Health Archives Group

Hospital Patient Case Records: a guide to their retention and disposal

Revised September 2002, and September 2006

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Introduction and acknowledgements

Introduction This is a version, revised and updated in 2002, with further updating in 2006, of *Hospital Patient Case Records A Guide to Their Retention and Disposal* by Hamish Maxwell-Stewart, Julia Sheppard and Geoffrey Yeo, originally produced by the Health Archives Group (now the Health Archives and Records Group) in 1996. The introduction and acknowledgements to the first edition are reproduced here. This revision has been updated to reflect legislative and technological developments since 1996. Some advice on sources of information on electronic records management is included but, although electronic records are playing an increasingly large role in the delivery of health care, they do not provide a panacea to solve all storage and retention problems of the patient health record. In this guide they are considered as an additional format to be considered in the appraisal and selection of patient health records. The focus of the original manual was on methods to reduce the physical bulk of patient health records for long-term preservation and much of this guidance remains valid.

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Introduction and acknowledgements (1996 edition) Since at least the late 1960s National Health Service hospitals in the United Kingdom have experienced acute difficulties with the storage of patient case records. These problems have arisen because such records are extremely bulky (a large hospital may produce in excess of 200 linear metres each year). Furthermore, the ever increasing volume of records has created a retrieval problem: the more files there are, the more difficult it has proved to locate information. In an attempt to ease storage and retrieval pressures many hospitals have resorted to destruction policies. However, deciding which files should be destroyed and which should be kept is rarely straightforward. The purpose of this manual is to provide advice on how to

appraise hospital patient case records. Guidelines are also provided on a range of sampling and other selection techniques designed to draw material from larger collections of records, for the benefit of those faced with the difficult question of what to preserve for future reference.
An effective records management programme, with periodic examination of records to identify those which are no longer current (that is, no longer needed for clinical or legal purposes) should be the aim of every hospital. The practice of allowing records to accumulate in quantity and of considering disposal only when storage problems arise, should be firmly discouraged. It is hoped that this manual will prove of use to managers and staff charged with setting up a planned programme of records management, as well as those attempting to resolve the problems created by poor management practice in the past. Advice in this manual is based on practice in the United Kingdom, but much of the guidance may also be useful to those responsible for hospital records in other countries.

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1.0 Defining a hospital patient case record

1.01 The guidelines in this handbook have been written with specific reference to patient case records, i.e. records containing information relating to an attendance, or a series of episodes, at a hospital either as an in-patient or as an out-patient. The bulk of the case records now held by the National Health Service are still paper files but the future development of the NHS Care Records Service, through which NHS patient records will be created and held in electronic format, will significantly alter the balance between paper and electronic records in the future; although for some time to come patient records will be in hybrid systems - a combination of paper, image and electronic formats.

1.02 Early records generally take the form of bound volumes: they might be ward journals recording information about all the patients in a ward, or case books with patient notes in chronological order by date of admission. Ward journals or case books were gradually superseded by patient notes kept in individual unit files, and by filing systems arranged not by date of admission but by date of discharge or death. However these changes were gradual between the 1920s and 1960s, with some hospitals maintaining the tradition of bound volumes by binding up case notes for patients admitted, discharged or dying in a particular year.
Unit files, which were in general use in hospitals by the 1960s, are distinctive in the following respects:

- Each contains information relating to one patient and only one patient.
- They are usually composed of many sheets placed in pockets or secured by loose leaf bindings within card folder covers.
- Each file can cover several episodes of treatment for one patient over many years.

The history of clinical recordkeeping is briefly traced in Maxwell-Stewart and Tough's *Selecting clinical records for long-term preservation: problems and procedures* (University of Glasgow 2000) pp. 11-15. Some of the selection techniques referred to in this guide are applicable to bound volumes of records, but others are not.

1.03 In the past the chief problem in record keeping has been the survival of too much paper. However, with the development of the electronic patient record (EPR) many records are created and used only in electronic formats. The strategy for developing IT in the NHS is set out in *Delivering 21st Century IT Support for the NHS – a National Strategic Programme* (Department of Health 2002). The programme is being delivered by NHS Connecting for Health. These developments impose the need to ensure the long term preservation of the electronic record. Electronic records may become unreadable within a short period because of obsolete hardware or software and can be virtually meaningless when printed out because many of the necessary headings and cross-references only exist electronically. Most records of a transactional nature can be destroyed routinely in accordance with agreed recommendations and policies but serious problems arise with records only readable by machine which are required long term for legal, administrative or historical purposes even when no longer current. Additional policies and systems may be required to ensure the authenticity and accuracy of the record is maintained over time.

1.04 Clinical information is held in many other records created by hospitals. These may include admission and discharge books, ward records, operating theatre registers, x-ray registers, birth and death registers, laboratory records, pharmacy records etc. The scope of psychiatric record series is outlined in Garside and Jackson's *Model guide to Lancashire mental hospital records* (University of Salford, 2001) pp. 39-80. All NHS records (medical and administrative) are

classified as public records under the Public Records Act, 1958 and it is important for the hospital to employ proper procedures to manage these records. These issues fall outside the scope of this guide, but guidance is provided by *Records Management: NHS Code of Practice Parts 1 &* 2 (Department of Health 2006). In Scotland, the relevant circular is currently MEL(1993)152, although this circular is due for revision to take account of UK legislation on data protection and the development of electronic patient records.

1.05 Information from medical records is employed for a wide variety of purposes. These include:

- immediate and long-term patient management
- medical research (see 2.3)
- epidemiological surveys
- compilation of morbidity statistics
- data checking and cleaning
- clinical teaching
- medical audit
- the assessment of outcome indicators
- litigation
- data subject access requests

There is also considerable interest in hospital medical records, especially older records, for historical, non-medical research, and this archival value needs to be considered in any appraisal decisions.

1.06 The multitude of uses to which patient records are put place different and often competing demands on hospital information management structures:

- Information considered essential to the immediate management of the patient may have a lifetime which can be measured in weeks or even days.
- Other data may be of use in providing continuing care, possibly throughout the life of the patient.
- Records may be needed to allow the hospital to prepare its defence against claims for alleged negligence: the Limitation Act 1980 defines statutory periods within which legal action for personal injury may be brought, although these periods run from the date of discovery of an injury, which could be many years after treatment. Trusts are increasingly accountable for the information they hold and how they use it, and may face legal challenges where medical records provide vital evidence of actions taken and may be required as evidence in a court of law.
- For functions such as long term audit and data back-up, it may be deemed prudent to keep a sample of material for as long as 30 or 40 years.
- Epidemiologists interested in long-term morbidity trends, or assessments of past medical intervention, may argue that information should be kept for considerably longer, perhaps in excess of 100 years
- Social and other historians may wish some information to be preserved permanently.

1.07 It should be remembered that storage of personal data in structured systems (manual or electronic) is subject to the provisions of the Data Protection Act 1998 and requires registration with the Information Commissioner. Subject rights of access to information are enhanced and Trusts must be in a position to produce the information requested within prescribed time-scales, or risk incurring fines or other penalties (the *Records Management: NHS Code of Practice Part 1* (Department of Health 2006) suggests that although the Data Protection Act allows 40 days to meet requests, healthcare organizations should try to meet requests within a 21 day deadline to reflect previous rights within the Access to Health Records Act 1990). There are also increased rights of public access to records held by NHS Trusts under the Freedom of Information Act 2000 and the Freedom of Information (Scotland) Act 2002. Guidance on the application of this legislation is published by The National Archives (see appendices for contacts and references) and by the Health Archives and Records Group.

2.0 Retention criteria

2.01 All NHS records are classified as public records and retention must be in accordance with legislative requirements. The following sections set out existing central government guidelines and provide a review of other criteria which may need to be considered.

2.1 Statutory and legal criteria

2.11 The minimum retention periods recommended by the Department of Health in *Records Management: NHS Code of Practice Parts 1 &* 2 (Department of Health 2006) and by the Scottish Executive in MEL(1993)152 are summarised in the table below. Wales generally follows Department of Health guidance, but the Records Management NHS Code of Practice has not yet (2006) been issued for Wales. Northern Ireland also follows guidance set by the Department of Health but has no separate circular. Note that the table below gives only a brief indication of retention periods. The guidance documents themselves should be consulted for more detail and for important additional information on retention of health records, which should be taken into account before making any decisions on retention and disposal.

	ENGLAND (see note above for Wales and Northern Ireland)	**SCOTLAND**
Pre-1948 records	Consult The National Archives	No surviving health record dated 1948 or earlier should be destroyed.
Health records (excluding patient records specified elsewhere in	8 years after conclusion of treatment or death	6 years after the date of the last entry or 3 years after death.

retention schedule)		
Children and young people (all types of records)	Retain until the patient's 25th birthday or 26th if young person was 17 at conclusion of treatment, or 8 years after death. If illness or death could have potential relevance to adult conditions or have genetic implications, the advice of clinicians should be sought as to whether to retain the records for a longer period.	Until the patient reaches the age of 25, or 3 years after death if earlier.
Maternity (all obstetric and midwifery records, including those of episodes of maternity care that end in stillbirth or where child later dies)	25 years after the birth of the last child	25 years after the birth of the child (including stillbirth).
Mentally disordered persons (within the meaning of any Mental Health Act)	20 years after the date of last contact between the patient/client/service user and any health/care professional employed by the mental health provider, or 8 years after the death of the patient/client/user if sooner. NB Mental health organizations may wish to keep records for up to 30 years before review. Records must be kept as complete records for the first 20 years but may be kept in summary format for additional 10 years. Social services records are kept for longer. Where there is a joint health and	Records made before 1 Jan 1961 should be retained indefinitely. All other records for the lifetime of the patient and 3 years after death.

	social care Trust, keep for higher retention period.	
Learning difficulties (records of patients with)	Retain for 10 years after the death of the individual	
Abortion Certificate A (Form HSA1) and Certificate B (Emergency Abortion)	3 years	
Ambulance Records patient identifiable component (including paramedic records made on behalf of the ambulance service)	10 years	
Asylum seekers and refugees (NHS personal health record – patient-held record)	Special NHS record – patient held – no requirement on NHS to retain	
Body release forms	2 years	
Clinical psychology	30 years	
Clinical trials of investigational medicinal products –health records of participants that are the source data for the trial	For trials to be included in regulatory submissions: at least 2 years after the last approval of a marketing application in the EU. These documents should be retained for a longer period, however, if required by the applicable regulatory requirement(s) or by agreement with the Sponsor. For trials which are not to be to be used in regulatory submissions: At least 5 years after completion of the trial. These documents should be retained for a longer	15 years from date of trial (EC directive).

	period if required by the applicable regulatory requirement(s), the Sponsor or the funder of the trial In either case, if the period appropriate to the specialty is greater, this is the minimum retention period	
Research records other than clinical trials of investigational medicinal products: health records of participants that are the source data for the research	30 years	
Counselling records	30 years	
Creutzfeldt-Jakob Disease (hospital and GP)	30 years from date of diagnosis, including deceased patients	
Dental, ophthalmic and auditory screening records	11 years for adults For children 11 years or up to their 25thbirthday, whichever is the longer	
Donor records (blood and tissue)	30 years post transplantation	
Family planning records	10 years after closure of the case For children retain until their 25th birthday	
Forensic medicine records (including pathology, toxicology, haematology, dentistry, DNA testing, post mortems forming part of the Coroner's report, and human tissue kept as part of the forensic record)	For post-mortem records which form part of the Coroner's report, approval should be sought from the coroner for a copy of the report to be incorporated in the patient's notes, which should then be kept in line with the specialty, and then reviewed All other records retain for	

	30 years	
Genetic records	30 years from date of last attendance	Consider retention beyond minimum 6 year period.
Health visitor records	10 years. Records relating to children should be retained until their 25th birthday	
Homicide/'serious untoward incident' records	30 years	
Hospital acquired infection records	6 years	
Human fertilisation records, including embryology records	Treatment centres: If a live child is not born, records should be kept for at least 8 years after conclusion of treatment. If a live child is born, records shall be kept for at least 25 years after the child's birth If there is no evidence whether a child was born or not, records must be kept for at least 50 years after the information was first recorded Storage centres: Where gametes, etc have been used in research, records must be kept for at least 50 years after the information was first recorded Research centre: Records are to be kept for 3 years from the date of final report of results/conclusions to Human Fertilisation and Embryology Authority	

	(HFEA)	
Immunisation and vaccination records	For children and young people – retain until the patient's 25th birthday or 26th if the young person was 17 at conclusion of treatment All others retain for 10 years after conclusion of treatment	
Joint replacement records	For joint replacement surgery the revision of a primary replacement may be required after 10 years to identify which prosthesis was used. Only need to retain minimum of notes with specific information about the prosthesis	
Neonatal screening records	25 years	
Oncology (including radiotherapy)	30 years NB Records should be retained on a computer database if possible. Also consider the need for permanent preservation for research purposes	Lifetime of the patient and 3 years after death. After this period, may only be destroyed after consultation with the consultant in charge.
Outpatient lists (where they exist in paper format)	2 years after the year to which they relate	
Psychology records	30 years	
Records/documents related to any litigation	As advised by the organisation's legal advisor. All records to be reviewed. Normal review 10 years after the file is closed	
Suicide notes of patients having committed suicide	10 years	

Video records/voice recordings relating to patient care/video-conferencing records	8 years subject to the following exceptions: Children and young people: records must be kept until the patient's 25th birthday, or if the patient was 17 at the conclusion of treatment, until their 26th birthday, or until 8 years after the patient's death if sooner Maternity: 25 years Mentally disordered persons: records should be kept for 20 years after the date of last contact between patient/client/service user and any healthcare professional or 8 years after the patient's death if sooner Cancer patients: records should be kept until 8 years after the conclusion of treatment, especially if surgery was involved. The Royal College of Radiologists has recommended that such records be kept permanently where chemotherapy and/or radiotherapy was given	
Other types of records: A&E records (where these are stored separately from the main patient record) Audiology records	***These records should all be retained for the period of time appropriate to the patient/specialty, eg:*** *Health records of adults 8 years after conclusion of*	

Care records –compiled by employees of a Care Trust (including information on an individual's educational status, care needs, etc) Child and family guidance Child Protection Register (records relating to) Dietetic and nutrition District nursing records Genito Urinary Medicine (GUM) Intensive Care Unit charts Macmillan (cancer care) patient records– community and acute Medical illustrations/Photographs (where the photograph refers to a particular patient it should be treated as part of the health record) Microfilm/microfiche records relating to patient care Music therapy records Occupational therapy records Orthoptic records Patient-held and	*treatment or death* *children's records as per the retention period for the records of children and young people* *mentally disordered persons (within the meaning of the Mental Health Act 1983) 20 years after the last entry in the record or 8 years after the patient's death if patient died while in the care of the organization* *(and see other categories in table above)*	

Parent-held records Physiotherapy records Podiatry records Scanned records relating to patient care Speech and language therapy records Telemedicine records Ultrasound records (eg vascular, obstetric) X-ray reports (including reports for all imaging modalities)		

2.12 Records of private patients admitted under section 58 of the National Health Service Act 1977 or section 5 of the National Health Service Act 1946 are technically exempt from the Public Records Acts, but the *Records Management NHS Code of Practice* recommends that it would be appropriate for authorities to treat such records as if they were not so exempt and retain for period appropriate to the specialty. There is also a statement of minimum standards for independent health care, including records and information management, issued under the Care Standards Act 2000; the Healthcare Commission is now the regulatory body for these standards.

2.13 Records should not be destroyed before the end of the period stated in this table. These periods are not legally binding but in general they reflect the statutory time limits for legal action to be taken. Any hospital which ignores them would be in breach of guidelines laid down by central government, and would run the risk of being unable to defend itself against claims for alleged medical negligence.

2.14 It is important that decisions on retention also take into account legislative requirements. The Data Protection Act 1998 places restrictions on the storage and use of personal information. The Freedom of Information Act 2000 (for England and Wales and Northern Ireland) and the Freedom of Information (Scotland) Act 2002 lay down requirements for public bodies to make information available on request; good records management is vital for compliance and so both Acts are supplemented by codes of practice on records management: these are respectively the *Lord Chancellor's Code of Practice on the Management of*

Records (November 2002) and the *Freedom of Information (Scotland) Act 2002, Code of Practice on records Management,* (November 2003). See appendices for contacts and sources of guidance on the application of Data Protection and Freedom of Information legislation

2.15 To facilitate the identification of records which fall within these criteria, it is good practice for hospital records staff to mark files with the year of last attendance. This can be done for paper records by pre-printing file covers with a list of years in the form of a grid, the year of attendance being ticked or marked when the patient attends the hospital; or by attaching a coloured sticker with the year date at the time of each attendance. In the case of paediatric and obstetric records it is helpful if the file cover is clearly marked with the year in which the child will reach the age of 25. Hospitals which do not currently observe these practices should be encouraged to introduce them. For electronic records and indexes this can easily be incorporated in the specification.

2.16 The hospital management (or its legal services department if there is one) should also bear in mind that there may be arguments for keeping some records beyond the minimum retention periods outlined above. For example, if there is a long-running legal dispute over the treatment of a patient, the relevant documentation must be preserved at least until the case is resolved at the point of final appeal. In some cases there may be a need to preserve further records, not directly relating to the patient in question, as evidence of practice and procedure at the time of the disputed event. Any files in use in connection with a legal action should be marked with an agreed form of words such as “Do not destroy until reviewed by legal services department”.

2.2 Clinical criteria

2.21 Most of the retention periods recommended by the Department of Health and the Scottish Executive reflect legal rather than clinical criteria and set out minimum retention requirements. Consideration should also be given to possible clinical reasons for preserving records beyond these limits.

2.22 Clinicians may recommend that some or all patient records should be kept for longer than the minimum periods mentioned above, for clinical reference in the event of the patient re-attending. Some clinicians may want every record to be kept until the patient is known to have died. A better approach may be to identify particular diagnoses for which longer or shorter retention periods are appropriate. In some specialties professional bodies have published advice on clinical criteria for record retention; an example is *The Retention and Storage of Pathological Records and Archives* (Third Edition 2005), published by The Royal College of Pathologists.

2.23 In the absence of national guidelines, the hospital’s medical committee, or equivalent body, could be asked to advise on this question with a view to identifying retention periods for particular diagnoses. Hospital staff employed on

diagnostic coding can then be instructed to mark file covers or tag electronic records with an appropriate form of words (e.g. “Do not destroy until 30 years from last attendance”) when relevant diagnoses are coded.

2.24 However, if this has not been done in the past it may be necessary to review the content of an existing record series on a file by file basis, particularly if there are no diagnostic indexes. Medical staff whose advice is sought may need to be reminded of the costs and time involved in such an exercise. It may prove more cost-effective to retain the record series in its entirety, at least for as long as any of its component records have continuing clinical value.

2.3 Research criteria

2.31 Even when legally and clinically redundant, hospital patient case records are an important source of information for epidemiological and other research. Such research may result in improvements in health care which are of benefit to the community as a whole. Patient records may also have value as a teaching resource. In addition, where minimum datasets, hospital statistics or other summary data have been collected, the facility to trace information back to source is important. Once patient record series have been destroyed, checking and clarifying summary data becomes difficult if not impossible. The interpretation of summary returns is also impaired if the detailed source materials from which they were abstracted no longer exist. For these reasons it is prudent to consider the permanent preservation either of entire record series or of selections drawn from them. Retention of entire series will also enhance the value of these records for eventual historical or genealogical research.

2.32 There are confidentiality and data protection issues, which also need to be addressed if medical records are used for research purposes. There may also be difficulties in re-activating for clinical purposes medical records which have been designated for research. *Research governance framework for health and social care Second Edition* (Department of Health, 2005) includes guidance on use of medical records in medical research. NHS records are also subject to the *Confidentiality: NHS Code of Practice* (Department of Health 2003). Information and guidance on the Data Protection Act and confidentiality issues can be found on the website of the Information Commissioner’s Office: in particular see *Use and Disclosure of Health Data. Guidance on the Application of the Data Protection Act 1998* (May 2002). There is also a *Code of Practice for Archivists and Records Managers under Section 51(4) of the Data Protection Act 1998* (revised 2006), issued by The National Archives, the Society of Archivists, the Records Management Society and the National Association of Information Managers. This can be seen on The National Archives website, which has much guidance and information on the Data Protection Act and the Freedom of Information Act 2000. The Freedom of Information Act can now be used in England, Wales and Northern Ireland and the Freedom of Information (Scotland) Act in Scotland to request access to the medical records of deceased patients. This is in addition to the limited access already provided to records of deceased patients made after

November 1991 under the Access to Health Records Act 1990. The Secretary of State for Constitutional Affairs has issued a general *Code of Practice on the discharge of public authorities' functions under Part 1 of the Freedom of Information Act 2000* (2004) which outlines the practices which should be followed by public authorities in dealing with information requests. Specific guidance on dealing with requests to access deceased patients' records has been produced by the Health Archives and Records Group. This is published on the Society of Archivists website as its Best Practice Guideline 8: *After the hundred year rule. Guidance for archivists and records managers on access to medical records under the Freedom of Information Act,* by Colin Gale and Catherine Redfern (2004). Guidance from the Information Commissioners' Office on applying the Freedom of Information Act to requests to access deceased patients' medical records is forthcoming.

3.0 Preservation options

3.1 Preservation for legal or clinical reasons

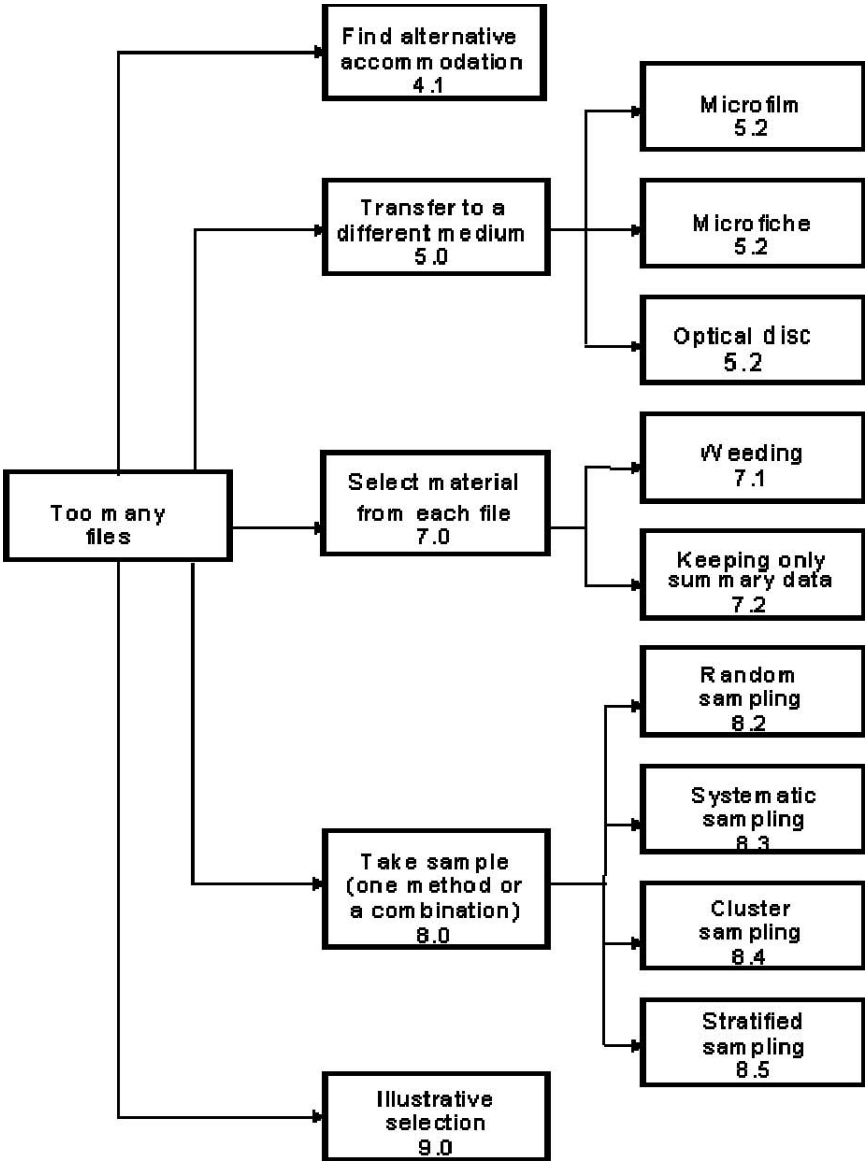
3.11 Information which has a continuing legal or clinical value must not be lost but care must be taken that such retention does not breach the provisions of recent legislation, particularly the Data Protection Act 1998.

3.12 Once the decision to preserve the records has been made, the choice lies between preserving the records in their original format, which can be paper, images, or electronic, or more likely a combination of all three, and converting them to a different medium. Media transfer can offer substantial space savings for paper records and converting to electronic format (e.g. scanning) offers benefits for access but it is not cheap and may affect the legal admissibility of the records. In the longer term it may impede access to information needed for research purposes (see section 5.6) and non-paper formats require active monitoring of storage conditions and migration to new media to ensure their legibility in the future. If warehousing facilities are available at a convenient location which provide sufficient security and at a cost comparable to that of media transfer, retaining records in the original format can be a more cost-effective solution.

3.13 Preservation of paper records in their original format is discussed further in section 4, and the legal implications and cost-effectiveness of media transfer in section 5.

3.2 Preservation for research

3.21 If records are no longer needed for legal or clinical purposes but it is felt that they have a potential research or teaching value, a range of preservation options may be considered. A complete record series may be kept, or if storage problems arise a sample could be taken. Alternatively it may be possible to make savings in space by disposing of some material from each file. These options are summarised in the following diagram. The number after each option refers to the section of this guide where it is described in greater depth.



3.22 The potential research or teaching value of any record series must be balanced against the costs that would be incurred in preserving it in whole or part. All the options discussed in this guide have cost implications.

3.23 An assessment should be made of the physical condition and completeness of the records. Preservation of the records may not be a viable option unless their research value is exceptionally high. Media conversion of records which are especially bulky, or to bring the whole record into one format, may be considered but the issues affecting transfer into alternative media discussed in section 3.12 need to be taken into account.

3.24 Consideration should also be given to the possibility that research or teaching needs can be met by other records which have already been secured for

permanent preservation, or by identifying another series of records which could be preserved at lower cost.

3.25 The Public Records Acts 1958 and 1967 require that if any records are to be kept for more than 30 years after the last date on which the records were active, approval must be sought from The National Archives. NHS records selected for permanent preservation should be transferred to a Place of Deposit for public records, also approved by The National Archives. Original records which are to be preserved permanently for research purposes must be located where they will be accessible to bona fide researchers subject to relevant restrictions on access, and where there are guarantees of a continuing commitment to preservation of the records and to the maintenance of archival standards. Storage areas will need to be secure and free from damp, high humidity and temperature fluctuations. Full recommendations are given in the British Standard BS5454: *Recommendations for storage and exhibition of archival documents* (2000). In many cases the required minimum standards will best be met by transferring the records to a local authority or other publicly funded record office. The Public Services Quality Group and The National Council on Archives have published a *British standard for access to archives* (7th, final edition September 2003), and the National Advisory Services at The National Archives can advise on standards for storage and approved places of deposit in England and Wales. *The National Archives standard for record repositories* (2004) summarises current requirements for storage and access for approved places of deposit for public records and there are regular bulletins on changes and developments affecting approved places of deposit for public records. The Keeper of the Records at the National Archives of Scotland provides advice on all aspects of Scottish health records in consultation with Scottish NHS archivists at Aberdeen, Dumfries, Edinburgh and Glasgow.

3.26 Records with nominal, diagnostic or other indexes are more likely to be usable for research, teaching, audit and data checking than those without. If records are relocated to alternative accommodation, whenever possible supporting documentation such as indexes and coding manuals should also be transferred. This is particularly important in the case of electronic records where data without its associated metadata could be impossible to use.

3.27 It is important that all decisions taken in respect of the partial or total destruction, relocation, or media conversion, of medical records are adequately documented. A record of decisions and decision-making criteria should be made and kept, both to document hospital policy and to aid the interpretation of records retained for future reference. The National Archives or the National Archives of Scotland should be notified of any change in circumstances affecting patient case records in NHS hospitals.

4.0 Keeping records in their original format

4.1 Manual records (paper, x-rays etc)

4.11 If it is decided to preserve an entire record series in its original paper form, the

following options may be considered for its accommodation:

- Suitable accommodation may be available on the hospital site.
- Another record store may be built, purchased or leased by the hospital.
- A commercial storage facility may be used.
- A local authority or other publicly funded record office may be persuaded to take the records.

4.12 Advice on alternative storage locations may be obtained from The National Archives, the Keeper of the Records at the National Archives of Scotland and from local record offices or archives services. If the records are to be transferred away from the hospital site, The National Archives or National Archives of Scotland should be notified.

4.13 The quality of the facilities offered by commercial storage firms should be carefully checked, particularly with regard to the degree of security and confidentiality that is offered. The charges levied by such firms may be acceptable while the records have a clinical or legal value, but are likely to rule out the use of commercial storage for records kept purely for research purposes. Public records must always remain in unbroken public sector custody and long-term commercial storage may contravene the requirements of the Public Records Acts. Well before a final decision is taken, The National Archives should be consulted.

4.14 Unlike commercial storage firms, local authority record offices may not always levy a charge, but they will almost certainly not accept records which are still in use for clinical purposes. Most local authority record offices see their role as serving the needs of the research community. Some may take the view that committing space for one bulky series could prevent preservation of more deserving records in the future. However others might accept complete series of hospital records which are clinically redundant, if the records can be shown to have a potential research value.

4.2 Electronic records

4.21 Extra care needs to be taken with electronic records to prevent corruption or deterioration of the data. Re-recording or transfer of data will also need to be considered as equipment and software become obsolete, and great care must be taken to ensure that material will be able to be read at the end of its designated retention period.

4.22 Electronic records need policies for their security and use, including the requirements which would need to be met to make them acceptable for evidence in court cases, if necessary. Future defence in law may depend on establishing both that there were clear policies on electronic records management in force, and that the hardware and software were operating correctly. There have been cases lost in the past because a different program on the same machine was faulty and this was used to argue that the data was unreliable. DISC PD 0008: 2004: *Code of practice for legal admissibility and evidential weight of information stored electronically*

(2004) and its associated compliance handbook issued by the British Standards Institute provide guidance.

5.0 Conversion of original paper records to a different medium

5.01 It may prove possible to retain a bulky record series in its entirety by transferring information to a less space intensive storage medium. For records which are considered to have a high value this option is worth exploring, especially if the records are in a poor physical state and are unlikely to survive in their original form without expensive conservation work.

5.02 Until recently media transfer meant conversion to microfilm, microfiche or jacketed film; nowadays it is increasingly likely that electronic storage (scanning and electronic optical disc storage, CD-ROMs) will be considered, or a combination of the two.

5.1 Legal aspects of media transfer

5.11 If any of the records bear dates which fall within the retention periods suggested by the Department of Health and the Scottish Executive (see section 2.1), it should be noted that the media transfer may have legal implications if the record is required in court; it should be remembered that legal admissibility of transferred media, as opposed to records which were originally created in electronic format, remains something of a "grey area". An attempt could be made by opposing counsel to investigate the circumstances in which the media transfer took place as a possible means of undermining the reliability of the evidence. Demonstrating that records were copied without accidental omission may be done if their contents are paginated prior to scanning or filming. It is in any case important that the circumstances of the transfer are documented as fully as possible. BS 6498:2002 *Guide to the preparation of microfilm and other microforms that may be required as evidence* (2002) indicates safeguards which can be employed; if these guidelines are followed, the integrity of the transferred record will be less open to dispute. DISC PD 0008:2004: *Code of practice for legal admissibility and evidential weight of information stored electronically* (2004) and its associated compliance handbook give similar guidance for electronic records. Even if all records for which media transfer is proposed fall outside the suggested retention periods, it would still be wise to follow the British Standard, as there can be no guarantee that any record of any age will never be wanted in evidence. An option increasingly being considered by hospitals is to microfilm the records to legally acceptable standards and scan the microfilm into the electronic system for retrieval purposes.

5.12 Any media transfer will bring considerations of copyright law. A hospital will own copyright in records written since 24 July 1990 in Scotland and 1 April 1991 in England and Wales by its employed staff but not those written by others; documents in this latter category will include anything written by general practitioners and by some, perhaps all, of the hospital's consultants. However, hospitals have an implied licence to use anything written to or for them for the

purpose for which they were written, and to choose the most appropriate means of preservation of, and access to, records for clinical purposes.

5.13 It should be noted that where a record is copied (to whatever format) and the original is destroyed, then the copy assumes the public record status of the original.

5.2 Choice of media formats

5.21 Until recently microform was the usual choice of format, and it remains a tried and tested process. Filmed records occupy approximately 2% of the space required to store paper records.

5.22 Microform can be in roll film format (either 16mm or 35mm) or in microfiche format. In the latter case, records are filmed onto 'outsize' sheets of film which are then cut into grids. There are two international standards, 270 or 420 frames per grid. Roll film can be 'jacketed' by cutting it into strips which are then inserted in laminated or cardboard pockets.

5.23 A drawback of microfilm is that where two records are identified as pertaining to the same patient, they can be united physically only through cutting and splicing of the film. Jacketed film offers the advantage that additional material can be added to an individual patient's record without the need for cutting and splicing. However the jacketing adds extra expense to the production process and is unlikely to meet requirements for legal admissibility.

5.24 Microfiche and jacketed film were once seen as easier to use than roll film. They obviate the need to wind a film along a spool in order to locate the desired record, and they make possible more accurate labelling. Since the advent of computer-assisted roll film systems, in which an index is held on a computer and linked to equipment which searches the film automatically, speed of access to microfilmed records has improved dramatically and it is easy to re-unite 'virtually' records which are separated physically. When a valid search request is entered, the system displays the required microfilm images with no further effort required on the part of the operator. However the faster response time is obtained at the cost of time spent at the point of media transfer, when the index has to be created and loaded onto the computer.

5.25 Optical discs are similar to audio compact discs (CDs). A single disc can hold the equivalent of tens of thousands of paper records (the precise number depends upon the image resolution at which the records are captured). Electronic storage of this kind may occupy less than 1% of the space required to store paper records.

5.26 The accessibility of electronically-stored records marks a great advance on all varieties of microform. A number of optical discs can be assembled in a system which allows several discs to be accessed at once, several records on one disc to be read simultaneously and one record to be read by many people at the same

time. Optical disc systems allow easy transmission over short or long distances, easy conversion to other magnetic media, and virtually instant access to indexed records.

5.27 However, as with computer-assisted microfilm, electronic systems require separate entry of index data to allow access to the records. Manual keyboarding of patients' names or file numbers is time-consuming, and even where these data can be downloaded from existing patient administration (PAS) systems they must still be linked to the relevant electronic image. Optical character recognition and other technological advances may eventually alleviate these problems but they are not likely to do so in the near future.

5.3 Storage requirements

5.31 In the case of microform, a master negative and working positive copies should be made. Only the positive copies should be used for reference purposes.

5.32 Master copies should be stored in closed non-airtight containers made of non-corrosive materials, such as inert plastic. Containers should also be free of bleaching agents, glues and varnishes. Rolls of film should be mounted on inert reels and secured by the use of acid-free paper ties. Fiche and jacketed film should be stored in acid-free envelopes. Rubber bands and paper clips should not be used.

5.33 Microform should be stored in controlled atmospheric conditions, with temperature between 15 and 20 degrees centigrade (ideally not exceeding 18 degrees), and relative humidity between 30% and 40%. As with paper records, circulation of filtered and purified air is recommended, and rapid changes in temperature and relative humidity should be avoided.

5.34 Optical discs should be stored in closed non-airtight containers made of non-corrosive materials such as inert plastic. The optimum atmospheric conditions for long-term preservation of optical discs have not yet been established. However, optical discs that are regularly consulted may benefit from storage conditions that closely resemble the conditions in which they will be accessed, because in this way rapid environmental changes will be avoided. For this purpose, optical disks should be stored in a controlled environment with temperature between 18 and 20 degrees centigrade, and relative humidity between 35% and 45%.

5.4 Life expectancy

5.41 The long-term life of digital media is uncertain. Manufacturers' guarantees for optical discs indicate periods of up to 30 years, and claims have been made that the discs will last 100 years. It is not clear on what evidence these claims are based and there are growing doubts about the suitability of discs for long-term storage. Data stored electronically may also become unreadable because of hardware and software obsolescence. Its continued existence in any meaningful form requires a commitment to a rolling programme of conversions to keep pace

with the rapid rate of technological change.

5.42 In the case of microform, silver halide film (as opposed to diazo or vesicular film) is recommended for long-term storage. Silver halide film manufactured in the 1940s and stored under proper conditions is still usable and shows little sign of loss of visual definition. Industry claims suggest a lifetime of up to 500 years. Data stored on microform is also dependent on equipment to read it, but technological changes are not as rapid as in the electronic environment.
5.43 There appear to be few technical difficulties in copying to a new film or disc as the old one approaches the end of its life span. Copying to a new film involves some loss of definition, but with digital media this does not arise.

5.44 Microform should be regularly inspected. It is recommended that 20% of each format should be examined every two years, or more frequently if signs of deterioration are found, with new copies being made from the master negative as necessary. When rolls of film are checked they should be wound through a reader as roll film may set or crack if not regularly 'exercised'.

5.5 Advantages of media transfer
5.51 The usual reason for undertaking media transfer is that it enables all the recorded information to be retained while greatly reducing the requirement for storage space. If space runs out before the recommended retention periods have expired, or while there is frequent need to access the records for clinical purposes, media transfer is likely to be the favoured option. Even for older records media transfer has considerable appeal to clinicians simply because they can never be wholly certain that a particular record will never again be required for clinical reference during the lifetime of a patient.

5.52 The introduction of the NHS Care Records Service, through which all NHS patient records will be kept in electronic format in the future will mean that some patient data created on paper will be migrated to a national electronic ‘data spine’.

5.53 Transfer to fixed medium enhances the security of the record since information cannot be changed.

5.6 Disadvantages of media transfer
5.61 The costs of a conversion programme, in both time and money, should not be underestimated. Each page has to be set up for the camera, or individually scanned; and variations in tints and thickness of paper used in patient files may slow the process further. Entering index data will require further commitment of resources.

5.62 If access to the information in the records is only expected to be required in the short term, the cost of media transfer is almost certain to be higher than the cost of warehousing the originals for a small number of years. Conversion charges are more likely to prove comparable with warehousing costs for medium-term

storage of the original documents.

5.63 If long-term access or permanent preservation is envisaged, media transfer may appear cheaper than warehousing of paper originals over many years; but it is in the long-term that the disadvantages of media conversion become most apparent. Electronic data can be accessed only by means of appropriate hardware and software. If the electronic data is to be preserved permanently, it will be necessary to undertake regular data conversion to new formats, either as the new formats appear, or as the old formats approach obsolescence.
5.64 Long-term preservation of microform involves careful monitoring of optimum storage conditions. Microform also requires the purchase and maintenance of appropriate readers and printers, which may become obsolescent over time.

5.7 Conclusions
5.71 Until comparatively recently, microform technology appeared to be heading for obsolescence, unable to compete with the speed and flexibility of electronic storage. However, the advantages it offers over electronic storage in terms of medium- and long-term preservation (and also in terms of cost), are beginning to be appreciated afresh. The preservation qualities of microform and the access advantages of electronic storage may be combined by a hybrid approach, which relies on the preservation of a microfilm master negative, and the use (for purposes of current access) of digital copies, which may be renewed from the analogue master as and when required by changes in hardware or software.

5.72 The probable long-term effect of transfer of data onto digital media, and of the introduction of electronic record systems, will be to commit our successors to a continuing programme of conversions as new generations of automated equipment supersede one another. Any future lack of resources for such conversions may well result in irretrievable loss of information unless a hybrid approach, such as is described in 5.71, is taken. Long-term preservation of modern media could prove considerably more expensive than retention of paper records in original form.

6.0 Selecting original material for retention
6.01 In the following sections (numbered 6 to 9) a range of techniques is described which can be used, when records are clinically and legally redundant, to select a proportion of a record series for long-term retention in paper form for research use.

6.02 Each technique is suited to different circumstances. Some require considerable planning, while others are designed to be of use in emergencies.

6.1 Keeping all records from selected hospitals
6.11 This approach involves the total retention of some record series at the expense of others. It works best when implemented on a regional basis or throughout several hospitals administered by one health authority, health board or trust. Each hospital and/or record-creating specialty in the area to be covered is

listed according to type (general, psychiatric, geriatric, dental etc.) and one or two of each type are selected. All records from those institutions are earmarked for retention while all records from other hospitals of the same type are destroyed. This is in effect a cluster sample (see section 8.4).

6.12 Advantages The advantages of this technique are considerable. If well executed it can relieve storage pressures while maintaining a considerable information resource. The approach is also relatively easy to administer compared, for example, to a large representative sampling initiative.

6.13 Disadvantages It is in the nature of hospitals that each is distinctive. It is impossible to select one psychiatric hospital, for example, which is wholly representative of all others. The implications of this depend on the use to which the records are to be put. For studies based on one of the hospitals whose records are selected for preservation, an institution-based retention policy is an excellent solution. For example, the patient records of hospitals with a history of taking a leading role in the development of specialised treatments might be prime candidates for preservation in their entirety. For exercises which require representative data drawn across a region or area, the approach is less useful as it will tend to favour the records of centres of clinical excellence over the records of less prestigious and/or more remote hospitals. This is true, not only of many areas of epidemiological study, but also of audit exercises, calculation of outcome procedures and data validity checks. One of the problems associated with using only summary data for such studies is that coding rules may be interpreted in different ways in different hospitals. It may be unwise to project findings based on the complete records of a single hospital across a larger area.

6.14 This type of selection should be implemented only after careful consideration. Representative sampling should be considered as an alternative (see section 8).

6.2 Selecting a proportion of a single record series

6.21 A number of selection techniques are available which can be applied to a single series of records. Some of these are described in sections 8 and 9 below. Before attempting to decide which technique to employ, however, the number of files in the series should be estimated. If all the records are shelved, the easiest way to do this is to count the number of files on a small proportion of the shelves and then multiply by the appropriate figure. It is important to check whether all shelves are of the same size and whether some are packed more densely than others. If records have been removed from their shelves this task will be more difficult. In the case of some record series, the number recorded on the cover of the most recent file will provide a good estimate of the total number of records. This assumes, however, that numbers were assigned in sequence, that the record series is complete (or nearly complete) and that it does not share a numbering system with other series stored elsewhere.

6.22 Having estimated the number of files it may be useful to estimate the average

file width, in order to establish how much space a sample or selection of records will occupy. A simple way to perform this calculation is to measure several shelves at intervals through the filing range and count how many records they contain. The total length of these shelves can then be divided by the number of records to obtain an estimate of average file width. The shelves used in this exercise should be ones which are packed to an acceptable level of density. It is also important to check whether any outsized files have been stored separately.

6.23 If possible a note should be made of the time span covered by the records and of the hospital(s) or specialties responsible for their creation. This information can:

- Provide a brief description of what has been destroyed.
- Assist in deciding whether it is possible to draw a sample of records and which selection technique is most suitable.
- Supply background information of use with a sample or other selection.

7.0 Selecting material from each file

7.01 These techniques involve retaining all records but removing some documentation from all or most of them.

7.1 Weeding or stripping

7.11 Weeding (sometimes referred to as file stripping) is the process by which duplicate and irrelevant material is removed from files. Where weeding is employed it is very important that what is meant by 'irrelevant' and 'unimportant' documentation is clearly defined. If rules are not drawn up there is a danger that decisions will be applied inconsistently across a file series. This would hinder future interpretation of the records.

7.12 Advantages: there are two advantages to be gained: savings in space, and improved access resulting from slimmer and tidier files.

7.13 Disadvantages: weeding is time-consuming and the resultant reductions in bulk may be small compared to the effort expended. The removal of administrative paperwork may also blur relationships between remaining documentation.

7.2 Keeping summary data

7.21 This procedure involves extracting and retaining only the discharge/summary sheets, or equivalent summary documentation, from each record.

7.22 Advantages: the advantage of this approach is that a standardised account of each in-patient episode is preserved for all files in a series. The discharge sheets can then be stored by patient unit number or surname. This is a particularly powerful approach when combined with a sample or samples of files retained in their entirety.

This combination has the advantage of preserving some information for each episode together with full details of particular episodes.

7.23 Disadvantages: while not as time-consuming as weeding, this may still prove to be a considerable undertaking. If there is insufficient time and resources to preserve a summary of each record and draw a sample, then a sampling programme based on complete files may be a better option (see section 8).

7.24 Care should be exercised that alternative sources of summary data are not overlooked. For example, since 1961 an electronically-held summary of each Scottish in-patient episode has been stored by the Information Services Division of the Scottish Executive Health Department. This data (Scottish Hospital In Patient Statistics or SHIPS) is similar to that recorded on discharge summaries and include patient unit numbers and hospital identification codes. Unfortunately, equivalent data is not available for England and Wales. The medical records departments of some hospitals collated and kept copies of summary data separate from the main run of patient records, and hospital diagnostic indexes may also contain summary information. Where such alternative sources exist, the removal of summary sheets from patient files may prove redundant.

8.0 Sampling

8.01 Sampling does not offer a panacea to the problems of record retention. While a number of sampling techniques are available it is worth stressing that, whichever technique is applied, some information will be lost. Although a sampling programme will disappoint some potential users, the same could be said of virtually any other approach to clinical record storage problems. In many ways the justification for sampling is simply that it can provide a sound procedural basis to the thorny question of what should be kept and what discarded.

8.02 Sampling is best suited to very large record series. A 5% sample of 5 million records would provide more effective coverage than a 5% sample of 1 million records. Several sampling schemes applied in conjunction can be particularly powerful (see section 8.6). In general, sampling procedures may be applied to large series that have been assembled in a consistent fashion. Many series of hospital patient case records fall into this category. Small series displaying much variation in content should not be sampled. Similarly if the records are in a confused state and cannot easily be put in order the sampling techniques considered below may not be applicable. An alternative is suggested in section 9.

8.03 Sampling can be used in a variety of situations when time is short (see section 8.33). Each sampling technique should be carefully considered in relation to the record series to which it is to be applied and the time available to complete the project. Some are particularly suited to records filed in certain ways. A technique which is difficult to apply to a record series may prove expensive and time-consuming. Further, if errors are committed in drawing the sample, the value of the exercise will be undermined. Thus it is vital that objectives are clearly defined and that a sampling scheme is weighed against other options. Where possible statistical advice should be sought; for larger schemes this is essential.

Sources of advice are suggested in Appendix I.

8.04 Documentation must be provided for every sample of records taken. It should include information on the following: the aims of the retention programme; a description of the context in which the original records were produced; the sampling techniques employed; records from the frame that could not be located (accompanied by a list of record destructions that took place before the sampling) and instructions on how to access the information in the archive.

8.1 Constructing a sampling frame

8.11 Before drawing a sample it is necessary to construct a sampling frame, i.e. a list which contains a reference for every record in the series to be sampled. For patient records the unit file number allocated by the hospital to each record provides a particularly useful frame. In practice, however, a wide variety of frames can be used: for example, the years that the records were created. No matter what type of frame is chosen it is important that every record should have an entry on the frame.

8.12 The easiest frames to construct and use are those based on information which appears on file covers.

8.2 Random sampling

8.21 With random sampling a record is selected from the frame in a way that ensures that there is an equal probability of any other record in that series being selected in its place. This procedure is repeated until a sample of the desired size has been assembled. This is achieved through resort to a random number table or a computer package that generates random numbers. The method employed to determine random numbers would depend on the size of the sample.

8.22 Advantages: simple random sampling is relatively free from bias.

8.23 Disadvantages: when a list of random file numbers has been generated, each file has to be individually retrieved. If the size of the sample is large this process can become laborious and thus prone to human error. However, for smaller record series random sampling can be a valuable tool.

8.3 Systematic sampling

8.31 Systematic sampling is commonly used to overcome the disadvantages associated with random sampling. It involves drawing records from a frame at regular intervals. The usual procedure is to take every nth record after a randomly chosen start.

8.32 Systematic sampling can work particularly well in hospitals which employ terminal digit filing. This procedure involves allotting records to shelf ranges according to the last two digits of their unit file number: thus all files ending ****00 may be stored on one shelf range, all ending ****01 on the next and so on up to

****99. Taking all the records on any one of these shelf ranges is equivalent to drawing a one percent systematic sample. Selecting five ranges would be equivalent to drawing a 5% sample.

8.33 Where terminal digit filing is not used, the selection of records will take a little more time. A common shortcut is to proceed down a shelf range with a measuring stick, for example a one-metre rule. Selecting records at regular measured intervals can cut out much laborious counting. While not all statisticians would approve of this, it is a good tactic to adopt when time is short. However, it will not work well if there is much variation in file size, as larger files will have a greater probability of being selected.

8.34 Advantages: the technique is relatively simple. Compared to random sampling it offers time savings and may reduce the number of mistakes made during the selection process. It is an acceptable technique even if small numbers of files are missing from the series.

8.35 Disadvantages: systematic sampling can sometimes produce unsatisfactory results due to underlying patterns imbedded in the data. This can be illustrated by the example of a clinic which sees one set of patients in the morning and a different set in the afternoon. If approximately the same number of cases presented in the morning and in the afternoon and the amount of patients seen over time remained constant, a systematic sample of the records might consist of cases drawn entirely from one set of patients.

8.36 A further disadvantage is that the technique provides no information on the relationship between sequential observations. Thus a systematic sample of accident and emergency admissions might lead to the impression that never more than one individual was injured in a traffic accident.

8.4 Cluster sampling

8.41 This technique involves dividing the frame into sections: for example, the years that patients were first treated or the postcode areas in which they are resident. It is these sections or clusters of data which are then sampled.

8.42 Advantages: splitting the frame into clusters can provide a relatively easy sampling method and may increase the speed and efficiency with which a sample can be drawn. Common examples of this are samples drawn according to the first letter of the surname from an alphabetical series or according to years of admission or discharge from a chronological series. The procedure can also be used to facilitate record linkage. Thus a record series arranged by year of creation could be sampled to coincide with the census. The census has been officially taken every tenth year from 1801 therefore record samples may be taken from 1951, 1961 and so on.

8.43 Disadvantage: cluster sampling is prone to one particular form of bias. This

occurs when one or more of the clusters are distinctive in a manner which may prejudice future research. The most common example arises from alphabetical sampling based on the first letter of patients' surnames: if M is included the sample could be biased towards names of Gaelic origin (Mac and Mc) and if it is not the reverse will hold. A further use of cluster sampling is discussed in section 6.1.

8.5 Stratified sampling

8.51 Stratified sampling is a technique where the frame is split into strata, which are then sampled more or less intensely according to their occurrence in the original record series. For example, if it was decided that the frame should consist of all diagnoses in a hospital record series, a stratified sample might consist of 1% of commonly encountered disorders, 10% of uncommonly encountered and 100% of rare disorders.

Once the design of the frame and sampling proportions have been agreed, records can be drawn from each stratum by either systematic or random sampling as described above.

8.52 Advantages: stratified sampling can reduce the size of the sample drawn without compromising its integrity. This is especially true for record series which contain a large number of similar records occasionally interspersed with more unusual ones. If, for example, a 5% sample was drawn from such a series without the use of stratification it is likely that many unusual records would be represented poorly or not at all. A stratified approach would reduce the overall size of the sample by drawing fewer records with routine content whilst ensuring that more unusual aspects of the series were preserved.

8.53 Disadvantages: it is important that a great deal is known about a record series before a stratified sample can be drawn. For example, if it was decided that stratification would provide the best means of preserving diagnostic information, the sampling frame could not be constructed unless it was possible to ascertain the frequency of each diagnosis in the original record series. It is also important that this information is preserved with the sample so that future researchers can re-weight each stratum for use in conjunction with the others. After sampling care should also be exercised to ensure that each stratum is stored separately. It is especially important that a stratified sample is well planned and executed; it is not an option when time is short.

8.54 In designing a stratified sample decisions must be made as to which categories of information merit protection. These decisions will inevitably be subjective. The example given above was based on diagnoses. While some subsequent research programmes might benefit from this approach others, for instance those interested in the areas of residence of patients, may be poorly served. It is also possible that the range of diagnoses may be too great to protect each one. The justification for a stratified approach may be that it is better to ensure that a small range of research interests is well served, rather than provide a resource which is universally inadequate.

8.6 Combining samples

8.61 A common problem with random and systematic sampling is that they are not very good at preserving unusual aspects of the original record series. One way of dealing with this problem is to draw smaller subsidiary samples to cover any categories of records identified as of particular interest. For example, a systematic sample of every record with a file number ending in 15 could be combined with several cluster samples composed of all records raised in a census year. An approach of this kind requires careful planning. As with stratified sampling, it is important that subsidiary samples are clearly identified and stored separately.

8.62 Advantages: this approach has similar advantages to stratified sampling but can be easier to implement.

8.63 Disadvantages: as with stratified sampling, deciding which records are worthy of further protection is a subjective exercise. It may not be practicable unless diagnostic indexes or other sources of summary data are available.

8.7 Determining the size of a sample

8.71 On many occasions the size of a sample will in practice be determined by the space available for its storage. However, if space is not an issue other factors should be considered. The optimum size of a sample depends not on the size of the record series but on the variety of information it contains and the degree of reliability or representativeness that is required. Thus a very small sample would suffice to establish the proportion of patients of each sex. Patients can be only male or female and the subsequent analysis depends on only two values. An analysis based on addresses or diagnoses would require a much larger sample. However, as the full range of uses to which a sample of patient records may be put cannot be predicted, it is impossible to calculate the optimum sample size with any degree of certainty. In general large samples are more likely to be of use than small ones, provided they are well executed.

However, a quadrupling of sample size will only result in a doubling of precision, and samples of less than 300 records are unlikely to be of much use except as illustrative selections (see section 9).

9.0 Illustrative selections

9.01 This approach involves preserving a limited number of records as examples. Structured selection techniques are not employed. If the records are in a confused state this may be the only option.

9.02 A few files preserved as examples of a destroyed record series are better than nothing. These records should be stored in conjunction with any information which may be available about the range and scope of the original series. However illustrative selections are of very limited use. This technique should be used only as a last resort.

9.03 A second use for illustrative selections is to provide examples of particular aspects of a record series that are likely to be poorly represented by a sampling programme. Any records selected in this way should be stored separately, with adequate documentation.

10.0 Destruction of records

10.01 Every hospital should have an agreed retention/disposal policy for its records, supported by retention schedules based on those in the *Records Management: NHS Code of Practice* (2006). The schedules should cover all series of records held, in any media, and should state the agreed retention period and disposal action, including, where appropriate, an indication of those records which should be considered for archival preservation. The retention/disposal policy should be drawn up by the corporate records manager or archivist and with the input of senior management and of archivists at the local place of archive deposit.

10.02 Any method used to destroy patient case records must ensure that confidentiality is maintained at every stage. There is a common law duty of confidence to patients and employer as well as a duty to maintain professional ethical standards of confidentiality. This duty of confidence continues even after the death of the patient or after an employee or contractor has left the NHS. Further information about record disposal is contained in the *Records Management: NHS Code of Practice* (2006).

10.03 The methods used to destroy records must be fully effective and secure their complete illegibility. Destruction by shredding, pulping or incineration is preferable. If the hospital has no immediate access to an industrial shredder or incinerator, there are numerous firms that can provide this service. Recycling is an alternative option but it is recommended that if at all possible the records should be shredded before being sent for recycling. This can be done on site or via an approved contractor. It is important to have destruction as well as preservation policies for electronic records. It is often helpful that an expert can retrieve deleted files in an emergency, but this ability to retrieve deleted electronic data has inherent dangers for confidential information when hardware and software is discarded It may also jeopardise the viability of a records management programme if records that are supposedly ‘destroyed’ can be retrieved from the system.

10.04 Whichever option is chosen, the process should be monitored at all stages, including transport to the destruction site. It is the responsibility of the NHS Trust or Health Authority to satisfy itself that the methods used throughout the process provide adequate safeguards against the accidental loss, or disclosure of the records' contents. If an external contractor is used, the company should be required to sign confidentiality undertakings and to produce written certification as proof of destruction.

10.05 It is essential that the destruction process is documented. The following information should be recorded: a list of the records destroyed and when this took

place; who authorised the destruction; who carried out the process and the reason for destruction (this should refer to the retention/disposal policy).

10.06 All Public Records in places of deposit are subject to the Public Records Act and must only be destroyed in accordance with *The National Archives standard for record repositories* (2004) and not destroyed without approval from The National Archives or in Scotland the Keeper of Records at the National Archives of Scotland.

Appendix I
Useful addresses and sources of further information

General enquiries regarding the application of guidelines for the retention and destruction of health records in England and Wales (as stated in the *Records Management: NHS Code of Practice*) should be addressed to:

Liz Waddington
Digital Information Policy
NHS Connecting for Health
Tel: 0113 280 6748
e-mail: liz.waddington@dh.gsi.gov.uk
recordsmanagement@dh.gsi.gov.uk

In England and Wales, a small number of NHS organisations are themselves approved as places of deposit to hold hospital records which are selected for permanent preservation as archives; otherwise the place of deposit will usually be the local authority archives service. Where an NHS organisation has an established relationship with its place of deposit, these should be contacted where issues arise which relate to determining whether records are worthy of permanent preservation, or where general advice on managing them is needed. Otherwise, The National Advisory Services at The National Archives should be contacted:

National Advisory Services
The National Archives
Kew
Richmond
Surrey TW9 4DU
Tel: 020 8876 3444
e-mail: nas@nationalarchives.gov.uk
website: http://www.nationalarchives.gov.uk

Enquiries regarding the application of guidelines for the retention and destruction of health records in Scotland (as stated in MEL [1993]152 [shortly due for revision]) should be addressed to:

Scottish Executive Health Department
St Andrew's House
Regent Road
Edinburgh EH1 3DG

e-mail ceu@scotland.gov.uk
website: http://www.show.scot.nhs.uk/sehd

General advice and guidance is available from:

The Keeper of the Records of Scotland
National Archives of Scotland
General Register House
2 Princes Street
Edinburgh EH1 3YY
Tel: 0131 535 1314
e-mail: enquiries@nas.gov.uk
website: http://www.nas.gov.uk

Advice and guidance on records matters in Scotland, including the application of current guidelines, is also available from the following:

Lothian Health Services Archive
Special Collections
Edinburgh University Library
George Square
Edinburgh EH8 9LJ
Tel: 0131 650 3392
Fax: 0131 650 6863
e-mail: lhsa@ed.ac.uk
website: http://www.lhsa.lib.ed.ac.uk

Dumfries and Galloway Health Board Archivist
Easterbrook Hall
Crichton Royal Hospital
Dumfries DG1 4TG
Tel: 01387 244 228

NHS Greater Glasgow Archives
77-87 Dumbarton Road
Glasgow G11 6PW
Tel: 0141 330 2992
Fax: 0141 330 4158
e-mail: a.tough@archives.gla.ac.uk
website: http://www.archives.gla.ac.uk/gghb

Northern Health Services Archives
Aberdeen Royal Infirmary
Woolmanhill
Aberdeen AB25 1LD
Tel: 01224 555 562

In the case of areas which have no Health Board Archivist, the Keeper of the

Records of Scotland will put enquirers in touch with the nearest Health Board Archivist, or an appropriate archive service.

Statistical advice for England and Wales can be obtained from the Office for National Statistics (ONS), which has offices in London, Newport, Southport and Tichfield: the London and Newport offices both have ONS libraries.

Office for National Statistics
Cardiff Road
Newport NP10 8XG
or
Office for National Statistics
1 Drummond Gate
London SW1V 2QQ
There is a central Customer Enquiry Service Tel: (0) 845 601 3034
Fax: (0)1633 652747
e-mail: info@statistics.gov.uk
website: http://www.statistics.gov.uk

Statistical advice for Scotland can be obtained from:

Information & Statistics Division (ISD)
Common Services Agency for NHS Scotland
Trinity Park House
South Trinity Road
Edinburgh EH5 3SQ
Tel: 0131 551 8899
Fax: 0131 551 1392
e-mail: contact@isd.csa.scot.nhs.uk
website:http://www.isdscotland.org/

Information on Scottish Hospital In Patient Statistics (SHIPS) and the requirements of the Data Protection Act is also available from this address. Many trusts or health authorities in England and Wales, and local health boards in Scotland, employ a statistician.

Advice on good practice in medical record keeping can be obtained from the Institute of Health Record Information and Management (IHRIM), who aim to promote excellence and professionalism in the management of health record information. They can be contacted at:

IHRIM (UK) Headquarters
141 Leander Drive
Castleton
Rochdale
Lancashire OL11 2XE
Tel / Fax number: 01706 868481
e-mail: ihrim@zen.co.uk
website: http://www.ihrim.co.uk

The Health Archives and Records Group (HARG) meets 3 times a year, and provides an opportunity for archivists and records managers dealing with health records to discuss issues of common interest. Current contact details can be found on the Group's website, http://www.healtharchives.org

The Records Management Society (RMS) encourages all those working in the field of records management to improve professional standards. The RMS holds regular meetings and publishes a Bulletin; its web-site also provides news and offers guidance on retention. The RMS can be contacted at:

Records Management Society
Woodside
Coleheath Bottom
Speen
Princes Risborough
Bucks HP27 OSZ
Tel: 01494 488566
Fax: 01494 488590
e-mail: info@rms-gb.org.uk
website: http://www.rms-gb.org.uk

The National Archives maintains the National Register of Archives (NRA) which includes hospital records held in various archive repositories. The National Archives can be contacted at:

The National Archives
Kew
Richmond
Surrey TW9 4DU
Tel: 020 8876 3444
website: http://www.nationalarchives.gov.uk/nra

Information on the whereabouts of hospital records (mainly those which have been placed in archive repositories) is also held on the Hospital Records Project database, run jointly by The National Archives and the Wellcome Library for the History and Understanding of Medicine. The database can be accessed online at: http://www.nationalarchives.gov.uk/hospitalrecords/

The Archives and Manuscripts section of the Wellcome Library can be contacted at:

Archives and Manuscripts
Wellcome Library
210 Euston Road
London NW1 2BE
Tel: 020 7611 8899
Fax: 020 7611 8703
e-mail: arch+mss@wellcome.ac.uk

website: http://library.wellcome.ac.uk

Guidance on the application of data protection legislation in the UK and freedom of information and environmental information legislation in England, Wales and Northern Ireland can be obtained from the Information Commissioner, at:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire SK9 5AF
Tel: 01625 545745
Fax: 01625 524510
website: http://www.ico.gov.uk

The website includes an online enquiries form

Guidance on the application of freedom of information and environmental legislation in Scotland can be obtained from the Scottish Information Commissioner at:

Scottish Information Commissioner
Kinburn Castle
Doubledykes Road
St Andrews
Fife KY16 9DS
Tel: 01334 464610
Fax: 01334 464611
e-mail: enquiries@itspublicknowledge.info
website: http://www.itspublicknowledge.info

NHS Connecting for Health, an agency of the Department of Health, is responsible for delivering the National Programme for IT (NPfIT) and the NHS electronic patient record.

For further information:

NHS Connecting for Health
website: www.connectingforhealth.nhs.uk

The National Archives offers advice and guidance on a range of issues relating to the management, appraisal and preservation of digital records.

Contact:
The Digital Preservation Department
The National Archives
Kew
Richmond
Surrey TW9 4DU
website: http://www.nationalarchives.gov.uk

The website has details of the current key contact for preservation and digital preservation issues.

The Digital Preservation Coalition is a forum for advice on the preservation of electronic records; it can be contacted at:

Digital Preservation Coalition
Innovation Centre
York Science Park
Heslington
York YO10 5DG
Tel: 01904 435362
e-mail: info@dpconline.org
website: http://www.dpconline.org

Appendix II
Select Bibliography

British Standards and Codes of Practice

Further information can be found at http://www.bsi-global.com.

BS 1153:1992	*Recommendations for processing and storage of silver-gelatin-type microfilm* (London : BSI, 1992)
BS 5454:2000	*Recommendations for Storage and Exhibition of Archival Documents* (London : BSI, 2000)
BS ISO 6199: 2005	*Microfilming of documents on 16 mm and 35 mm silver-gelatin type microfilm* (London : BSI, 2005)
BS 6498:2002	*Guide to preparation of microfilm and other microforms that may be required as evidence* (London : BSI, 2002)
BS 7799-3:2006	*Information security management systems. Guidelines for information security risk management* (London : BSI, 2006)
BS 4783-1-8:1988-1994 (some parts obsolescent)	*Storage, transportation and maintenance of magnetic media for use in data processing and information storage* (Milton Keynes : BSI, 1988-1994)
BS ISO 15489:1-2	*Information and documentation: records management. Part 1 – general Part 2 -guidelines* (London : BSI, 2001)
DISC PD 0008:2004	*Code of practice for legal admissibility and evidential weight of information stored electronically* (London : BSI-DISC, 2004)
DISC PD 0010:1997	*The principles of good practice for information management* (London : BSI-DISC, 1997)
DISC PD 0012-1:2000	*Data protection. Guide to the practical implementation of the Data Protection Act 1998* (London : BSI-DISC, 2000)

Department of Health

Most of the following publications can be downloaded from the relevant section of the Department of Health's web-site, at: www.doh.gov.uk/publications

Department of Health	*Records Management: NHS Code of Practice Parts 1 &* 2 (London: Department of Health, 2006) [This document contains the **current recommended retention periods for NHS records in England, Wales and Northern Ireland**, and much other guidance and information. It replaces previous NHS Circulars, and is a much expanded document]
Department of Health	*Research governance framework for health and social care* (London: Department of Health, 2nd edn 2005)
Department of Health	*Building the information core: implementing the NHS Plan* (London: Department of Health, 2001) [Updates the NHS information strategy *Information for Health* (originally published in 1998), concentrating on development of electronic records]
Department of Health	*Delivering 21st Century IT Support for the NHS – a National Strategic Programme* (London: Department of Health, 2002) [This sets out the strategy for developing IT in the NHS, which is being delivered by NHS Connecting for Health www.connectingforhealth.nhs.uk]
Department of Health	*Confidentiality: NHS Code of Practice* (London: Department of Health 2003)

Scottish Health Records Circular

MEL (1993) 152	*Guidance on the Retention and Destruction of Health Records* (Edinburgh: Scottish Office, 1993) [This document contains the **current recommended retention periods for NHS records in Scotland**. It is currently being revised]

The National Archives

The National Archives publishes updated publications and guidance on its website, at: http://www.nationalarchives.gov.uk/

The National Archives	*Standard for Record Repositories* (Kew: The National Archives, 2004)
The National Archives	*Data Protection Act 1998: a guide for records managers and archivists* (Kew: Public Record Office, 2000)
The National Archives	*Model Action Plan for Health Authorities for Developing Records Management Compliant with the Lord Chancellor's Code of Practice under Section 46 of the Freedom of Information Act 2000* (Kew: The National Archives, 2002)

The National Archives	*Management, appraisal and preservation of electronic records,* 2nd ed. (Kew: The National Archives, 1999)
The National Archives	*The selection of case files: sampling techniques* (Kew: The National Archives, 2001) [Guidance about preserving and making available to users public records kept outside The National Archives. Contains information on minimum storage standards]

Other Books and Publications

Audit Commission	*Setting the records straight: a review of progress in health records services - update* (London: Audit Commission, 1999), [A report in 1995 concluded that trusts still had much to do to create a quality records service before the benefits of investing in technology would be felt. This update examines the main changes since the audits in 1994/5. website see: http://www.audit-commission.gov.uk]
J Cofer (ed.)	*Health Information Management*, 10th ed. (Berwyn, Ill: Physicians' Record Company, 1994)
J Collett-White and K Ward	'Appraisal of mental hospital patient case files: the Bedfordshire Record Office experience' *Journal of the Society of Archivists,* 15,2 (1994) [Example of a retention policy and accompanying documentation]
WE Deming	*Some Theory of Sampling* (London : John Wiley & Sons, 1950) [Dated but still an excellent and accessible account of sampling methodology and procedures]
Department of Constitutional Affairs	*Lord Chancellor's Code of Practice on the Management of Records issued under section 46 of the Freedom of Information act* 2000 (November 2002) [Available on the Department of Constitutional Affairs website: http://www.dca.gov.uk]
Department of Constitutional Affairs	*Secretary of State for Constitutional Affairs' Code of Practice on the discharge of public authorities' functions under Part 1 of the Freedom of Information Act 2000 issued under section 45 of the Act* (November 2004) [Available on the Department of Constitutional Affairs website: http://www.dca.gov.uk]
Colin Gale and Catherine Redfern, on behalf of the Health Archives Group	*After the hundred year rule. Guidance for archivists and records managers on access to medical records under the Freedom of Information Act* (Society of Archivists Best Practice Guidelines 8, 2004) [Available on the Society of Archivists website http://www.archives.org.uk/

There is also a link from the HARG website http://www.healtharchives.org]

PL Garside and B Jackson — *Model guide to Lancashire Mental Hospital Records* (Manchester: University of Salford, 2001)

M Hedstrom — 'Understanding electronic incunabula: a framework for research on electronic records' *American Archivist*, 54,3 (1991)
[An examination of the social, historical, and cultural context of electronic record keeping]

E Higgs — 'Machine-readable records, archives and historical memory' *History and Computing*, 4,3 (1992)
[Summary of the methodological problems that information technology may pose for archivists and other information appraisers, storers and maintainers]

E Higgs — 'Particular instance papers: the historical and archival dimensions' *Social History*, 10,1 (1985)
[A critical examination of the issues surrounding the appraisal of large series of case papers]

T Homfray — *Retention of medical records with particular reference to medical genetics: a report from the Clinical Genetics Committee of the Royal College of Physicians of London* (London: Royal College of Physicians of London, 1998)

F Hull — *The use of sampling techniques in the retention of records : a RAMP study with guidelines* (Paris: UNESCO, 1981)
[The best all round work on record sampling for long-term retention]

I Kearsey — 'Some Problems in Placing Modern Medical Records in Public Archives' *Archives and Manuscripts*, 17 (1989)
[This article focuses on Australia, however much of the discussion and advice offered is applicable to the United Kingdom]

Information Commissioners Office — *Use and Disclosure of Health Data. Guidance on the Application of the Data Protection Act 1998* (May 2002)
[Available on the Information Commissioner's website: http://www.ico.gov.uk/]

King's Fund — *Hospital clinical records* (London: King's Fund Centre, 1985)
[Proceedings of a symposium at the King's Fund Centre, Wednesday 8 May 1985, in collaboration with The Wellcome Institute for the History of Medicine Contemporary Medical Archives Centre. Contributions by A. Nicol, J.G.A. Sheppard, W.B. Marshall and J. Pepler

are all particularly valuable]

J McDonald — 'The case against microfilming' *American Archivist*, 20,4 (1957)
[Surprisingly little seems to have changed since the 1950s. Read this before recommending investment in microfilming or optical disc technology]

J MacDougall and J Brittain — *Use of information in the NHS* (London: British Library, 1992)

McKay, E. — 'Random sampling techniques: a method of reducing large homogeneous series in Congressional papers' *American Archivist*, 14,3 (1978)

H Maxwell-Stewart (et al.) — *Selecting clinical records for long-term preservation: problems and procedures* 2nd ed., (Glasgow: Wellcome Unit for the History of Medicine, University of Glasgow, 2000)
[Useful discussion on background problems, with case studies. Argues for the use of systematic sampling techniques and improved information management structures as a solution to clinical record storage problems]

A Michelson and J Rothenberg — 'Scholarly communication and information technology: exploring the impact of changes in the research process on archives' *American Archivist*, 55,2 (1992)
[Comprehensive discussion of the implications of the I.T. revolution for both data users and preservers]

JH Mitchell — *A new look at hospital case records* (London: H.K. Lewis, 1969)
[Now not so new, but contains an interesting argument for the retention of all discharge sheets for records threatened with destruction]

E Parker — *Managing your organization's records* (London: Library Association, 1999)
[Guidance on good records management practice. Not specifically for health records]

IA Penn (et al.) — *Records management handbook* 2nd ed. (Aldershot: Gower, c1994)
[Guidance on good records management practice. Not specifically for health records]

Public Record Office Victoria, Australia — *General disposal schedule for public health services patient information records* (Victoria: Public Record Office, 1999)
[An excellent example of government guidance on disposal of medical records, which can be viewed on the website of the Public Record Office Victoria, at: http://www.prov.vic.gov.au/]

The Public Services Quality Group and The National Council on Archives	*British standard for access to archives* (7th, final edition September 2003)
GB Risse and JH Warner	'Reconstructing clinical activities: patient records in medical history', *Social History of Medicine* 5,2, (1992) [Argues for the retention of medical records, and provides an outline of recent historical work employing data drawn from hospital case records]
Z Sabovic and D Pearson (eds.)	*A healthy heritage: collecting for the future of medical history* (London: Wellcome Trust, 1999) [Proceedings of a conference held at the Wellcome Trust 25-26 February 1999]
Scottish Ministers, in consultation with the Scottish Commissioner and the Keeper of the Records of Scotland	*Freedom of Information (Scotland) Act 2002, Code of Practice on records Management,* (November 2003) [Available on the Scottish Executive website: http://www.scotland.gov.uk]
E Shepherd and Geoffrey Yeo	*Managing records – a handbook of principles and practice* (London, Facet Publishing 2003) [Guidance on good records management practice. Not specifically for health records]
L Steck and F Blouin	'Hannah Lay & Company: sampling the records of a century of lumbering in Michigan' *American Archivist*, 37 (1974) [Despite the esoteric title, worth reading for a good overview of decennial cluster sampling]
The National Archives, Society of Archivists, Records Management Society and National Association of Information Managers	*Code of practice for archivists and records managers under Section 514) of the Data Protection Act 1998,* (draft version 4, 2006) [This document can be accessed via the Society of Archivists' website, at: http://www.archives.org.uk/]
AJ Wilburn	*Practical statistical sampling for auditors* (New York: Marcel Dekker, 1984) [Especially good on systematic sampling]