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1. Introduction

Good information is required to practise medicine to the highest standards. This ranges from clinical information about individual patients and clinicians, and departmental requirements for local protocols and rotas, to nationally devised guidelines for carrying out and maintaining best clinical practice [1].

The collection of national data over months and years will provide a solid foundation upon which policies can be built. High quality information must not only be produced, it must also be made available effectively. This need is reinforced by reports and papers from numerous independent enquiries (Kennedy, Ledward reports, etc.), Government committees, professional organisations and defence organisations.

Any large-scale data collection raises privacy issues, and at the time of writing the Government is undertaking a national consultation on the use and sharing of personal information.
2. Background

In 2000 the NHS Plan was published, bringing further reorganisation and increased NHS funding. This built on ‘Information for Health’ [2], the NHS information strategy published in 1998. Its purpose was to ensure that information is used to help patients receive the best possible care and to enable NHS healthcare professionals to have the information they need both to provide that care and to play their part in improving the health of the public. It also aimed to ensure that patients have the information necessary to make decisions about their own treatment.

In 2002 the National Programme for Information Technology [3] (NPfIT), was announced, which focuses on measures to improve delivery of care and services in England. There are different programmes in Scotland, Wales and Northern Ireland. NPfIT is being delivered by NHS Connecting for Health. NPfIT currently includes the following key projects:

- A New National Network (N3) with sufficient connectivity and broadband capacity to meet current and future NHS needs.
- Electronic appointment booking for investigations, outpatients and surgery (Choose and Book).
- Electronic prescriptions service (EPS).
- A centrally managed email and directory service (NHSMail).
- Picture Archiving and Communication Systems to capture, store, distribute and display digital medical images (PACS).

One of the original features of NPfIT was the shift to a national approach. For the purposes of health records, this meant national procurement and implementation conforming to national standards. The NCRS aims to deliver the patient’s health record to the point of care, whether it be acute, primary, mental health or social care. A Summary Care Record (SCR) of the patient’s lifetime health record will be held on the Spine, which should be accessible at any point. The national programme is supported by substantial central funding, but this still leaves much to be funded locally.

It is important that anaesthetists are involved with local funding decisions, and that managers understand that anaesthetists have a key impact on two-thirds of an acute trust’s income [4] and must therefore have appropriate information systems.
3. **Departmental resources**

- Every member of the department should have local, confidential access to email, the Internet and office software such as word processing, spreadsheets, and slide creation.
- Anaesthetic departments should be equipped with up-to-date information and communications systems.
- Every anaesthetic machine should be equipped with a computerised anaesthetic record-keeping system connected to the patient monitors. This should be linked with the main hospital administrative and clinical systems, so that all information held on the patient is available at the point of care.
- Computers used by clinical staff should be capable of handling all the day-to-day tasks required by information and communications technology including, for example, the transmission and display of high quality images and electronic clinical reference systems.
- Teleconferencing facilities should ideally be available on the hospital site.
- A member of the department should be identified with a specialist interest in Health Informatics. This will need to be recognised in the job plan.
4. **Clinical information requirements**

In order to treat patients effectively, anaesthetists need ready access not only to clinical information about the patient being treated but, because of the acute nature of the specialty, to immediate clinical decision support and reference services.

**Information required by the anaesthetist**

**Ready access to clinical records**

Anaesthetists require access to almost every part of the clinical record in order to assess the patient’s fitness for surgery - clerking, progress notes, nursing notes, integrated care pathways and investigations etc from current and past episodes of care. Key points to note are:

- Clinical information about the current hospital admission should be immediately available whenever and wherever needed.
- Often several members of staff need simultaneous access.
- Details of any pre-operative assessment performed, whether by anaesthetist or other clinicians, must be available with clear authorship.
- The location of patients should be known to the hospital information system at all times.
- Registration and personnel policies should enable appropriate and rapid access to all patient records.

**Clinical information held elsewhere**

Relevant clinical information recorded about the patient (such as problems or lessons learnt from past anaesthetics) in other locations (such as a different hospital) should be obtained sufficiently quickly to be able to take account of it when proposing treatment. Anaesthetic records should be made available to others who have a reasonable need to see them. This may include other hospitals, patients or their carers.

**Information recorded about the anaesthetic episode**

**The anaesthetic record**

There is an absolute requirement for good anaesthetic records. These will include

- Pre-operative assessment and findings
- The anaesthetic episode
- Recovery, high dependency or intensive care records
- Full fluid balance and analgesic records

The recommended anaesthetic dataset is illustrated in Table 1[5]
### TABLE 1
Anaesthetic record set suggestions

#### Pre-operative information
- **Patient identity**
  - Name/ID No/Sex
  - Date of Birth

- **Preop assessment & risk factors**
  - Date and time of assessment
  - Assessor, Where assessed
  - Weight (kg)
  - Basic Vital Signs (BP, HR)
  - Height (m) - optional
  - Medication including Contraception
  - Allergies
  - Addiction (Alcohol, tobacco, drugs)
  - Previous GAs / Family history
  - Potential airway problems
  - Venous access problems
  - Prostheses, teeth, crowns
  - Investigations
  - Other problems
  - Cardiorespiratory fitness
  - ASA physical status +/- comment

- **Urgency (as determined by NCEPOD)**
  - Scheduled - listed on a routine list
  - Urgent - resuscitated, not on a routine list
  - Emergency - not fully resuscitated

#### Peroperative Information
- **Checks**
  - Nil by mouth
  - Consent
  - Premedication, type & effect

- **Place & time**
  - Place
  - Date, start & end time

- **Personnel**
  - All Anaesthetists named
  - Qualified assistance present
  - Supervising consultant
  - Operating Surgeon

- **Operation planned/performed**

#### Peroperative information (cont)
- **Apparatus**
  - Checks performed
  - Anaesthetic room
  - Theatre

- **Vital signs recording/charting**
  - Monitors used & vital signs (specify)

- **Drugs & fluids**
  - Dose, concentration & volume
  - Cannulation
  - Injection site(s), time & route
  - Warmer used
  - Blood loss, urine output

- **Airway**
  - Route, system used
  - Ventilation: type & mode
  - Airway type, size, cuff, shape
  - Special procedures, humidifier, filter
  - Throat pack
  - Difficulty

- **Regional anaesthesia**
  - Block performed
  - Entry site
  - Needle used, aid to location
  - Catheter
  - Drug, concentration and dose

- **Patient position & attachments**
  - Thrombosis prophylaxis
  - Temperature control
  - Limb positions

- **Postoperative instructions**
  - Drugs, fluids & doses
  - Analgesic techniques
  - Special airway instructions including oxygen therapy
  - Monitoring

- **Untoward events**
  - Abnormalities
  - Critical incidents
  - Pre-op - perop - postop
  - Context - cause – effect

- **Hazard flags**
  - Warnings for future care
Comments on particular fields
Items are frequently already present in the record and so it may be considered pointless to rewrite them. However, key items of anaesthetic relevance may need to be copied on occasion to emphasise that the anaesthetist has reviewed them. In an electronic record these may be presented as defaults, to be accepted or modified as required.

Personnel
This should also include the supervising or ‘named’ consultant anaesthetist, in line with recent guidance from the Association of Anaesthetists of Great Britain & Ireland and the Royal College of Anaesthetists [6].

Patient posture & attachments
The way in which a patient was positioned during the operation should be recorded, including the position of the limbs and any special precautions taken against injury.

Untoward events
There is a whole series of terms developing in this field - critical incidents, complications, abnormalities, negative outcomes, recovery room impact events, and more. Thinking in this field is changing sufficiently rapidly that it is not sensible to be dogmatic about which terms to use. In general terms, the need is to record events so that anaesthesia may be safer in the future; to record, therefore, not only things that went wrong (complications), but also that nearly went wrong (critical incidents). We should also record ‘abnormalities’ such as a difficult intubation, which are not preventable, both for the patient’s future safety and for educational reasons. The severity of the incident should also be recorded.

Hazard flags
Any important abnormalities such as drug sensitivities or errors of metabolism that affect the patient should be flagged clearly both on the record and in the notes.

Sharing of clinical information
When sharing information with other health professionals it is important to avoid specialty jargon. In addition to the verbal handover of information, it is essential to have a clearly structured and documented record of plans and instructions. A unified, computerised record will help this process. Criteria for such a system are shown in Table 2.
TABLE 2

Criteria for an anaesthetic record system

- Should link to:
  - Pre-assessment information
  - Electronic clinical record
  - Electronic prescribing system
  - Pathology
  - Radiology and PACS
  - Theatre system for operating list information, personnel

- Perioperative record should have:
  - Appropriate user interface
  - Anaesthetic pre-operative assessment record
  - Identification of staff
  - Capture of all data output from monitors
  - Capture of all machine data
  - Configurable display of all trend data
  - Comprehensive data dictionary
  - Rapid entry of narrative from menus
  - Automatic coding
  - Free text entry
  - Drugs/fluids/infusions (including calculations)
  - Critical incidents
  - Post-operative instructions
  - Recovery progress
  - Key outcomes (death, pain, PONV, etc)
  - Audit trail of user activity

- Reporting should include:
  - Staff logbooks
  - Activity analysis
  - Performance indicators
  - Data for audit
  - Financial analysis
**Clinical Decision Support**

‘Decision Support’ is a term to describe assistance available when decisions have to be made. It may be either passive or active.

**Passive**

Passive Decision Support includes easy access to a relevant clinical guideline in specific situations.

**Passive Clinical Decision Support examples**

When requesting any investigation using a computerised system, the accepted indications should be available:

- When malignant hyperpyrexia or other anaesthetic emergency is suspected, it must be easy to find the local guideline on the intranet.
- When organising peri-operative care, local guidelines such as fluids and sliding insulin scales for diabetic management must be available.
- When ordering tests during pre-assessment, current NICE guidelines should be available immediately.
- When prescribing, local and national formularies should be available immediately, including lists of drug interactions.
- Clinical knowledge reference sources such as the Map of Medicine [7] should be available immediately.

Passive Decision Support could be made available in many hospitals already simply by making information available at the point of care via the hospital intranet.

Local guidelines (often modified national guidelines) held on a hospital intranet have the benefit of being always available, not only in the specialty but also to others outside the specialty, and staff will always read the current version.

When printing any guideline from the intranet:

- It should be date stamped.
- the formatting should be preserved - for example the realignment of a table causing drug doses to be lined up against the wrong indication. Fixed formats like Adobe Acrobat™ have been found useful to prevent this.
Active
Active Decision Support usually involves logical rules written for specific situations to warn against potential hazards. These have principally proved their value in avoiding prescription errors, but can also be used for other clinical guidance. It should however be recognised that decision support may introduce new hazards. Usually systems allow guidance to be overruled by the user after acknowledgement.

Active Clinical Decision Support examples
- A warning can be given if digoxin is prescribed for a patient who has a recent potassium level lower than 3.5mmol.l⁻¹
- Nurses can be warned at the point of care not to give β-blockers or digoxin to patients with excessively low heart rates.
- Prescribers can be warned about allergies such as giving amoxycillin to a patient with penicillin allergy.
- Administrative systems should be warned if staff attempt to book a patient last on an operating list if it is recorded that they are insulin dependent diabetics.

Information for patients
Patients undergoing medical treatment should be fully informed about treatments proposed.

It is now recognised that a verbal pre-operative explanation of treatment proposed does not give patients time to think about their choices and preferences or to seek further information.

It is important therefore to make written information available to patients before surgery. There have been a number of leaflets and templates written jointly by the Royal College of Anaesthetists and the Association of Anaesthetists of Great Britain & Ireland that may be freely downloaded from the anaesthetic patient information website [8].
5. Management information requirements

Sources of data

A number of principles will critically affect the quality of data used to produce management information to hospitals
- Data should be recorded by those with an interest in the information derived.
- Data should be entered once only, at the point of care.
- Management information should be derived from clinical systems.
- Individuals must have the opportunity to review and correct data collected by them and on their behalf.
- Information can be derived from paper records, but this is inefficient and prone to transcription errors.

Information needs

Clinical
Management of the clinical work of the department requires accurate information about individual cases and the resources required to treat them. Since the skills of the anaesthetist must be matched to the needs of the patient, systems must be in place to notify the anaesthetic department of particular problems such as difficult airways or significant co-morbidity. In addition, the rostering of anaesthetic staff needs to meet many other demands such as training, supervision, job plans, working time and individual local requirements. The NCRS should provide detailed information to meet these requirements, but it is unlikely that the final production of a daily work roster can be made without human intervention. Nevertheless, systems that provide template rosters automatically linked to theatre schedules, job plans and diary arrangements will be of considerable value.

Clinical Governance

Audit
Clinical systems must be able to provide detailed information for audit and clinical governance. The individual logbook is an important source of information for training review and appraisal.

Critical incidents
Systems should be available to record and report adverse events and critical incidents. Reports should be available to critical incident co-ordinators on a monthly basis for discussion at departmental morbidity and mortality meetings.

Morbidity and mortality
Information should be available immediately about investigation and treatment of patients dying within 30 days of anaesthesia.
Theatre efficiency [9]
Good information is necessary for effective use of theatres. Theatre systems must provide real time and historical information for those managing the facilities. Most modern theatre systems provide this functionality, but they must be implemented properly to achieve the full benefits.

For the surgical workload of the hospital to proceed efficiently, all interested parties, including the anaesthetic department, wards, pathology, radiology, and photography, should have real-time access to the progress of theatre cases.

Human Resources
The anaesthetic department, directorate and HR department need to be able to access information on individual workload, supervision, leave, and sickness, etc. For example, sickness rates and CPD attendance must be easily accessible.

Information about groups of patients
Aggregated information on multiple patients is needed both for clinical audit and for appraisals. Aggregated information can also be useful when reviewing quality and morbidity associated with clinical practice.

Information for central returns
In England all hospitals have to provide information to the Department of Health. It is planned that this should be extended to include some mandatory anaesthetic information:

- Operations and diagnoses with dates and times.
- Main category of general anaesthesia used.
- Local anaesthetic techniques.
- Anaesthetist(s) present (including the supervising or ‘named’ Consultant).
- ASA physical status.
- Operation priority (NCEPOD).

Reorganisation within the NHS has prevented this being implemented, but it would provide valuable information if it were available.
6. Information and the law

Data Protection Act [10]

Everyone in the United Kingdom has rights concerning the use of their personal data according to the Data Protection Act of 1998. This Act applies to all personal data and it places responsibility on data controllers, i.e. those who are responsible for the data, to manage it according to its principles. Personal data are those that relate to a living individual who can be identified from them, or from them together with other information that is or is likely to come into the possession of the data controller. It is considered that anonymised data are not covered by the Act. The GMC Confidentiality Guidance [1] defines anonymised data as those from which a patient cannot be identified by the recipient of the information. NHS or other unique numbers may be included only if anyone who might acquire the data could not reasonably have access to the ‘key’ to trace the identity of the patient using this number.

It is essential that personal data storage, whether on workplace or personal computers, conforms to the requirements of the Act. At the time of writing there is considerable confusion in the minds of different authorities as to the precise implications of the Act.

Consultants must make sure that they and their trainees are familiar with the requirements of the Act and local regulations.

Medical records are subject to a minimum retention period, which may vary according to the type of record. Further details can be found in ‘Records Management: NHS Code of Practice’ at www.dh.gov.uk/en/Publicationsandstatistics

Within each Trust a board level clinician is appointed as the Caldicott Guardian, who is responsible for the confidentiality of clinical information flows within and outside the organisation.

Patients are concerned about the way in which their health information is handled on computer systems, and the ‘Care Record Guarantee’ has been issued giving commitments over access to their records. Key commitments are shown in Box 3. [11]
**Box 3**
**The Care Records Service will:**

- hold records about your care in a national computer system so that, wherever in the country you need care, health care professionals can have access to the most up-to-date information.
- allow you to control whether information in electronic records made about you by the organisation providing your care can be seen elsewhere in the NHS.
- show only those parts of your record needed for your care.
- allow only authorised people (who will need a ‘Smartcard’ as well as a password) to access your records.
- allow only those involved in your care to have access to records about you from which you can be identified, unless you give your permission or the law allows.
- allow us to use information about your health care, to improve the services we offer or to support research, in a way that doesn’t reveal your identity.
- keep a note of everyone who accesses the records about you, and
- be operated in line with internationally approved information security standards.

See [www.connectingforhealth.nhs.uk/crdb/boardpapers/crs_guarantee_2.pdf](http://www.connectingforhealth.nhs.uk/crdb/boardpapers/crs_guarantee_2.pdf) for the full Care Record Guarantee

**Freedom of Information Act [12]**

Patient and personal information is controlled by the Data Protection Act, as explained above, but information about public organisations, e.g. NHS Trusts, is subject to the Freedom of Information Act. Anaesthetists should be aware of its requirements (for example all departmental procedures and protocols will fall into this category, as will emails that are not related to an individual patient’s care) and should be guided by the following principles:

- Information recorded should be factual, to the point and not excessive.
- Information should be kept only as long as it is needed.
- Documents should be published on the Trust’s intranet or website as appropriate in accordance with the Trust’s Publication Scheme This should include a trail of previous versions.
- Information should be identified whether it is for exemption or publication as soon as it is produced, and marked appropriately.
- Written requests for information should be read by the recipient, recorded and acted upon (e.g. forward to the Trust’s Freedom of Information Officer) on the day they are received.
7. Personal information requirements

Training in information management

All anaesthetists should have adequate and appropriate understanding of Information Management and Technology (IM&T) as defined in the RCoA training documents. This includes not only how to use IM&T, but also its role in the NHS.

Training should aim to achieve competency in core IT skills as covered by the European Computer Driving Licence. [13]

Competency in information management should be a requirement as outlined in the CCST SpR 3/4/5 competency document. [14]

All NHS trusts should facilitate training, hands-on experience and make time available to enable clinicians to acquire these skills.

Portfolios and logbooks

A portfolio is required for appraisal and revalidation. As part of this, records of clinical activity and continuing professional development (CPD) are maintained. While these can be maintained using paper systems, electronic storage and analysis provide greatly increased functionality. Electronic systems should be made available to store a cumulative record of training and CPD activity. The datasets for personal portfolio and anaesthetic logbook have been defined. [15]

Recommendations for best practice

The recommendations below are those which should assist in the provision of best patient care. In some cases they can only be fulfilled using computerised record systems.

1. Accessibility
   1.1. All clinical notes should be rapidly accessible to enable prompt treatment.
   1.2. Paper notes must be kept near the patient so that any member of staff may see or contribute to them.
   1.3. All current notes, such as medical, nursing and physiotherapy should be held together so that an overall view can be obtained.
   1.4. There must be a system which allows clinicians to conveniently see old notes that have been microfilmed. It is not acceptable for clinicians to have to work microfilm readers.
   1.5. Clinical notes must be clearly organised. For instance, as a minimum, there must be a way of viewing all previous anaesthetic records and investigation results.
   1.6. Every department should aim to introduce computerised systems that allow access to anaesthetic records. It must be possible for anaesthetists to search and interrogate these systems in order to assess their own performance.
1.7. Computerised records must allow viewing of all notes at all times. Conflict between confidentiality and security must be resolved. Clinicians must always be able when necessary to get emergency access to computer records. This may involve using a ‘break glass’ facility which is monitored closely and has to be justified for access to restricted records.

1.8. If clinical information is held electronically in another healthcare organisation it should, after satisfying access control procedures, be capable of on-line review, email or direct transfer into the local computerised record.

1.9. If it is not held electronically, systems should be available for staff to locate patient information in other organisations when requested by clinicians.

1.10. The need for concurrent access by more than one member of staff makes computerised records preferable.

1.11. Information Systems must provide anaesthetists with up-to-date information on the location of patients.

2. Quality

2.1. A signed and dated entry must be made for every significant clinical encounter. Time stamping and attribution can be automated with computerised records.

2.2. Computerised anaesthetic record keeping systems which allow automatic recording of all monitored variables and infusions have been shown to provide a more accurate record than paper systems.

2.3. Headings such as those in the Recommended Anaesthetic Record Set should be used to structure the record [4], and the content should conform to the recommendations of the Good Practice Guide 2006. [15]

2.4. An anaesthetic record system should be fully integrated with the hospital clinical systems so that anaesthetic interventions in theatre, such as drug administration, will be known to staff caring for the patient after surgery and be available to clinical decision support systems.

2.5. Anaesthetic clinical systems should record appropriate anaesthetic information such as allergies and alerts on the NHS information spine to ensure maximum communication of these risks.

2.6. Abbreviations and acronyms should be used only if there is a hospital glossary allowing non-anaesthetic staff to check their meaning. This is not a problem if a computerised terminology system is used because the full text for all acronyms or synonyms will be available.

2.7. Anaesthetic departments should ensure there is a mechanism to check the quality of anaesthetic information being used for management purposes.

3. Technical

3.1. 24-hour support must be available.

3.2. Anaesthetists require dedicated access to a computer connected to the hospital network in the anaesthetic room and on the anaesthetic machine in theatres.

3.3. All IT equipment should be appropriate for theatre use, bearing in mind the very high requirements for electrical safety and infection control.
3.4 Clinical systems should conform to the Academy of Colleges Information Group guidelines. [16]

4 Decision Support
4.1 When treating patients there should be immediate access to the latest relevant publications. The wealth of medical literature means that this is only possible using computerised databases and online journals.
4.2 Internet access should be available in all departments and at all points of care.
4.3 Local internet restrictions should not inhibit comprehensive medical searches.
4.4 Departments should provide electronic access to relevant full text journals.
4.5 Active Decision Support (ADS) reduces clinical errors and hence should be introduced wherever possible; bearing in mind that computerisation may produce new errors.
4.6 ADS can only be fully effective in anaesthetic record-keeping systems which are integrated with the main Electronic Patient Record systems.
4.7 Only clinicians who have specialist knowledge of both the clinical specialty involved and the technical implications should introduce new ADS rules.
4.8 Printed copies of Passive Decision Support references should be in a fixed format such as Adobe Acrobat™ so that errors due to misalignment of tables may be avoided.

5 Information for Patients
5.1 All departments should ensure that patients scheduled for surgery have adequate written information available to them pre-operatively in time to consider their choices and preferences.
5.2 Patients should be given information about on-line sources.

6 Skills and training
6.1 Proficiency in the use of computers and information technology as covered by the European Computer Driving Licence should be a core requirement for all anaesthetists. [13]
6.2 All anaesthetists should have adequate and appropriate understanding of Information Management and Technology (IM&T) as defined in the RCoA training documents. This includes not only how to use IM&T, but also its role in the NHS. [14]
6.3 Competency in information management should be a requirement as outlined in the CCT in Anaesthesia – 1: General Principles. [14]
6.4 NHS Trusts should facilitate training, hands-on experience and free up time to enable busy clinicians to acquire these skills.
6.5 All departments should have at least one consultant who is responsible for advising and training on anaesthetic informatics.
## SCATA JARGON BUSTER [17]

<table>
<thead>
<tr>
<th>Term or acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADS</td>
<td>Active Decision Support. Function within an electronic record that uses ‘if...then...’ rules to evaluate data held in the record and automatically provide relevant information to assist clinicians in making decisions.</td>
</tr>
<tr>
<td>AIMS</td>
<td>Anaesthetic Information Management System.</td>
</tr>
<tr>
<td>Arden Syntax</td>
<td>A programming language for ‘Medical Logic Modules’ or Active (clinical) Decision Support.</td>
</tr>
<tr>
<td>Audit Trail</td>
<td>The mechanism whereby changes to a document or database can be identified, along with who did what and when.</td>
</tr>
<tr>
<td>Caldicott Guardian</td>
<td>A senior clinician within an NHS Trust who is responsible for the confidentiality of clinical information flows, and who is often the Medical Director.</td>
</tr>
<tr>
<td>CSA</td>
<td>Clinical Spine Application. Previously known as the Personal Spine Information Service (PSIS) or ‘the Spine’, and officially called the ‘Summary Care Record Application’. The computer system that holds the Summary Care Record (vide infra).</td>
</tr>
<tr>
<td>CTV3</td>
<td>Clinical Terms, version 3. A collection of over 200,000 terms developed during the Clinical Terms Project in 1992-5 and includes Read codes, ICD10 and OPCS4.</td>
</tr>
<tr>
<td>Data Controller</td>
<td>A term used in the Data Protection Act to describe anyone who controls the use of personal data.</td>
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<tr>
<td>DICOM</td>
<td>Digital Imaging and Communications in Medicine. A communication standard for handling digital images, mostly relevant to diagnostic imaging, e.g. X Rays.</td>
</tr>
<tr>
<td>dm+d</td>
<td>Dictionary of Medicines and Devices - A mechanism for codifying all clinical products in use in the UK. The dm+d aims to deliver a standard electronic vocabulary (terminology) and identifiers for clinical products (medicines, appliances and personal medical devices). This dictionary will facilitate electronic transfer of data on clinical products between systems and provide a route by which knowledge to assist decision making can be accessed for the relevant product.</td>
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<tr>
<td>DSCN</td>
<td>Data Set Change Notice. A formal notification from Connecting for Health of changes to mandatory NHS data sets.</td>
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<tr>
<td>ECDL</td>
<td>European Computer Driving Licence. A test of competence in the use of computers and (mostly Microsoft) software. An internationally recognised qualification adopted as a standard by the NHS.</td>
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<tr>
<td>(UN) EDIFACT</td>
<td>Electronic Data Interchange For Administration, Commerce and Transport – a standard supported by the United Nations for the electronic exchange of structured messages. Used for Central Returns and Pathology messages in the NHS. Being replaced by XML as a messaging standard.</td>
</tr>
<tr>
<td>EHR</td>
<td>Electronic Health Record, a term introduced in Information for Health and now replaced by the Summary Care Record, a component of the NHS Care Records Service. The concept of a cradle to grave record of health and health care maintained in the primary care arena.</td>
</tr>
<tr>
<td>Term or acronym</td>
<td>Definition</td>
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<tr>
<td><strong>EPR</strong></td>
<td>Electronic Patient Record. The electronic equivalent of the hospital notes folder but with added functions such as PAS, scheduling of appointments, order communications, electronic prescribing and decision support.</td>
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<tr>
<td><strong>ERDIP</strong></td>
<td>Electronic Record Development and Implementation Programme. A series of pilot projects exploring various aspects of electronic patient records. Lessons learned from these pilots have been used to inform the NPfIT.</td>
</tr>
<tr>
<td><strong>FAQs</strong></td>
<td>Frequently Asked Questions. Commonly found on web sites.</td>
</tr>
<tr>
<td><strong>GNU</strong></td>
<td>Gnu is not Unix, a recursive acronym. Unix is a well-established computer operating system. GNU is the basis of a free Unix-like non-Unix operating system.</td>
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<tr>
<td><strong>GUI</strong></td>
<td>Graphical User Interface, e.g. Microsoft Windows.</td>
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<tr>
<td><strong>Health Informatics</strong></td>
<td>The knowledge, skills and tools which enable information to be collected, managed, used and shared to support the delivery of healthcare and to promote health.</td>
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<tr>
<td><strong>HL7</strong></td>
<td>Health Level 7. A standards group in the USA. Often referred to in the context of ‘structured messages’ used to send clinical information between computer systems, e.g. EPR and RIS. See <a href="http://www.hl7.org">www.hl7.org</a>. &lt;br&gt;The mission of HL7 is to: ‘To provide standards for the exchange, management and integration of data that support clinical patient care and the management, delivery and evaluation of healthcare services. Specifically, to create flexible, cost effective approaches, standards, guidelines, methodologies, and related services for interoperability between healthcare information systems.’</td>
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<tr>
<td><strong>ICD (ICD10)</strong></td>
<td>International Classification of Diseases, version 10.</td>
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<tr>
<td><strong>ISB</strong></td>
<td>Information Standards Board. Established in 2001 to provide an independent mechanism for the approval of information standards in the NHS.</td>
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<tr>
<td><strong>LAN</strong></td>
<td>Local Area Network. A private or semi-private computer network confined to a defined locality, e.g a hospital site.</td>
</tr>
<tr>
<td><strong>Legacy System</strong></td>
<td>Computer system inherited (as a legacy) from a bygone age.</td>
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<tr>
<td><strong>MIB</strong></td>
<td>Medical Information Bus. An international standard – IEEE P1073. Technology that facilitates the inter-connection of bedside monitors such as ECGs, pulse oximeters, automatic blood pressure monitors etc so that physiological data can be downloaded and stored on a central database, e.g. an EPR system. Designed to permit ‘plug and play’.</td>
</tr>
<tr>
<td><strong>NCRS</strong></td>
<td>NHS Care Records Service. The service that provides EPRs through a series of contracts with commercial suppliers.</td>
</tr>
<tr>
<td><strong>NHS Data Dictionary</strong></td>
<td>The dictionary of all NHS data items, their structure and definitions. It also includes descriptions of most of the Central Returns.</td>
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<tr>
<td><strong>NHS Number</strong></td>
<td>A 10 digit number that uniquely identifies every individual within the NHS in England and Wales.</td>
</tr>
<tr>
<td>Term or acronym</td>
<td>Definition</td>
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<tr>
<td><strong>NHSIA</strong></td>
<td><strong>NHS Information Authority.</strong> A special Health Authority created in April 1999 to deliver the Information Strategy set out in Information for Health. It was abolished and its functions taken over by Connecting for Health in 2005.</td>
</tr>
<tr>
<td><strong>NN4B</strong></td>
<td><strong>NHS Numbers for Babies.</strong> The project to give every baby an NHS number at birth. Babies never used to have their own numbers from birth - they used their mother’s number.</td>
</tr>
<tr>
<td><strong>NPfIT</strong></td>
<td><strong>National Programme for IT.</strong> The biggest IT project on the planet. Responsible for the procurement and delivery of new information and technology systems to help patients and clinicians, and improve NHS services.</td>
</tr>
<tr>
<td><strong>OCS</strong></td>
<td><strong>Order Communications System – ‘order comms’.</strong> The electronic equivalent of ‘requesting’ an X-Ray or blood test or almost anything else that may be required for a patient, e.g. a theatre slot, dietetic advice.</td>
</tr>
<tr>
<td><strong>OSS</strong></td>
<td><strong>Open Source Software,</strong> i.e. free or very cheap. Linux is an example of an open source computer operating system.</td>
</tr>
<tr>
<td><strong>PDA</strong></td>
<td><strong>Personal Digital Assistant.</strong> A handheld computer designed to be used in conjunction with a desktop PC, e.g. Palm or Pocket PC / Windows Mobile devices.</td>
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<tr>
<td><strong>RF LAN</strong></td>
<td><strong>Radio Frequency LAN.</strong> A wireless version of a LAN.</td>
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<tr>
<td><strong>SGML</strong></td>
<td><strong>Standard Generalised Markup Language,</strong> a page markup language that was initially developed in the late 1960s by the US Graphic Communications Association to permit the electronic transfer of page formatting and layout instructions from publishers to printers. Adopted as an international standard in 1986. The foundation for HTML and XML.</td>
</tr>
<tr>
<td><strong>SMTP</strong></td>
<td><strong>Simple Mail Transfer Protocol.</strong> The protocol that governs the transmission of email messages.</td>
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<tr>
<td><strong>SNOMED CT</strong></td>
<td><strong>SNOMED Clinical Terms.</strong> SNOMED stands for Systematised Nomenclature for Medicine and was originally developed by the College of American Pathologists. SNOMED CT represents the combination of SNOMED with CTV3, and was a collaborative venture between the College of American Pathologists and the NHS. It is an international thesaurus of nearly a million approved clinical terms and their synonyms, plus their associated computer codes and inter-relationships. Designed to facilitate electronic communications between healthcare professionals in clear and unambiguous terms. Ownership of SNOMED CT has now been transferred to the International Health Terminology Standards Development Organisation based in Copenhagen.</td>
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<tr>
<td><strong>SOAP</strong></td>
<td><strong>Simple Object Access Protocol.</strong> An XML protocol for the exchange of information.</td>
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<td>Term or acronym</td>
<td>Definition</td>
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<tr>
<td><strong>SCR</strong></td>
<td><strong>Summary Care Record.</strong> A central database within the NCRS that will hold essential data about every patient. Will include NHS number, demographic details, and essential clinical information such as drug therapy, allergies, chronic diseases and surgical operations.</td>
</tr>
<tr>
<td><strong>UML</strong></td>
<td><strong>Universal Modelling Language.</strong> A technique for modelling processes that is universally applicable and facilitates the subsequent computerisation of those processes. See <a href="http://www.uml.org">www.uml.org</a>.</td>
</tr>
<tr>
<td><strong>URL</strong></td>
<td><strong>Universal Resource Locator.</strong> An internet address, e.g. <a href="http://www.google.com">www.google.com</a>.</td>
</tr>
<tr>
<td><strong>Virus</strong></td>
<td>A computer programme that loads and runs without the users knowledge and serves no useful purpose. Frequently malevolent in its effect. Spread by sharing files or by email.</td>
</tr>
<tr>
<td><strong>W3C</strong></td>
<td><strong>World Wide Web Consortium.</strong> The organisation that develops interoperable web technologies. See <a href="http://www.w3.org">www.w3.org</a>.</td>
</tr>
<tr>
<td><strong>WAN</strong></td>
<td><strong>Wide Area Network.</strong> A private or semi-private computer network confined to a wider area than a LAN but not the internet. The NHS’ private network, NHS net, could be regarded as an example.</td>
</tr>
<tr>
<td><strong>Worm</strong></td>
<td>A variety of a computer a virus that ‘worms’ its way into a system and causes havoc.</td>
</tr>
<tr>
<td><strong>XML</strong></td>
<td><strong>Extensible Markup Language.</strong> A subset of SGML. More flexible than HTML. Can be used to transmit structured messages, e.g. pathology results. See <a href="http://www.w3.org/XML/">www.w3.org/XML/</a>.</td>
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</tbody>
</table>

This is a modified version of the ‘jargon buster’ written by Dr A P Madden, and published on the SCATA website. www.scata.org.uk/jargon.php [13]
References
