STUDY TITLE: An evaluation of an eReferral Management & Triage System for Minor Oral Surgery Referrals from Primary Care Dentists: Diagnostic Test Accuracy

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Manchester M156SH
United Kingdom

STUDY PHASE: Diagnostic assessment of triage

OBJECTIVES: To assess the accuracy of referrals made during a pilot study of eReferral management and triage for minor oral surgery.

PARTICIPANTS: i) Female and male adults referred from primary dental care for Minor Oral surgery in secondary care
   ii) Dentists undertaking triage activity

STRUCTURE: One triage exercise using paper based notes, plus one clinical face to face examination

NUMBER OF CENTRES: University Dental Hospital of Manchester/ Central Manchester Foundation Trust

BLINDING: Not blind at clinical examination stage, blind during paper triage assessment to clinical decision (notes will be typed separately and patient name and identifiable information will be hidden)

METHOD OF ASSIGNMENT: All eligible subjects will be seen clinically and paper triaged until the appropriate sample size is reached (279)

EXAMINATION POINTS: Once, during initial clinical examination

ESTIMATED TOTAL SAMPLE SIZE: Sample size calculations suggest that 279 subjects are required for DTA

EFFICACY VARIABLE: Sensitivity and specificity of referrals triaged to secondary and primary care will be measured. Discrepancies and agreements between a range of professionals will be assessed using Kappa. Qualitative work will examine the decision making processes of clinicians

ADVERSE REACTIONS: N/A

STUDY ORIGINATORS: Professor Iain A Pretty
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An evaluation of an eReferral Management & Triage System for Minor Oral Surgery Referrals from Primary Care Dentists: Diagnostic Test Accuracy

I. INTRODUCTION

BACKGROUND
Minor Oral Surgery (MOS) referrals represent the largest volume, and cost, of referrals from primary dental care to secondary care. MOS referrals, in the main, involve the extraction of teeth and these treatments may be supplemented by adjunct IV sedation offerings. Care is typically provided in oral surgery units within acute hospitals and is Consultant led with trainees of various levels undertaking the procedures. The average cost of an MOS referral to acute trusts in the North West region is circa £650. Many cases are treated on a planned same day case basis further increasing the cost but having little impact on the type of care delivered. In the North West the total charge for MOS referrals in 2009/10 was £53,864,857.

Referrals from Primary Care General Dental Practitioners (GDPs)
The introduction of the 2006 dental contract provided a Band II payment for tooth extraction that, on North West averages, provides a fee of £75 for one or more teeth to be extracted within a single course of treatment. Figures from acute trusts and eReporting data suggest an exponential increase in referrals of MOS to secondary care. There are a number of reasons postulated for this including perverse incentives in the dental contract (GDPs receive payments for referrals alone at the same Band II level) and that younger dentists may have limited competency as undergraduate experience in MOS treatments is limited (MEE Report, 2010). A number of acute trusts in the North West have struggled to deliver capacity against this increase in demand and work has been undertaken to manage this through a number of routes and approaches.

Current demand management strategies for MOS – NHS Manchester
NHS Manchester has continued the early work started in NHS Trafford with the introduction of the hybrid referral management pilot. All referrals to secondary care are captured (either by post, email or fax) and then scanned for paper-based triage. A website provides practitioners with a live status check on their referral’s progress. This work has taken place under the Dental QIPP programme stream in the North West for demand management. By producing an agreed proforma, requiring adherence to a minimum dataset (including provision of appropriate radiographs) and ensuring administrative procedures to check compliance, there has been a 9% reduction in referrals into all dental specialties as well as the diversion of considerable numbers of referrals into primary care and advanced primary care settings. It is important to recognize that, given the drive to decrease costs whilst improving quality of care across the NHS, referral management systems are developing rapidly.

NEED
There is a need to protect and preserve secondary care dental services for those who need them; the current demand on such services threatens their sustainability. The research team was originally alerted to the potential risks to services by a failure of a local acute trust to manage oral surgery referrals within the 18-week directive. A range of approaches were taken to manage the issue at the time – but the dramatic increase in such referrals threatens services across England, not only in terms of the access to care for patients but for the training and educational functions undertaken in such settings. In their report of 2010 the Kings Fund state that simple measures to manage demand are unlikely to succeed – or may have unintended consequences that can only be managed by taking a whole systems approach to service redesign. Such an approach needs a robust research methodology to ensure that the evaluation delivers the required outputs for the NHS to inform such redesigns on a wider footprint and to understand the risks and benefits. The NHS, and the dental budget, are facing considerable challenges, not least the requirement to make savings in the region of £15-20 billion over the next 4 years. This requirement has led to the development of the QIPP agenda and as such there are considerable opportunities to work across sectors and secure organizational change. Working together
with commissioners, primary care, secondary care and academia the current climate offers opportunity for change – but change that must be informed by evidence based interventions. Since the outline bid was described there have been further significant developments in defining and reorienting MOS services within the North West. The need for a reduction in the number of centres, and “lone working” Consultants has been recognized. Alongside this recognition by the surgeons has been an acknowledgment that this infrastructure change must be accompanied by change within primary care and the associated care pathways – the need for central referral capture and management has therefore never been greater. If service redesign is to succeed it must, as described in the Kings Fund report, occur at all levels within the pathway and be evidence based. The proposed addresses a need for such an evidence base within the dental referral arena. The literature on dental referral management is sparse – with the focus of investigators on the development of referral forms (Sadler, 1993) or primary care MOS services (Dyer, 2009) without an assessment of the implementation of such systems and the associated need for behaviour change against a backdrop of contractual and financial incentives to refer. Several studies have examined the “appropriateness” of referrals but these studies have largely concentrated on the completeness of the record – rather than its true appropriateness for the care patients receive (McGoldrick et al 2001, Woolley 2009). Researchers have often failed to design referral forms on an evidence-based approach or have failed to capture patient need rather than professionally induced demand for the referral. The applicants recently undertook the development of a referral form for dental sedation that included a section to be completed by the patient themselves – and thus involving the service user in the decision to refer (Coulthard 2011, Pretty 2011). There is a need to expand this type of approach into an integrated referral management system. The impact of demand and referral management systems on adjunct dental specialties, training provision and case mix within acute trusts, has not been robustly assessed on a whole systems basis. Indeed, some early work undertaken by the principle investigator (in NHS Trafford) on referral management resulted in coding changes at the acute trusts rendering the same charge to the PCT but for half the activity level. These behaviours, at all levels within the NHS structures providing care, need detailed assessment if referral management is to make a sustainable and real difference to both the quality of patient care and the cost of that care. BIRCH’s expertise in health economic evaluation will enable the complex interplay between primary and secondary care budgets to be assessed as well as measuring the opportunity costs and benefits of diversion services.

Purpose of this study
The referral management system is based on the ability of Consultants to assess treatment need and complexity from the data supplied on the referral forms. Pilot data suggests that the system works – but we need to evidence this and understand where errors might be occurring, and how the referral data collection can be altered to optimise triage effectiveness. The use of case mixes will address issues of industrialisation while the engagement of general dental practitioners enables discrepancies between the views of hospital consultants and dentists working in primary care to be explored and understood. There are important explanatory data to be gained from qualitative observations of the face to face process and focus group work on discrepancy analysis that lend a richness of understanding to the complex decision making process involved in assessing need and complexity. From the initial portion of the study a range of sensitivity and specificity scores will be generated relating to the comparison of the reference examiners clinical and paper-based decisions. Further sensitivity and specificity values will be generated from the two additional consultants assessments of the paper based referrals against both the reference standard paper based and clinical assessments. The final metrics relate to agreement around all four possible decisions for the triage using Kappa (with additional cross tabulations) and a range of skill mix examiners.

II. AIMS
The aim of this study is to establish the level of accuracy and reliability of remote centralized assessment and triage.
III. STUDY DESIGN

Mixed methods.  
Provision of diagnostic metrics.

IV. INVESTIGATORS

The Principal Investigators for this study will be:

Professor Iain A Pretty  
Professor of Public Health Dentistry  
Dental Health Unit  
Williams House  
Lloyd Street North  
Manchester Science Park  
MANCHESTER  
M15 6SE

Other individuals involved in this study include:

a) Dr Tanya Walsh (University of Manchester; Statistical support)  
b) Ms Joanna Goldthorpe (University of Manchester; Qualitative/Study Manager)  
c) Professor Paul Coulthard (University of Manchester; Consultant in Oral Surgery)  
d) Mr. Stuart Clark (NHS: Central Manchester Foundation Trust)  
e) Professor Julian Yates (University of Manchester; Oral Surgery)  
f) Mr. Ravi Singh (General Dental Practitioner)  
g) Ms Michaela Goodwin (University of Manchester; Research Assistant)

V. APPROVAL OF THE PROTOCOL

The protocol will be reviewed and approved in writing by NHS ethics through IRAS and the University of Manchester following submission of an appropriately completed form.

The Principal Investigator will ensure all relevant staff participating in the study has appropriate up to date enhanced checks carried out by the Criminal Records Bureau (CRB) prior to study commencement.

VI. DURATION OF STUDY

The Diagnostic Test Accuracy study will be completed over 6 months involving 279 referrals.

VII. SUBJECTS

Patients referred for Minor Oral Surgery by participating sites, Clinicians involved in triage activities (Stage 1. Coulthard; Stage 2. Clark, Yates, Singh).

Minimum Sample Size

DTA = A total of 279 referrals are required, if taking the most conservative estimate, given a prevalence of 30% and sensitivity of 0.98 based on people referred to secondary care with assessment of paper only out of people referred to secondary face-to-face triage:
Sample size based on sensitivity = \( \frac{Z_{1-\alpha/2} \times S_N \times (1 - S_N)}{\frac{Z^2}{2} \times \text{prevalence} \times (1 - S_N)} \)

Sample size based on specificity = \( \frac{Z_{1-\alpha/2} \times S_p \times (1 - S_p)}{\frac{Z^2}{2} \times (1 - \text{prevalence})} \)

\( Z_{1-\alpha/2} = 1.96 \)

\( S_N = 0.98 (0.04) \text{ CI } = 0.935 \text{ to } 0.995 \)

\( S_p = 0.88 (0.07) \text{ CI } = 0.795 \text{ to } 0.934 \)

Table 1: Sample size given various prevalence split between primary and secondary referral decision

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<tr>
<td>0.7</td>
<td>276</td>
<td>0.7</td>
<td>120</td>
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**Inclusion / exclusion characteristics**

Patients must:

1. Be referred for MOS
2. Be able to understand the patient information leaflet
3. Adults aged > 18

**IX. STUDY DESIGN**

**Stage 1**

A total of 279 referrals to the NHS Manchester referral pilot will be assessed based on the level of acceptable precision (95% confidence level, see statistical plan for sample size calculation), assessing sensitivity and specificity of referrals triaged to secondary or primary care. It is important that there is high precision in comparison of the methods of triage and that erroneous referrals should ideally be sent to secondary care rather than primary care, to ensure patient safety and service quality. Therefore, this has been calculated with a sensitivity of 0.98 and specificity of 0.88 (Malhotra 2010). Consecutive cases will be identified from the current on-going pilot referral management service and will have met the administrative triage threshold – i.e. they will have all the necessary information and enclosures.

The consultant will clinically examine these patients “Face to Face” (blinded to his paper based decision, see below) to determine a reference standard clinical triage. Additionally, the notes used during the clinical exam will be typed in a standardized format (as opposed to hand written by the dentist) in order to reduce this bias as much as possible (however it is acknowledged it is impossible for research to be completely free of bias in this respect). A clinical “truth” decision will then be applied to each case and the sensitivity and specificity of the Consultant led triage service established. This sensitivity and specificity is based on referral to secondary care vs. other decisions.
These referrals will concurrently be paper triaged by a consultant. In order to reduce incorporation bias all non-relevant patient identifiable information, such as patient name and address, will be removed from the e-referral form. The provided materials will be used to triage the patients into one of the following categories:

- Suitable for secondary care Consultant led services
- Suitable for primary care advanced services, such as those offered by Dentists with a Special Interest (DwSpI) or those on the Oral Surgery specialist list.
- Suitable for primary care – any competent GDP should be able to provide this treatment safely and effectively within general dental practice
- Rejected - sent back to original GDP

For the qualitative piece, an experienced qualitative researcher will carry out detailed observations of a sample (approximately 20-30) of the consultant’s paper triage decision-making and clinical (face-to-face) sessions in order to capture and compare processes associated with both methods. During paper based decision making, the consultant will be asked to articulate decision making processes in real time for recording purposes. Face to face decision-making for the same cases will also be observed and reasons for decision made recorded following the consultation. Both procedures will be audio recorded and transcribed prior to analysis and data scrutinised to consider key factors that simplify or complicate decision-making. This approach will be used to illuminate processes of clinical decision-making.

**Stage 2**

In the second stage of the diagnostic accuracy and ‘workability’ test the paper notes of the 279 cases that have been assessed face-to-face will be provided to an additional two Consultants. The sensitivity and specificity of the Consultants’ decisions will also be tested for sensitivity and specificity against the original consultant’s face-to-face examination decision. Additionally, tests for paired sensitivities to determine the equality between the three Consultant examiners could be undertaken using the median sensitivity score, if appropriate.

Further, the discrepancies / agreement between a range of professionals (skill mix) will be assessed using Kappa, a sample size of 50 will be required given a distribution of 5% rejected, 10% to primary care, 30% to advanced primary care and 50% to secondary care (see data analyses below). These will be selected from the 279 cases previous triaged by the original consultant. Additionally a cross tabulation to further explore the referral patterns and nature of the discrepancies will be performed. The 50 paper based referrals will therefore be shared with the following individuals:

- Consultant in Oral Surgery
- A Consultant in Maxillo Facial Surgery
- Two specialists in oral surgery
- Two individuals with a DwSpI (Dentist with Special Interests) contract
- Four general dental practitioners

Each will be asked (with the exception of the two consultants who have undertaken the assessment as part of the previous sensitivity and specificity assessment) to undertake a triage with the same options as described above. The decisions from these groups will be compared to both the original consultants face-to-face and paper-based decisions. While the intention for this study is to utilize Consultant led triage it is important to explore if there are any major discrepancies between Consultants and other professionals in where they believe certain cases should be sent. By assessing if there are any consistent differences quantitatively between triagers, this can then be further explored with qualitative case based focus groups using exception analysis. Discussion will be focused using case presentations involving real examples of points of disagreements in decision making in order to explore areas of contention. We anticipate that areas of disagreement will fall into two main categories. Firstly, between professional backgrounds (consultants and GDPs) within the skill mix triage group, and secondly concerning decision making via paper based versus referral following face-to-face consultation. Two
researchers will be involved in conducting the focus group. The first will facilitate and manage the group
discussion, and a second will take notes and summarise key issues. Additionally, sessions will be audio
taped and transcribed for analysis.

A. Selection practices

University Dental Hospital of Manchester has been identified as the location for the study

B. Screening and Selection of Subjects

Participants will be selected consecutively after being screened at the Dental Referral Management
(DRM) centre for clarity and accuracy of information and selected according to inclusion and exclusion
criteria. This will be followed by a written confirmation of the appointment with patient information
sheet being posted to patients. Informed consent will be obtained in the waiting room prior to
consultations taking place.

C. Examination

All participants must have been referred for MOS and consented to the study (please see participant
flow diagram, appendix 2)

E. Monitoring of the study

This study will be monitored by Staff from the University of Manchester Dental Health Unit, at periodic
intervals by the principle investigator and consultants to ensure that the study is being conducted
according to Good Clinical Practice Guidelines. NHS guidelines regarding 18 week waiting times will be
adhered to.

G. Randomization

No randomisation necessary for Diagnostic Test Accuracy; the next 279 patients referred for MOS will
be examined clinically, and paper triaged

XI. DATA ANALYSES

The comparison of the reference standard clinical examination compared to an eReferral triage will be
assessed for sensitivity and specificity. The minimum values for these estimates have been set fairly
high, as decisions on patient management should be made with a high degree of accuracy. The sample
size is based on the level of acceptable precision (95% confidence level), assessing sensitivity and
specificity of referrals triaged to secondary or primary care (which includes advanced primary and
rejected).

Additionally tests for paired sensitivities to determine the equality between the three Consultant
examiners could be undertaken (Coulthard vs. median of Yates and Clark).

Kappa statistics for agreement between professionals

A kappa statistic can be used to assess the agreement between either two clinicians/ raters of the same
patient or if a clinician provides two ratings of the same patient.

Qualitative data analysis

Data from observations will be collected through written notes of face to face examinations and
recordings of paper triage decision making processes. Consultants’ narration for the triage process will
be digitally recorded and transcribed. All transcripts will be anonymised and checked for accuracy.
Analysis will draw upon some common techniques of grounded theory approaches (after Glaser and
Strauss, 1967) including the technique of constant comparison whereby analysis will be carried out
concurrently with data collection so that emerging issues can be explored iteratively. We will also
follow stages of coding consistent with a grounded theory approach comprising initial coding of text segments, followed by re-coding and memo writing in order to generate conceptual themes. Themes will be constantly compared within and across cases, paying particular attention to negative cases and possible reasons for differences. The data will be organised with the aid of qualitative data software package ATLAS.ti. Emerging themes will be discussed regularly at research team meetings to enable refinement of conceptual categories and to discuss common threads or differences across the different respondent groups. The team will ensure an audit trail of all stages of the analysis to maximise credibility, dependability, confirmability and transferability (Pope & Mays, 2000; Lincoln & Guba, 1985).
Appendices

Appendix 1 (information to be received by patients)

a) Patient information sheet

b) Informed consent form

c) Example referral data

Appendix 2

Participant flow diagram
RE: Your referral for Oral Surgery

An appointment has been made for you to attend a consultation appointment with Professor Paul Coulthard at the University Dental Hospital of Manchester, department of Oral Surgery on dd/mm/yyyy at 00.00 am/pm.

When you arrive for your appointment, a member of staff from the University of Manchester will talk to you about a study being carried out that aims to evaluate a new system for referring dental patients to hospital, and will ask you if you would like to participate. Please read the rest of this letter carefully, as it gives you further information about the research we are carrying out and what we will ask you to do.

Why am I being asked to participate?
You are being asked to participate because your dentist has referred you for minor oral surgery in Manchester.

What will happen to me if I participate in the study?
You will attend your appointment with Professor Paul Coulthard, a consultant in Oral Surgery at the University Dental Hospital of Manchester, where he will carry out a thorough dental examination, as usual. The researcher from the University of Manchester will approach you in the waiting room and ask you if you will allow her to have access to your referral data, which will be made anonymous. There is an example of the way this data is presented included with this letter, so you can see exactly what the research team will be able to look at: Example 1 is on pink paper and shows how your referral notes look when they arrive at the central dental referrals office. Example 2 is printed on yellow paper, and shows how your referral notes will appear to the researchers working on this study, if you agree to participate.

In addition, the researcher may also ask if she can observe your examination. This will be audio recorded and conversations that took place during the consultation will be transcribed. Any recording or notes taken during the observations will be made anonymous and treated with strict confidence.

What benefit is there to me?
You will be helping by providing information, which can be used to improve the way patients are referred to minor oral surgery.

If you consent to being involved in this study, the University of Manchester will reimburse your car parking or public transport costs up to a value of £5 to acknowledge the extra time you have taken to read and consider this information.

What if there is a problem?
Complaints
If you have a concern about any aspect of this study, you should ask to speak to the researchers who
Protocol SDO-001-Pretty

will do their best to answer your questions. If they are unable to resolve your concern or you wish to make a complaint regarding the study, please contact a University Research Practice and Governance Co-ordinator on 0161 2757583 or 0161 2758093 or by email to: research-governance@manchester.ac.uk

Who is paying for this study?
The University of Manchester is the study sponsor and the funding is sourced from the National Institute for Health Research.

Who has reviewed this study?
This research has been looked at by an independent group of people called a Research Ethics Committee to protect your safety, wellbeing, rights and dignity.

Who is running this study and what if I have a question?
This study is being conducted by researchers at the University of Manchester. Professor Iain Pretty is the principle investigator and Ms Joanna Goldthorpe is managing the study. If you have any questions regarding the study please feel free to contact Professor Iain Pretty or Joanna Goldthorpe on 0161 266 1211 or email Joanna.goldthorpe@manchester.ac.uk / lai.pretty@manchester.ac.uk

What do I do now?
Consider the information provided in this letter and attend your consultation appointment as usual. A member of the research team will talk to you while you are waiting for your appointment to answer any questions you might have relating to this study. If you would like to be involved you will be asked to complete a form (enclosed), indicating that you consent to participate in the study. You can complete this consent form and bring it with you to your appointment, or if you prefer, the researcher will be able to provide one and go through it with you in the waiting room. You might like to arrive for your appointment around 10 minutes earlier than usual to ensure you have enough time to ask any questions you might have relating to the research.

I would like to thank you for reading this information and considering participation in the study.

Yours Faithfully,

Professor Iain Pretty
An evaluation of an eReferral Management & Triage System for Minor Oral Surgery Referrals from Primary Care Dentists: Diagnostic Test Accuracy

Consent Form

ID number (office use only) _____________________________

Name __________________________________________________________________________

Address __________________________________________________________________________

___________________________________

______________________________________________

Telephone (Home) ____________________________ (Mobile) ______________________________

Please read the following statements and place your initials in the corresponding box, if you agree with the following statements:

☐ I have read and understood the accompanying information and have had the opportunity to ask questions.

☐ I understand that participation is voluntary and I may withdraw at any time without it affecting my rights to dental treatment.

☐ I understand that data collected during the study may be looked at by responsible individuals from the University of Manchester, from regulatory authorities or from the NHS trust where it is relevant to my taking part in this research.

☐ I agree to a researcher from the University of Manchester observing and audio recording my dental examination.

☐ I agree to take part in this study

☐ I would like to receive a one-page summary describing the results at the end of the study

Signed __________________________________________ Date __________________________________
**MINOR ORAL SURGERY FORM**

**URN:** M0S 2345  **Patient’s Title & Name:** Mrs. Jane Smith

**Patient’s Address:** 10 The Street, Manchester

**Preferred Contact No:** 0161 880 2411  **Patient’s Postcode:** M1 1XY

**Referrer’s Name:** John Jones  **Practice Postcode:** M2 1AB  **Date of Decision to refer:** 1/1/2012

**Age of Patient in years:** 32  **Care Type:**

**Date of Birth (DD/MM/YY):** 2/10/80

All information above this line is removed prior to clinical triage for data protection purposes.

**Interpreter required?** Yes / No  **Language:**

If Urgent Care please state why:

---

**Patient’s GP Name and Address including Postcode:** The Dental Surgery, Town, M1 7YZ

**Patient’s principle complaint:**

**Patient Choice (see guidance notes):**

Please indicate requested anaesthesia

- Local anaesthetic only
- IHS / RA sedation
- IV Sedation (please complete IOSN form)

**Main Reason for referral:**

- ROUTINE EXTRACTION OF TEETH*
- REMOVAL OF SIMPLE IMPACTED TEETH
- SURGICAL ENDODONTICS ON SINGLE ROOTED ANTERIOR TEETH
- REMOVAL OF BURIED / FRACTURED ROOT FRAGMENTS

**If "other" please describe here:**

**"**If "other" please describe here

**PLEASE NOTE – READ GUIDANCE NOTES CAREFULLY TO ENSURE THAT YOU MEET THE REQUIREMENTS – I.E. NICE GUIDELINES FOR 3RD MOLARS – *ROUTINE EXTRACTIONS FOR MEDICALLY COMPROMISED PATIENTS ONLY**

**PLEASE ENSURE THAT YOU HAVE ATTACHED THE NECESSARY RADIographs. FORMS WITHOUT RADIographs WILL BE RETURNED. DPT FILMS ARE PREFERRED FOR THIRD MOLARS.**

For extractions, please indicate below the teeth / roots to be removed

**PERMANENT DENTITION**

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**PRIMARY DENTITION**

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Please describe why specialist care is required? For third molars indicate how NICE guidelines are met:

---

I have read and understood the guidance notes for referrals of this type (available at www.dental-referrals.org)

**SIGNED:**

PLEASE COMPLETE A MEDICAL HISTORY FORM – COPY URN TO THIS FORM – ENSURE ALL BOXES ABOVE COMPLETED ADDITIONAL INFORMATION / LETTERS ETC MAY ACCOMPANY THE REFERRAL BUT MUST REFERENCE THE URN
Example 2: Anonymous referral information

You can send us your referral by:

Dental Referral Management Centre,
3000 Aviator Way, Manchester Business Park,
M02 5TG

From an nhs.net account to: d.referrals@nhs.net

To our safe haven fax: 0161 880 2411

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### MINOR ORAL SURGERY FORM

<table>
<thead>
<tr>
<th>URN:</th>
<th>Patient’s Title &amp; Name:</th>
<th>Sex</th>
<th>Date of Birth (DD/MM/YY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XxxxxXxxxxX</td>
<td>Xx XxxxxXxxxxX</td>
<td>Xx</td>
<td>Xx XxxxxXxxxxX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient’s Address:</th>
<th>Patient’s Town or City:</th>
<th>Preferred Contact No:</th>
<th>Patient’s Postcode</th>
</tr>
</thead>
<tbody>
<tr>
<td>XxxxxXxxxxXxxxxX</td>
<td>XxxxxXxxxxXxxxxX</td>
<td>XxxxxXxxxxXxxxxX</td>
<td>XxxxxXxxxxXxxxxX</td>
</tr>
</tbody>
</table>

ALL INFORMATION ABOVE THIS LINE IS REMOVED PRIOR TO CLINICAL TRIAGE FOR DATA PROTECTION PURPOSES

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Referree's Name: John Doe | Practice Postcode: M1 1AB | Date of Decision to refer: 1/1/2012 | Interpreter required? | Language? | URN: MAN 2345

Age of Patient in years: Xx | Care Type: Xx |

If urgent care please state why:

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**Patient’s GP Name and Address including Postcode:** The Dental Surgery, Town, M1 7Y2

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**Patient’s principle complaint:**

**Patient Choice (see guidance notes):**

Please indicate requested anaesthesia:
- Local anaesthetic only
- IVS / RA sedation
- IV Sedation (please complete ISM form)

Main Reason for referral:
- ROUTINE EXTRACTION OF TEETH
- REMOVAL OF SIMPLE IMPACTED TEETH
- SURGICAL ENDODONTICS ON SINGLE ROOTED ANTERIOR TEETH
- REMOVAL OF BURIED / FRACTURED ROOT FRAGMENTS
- OTHER

**"If other" please describe here**

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**For extractions, please indicate below the teeth / roots to be removed**

**PERMANENT DENTITION**

<table>
<thead>
<tr>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>1</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
</table>

**PRIMARY DENTITION**

| A | B | C | D | E | A | B | C | D | E | A | B | C | D | E | E |

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Please describe why specialist care is required? For third molars indicate how NICE guidelines are met:

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I have read and understood the guidance notes for referrals of this type (available at www.dental-referrals.org)

SIGNED:

**PLEASE COMPLETE A MEDICAL HISTORY FORM - COPY URN TO THIS FORM - ENSURE ALL BOXES ABOVE COMPLETED ADDITIONAL INFORMATION / LETTERS ETC MAY ACCOMPANY THE REFERRAL BUT MUST REFERENCE THE URN**
Appendix 2
Diagnostic test accuracy
Participant flow

GDP referral from Primary Care

Main Referral Centre

Not MOS

MOS

Admin triage

Information complete

Meets inclusion criteria

Consultation appointment & patient information sheet posted

Not consented

Consent taken at appointment

Consultation appointment as usual

Consultation appointment as usual, plus possibility of observation

Incomplete information

Does not meet inclusion criteria (< 18 years, unable to consent)