so that meetings with the research team could be held before or after such meetings. In the other four case studies, only one of which took part in phase two of the study, local reference groups were smaller and met less often. Service user involvement was facilitated at the pilot study stage for the patient survey and interviews when participants were asked for their views about their experience of taking part. Almost all patients taking part in the interview study opted to have a summary of the report posted to them in due course. In light of the response to the survey, it may have been beneficial to have extended service user contributions to developing the method of administration as well as the content and language of the questionnaires.
9.2 Conduct of mixed methods research

This study meets the criteria for a mixed methods study (O’Cathain et al, 2008) by having at least two separate methods of data collection within the same study, at least one quantitative and one qualitative. Drawing on O’Cathain’s questions which can be used to address the quality of mixed methods studies, we consider the extent to which the methods in this study have been successfully brought together.

The main justification for using a mixed methods approach was that this was necessary in order to address the demands of the commissioning brief. In adopting the framework proposed by Mingers and Brocklesby (1997) to guide the sequence of the study and the plan of analysis we used a set of study propositions (after Yin, 2003) as a vehicle for understanding what had been observed. To some extent, the propositions were constrained by our assessment of the literature at the outset of the study. A similar approach was taken by McDonnell et al (2000) in their study of the introduction of new roles in nursing (the ENRIP study) who acknowledged that ‘case studies benefit from prior development of theoretical propositions to guide data collection and analysis’ (p385).

Within the case studies, the observation in practice settings, the staff interviews and the local reference groups all contributed to the development and refinement of the qualitative system maps. Local variations also informed the terminology used in the patient questionnaire when referring to services or staff. The coding framework developed for the qualitative analysis of interview data enabled descriptive data about the case studies to be extracted in Atlas-ti for use by the modelling team (SB and EJ).

Within the approach to analysis there were several points where discussion of the integration of findings was important. In addition to continuing activity within the methods work groups, a ‘thinking and writing’ meeting held over two days in May 2008 was an important staging post in reflecting on learning from the emerging data analyses and this informed the approach to preparing the final report. It was decided that a thematic, integrated approach would better serve the integration of findings than a traditional research report structure. This decision required ongoing participation of members of the research team with lead responsibility for particular methods. Specifically: KOD and VL worked on the introductory sections of the report and the reviews of policy and literature; VL, KOD and GM worked on the case study descriptions using preliminary analyses and reports produced by the research associates; GM, VL and AB developed the urgent care network typologies that informed the analysis of the antecedents and drivers of workforce change (section 5) led by KOD and GM. Qualitative analysis of staff interview data was a major analysis task, led by VL in collaboration with the research associates and with the involvement of CS and JD in discussing interpretation and building the conclusions of the analysis. Integration of the findings from the patient studies.
involved DH who led on the design of the patient survey and analysis of results with AB. The link with the patient pathways study (telephone interviews) was held by AB who had close involvement with both methods and MM who led the patient interview study and conducted the analyses with AB. Integration of the findings that related to the impact on health systems involved SB, GM and VL as it drew on evidence from interviews with staff and stakeholders as well as systems mapping. JB, MC, CS and JD commented on interim versions of the thematic report.

In the original study design, the patient survey and patient interviews had been conceived as separate elements. Practical considerations concerning the workload for case study staff and contributions from ethics committees convinced the team to simplify the approach to recruitment. Respondents to the survey would be invited to express interest in taking part in a telephone interview. The limitations of this approach were in reducing the likelihood that carers of palliative care patients would respond, as indeed was borne out in the responses from this group.
10 Discussion and conclusions

The aim of this research study was to describe how changing workforce patterns and skill mix in emergency and out-of-hours care systems in the NHS have an impact on staff practice, patient experience of service delivery and health systems and to ‘map’ the patient experience within one or more organisational settings.

In this section we discuss the main findings and their relevance for other settings with reference to the wider literature. We draw conclusions and consider the implications of these for future policy, practice and research and make recommendations for each domain. Table 10.1 at the end of this section shows the initial study propositions, which research methods were used to test these and in which section of the report to find the more detailed findings. The revised propositions were discussed at the end of each section.

10.1 Summary and discussion of the main findings in relation to the research questions

10.1.1 A decade of change in urgent care: the main trends

Research questions (a) to (c) were focused on examining the changes to working patterns in emergency and urgent out-of-hours care in the ten years preceding the start of the study, the range of influences that had shaped these changes and how unscheduled care was being commissioned and delivered in the period following the 2004 GMS contract.

The development of urgent care commissioning in England

From telephone interviews with Urgent Care Leads in the Strategic Health Authorities in England and the Scottish Health Boards undertaken to supplement material returned to us by PCOs about their local delivery plans for urgent care, it was clear that by the beginning of 2006, individual general practices were no longer leading on the provision and planning of out-of-hours health care. Collaborative arrangements, many based on previous GP co-operatives were the norm and offered some continuity. Primary Care Organisations had direct management of these arrangements in at least 20 PCTs that we identified.
By the time the study commenced, urgent health care commissioning had become established in the English case studies as a specialist commissioning function in the wake of the new GMS contract. A provider market in urgent health care appeared to be developing but as part of a range of new supply side developments in extended community care. Mental health and community hospitals were often pivotal to these with target populations now beyond the level of the largest general practice groupings. Those PCTs where an intra-NHS response to urgent health care policy was prevalent were characterized by relatively stable long term local relationships with primary care practices.

In the main, however, PCTs did not have, or expect to have the capacity to undertake this specialist commissioning using their own personnel and technical resources, nor was it understood by PCTs as an appropriate function for locality management, including by emergent practice based commissioners, which are often perceived as alternative provider business developments. The implementation of central urgent health care policies was heavily dependent on the change management and consultancy contributions of external and private agencies. These took central directives as their reference frameworks and focus on systems redesign. There did, however appear to be a correlation between the contribution of external and private agencies to urgent health care commissioning and the growth of private and external urgent health care service providers. Furthermore, urgent health care management was perceived as a political activity in which new levels of relational skills and strategic analysis were needed to respond to new stakeholder interests and to deliver improved performance through novel provider networks and collaborations. Hence not only was urgent health care becoming a specialist commissioning concept and emergent practice, it was also becoming a specialist set of provider roles and responsibilities in primary care.

Centralisation of out-of-hours services across the UK

A major relocation of out-of-hours primary care services was taking place at this time to General Hospital sites. Over thirty specific examples were given nationwide, although any transfers in actual service management responsibilities to NHS Trusts were largely unspecified and as yet unclear. Most of these moves involved multiple PCT backing in terms of contracted referrals and funding.

Similarly, a major transfer of call handling and direct care services was underway way at this time in favour of NHS Ambulance Trusts. Over 50 PCTs were covered by the 17 specific instances given, with such transfers particularly prominent along the South Coast (e.g. Dorset, South West Hampshire, South West Kent and Somerset).

In parallel, and in some cases as a consequence of the transfer to ambulance services, there were significant net losses in NHS Direct initial call handling for out-of-hours urgent care. While there were examples of increased integration
of local services with an extended NHS Direct, these were numerically more than counterbalanced by such ‘losses’. With a very few exceptions, there was no suggestion of collaborative provision with non-NHS agencies, although shared facilities in some rural community hospitals were occasionally referenced. There were ten specific examples of private out-of-hours providers. This seemed to represent a modest upward trend but with no evidence of any particular local escalation or concentration. Little mention was made throughout the SHA commentaries of Social Services.

The emergence of new and larger collaborations

By the beginning of 2006 the changes in the scale of provision outlined above seemed to correspond to an emergent pattern of new and larger collaborations in both the planning and purchasing of urgent health care. Taken together there was a clear shift from simple operational contracting towards strategic commissioning arrangements. Some of the most innovative strategic health systems-wide developments appeared to be where one or more SHAs) were exercising direct management coordination and control of the commissioning process. Very few references were made to co-commissioning with, for example, local authorities or voluntary organisations. In several areas the continuity of primary care collaboratives seemed to mean, implicitly, that the framework remained that of local contract processing and paying rather than market based competitive tendering.

The need for management and infrastructure resource

Primary care collaborations for out-of-hours care were by 2005/06 requiring their own dedicated management and support staff and had moved as organisations beyond the Practice level. Furthermore, as urgent health care emerged as a discrete strategic commissioning specialism with local health system wide roles and responsibilities, new job titles within this function appeared, including, for example, ‘Head’ or ‘Consultant’, ‘Director’ or ‘Lead’ for ‘Whole Systems’, ‘Case Management’ and ‘Emergency Clinical Care Networks’/‘Unscheduled Care’.

The scale of provider role substitution and development (for example new Emergency Care Practitioners), service mergers and site relocations pointed to an extended transitions or change management function. Many areas detailed appointments of new Project and Implementation Officers as a result. A range of new staff support functions were detailed in the SHA returns to back up both the strategic commissioning and transitions management roles. These included operational and financial modelling for new urgent health care pathways and resources; clinical and I.T. systems design; workforce development with Further and Higher Education- quality assurance and control.

Financial arrangements
Complex contracts management covering specification, negotiation and monitoring in 2005/06 increasingly replaced simple payment processing and administrative arrangements, particularly where, for example, Board level NHS Trust officers were assuming personal responsibility for urgent health care and its performance. In some areas it appeared that the new organisational structures would be a key source for changes in service level activity and profiles, rather than being a response to them.

*External drivers of change*

The Labour government's blueprint for the reform of the NHS set out in the NHS Plan (2000) contained within it the clear intention to expand and develop the health care workforce. A range of health policies that were important for emergency and urgent care were explored in section 5 of the report. Arguably, however, it was the independent review of out-of-hours care (Department of Health, 2000) and new quality standards it set (later national quality requirements) that raised aspirations and expectations for delivering real improvements in out-of-hours care. Innovative aspects of the proposed new national model for out-of-hours care had important workforce implications and the case studies described in this research showed that many of the proposals had indeed been implemented, from home visiting by nurses and other non-medical professionals to widening the range of services to which patients could be referred. Strategic development of technical links to allow transfer of calls to NHS Direct / NHS24 had improved service integration. Importantly, the focus for service redesign had shifted towards services based around the needs of patients, rather than organisations and health professionals and solutions proposed for improving urgent care now centred on service integration and role innovation and substitution.

Commissioned evaluations of new ways of delivering urgent care had typically identified how local sites tailored national initiatives, with different skill mix solutions evident. There was little evidence, however, to suggest that any integrated service or new role has an impact on existing services. Indeed, every new role appeared to generate its own patient base, rather than reduce demand elsewhere. The way in which external influences made a mark on local service delivery appeared to be related to characteristics of the local health care networks.

Notwithstanding the above changes specific to urgent care, the study period coincided with major structural change in the organisation of strategic health authorities and primary care trusts in England, and in NHS ambulance trusts across the UK. In England, the number of strategic health authorities was reduced from 25 to 10 in 2005 and the number of PCTs was reduced from 303 to 152 in 2006. PCT boundaries were to be aligned more closely with local authorities providing social services and the new arrangements would to
develop commissioning capability and contain administrative costs. In addition, there was a major rearrangement of ambulance trusts outside London.

**Internal drivers of change**

Two important internal drivers of change identified were economic considerations and the anticipated opt-out of GPs from out-of-hours care after 1994. The need to contain or reduce costs and to weigh up the costs and benefits of change were raised in interviews with senior managers and commissioners. By the time of the main data collection for the study in 2006-7 the NHS had received considerable additional resources in response to calls to address widespread concerns about workforce shortages. All the case studies had to some extent developed new roles and new ways of working to offset the effects of shortages of GPs.

The influence of local context and culture, the particular needs of local communities and sensitivity to preserving local relationships, including those with patients were also drivers of change. The challenges of rurality and distance also appeared to play a part in stimulating workforce change. External drivers for change did include government policy, but also included regulatory and legislative factors.

**10.1.2 System characteristics and workforce change in the case studies**

Qualitative system maps were developed to enable us to understand the consequences of change for health systems (research question g) and changes in the content and organisation of the workforce were explored in interviews with staff and observation in the case sites (research question d).

Standardised approaches to drawing the maps aimed to make them broadly comparable. This included superimposing the maps on a framework of contact, assessment/treatment and outcome zones and using notation to indicate whether access was by telephone or in person. There were common services present in every case study by virtue of these being nationally or regionally provided (including ambulance services, NHS Direct, NHS 24 and emergency departments) as well as local variation in the range of services provided. Some had specialist palliative care, mental health or dental services for example.
Differences in the urgent care systems

There were three important differences between the systems, however:

(i) Patient flows were more complex in systems that had evolved over time than in those subjected to strategic redesign. Although not necessarily a negative finding (because it may denote greater patient choice), complexity may signal reduced efficiency and the potential for confusion amongst the public about the services that are available and how to use them.

(ii) Telephone access was more streamlined in some case sites than others, especially where NHS 24 was the first point of contact.

(iii) There was wide variety in how face to face treatment was organised in different localities; in the types of setting, the extent to which services were co-located and how home visits were delivered.

The different mix of skills in each case study were embedded within these structural differences

Differences in skill mix

There were differences between the case studies in which type of staff answered the telephone and prioritised, assessed and triaged calls (call handler, receptionist, nurses including nurse practitioners, ECPs and GPs. Main areas of nurse and ECP substitution for GP were telephone triage and assessment; home visiting (independent practice with the option to contact a GP if necessary or with the GP in telephone contact during the visit); providing consultations for patients attending centres; prescribing medicines and negotiating emergency hospital admissions. There were some examples also of support staff substituting for nurses. Call handlers in some sites undertook call prioritising. Here were also examples of horizontal substitution whereby receptionists, health care assistants and drivers worked flexibly and could interchange roles to respond to demand.

Delegation and substitution

In the main, nurses and ECPs were carrying out extended scope of practice activities. The activities were delegated substitutes for GP inputs rather than simply enhancing the range and volume of services provided by the care team. With the exception of telephone triage and assessment which was wholly delegated to others in some case studies, GPs continued to carry out delegated activities alongside other staff, but focusing on more complex cases.
was evidence that GPs would allocate suitable cases for ECPs to attend, taking into account the patient’s presenting problem and the level of experience and competence of the practitioner. It was also normal practice for nurses and ECPs in face to face treatment settings to select patients that they were able to assist and to refer back to a doctor where necessary. Only in Centre-med was there not a GP available in person overnight (on call at home). This approach locally was said to be working very well and without consequence for emergency admissions. We return to this in relation to the implications for research (see below).

10.1.3 The impact of changing workforce patterns for staff practice

We explored the impact of changing workforce patterns for staff (research question d) in semi-structured interviews with 120 staff across all eight case study sites. Additional insights were gained from observation in urgent care setting.

In all eight case studies that participated in this research we found multiple examples of workforce change, described in detail in section 6. As well as new roles such as nurse practitioner and emergency care practitioner which are now widely seen in the NHS, there were many examples of more bespoke roles and titles created to meet particular local needs. A number of these roles were undertaken by allied health professionals.

Reported benefits and challenges of skill mix

Based on the detailed accounts of the clinical staff, managers and support staff, our analysis suggested that efforts to develop skill mix in urgent care had led to reported service improvements. There were important improvements in the responsiveness of services to prioritising and managing demand as a result of staff working together in different ways. This included how clinical decisions were made, how clinical risk was contained, how care was delivered by enabling the delegation or substitution of tasks, how referral of patients between staff and to other services was achieved and how staff shared resources. The physical co-location of staff did not generate conditions sufficient for collaboration and teamwork, nor was it a necessary pre-condition for effective collaboration.

There were however some challenges that needed to be overcome. Many staff were working independently undertaking extended scope of practice and working across different provider organisations. A lack of integrated governance systems meant that staff needed to be familiar with different policies and procedures and this appeared particularly cumbersome. Access to patient information to support decision making by the urgent care team was
not easily available. To some extent therefore, organisational and technical obstacles were holding back realising the full potential of skill mix.

As the skill mix developed and more staff had contact with patients, individual practitioners tended not to know the outcome of an episode of care for a patient. For staff more used to ‘knowing the whole story’ this was frustrating, not just from the human interest perspective, but in as far as it was difficult to judge the effectiveness of their contribution. A commonly held view was that rather more planned, professional conversations about the care of individual patients were needed as well as more robust approaches to event auditing in some case studies.

Training and education needs to support skill mix in urgent care were considerable and often provided in house. There were priorities, for example, to ensure that staff were competent in minor illness and minor injuries care. Traditionally it had been entirely possible to specialise in one or the other. Financial constraints restricted this to mandatory training at times.

Considerable discretionary effort by staff to meet their own learning needs was evident and GPs remained important providers of training and mentorship. Informal education and training provided by GPs was highly valued by non-medical staff. There were increasing signs of emerging clinical leadership by nurses and AHPs, beginning, for example to link with higher education providers but there were very few consultant level non-medical staff, a need to ensure that non-medical professionals had a leadership voice and appropriate career pathway support.

Plans for developing skill mix were often beset by recruitment challenges. It was not possible to find staff with the right skills, there were local labour supply issues, lack of access to education and training for existing staff or adequate finance to resource this and the reality of losing skilled staff to other posts in the health community, including daytime general practice was a reality.

10.1.4 The impact of changing workforce patterns for patients

In research question (e) we asked ‘what are the consequences of changing workforce patterns for patients, including vulnerable patients? We addressed this question through a postal questionnaire survey (also made available for completion on line or over the telephone) and in telephone interviews with questionnaire respondents who agreed to take part.

The questionnaire aimed to examine the experience of people who had contacted out-of-hours services in four case studies, each with a different prevailing skill mix and to find out whether the number and type of staff they had contact with was related to their evaluation of the care they received, from initial reception to assessment and management. After two pilot studies, we
decided on a set of five clinical scenarios as the basis for selecting patients to take part in the study so that as far as practicable, differences in patient pathways would reflect differences in care provision rather than differences between patients. Adults were defined as 18 years and over. The scenarios were (i) child under 10 yrs unwell and suspected fever as the main concern (ii) child under 5 years with acute wheezing (iii) adult with breathlessness (iv) adult with abdominal pain (v) adult with advanced cancer requiring assistance with pain relief.

The main differences between the questionnaire survey and the scope of the interview lay in the opportunity that the interview provided to explore the sequence of events and process of decision making leading up to making contact with the out-of-hours service; to plot the stages in each patients pathway (this was a further way of validating the system maps) and to estimate the reliability with which those who had completed a questionnaire recalled the number and type of staff they had had contact with. Further details of the methods are given in section 3 and the limitations of the methods are discussed in section 9.

Piloting had shown that the numbers of palliative care patients that would be identified in each case study would be small (contact with the out-of-hours service was not necessarily the main help seeking route for these patients who might have access to other services). We reported findings from questionnaires and interviews with the carers separately in section seven.

**The number and type of staff that patients had contact with**

Few respondents to the survey said they had contact with five or more staff during their out-of-hours episode, from first point of contact to receiving definitive clinical treatment. Contact with 3-4 staff was typical in Community-med (where contact with NHS 24 preceded referral on to GP services) and 2-3 staff in the other case studies. Calls about children were more likely to be associated with higher numbers of staff contacts during an episode. Very few respondents reported contact with an ECP. In subsequent interviews, around a third of interviewees subsequently remembered other staff that they had had contact with. These were very largely non-clinical staff such as call handlers and receptionists.

We did not find evidence that the number of staff a patient had contact with had an impact on overall satisfaction with care. Some variation in satisfaction was associated with different types of staff and this was consistent across case studies. Callers who had had contact with a nurse over the telephone were more satisfied (71%-76% very satisfied) than with their contact with a call handler (58.7%-66.7% very satisfied); receptionist (49.0%-55.2% very satisfied); or doctor over the telephone (51.2%-60.3% very satisfied). It is possible that satisfaction was related to the scope of what staff were able to do
within the system. So, for example, a call handler who takes initial information from callers plays a vital role but is not involved in managing the caller’s query and arguably has less opportunity to make a positive difference to the caller’s experience. Callers were similarly satisfied with contact with a nurse or a doctor in person (satisfied or very satisfied).

Evidence from a major qualitative study by O’Cathain et al, 2005 has suggested that there may be important public benefits of access to telephone consultation for urgent problems. NHS Direct callers considered that the service gave time, respect, listening and support. Being able to contact the service without fear of being regarded as ‘inappropriate’ (an attribute also ascribed to NHS Walk-in Centres in other studies) legitimised next stage contact with other health providers and gave a sense of control over the amount of effort patients needed to make when contacting services. Callers valued the sense of being ‘cared for’, particularly when they were anxious or in pain. In this study we observed that patients with particular conditions expressed differences in expectations in the clinical scenario groups, with those calling about children least likely to expect a home visit.

**Positive experiences of the process of care were offset by having to repeat information**

The great majority of respondents indicated that they were kept informed about what would happen next; had enough time to discuss their problem; felt things were explained in a way they could understand; that staff had listened to what they had to say; thought their problem had been resolved and agreed that contact with the service had been worthwhile. Most were better able to understand their health problem and to cope with it and felt reassured after contact with the service. However, half stated that they had to tell their story again to a different member of staff and there were limitations in the extent to which information was passed onto the next member of staff at each stage.

Satisfaction with out-of-hours care was related to generic attributes such as having good access (by telephone and adequate signage and parking at treatment centres and hospitals); keeping waiting times to a minimum and keeping patients informed of waiting times; good communication between staff and different parts of the service and the professional behaviour of staff.

Previous studies of patient experience and satisfaction have suggested that satisfaction with care received is lower where there is a mis-match between what the patient wished to happen or thought should happen and the received outcome (Thompson et al, 2004; McKinley et al, 2002; Wilson et al (2001). Typically, satisfaction with telephone advice is lower than satisfaction with treatment at a centre or a home visit (highest satisfaction scores) except where the patient called for advice (van Charente et al, 2006; van Uden et al, 2005a). The provision of good information about how local urgent care services operate
may go some way to influencing public perceptions of the services that are available in a locality and how they function.

**Access beyond the first point of contact**

In some case studies, the range of services available to patients (such as acute mental health care) was contingent on the particular ‘front door’ of the urgent care service by which they had entered (insight from staff interviews, section 6). In co-located GP out-of-hours and ED minor illness and injury units, the point of entry (and this could be which door the patient entered by) determined whether patients were seen to ‘belong’ to primary or acute care. Co-location did not necessarily mean that staff (with different employers) could work together to minimise waiting times by seeing ‘each others’ patients and examples were given of patients who waited to be even when staff employed by the other co-located service appeared to have capacity to see them. In other case studies, co-location was managed to prevent instances such as this. From a patient perspective however, ease of access to care was not only important at the first point of contact.

The expansion of points of access to urgent primary care in the UK offers patients the option contact any one of a number of health care providers, including general practitioners out-of-hours services, emergency departments, minor injuries units, NHS Direct, NHS Walk-in Centres and the emergency 999 ambulance services. Relatively little is known about what motivates individuals to call on particular services or what communities value as the important features of these services. Three studies have applied the discrete choice technique specifically to the delivery of out-of-hours services in the UK (Morgan et al, 2000; Scott et al, 2003; Gerard et al, 2004). The study by Gerard et al (2004) found that being kept informed of expected waiting time and quality of the consultation were also important attributes of the initial out-of-hours contact. Gerard et al (2006) later found that patients contacting urgent care services out-of-hours expressed greater preference for models that had a higher chance of relieving anxiety, offered contact in person with a doctor and had shorter waiting times.

An important indicator of the extent to which services are able to resolve problems to the caller’s satisfaction is the rate of re-consultation about the same problem. We did not observe differences in re-consultation rates between the four clinical conditions or between case studies. Those who had seen a doctor were no less likely to re-consult that those who had seen a nurse or allied health professional. Callers who did reconsult about the same problem within days were more likely to have said that they were neutral, unsatisfied, or very unsatisfied with the overall service they received.

Urgent care in the UK is increasingly provided in treatment centres of various kinds: Walk-in Centres, Primary Care Centres and Minor Injuries Units and it can be argued that these are increasingly likely to be based in hospital settings with the aim of providing patients with more choice about how to access health
care and of relieving pressure on emergency departments already treating substantial numbers of patients with minor illness and injury. In this research, ED-med exemplified a co-located emergency and urgent care service. From the patient’s perspective a distinction can be drawn between ‘drop in’ centres and centres where a prior appointment is needed, indeed where patients arriving without an appointment might be asked to make a telephone call from the centre to their out-of-hours provider who will then make an appointment (if appropriate) for the patient to be seen.

Laurant et al (2008) carried out a cross-sectional survey of 235 patients receiving care from a nurse and a doctor to measure preferences and satisfaction following introduction of Nurse Practitioners. They concluded that patient satisfaction with primary care appeared high irrespective of whether care was delivered by nurses or doctors. However, they also observed that patients make distinctions between nurses and doctors in terms of which types of care they believe each practitioner is best at providing. Laurant recommends that patients should be informed about the competence of different health care providers and the safety of the services they offer. Similarly they found it potentially reassuring to have found that changes in practitioners’ roles may have relatively small effects on overall satisfaction and suggest that factors that might have a much larger impact on satisfaction may include changes to the quality of communication processes such as the degree of patient centredness, opportunities for shared decision making and degree of patient empowerment.

10.1.5 The impact of changing workforce patterns for health systems

Our research question about the consequences of changing workforce patterns at the health system level (research question g) was predicated on an understanding that there can be unanticipated as well as anticipated consequences of change.

The Vensim influence diagram and a number of feedback loops were identified that show the central importance of workload management in the system to avoid difficulties in retention and recruitment of staff associated with stress and reduced staff satisfaction; to avoid incorrect triage of calls with consequences for missing serious cases, increasing the volume of genuine clinical need causing additional workload through further calls to the hub or patient self referrals to the emergency department or to 999 services. This suggests that in urgent care, new workforce and skill mix patterns most likely to have enduring success are those which deliberately focus on effective demand management. We observed that where one organisation employed the majority of staff working in the system, the system was able to ‘flex up’ to meet demand more effectively. For example, Hub-med was able to despatch the nearest practitioner to attend a 999 category A call and this person or team may well arrive before the ambulance. A similar system operated in PCT-med based on
the same principles. It also enabled the ambulance services to meet response
time targets.

The Vensim diagram identifies a chain of influence for the parameter ‘quality of
staff mix’ which suggests that in any comparative future evaluation of skill mix
models in urgent care it will be important to determine the number of correctly
and incorrectly triaged calls (including missed serious cases and inappropriate
hospital referrals); staff satisfaction and retention; and patient satisfaction and
outcomes of care.

There had been multi-agency involvement and service user engagement in the
planning and development of services. Some public resistance was anticipated
when plans involved re-distributing services within an area and new skill mix
was considered to have potentially de-stabilising effect for emergency
departments and ambulance services. Successful change strategies included
strategic, planned change and capacity to allow emergent change along side
this that was highly tuned to local needs. An appreciation of the dynamics of
the local health system, its political discourses, resources and potential for
change were vital. For successful change, however, Ferlie and Shortell (2001)
argue that a ‘comprehensive, multi-level approach to change’ is needed which
included the individual, the group or team, the organisation and the larger
system or environment (p283). Furthermore, where quality improvement is the
goal there needs to be “leadership at all levels; a pervasive culture that
supports learning throughout the care process; an emphasis on the
development of effective teams and greater use of information technologies for
both continuous improvement work and external accountability” (p.282).

We identified in section 6 the need to develop clinical leaders in the non-
medical professions; the need to devise and implement opportunities of
structured learning and reflection on practice and a need to develop
information systems that enable patient information to be shared across
agencies (for the benefit of care quality) and for staff to be more easily able to
access information about the outcomes of care for individual patients to
support this self assessment.

10.1.6 The efficiency of skill mix in integrated systems

In possibly the most comprehensive review of evidence to date, Laurant et al
(2009) advise that although non-physicians working as substitutes or
supplements for doctors can improve the quality and outcomes of care for
patients in particular areas of care there is mixed evidence about costs and
savings and a need for more robust evaluations:

“Whilst the revision of roles between physician and non-physician clinicians
is widespread and growing, the evidence base to support such changes is
both difficult to access and meagre in relation to the scale and scope of
workforce reforms. It therefore remains unclear whether professional role
revision delivers the expected gains for patients, professionals and health care systems.” (p.5).

Given this lack of evidence of efficiency in production in relation to skill mix, it is very difficult to make observations about potential allocative efficiency. At the start of the study we predicted that workforce and skill mix change that was incorporated in more integrated arrangements was more likely to offer evidence of ‘greater allocative efficiency’ and be more sustainable than change introduced in other settings (proposition 9). Integrated arrangements were defined as those where partnerships exist between services to optimise care delivery.

The out-of-hours urgent care context has provided examples of new or extended roles in which the domain for practice can extend from first point of contact (potential emergency) to hospital admission in secondary care. The policy focus on patient pathways has challenged a more traditional approach to practice in which only the doctor ventured beyond the clinic setting out of hours.

The aim of the study was not to measure the effectiveness of skill mix or the costs, but we were able to assess the extent that the recipients of services found them to be responsive, to offer patients simple or more complex care pathways and whether the system had met their needs. We found that the most integrated systems were ones in which the staffing resource could be diverted in real time to respond to demands in the system. At Hub-med for example, employing all the staff through the ambulance service trust meant that managers could detail staff to respond immediately to demand somewhere else in the system. This meant that speed of response was prioritised for the most seriously unwell patients. The sensitivity and specificity of ambulance service prioritisation and dispatch systems is important however, for this system could have been highly responsive but not very effective if there were false positives in identifying life threatening calls. Staff could be diverted unnecessarily from less urgent, but nonetheless important cases. In more traditional models, out-of-hours services and ambulance services worked entirely separately. We also found that co-located services (which were the product of partnerships) did not guarantee that many benefits would accrue to patients from this. Patients waited in adjacent but separate seating areas and ‘belonged’ to primary care or hospitals depending on which door they had entered. Patients often were not able to walk-in without an appointment – if they were general practice patients they may have to leave, telephone in, secure an appointment and then enter again.

New skill mix arrangements meant that many patients received urgent care without being referred to a doctor. Other health professionals completed the care and prescribed medication for example. Medical resource was ‘freed up’ to see more complex cases. There was evidence that this changed the working experience for doctors out of hours and some reflected that the mix of easy and complex cases in the past was more tolerable, it allowed catching up time
in a system that operates limited time appointment and the ‘easy’ cases provided some ‘light relief’ for the complex work.

These examples need to inform an economic evaluation of skill mix models and we return to this in the section on implications for research below.

**10.2 Applicability of findings to other settings**

As intended, we recruited eight case studies to take part in this research. They were purposively selected as studies of observable change. We learned from contact with SHA’s and Local Health Boards that a wide range of attributes would be encompassed within a few cases. Common attributes between sample cases and one or more populations of interest would form the basis of conceptual rather than statistical generalisation and the creation of detailed accounts of each case study would enable the reader to extrapolate, should they wish to do so from individual case studies to their own context.

An important question is the extent to which the study findings are applicable elsewhere. Case studies rely on analytical rather than statistical generalisation and this has been the source of considerable methodological debate in the literature. Case study methods are employed by social and health scientists for different purposes and with different perspectives.

The case study has been defined as ‘a research strategy which focuses on understanding the dynamics present within single settings’ (Eisenhardt, 2006) and as “an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2003). According to Eisenhardt, case studies typically combine data collection methods (evidence may be qualitative and or qualitative) and may have different aims, from providing description to generating or testing theory. We defined the case study boundaries as those suggested by the configuration of local urgent care systems. Each had national, regional and local services represented (so that for example NHS Direct / NHS 24; ambulance services and emergency departments were common to all); all worked to national quality requirements in the delivery of urgent care, but each had some variation in the type of local service provision (different approaches to triage and type of treatment centre facility for example) Similarly in terms of workforce and staffing, every case study had general practitioners, registered nurses and paramedics but there were local differences in roles and skill mix.

Ragin (2006) observes differences in the social science literature between “those who do small-N, qualitative studies” (and whose interests are in complexity) and those who do “large-N quantitative studies” (and whose interests are in generality); a distinction which lies at the heart of a fundamental disagreement about the scientific purpose of case study research. Ragin argues for an approach which finds a middle ground between these
perspectives using a method of Qualitative Comparative Analysis (QCA), a method of examining and analysing patterns across cases.

According to Mitchell (1983), cases should be chosen for their explanatory power rather than their typicality as the aim is not to secure representativeness in the quantitative sense, but plausibility. Hence in this research, we would not say that the case studies were representative of UK urgent care systems (for we have already identified they were different in having examples of innovation) but that there were sufficient similarities as well as differences between the studies to be able to configure them in membership ‘sets’ along the lines that Ragin proposes. So as we concluded in section 4, there were systems that could be categorised as simple, intermediate and complex in terms of patient flows and systems with single call access versus multiple option telephone access.

The iterative approach to the development of system maps through interviews and in discussion with local reference groups aimed to ensure that these captured both a ‘helicopter’ view of the system as well as having meaning for those who worked in the system. This exposure of the maps to multiple perspectives, adjustment and clarification was an important part of establishing construct validity and reliability of the models.

Because patients enter the urgent care system and then have a pathway through it, encountering different staff and services along the way, we hypothesised that the patient studies would reveal differences in experience depending on the clinical condition (reason for calling) and the system characteristics (access arrangements and dispositions / outcomes). We did not, as has been reported, detect differences in overall satisfaction with care linked to experience of the different systems.

## 10.3 Implications

### 10.3.1 Implications for urgent care policy

One of the of the most important developments in UK urgent care in the near future will be the introduction of a new, three digit number for non-emergency health care in England (now confirmed as 111 and approved by Ofcom). The new number is soon to be piloted in three English regions before rolling it out nationally. The 111 number promises to provide an easily memorable number (unlike the NHS Direct 0845 number which has not easily been remembered by the public) which anyone can dial if they think they need health care urgently but don’t know what to do. The number is designed to complement 999 and 0845 4647. It will in effect be an additional choice but in the longer term has the potential to become the single number to access non-emergency care services in England, including NHS Direct. In emergency situations, 999 will remain the number to call.
In concert with other studies, our research has shown that people who need medical help are, depending on where they live in the UK, presented with considerable variation in the range of services, how they are accessed and who will be involved in providing health care.

Systems dynamics modelling showed the range of options available for accessing urgent care in different localities and how patient pathways through urgent care could be streamlined by deliberate efforts to re-design the system. It also showed that getting initial access right was an important part of designing systems that work for patients. It also showed that complexity was not necessarily a negative attribute of urgent systems if it was a function of increased choice and availability of a broader range of services that would meet patient needs. However, in some of the models, the presence of numerous backwards flows suggested that there was more scope for streamlining patient flows.

The new 111 service has the potential to provide the solution to the problem of confusion and uncertainty that some people describe when faced with needing to access medical care urgently. It will also provide initial prioritisation and assessment to a common standard, probably using NHS Pathways, an active CDSS system which has already been piloted in Ambulance Services with 999 calls and in out-of-hours care. When someone calls 111, they will be assessed straight away. Emergency calls will be immediately passed to the ambulance service who will despatch an ambulance without the need for further assessment. Clinical advice will be available over the telephone and if the caller needs to be seen in person, an arrangement will be made for them to be seen locally. Unlike a previous plan to introduce single call access to urgent care via NHS Direct (the Exemplar Programme in England, 2001) the 3DN, as a complementary service, is less likely to face capacity management problems initially.

Arguably a greater risk than that related to complexity of patient flows in our case studies was the wide variation in how clinical assessment was conducted at the first point of contact. A range of staff were involved in this in the different sites. In situations where non-medical practitioners assessed calls, decision making was often not supported by CDSS.

There is more involved, however, than changing the front end of the urgent care service and deciding which type of staff and with what support should provide initial telephone assessment. Behind the first point of contact will remain the complex range of local provision that aims to meet local needs. The co-ordination and integration of local services and staff beyond the first point of contact remains of the utmost importance and it is here that the lessons from this study about the impact of changing workforce patterns and skill mix may have greatest application.
10.3.2 Implications for urgent care commissioning

*Designing integrated and effective systems*

In the urgent care systems we examined, there was evidence that where there had been work at the local system level to deliberately redesign urgent care services around the needs of patients and effective patient pathways, this had generated less complex pathways and processes. Complex systems that develop more organically may not be ‘worse’ in as far as they may offer more options for patients, but they may be less efficient, more difficult to understand and to change and the inevitable unforeseen consequences of change may be more difficult to predict. Developing local capacity for system understanding and design is important, along with the information and data skills to be able to extract intelligence about the urgent care system in a way that system performance can be understood and reported for various audiences. Also, as urgent care networks develop, there appears to be a need to develop more integrated approaches to clinical governance and to develop policies and procedures that reflect service integration.

The urgent care systems we studied fit what some analysts have called ‘health care microsystems’ (Nelson et al, 1998). The function of a microsystem is “to standardize care where possible, based on the best current evidence; to stratify patients based on medical need, and provide the best evidence based care within each stratum; and to customise care to meet individual needs for patients with complex health problems.” (Ferlie and Shortell, 2000, page 296).

Based on the supposed vital elements of an effective health care system we can assess how the urgent care systems described in our research measured up. The key elements are (1) a core team of health professionals (2) a defined population that they care for (3) an information environment to support the work of the care givers and the patients (4) support staff, equipment and facilities. Of these four, the information environment is one which appears to need most development.

*Workforce planning*

The call for enhanced skill mix in UK out-of-hours care has a long history. Rapidly increasing demand for out-of-hours care in the 1980’s and 1990’s, and the reducing preference of many family doctors to provide 24 hour care gave way in 2004 to a new general medical services contract which allowed GPs to opt out. Many did so and urgent care services, now commissioned by PCTs in England, developed workforce strategies to enable nurses and allied health practitioners to substitute for GPs in aspects of their work. In the case studies we examined, shortage of GP labour is no longer a central issue as many returned to volunteer to undertake sessional work and GPs face increasing difficulty in finding work. Furthermore the role of the salaried doctor in out-of-
hours care is consolidating with its own place in the general practice career pathway.

If a key driver of workforce change is a shortage of particular types of staff then it is important to note that the correct solution can change rapidly when other factors which impact on the availability of staff. In urgent out-of-hours care, the balance appears to have moved towards a surplus of GPs and a shortage of nurse practitioners and ECPs. All this highlights the need for more robust workforce planning for the longer term and the potential of skill mix development to counterbalance the unsettling effects of short term health policy initiatives.

The clear message from UK government policy is that detailed workforce planning is best delivered locally by those who are in a position to respond to patient needs. The role of government is to work with the NHS to make sure that policies are understood and built into local workforce plans and in England, SHA’s are likely to continue to have a role in overseeing workforce planning at a regional level.

Observations from this study broadly support this position. Successful approaches to workforce change with real innovations in the urgent care workforce were rooted in detailed appreciation of the local health system, its political discourses and its resources and potential for change (section 8.7.1). Both planned and emergent approaches to change were important, though this distinction is somewhat simplistic. As well as local appreciation of the health system, knowledge of the characteristics of local urgent care networks and the motivations of the various providers was important in being able to predict the likely success of change strategies.

**The effectiveness of first point of contact assessment**

This research has shown the important interface between the structure of urgent care systems and the prevailing skill mix. An effective and safe first point of assessment, triage and referral is important in order that the patient is referred to the most appropriate person to meet their needs. There are important research questions that remain to be addressed (see below), but much that commissioners and providers can do to review the management of cases, systematic internal evaluation and collecting patient feedback.

The safety and effectiveness of the workforce and skill mix models observed was not a focus of this study. Questions remain not only about whether assisted decision support is needed at all first points of contact, but also the extent to which skill mix is equally an active ingredient in the safety of urgent care systems. Where trained but non-clinical staff receive and pass on calls for assessment to clinical staff there may be questions of efficiency, but less so safety unless they are also prioritising calls. Triage and assessment of calls by non-clinicians operating without decision support must raise cause for concern.
Education and training

Evidence from this study suggests that in urgent health care GPs are an enduringly important resource in the training and support of registrars, nurses and allied health professionals. The involvement of GPs was overwhelmingly welcomed by staff who took part in the study, but it was also greatly needed.

There was evidence that staff working in new or changing roles were eager to prioritise self-directed learning and to share the costs of this training (time and funds) with their employers. We encountered very few nurse consultants and community matrons, though they appeared to be having a very positive impact in leading on professional issues and developing plans for education in liaison with higher education. In areas where financial constraints were keenly felt, staff development opportunities were reported to have been reduced to aspects of mandatory training (such as fire safety, moving and handling).

In order to secure the sustainability of workforce change and the development of clinical leaders across the health disciplines, significant investment will be needed in education and training. Higher Education providers together with Strategic Health Authorities and Health Boards could usefully consider how this could be resourced. To return to the World Health Organisation’s priorities for reform, to which we referred in section 1, not only is the health workforce critical to primary health care reforms, but failing to invest may foster resistance to change:

‘Significant investment is needed to empower health staff – from nurses to policy makers- with the wherewithal to learn, adapt, be team players, and to combine biomedical and social perspectives, equity sensitivity and patient centredness.’ (p134).

These high level skills and capabilities require ‘a rethink and review of existing pedagogic approaches’ (p134) in existing pre-registration programmes but also in maximising for learning in everyday practice. It was in everyday practice that staff working out-of-hours identified that there were real needs for planned approaches to learning from experience. In every case study, there was a strong sense of ‘team’ and team commitment. Informal mentorship, exchange of ideas and pooling expertise were described. The fast pace and the pressure of the urgent care environment, however, suggests that this is not best left to chance.

Staff highlighted the limited opportunities they had for natural feedback about their individual performance, not least because they rarely know about the outcomes for individual patients as a consequence of their decisions. These decisions are made in the context of having to assess patients in time limited circumstances and with limited information. The case for funding and developing good systems of clinical supervision, mentorship and coaching is compelling in these circumstances.
10.3.3 Implications for urgent care teams and managers

The characteristics of the urgent care systems we explored were closely aligned to those of health care mircosystems” as defined by Ferlie and Shortell (2000). They propose that In order to develop a culture of patient centredness, the ‘rules of engagement between health care professionals begin to change.

With reference to the following extract, we can assess the extent to which this has broadly already been achieved in urgent care and what the outstanding challenges are for teams:

“For example, rather than care being provided only between 8 am and 5 pm, care is provided on an as-needed basis – 24hrs a day, 7 days a week, 365 days a year. Rather than providing care based on one’s personal experience and expertise, care is provided based on evidence of best practices and shared knowledge of the health care team and the system at large. Rather than variance in care being driven by professional autonomy, variance is driven only by differences in patient needs and values. Rather than providing care based exclusively on office visits, care is provided based on ongoing information-rich healing relationships facilitated by the Internet (Institute of Medicine, 2001). Facilitating these changes will require incorporating advances in information technology” (Ferlie and Shortell, 2000; page p296).

The concept of twenty-four hour urgent care is gradually replacing that of out-of-hours general practice care. Care is increasingly provided by multi-disciplinary teams within which GPs continue to be central. Care based on evidence of best practice is being supported by the introduction of clinical decision support systems, though there will remain strong reliance on practitioners remaining up to date and recruitment and selection processes that seek out staff with the appropriate skills and experience. There is a risk with the development of skill mix that the goal could be misunderstood as that of demonstrating that nurses and others can ‘do’ the work of general practitioners. As we have seen, nurses can safely substitute for doctors in important areas but the goal of skill mix is firmly patient oriented. The patient should be seen by an appropriate practitioner to meet their needs. The availability of health information and advice over the internet has become much more widespread in the last ten years (NHS Direct and NHS 24 on-line; PCT web links), though as we have already identified, information flows between urgent care services are not yet optimal for clinical decision making and referral. The European Commission (2008) has observed that new technologies are improving the efficiency of the health care workforce. Allowing health workers to share information more easily and to work more closely
together is improving overall care, but the introduction of new technology requires that health workers are properly trained, and if necessary, re-skilled, to use it.

In both the English and Scottish case studies, considerable responsibility for urgent care lay with local providers for the quality of care and communication. The co-location of staff and services is often promoted as a good way to achieve service integration. For example, within the Direction of Travel consultation (Department of Health, 2006) the ability to resolve a person’s urgent care need at their first point of contact is said to be often ‘best met’ through physical co-location of services, whether telephone or face-to-face care. In this study we observed several examples of co-located urgent care services. Walk-in centres and out-of-hours services were co-located in Centre-med and Walk-in med and ED and out-of-hours urgent care were co-located in ED-med. Whilst this model clearly could work well, co-location needed to be part of a wider strategy of facilitating integrated working practices. Without this, co-location could produce competition for access to shared resources and confusion for patients for whom different streams of service delivery were visible.

10.3.4 Implications for professional regulation

The development of new roles in health care has a longer history, particularly in nursing and midwifery (Isles and Sutherland, 2001; McKenna, 2006) but also in the allied health professions (McPherson et al, 2006). Efforts to modernise services have included a specific focus on reconsidering the roles of the health care team and an increasing drive towards the development of a ‘flexible’ workforce, where different professions are able to take on each others’ traditional tasks. This study was conducted at a time when the implementation of NHS reforms in the period since 2000 was arguably at its peak. In 2007, the government Health Select Committee on Workforce Planning reported that the additional funding made available between 1999 and 2005 had generated an increase of 260,000 (24% growth in the workforce overall). Targets for large increases in the number of staff employed in the NHS had been set out in the NHS Plan.

Developing workforce capacity in prescribing

Evidence from this study suggests that there is scope to extend prescribing legislation to allied health professionals and scope to accelerate the pace of prescribing initiatives in general. Quite apart from important questions of safety, which were not for this study to consider, there were risks inherent in
some reported traditional practices. In particular the administration of medicines for which a practitioner had sought GP permission to give (and for which a prescription was later signed) was on several occasions described as a way to circumvent the situation in order that the patient did not have to wait to see a doctor.

**Managing the expansion of new role titles**

The regulation of new roles for nursing and allied health professions is the concern of the UK Nursing and Midwifery Council and the Health Professions Council. In the localities in which we conducted the research, we observed a host of new role titles. Service users were often unsure what these roles were and the question arises to what extent local services should be constrained by the professional bodies. The still uncertain status of various ’Nurse Practitioners’ with the Nursing and Midwifery Council was pointed to by some interviewees as a clear indicator of an unsatisfactory position nationally and a sense that NHS policy in relation to ‘Agenda for Change’ had promoted an increase in the levels of practitioner linked to NHS pay structures.

**10.3.5 Implications for research**

It is clear from this study that skill mix is an ‘active ingredient’ of the urgent care system.

We had intended to develop a quantitative model of an urgent care system and this would have enabled us to test the impact of skill mix (who cared for patients) on system performance – where bottlenecks occurred, how waiting times could be reduced and how care could be more streamlined. Quantitative modelling would not, however, have been able to address the pressing questions of the effectiveness and cost-effectiveness of skill mix, that is, the extent to which when health professionals are substitutes for doctors this is beneficial.

The high level influence diagram (Vensim model set out in section 8) suggested that workload management would be an important variable in developing a balanced, sustainable system. The staff mix, in terms of roles and qualifications, affected triage and treatment processes, potentially leading to desirable outcomes such as correctly triaged calls, correctly treated patients, and better health outcomes. On the other hand, getting the staff mix wrong could lead to incorrectly triaged calls, potentially ”missed serious cases” and greater pressure on in-hours services, or inappropriate use of other services. Skill mix should be considered an ‘active ingredient’ of the treatment patients receive with potential consequences for patient outcomes. In this study we gathered data on patient self reported outcomes in a questionnaire survey. Limitations of NHS data systems mean that to date it has been impossible to evidence individual patient pathways and outcomes using routine NHS data. In
the future, as information systems become more integrated it should become possible to do this.

Comparative studies of the safety, effectiveness and cost effectiveness are needed, but to date there have been very few such studies. Richardson et al (1998) remind us that over twenty-five years ago, Spitzer (1984) argued for this in relation to nurse practitioner initiatives and despaired that the challenges of undertaking such studies, not least the expense and complexity of properly controlled trials and well designed follow-up studies had inhibited their replication in sufficiently diverse settings so that conclusions about safety could be generalised.

Richardson et al (1998) argued that “what needs to be considered, however, is that the costs of such trials would be small compared to the potential savings available form substituting other health professionals for doctors and the potential costs (including damage to patients) of changing skill mix in the absence of sufficient knowledge base. It is surprising that such evaluations have been absent when skill mix in many countries has been altered radically.” (page 27).

The difficulty is, as we have seen in this study, that the development of new roles and skill mix, at least in urgent care has progressed at a rapid pace. Role titles tell us little about what is being practiced and as we have see there is considerable variation in the scope of practice and the particular skill mix in each setting which is embedded in systems with different characteristics. It may be important, for pragmatic reasons to press on with the reform of urgent health care, in as far as there are some patients who need care but because of the inadequacies of current arrangements are not having easy access to medical care when they need it outside GP surgery hours. But in prioritising areas for further research, the most pressing question probably remains the safety, effectiveness and cost effectiveness of different prioritisation and triage systems.

It is sometimes difficult for practitioners and managers to understand that negative outcomes for patients can be invisible without detailed and systematic follow up. So, for example, just because a local emergency department does not report an increase in admissions after the introduction of a nurse home visiting service, this does not mean that the service is safe. For example, it does not tell us about patients who should have been admitted to hospital but were not. Issues of cost effectiveness were a recurring theme in some of the interviews with staff, for example the observation that some types of staff were much slower than others, and that skill mix led to more cross referral. Whilst this may suggest appropriate use of the skills of the multi-disciplinary team, it could suggest that skill mix is may be less rather than more cost-effective.

With reference to the work of Richardson et al (1998), it is important to understand which elements of diagnosis, treatment and referral can be delegated cost-effectively from general practitioners to nurses, pharmacists
and other non-medical professions’ (page 127), for example in relation to the new patterns of referral between non-medical professionals reported in section 6. The range of delegated substitutes for GP inputs highlighted in table 6.1 may be useful in focussing attention on where evidence is needed most. The cost-effectiveness of nurse and ECP home visiting, of delegated emergency admission to hospital and of referral pathways after initial contact with a non-medical professional (all in comparison with usual care).

The safety and effectiveness of the workforce and skill mix models observed was not the focus of this study. Questions remain not only about whether assisted decision support is needed at all first points of contact, but also the extent to which skill mix is equally an active ingredient in the safety of urgent care systems. Where trained but non-clinical staff receive and pass on calls for assessment to clinical staff there may be questions of efficiency, but less so safety unless they are also prioritising calls. Triage and assessment of calls by non-clinicians operating without decision support must raise cause for concern.

Research is also needed to identify the learning needs of practitioners engaging in new or extended roles in this setting. In order to sustain the progress made in skill mix development to date, the study findings suggested that current approaches to education and training are unlikely to be sufficient. Work is needed to identify the development needs of practitioners engaged in new ways of working to support every day clinical practice, but also to design career pathways that can support what the vision of care co-ordinated around the person or patient. This will require support for clinical academic careers as well as development and research into new pedagogic approaches.

10.6 Recommendations

10.6.1 Recommendations for policy

(i) Proposals for the new three digit number for non-emergency health care have potential to reduce the confusion that members of the public have about how to make contact with urgent health services and could provide a more unified ‘front end’ to multiple access points which do not automatically redirect patients on to the right service for their needs.

(ii) Although evidence is only partial, active clinical decision support systems that have been approved for NHS use by practitioners at the first point of contact currently offer the best way of ensuring a consistent and systematic approach to prioritisation, assessment and triage.
(iii) The public need to understand what type of staff they are engaging with at each point in the care process and their competencies. There may be scope to make this clearer in public information nationally and locally.

(iv) Non-medical health professionals are making a key contribution to the delivery of urgent care. Their perspectives need to be taken into account in policy development.

(v) The education and training of urgent care staff appears variable and there is scope for clearer role and competency descriptions as well as guidance on expected levels of local investment in this.

(vi) Urgent Care Commissioning in England and leadership roles in England and Scotland have grown rapidly as specialist areas of management practice. We heard from Local Reference Groups that primary care organisations would welcome ‘master class’ opportunities and networking with others in similar roles. Focus could usefully include strategies for change and system redesign and analysing and using NHS data for performance management.

10.6.2 Recommendations for practice

(i) Given that many patients are not sure which type of staff they have had contact with, staff should routinely explain what their role is to patients (accepting that emergency situations may prevent this).

(ii) From the patient perspective, having a positive experience of urgent care is related to responsiveness and the quality of communication with individual practitioners. At times this can overcome dissatisfaction with aspects of the process of care. Reducing the number of times someone has to tell their story and reducing waiting times continue to be important areas for improvement.

(iii) Qualitative system maps can help staff to have an overview of the context in which they operate and can be a learning tool for organisations. O’Cathain et al, 2008 highlight the partial view of the system that service users have and conclude that knowledge of how the system worked was important to people. “A proposed solution to their knowledge gap was a ‘map’ of the system, posted to homes, so people knew where best to enter the system.

(iv) Clinical leadership, particularly in the non-medical professions is needed along with career pathways in urgent care. This should be the subject of local and national discussion.

(v) Where services are co-located (for example GP out-of-hours and emergency department minor illness and injury) there is often further scope to use the staff resource more flexibly to reduce patient waiting times. Perverse incentives that prevent this need to be overcome.
(vi) In our models, effective management of demand and workload was particularly important. Staff need to have sufficient time and resources to treat patients, including access to patient information.

10.6.3 Recommendations for research

(i) Skill mix should be considered an ‘active ingredient’ of the treatment patients receive with potential consequences for patient outcomes. Although comparative studies, especially trials, are difficult to execute (and costly) there is little evidence to show what the costs and consequences are of substituting health professionals for doctors in this setting. Comparative evaluations, including randomised controlled trials with economic evaluation are needed to inform the future development of skill mix.

(ii) There is scope for research support in the development of NHS data systems to enable routine data collection analysis that can inform performance analysis at the health system level with reference to important system outcome indicators and at the level of individual patient pathways. Historically, it has been very difficult to understand the impact of urgent care for individual patients because separate patient databases have been held by out-of-hours providers, hospitals and ambulance services.

10.7 Conclusion

The need for person centred services that are responsive and which can safely and effectively differentiate potentially life threatening problems from those that are less urgent have been longstanding priorities in UK urgent care policy. A new contract that allowed GPs to opt out of their 24 hour responsibility for patients accelerated local initiatives to develop skill mix in urgent care. Our task was to understand ‘who cares for patients’ and the impact of changing workforce patterns and skill mix at different levels. We found a multi-disciplinary approach to delivering urgent care in each case study in which non-medical professionals were frequently substituting for general practitioners, though GPs remained a vital part of the service. There were many examples of bespoke roles with locally inspired titles and functions which responded to the needs of local services.

Strategic approaches to system redesign had produced less complex pathways for patients and more effective management of the first point of contact with the system. In the context of skill mix, this was important in ensuring that patients were routed to an appropriate member of staff. For patients, overall satisfaction with the service was not directly related to the number of staff they had contact with during an episode of care or to local skill mix but to more generic qualities of service provision such as the quality of communication (including how to access services) and length of waiting time. The cost effectiveness of new skill mix models is therefore a priority for further research.
Table 10.1  Initial propositions, methods of investigation, summary of evidence and revised propositions. Methods (M 1-9 as described in the Plan of Investigation (Figure 2.1) and relevant sections of the report (S 4-9)

<table>
<thead>
<tr>
<th>Propositions 1-4</th>
<th>Evidence summary</th>
<th>Revised proposition</th>
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</thead>
<tbody>
<tr>
<td>1. The main internal drivers for changing the skill mix of the workforce are local skills shortages and the need to reduce health care costs. External (universal) drivers for change include government policy requirements and recommendations.</td>
<td>M 1,2,3,5,7  S5 Antecedents and drivers of workforce change</td>
<td>Economic factors were of major importance, but included concerns beyond cost reduction: cost containment, best value and securing control over resources. External drivers also included regulatory and legislative factors.</td>
</tr>
<tr>
<td>2. The human resources management culture in health care organisations affects the facilitation of workforce change. Observable aspects of a positive culture include concern with staff satisfaction and staff development (despite limited resources) and concern with the quality of care.</td>
<td>M 5,7  S6 Impact for staff</td>
<td>Evidence supports the original proposition (unchanged)</td>
</tr>
<tr>
<td>3. Planned rather than emergent approaches to workforce change are associated with greater role clarity, higher morale amongst staff and reduced stress. In particular, strategically and systematically planned large scale skill mix change implemented at one point in time in which as many staff as possible are retained and redeployed will be most successful in maximizing the benefits to patients.</td>
<td>M 4, 5, 6, 7  S8 Impact for health systems</td>
<td>Evidence suggests that the differentiation between planned and emergent change is simplistic. Both appear important as does detailed appreciation of the local context.</td>
</tr>
<tr>
<td>4. Continuous change is infrequently achieved but most associated with the degree of organisational evolution likely to be necessary to implement current NHS policies.</td>
<td>M 5, 7  S8 Impact for health systems</td>
<td>All case studies reflected aspects of continuous change (Proposition untested).</td>
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</table>
### Propositions 5-9

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Section of the report</th>
<th>Evidence from the study</th>
<th>Revised proposition</th>
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<tbody>
<tr>
<td>5. Changes in skill mix alter care provision by enabling the delegation or substitution of tasks, or by enabling the organisation to diversify through enhancing the skills and capabilities of existing staff or by recruiting new staff.</td>
<td>M 5&lt;br&gt;S6 Impact for staff</td>
<td>Changes altered care provision in by changing the way in which staff worked independently and in cooperation to contribute to the provision of responsive, risk managed services.</td>
<td>Changes in skill mix alter care provision by changing the responsiveness of the service to prioritising and managing demand and changing the way in which staff work independently as well as together including how clinical decisions are made; how clinical risk is contained; how care is delivered by enabling the delegation or substitution of tasks; how referral of patients between staff and to other services is achieved and how resources are shared in the interests of patients.</td>
</tr>
<tr>
<td>6. Improved skill mix will be that which is described to positively affect patient pathways through the urgent care system in terms of: (a) shorter pathways (number of steps, duration and waiting times) (b) contact with fewer staff able to contribute definitive care or onward referral (c) satisfaction with the experience of care.</td>
<td>M 8&lt;br&gt;S7 Impact for patients</td>
<td>No relationship observed between number or type of staff the patient had contact with and overall satisfaction</td>
<td>Improved skill mix positively affects patient pathways through the urgent care system by (a) safe, effective and timely initial assessment (b) effective referral within the urgent care team (c) timely access to medicines (d) direct admission to hospital where needed. These factors appear more important than the number or type of staff encountered.</td>
</tr>
<tr>
<td>7. Though impossible to describe a universal ideal mix of health personnel, an optimal mix of personnel for out-of-hours urgent care can be described for typical case mix.</td>
<td>M 4, 6</td>
<td>Insufficient evidence (unchanged)</td>
<td></td>
</tr>
<tr>
<td>8. Health care organizations operate within complex networks and systems. The dynamics of these systems and the impact of workforce and skill mix change on such systems can be analysed by examining underlying structures of flows, delays, information and feedback.</td>
<td>M 6, 9&lt;br&gt;S8 Impact for systems</td>
<td>Evidence supports the original proposition (unchanged)</td>
<td></td>
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<tr>
<td>9. Workforce and skill mix change that is incorporated in more integrated arrangements is more likely to offer evidence of greater allocative efficiency and sustainability over time.</td>
<td>M 4, 5, 7, 8&lt;br&gt;S10 Discussion and conclusions</td>
<td>Partially supported by evidence but co-location was not a proxy for integration</td>
<td>Workforce and skill mix change that is incorporated in more integrated arrangements may deliver allocative efficiency and be more sustainable but this needs further research. Co-location of staff was neither a necessary nor sufficient condition for service integration.</td>
</tr>
</tbody>
</table>
References


BBC News. Private firms face Scots GP block. 2008


Davies C, Anand P. Links between Governance, Incentives and Outcomes: a review of the literature. 2005


Eisenhardt K. Building Theories from Case Study Research in Case Study Research. 2006. 298-323.

European Commission COUNCIL DIRECTIVE No 93/104/EC of 23 November 1993 concerning certain aspects of the organisation of working time.


Exworthy M. Primary care in the UK: understanding the dynamics of devolution. Health & Social Care in the Community 2001; 9(5):266-278.

Greer SL. Four way bet: How devolution has led to four different models for the NHS. 2004. University College London, The Constitution Unit.


Hurwitz B. Out of hours: Primary care needs a properly funded, well organised night time service. BMJ 1994; 309:1593-1594.


NCCSDO Workforce Research Programme: A call for research proposals within a co-ordinates series of projects into NHS Workforce issues. 2004; NCCSDO.


O'Cathain A, Thomas KJ. "Any other comments?" Open questions on questionnaires - a bane or a bonus to research? BMC Medical Research Methodology 2004; 4(25).


Appendix 1 Literature Review materials

1. KEY QUESTIONS FOR THE REVIEW

1. What workforce changes have
   a. Been proposed?
   b. Occurred?
2. What changes in skill-mix have resulted from these workforce developments?
3. Have these workforce changes led to changes in service delivery or models of care, for example the development of satellite centres; more centralised services? Conversely, have changes in service delivery or models of care led to changes in workforce skill mix roles?
4. Is there evidence for integration or co-location of services?
   a. Co-location: Where two services or professional groups work beside each other in same organisation, but may not be formally integrated e.g. emergency departments and GP co-operative located side-by-side.
   b. Integration: Where professional groups are formally part of same organisation e.g. GPs and nurses working within same ooh organisation.
5. What has been the impact on staff, for example:
   a. On overall workload?
   b. On case mix seen by individual professional groups?
   c. On role boundaries, e.g. with the development of new roles?
6. What has been the impact of workforce changes on patients, for example:
   a. Satisfaction with service?
   b. Location of care?
   c. Patient expectation, e.g. does co-location of services increase patients expectation of integrated services?
   d. On patient outcome?
   e. Patient’s understanding and acceptance of change?
7. What is the impact of different configurations of skill-mix on access in terms of:
a. Type of service offered?
b. Distance to services?
c. Locality?
d. Time to response?
e. Getting through on the telephone?

8. What are the conditions for acceptance of change by staff and by patients, for example, are there geographical implications, urban vs rural?

9. What aspects of care process out-of-hours have been influenced by change? For example the breakdown between advice, home visits and centre visits. Is there equal opportunity for access?

10. What is the impact of different configurations of skill-mix on other services?

11. What is the real impact of skill-mix changes on patients? Does it make care easier or more complex?
POLICY DOCUMENTS REVIEWED


Notes: [http://www.dh.gov.uk/assetRoot/04/06/69/38/04066938.pdf](http://www.dh.gov.uk/assetRoot/04/06/69/38/04066938.pdf)


Notes: [http://www.dh.gov.uk/assetRoot/04/05/57/83/04055783.pdf](http://www.dh.gov.uk/assetRoot/04/05/57/83/04055783.pdf)


Notes: [http://www.dh.gov.uk/assetRoot/04/05/88/36/04058836.pdf](http://www.dh.gov.uk/assetRoot/04/05/88/36/04058836.pdf)


Notes: [http://www.dh.gov.uk/assetRoot/04/08/59/47/04085947.pdf](http://www.dh.gov.uk/assetRoot/04/08/59/47/04085947.pdf)


Notes: [http://www.dh.gov.uk/assetRoot/04/08/45/22/04084522.pdf](http://www.dh.gov.uk/assetRoot/04/08/45/22/04084522.pdf)


Notes: http://www.dh.gov.uk/en/Consultations/Liveconsultations/DH_4139428


Notes: http://www.publications.parliament.uk/pa/cm200304/cmselect/cmhealth/697/697.pdf


Notes: http://www.dh.gov.uk/assetRoot/04/06/68/27/04066827.pdf


Notes: http://www.nao.org.uk/publications/nao_reports/05-06/05061041.pdf


Notes: http://www.nao.org.uk/publications/nao_reports/03-04/03041075.pdf


Notes: http://www.dh.gov.uk/assetRoot/04/09/30/88/04093088.pdf


Appendix 2 Observation and Interview Schedules

Observation schedule version 1 (26 01 07)

<table>
<thead>
<tr>
<th>Case study:</th>
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<tbody>
<tr>
<td>Site name and address:</td>
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</tr>
<tr>
<td>Observation area</td>
<td></td>
</tr>
<tr>
<td>Observer</td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td></td>
</tr>
<tr>
<td>Start time:</td>
<td></td>
</tr>
<tr>
<td>Finish time:</td>
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</tbody>
</table>

**Description of site location:**
(e.g. accessibility; signage; parking)

**Description of physical environment of the waiting/reception area:**
(e.g. size, facilities, pictures, seating, comfort)

**Staff groups on shift being observed:**
(number of staff in different groups; their start/finish times if known)

**How patients move through the system**
First contact and sequence of events/contacts
Flow through the system

Any observable delays and bottlenecks

**Patient mood/atmosphere**

**Staff interactions**
Nature of interactions
(e.g. telephone; face to face; subject/purpose of interaction; apparent role/relationship - supervisor & staff or colleagues)

Quality of interactions/relationships
(e.g. humour, friendliness, politeness, tension)

**Staff-patient interactions**
Nature of interaction
(e.g. which staff groups/individuals communicated with patients; who initiated the interaction; subject/reason for interaction)

Quality of patient/staff interactions

**Researcher comments**
Overall impressions and reflections about the experience, environment and roles. Any changes to previous interpretations/understandings? Questions and puzzles to follow up.
INTERVIEW GUIDE
Senior Staff

(Instructions for the interviewer are in italic)

Introduction: check participant has received and read project information. Recap, answer questions as necessary. Talk through consent form, and gain permission to tape record. Ask participant to sign the consent form.

LEAD IN

Thank you for agreeing to be interviewed as part of the study. In our discussion today, I would like us to focus on three aspects. First, I’d like to ask you about the commissioning arrangements for out-of-hours care locally and your role in this. Second, I’d like to ask you about the main aspects of workforce and skill mix change that you consider to be important locally, the factors that influenced their development and the impact you think these changes are having (for patients, staff and the overall system). Finally, I would like to ask for your help in refining a map of patient pathways through the urgent care system that we are developing.

1. First, some questions about how out-of-hours care is commissioned

(a) Please could you tell me about your role (organisation) and any responsibility you have for urgent care?
(b) How is out-of-hours care currently commissioned in the new structures (ie since PCT and SHA realignment?) - assess whether practice based commissioning is important, health and social care partnerships.

(c) What factors do you consider have shaped the system? (historical or current)

(d) How is performance in the out-of-hours system monitored?

2. **Second, some questions about the main aspects of workforce change**

(a) What are the main changes that have taken place in the workforce / to the skill mix? Which have been the most important changes and why?

(b) What were the factors that influenced this ie local drivers such as workforce availability, need for cost savings, national policy?

(c) What were the aims of the changes?

(d) What other agencies have been involved/consulted about the change(s)?

(e) How were the changes planned for and introduced? What helped / hindered the process?

(f) What is your experience of how well the change(s) are working?

**Finally, some questions about patient pathways through the urgent care system**

(a) talk through the map with the interviewee, describing how it represents ways in which patients can access and move through the system and noticing the major service providers, especially the interviewee’s organisation

(b) ask them to tell you about anything that doesn’t seem quite right about the map, anything they would like to change, look carefully at the boundaries of the system.

(c) ask them to focus on the section of the map that relates to their organisation – is this how it works in reality? Where are the system bottlenecks where patients have to wait? Invite them to annotate the map

(d) What capacity does the participant have to influence the system?
INTerview guide

Operational Staff

(Instructions for the interviewer are in italic)

Introduction: check participant has received and read project information. Recap, answer questions as necessary. Talk through consent form, and gain permission to tape record. Ask participant to sign the consent form.

Lead in

Thank you for agreeing to be interviewed as part of the study. In our discussion today, I would like us to focus on three aspects. First, I’d like to ask you about the job you do, what it involves and which other staff you work most closely with. Then I’d like to ask you about how you think your practice and your work with other staff has changed because of the new ways of working that are happening in your service and finally, I’d like to show you a map that we’re developing of the care pathways that patients take through the local out-of-hours system and ask you to tell me whether it could be further improved to reflect reality.

1. First some questions about your role and the staff you work closely with:
(a) Perhaps you could start by telling me about the work that you do here in (organisation)? What is your role and what is involved in the day-to-day aspects of your work?

(b) In what ways does your post contribute to the way the organisation works?

(c) Which other types of staff do you work most closely with? Could you say a little about each of those roles and the aspects of your work that overlap or are very different? Are there members of your workforce that you think you should work more closely with? How do you communicate with other members of your team and for what purposes?

(d) What proportion of your time would you say is spent in direct contact with patients versus other work you have to do? Has this changed?

(e) What opportunities are there for personal/professional development? (If the interviewee has a new role, ask what specific training and preparation they have had).

2. Now some questions about how your practice has changed and what you think about the changes

(a) In your experience, what have been the main changes in your role and in the role of other staff?
   • Which have been the most important changes in your role and why? To what extent are the changes a direct result of new ways of working being introduced?
   • Has your level of autonomy changed with since the workforce change(s) have taken place/new job roles have been established (ask to describe before and present)? If so, how?
   • Are there any aspects of your current job that you think could or should be undertaken by other staff? Are there aspects of other people’s jobs that you think you could or should be doing?

3. Finally, some questions about patient pathways through the urgent care system

(e) talk through the map with the interviewee, describing how it represents ways in which patients can access and move through the system and noticing the major service providers, especially the interviewee’s organisation

(f) ask them to tell you about anything that doesn’t seem quite right about the map, anything they would like to change

(g) ask them to focus on the section of the map that relates to their organisation – is this how it works in reality? Where are the system bottlenecks where patients have to wait? Invite them to annotate the map
(h) if a health or social care professional or helper: what authority do you have to refer patients to other services (eg hospital wards, mental health and social care).

Appendix 3 Analytical coding framework

Urgent Care Workforce Project: Coding Framework_v2.0_08Aug07

S) SITE (compulsory code)
Sa PCT-med
Sb Clinic-med
Sc Walk-in med
Sd Hub-med
Se Ed-med
Sf District-med
Sg Community-med
Sh County-med

D) DESCRIPTIVE PASSAGES
This section for identification of descriptive data regarding the model and the roles.
Code D1) Model Description (to include any purely descriptive passages about the model)
Code D2) Role Description (to include any purely descriptive passages about a person’s role)

1) INFLUENCING CHANGE
References to the various factors (local, economic, social, historic and geographical), influences and drivers behind the initial changes that took place in service delivery
Code 1a) National Policy (e.g. changes to the GP contracts,)
Code 1b) Local historic & social factors (e.g. local agency’s desire to have single point of access for out of hours and urgent care, or success of previous GP co-op service)
Code 1c) Economic drivers (e.g. PCT funding priorities)
Code 1d) Geography (e.g. high percentage of rural areas in the region)
*Code 1e) Other (this code is only to be used if text related to influencing change will not fit into any other category and you consider it essential that it be coded)
2) CHANGE IMPLEMENTATION & PROCESS

References to the process of and the implementation of the initial changes that have taken place in the delivery of the urgent and out of hour service

**Code 2a) Preparation and testing** (for example, planning for the change, specific change related training, testing and piloting of new systems)

**Code 2b) Information** (exchange and feedback of information regarding the change(s))

**Code 2c) Evaluation of the change process** (interviewees’ evaluative comments about the process of change, e.g. what was planned and how this was carried out).

3) THE MODEL

References to the outcome of the change(s), or current Model of Urgent and Out of Hours care service delivery.

**Code 3a) Management style/culture** (organisational structures and systems, communication methods between managers and staff, management culture, and manager’s individual or group styles of management and concern with quality of care)

**Code 3b) Ethos** (the character or internal social context of the model e.g. more businesslike)

**Code 3c) Advantages and Benefits** (e.g. staff comments on better working conditions or increased work satisfaction)

**Code 3d) Disadvantages and losses** (e.g. loss of rest room or other facilities, or increased bureaucracy)

**Code 3e) Responsiveness** (How the model flexes and responds to changes in demand or crises, e.g. use of planned versus emergent strategies)

**Code 3f) Monitoring model performance** (references to feedback, data collected for purposes or monitoring service and staff standards and performance)

*Code 3g) Commissioning & strategy* (references to decisions, decision making and strategy regarding the commissioning of services)

4) RESOURCES

References to how resources have or are being used in the model and how resources affect the working of the model

**Code 4a) Staffing** (e.g. use of locums)

**4b) Infrastructure**

**Code 4b1) Technology** (e.g. computer systems, electronic communications between staff)

**Code 4b2) Networks** (e.g. professional bodies and professional networks e.g. Physician Assistant in Scotland using PA group in England as source of support)
**SDO Project (08/1519/97)**

**Code 4c) Physical environment** (e.g. ECP vehicle parking when in downtime/awaiting calls; and sharing of rooms and equipment)

**5) ONGOING CHANGE**

References to ongoing changes or modifications in the current model of service delivery.

**Code 5a) Modifications** (modifications or other changes that have happened since model inauguration or are currently happening, this code would also include any comments regarding modification of roles or how roles have evolved since the model was set up)

**Code 5b) Forthcoming change** (modifications or changes that are planned and will be implemented)

**Code 5c) Identified needs** (comments regarding perceived need for modification or changes to or within the current model of service delivery)

**Code 5d) Impact of continuous change** (impact of ongoing or continuous change on staff members and the model. References to the impact of initial change that brought the current model into being are to be understood as evaluative comments about the model and go under codes 3c or 3d)

**6) WIDER HEALTH SERVICE (WHS)**

As the model does not stand in isolation to the wider world this group of codes will include all references to how other health services and factors relating to the wider world of health care interact with or impact upon the model of service delivery.

**Code 6a) Regulations and legislation** (e.g. Department of Health and/or Strategic Health Authority targets and other regulations.

**Code 6b) Service availability** (e.g. waiting times for other services, availability of community beds, etc)

**Code 6c) WHS Change Events** (to include event, circumstance or policy in the wider health service that have impacted on the delivery of urgent and out of hours care eg changes in GP training, agenda for change, 4 hour targets)

**Code 6d) Model impact on WHS** (references to how the current model of Urgent and Out of Hours care service delivery impacts or has impacted on the wider health service, e.g. increases in GP in-hours surgery attendances)

*Code 6e) Cross-sector working* (references to links with services providers other than the NHS, eg working with private hospitals or consulting non NHS or non health organisations)

**7) INTEGRATION & GROUP INTERACTIONS**

**Code 7a) Trust level**

References to integration and/or interactions at Trust level (eg Hospital Trusts, PCT etc). Including interactions between Trusts or between other organisations and Trust bodies.
7b) Service level

References to integration and/or interactions at service provider level (e.g. between Out of Hours and hospital services providers and references to the wider MDT e.g. Specialists teams within the hospital).

**Code 7b1) Service level neutral**

**Code 7b2) Service level positive**

**Code 7b3) Service level negative**

7c) Multi-disciplinary team (MDT)

References to integration and/or interaction at team level. Team level means any combination of urgent care/Out of Hours personnel, including support staff (e.g., receptionists & drivers) but excluding senior managers.

7c1) Component roles (perceptions of other people's specific roles and their function within the team)

**Code 7c1a) Doctor and GP roles** (excluding references to seeking help from doctors/GPs as support for job performance - see code 8)

**Code 7c1b) Practitioner roles** (excluding doctors and GP's)

**Code 7c1c) Non-clinical support staff**

7c2) Interdisciplinary views (Perceptions of the cultures, backgrounds and ways of working of other professional groups. Professional groups refer to nurses versus doctors or GP's versus hospital staff etc.)

**Code 7c2a) Rivalry** (references to negative comments or evaluations of other professionals and groups and their ways of working)

**Code 7c2b) Respect** (references to positive comments or evaluation of other professional groups and their ways of working)

*Code 7c2c) Remuneration*

**Code 7c2d) Other** (neutral comments or remarks about other professional groups or their ways of working)

7c3) Team performance (evaluative references to team performance and identity as a whole group)

**Code 7c3a) Team performance positive** (e.g. "over time group have gelled as a team")

**Code 7c3b) Team performance negative** (e.g. there are tensions within the team that have disrupted working patterns)
**Code 7c3c) Team performance neutral** (non evaluative references relating to team performance)

7c4) Multidisciplinary Team Working (MDT working) (Any references to the nature of working integrations and/or interactions within the multidisciplinary team, sub-groups or personnel which contribute to team function.)

*Code 7c4a) New shift different role* (references to working in different roles according to their shifts eg the same individual working as a car based EMP on one shift and as a Walk-in-Centre EMP on another shift. Also references to the conflicts or benefits experiences from working in this way)

*Code 7c4b) Flexing and multiple hats within shift* (references to intra role fluidity, how individuals flex regarding work tasks and responsibilities and could be said to be wearing multiple hats within their shift, e.g. support staff such as Walk-in Centre receptionists taking on additional tasks for Out of Hours colleagues)

*Code 7c4c) Lone working* (references to lone working)

*Code 7c4d) Non lone Working* (references to MDT group, collaborative, or partnership working)

*Code 7c4e) Working dynamics* (how team or group working patterns are informally managed by the individuals concerned and implications for direct patient contact time)

**Code 7c4f) Communication and information** (e.g. preparation and use of guidelines; regular team meetings, within group information exchange)

**Code 7c4g) Contribution** (perception of how their role contributes to the overall work of the team and the importance of the role within the team, e.g. how a driver supports and saves time for the GP on home visits)

7c5) Sibbald Definitions (these codes are for clear examples of Sibbald et al (2004) definitions of skill mix change and changes in service provision, it is possible that such examples will also fall under another code in which case code twice.

**Code 7c5a) Substitution** (any examples or quasi examples of substitution defined as ‘replacement of one type of worker for another,’ also references to how substitution negotiated and managed)

**Code 7c5b) Delegation** (any examples or quasi examples of delegation understood as ‘transfer with/without support or supervision of parts of a role from one worker to another’ also include references to how delegation is negotiated and managed)

*Code 7c5e) Enhancement* (any examples or quasi examples of delegation understood as ‘increasing the depth of a job by extending the role or skills of a particular type of worker’)

*Code 7c5f) Innovation* (any examples or quasi examples of delegation understood as referred to as ‘creating new jobs by introducing a new type of worker’)

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**Code 7c5c) Relocation** (shifting the venue from which a service is provided from one health care service/sector to another without changing people delivering the service e.g. primary OOH sited in A&E)

**Code 7c5d) Transfer** (moving provision of a service from one health care service/sector to another)

**Code 7c5g) Liaison** (using specialist in one health care service/sector to educate and support staff working in another sector)

**Code 7c5h) Newly available time** (use of time freed up by substitution or delegation, e.g. nurse practitioner writing up notes whilst health care assistant does delegated task of dressings)

### 8) NEW WAYS OF WORKING (NWOW)

Reference to new ways of working under the model of service delivery, this would include how individual practitioner’s interpret their competence to practice their roles in these new ways of working, what strategies are used to ensure safe and effective practice delivery and how these strategies and practices are implemented. The aim of these codes is to capture how people are meeting the challenges associated with the new ways of working.

**8a) Role Enablement**

This group of codes refers to comments regarding all the various factors that enable individuals to carry out their roles and how they deal with uncertainty understood as those occasions where they feel the need of little something extra beyond their own skills and competencies. (e.g. needing to seek further advice to deal with a particular patient, or seeking advice regarding how internal NHS systems work etc.)

**Code 8a1) Support from seniors** (e.g Nurse practitioner seeking treatment advice from a GP)

**Code 8a2) Peer group knowledge and experience** (both the giving and receiving, e.g. Nurse practitioners seeking advice on childhood asthma from paediatric experienced nurse practitioner colleague)

**Code 8a3) Individual past experience and knowledge** (how individuals have called on previous, past or other experience to deal with situations in their current roles e.g. ECP drawing upon own past experience as a paramedic)

**8b) Training** (References to formal or informal, in-house, trust level or national training)

**Code 8b1) Training needs** (practitioner identified need, e.g. how a venepuncture (taking bloods) course would increase scope and effectiveness of practitioner in their role)

**8b2 Organisational Approaches to training** (References to access to, availability or barriers to undertaking or provision of formal or informal training)

**8b2a) Formal Training**
*Code 8b2a1) Access and availability to formal training positives* (e.g. provision of role specific training such as call handlers receiving specialist ADASTRA and communication training, or existence of training support lead, or provision of training sessions)

*Code 8b2a2) Barriers to formal training access and availability* (e.g. ‘management pay for the course but we have to do it in our own time’)

*Code 8b2a3) Training consolidation* (support and opportunity to consolidate new learning especially after a course and on-job learning e.g. GP being available to support nurse practitioner after a minor illness course by confirming or correcting diagnoses or clinical decisions.)

*Code 8b2b) Informal training* (for mentions of informal training, nurse from different disciplines running sessions for each other)

Code 8b2c) Mandatory Training (e.g. Lifting and Handling; Health & Safety, Fire, Basic Life Support)

*Code 8b3) Training generic* (general mentions of training received that does not fit in the other categories, e.g. descriptions of training received)

8c) Role Practice

*Code 8c1) Accountability* (references to duty of care, clinical risk, interpretation of priorities in carrying out of role)

*Code 8c2) Self-directed working* (references to levels of autonomy and decisions and choices regarding delivery of skills and competencies and or completing episodes of care)

*Code 8c2a) Decreases in self-directed working* (could prescribe previously but unable to prescribe now)

*Code 8c2b) Increases in self-directed working* (now able to do home visits, refer, admit)

*8c3) Skills

*Code 8c3a) Skills effects* (to include de-skilling, up-skilling, dilution of skills and ability to complete episodes of care)

*Code 8c3b) Limits* (limits imposed on role practice from a range of sources, such as the style or model for service delivery (e.g. GPs have always done home visits), management decisions, regional policy etc)

Code 8c3c) Confidence and vulnerabilities (references by individuals to their own confidence and vulnerabilities regarding the implementation of their role, e.g. ‘I know my own level of competence and I know when I need to seek help').

*Code 8c4) Role clarity & overlap* (clarity and overlap and recognition of role and role duties by others, e.g. being recognised as an emergency practitioner by patients)

Code 8c5) Emotional Responses (references to the individual’s emotional response to aspects of practising their role and the level and quality of patient care they can deliver, for example morale, satisfaction, anxiety or stress)
9) IMPLICATIONS FOR PATIENTS

References to the impact upon or implications for patients.

**Code 9a) Access** (references to face to face or telephone access to Urgent or Out of Hours services, including comments regarding NHS Direct and NHS 24)

**Code 9b) Patient selection** (references to how the various professional (nurse practitioners, GPs or physiotherapist) select the patients for consultation from the waiting for treatment list, e.g. ‘I make a judgement as to whether I can deal with the case or not’;

**Code 9c) Patient pathway** (references to shortening or lengthening of the patient’s pathway through the system, the number of steps or clinical or operational staff with whom they have contact during their pathway and continuity of patient records and information. E.g. pharmacist practitioner transferring patient to GP as case more appropriate for GP consult; or patient benefits from nurse practitioner’s ability to complete the episode of care from start to finish; patients being inappropriately held in a Clinical Decision Unit to avoid 4 hour target breach)

**Code 9d) Patient expectations** (references to what patients expect or demand of the service and appropriate or inappropriate usage e.g. GP’s view that some patients use of Out of hours service because it’s convenient, or to be seen by a doctor)

**Code 9e) Positive emotional responses** (references to patients’ emotional responses to aspects of the service e.g. shorter waiting times increase patient satisfaction)

**Code 9f) Negative emotional responses** (e.g. locums and nurse practitioners order more lab tests and increase patient anxiety)
Appendix 4 Introduction to Systems Dynamics modelling

1. System Dynamics and its role in this project

System Dynamics (SD) is an analytical modelling approach whose foundations were laid in the 1950's at MIT by Jay Forrester in his pioneering work on “industrial dynamics” (Forrester 1960, 1961). The fundamental principle of SD is that structure determines behaviour: in other words, the way that the separate components of any system relate to and affect each other determines the emergent behaviour of the system as a whole. SD has two distinct aspects; one qualitative and one quantitative. The qualitative aspect involves the construction of causal loop or influence diagrams, which depict graphically the way in which the system elements are related. Through discussions with problem owners and other stakeholders, the identified system elements are represented in the form of a causal loop diagram (CLD), an example of which is shown below in Figure 1.

Figure 1 Causal Loop Diagram for hospital admissions

The system depicted here is the process by which patients are referred and then admitted to hospital. The identified elements are connected by arrows. The plus and minus signs at the arrow heads denote the direction of the influence, under the assumption that everything else remains the same (ceteris
paribus), but not its magnitude. For example, as referral rates increase the bed occupancy increases, shown by a plus arrow. As waiting lists increase, GP referral rates tend to decrease, since long waiting times will lead GPs to seek alternatives to hospital admission. The latter effect, although difficult to quantify numerically, is represented qualitatively in the CLD by a minus arrow. In this way complex and informative diagrams can be built up to represent and clarify the system being investigated, providing insights into how the various components interact.

In many cases the qualitative analysis of these diagrams is of value in its own right. The aim of this analysis is to find loops, as in the above example, where elements are connected by a directed cycle of arrows. Balancing loops contain an odd number of minus signs, whereas reinforcing loops or vicious circles contain an even number of minus signs. Balancing loops retain the status quo and keep the system in steady-state, whereas in vicious circles the system spirals out of control. Figure 1, a balancing loop, shows that waiting lists can have an important role to play in regulating the hospital admissions system and keeping it in steady state. Identifying both types of loop can be very helpful in understanding system behaviour.

For quantitative SD modelling, the CLD has to be converted to a stock-flow diagram. These models are best conceptualized as a system of tanks connected by pipes: a domestic central heating system is a reasonable analogy. Water flows from tank to tank and the rate of flow is governed by taps or valves on the pipes. The “water” which flows around such a system may represent money, people, material, product, and so on. Figure 2 shows the stock-flow diagram constructed from the CLD of Figure 1 in the notation of the computer software used for the UCWP, Vensim (Ventana Systems, 2008). Here the “water” represents patients. The two “clouds” represent a source and a sink, in other words patients outside the system. The rectangle is a stock, and represents the number of patients occupying beds in hospital. The two pipes represent admissions and discharges, and the valves represent the rate of flow along these pipes. A discharge flow has been added (not required in the original CLD) since otherwise patients would never leave hospital.
Figure 2. Stock-flow model for hospital admissions

The model needs to be parameterized, in this case by defining the referral and discharge rates, the initial value of the Occupied beds stock, and the “Waiting list” variable and its interactions - which are actually quite complex and may need extra variables not included here. The time-step (e.g. one day) and the total time horizon (e.g. 5 years) need to be selected. The model can now be run as a computer simulation. The first step is to validate the model using historical data to check that the output (in this case the daily bed occupancy) agrees with observed values. Then, experiments over a range of different future scenarios can be conducted by changing the inputs, and observing how the outputs change over time, allowing the system behaviour to be monitored and the effects of different scenarios analyzed.

Process flow mapping is a very useful addition to the toolbox of more traditional qualitative and quantitative approaches in SD. A process flow map represents the “workflow” of people, material, information, etc., showing the possible entry points to a system, subsequent pathways, decision or branch points, and exits. The method can be used to map existing processes or design new ones. This approach is widely used in manufacturing industry and underlies the concept of clinical pathways. A process flow map can be annotated to show bottlenecks, resource constraints, decision criteria, and so on. The procedure for obtaining a process flow map is very similar to that for a CLD, namely a series of interviews with stakeholders from all parts of the system in order to construct, iteratively, a diagram which represents an agreed understanding of the system. Where data are available, flow volumes along the different pathways can be shown.

In the Nottingham Urgent Care project (Brailsford et al, Lattimer et al, 2004) a combination of process flow mapping and causal loop diagramming was used to develop a conceptual model of the entire emergency care system in Nottingham. Having drawn up a rough map of patient flows during a brief orientation visit, interviews were conducted with about 30 stakeholders from all parts of the system. The interviewees were shown this map and were allowed to annotate, modify and amend it as necessary, showing where they felt their own influence extended and where (and why) they considered bottlenecks existed. One of the interesting, but maybe unsurprising findings was the relatively low level of understanding of the system as a whole by many individuals: they were all experts in their own particular part of the system but often did not know how other parts worked, or understand how the different parts connected up. Participants were asked to describe political or historical factors which had led to the development of their part of the system in a particular way, and where possible these were incorporated into the final
quantitative model. However, the key output from this process was the conceptual model which represented the whole system. This was then used as the basis for a quantitative model, which was used to conduct experiments using different hypothetical change scenarios or interventions, for example longer opening hours for the nurse-led Walk-in Centre, or increased out-patient diagnostic facilities.

The main benefits of modelling are twofold. Firstly, the process of qualitative modelling facilitates discussion between researchers and stakeholder participants, allowing insights and information to be obtained in a structured way. This is especially helpful when using a multiple case study methodology, since it greatly assists consistency between the different units of analysis and the different researchers. From a practical perspective, viewing a project as consultancy rather than academic research, the outcomes from this phase of the modelling are often of most help to the client organisation(s). The consensus-building aspects of the system model development enable stakeholders to understand each others’ perspectives and see the “big picture”. Secondly, the use of a validated computer model can allow risk-free experimentation with different strategies, without the need to test such interventions in the real world system. The model itself can act as a catalyst for discussion in the client organisation(s) as well as a test-bed for potential strategic changes.
Appendix 5 Quantitative analysis of activity data from *Hub-med*

Activity data for the twelve month period April 2007 to March 2008 were analysed. In total there were 205,764 Hubmed patient contacts during this period. Table 1 below presents an analysis by disposition and shows that the great majority of calls (87%) resulted in either a visit to a Treatment Centre, a home visit by a GP, or telephone advice and assessment. These data were used to provide a crude validation of the flow volumes represented in the Hubmed system map.

<table>
<thead>
<tr>
<th>Call disposition</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice/Assessment</td>
<td>70208</td>
<td>34.1</td>
</tr>
<tr>
<td>Treatment Centre</td>
<td>74337</td>
<td>36.1</td>
</tr>
<tr>
<td>GP Home Visit</td>
<td>34693</td>
<td>16.9</td>
</tr>
<tr>
<td>Dentist</td>
<td>8652</td>
<td>4.2</td>
</tr>
<tr>
<td>District Nurse</td>
<td>12153</td>
<td>5.9</td>
</tr>
<tr>
<td>ECP Home Visit</td>
<td>1294</td>
<td>0.6</td>
</tr>
<tr>
<td>Information only</td>
<td>1225</td>
<td>0.6</td>
</tr>
<tr>
<td>Palliative Care</td>
<td>542</td>
<td>0.3</td>
</tr>
<tr>
<td>Prescription only</td>
<td>1162</td>
<td>0.6</td>
</tr>
<tr>
<td>Refer To A/E or /MIU</td>
<td>12</td>
<td>0.0</td>
</tr>
<tr>
<td>Walk In/drop in patients</td>
<td>1116</td>
<td>0.5</td>
</tr>
<tr>
<td>Refer to 999</td>
<td>370</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>205764</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
We also analysed the call volume data by hour of day and day of week (Figure 1). The pattern of demand reflects that typically observed in out-of-hours emergency and urgent care services (Salisbury, 2000; Lattimer et al, 2005) showing peak demand at around 8 pm on weekday evening and during mid-morning at the weekends.

Figure: Call volume by time of day and day of week at Hub-med (April 2007 – March 2008)
Appendix 6 Patient questionnaire

<table>
<thead>
<tr>
<th>First some questions about your most recent request for help or advice from SERVICE NAME ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Were you the person who contacted SERVICE NAME?</td>
</tr>
<tr>
<td>Yes □</td>
</tr>
<tr>
<td>2. Were you the patient or their carer?</td>
</tr>
<tr>
<td>the patient □</td>
</tr>
<tr>
<td>‘carer’ refers to the person that called on the patient’s behalf (including their parent, guardian, spouse, child or a health professional)</td>
</tr>
<tr>
<td>3. At the time you requested help or advice what did you want from SERVICE NAME?</td>
</tr>
<tr>
<td>To request a home visit □</td>
</tr>
<tr>
<td>To request an appointment to be seen at an out-of-hours Local Treatment Centre □</td>
</tr>
<tr>
<td>To obtain reassurance or advice over the telephone □</td>
</tr>
<tr>
<td>To be seen at a Walk-in Centre or Minor Injuries Unit □</td>
</tr>
<tr>
<td>To receive a (repeat) prescription □</td>
</tr>
<tr>
<td>To be seen at Accident &amp; Emergency □</td>
</tr>
<tr>
<td>Something else (please describe):</td>
</tr>
</tbody>
</table>

| 4. How urgent, in your opinion, was your request for help or advice? | (tick 1 box only) |
| An emergency (required attention within 1 hour) □ |
| Urgent (required attention within 2 hours) □ |
| Less urgent (required medical attention within 6 hours) □ |
| I wanted healthcare advice or information □ |
Some questions about the staff you had contact with ...

7. SERVICE NAME employs a range of staff providing out-of-hours care. For each member of staff you saw or spoke to please place a tick in the column 'I saw or spoke to this person', for every member of staff you had contact with please use the scale provided to indicate how satisfied you were with this contact. (Please note that some patients may only have contact with one or two staff, other patients will have contact with more).

<table>
<thead>
<tr>
<th>Member of staff:</th>
<th>YES, I saw or spoke to this person</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Neutral</th>
<th>Unsatisfied</th>
<th>Very Unsatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>A call receiver</td>
<td>[ ] C19</td>
<td>[ ] C20</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a receptionist</td>
<td>[ ] C21</td>
<td>[ ] C22</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a nurse over the phone</td>
<td>[ ] C23</td>
<td>[ ] C24</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a nurse in person</td>
<td>[ ] C25</td>
<td>[ ] C26</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a doctor over the phone</td>
<td>[ ] C27</td>
<td>[ ] C28</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a doctor in person</td>
<td>[ ] C29</td>
<td>[ ] C30</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a paramedic</td>
<td>[ ] C31</td>
<td>[ ] C32</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>a driver</td>
<td>[ ] C33</td>
<td>[ ] C34</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>an emergency care practitioner</td>
<td>[ ] C35</td>
<td>[ ] C36</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
<tr>
<td>somebody else:</td>
<td>[ ] C37</td>
<td>[ ] C38</td>
<td>[ ] 1</td>
<td>[ ] 2</td>
<td>[ ] 3</td>
<td>[ ] 4</td>
</tr>
</tbody>
</table>

8. So how many members of staff did you see and/or speak to in total? (tick 1 box only)

1 2 3 4 5 6 or more Not sure 7 C39

Some questions about getting in touch with service ...

Your out of hours episode begins when the patient or someone acting on their behalf picks up the phone, or the patient (and their carer) travel to a centre (e.g. a Walk-in Centre), whichever they did first.

5. How did you first get in touch with SERVICE NAME? (tick 1 box only)

I called the special out of hours number for my area [ ] 1
I called NHS Direct (0845 46 47) / NHS 24 (08454 24 24 24) [ ] 2
I called my GP surgery and was put through to the out of hours service or given a number to call [ ] 3
I called 999 [ ] 4
I went to a centre or clinic (e.g Local Treatment Centre) [ ] 5
I went to an Accident & Emergency (A&E) Department [ ] 6
I did something else (please describe): [ ] 7

6. How easy or difficult did you find getting in touch with SERVICE NAME? (tick 1 box only)

Very Easy [ ] Quite Easy [ ] Neither [ ] Quite Difficult [ ] Very Difficult [ ]
**Thinking about the care you received overall…**

9. **How satisfied were you with the care you received overall?**  
   (tick 1 box only)
   - Very Satisfied ☐
   - Satisfied ☐
   - Neutral ☐
   - Unsatisfied ☐
   - Very Unsatisfied ☐

10. **How well did the service you received match with your expectations?**  
    (tick 1 box only)
    - Completely ☐
    - Mostly ☐
    - Somewhat ☐
    - A little ☐
    - Not at all ☐

11. **Have you consulted another service or healthcare professional about the same problem since you contacted your out-of-hours service on this occasion?**  
    (tick 1 box only)
    - Yes, I was advised to do so ☐
    - Yes, I decided to do so ☐
    - No ☐

If you answered YES, which service/healthcare professional did you consult?  
(tick all that apply)
- GP ☐
- Practice nurse ☐
- Accident & Emergency ☐
- Local Treatment Centre ☐
- NHS Walk-in Centre ☐
- NHS Direct / NHS 24 ☐
- Not applicable ☐
- Other (please describe): ______________________

Some questions about the patient…
If you were the patient please complete this section about yourself. If you were contacting the service on the patient’s behalf (e.g. as their parent or carer) please complete this section on their behalf and then complete the next section ‘Lastly some questions about the caller/carer...’ about yourself.

27. **What is the patient’s age?**
   (please circle the correct answer)
   - Years / Months / Weeks / Days

28. **What is patient’s gender?**
   (tick 1 box only)
   - Male ☐
   - Female ☐

29. **What is the patient’s postcode?**
   (please describe)

30. **To which of these ethnic groups does the patient belong?**  
    (tick 1 box only)
    - White ☐
    - Black or Black British ☐
    - Asian or Asian British ☐
    - Chinese ☐
    - Mixed ☐
    - Other ☐

31. **Which of these best describes what the patient does?**  
    (please tick one box only)
    - Going to school, college or university ☐
    - Employed ☐
    - Unemployed ☐
    - On a Government / employment training scheme e.g. New Deal ☐
    - Permanently sick or disabled ☐
    - Looking after the home or the family ☐
    - Retired ☐
    - Other (describe) ______________________

Now some questions about the caller/carer …
If you were contacting the service on the patient’s behalf (e.g. as their parent or carer) please complete this final section about yourself. However, if you were the patient and have already completed the previous section please skip this section and go to the end.

32. **What is the caller’s age?**
   (please circle the correct answer)
   - Years

33. **What is the carer/caller’s gender?**
   (tick 1 box only)
   - Male ☐
   - Female ☐

34. **To which of these ethnic groups does the carer/caller belong?**  
    (tick 1 box only)
    - White ☐
    - Black or Black British ☐
    - Asian or Asian British ☐
    - Chinese ☐
    - Mixed ☐
    - Other (describe): ______________________

35. **Which of these best describes what the carer/caller does?**  
    (tick 1 box only)
### Going to school, college or university

- **□ 1** Employed
- **□ 2**

### Unemployed

- **□ 3** On a Government / employment training scheme e.g. New Deal
- **□ 4**

### Permanently sick or disabled

- **□ 5** Looking after the home or the family
- **□ 6**

### Retired

- **□ 7** Something else *(please describe)*:
- **□ 8** C89

### 36. Which of the following best describes the carer/caller's relationship to the patient? *(tick 1 box only)*

- **□ 1** Parent (or Guardian)
- **□ 2** Neighbour
- **□ 3** Partner / Spouse
- **□ 4** Other Relative
- **□ 5** Professional Carer
- **□ 6** Other *(describe)*:
- **□ 8** C90
12. Was your case managed with sufficient urgency? (tick 1 box only)
- Completely □ 1
- Mostly □ 2
- Somewhat □ 3
- A little □ 4
- Not at all □ 5

13. At the time you contacted SERVICE NAME did you have access to a vehicle? (tick 1 box only)
- Yes □ 1
- No □ 2

Questions 14-25 are statements - based on your overall experience, please indicate by ticking the appropriate box how much you agree or disagree with each statement …

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I was kept informed about what would happen next at each stage</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>15. I found that I had to repeat my story to different members of staff</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>16. Information about me/the patient was passed on to the next member of staff at each stage</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>17. One member of staff told me one thing while another told me something quite different.</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>18. I had enough time to discuss my problem</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>19. The staff I had contact with explained things in a way I could understand</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>20. The staff I had contact with listened to what I had to say</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
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<td>21. My problem was resolved</td>
<td>□ 1</td>
<td>□ 2</td>
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<td>□ 4</td>
<td>□ 5</td>
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<tr>
<td>22. Contact with this service was worthwhile</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
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<td>23. After contact with this service I was better able to understand my health problem</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>24. After contact with this service I was better able to cope with my health problem</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
<td>□ 5</td>
</tr>
<tr>
<td>25. After contact with this service I felt more reassured</td>
<td>□ 1</td>
<td>□ 2</td>
<td>□ 3</td>
<td>□ 4</td>
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26. What was the outcome of your request for help or advice from SERVICE NAME?

- I/the patient received a home visit □ 1
- I/the patient received an appointment to be seen at a Local Treatment Centre □ 2
- I/the patient received reassurance or advice over the telephone □ 3
- I/the patient attended a Walk-in Centre or Minor Injuries Unit □ 4
- I/the patient attended an Accident & Emergency Department □ 5
- Something else happened (describe): ______________________________________ □ 6

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An invitation to tell us more…

First of all, thank you very much for taking the time to complete our questionnaire. Your views are important to us.

We would like to hear more about your recent request for healthcare or advice when your GP surgery was shut. It is only by talking to patients (or their carers) about their experiences that we can start to understand the full picture. To this end we would like to invite you or the person who contacted the service on your behalf to talk in more detail about what happened to you with a member of our research team. We are particularly interested in how you found accessing the service, your thoughts about the staff you encountered and any points in the system where you had to wait to see or speak to a member of staff.

Would you be willing to speak to a member of our research team, in confidence, about your experience? If so, please complete the reply slip on page 7 and return it with your completed questionnaire in the FREEPOST envelope provided. Alternatively you might just like to write a brief summary about your experience in the space provided below. Either way we would value your opinion.

Any comments?

If you have any other comments about your experience with the staff you had contact with we would like to hear them, please use the space provided below or include a separate sheet of paper with your comments:
**Reply Form:**

- If you think you would be willing to talk to one of our research team on the telephone, please fill provide the following details on the form below: your name, your address, contact telephone number(s), the best time to call and your e-mail address if you have one.

- We will send you further information so that you can decide whether or not to take part and contact you to arrange a convenient time to discuss the study further.

Please note:

- The envelope containing your survey and reply form will only be opened by a member of the research team,

- The reply form will be separated from your survey so that you cannot be identified from the questionnaire.

- Speaking with a member of the research team will not in any way commit you to taking part in the study. It is important that you understand the study fully before deciding whether to take part.

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<td>E-mail address:</td>
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Finally…

Once again, many thanks for taking the time to complete our survey. Your views are important to us.

Please now place your completed form in the FREEPOST envelope provide and return it to us.

**The End**
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<th>How to contact us ...</th>
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<td><strong>Project Lead:</strong></td>
<td><strong>Research Co-ordinator:</strong></td>
<td><strong>Local Researcher</strong></td>
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<tr>
<td><strong>Professor Val Lattimer</strong></td>
<td><strong>Dr Abigail Burgess</strong></td>
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<td>University of Southampton</td>
<td>University of Southampton</td>
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<td>Tel: 023 8059 7957</td>
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<td>Fax: 023 8059 8308</td>
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<tr>
<td>Email: <a href="mailto:V.A.Lattimer@soton.ac.uk">V.A.Lattimer@soton.ac.uk</a></td>
<td>Email: <a href="mailto:A.L.Burgess@soton.ac.uk">A.L.Burgess@soton.ac.uk</a></td>
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Appendix 7 Patient pathway study documents

PARTICIPANT INFORMATION LEAFLET

A study of patients’ accounts of contacting an out-of-hours service: Stage two – telephone discussion with a researcher

Invitation to take part in our research study...

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish.

Please contact us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of this study?
This study is part of a large national project, the purpose of which is to describe how changing workforce configurations in emergency and urgent out-of-hours care systems in the NHS are having an impact on staff practice, patient experience of service delivery and health system performance.

In this part of the study we are interested in the care that patients receive “out-of-hours”. This is the period after the doctor’s surgery closes for the day and reopens the following morning. It also includes weekends and public holidays. Out-of-hours care is provided by a team of staff, including receptionists, nurses and doctors working in different locations. This team help to decide the best course of action for each patient. Each team member can tell us something about the role they played, but only patients (or the person who called the service on their behalf) can tell us the whole story of what happened. Having a better understanding of the whole story might help us to know how to make out-of-hours services respond better to patients’ needs.

This second stage of this study involves inviting patients (or their carers) who have already completed a questionnaire in stage one of the study to tell us more about their experience.

Why have I been chosen?
When you completed the questionnaire that was sent to you during stage one of the study you also completed the reply form within the questionnaire indicating you might be
interested to speak with a researcher in more detail about your experience of requesting healthcare or advice from your out-of-hours service provider.

Do I have to take part?
It is entirely up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

What do I have to do?
First, we would like you to read this information sheet and all the other documents enclosed in the pack you received and take some time to think about whether you think you would be willing to take part in this second phase of our study.

A member of our research team will contact you shortly using the contact details you provided in your reply slip to discuss the study further and answer any questions you may have. If you are still interested in taking part in a telephone interview they will arrange a convenient time for the interview to take place and advise you on completion of the enclosed consent form.

On receipt of their completed consent form a copy of the consent form will be returned to the patient/caller for their records.

What will happen if I decide to take part?
If you are still interested in taking part in a telephone interview the researcher will arrange a convenient time for the telephone interview to take place to discuss your recent experience with you, or with someone who helped you to make contact with the out-of-hours service if you prefer. This telephone call will take up to thirty minutes of your time. We will send you confirmation in the post about the time and date we have arranged to call you and the name of the researcher that will call you. We will also ask you to return the Consent Form enclosed with this pack as soon as possible in the FREEPOST envelope provided (don’t worry if you have misplaced it we will send a duplicate with confirmation of the interview)

The day before we have arranged the telephone call with you, the named researcher will contact you to check you are still happy to take part.

On the day of the telephone call the researcher will contact you at the arranged time on your preferred number. At the start of the interview the researcher will confirm that the you are happy for the interview to be recorded, this will help the researcher to remember the details of your conversation afterwards. During the telephone call the researcher will ask you a series of question about your recent experience. A summary of the types of questions the researcher may ask you when they talk with you on the telephone is included in this pack. The researcher will take notes about what you say to help them piece together your sequence of events that happened when you made contact with your out-of-hours service provider. After that, your participation in this study as a participant will come to an end.
At the end of the telephone discussion the researcher will ask you if you would like to receive a summary of our research findings and if so we will ask your out-of-hours service provider to send this to you in the post.

If you decide not to take part, you will not be contacted again about this study.

**What will happen if I don’t want to carry on with the study?**
If you decide you don’t want to carry on with the study you may withdraw at any time without giving a reason and without consequence.

**What are the possible disadvantages of taking part?**
Speaking with a researcher will take up to thirty minutes of your time. Sometimes telling the story of what happened out-of-hours can make you remember difficult or unsatisfactory aspects of the experience as well as the good parts.

**What are the possible benefits of taking part?**
We don’t think that there are direct benefits to participants in taking part in the study. However, knowing about your experience could help us to make out-of-hours services better for other patients by developing local understanding of the urgent and emergency care service provision in England and Scotland.

**What if there is a problem or I have a complaint?**
If you have a concern or a complaint about the conduct of this study you should contact Professor Valerie Lattimer by calling the Research Office at the University of Southampton on 023 8059 8307. If Professor Lattimer is not immediately available, the office team will arrange for her to call you as soon as possible. If you remain unhappy and wish to complain formally, you can do this through the University Complaints Procedure which can be obtained from the Research Office.

If you have a concern or a complaint about the care you received from the out-of-hours service, you should contact, <insert name, address, telephone number of out-of-hours service>. If you remain unhappy and wish to complain formally, you can do this through the NHS Complaints Procedure which can be obtained from the out-of-hours service.

**Will my involvement in this study be kept confidential?**
All information which is collected about you during the course of the research will be kept strictly confidential. The research team will not know any of your personal details unless you provided them to the team by completing and returning a reply slip to us in the first stage of the study. This is because your out-of-hours service provider contacted you in the first instance. If you decide to take part in stage two of the study, it is up to you how much you tell us about your situation and your experience out-of-hours. We don’t need to know the details of your medical history and we will not be asking to see your medical records. We are just interested in your experience of what happened after you called the out-of-hours service.
Our procedures for handling, processing, storage and destruction of their data comply with the Data Protection Act 1998. This means that information about your name (or your address if you gave this to us so that we could come to visit you to conduct an interview) will be kept in a secure location separate from the information collected during the interview. The transcript of your interview with you will be stored in an anonymous form using a code number for reference and not your name or anything that could identify you or any of the people involved in your care. Only members of the research team will have access to the notes. The notes will be stored in a computer file on one of the research project computers at the University. The computer is password protected. We will use the notes to help us to describe the sequence of events for patients out of hours whose care is provided by certain types of staff. We will be comparing our notes of your experience with the experience of other patients and callers who contacted the out-of-hours service for broadly similar reasons.

In line with University of Southampton data storage policies, after the study has finished all anonymous transcripts and audiotapes will be kept for a period of 15 years after which they will be destroyed.

**Who is funding the research?**
The study is being funded by the Department of Health through the National Co-ordinating Centre for Service Delivery and Organisation.

**Who is providing sponsorship and professional indemnity for the study?**
Sponsorship and professional indemnity is being provided by the University of Southampton, Legal Services. Building 37, Highfield, Southampton, SO17 1BJ

**Who has reviewed the study?**
This study was given a favourable ethical opinion for conduct in the NHS (or private sector) by Wiltshire Research Ethics Committee.

**What will happen to the results of the research?**
Once we have completed the interview study, we will write a project report and papers for publication in a medical journal. Your involvement in the study will remain confidential at all stages.

**Contact Details:**
Professor Valerie Lattimer OR Dr Abigail Burgess

**Address:** University of Southampton, School of Nursing & Midwifery, Building 67, Highfield, Southampton, SO17 1BJ.

**Tel:** No: 02380 598307  
**Fax:** No: 02380 598308  
**Email:** V.A.Lattimer@soton.ac.uk OR A.L.Burgess@soton.ac.uk

Thank you very much for considering taking part in this study
A study of patients’ accounts of contacting an out-of-hours service:  
Stage two – telephone discussion with a researcher

Discussion guide

At the start
The researcher will introduce themselves, check that this is a convenient time for you and answer any questions you may have. You will have signed and returned a consent form, and if you have agreed that the telephone discussion may be tape recorded, they will check that you are content for the tape recording to begin. The researcher will explain that you are free to bring the interview to a close at any time and that you don’t have to answer all the questions if you prefer not to for any reason.

During the discussion
We are interested in your account of what happened when you contacted the out-of-hours service but we don’t expect you to be able to remember everything. We would like to ask you about some of the aspects below, though not necessarily in this order:

- What happened in the period leading up to the decision to contact the out-of-hours service.
- How you made the decision about whom or which service to contact first.
- What you thought about the number and different types of staff you had contact with and what aspects of the care you received were most important to you.
- To expand a little on your answers in the questionnaire. In particular how long you had to wait at each stage and whether anything would have made your experience better?

At the end the researcher will thank you for your help and ask you if you have any questions.
The Pathway Chart below shows an example of the pathway a patient might take through the out-of-hours service, the stages they encounter and the waiting times they might experience: (i) the patient called the out-of-hours service, (ii) the line was engaged so they had to call again, (iii) they had a telephone consultation with a nurse, (iv) they were given an appointment at a treatment centre, (vi) they attended the centre and were seen by a nurse.

Example:

```
START

Called the out-of-hours service ✓

Line engaged, tried again ✓

Spoke to receptionist straight away ✓

Spoke to a nurse straight away ✓

Spoke to a doctor straight away ✓

They arranged to call me back

Telephone consultation with a nurse ✓

Telephone consultation with a doctor

999 ambulance was called

Received self care ✓ Advice from the nurse/doctor

Advised to make an appointment with my GP the next day

Advised to make own way to A&E

Needed a prescription

Given appointment at a centre ✓

Seen by a doctor ✓

Seen by a nurse ✓

Waited 30 minutes

Also included with this pack is an empty grid like the one above, but on A3 paper, that you might like to use to record your own ‘pathway’. Please put a tick anywhere in the boxes that best describe what happened to you or the person you called about. Please use the empty boxes to write in other things that happened in your situation that aren’t shown already. Then you can draw a line through the boxes showing the order of what happened. Feel free to add any details to the grid that you feel are important, e.g. who you saw/spoke to or how long you had to wait at any point in your journey.
```
Disclaimer:

This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the NIHR SDO programme or the Department of Health. The views and opinions expressed by the interviewees in this publication are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, the NIHR SDO programme or the Department of Health.”

Addendum:

This document is an output from a research project that was commissioned by the Service Delivery and Organisation (SDO) programme, and managed by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO), based at the London School of Hygiene & Tropical Medicine.

The management of the SDO programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Although NETSCC, SDO has conducted the editorial review of this document, we had no involvement in the commissioning, and therefore may not be able to comment on the background of this document. Should you have any queries please contact sdo@southampton.ac.uk.