The Management of Medical Records in Government Hospitals in Ghana: An Agenda for Reform

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Thesis submitted for the Degree of Doctor of Philosophy in the Faculty of Arts of the University of London

University College London
January, 2000

To my parents

Rejoice in the Lord always; again I say rejoice.
Let all men know your forbearance. The Lord is at hand.
Have no anxiety about anything, but in everything, by prayer
and supplication with thanksgiving let your requests be made known
to God. And the peace of God which passes all understanding, will keep
your hearts and your minds in Christ Jesus.

PHILIPPIANS 4:4-7

Acknowledgements

Many people have in many ways been directly or indirectly involved in the preparation of this thesis. To all of them I have cause to be grateful.

I wish to thank all my supervisors without whose guidance, patience and support I could not have completed this work. Dr. Anne Thurston and Mr. Geoffrey Yeo I have to thank on several counts. They in the first place provided guidance and direction during the initial stages of this study, helped me through the review of literature and in the design of the data collection instruments, and arranged my hospital visits and attachments in the UK and The Gambia. In this context I was glad that my field data proved to be of some use to Mr. Yeo in the preparation of the 1997 International Records Management Trust Report on information management in the Ministry of Health in Ghana.

Mr J. H. St. John McIlwaine and Miss Elizabeth Danbury I thank for their supervision over the three years that followed. I am greatly indebted to them for their time and commitment. In particular, for their valuable comments and criticism which helped me to analyse my field data in a meaningful way, and for their painstaking review of my drafts and encouragement to see my way clear to each new step in the finalisation of the thesis.

I am also appreciative of the assistance I received from the various people who helped me during my field work in Ghana. Special thanks are due in this regard to Messrs. A Amanning, E. K. Appah, E. Asomani Darko, E. Boateng, A. Arhin, A. Djan and Miss Agatha Ashie, all Medical Records Officers in the hospitals included in the survey. Messrs Awuah Barima, Prince Boney, J. B. Danquah, D. Darko and Emmanuel Larbi of the Centre for Health Information Management (CHIM) are also gratefully thanked for their cooperation, as are Messrs. I. Adams, A. Asamoah-Baah, Edusei and Dr.

Ahmed of the Ministry of Health. All of them gave more than generously for their time in providing information useful for the study.

To Mrs. Don Beaver, the Health Records Manager of the Royal London Hospital, and her counterpart at the West Glasgow Hospitals, Mrs Mary Jack, a most particular word of thanks is due. Not only did they allow me unlimited access to their departments where I was attached for a period of time, but they gave a warm personal welcome to this particular stranger in their midst.

Mr. Andrew Grifiths and Miss Marion Hill of the St. Bartholomew's Hospital Archives are thanked for all their help and patience during my visits to the Archives.

Mr. Alistair Tough of the Greater Glasgow Health Board Archives also has a call on my gratitude not only for arranging my visit to Glasgow, but for making available to me exceedingly useful research material which I would not otherwise have found.

Dr. Barbara Craig of the University of Toronto, Canada and Dr. Anne Mitchell of Monash University, Australia, I thank for being ever-helpful sources of information on medical record-keeping in North America and Australia.

Finally, I thank all friends in the UK for their warmth, hospitality, and reassurance when times were difficult.

In conclusion I thank the Department for International Development (DfID) for the funding without which this study could not have been undertaken. This support is greatly acknowledged.

In writing this thesis every reasonable attempt has been made to attribute comments to the right people and publications.

Abstract

Health sector reforms aimed at addressing fundamental problems in health care delivery, and also at preparing the ground for a *National Health Service,* are currently underway. The reform programme is crucially dependent on improving information flows and information management to facilitate resource planning, monitoring and evaluation. Medical record systems and their management are central to this process, and are here made the subject of review. The emphasis throughout is upon practical solutions that are appropriate to the Ghanaian situation.

My purpose is to outline a framework for the development and management of a standardised, coherent medical record system. The state of the art in the creation, maintenance, use and final disposition of medical records is critically reviewed and evaluated with a view to recommending remedial measures and formulating research proposals that could contribute to the improvement of the existing system.

The study is limited to selected government-run regional and teaching hospitals (6 in all). For purposes of data collection, the study relied on survey research and adopted the 'records life cycle' concept for its analysis.

The study revealed that the problems inherent in the present record systems are due to the absence of sufficiently formalised policies, guidelines and procedures, and to the fact that those that exist are not properly enforced. It is argued that the causes of these deficiencies lie in a lack of accountability and lack of appropriate organisational and managerial structures. A second problem has been the paucity of essential resources; financial, material and human.

The study is organised into three sections, each divided into a number of chapters. Section I outlines the context of the study and has three chapters: *Introduction, Overview of the Ghana Health Service,* and *The Medical Record in Historical Perspective.* Section II presents the case study and documents the findings of the research (Chapters 4, 5, 6, and 7). A detailed analysis of existing routines and procedures (making comparisons with working methods elsewhere, chiefly English and Scottish hospitals) is presented, painting a picture of the current condition of the function, and providing

essential insights regarding the changes required. Section III has two chapters. Chapter 8 recapitulates in brief the key problems discussed in the case study and for which practical solutions are required in order to substantially improve the medical record function. This chapter further proposes solutions to the problems that require intervention at the institutional or operational level, and also to problems which require a strategic approach. Chapter 9 concludes the study and outlines the proposals for reforms presented in Chapter 8.

Table of contents

SECTION II: THE CASE STUDY

SECTION III: AN AGENDA FOR THE FUTURE

List of Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ADB	African Development Bank
AHIMA	American Health Information Management Association (Formerly AMRA)
AMRA	American Medical Record Association (Now AHIMA)
CHAG	Christian Health Association of Ghana
CHIM	Centre for Health Information Management
COSTAR	Computer-Stored Ambulatory Record System
CPR	Computerised Patient Record
DHMT	District Health Management Team
EPR	Electronic Patient Record
GCE	General Certificate of Education
GEHR	Good European Health Record
GGHB(A)	Greater Glasgow Health Board (Archives)
GHS	Ghana Health Service
GIMPA	Ghana Institute Management and Public Administration
HL7	Health Level 7
ICD-10	International Classification of Diseases Tenth Version
ICU	Intensive Care Unit
IHRIM	Institute of Health Record Information and Management
IM&TSG	Information Management and Technology Strategy Group
IRMT	International Records Management Trust
ITU	Intensive Treatment Unit
MDPI	Management Development and Productivity Institute
MoH	Ministry of Health
MPI	Master Patient Index
MRA	Medical Record Assistant
MRO	Medical Record Officer
MTHS	Medium Term Health Strategy
NGOs	Non Governmental Organisations
NHS	National Health Service
ODA	Overseas Development Administration
OMR	Out-Patient Medical Record

PAS	Patient Administration System
PHC	Primary Health Care
POMR	Problem-Oriented Medical Record
PPMED	Policy, Planning, Monitoring and Evaluation Division
PPR	Paper Patient Record
PRAAD	Public Records and Archives Administration Department
PROMIS	Problem-Oriented Medical Information System
RMS	The Regenstrif Medical Information System
SOR	Source-Oriented Record
TBAs	Traditional Birth Attendants
TMR	The Medical Record
UMR	Unit Medical Record
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organisation

List of Tables, Figures and Pictures

Tables

Figures

Pictures

Chapter 6

List of appendices

Appendix

1 Background and introduction to the study

1.1 General

Health has been a priority issue since Ghana became an independent state in 1957. Successive governments have consistently sought to address the double task of raising the health status of the nation and keeping up with increasing demand on the health sector as the population expanded from 6.7 million in 1960[1] to 8.6 million in 1970[2] and 12.3 million[3] at last count in 1984. The Projection for 1999 stands at 19.5 million.[4]

Central government, supported by external assistance from bilateral and multilateral donors, notably UNICEF, WHO, the World Bank, DfID formerly ODA (UK), USAID, UNFPA and The African Development Bank (ADB), has been the main financial provider to the sector.[5]

In the late 1970s Ghana began to experience economic decline. This adversely affected the performance of all sectors, including health. Given the politically sensitive nature of health, from the 1980s onwards government has been making a point of injecting substantial amounts of money to improve performance. Following modest economic gains due to the Economic Recovery Programme introduced in 1983, the Ministry of Health (MoH) began to receive a larger proportion of the government recurrent budget. Thus in 1986 for instance, health obtained 9.8 per cent of government's recurrent budget. This rose to 10.7 per cent in 1989 and 10.9 per cent in 1990.[6]

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[1] Census Office, 1960 Population of Ghana, Vol. V, General Report, Central Bureau of Statistics, Accra, 1964, p. 27

[2] Republic of Ghana, (Ghana Statistical Service), Analysis of Demographic Data, Vol. 1 (1995), p. 1

[3] Republic of Ghana, (Ghana Statistical Service), Analysis of Demographic Data, Vol. 1 (1995), p. 1

[4] Republic of Ghana, (Ghana Statistical Service), Analysis of Demographic Data, Vol. 1 (1995), p. 58

[5] Republic of Ghana, (MoH), Health in Brief, Accra, 1991, p. 38

[6] Republic of Ghana, (MoH), Health in Brief, Accra, 1991, p. 34

Since 1990 the health sector has continued to receive an average 8-10 per cent of the total government budget.[7]

Efforts to improve health yielded good results. Taking the quarter century between 1970 and 1993 as a whole, infant mortality dropped from 133 to 66 per 1000 live births, with life expectancy increasing from 45 to 55 years. These improvements put Ghana above average for Africa generally. However, in relation to other countries with comparable levels of development, such figures look less impressive. Botswana, for instance, has over the corresponding years seen the IMR fall from 101 to 35, and life expectancy being up from 45 to 68 years.[8]

To sum up, at the end of the 1990s access to, and the quality and utilisation of primary health services are still low: '... Ghanaians continue to suffer from heavy burdens of infectious diseases, malnutrition, poor reproductive health and non-communicable diseases'.[9]

Failure for optimal performance in the health sector has been blamed on a number, or a combination, of factors with the chief culprits being weak management structures at national and institutional level; underdeveloped health support functions; and misapplication of financial and material resources.[10]

Currently a comprehensive reform package is underway to tackle fundamental problems in the health sector and to lay the groundwork for the introduction of the *Ghana Health Service (GHS)*. 'These reforms mark the start of immense changes in the way health care services are delivered in Ghana. There are several strands to these changes, including the re-organisation of funding mechanisms, structural re-organisation, and decentralisation'[11].

To redress the situation, attention is in the first place being directed towards the identification and development of health status indicators with a bearing on how the sector is run. Successful use of such indicators to facilitate

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[7] See Republic of Ghana, (MoH), Annual Estimates, 1990-1999 and Republic of Ghana, (Ministry of Communication), Budget Statement and the Economic Policy of Ghana, Accra, 1991, p.15; 1992, p.10; 1993, p.5; 1994, p.10; 1995, p.11; 1996, p.11; 1997, p. 9; 1998, p. 14; 1999, p. 22

[8] Republic of Ghana, (MoH), Medium Term Health Strategy: Towards Vision 2020, Accra, 1995, p.1

[9] Republic of Ghana, (MoH), Health Sector 5-Year Programme of Work, Accra, 1996, (See Executive Summary)

[10] Republic of Ghana (MoH), Health Sector 5-Year Programme of Wok, Accra, 1996, (See Executive Summary)

[11] Republic of Ghana, (MoH), Information Management: A Collaborative Scoping Study, International Records Management Trust, GH 64 Vol. II, 1997, P.4 1997, p. 4

improved resource planning, monitoring, and evaluation, depends utterly on the availability of accurate and reliable data.

While information has never been undervalued in the health sector, this recent period of re-evaluation and reform has seen a distinct shift of perception in the recognition that information is an essential tool which needs to be managed in its own right if the aims of the reforms are to be translated into reality. In other words, it is now fully appreciated that effective information management is vital to underpin the initiatives.

The current emphasis on developing and building up a national health information network naturally brings into the spotlight the medical record and the desirability of addressing problems which impede this function's efficiency in the consolidation of a nationwide health information system. The fact, for a start, that the medical record is a prime source of morbidity and health services data make it a crucial link in the information chain. As an end product too, the medical record is central to many of the changes being proposed as part of the reform process. For example, improved quality care, clinical audit, and contracting for functional services, are all areas which rely on particular categories of information which are obtainable from no source other than records.

But at this moment in 1999 when the record system is designated to become an integral component of health information system, the function is beset by critical, endemic difficulties deep from within. There exists, therefore, an urgent need to bring the medical record function into line with criteria appropriate to the requirements of imminent *GHS*, if not in this century, then as fast as possible in the next.

Essentially, the service has remained grounded in the practices and logistics of an earlier period, and 'appears to have little sense of future direction'. Briefly, some of the problems being faced by the function are:

lack of adequate, policies and procedures
at both national and institutional level

insufficient resources, including qualified manpower

lack of standardised procedures among health institutions

the general absence of a coordinated records management
programme

It is not unfair to state that at present the state of medical records management in Ghana is chaotic, with hospitals and national institutions

floundering in a structural void. At institutional level, where there is no shortage of evidence pointing to a high degree of commitment to the principle of the function, this has long been recognised. That these shortcomings have persisted for so long is because the significance of an efficient system of medical record-keeping has been underestimated at higher level. As matters stand, all the indicators suggest that the state of the art of this pivotal tool in health care delivery is progressively lagging further and further behind advances being made in other areas. Since this situation is to the detriment not only of the health sector itself, but of the national health information data bases collectively, it is clearly more than time that the medical record function be brought into line with the modern age. This is what the study is about.

1.2 The purpose of the study

The study is designed to present a conclusive case for the development and management of a standardised and coherent medical record system in Ghana. The system now in place is severely under pressure after decades of neglect, a rudderless approach of *ad hoc* decision-making and piecemeal solutions, and no structure of formal accountability. Furthermore, it is not easy to see how the current situation can be reversed without a resolute strategy of coordinating and planning, capital investment and regulatory legislation. This alone would create a viable platform for consensus between the various interest groups and areas of expertise involved, and thus allow the preconditions to be set for the delineation of definitive policy directives, guidelines, control mechanisms, and a chain of formal accountability. Failing this, there is no doubt that the maintenance of the nation's health records will continue to depend on chance and circumstance.

1.3 Objective of study

The study examines medical record systems in tertiary and regional hospitals. Procedures relating to the creation, maintenance, use and final disposition of records in hospitals will be critically reviewed and evaluated with the objective of identifying pitfalls to efficiency, recommending remedial measures, and formulating proposals for further research which might contribute to improvement in the future.

More specifically the study will:

document the present medical record systems

specify the main obstacles to the development and implementation of superior systems

articulate strategies for upgrading the systems

outline other areas of constructive research endeavour which, if pursued, could generate knowledge useful to the enhancement of the function.

1.4 Significance of the study

The health reforms currently being introduced have led to a requirement for reliable sources of accurate patient-based data, and at the same time made obvious deficiencies in this area. To begin with, more comprehensive information about patient care is wanted to support clinical audit, while the proposed introduction of contracts for service provision calls for more detailed information on cost of treatment, so that suitable billing processes can be set up. And thus the list continues. The very way in which health care — from primary through secondary to tertiary care — is organised and delivered via the referral ladder necessitates the need for speedy and accurate information exchange. All of this calls for an order of efficiency from the medical record system for which the capacity simply does not exist. The inference of this is that the medical record function in its present state is a potentially serious liability to reform. Significantly, this study comes at a time when the operational problems and bottlenecks in the function are increasingly emerging into the open and becoming a target of widespread concern and censure. Generally, therefore, it is envisaged that the recommendations for reform which this study will propose should not only offer solutions for the institutions covered by the survey but point the way forward for others too.

The major consideration in framing my design for reform has been that the function should, above all, be developed as a flexible information tool, with optimal capability to equally service immediate (health care) ends and the national health information network as a whole, particularly at sub-systemic level. Medical records, for instance, contain morbidity data and other health services-related information. Hence, my recommendations are,

above all, aimed to enhance the function's capacity to support health care delivery and research.

Another factor which makes the case for reform all the more urgent is the imminent establishment of a national health insurance scheme, for which pilot schemes are already in progress in selected regions of the country. Again, it is difficult to see how a scheme of this magnitude can realistically be implemented without the solid bedrock of an efficient medical record system.

As mentioned earlier, the scope of the information carried by the medical record goes far beyond that of patient care and health care planning. Key among its many secondary uses is in epidemiological research, both prospective and retrospective. The latter, as Tough for one has noted, requires records with an active life span of at least 30 years.[12]

Historical research in the health field relies on old records. Yet Ghana at present has no medical archives to facilitate such research, nor is there evidence of much interest in records among historians. This apparent neglect of an important source must certainly in part be attributed to the unavailability of records. Hence the study puts forward some proposals for promoting the development of medical archives in health institutions. While this may not seem an attractive proposition for the moment because of the financial implications, it is nevertheless necessary to think and plan for it now.

Between 1992 and 1996 a series of independent studies examined record-keeping practices and procedures in some district health institutions. The aim was to identify mechanisms for strengthening the record systems as the foundation of a national health information system. In concentrating of the regional and teaching hospitals, the intention in this study was to complement what has already been accomplished at district level, and thereby round off the picture of records systems in the health sector.

In the interim, another study has appeared of which aspects touch on this study, and in which I was formally involved. This study, by the International Records Management Trust (IRMT), will be discussed in section 1.10

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[12] Hamish Maxwell-Stewart and Alistair Tough 'Cutting the Gordian Knot: or How to Preserve Non-Current Clinical Records Without Being Buried in Paper' Archivaria, 41: 1996, p. 66

1.5 Theoretical frame of reference

The study will take the life cycle principle of records management as its criterion for analysis. This principle is based on the premise that records pass through a series or continuum of distinctive stages or phases from the time of to the end of their working life, when they are either destroyed or preserved.

Records management and archival science accept two main theoretical perspectives on phasing the record life cycle. The first defines the different stages primarily in terms of their frequency of use by the creating or user agency, starting from when a record comes into existence: that is when information is first received or generated and recorded. The second stage is the period of active use which may 'range from a few days to several years'.[13] This is followed by a third stage of inactive use, implying that although these records are still required by the creating agency, they are referred to less often. The final, disposition phase, entails the destruction of records of no further use, and arrangement for the permanent retention for those of lasting value or interest. At this stage records which are no longer useful to the creating agency are destroyed, while those with continuing and enduring value are preserved.[14]

The second methodology of record life cycle management breaks down the stages of a record's life span strictly in terms its functions in relation to information management. There are 'four major headings or phases representing the total life cycle of records'. These are:

1. The record creation phase which includes the elements of forms design and management, the preparation and management of correspondence, the management of reports and directives, the development management information systems, and the application of modern technology to these processes.

2. Records use and maintenance is a phase encompassing the development of filing and retrieval systems, file management and telecommunication management, the selection and management of office copying machines, systems analysis, the development and maintenance of vital records programmes, the operation of records centres, the application, as

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[13] See Susan Z. Diamond, Records Management, AMACOM Book Division, New York, 1983, p. 1

[14] Susan Z. Diamond, Records Management, New York, 1983, p. 1

appropriate, of automation and reprography to these processes.

3. The records disposition phase includes the identification and description of records series, the development of retention and disposition schedules, records appraisal, records disposal and transfer of permanently valuable records to the archives.

4. Archives administration encompasses the design and equipping of archival repositories, methods and processes for the repair and conservation of archives and archival information.[Rhoads concludes that a] number of these elements are increasingly dependent on the use of computers and micrographics.[15]

As the above scheme makes clear, the four consecutive stages of the record life cycle correspond with the basic procedures of records care and management.

A range of life cycle models has been developed by adherents of these two theoretical points of departure. By and large, even though the different models may vary in the details of their structural and operational characteristics, they collectively form the foundations of the basic concepts and techniques of modern records management. Rhoads, weighing up the ideas of Atherton, Chatfield, Couture and Rousseau, De Puy, Dojka and Conneen, Garrison, Penn, and Perotin, comes to the conclusion that:

> A comprehensive records management system will be concerned with everything that happens to the records of an organisation throughout their entire 'life cycle,' that is from their 'birth' through their active and reproductive life as a means of accomplishing the organisation's functions, to their 'death' or destruction when all useful purposes have been served, or their 'reincarnation' as archives if they have values warranting permanent preservation.[16]

The records management literature provides comprehensive descriptions and explanations of the various techniques and conventions of planning, organising, coordinating, directing, controlling, and supervising all categories of records from their creation to their final disposition. Although the literature is made complicated by lack of a standard terminology, analysis

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[15]James B. Rhoads, The Role of Archives and Records Management in National Information Systems: A RAMP Study, Paris, Unesco, PG1-83/WS 21 1983, p. 24

[16]James B. Rhoads, The Role of Archives and Records Management in National Information Systems: A RAMP Study, Paris, Unesco, PG1-83/WS/21, 1983, p. 2

indicates there is no disagreement on the basic functions and the scope of the systems and programmes appropriate to the management of records through the life cycle.

Central to the structure of a records management system are the interrelated functions of service and control. Service functions encompass the 'basic activities performed by records staff, regardless of the size and complexity of an organisation's operations to facilitate effective management of recorded information through all stages ... from creation to disposal.'[17] Analysis shows that service functions fall into three basic categories or fields of activity: (i) creation and accumulation; (ii) organisation and arrangement; and (iii) maintenance and use.

Interrelated with these service functions is the concept of control, the second function of a records management system. The control function is exercised through the various 'records management techniques,' generally referred to in the literature as *components* or *elements*, which have been developed to facilitate service functions.[18] Dojka and Coneen, Garrison and Maedke *et al* are leading proponents of the view that the creation, receipt, and distribution of records can be controlled by implementation of various combinations of the following components or elements: correspondence management, directives management, reports management, mail management and reproduction management.

In the literature it is generally agreed that these components or elements determine the scope of a records management system. Conneen and Dojka hold that the concept of using records management techniques to propel records through the life cycle is 'emphatically not an all-or-nothing proposition. ... There are choices to be made ...' according to the availability of resources, the size, character, and scope of operations, and the needs of management. In other words, the control function of a records management system is tailored to suit the particular nature and extent of an organisation's operations.[19]

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[17] Jay Atherton, 'From Life Cycle to Continuum: Some Thoughts on Records Management - Archives Relationship, Archivaria, 21: 1985-86 p. 51

[18] John Dojka and Sheila Conneen, 'Records management as an Appraisal Tool in College and University Archives', Archival Choices, Nancy E. Peace, (ed.), Lexington, Massachusetts, Lexington Books, 1984, p. 20

[19] John Dojka and Sheila Conneen, Records Management as an Appraisal Tool in College and University Archives', Archival Choices ,Nancy E. Peace, (ed.), Lexington, Massachusetts, Lexington Books, pp. 20- 21

Finally, the literature leaves no doubt that there is a number of management elements which should be at the core of any record keeping system. These elements, it is generally agreed, should be: a files classification system, a records retention schedule and a records procedural manual.[20] Together, it would appear, these three components provide the indispensable framework for establishing and monitoring an effective records keeping system.

1.6 Research parameters

The research undertaken for this study is based on critical analysis and evaluation of a collection of data obtained during field survey in the form of responses to interviews, and personal observation. To guide the research the following areas of inquiry were identified:

> The state of the art of medical records management in government hospitals
>
> Issues affecting the way in which records are created, maintained and used
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> Problems existing now; new problems arising or likely to arise; possible lines of action to resolve these
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> Existing professional systems and organisational structure
>
> Whether medical record systems and practices used elsewhere could be adapted to suit the Ghanaian environment.

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[20] Carol Couture and Jean-Yves Rousseau, The Life of A Document, Vehicle Press, Montreal, 1986, p. 36

1.7 Research methods

1.7.1 Data collection instruments

The literature on research methods identifies a number of methods through which research may be conducted. These methods include experimental research, historical research and survey research.

In the social sciences the survey method is one of the most established means used to evaluate a situation. More recently it has become highly respected in the field of archives and librarianship. Survey works on the premise that by carefully following certain scientific procedures, it is permissible to make assumptions about a large group of things or people on the basis of observing a comparatively limited sample drawn from that group.[21]

Records managers and archivists appreciate the survey method particularly for its adaptability and amenability to procedures relating to appraisal, acquisition and description. More specifically, in modern records and archives management the use of surveys has proved exceptionally relevant to — any one or all of— the following objectives: identifying/locating records for acquisition; gathering information on intramural records creation and accumulation to expedite efficient management and disposition procedures to optimising information on specific types of records distributed over different locations in order to promote their preservation, and their use for research purposes.[22]

Given the nature of this study, the survey method was considered to be the research tool most appropriate to the objectives and character of the work. Survey research relies on three main instruments for the collection of data and other information: questionnaire, interview, and observation.[23] After weighing the pros and cons of each in the specific character of the study, it was decided that the most appropriate method of collecting data would be through interview schedule reinforced by personal observation.

The interview schedule was designed to reflect the aims and objectives of the study, and conceptualised in keeping with the areas of inquiry. The

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[21]Charles H. Busha and Stephen P Harter, Research Methods in Librarianship: Techniques and Interpretation, Academic Press Inc., New York, 1980, p. 54

[22]J. A. Fleckner, Archives and Manuscripts: Surveys, Society of American Archivists, Chicago, Illinois 1977, pp. 3-6

[23]Ronald R. Powell, Basic Research Methods for Librarians, (2nd ed.), Ablex Publishing Corporation, Norwood, New Jersey, 1991, p. 83

schedule was organised into two parts, with each part subdivided according to the different issues and topics to be covered.

Part 1 was formulated with health services administrators and managers in mind; Part 2 was for medical record officers. Most of the questions were open-ended. The very few structured questions that were interspersed, required a yes/no, or one response from a checklist of possible replies. Open-ended questions required either a written or a verbal response, and were so formulated that the participants had plenty of latitude to express their opinion freely.

To augment the information obtained by interview, observational sessions were scheduled to observe how the procedures and operations under investigation manifest themselves within the hospital setting. This aspect of the research related specifically to admission procedures and records creation, the location / retrieval of records, and the standard of facilities and so forth. A complete list of observational categories / cheklist was prepared and attached to the interview form. All observations were carefully and systematically recorded.

Discussions were also held with officials at the MoH, and the Centre for Health Information Management (CHIM). Data collection in Ghana started in the first week of December 1996, and was completed in mid-April in 1997.

1.7.2 Preliminaries to data collection

During the initial phase of the project, medical record literature was reviewed in order to acquire the necessary background information and establish a frame of reference. At this stage too, my supervisors arranged for me to attend the medical record department at Royal London Hospital and the Archives of St. Bartholomew's Hospital for a duration of ten weeks each. The aim of this was to provide me the opportunity to observe at first hand how current and non-current medical records are managed in major London teaching hospitals. Equally, this gave me the opportunity to become familiar with the problems and drawbacks, as well as the advantages, of medical record systems of modern institutions of this kind. In addition to this, a seven-day visit to a number of health institutions in Scotland was arranged. These were the West Glasgow University NHS Trust, the Department of Public Health and the Greater Glasgow Health Board Archives (GGHBA), all in Glasgow. At all these establishments discussions were held with health record managers, medical archivists, and other key people. Furthermore, the

Scottish journey yielded an unexpected bonus in that a records management workshop, organised jointly by the Royal Bank of Scotland and the University of Glasgow was taking place that very week.

Besides these visits, I also travelled to The Gambia to visit the Royal Victoria Hospital, where the Overseas Development Administration (ODA), now the Department for International Development (DfID), had been supporting a hospital records project. Collectively, these fact-finding missions enabled the me to see how the theoretical precepts of medical record management translate into real-life procedures. This experience provided a cohesive basis for the formulation of the research topics, and for the design of a draft interview schedule closely tailored to the purpose and objectives of the research.

While this study is not a comparative study of hospitals in Ghana and elsewhere, reference will be made, where appropriate, to aspects of hospital experience which are relevant to the Ghanaian picture.

1.7.3 Hospitals included in the study

Hospitals in Ghana fall into two broad categories: government-controlled and privately-owned. The public sector comprises two tertiary/teaching hospitals, eight regional hospitals and thirty-eight district hospitals. The study concerned government-controlled hospitals only, and was targeted on the two tertiary hospitals and six regional hospitals. (See appendix 2 for names and location of regional and teaching hospitals). No district hospital was included. The reasons for selecting these particular hospitals were two-fold.

First, government hospitals were chosen because it was thought that as the best regarded and also the most institutionalised type of establishment, these were the most likely to lend full cooperation. More importantly, current government health sector reform initiatives mean that medical records are now a hot issue in government hospitals.

Second, the tertiary and the regional hospitals are homogeneous in terms of the services provided and the functions performed. Both types deliver not only general health care services, but specialised care in broad areas of medicine and, at varying levels of sophistication in surgery. Because of this range of services these hospitals occupy a leading-edge position as referral centres for all health facilities in the country. Serving large numbers of the population has implications for the number of patient records generated, and

how these are managed. Furthermore, as these institutions also function as research and training establishments, their medical records are in regular use for education and investigation. On this account, all of these hospitals have well established (though not professionally-established) records departments, giving them a dimension which made them particularly suitable candidates for study.

These considerations — especially when viewed in the perspective of on-going reform in the health care delivery services; the key position of government hospitals within the sector; and the growing awareness in government and professional health circles that the medical-record keeping systems and their management are due for a thorough overhaul — formed the rationale for targeting tertiary and regional hospitals for the study.

In order to safeguard confidence, the actual names of the hospitals surveyed have not been mentioned in this study.

1.8 Limitations

One limitation of the study is that it was confined to hospital patient records only, even though hospitals generate a wide variety of administrative records. A second was the limitation of the study to government hospitals only. On this account, while the findings may be used to generalise about other government hospitals outside the study, they cannot with any degree of confidence be used to generalise about private and quasi-government hospitals.

In addition, the medical record officers of two of the regional hospitals selected (Effia-Nkwanta Hospital and Ho Government Hospital) could not interviewed, as they had gone on leave. In the event, the information obtained from the hospital administrations, together with first-hand observation of the department, did not suffice to compensate for the information that the medical record officers would have been able to supply. The data collected was, therefore, considered to be inadequate, as a result of which these two hospitals were with considerable regret excluded from the study.

1.9 A working definition of the medical record

The medical record has come to be known by a variety of names: hospital patient record, clinical case notes, case notes and health record. All this constitute one and the same thing.

As my working definition of the medical record I have followed Hamish Maxwell-Stewart *et al,* who define patient case records as '... records containing information relating to an attendance or a series of attendances, at a hospital either as an in-patient or as an out-patient'.[24] The modern hospital patient hospital record contains both clinical and administrative information generated during the course of treatment.

As Hamish-Maxwell *et al* point out, 'clinical information is held in many other records created by hospitals. These include books of admission and discharge, ward records or ward journals, operating theatre registers, x-ray registers, birth and death registers, laboratory records, pharmacy records and others'.[25] None of these categories are dealt with in the present study. The study is exclusively concerned with the clinical and other patient data compiled during the course of treatment (medication) by various health professionals kept in folders.

1.10 The International Records Management Trust (IRMT) Report

In 1997 the MoH commissioned a study from the International Records Management Trust (IRMT) on information management within the Ministry. Medical Records were one of the elements of a more comprehensive agenda for discussion. The onus in this connection was on identifying mechanisms for reinforcement of the medical record-keeping systems as a building block of a national health information system. This study, which concentrated / focused on selected health institutions in and around the Greater Accra Region, took place at a time when my own project was in its eighteenth month and I was in the process of analysing and evaluating my research data. In this context, when the IRMT approached me in London for advice on their upcoming study, I was more than glad to be of use to them by discussing and

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[24] Hamish Maxwell-Stewart *et al,* Hospital Patient Case Records: A Guide to their Retention and Disposal, London, St Bartholomew's Hospital, 1996, p. 1

[25] Hamish Maxwell-Stewart *et al.,* Hospital Patient Case Records: A Guide to their Retention and Disposal, 1996, p. 1

releasing my data and preliminary findings. Hence, not surprisingly, the IRMT findings and conclusions to some extent overlapped with my own. However, I must confess that in the final event I did not find myself entirely at one with at least some of aspects of the proposals to emerge from those conclusions. (See Chapter 8 Section 8.6).

1.11 Organisation of the study

The study is organised into three sections, each divided into a number of chapters, followed by a conclusion. Section I (Chapters 1-3) sets the scene for the study. Section II (Chapters 4-7) sets out the case study on which the research is based. Section III, (Chapter 8) puts forward recommendations for the solution of the problems identified in the case study. Chapter 9, the conclusion summarises the main issues addressed in the study and highlights the recommendations.

The three Section I chapters are: Chapter 1, *Introduction*; Chapter 2, *Overview of the Ghana Health Service* and Chapter 3, *The Medical Record in Historical Perspective.*

Chapter 1, *Introduction,* provides the background to the study in terms of its motivation and origins, and its purpose, rationale, and objectives. Also set out are the a-priori limitations imposed on the study; the key definition of the core term 'medical record'; and a description of how the thesis is organised.

Chapter 2, *Overview of the Ghana Health Service* discusses the changing nature of health delivery in Ghana and, arising from this, the requirement for records and information systems designed to monitor and evaluate the effectiveness of aspects of change, and guide the future development of health policy. This chapter concentrates on the projected *Ghana Health Service* in which I focus on existing health facilities, organisation of service delivery, and administrative management structure. Current institutional reform is covered in some detail, with the emphasis on the genesis of the reforms, the present challenges to optimum delivery (highlighting some critical issues in the health service) which reform seeks to address, and the new structural and organisational arrangements which will carry reform forward. In this chapter I have tried to present an argument urging the need for efficient records and information systems as a necessary pre-requisite to support the reforms.

Chapter 3, *The Medical Record in Historical Perspective,* the last of the foundation chapters, summarises the evolution of the medical record from earliest times to the present. The intention has been to at least mention the

most significant of the changes that took place as medical science kept pace with new techniques and technology.

Section II, (Chapter 4-7), documents the case study and its findings. To give a picture of the current state of affairs, existing routines and procedures are described and analysed in detail. This analysis provides the essential basis for identification of the specific changes required in the different areas of the medical record function.

Chapter 4 investigates organisational aspects of the medical record departments in the hospitals surveyed. Medical record departments everywhere play an important part in the development and maintenance of efficient record systems. In any hospital setting this department is the pivot around which the management of patient information revolves. The fact that Ghana is on the threshold of sweeping health sector reform creates an urgent need for better-organised and better-structured record departments if targets are to be met. This chapter seeks to evaluate the extent to which medical record departments are at this moment adequately positioned to cope with the new challenges and responsibilities that are imminent.

Chapter 5 covers current records management with the emphasis on physical and intellectual control mechanisms. I have tried not only to identify the main deficiencies of the systems but also account for the problems. All the hospitals surveyed have manually operated, paper-based systems. While computerisation could in some respects be anticipated to enhance current performance levels in the medical record function — and, for that matter in other operational areas of the health sector as well — it is argued that this solution would not eradicate the root causes of the deficiencies the study identifies. I propose that as long as smooth management and coordination of perfectly functional, straightforward manual paper systems has yet to be achieved, the introduction of computers with their infinitely more complex procedural routines, is likely to cause more problems than relief.

Chapter 6 looks at medical records retention procedures. The many secondary uses of the medical record for historical and retrospective medical research dictate that records which have become redundant for clinical and legal purposes be kept for reference for a set period. Retention practices at the hospitals visited are described, problems which came to light discussed, and feasible solutions modelled on procedure and experience elsewhere, put forward.

In Chapter 7, which concludes the case study, I examine issues of patient confidentiality. Earlier in Chapter 3, we saw how physicians, thousands of years ago, were already creating case notes as personal memos on their

findings, patients' clinical progress and courses of treatment. In modern times, a good proportion of the data carried by medical records has for a variety of reasons become part of the public domain. Consequently, physicians and hospitals have experienced mounting pressure from many directions, including commercial interests, to reveal patient information. Today, as the twentieth century closes, the medical record does fall not far short of a multipurpose document with an external user list ranging from academics to actuaries to nappy manufacturers. As global electronic communication is assuming a life of its own, so traditional conceptions and conventions of privacy are gradually becoming meaningless. Although this is not yet the case, it should be anticipated, and precautions taken. Control mechanisms, in the form of stringent curbs on freedom of disclosure of sensitive medical material, are the only way to guarantee tomorrow's patient continued protection against violation of his intimate life.

This is one area in which Ghana lacks sufficient legislation and policy. The study argues that as changes taking place in the health sector are bound to bring these issues into the forefront of attention, now is the right time to institutionalise a comprehensive framework of legislation as the foundation for drawing up strategic policies for health institutions.

Section 3 of the study comprises the final two chapters of the research. Chapter 8 recapitulates in brief the totality of the issues and areas of concerns emerging from the case study, identifying in which areas pragmatic solutions are needed to prepare the medical record function in Ghana for the challenges of the foreseeable future and beyond. Solutions fall into two main types: problems that can be dealt with at operational or institutional level in the short term, and problems which require a medium term strategic approach. In addition to this I have also pointed areas of longer range agenda.

The problems at institutional level, such as poor standards of record-keeping, missing case notes, overcrowded records departments, and so forth, can be resolved through management action. Drawing on British examples, but with certain necessary adjustments, I have sought to propose practical measures to point hospital administrations in the right direction. At the strategic level I have made recommendations in the following areas:

- Introduction of computers
- Development of medical record education in Ghana

- Structural and organisational changes required at national level to promote the efficiency and effective management in the medical record service
- Central guidance and policy formulation

Finally, the research identifies further areas of research which could contribute to improvement of the medical record function.

Chapter 9 finalises the study with a general conclusion and a recapitulation of recommendations made in Chapter 8.

2 Overview of the Ghana Health Service

2.1 Introduction

> Essential to the definition of a medical record system is a clear understanding of the health care system it is to serve. The philosophy, programme, organisation, approach and priorities of the health care system as a whole ... should be described. WHO[1]

Accepting the rationale of this statement, the second of the foundation chapters is an account of the health care system in Ghana. On the one hand this will put into broader perspective some of the aspects of the backgrounds, motivations and objectives of the study described in the previous chapter, and on the other set the scene for Chapter 3 which will focus on the history and development of the medical record.

The overview concentrates on how services are organised and delivered, and the types of facilities available. More particularly, I shall discuss in brief the reform initiatives which are currently underway to improve the performance of the health sector. In conclusion I shall outline the implications of these reforms for the medical record function, and examine how the existing system will have to be reinforced to support the information requirements of the reform process, and ultimately, of the redesigned health service.

The kind of factual material demanded for this account did not require in-depth research, or access to classified information. My aim has been to give a general impression of the health system, but in sufficient detail to provide a solid frame of reference. For information I have drawn on Ministry of Health

[1] World Health Organisation, Guidelines for Medical Record Practice, WHO/HS/NAT.CON/80.370 Geneva, 1980, p. 11

(MoH) Publications and policy documents, government statements on health policy and strategy, and standard reference works, as well as interviews and discussions with health authorities and individuals working in the health sector.

2.2 Functions of the health system

The health system in Ghana supplies a comprehensive spectrum of services at different levels, including health promotion and preventive services. These services, which include such activities as health education, immunisation, growth monitoring and screening and treatment of disease, are targeted at safeguarding and improving the health of the population as a whole. More specifically, health promotion deals with raising public awareness of the benefits of exercise, rest, and good nutrition. The promotional services include community health campaigns, health in the workplace actions and providing back up for individual doctors and health workers with a commitment to this aspect of patient care. Preventive services focus on early screening, diagnosis and treatment of diseases and raising public awareness of the hazards of smoking, drug and alcohol abuse and unprotected sex.[2]

Another set of services deals with the curative, clinical and rehabilitative aspects of health care. Curative and clinical services — which are services concerned with the diagnosis and treatment of diseases — are clinic or hospital-based and involve treatment by conventionally-educated general and specialist physicians and surgeons. They include ambulatory out-patient services and in-patient care. The function of the rehabilitation or restoration services is to return the patient to his or her optimum state of health.[3]

Other functions of the health system include the education and training of health professionals, biomedical research, and policy formulation; the last involves the coordination of health services within a specific field, region, or jurisdiction at a supra-institutional level. Policies and regulations are intended to establish standards for institutions and practitioners.

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[2] Republic of Ghana, Medium Term Health Strategy: Towards Vision 2020, (MoH), Accra, 1995, p. 6

[3] Republic of Ghana: Medium Term Health Strategy, (MoH), Accra, 1995, p. 6

Health care in Ghana is provided by the government in partnership with the private sector. The MoH is the agency which represents the government health sector. It is the principal organised body in Ghana's health system. Several ministries and organisations collaborate with the MoH to support health delivery. These include the following: the Ministry of Local Government, responsible for sanitation; the Ministry of Agriculture, responsible for extension services in the area of food and nutrition; and the Department of Social Welfare, which provides rehabilitation services for the physically and mentally handicapped. The Ministries of Education, Defence and Interior have institutions under them which provide health services to the universities, the armed forces and the police, respectively.[4]

The private health delivery market in Ghana comprises the services provided by physicians with privately owned clinics, by traditional healers and birth attendants, by private pharmacies and by private proprietary hospitals.[5]

In the Ghanaian context, traditional healers (officially known as traditional health providers) also occupy an important place in the scheme of things. This community includes practitioners of all forms of traditional medicine: medicine — herbal, psychic and spiritual; traditional birth attendants (TBAs); bone setters; and *Wanzams* (traditional male circumcisers). Traditional health providers constitute a very significant resource, especially at the primary health care level.[6] The traditional health care providers operate mainly in rural settings. Most other private health care providers are localised in the cities and urban areas of the country. Chinese and other forms of Oriental herbal medicine have recently become popular in Ghana.

2.3 Type and distribution of health facilities

Ghana is divided into ten administrative regions, (see appendix 1) each of which is divided into a number of districts totaling 110. Every region and district has a number of hospitals and/or other health faculties such as health posts and clinics.

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[4] Republic of Ghana, (MoH), Health in Brief, Accra, 1991, p. 13

[5] Republic of Ghana, (MoH), Health in Brief, Accra, 1991, p. 13

[6] Republic of Ghana, (MoH), Medium Term Health Strategy, Accra, 1995, p. 26

Table 2.1 shows the distribution of health facilities by type and ownership; table 2.2 present the distribution by type and region. By health facilities is meant health institutions which provide hands-on patient care: hospitals, clinics and health centres. Hospitals and clinics are differentiated in that the former provide both in-patient and out-patient care, whereas the latter concentrate on out-patient services.[7] All the facilities play an important role in health delivery.

Table 2.1

Health facilities by ownership and type

Agency	Hospital	Health Centre	Clinic	Total
MoH	61	372	267	700
Quasi	24	32	0	56
Mission	41	63	602*	1023*
Private	51	266		
Total	**177**	**733**	**869**	**1779**

NB: MoH = Ministry of Health
Private = Clinics, maternity homes, private hospitals
*the figure for clinics combines mission and private

[7] Republic of Ghana, (MoH), The Health Sector: Facts and Figures, 1996, p. 12. See also E. K. Ackon, The Management of Health Services in a Developing Country: The Case of Ghana, Accra, Bel-Team Publication Ltd. 1994, p. 12

Table 2.2

Health facilities by type and region

Region	Hospital	Health Centre	Clinic
Ashanti	19	159	128
Brong-Ahafo	17	37	150
Central	15	60	73
Eastern	23	42	87
Greater Accra	39	36	192
Northern	7	59	40
Upper East	10	40	51
Upper West	6	23	34
Volta	22	106	147
Western	19	71	64
National Total	**177**	**733**	**869**

Source: Republic of Ghana (MoH), The Health Sector: Facts and Figures, 1996, P.12

Ghanaian Health facilities represent a mix of government and non-government sectors, although the majority of facilities are government-owned, i.e. established, controlled and funded by central government. As such they are managed by the Ministry of Health.

Non-government facilities are of two types: profit and non-profit providers. The profit facilities usually established and run predominantly by private medical practitioners operating individual private clinics or hospitals, which are usually small in scale. This type of facility are mostly found in the cities and larger urban areas. The non-profit segment is mainly run by religious organisations and non-governmental organisations (NGOs). The services of these facilities are coordinated by the Christian Health

Association of Ghana (CHAG). The central government bears full responsibility for personnel costs.

Falling between these two broad categories (i.e. government and non-government) are quasi-government facilities, which are government-established by organisations with subvented status to cater for their staff and the wider community. The government exercises minimum control over these hospitals in terms of the administration and internal organisation. Finally, it should be emphasised that all health institutions, regardless of type, ownership or control, are bound to conform to government policy directives and national health care delivery regulations in respect of quality of service, and medical ethics.

In addition to these categories, health facilities in Ghana can also be classified into general or special facilities. General health facilities are mainly hospitals which see a wide variety of medical problems while special hospitals limit their services to specific illnesses. Examples of special hospitals in Ghana are psychiatric hospitals, leprosaria and children's hospitals. Acting in close partnership with non-government hospitals, government hospitals are organised and managed by the Ministry of Health (MoH) to provide health care for the population.[8]

Health centres and clinics provide support for hospitals. They provide mainly out-patient and preventive services as I have already noted. Together health centres and clinics constitute a greater proportion of health facilities in Ghana. Quite a significant number are government controlled.

2.4 Organisation of service delivery

In Ghana health services are organised and delivered at three main levels — primary, secondary and tertiary care. The level of care is based on the severity and complexity of the condition to be treated.

Primary care, the basic level of care for every one, covers care that is simple to give as well as evaluations of a condition and specialist referrals. The emphasis is on the more common and less defined problems that tend to be found in community settings such as schools, health centres, offices and the home. Individuals may also receive primary care in hospitals. In health

[8] Interviews and discussions with health officials at the Ministry of Health Headquarters, Accra between February and March 1997.

care settings where primary care is delivered, hospitalisation is not required. Typical candidates for primary health care would be minor infections and minor accidents. Physical examinations also fall within the competence of the service. By and large, the characteristics of primary care are minimal technology, low investment in resources and a community basis.

Primary health care services are based on a three-tier structure from community level (Level A), to sub-district level (Level B) to district level (Level C). Level A is the least developed in the health care system. There are few community–based services, so the health services are delivered on an outreach basis by a team of health workers which includes a Traditional Birth Attendant (TBA), a Village Health Worker (VHW) and a Community Clinic Attendant (CCA), who are all trained by the Ministry of Health but are paid directly by their local committees. At this level are found chemical sellers and itinerant herbalists. The key emphasis is on preventive and promotive strategies. Particular attention is paid to pregnancy management, child health promotion and environmental health.[9]

The level B or sub-district level is classified as a geographical area with a population of between 15,000 and 30,000[10]. This level is usually served permanently by health centres or health posts, providing basic preventive and curative care, including pregnancy care, environmental sanitation and child health. The personnel include a Medical Assistant, a Community Health Nurse, a Health Inspection Assistant and a Medical Field Technician (responsible for control of communicable diseases). Unlike Level A personnel, Level B workers are Ministry of Health staff who are formally trained in their fields of specialisation and are government-salaried.[11]

The level C or District Level, is the coordinating unit for all primary health care (PHC) programmes. The main health facility at this level is the District Hospital, headed by a Senior Medical Officer who is supported by a District Health Management Team (DHMT) consisting of a Medical Officer, a Public Health Nurse, a Health Inspection Assistant and a Medical Field Technician.[12]

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[9] Republic of Ghana, (MoH), Health in Brief, Accra, 1991, pp. 14-16

[10] Republic of Ghana, (MoH), Medium Term Health Strategy, Accra, 1995, p. 50

[11] Republic of Ghana, (MoH), Health in Brief, Accra, 1991 p. 16

[12] Republic of Ghana, (MoH), Health in Brief, Accra, pp. 15-16 See also Mary Prendergast, Information Systems and Decision Making within Sub-District Health Teams..., Unpublished M.Sc Dissertation, University of Liverpool, 1993, p. 14-18

The DHMT is responsible for planning and implementing health programmes, including the management of resources, the provision of training and technical support for workers at levels A and B. In short, district-level health services play an important role in matching local health needs and priorities within national policies.

Secondary care services involve more specialised types for conditions that require hospitalisation. Such services are considered as consultant services, which are generally intermediate, coming between primary and tertiary care. The treatment of burns and of serious accident victims and the extraction of tonsils are examples of conditions which typically come under this level which is responsible for secondary care, providing sophisticated health care in the areas of medicine and surgery. The majority of secondary care facilities are in government hospitals, located in the regional capitals and hence designated 'Regional Hospitals', providing both in-patient and out-patient services. Furthermore they serve as referral centres where complex cases from the districts requiring further diagnosis, sophisticated equipment, and sometimes specialists are dealt with. Services at this level cover clinical and diagnostic care in the areas of medicine and surgery, pediatrics, obstetrics and gynaecology, otorhinolaryngology, dentistry, ophthalmology and out-patient psychiatric services.[13]

Of the three levels, the most specialised is tertiary care which denotes the sub-specialty or categorical services provided in a medical centre such as a university hospital. Tertiary care involves the most advanced medical knowledge and technology available. Tertiary care in Ghana is centred on the two teaching hospitals as the only places specialised in cancer treatment, congenital and metabolic disorders and major surgery. These two university teaching hospitals constitute the apex of the more specialised and sophisticated end of the health services. 'Sub-specialties, such as cardiology, nephnology and vascular surgery, are offered in these hospitals.'[14] Tertiary hospitals serve as referral centres for all other levels in the health care delivery system. Unlike Regional Hospitals, Tertiary Hospitals concentrate on in-patient care, although out-patient services are provided by clinics located close-by.

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[13] Interview and discussion with health authorities at the Ministry of Health headquarters. February, 1997

[14] Republic of Ghana, (MoH), Medium Term health Strategy, Accra, 1995, p. 11

As the most sophisticated health care facilities in the country, these hospitals have an important function in providing support for the lower levels. Complicated cases are initially referred to district hospitals where they are either dealt with, or referred to higher level depending on their severity and complexity.

Secondary and tertiary care are hospital-based and can be provided in in-patient and out-patient settings. Characteristics common to the two levels of care include sophisticated high-technology, high levels of investment, long consultation times, restricted or delayed access, prolonged general and specialised training, episodic care and the treatment of less common illnesses.[15] The role of hospitals and other lower health facilities replicate the broad functions of the health care system already described.

In the past, the Ministry of Health has been the central agency that by tradition manages health delivery at the various levels as described. Now under the current health service reform management arrangements for administration of health services have been restructured. This is discussed in section 2.5.2

2.5 Health sector reforms

2.5.1 The call for reform

Attempts to reform the health service started in 1988.[16] The motivation for reform was to halt the downward trend of performance of the health sector — in other words to reverse the deterioration of the service caused by the economic decline which started in the late 1970s. The health sector reached its nadir between '1982-1984 when available resources [proved inadequate] to maintain existing services' or to keep stocks of essential drugs and other logistic supplies up to demand as 'hospital buildings, plants and equipment broke down and could not be repaired or replaced because the economy was

[15] Interview with health officials at Ministry of Health headquarters, February, 1997

[16] Andrew Cassels and Katja Janovsy, Health Policy, Planning and Organisation in Ghana: Notes on Selected Issues. A Discussion Paper presented to the Ministry of Health, October, 1990, p. 2

in such a bad shape'.[17] From 1985 onwards government began to take initiatives to improve health care delivery. A programme for the rehabilitation of all district hospitals was set in motion, for instance, followed by similar work on regional and tertiary hospitals. In the same period a public health programme to combat malnutrition was launched while Child Health and Nutrition Rehabilitation Centres were established to advise mothers about nutrition and to dispense food supplements to children. Health financing was also taken in hand with the introduction, in 1985, of a new hospitals fees structure which was aimed to recover 15 per cent of recurrent cost. [18] Meanwhile government's contribution to the health sector was set on a steady upward curve, growing from 9.8 per cent of government recurrent expenditure in 1986 to 10.7 in 1989 and 10.9 per cent in 1990[19]. During the 1990s the figure continued to hover around the 10 per cent mark.[20] In real terms however this represented a contraction as government expenditure dwindled over the years in the face of inflation. Despite all effort, many health problems remained and remain unresolved. Access to, as well as the quality and utilisation of health services remain low.[21]

Against the background of mounting cost, declining resources and thwarted expectations, the efficiency of the health sector as a whole, and its management in particular grew into an issue of widespread controversy and debate. A high level symposium was held in 1988 to identify key issues and clarify health policy directions. Out of this symposium came proposals for reform strategies to improve performance. Reform was henceforth to centre on cost reduction, increasing financing, and changing the pattern of or resource allocation. It was also concluded that the existing organisational structure was counter productive.[22]

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[17] E. K Ackon, The Management of Health Services in a Developing Country, Accra, 1994, p. 41

[18] E. K Ackon, The Management of Health Services in a Developing Country, Accra, 1994, pp. 41-42.

[19] See Republic of Ghana, (MoH), Health in Brief, Accra, 1991, p. 34

[20] See Republic of Ghana, (MoH), Annual Estimates, 1990-1991, and Republic of Ghana, (Ministry of Communication), Budget Statement and the Economic Policy of Ghana, Accra, 1991, p. 15; 1992, p. 10; 1993, p. 5; 1994, p. 10; 1995, p. 11; 1996, p. 11; 1997, p. 9; 1998, p. 14; 1999, p. 22

[21] See Republic of Ghana, (MoH), Health Sector 5-Year Programme of Work., Accra, 1996, (See Executive Summary)

[22] Andrew Cassels and Katja Janovsy, 'Health Policy, Planning and organisation...'1990, p.2

Efforts to improve health sector performance gained renewed momentum in the early 1990s when further initiatives were articulated for health sector development as part of the overall long term vision for Ghana's future growth and development as framed in the document Ghana Vision 2020. These new initiatives for the first time acknowledged the first premise that improvement in the standard of health care delivery required a fundamental redefinition both of aims and in the running of the service. The first consideration led to a restatement of policy, launching a shift away from quality per se to an emphasis on balancing quality against cost. The second led to structural reorganisation after findings conclusively demonstrated that the management structure as it stood was not only counterproductive but an active impediment to the implementation of a viable strategy of health management and criteria of performance.[23] (see section 2.5.2).

As its contribution to the development objectives of *Ghana Vision 2020* the Ministry of Health unveiled its Medium Term Health Strategy (MTHS) in a document designed to guide health development in Ghana for five-year period, (1997-2001).

The MTHS objectives were framed as follows:

> 'Increased geographical and financial access to basic health services'
>
> 'Better quality of care in all health facilities and during outreaches'
> 'Improved efficiency in the health sector'
>
> 'Closer collaboration and partnership between the health sector and communities, other sectors and private providers both allopathic and traditional'
>
> 'Increased overall resources in the health sector, equitably and efficiently distributed' [24]

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[23] Republic of Ghana, (MoH), Institutional Reform in the Health Sector, Accra, 1996, pp. 2-3

[24] Republic of Ghana, (MoH), Medium Term Health Strategy, Accra, 1995. See also Republic of Ghana, (MoH), Health Sector 5-Year Programme of Work, Accra, 1996, p. 9

In 1996 practical strategies for attaining these medium term objectives were laid down in the policy document Programmme of Work. (POW) . Seven approaches were identified:

> 'To strengthen primary health services (district health services)'
>
> 'To re-orient secondary and tertiary services to support primary health services'
>
> 'To develop and implement a programme to train adequate numbers of new health teams to provide and manage these services'
>
> 'To improve capacity for policy analysis, performance monitoring and evaluation, and regulation of service delivery by health professionals'
>
> 'To strengthen central support systems for human resources, logistics and supplies, financial and health information management'
>
> 'To improve private sector involvement in the delivery of health service'
>
> 'To strengthen intersectorial collaboration'[25]

The POW describes these strategies in detail in terms of their purpose, the particular concerns to be addressed, the constituent components of specific courses of action, and demonstrable performance.

2.5.2 Structural, organisational and management arrangements

Arrangements to re-structure the management of the health service started in 1993 when the MoH was reorganised. The reorganisation was undertaken as part of the reform goal to provide a sound management base for advancing the larger aims of the reforms.

The objectives of the reorganistion were twofold: First the establishment of a *Ghana Health Service* (GHS) alongside the MoH and the second to 'provide a sound organisational framework for the growing degree of managerial

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[25] Republic of Ghana, (MoH), Health Sector 5-Year Programme of Work, Accra, 1996, p. 12

responsibility in all health service institutions.'[26] The central theme of the reform initiative was, and is the restructuring of the organisational hierarchies of the MoH and of the teaching hospitals.

Prior to re-organisation the central MoH was organised into a number of technical and support divisions. Technical programmes were managed by five programme divisions: Epidemiology; Maternal and Child Care/Family Planning; Nutrition; Medical Care; and Environmental Sanitation. These five divisions were served by nine support divisions: health education; planning and budgeting; manpower development and training; health laboratory services; common services; blood transfusion services; x-ray services; nursing; and supplies and stores.

This organisational structure was to be counter productive. It was vertical in nature, (see figure 2.1), resulting in the development of vertically organised management systems: for transmission of information, for financial management, and for supervision. There was duplication and competition for centrally managed vertical programmes; roles and responsibilities between technical and administrative divisions were confused; and standards and mechanisms for monitoring performance were ill-defined and weak. Furthermore, relations between hospitals and other health facilities were unclear. There was also an excessive degree of centralised authority.[27]

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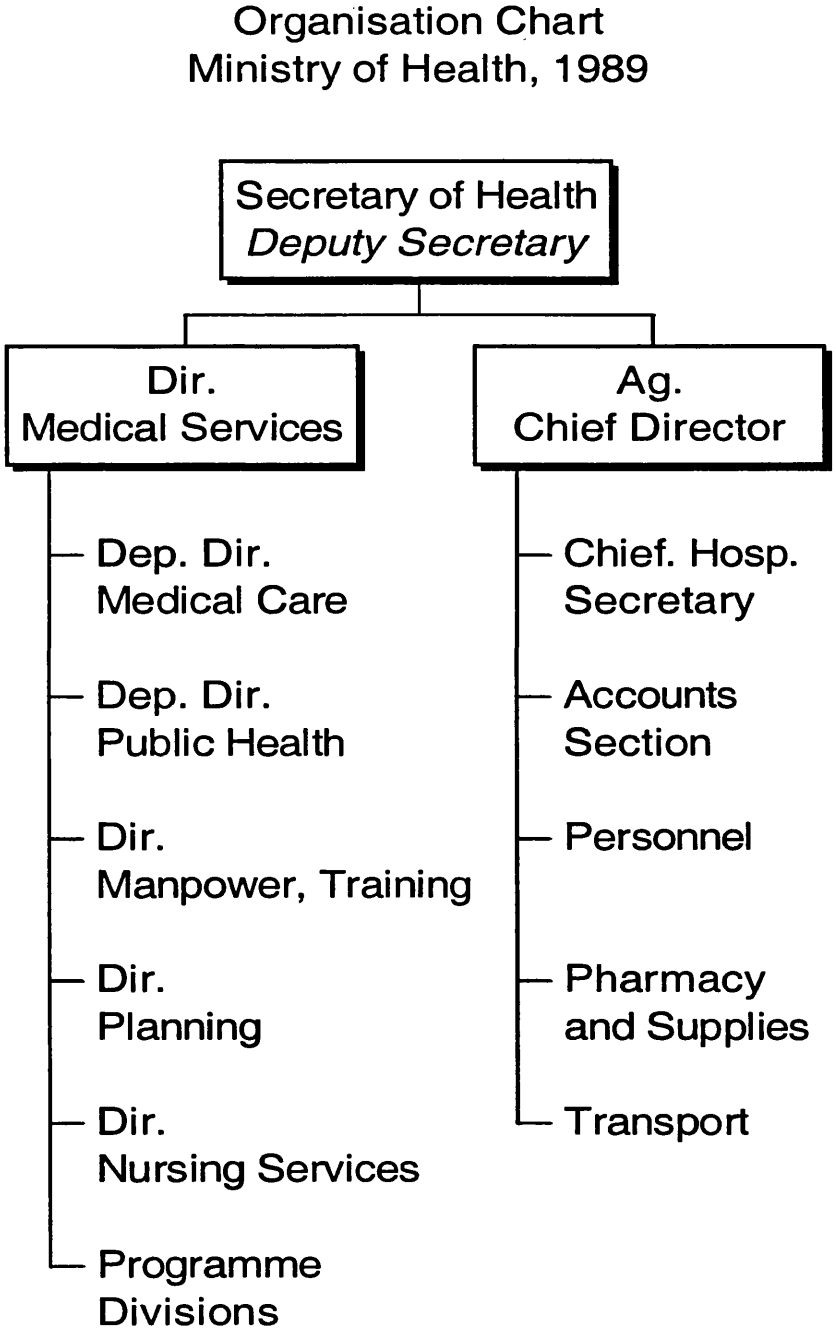
[26] Republic of Ghana, (MoH) Institutional Reform in the Health Sector, Accra, 1996, p. 1

[27] Discussions with MoH officials, February, 1997. Two officials expressed this view. Victoria Darko (Mrs), (Director Health Administration and Support Services) and Dr. A Asamoah-Baah (Acting Director of Medical Services)

Figure 2.1
Organisation Chart — Ministry of Health, 1989



The 1993 MoH reorganisation and further plans create the *Ghana Health Service* are designed to correct these deficiencies. Under the new order the technical and support divisions [have been] integrated within a new

Directorate structure. Six directorates have been created to include: "Policy Planning Monitoring and Evaluation, Institutional Care, Public Health, Health Administration and Support Services, Human Resource, and Supplies, Stores and Drug Management. (See figure 2.2). The activities of these directorates and their sub-divisions are coordinated by a Director of Health Services who reports to or is responsible to the Minister and Deputy Minister for Health.

The next stage of overall reorganisation of the Ghana Health Service is due to be institutionalised following the enactment of the Ghana Health Services and Teaching Hospitals Act.[28] However, this has yet to become operational at the time of writing. The Act provides a broad framework for the creation of a Ghana Health Service (GHS), as a body distinct from the MoH. The new arrangement will involve a transformation in the role of the MoH as the central government agency responsible for coordinating all health issues in the country. In future the MoH will focus on sector-wide policy formulation, and on the monitoring and evaluation of progress in achieving targets. It will also initiate legislation and promote intersectorial coordination and collaboration in support of health objectives. All other executive functions in respect of the organisation and management of the health sector will be transferred to the Ghana Health Service, which will be part of the Public Services but distinct from the Civil Service. The objectives and functions of the GHS are clearly spelt out in Section 3 of the Act.[29]

This new arrangement is designed to facilitate decentralised planning and management of health care, to change the role of the centre (headquarters) and to give more functional authority to the Regional and District Health Administrations (to be managed under the Ghana Health Service), in planning and implementing their own health delivery activities within the framework of national plans.

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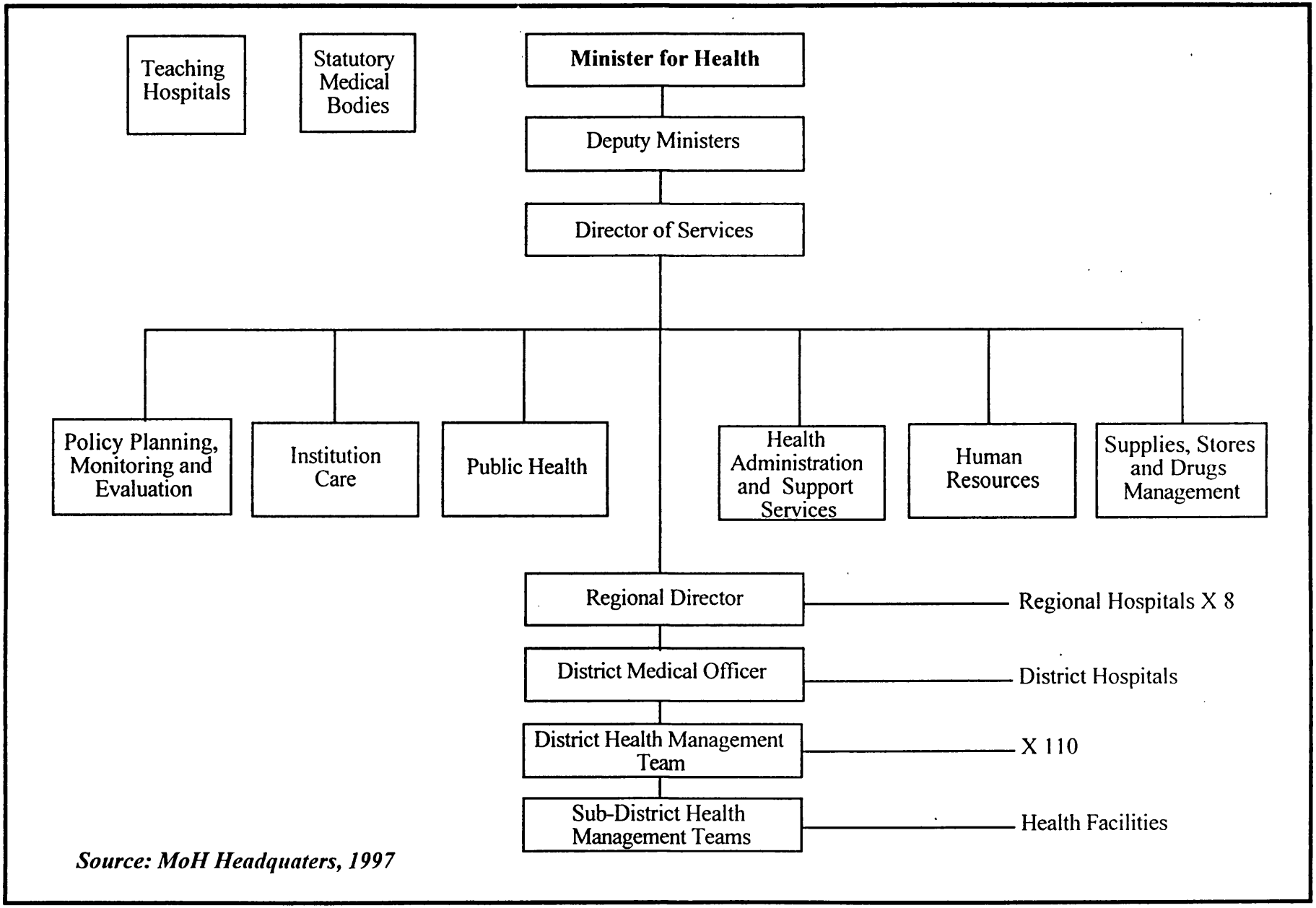
[28] Ghana Health Service and Teaching Hospital Act, (Act 525), 1996

[29] Ghana Health Service and Teaching Hospital Act, (Act 525), 1996, S. 1-17

Organisational of the Ministry of Health as at 1997



Source: MoH Headquaters, 1997

Decentralisation in the context of the current development in the health services means granting greater financial and management autonomy to local units within the system, that is, greater responsibility for planning and budgeting. It does not, however, imply any broad policy development by local units. This remains reserved for the Ministry of Health.

To oversee the organisation of health care delivery, the GHS will have 3 levels of management — National, Regional and District. At the national or headquarters level, a National Executive Group, will be responsible for policy formulation, monitoring and evaluation.[30]

Service will rest with the Ghana Health Service Governing Council which will have a close link with the National Executive Group. (The composition and responsibilities of these bodies are set out in Sections 4 and 5 of the Act, respectively).[31] The organisational structure of the *Ghana Health Service* has yet to be represented diagramatically.

The Chief Executive of the Service will have the title of 'Director-General' and will be answerable to the Council and the Health Service. He will be responsible for the organisation and management of the service, with the assistance of a team of directors and senior health advisers. Together, they will be responsible for the development of policy guidelines, for setting standards, for the development of protocols and manuals and for the creation of systems for rational resource allocation, as well as for monitoring and evaluating health service performance, including that of hospitals.[32]

The GHS will have branches in every one of the ten administrative divisions of the country, each headed by a Regional Director of Health Service, assisted by a team of health professionals. Regional Directors will be responsible for the day-to-day organisation and administration of the health services, and will report directly to the Director-General on technical issues[33] and also be expected to provide support and supervision for regional and district health programmes. At district level, every district will see the establishment of a branch of the service, managed by a team of health professionals (DHMT) under a District Director of the Health Service who will be responsible to the Regional Director of Health Services over technical

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[30] Republic of Ghana, (MoH), Medium Term Health Strategy, Accra, 1995, P. 12

[31] The Ghana Health Service and Teaching Hospitals Act, 1996, S. 4-5

[32] The Ghana Health Service and Teaching Hospitals Act, 1996, S. 11

[33] See Sections 18-22 of the Act.

issues. Overall responsibility for planning, organising, monitoring and evaluating health services within the district will be vested in the District Health Authority. (Details of responsibilities are set out under Sections 23–28 of the Act.)[34]

As noted earlier, the new arrangements involve a separation of the functions of the proposed *Ghana Health Service* and of the Ministry of Health. The Ghana Health Service will take on the former executive functions of the Ministry of Health. The Ministry will continue in its role of competing for the sector's share of the national budget. A key function of the Ministry will be to give clear guidance to the GHS concerning the trade-off between the objectives of equity and efficiency in the conduct of its operations. The principal advantage of this arrangement is that managers will be enabled to run the service free of the restrictions normally associated with civil service traditions, rules and procedures. New management systems and selection procedures, designed to encourage initiative and productivity could be introduced without requiring uniformity with the civil service as a whole.

The position of hospitals in the whole process has also been defined. The two teaching hospitals have already been given subvented status, thus increasing the degree of autonomy with which they can operate. Their accounting system has been revised, with the Office of the Controller and Accountant-General providing consultative assistance.[35]

Regional Hospitals will come under direct management of the GHS. Significant managerial responsibilities will be delegated to Medical Superintendents. Furthermore, although Regional Hospitals will continue to receive a separate allocation of funds, they will not have the same independent status as Teaching Hospitals. Integral to the management of Regional Hospitals will be in-house management committees, advisory committees on which the public will be represented, but which will not be independent. (See figure 2.3)

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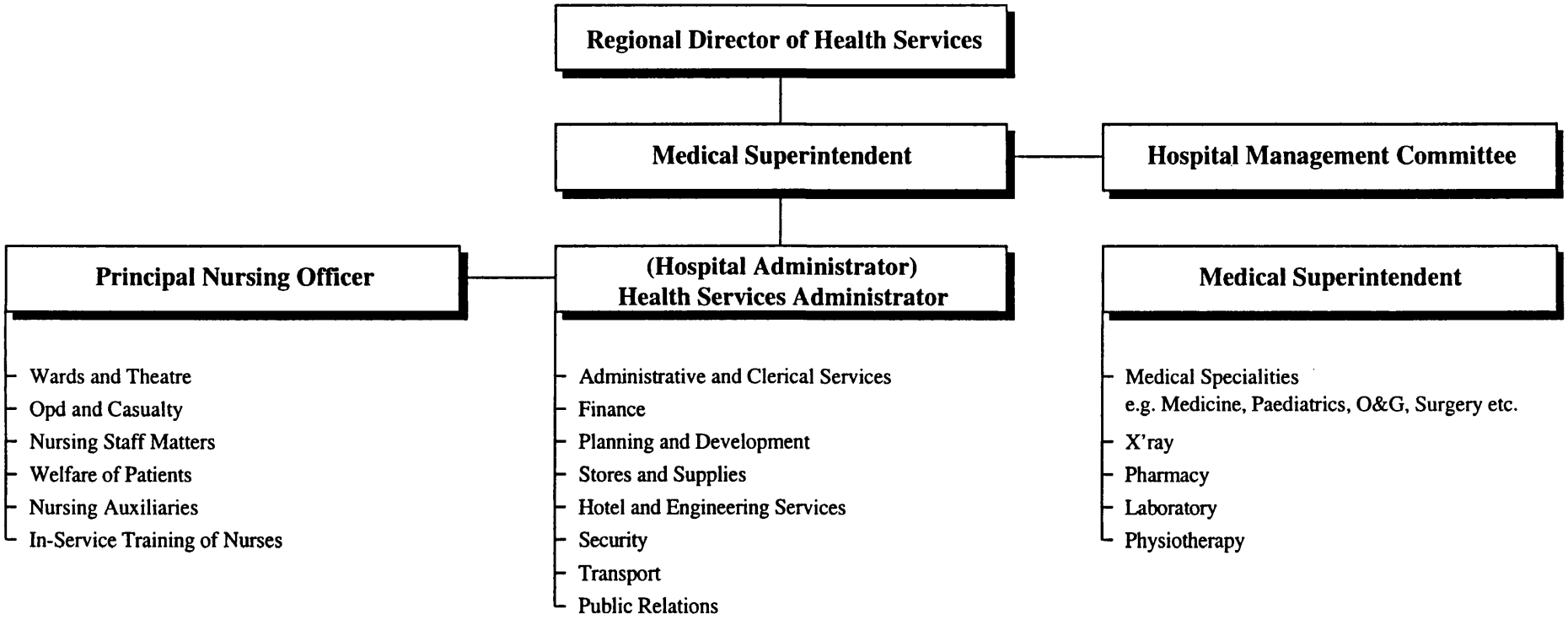
[34] See Sections 23-28 of the Act.

[35] Republic of Ghana, (MoH), Institutional Reforms in the Health Sector, Accra, 1996, p.23

Figure 2.3
Organisational Chart of the Administrative Set up in Regional Hospitals



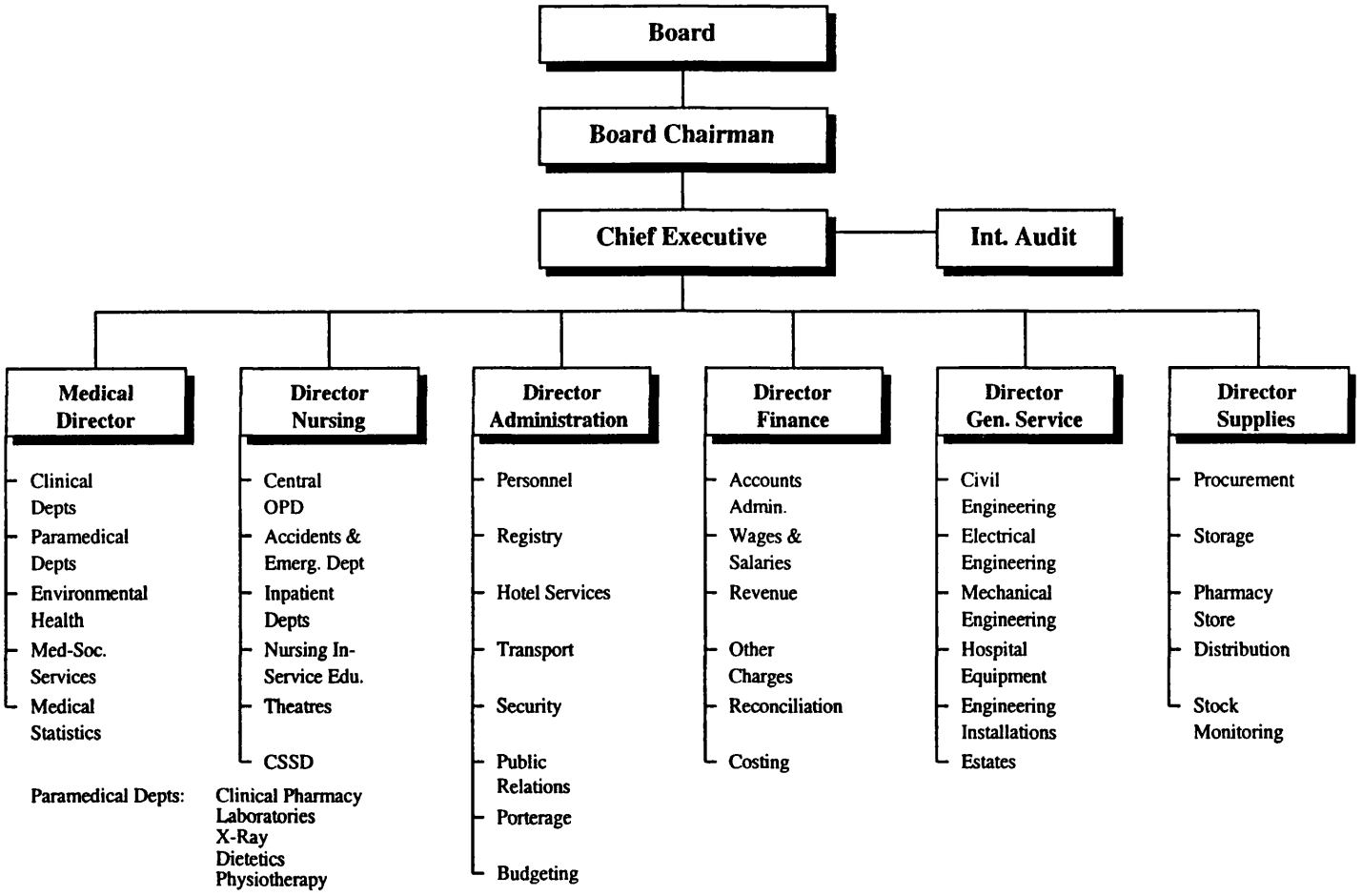
1. **The Medical Supt:** The Medical Superintendent is overall in-charge of the hospital and co-ordinates all professional and technical matters in particular the work of paramedical staff including Medical Assistants and policy.
2. **The Health Services Administrator:** He is responsible for the day-to-day management of the hospital and co-ordinates the daily aspects of all the departments. The administrative services and maintenance are under the control of the Health Services Administrator though there are officers in direct control of some units e.g. Catering Services, Laundry, Accounts and Stores.
3. **The Principal Nursing Officer:** The nursing services are under the Principal Nursing officer and consists of the OPD and Casualty, Theatre, Wards and Training of Nurses on the job. She is also responsible for the health and welfare of the nursing staff and patients.

Teaching hospitals will move a step further, and enjoy a complete autonomous status. Their administrative structure has been reorganised in order to decentralise decision-making and locate it in units where the resources are committed, thereby involving all health care professionals in management.[36] Figure 2.4 shows the new Directorate Model structure for the Teaching Hospitals. At the heart of this model lies the conviction that there is a need to involve doctors (physicians) in the management process, particularly with regard to priorities in the use of resources. This school of thought has become an accepted part of good hospital management practice throughout the world. In practice this means that '... senior hospital doctors whose decisions, quite rightly, lead to commitment of substantial sums of money, are involved in the management of teaching hospitals; are given responsibility for the use of resources; and are encouraged to use such resources in as effective and efficient a manner as possible.'[37]

[36] K. Lee, Increasing Autonomy for Ghana's Teaching Hospitals: Key Issues and Opportunities, A Report Prepared for the Ministry of Health, 1994, pp. 19-20

[37] K. Lee, Increasing Autonomy for Ghana's Teaching Hospitals ... p. 20

Figure 2.4
Organisational Chart For Autonomy - Teaching Hospitals



Office of the Hospital Administrator Regional Hospital B

2.6 The role of records — information management

Information is generated and used at all levels of the health system. Documentation on patient encounters in primary care add to hospital records which document patient information from hospital departments and units. Information generated is used for planning at all levels of the health delivery system.

At the sub-district level for instance, sub-district health management teams collect data on immunisation coverage, outpatient attendance and diagnoses. The information collected is used for problem identification as part of the planning process. At the district level DHMTs use health and demographic data to set service targets locally. Data is also used for computing indicators for monitoring the performance of programmes. At the regional level data from peripheral health institutions is received and processed along programme lines and used in computing indicators for preparing annual reports. Also at this level data is used to assess health needs, to allocate resources, monitor achievement and set targets. At the headquarters level information submitted by Regional Health Administrations is used for monitoring the effectiveness of resource allocations. Information at this level is also used for major policy decisions.

The current push for health care reform has made clear to policy makers in the health sector that the success of the reforms as well as the ability to assess the effect of a reformed system of the health of the public will require, among other resources accurate and reliable information. Improved information can only be achieved through efficient and effective management of records at all levels of the health delivery system.

The poor quality of health care delivery has in part been blamed on 'the absence of institutional quality assurance programmes, [lack of] a formal system of peer review and medical audit, and poorly developed performance monitoring systems'.[38] In the reformed health service quality assurance programmes, formal systems of medical audit and peer review will be established. Health programmes will have a monitoring and evaluation (M&E) component with clear processes and output indicators to assist in decision making at all levels. It follows therefore that medical records which

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[38] Republic of Ghana (MoH), Health Sector 5-Year Programme of work, Accra, 1996, p. 5

provide the raw ingredients for these structures and procedures, must be efficiently and effectively managed. There can be no mistaking the inference of the following statement:

> Evaluation research will be needed to assess the level of achievement of the health in the medium term and beyond. This will involve information on current levels and trends of mortality, levels and types of diseases and their epidemiological pattern, effectiveness and quality of various interventions and services being promoted, effectiveness of different delivery strategies and outcome measures needed to measure milestones and indicators set during the development of the medium term health strategy.[39]

This calls for efficient record systems to provide accurate an reliable information to support these programmes.

One priority of the current reform is to address the issue of health financing. Work is still on hand in reviewing the potential for introducing a national health insurance system. If this becomes a reality third party payers will have to depend on accurate and reliable patient information for purposes of reimbursement. A scheme of this magnitude will necessarily have to depend on an efficient medical record system.

The way in which the management structure of the health service has been reorganised has implications for the way records and information systems are handled. The Ghana Health Service will have management relations with Regional and District Health Administrations within the context of lines of accountability that run from the Ministry of Health. The new structure aims to foster a system under which clear responsibilities are exercised by each level of authority. Greater emphasis is being placed on the need for Districts and Regions to set our their strategic plans with clear and quantifiable objectives. In turn these objectives are amplified by more precise statements in short term programmes. Progress towards long term objectives and short term targets will be analysed at the national level in respect of policy and strategy. The key to the success in the new management arrangement lies in effective use of improved information. This in turn implies that information systems need to meet equally important needs: the provision to support clinicians, nurses and other staff in their day to day work; and the supply of valid management information as a by product of

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[39] Republic of Ghana, Medium Term Health Strategy, Accra, 1995, p. 40

these operational systems. Plans and strategies which are being developed for improving health care delivery should take into account strategies to manage health information to underpin these strategies. In short record systems which are the source of internally generated health information should be strengthened.

2.7 Conclusion

Following from this it is argued that whilst institutional reform is necessary, it is not sufficient in itself to guarantee sustained improvements in the performance of the health system. Having the capacity to define and evaluate expected levels of performance and monitor their achievements — which to a large extent depend on information — is critical to the operation of the whole system. For a complex organisation like the Health Service, with different specialties and departments, quality information provision has an enormous potential of saving costs, improving quality care and enabling innovation to be more effectively undertaken. It is therefore essential that records from which data is amassed at all levels of the health sector should be treated as an essential corporate commodity in the health service. It is by putting in place a good record and information system, that relevant accurate and reliable information can be produced for evaluating and monitoring health programmes. Without this no true picture of the country's health care needs can be produced.

3 The medical record in historical perspective

3.1 Introduction

The medical record as we know it today in terms of purpose and function did not begin to evolve until the turn of the eighteenth century. At the same time records of medical activity are among the oldest extant material evidence of organised society. In the north of Spain, for instance, there are Palaeolithic cave paintings dated to about 25,000 BC in which the trepanning and amputation of fingers is depicted.[1]

It is not my intention in this chapter to attempt a reconstruction of the history of the medical record from prehistory to the present, but rather to pinpoint landmarks in the documentation of medical care of which the traces can still be seen in our own records. As I am concerned only with Western scientific medicine, this discussion of the past will be confined to the line of intellectual development which traces itself back to Egypt, Greece, Rome, and onwards into the present.

3.2 Overview of developments prior to the nineteenth century

3.2.1 Antiquity

The boundaries between scientific medicine and sympathetic medicine have not always been cut and dried. (Indeed, even at this very moment, homeopathy, Chinese herbal medicine and many other ancient medical techniques and traditions, are gaining increasing ground among

[1] Edna K. Huffman, Manual for Medical Record Librarians, 5th ed., Berwyn, Illinois, Physician Record Company, 1963, p. 1. See also Jennifer Cochraine, An Illustrated History of Medicine, London, Tiger Books International, 1996, p. 6

conventionally Western-trained pysicians throughout the world as complimentary medicine.

All we can tell from the palaeolithic cave paintings in Spain mentioned earlier is that they stand as 'mute evidence that their authors kept records concerning their patients'.[2] But whether such interventions represented medical procedures in our sense of the word, is not as yet known; they might equally well have been inflicted for any number of ritual purposes, including letting out evil spirits.[3]

From the evidence of antiquity, we know that early civilisations attributed all knowledge to the gods or the supernatural, and accordingly ascribed the ability to intervene in the seemingly inexplicable process of life and death to divine inspiration. Consequently, the cure of the sick was initially associated with religion and the priesthood. It was not until the fifth century Athenian intellectual revolution that the conceptual foundations of the modern medical record were laid. In other words, we draw a clear division line at the stage when the practice of medicine became a secular discipline whose practitioners observed and, above all, interpreted the patient's symptoms from the perspective of physiological cause rather than as a manifestation of divine will.

However, this does not mean that the first Egyptian priest-doctors failed to make accurate notes of their patients' conditions and treatments. As far we know, the Egyptians kept treatises on disease as far back as 4500 BC.[4] Thoth, a healing-god and the deity of invention, wisdom, and writing, was credited with the authorship of 36 to 42 books of which six were on medical topics such as the human body, instruments and appliances, drugs, disease of the eyes, and gynaecological ailments. These books are known as the Hermetic Books after Hermes Trismegistus, whom the Greeks identified with Thoth.[5]

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[2] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p.1

[3] Erwin H. Ackerknecht, 'Medicine of Ancient Civilizations' in Erwin. H. Ackerknecht (ed.), A Short History of Medicine 4th ed., Baltimore, Maryland, Johns Hopkins Press, 1982, p. 23

[4] Dorothy L. Kurtz, The Unit Medical Record in the Hospital and Clinic, New York, Columbia University Press, 1943, p. 2

[5] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, p. 3

The next landmark we have is in c. 3000-2500 BC, when Imhoteb, or Imouthes emerges as the 'first figure of a physician to stand out from the mist of antiquity.' An architect as well as a man of medicine, his success as a physician led him to be venerated as the god of medicine.[6] To Imhoteb is ascribed the oldest of six extant Egyptian papyri on medical subjects, the Edwin Smith Papyrus, which would appear to be a 1600 BC copy of a text dating from 3000 BC,[7] and comprises 'seventeen columns, fragments of a surgical treatise in which, for the first time in history, the brain is actually named as such'.[8] In all, forty-eight cases of head and neck injuries are described so clearly and systematically that it seems probable that there was an instructional motive.[9] In each case, the doctor has included a title, details of the examination, a diagnosis, a decision whether to treat or not and, if so, the treatment adopted. A second collection of Egyptian medical treatises associated with Imhoteb is the Papyrus Ebers, which is dated to about 1500 BC, and similarly 'reflects a careful observation of disease and an intelligent application for remedies'[10], and which to that token also approaches the modern conception of a medical treatise.

3.2.2 Rational/Hippocratic medicine

The Greeks, drawing on the medical knowledge of earlier civilisations especially Egyptian and Mesopotamian cultures, developed the first rational system of medicine, which they practiced under the aegis of the god Aesculepius in temples at some 200 (known) sanctuaries in Greece and Asia

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[6] George A. Bender, Great Movements in Medicine, Detroit, Michigan, Parke-Davis, 1961, p. 11. See also Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p.3

[7] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois 1963, p. 4

[8] Jean-Pierre Changeux, Neuronal Man, the Biology of the Mind, Oxford, Oxford University Press, 1985, p. 3

[9] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 4

[10] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p.5

Minor[11] where the god was venerated, physicians trained, the sick treated, and records kept. The principal Aesculepian sanctuary was the Sacred Grove in Epidaurus, the remains of which have been dated to 1134 BC, and include columns inscribed with the names of patients, their case histories, and records of their treatment. These inscriptions are the most ancient medical records in the modern meaning of the term. Aesculepian medicine relied heavily on the interpretation of dreams, the prescription of dietary regimes, and religious ceremonies. Aesculepius' emblem, a staff with a snake entwined around it (presumably because snakes appear to renew life by shedding their skin), remains the symbol of the medical profession.

The clinical record advanced significantly in fifth century BC Athens when medical practice was dominated by Hippocrates, a scientifically-oriented Aesculepian who was a contemporary of Socrates, and physicians routinely began to analyse their patients' symptoms in terms of rational scientific, physiological rather than supernatural causes. As such, Greek medicine of this time became the forerunner of modern medicine, and provided us with much of the medical terminology in use today.[12] The careful and systematic records accredited to Hippocrates — of which there are more than fifty books containing notes of surgical procedures, case studies and conflicting opinions — are regarded as the first case notes in the modern sense. Moreover, the surviving body of his treatises on medical topics is sufficient to show that he was a scrupulous physician and a close observer of the history and physical symptoms of disease. Many of his observations, diagnoses and treatments are reported to hold good today, while his notes, and those of his sons Theslus, Dracon, and Dexippus, who followed in his footsteps, still make interesting reading.[13]

MacEachern evaluates the work of Hippocrates in these terms:

> Hippocrates was not the first to observe the symptoms of disease, but he was the first to systematically record them. ...[He] wrote his notes in a full as well as precise manner. He recorded the patient's condition in detail, including his facial appearance, temperature,

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[11] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 8

[12] Erwin H. Ackerknecht, 'Medicine of Ancient Civilisations', in Erwin Ackerknecht (ed.), Short History of Medicine, Baltimore, Maryland, 1982 p. 25

[13] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 8

> pulse and respiration, excreta, sputum, localised pains and movement of the body. He did not bother with non-essentials; nor did he write down meaningless words....His style was simple, precise and dignified, revealing always the scientific honesty with which he recorded his cases.[14]

Kurtz elaborates on this as follows:

> He was the first man to proclaim that disease arises from natural causes, not from the acts of the gods. It is no coincidence that the first man to approach medicine as a science was also the first to leave careful records. His genius consisted in rejecting current superstition and in basing his deductions upon his own careful observation. These observations...he preserved from the distortions of memory by prompt recording. Except for laboratory and instrumental reports his physical examinations and progress notes are ridiculously like those of today.[15]

Garrison, without reservations, declares about Hippocrates: 'All that a man of genius could do for internal medicine with no other instrument of precision than his own mind, he accomplished, and these reservations, his best descriptions are models of their kind today'.[16]

Reiser observes that 'case records in Hippocratic literature have two basic functions: to demonstrate the natural causes of illness and to portray this through accurate, clinical observations of the patient's symptoms'; a twofold objective which required physicians to be open and honest about the outcomes of the treatment they administered. The format of the Hippocratic case record is chronological. First preceding causes and presenting symptoms are recorded, next progress reports on the progress of the illness, and lastly a summary of the result.[17]

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[14] Malcolm T. MacEachern, Medical Records in the Hospital, Chicago, Illinois, Physicians Record Company, 1937, p. 1

[15] Dorothy L. Kurtz, The Unit Medical Record in the Hospital and Clinic, New York, 1943, pp. 2-3

[16] Fielding H. Garrison: cited in Malcolm T. MacEchern, Medical Records in the Hospital, Chicago, Illinois, p. 1

[17] Stanley J. Reiser, 'The Clinical Record in Medicine, (Part 1): 'Learning from Cases', in Annals of Internal Medicine, 114(10): 1991 p. 902

Another important Hippocratic legacy is the code of professional conduct, now known as the Hippocratic Oath. Among other rules, this established the precept of confidentiality between doctor and patient and, by that token, the status of the medical record as a privileged communication. Today, on entering the profession, physicians still pledge themselves to this principle in the original wording:

> whatsoever in my practice or not in my practices I shall see or hear amid the lives of men ought not to be noised abroad... as to this I shall keep silence holding such things unfitten to be spoken.[18]

The Hippocratic writings describe the proper relationship between doctor and patient in great detail, also from the financial point of view. The medical tradition of Athens passed to Alexandria and to Rome. The most distinguished Alexandrian physician was Galen (*c* 130-*c* 200 AD), who essentially relied on the teachings of Hippocrates, and wrote a large number of books of which more than 100 are known. Galen is especially important to the history of medicine for his theory of the circulation of the blood, which remained authoritative until Andreas Vesalius and William Harvey. His teaching was founded on case reports[19], and he is known to have practised dissection on Barbary apes.[20] As a medical authority Galen dominated western medicine for about 1500 years.

3.2.3 Medieval medicine and the Early Modern period

As the western Roman Empire collapsed under successive waves of barbarian invasions, the practice of medicine passed to the clergy. The Benedictine Rule, for instance, stipulated that 'Care must be taken of the sick, so that they may

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[18] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 8

[19] Edna. K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 10

[20] Richard Gordon, The Alarming History of Medicine, London, Sinclair-Stevenson, 1993, p. 8

be served in very deed, as Christ himself'.[21] For the Clergy the cause of disease was sin and its treatment was by prayer, fasting and repentance. In as far as scientific practices were observed, these continued to be based on Hippocrates, Galen and others, whose works were continued to be copied by monastic scribes.

From the late eleventh century Arabic translations of Greek texts (on the basis of which a distinguished tradition of medicine had developed in the Muslim world) became increasingly available through contact with Byzantium, and through the work of translators in Almoravid Toledo. At Salerno, a purely secular school of medicine was founded, which was soon followed by similar institutions at new universities such as Bologna, Paris, Oxford and Salamanca.[22]

This period also saw the foundation of hospitals in the modern sense, although they were still founded under the aegis of the Church. The oldest western European hospital surviving from mediaeval times is St. Bartholomew's Hospital, London, established in 1137 as a religious foundation. The library today still holds records dating from the founding year.

The next important stage in the development of the medical record came during the Reformation in Northern Europe when the practice of medicine, along with other areas of life, was secularised. In England this is reflected, for instance, in the reorganisation of St. Bartholomew's Hospital during the reign of Henry VIII, when a set of 'Ordes and Ordinances' were drawn up which give clear instructions for record keeping, and for privacy of information, stipulating that 'an order for safe keeping of the evidences and writings appertaining to the Hospital'.[23]

Towards the middle of the eighteenth century naval and prison medicine became important in England. Specific preventive health measures were established and hospitals built. The first was built at Winchester in 1760. In America, 1752 saw the foundation of the Pennsylvania Hospital, the first incorporated hospital in the continent. This period also saw the beginnings of

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[21] Lain P. Entralgo, Doctor and Patient, London, World University Library, 1969, p. 60

[22] Lain P. Entralgo, Doctor and Patient, London, 1969, p. 62

[23] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 14

modern record keeping in hospitals. At Philadelphia patient notes were kept from the start — initially in a register recording name address, disorder, and dates of admission and discharge. Then, in 1803 the practice began of keeping detailed case notes, often illustrated in pen and ink, of interesting cases. In 1837 the 'hospital began to keep histories'. The introduction of card indexing had to wait until a 1906 index (at the Pennsylvania Hospital), however. Record keeping at New York Hospital follows a similar pattern: founded in 1771; first patient register in 1793 and from about 1808, a by and large modern records routine of documenting personal data, diagnosis, date of admission, occupation, appearance, illness and treatment, together with progress notes.[24]

The Industrial Revolution brought large scale urbanisation, pollution, and crowded living conditions, as well as rapid advances in medical science, which included increasing reliance on complex diagnostic apparatus, installations and laboratories. In combination, these factors set the scene for hospitals as specialised centres of health care, research and teaching. The complexity of the new hospital environment and the expansion of patient services required an efficient administration and, therefore, comprehensive record keeping. In the next section we follow the development of the patient record in the United States of America and Britain into the nineteenth and early twentieth centuries.

3.3 Developments in the nineteenth and early twentieth centuries: The United States and Britain

3.3.1 The Nineteenth Century

Until the first decades of the nineteenth century the keeping of medical records was at the individual doctor's discretion. In the absence of pressure from professional bodies or the law, the majority of American physicians and hospitals, as Reiser reports, were not in the habit of maintaining adequate,

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[24] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 17-18

systematic records.[25] The outstanding exception in this regard was the Massachusetts General Hospital (MGH), where, from the hospital's foundation in 1821, the medical staff and administration had developed a tradition of recording and retaining data on the causes and treatment of illness. The impact of this on the quality of patient care and clinical efficiency was sufficiently impressive for the hospital administration to institutionalise this policy. Thus, by an amendment to the hospital's bye-laws in 1837, it became a formal requirement that physicians and house staff 'keep a daily record of every important fact on the history of the patient and as soon as possible to enter it in a handsome manner in a case book of the department'.[26] Particularly interesting from the modern perspective is that among the grounds given for the new regulation, it was explicitly stated 'that exact records are not only important for medical care of the patient but also be helpful in promoting the advance of medical education'.[27]

Around this period physicians in Great Britain were similarly showing a growing interest in keeping detailed notes of patients. At St. Bartholomew's Hospital, London, for instance, the practice of keeping good patient records is reported to have been well established by the 1840s. In fact, the doctors there were recording information on past histories from around 1826, so that, as Griffiths remarks 'it was thus easy to find accounts of acute traumatism in the volume of 1826'.[28]

From the 1840s, entering patient data into pre-bound volumes became increasingly established practice among hospital physicians on both sides of the Atlantic. In Britain they were known as ward, or medical journals which

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[25] Stanley J. Reiser, 'Creating Form out of Mass' in Everett Mendelson, (ed.), Transformation and Tradition in the Sciences, Cambridge, Cambridge University Press, 1984, p. 303

[26] Stanley J. Reiser, 'Creating Form out of Mass', in Everett Mendelson, (ed.), Transformation and Tradition in the Sciences, Cambridge, 1984, pp. 303-304

[27] Stanley J. Reiser, 'Creating Form out of Mass', in Everett Mendelson, (ed.), Transformation and Tradition in the Sciences, Cambridge, 1984, p. 304

[28] Siân M. Griffiths: Evaluating An Electronic Health Care Record for Rheumatology, M. D., Thesis, University of Sheffield, 1996, p. 39

were kept, as their name implies, in the wards, 'or at least within proximity of the staff responsible for their creation and maintenance.'[29] Unlike the present convention of keeping one file per person, the ward journal was collective, containing information on different episodes relating to different patients. New cases were entered in chronological order of admission, and the books were kept in annual folio-sized, or larger, volumes. The ward journal had a twofold function. Its principal purpose was to ensure a consistent history of events for each patient from the time of admission up to discharge. Secondly, the new, orderly, chronological method of documenting patient data was anticipated 'to encourage the assembly of records to provide a good view of the mechanics of the day-to-day health care provision'.[30]

The amount of information carried by the ward journal was not extensive. Patient data was usually confined to age, sex, and occupation, followed by a description of the complaint, and the findings of physical examination. After 1840s, however, a patient's past medical history also began to be recorded as a preliminary to investigating the present complaint or condition.[31]

In the latter part of the 19th century, between the 1870s and the 1890s, as the fruits of the medical revolution began to be integrated into everyday hospital procedure, the scope and complexity of patient data recorded became more elaborate. Among the new categories of information kept in the journal were charts displaying the results of chemical urine analysis, and drawings of the chest and abdomen showing the exact locations of organic complaints. The contemporary records also testify to physicians' growing attention to other aspects of the body's chemistry, such as the state of the blood, as well as to increasing use of bacteriological techniques.[32]

A breakthrough development in late 19th century record keeping was the advent of alphabetical name indexes — either in loose-leaf form, or bound into the journal — to streamline patient information retrieval. Moreover, it

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[29] Hamish Maxwell-Stewart and Alistair Tough 'Cutting the Gordian Knot: Or How to Preserve Non-Current Clinical Records Without Being Buried in Paper', Archivaria, 41: 1996, p. 63

[30] Hamish Maxwell-Stewart and Alistair Tough 'Cutting the Gordian Knot ...' Archivaria, 41:, 1996, p. 63

[31] Stanley J. Reiser, 'Creating Form out of Mass', in Everett Mendelson (ed.), Transformation and Tradition in the Sciences, Cambridge, 1984, p. 304

[32] Stanley J. Reiser, 'Creating form out of Mass', in Everett Mendelson (ed.), Transformation and Tradition in the Sciences, Cambridge, 1984, p. 306

became fairly usual for hospitals to keep separate (annual) volumes for each surgeon's and physician's case notes. As a further refinement on name indexes, at some leading hospitals 'special index volumes were set up for names, diagnoses and operations'. At the Bellevue Hospital in New York for instance, a scheme was devised 'for binding together all records with the same diagnoses'. Eventually, card files for name and diagnostic indexes were developed, 'reflecting the rapid replacement in the business world of ledgers by modern card and vertical filing'.[33]

A further important development in late 19th century record keeping was the introduction of the admission register as an administrative tool. Besides serving as the sole overall index to ward journals, the register provided a source of information for the compilation of statistics on admissions, cures, and mortality rates. By the turn of the century, it had become routine procedure to extend patients' particulars to marital status, religion, and country of birth, and to make provision for additional items of information in the remarks column of the journal.[34]

3.3.2 Reforms in the early up to mid Twentieth Century

The beginning of the 20th century witnessed an intensification of concern for how medical records were kept, especially in North America, where individuals and the professional associations collectively came to play a significant role in the development of the medical record as we know it. The initial impetus towards improved standards of medical record-keeping was centred around medical education.[35]

In 1900 Walter Cannon, then a student at Harvard Medical School, 'suggested the idea of using printed records of cases in the teaching of medicine', being convinced on the basis of his own experience that students needed more than lectures alone to train them 'to reason clearly in medical

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[33] Dorothy L Kurtz, The Unit Medical Record in the Hospital and Clinic, New York, 1943, p. 4

[34] Hamish Maxwell-Stewart and Alistair Tough 'Cutting the Gordian Knot ...', Archivaria, 41:, 1996, p. 63

[35] Stanley J. Reiser, 'Creating Form out of Mass', in Everett Mendelson, (ed.), Transformation and Tradition in the Sciences, Cambridge, 1984, p. 307

matters, weigh conflicting evidence or draw just conclusions'.[36] Systematic study of genuine cases as revealed in actual clinical records was, he believed, the surest way to induct students into the logic of medical thinking. Ten years later, the potential of such a parallel use of the medical record also struck R.C. Cabot of the Massachusetts General Hospital. In 1910 he began to hold weekly discussions on clinical histories from the medical record. Designed as an educational exercise for junior house staff, the onus of these sessions was on case analysis in terms of the evidence, the balance of probabilities, and the relationship between clinical and autopsy findings. Another influential figure who was instrumental in raising the status of the medical record was A.E. Codman. As a leading practising surgeon and teacher at the Massachusetts General Hospital, he viewed the issue of reliable patient documentation as crucial not only to improving medical education, but to raising medical standards as a whole.[37]

The revolution which the Massachusetts medical school had initiated by institutionalising the medical record as a teaching device, 'drew attention to the value of accurate and complete medical records'.[38] Nevertheless, among the majority of American doctors and hospitals reliable and detailed clinical notes remained a rarity, and most hospital records were regarded as 'practically valueless'.[39]

At this stage the American College of Surgeons, which had been set up in 1913 (by, among others, Codman himself) with the aim of promoting standards of surgery, took up the cudgels for improving the quality of hospital records in the context of an overall drive for to improve efficiency in hospitals. In effect, the American College of Surgeons harnessed record keeping to surgery by requiring new candidates for admission into the fellowship to submit for evaluation by their peers '50 complete copies and 50 abstracts of case records of patients upon whom the candidate had performed

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[36] Stanley J. Reiser, 'Creating Form out of Mass', in Everett Mendelson, (ed.), Transformation and Transformation in the Sciences, Cambridge, p. 307

[37] Stanley J. Reiser, 'The Clinical Record in Medicine: Reforming Content and Purpose': Part 2, Annals of Internal Medicine, 114:(1):, 1991, p. 980

[38] Stanley J, Reiser, 'The Clinical Record in Medicine ...', (Part 2), Annals of Internal Medicine, 114(11): 1991 p. 982

[39] Stanley J. Reiser, 'Creating form out of Mass', in Everett Mendelson, Transformation and Tradition in the Sciences, Cambridge, 1984, p. 310

major surgery'. In the event, most of the records assessed proved to be 'incomplete, fragmentary and different in form'.[40] The College thereupon incorporated the provision 'that accurate and complete case records be written for all patients and filed in an accessible manner in the hospital'[41] into its Hospital Standardisation Programme as a necessary step towards upgrading and regulating hospital procedure as a whole. Underlying this was an acknowledgement of the fact that the maintenance of good medical records is not only in the interest of efficient and consistent patient care but, of medico-legal significance for hospitals, physicians and the public alike and last but not least, important for medical education and training.[42] As an editorial in *Hospital Management* put it in May 1919, ... 'case records are the visible evidence of what the hospital is accomplishing. ... Not to maintain case records properly is like running a factory without a record of the product'.[43]

From the 1910s all this began to change dramatically. Up to then, all effort to improve the medical record had been directed towards 'preserving and indexing medical records'[44], with the basic form and chronological arrangement of data entry into the ward journal remaining essentially unchanged. However, as time went on, the system of entering records into the ward journal 'became increasingly outmoded'[45], and change became inevitable for three main reasons.

To begin with, the hand-written record entry was gradually complemented by duplicated and type-written documents that were pasted into the ward journal by hand. Then, as new advances in technology were integrated into everyday medical procedure, the journals had to accommodate a host of additional items such as x-ray results and laboratory

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[40] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 21

[41] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 21

[42] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 21

[43] Stanley J. Reiser, 'The Clinical Record in Medicine ...', (Part 2), Annals of Internal Medicine 114(11): 1991, p. 982

[44] Dorothy L. Kurtz, The Unit Medical Record in the Hospital, New York, 1943, p. 5

[45] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...', Archivaria, No. 41: 1996, p. 63

analysis reports. All these documents came in various shapes and sizes which, for lack of any other suitable place, were pasted into the margins alongside the relevant entry. As a result, the journals became untidy and awkward to use. Documents overlapped, obscuring each other as well as the main journal pages. Sometimes important documents went missing as appended documents became unstuck. Worse still, bindings would become distended beyond their limits so that the journals disintegrated in the course of time.[46]

These deficiencies were exacerbated by the custom of recording patient data at the time of consultation. Consequently passages relating to individual patients tended to be widely dispersed, so that clinicians had to wade through different pages in the same journal, or even to other volumes, to locate information on individual patients. Thus it became 'a formidable task to assemble any number of cases of a given condition or even to examine the progress of a single patient'.[47]

A second reason which made the use of the ward journal obsolete was that as hospital work became specialised, the number of departments and health care professionals directly or indirectly involved in patient care, proliferated. Examples of such new services are paramedical units such as social welfare, occupational therapy, and pharmacy, all of which generate information in the course of the treatment process. Meanwhile, it was common for all the services and departments involved in the by now multifaceted management of patient care to keep their files to themselves. While treatment was becoming more sophisticated by the day, it remained an accepted evil that '... to collect data on a patient with a history of repeated admissions and varied clinical care was exceedingly laborious and to attempt it for many cases was out of the question'.[48]

Finally, the post-Cannon, Cabot, and Codman era of medical education, with its emphasis on the analysis of real case histories, intensified the need

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[46] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...', Archivaria, No. 41:, 1996, p. 63

[47] Dorothy L. Kurtz, The Unit Medical Record in the Hospital and Clinic, New York, 1943, p. 5

[48] Dorothy L. Kurtz, The Unit Medical Record in the Hospital and Clinic, New York, 1943, p. 5

for a more consistent and reliable method of record keeping. To provide students with patient-based examples from the case book was not easy. Information was not only physically inconvenient to obtain in the first place (for reasons already outlined), but the nature of what was recorded did not lend itself to the collation of complete data on the individual patient. In the light of all this, it is not surprising that problems arising from 'incomplete entry of data even in the best kept records were not uncommon'.[49]

As late as 1923 a commentator observed: '...case histories are the most glaringly defective in what they fail to record about the patient'.[50] Two basic recommendations were made in the twentieth century to remedy these problems. To deal with the problem of the dispersion of medical evidence in the case record the Unit Medical Record (UMR) was introduced to replace the ward journal.

In contrast with the collective ward record, the UMR comprised 'a single file containing all data and information generated in each staff encounter with a given patient in any of the divisions of a hospital.'[51] The UMR system was primarily introduced to cope effectively with the escalating volume of hospital records resulting from the expansion and diversification of clinical techniques used in patient care. The rationale for its development was that if every patient had a unique number and a single file for all subsequent admissions it would be far easier to put together and oversee information on the individual patient. Furthermore, instead of medical records being ward, consultant, or practitioner based the identifying unit will be the patient with 'each patient folder [containing]all records pertaining to an individual from anti natal care to post mortem examination'.[52]

The first American general hospital known to have adopted the UMR system was the Presbyterian Hospital in New York, where it was

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[49] Stanley J. Reiser, 'The Clinical Record in Medicine ...', (Part 2), Annals of Internal Medicine, 114(11): 1991, p. 980

[50] Stanley J. Reiser, 'The Clinical Record in Medicine ...', (Part 2), Annals of Internal Medicine,114(11): 1991, p. 980

[51] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery' in Nancy McCall and Lisa Mix, (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, Johns Hopkins University Press, 1995, p. 35

[52] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...', Archivaria, 41: 1996, p. 65

implemented in 1916.[53] In Britain, as Maxwell-Stewart and Tough report, it was introduced slightly earlier, beginning with the Three Counties Hospitals in Bedfordshire in 1912. Other British hospitals which switched to UMR record-keeping around this time were the Royal and the Victorian Infirmaries in Glasgow, where its inception took place during the first world war.[54] At St. Bartholomew's, a traditional pioneer in medical record-keeping, the UMR came into use in 1921.[55] A case summary of patients of 1922 shows a style and format very similar to that of case summaries today.[56] Following the creation of the National Health service in 1948, the UMR became the norm throughout the Britain.[57] Today it is the prevailing system world-wide.

The beneficial impact of the UMR was immediately discernible from several points of view which Reiser sums up as follows: 'There was greater awareness among staff of the judgement of colleagues; patients received more appropriate therapy because staff had better knowledge of their history; and the ability to evaluate the result of intervention was enhanced'.[58] In corroboration of this he cites a clinician who observed in 1918: 'Only those who have used the antiquated and uncorrelated forms of in-patient and out-patient histories and later studied the unit histories in follow-up work can appreciate the advantages of the system'.[59]

Another basic reform of the patient record started in the 1920s and dealt with the problem of the omission of basic clinical information. The suggested solution was a standardised method of recording data. Every record it was proposed should contain a separate form on which physicians were required

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[53] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...', Archivaria, 41: 1996, p. 64

[54] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...', Archvaria, 41: 1996, p. 64

[55] Siân Griffiths, Evaluating an Electronic Health Care Record for Rheumatology, M. D. Thesis, University of Sheffield, p. 41

[56] Siân Griffiths, Evaluating an Electronic Health Care Record for Rheumatology, M. D. Thesis University of Sheffield, p. 41

[57] Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot...' Archivaria, 41: 1996, p. 64

[58] Stanley J. Reiser, 'The Clinical Record in Medicine ...', (Part 2), Annals of Internal Medicine, 114(11): p. 982

[59] A.-O. Whipple, cited in Stanley J. Reiser, 'The Clinical Record in Medicine ...', (Part 2), 114(10): 1990, p. 982

to note essential data. The standardised portion of the record would consist of data determined by staff consensus to be a necessary part of every case record. In Great Britain, following recommendations by special committees standardisation of records was encouraged by National Health Service administrative bodies.[60]

One other concern during the early 1920s up to the 1960s was how to organise data in the medical record to provide easy and timely accessibility to information. As was pointed out earlier, the UMR was specifically intended to come to grips with the inherent deficiencies of the ward journal, in particular its failure to guarantee convenient and fast access to patient data. The UMR solved the problem of convenience access by concentrating all information on a patient within the covers of a single folder. The second aspect, the speed factor, was a matter of structuring the contents of the folder in such a way that any particular type of note could be quickly distinguished from among its fellows. In other words, to maximise the record's accessibility to its users, it must, as Sullivan puts it, be 'orderly, eligible, and current and should be arranged in a fashion that facilitates treatment of acute and chronic illnesses, preventive care referral for specialist services and hospitalisation.'[61] The concern for the organisation of documents in the patient record led to the introduction and institutionalisation of various medical record formats, namely the source-oriented medical record (SOR), and the problem-oriented medical record by (POMR). Of these two the system that has prevailed in most paper patient record systems is the SOR. The section which follows discusses these formats in detail.

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[60] See Bernard Benjamin, (ed.) Medical Records, (2nd ed.), London, William Heinemann Medical Books Ltd., 1980, p. 196-200. and also Ministry of Health, 'The Standardisation of Hospital Medical Records', Report of the sub-committee of the Standing Medical Advisory Committee of the Central Health Service Council, London HMSO, 1965 and Scottish Home and Health Department, 'Hospital Medical Records in Scotland', (Development and Standardisation), Report of a Sub-committee of the Standing Medical Advisory Committee of the Scottish Health Services Council, Edinburgh, HMSO, 1967

[61] Robert J. Sullivan, Medical Records and Index Systems, Cambridge,Masschusetts, Ballinger Publishing Co. Inc., 1979, p. 15

3.3.3 Institutionalised formats

3.3.3.1 The source-oriented medical record. The oldest and most established method of ordering medical record data is the Source-Oriented Record (SOR) format — in which data is schematised according to source, and entered in strict chronological sequence. Thus the history and reports of physical examinations performed by attending physician(s), radiologists' reports, and other specialist findings, are assembled separately and filed in specific compartments of the record. Nurses' notes also has a set slot, and so do the observations and reports compiled by every category of health professional responsible for the patient.[62] This basic procedure applies to all in- and out-patient records, although in the case of the outpatient the data might be less compartmentalised because the scope, volume, categories of information, and the actual number of people involved in the compilation of the record tend to be more restricted.

The 'principal strength [of the SOR] lies in its function as an organised repository of data from multiple sources'[63]. The SOR format organises reports from each source together, thus making it easy to determine the assessment, treatment and observation that a particular department has provided.

3.3.3.2 The problem-oriented medical record. In the 1960s the SOR format came under heavy fire from Weed, who held that the traditional arrangement of keeping patient data was both inadequate and detrimental to patient care. As an alternative, he developed a new systematic method of documenting patient care, which he termed the Problem-Oriented Medical Record (POMR).[64]

Weed argued that data in the medical record should be assembled in accordance with the focus of information rather than its source. Focus, in this context, refers to a patient's actual problems as distinct from the arbitrary designations and diagnostic names by which illnesses and conditions are

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[62] Robert J. Sullivan, Medical Records and Index Systems, Cambridge, 1979, p.16

[63] Robert J. Sullivan, Medical Records and Index Systems, Cambridge, 1979, p. 16

[64] Robert J. Sullivan, Medical Records and Index Systems, Cambridge, 1979, p. 16

formally characterised. The following observation from Feinstein expresses Weed's position very well: ' ... Diagnosis of myocardial infraction identifies a disease, but does not tell us whether a patient is still having a chest pain or shortness of breath and whether his family is being bankrupted by high cost of hospitalisation.'[65] In other words, Weed founded his problem-oriented method on the precept that a patient's requirements are as much dictated by socio-economic and behavioural factors as by his formal medical condition. Further, if these factors are known to the provider, he is in a better position to understand the patient's condition and to treat him effectively. A total patient profile of this kind can be created by organising data in such a way as to show cause-and-effect relationships between problems and their treatment.

The Weed system relies in the first place on a data base. From this is compiled a numbered 'problem list' of past and present complaints as recorded on first encounter with the patient. The problem list serves as a permanent focus for referral for subsequent notes which are added chronologically, but filed under the old or new problems to they refer. Another feature of the POMR is that it is planned to address each problem on the list as a problem in its own right. The constituent (sub) plans are structured into three parts which respectively provide frameworks for the collection of further data, for treatment, and for the management of the individual problem.[66]

The POMR progress note has a distinct format comprising four elements: subjective, objective, assessment, and plan, for which the acronym is SOAP. The subjective element deals with the patient's symptoms and complaints, while the objective component deals with physical findings such as weight, blood pressure, and test results. Taking these two elements in conjunction, the physician arrives at an assessment, and formulates a plan of action which takes account of the evaluation as a whole.[67]

The POMR has been found of particular advantage in group practice where patients may be seen by different physicians. In such settings the

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[65] Alvan R. Feinstein, 'Quality of Data in the Medical Record', in Medical Information Systems San Francisco, California, Wobour Butterworth Inc., 1978, p. 45

[66] Robert J. Sullivan, Medical Record and Index Systems, Cambridge, 1979, p. 7

[67] Robert J. Sullivan, Medical Record and Index Systems, Cambridge, 1979, p. 8

record serves as communication device which allows successive doctors to quickly determine the status of each patient's difficulties.[68]

Commenting on and comparing the SOR and POMR data structures, Sullivan suggests that health care professionals may find data entry into the latter more laborious because each of a patient's problems require separate progress notes, and because laboratory data have to be matched with and entered in the appropriate category of notes. All the same Sullivan regards the POMR as superior to the SOR when it comes to data retrieval, noting that 'retrieval of data related to specific problems is improved when compared to the SOR, because pertinent items are together in logical sequence of record notes'.[69]

It is reported that at the early stages of its development the POMR enjoyed widespread acceptance among house staff in North American university health centres. The experience there had been that the POMR approach provided a cogent framework for organising the copious volume of information resulting from the large number of tests and consultations that are customary in the academic environment. Sullivan emphasises the extent to which these strengths won the POMR much acclaim and enthusiastic support. However, there is as at present no question of the POMR being universally perceived as an improvement over the SOR.[70]

Feinstein has criticised the POMR on the grounds that even though it 'provides an improved method of cataloguing the data in the medical record, it does not deal with the more basic issue quality of data'. Another of his main objections is that the POMR does not deal with the matter of data validation for the diagnostic and therapeutic decisions made by doctors managing their patients' problems.[71]

In many places today the system has been modified by putting emphasis on tying in every progress note with a particular problem, yet retaining the list and format of the progress note. At the present time the POMR is not popular among health care institutions because of its deficiencies. Despite these deficiencies, the POMR was adopted in the 1970s as the basis for

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[68] Robert J. Sullivan, Medical Record and Index Systems, Cambridge, 1979, p. 8

[69] Robert J. Sullivan, Medical Records and Index systems, Cambridge, 1979, p. 8

[70] Robert J. Sullivan, Medical Record and Index systems, Cambridge, 1979, p. 18

[71] Alvan R. Feinstein, 'Quality of Data in the Medical Record', in Medical Information Systems, San Francisco, California, 1978, p. 45

developing a computerised medical information system known as the Problem-Oriented Medical Information System or PROMIS.

3.3.4 Content of the medical record: the current status

Inevitably, the structural reform of the medical record also had implications for its content. The pre-20th century patient record was, for the better part of two centuries, accepted as the preserve of a very limited group of intramural, institutional users. It was created by physicians as a source of reference for themselves in the first instance, and for care givers and the hospital administration in the second. In contrast, today's medical record is the collective creation of a wide range of health care professionals other than doctors, including, for instance, different types of social workers, occupational therapists, and so forth.[72] For this reason, the contemporary medical record is constituted of a multiplicity of data which Feinstein classifies as demographic para-clinical, and therapeutic,[73] and which have come to assume a number of secondary functions serving a much wider audience than was the case before.

Demographic data refer to the patient's personal particulars (age, race, sex), and his environment (address, occupation, place of work). Clinical data relate to the patient's symptoms, how they developed, and any physical signs detected by the examining physician. Para-clinical information concerns the outcome of clinical laboratory and related examinations performed on substances deriving from the patient's body. Therapeutic data cover the range of diets, drugs, anaesthetics, surgical operations, and other strategies applied as part of the curative, therapeutic process. Included too, is a range of miscellaneous items such as consent forms, insurance records, legal documents, and correspondence.[74]

In addition to the above categories of information, the medical record also contains documentary items which complement or support the data

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[72] Michael P. Pegano, Communicating Effectively in Medical Records, London, Sage Publications, 1992, p. 1

[73] Alvan R. Feinstein, 'Quality of Data in the Medical Record' in Medical Information Systems, San Francisco, California, 1978, p. 46

[74] Alvan R. Feinstein, 'Quality of Data in the Medical Record', in Medical Information Systems, San Francisco, California, 1978, p. 47

contained in the unit file. Described by Howell as 'ancillary diagnostic media', these include 'images such as x-rays; computed demography (CT) and magnetic resonance (MRI) scans; pathology specimens and documentation; and the output of invovo tests such as electro cardiograms (ECG), electroencephalograms (EEG), and photographs'. [75] Howell also observes that in most institutions the actual test media, such as x-ray films and specimens, are retained by the department of origin, which then prepares a report of the test result for incorporation into the patient's folder. The reasons for this are purely practical. Some x-ray films, for instance, may be too large to fit into the regular file format, while in the case of pathology records the originals are often messy, and even likely to be contaminated with organic and chemical substances.

Taking the medical record as a collective unit, it is generally agreed that the different types of documentation of which it is composed fall into three broad classes, namely: primary, secondary and transitory documents. Primary documents are those which contain vital data based on summaries and reports, inclusive of test findings prepared at times when the patient is receiving treatment. That is, primary documents are directly related to illness, diagnoses, tests, and the administration of drugs and medication, and are by that token crucial to an individual's future health care and medical history. Secondary documents and reports, even though they may be of potentially crucial medical and legal significance, are not required for the patient's immediate subsequent care. Transitory documents, which are similarly of no significant future relevance once the patient has been discharged, include such items as diet reports, checklists, and graphs and charts of temperature, blood pressure and other readings.[76]

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[75] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery' in Nancy McCall and Lisa Mix Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, P. 37

[76] Alvan R. Feinstein, 'Quality of Data in the Medical Record', in Medical Information Systems, San Francisco, California, 1978, p. 46

3.4 The medical record in the computer era

3.4.1 The introduction of computers in hospitals

The use of computers in hospitals started in the early 1960s and has since grown steadily. The first computer systems were used primarily for financial applications such as bookkeeping and patient billing. Even in these early years, however, some large hospitals already began to experiment with computerised systems for specific clinical applications. [77]

Unfortunately, most of these systems failed to deliver on their early promise. Because of this initial poor showing of computer software packages designed for clinical use, many hospital administrators may have been discouraged from giving serious consideration to other software that evolved later in this era. Generally speaking, the 60s computers were in any event too cumbersome and expensive for even the largest hospitals. Cost and space factors aside, these early systems experienced changes in price (decreases) and capability (increases) so often that their acquisition, ironically, became something of a high financial risk. Hospitals often found themselves acquiring computer systems that were quickly made obsolete by emerging systems that were faster and cheaper. The reputation of hospital computer systems among the user community was further eroded by the unrealistic expectations that users placed on these systems. These overly high expectations were in large part the product of misconceptions and ignorance that many hospital staff had about systems and computers in general.[78]

By the end of the 1960s, a handful of data-processing companies routinely provided hospitals with computer support for financial applications, which was often available on a shared basis. This approach was not just useful, it was economical as well. Quite naturally, therefore, it became common practice during the 1970s.

Despite the steady advancement of computer technology and information management systems, the early 1960s efforts to produce acceptable hospitals information management systems met with varying degrees of success. This

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[77] J. Anderson, 'Clinical Records Systems', in Barbara Kostrewski (ed.), Current Perspectives in Health Care Computing, Cambridge, Cambridge University Press, 1984, p. 108

[78] J. Anderson, 'Clinical Records Systems', in Barbara Kostrewski (ed.), Current Perspectives in Health Care Computing, Cambridge 1984, pp. 108-109

poor progress can be attributed to two main factors. First, few people in the health care field were at all *au fait* with advances in the computer industry and, conversely, few in the computer industry had any awareness of the particular needs of the health care field. Second, the technology then available had inherent limitations which made it of little practical value to most potential users.

During the 1970s hospital information systems (HIS) developed in several ways. Many hospitals approached information systems development through departmental systems, beginning with financial information systems. Others adopted the goal of a single integrated or monolithic system that was designed for one large database that shared its resources among departments. By contrast, there were also those who acquired versions of hospital information systems through departmental applications, such as clinical laboratory systems, to which custom features were cumulatively added. As long as the intention was to create common data through a single shared database, this proved difficult to achieve. In large part, database structures and the tools needed to use them effectively were immature.[79] During this period hospital databases were derived from discharge analysis of medical records. Many hospitals participated through contracts with external computer service organisations by submitting discharge abstracts to the service computer companies for processing and receiving print-outs of hospital statistics[80]. As mini computers became more established in the 1970s more and more separate departments were able to acquire departmental systems that met their specific needs. Vendors began to offer packages of functions tailored to hospital departments, such as laboratories, radiology, pharmacy, and accounting.

By the late 1970s, micro computers and the PC had rolled into place. This major technological development gave rise to additional empowerment and expectations by health care practitioners. In effect, technological advances produced computers of reliability, small size, and low cost. As hardware reliability and availability became highly affordable, computer business communities recognised that the greatest cost involved in information

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[79] Gio Wiederhold and Leslie E Perreault, 'Hospital Information Systems' in E. H. Shortlife *et al*, Medical Informatics: Computer Applications in Health Care, New York, Addison Wesley Company Ltd., 1990, pp. 224-225

[80] M. Gross *et al*, 'Clinical Information Systems: Why Now'? Topics in Health Information Management, 14(1), 1993, p. 1

systems development was in the software. Thus software engineering emerged as a field dedicated to the management of the software development process. The three major activities that characterised the 1970s and 1980s were significantly improved reliability of hardware and software, reduction in cost, and significant investment in research and development. All this laid a strong foundation for the 1990s. The goal of the present decade has been to develop a fully integrated computerised medical records system. The section that follows presents a brief overview of developments in this area.

3.4.2 Computerised patient record (CPR) systems

3.4.2.1 Features of the Computerised Patient Record (CPR). As I have noted in the previous section, the development of medical information systems has an extensive history covering more than thirty years. The early research which was centred on laboratory management, electrocardiograph analysis, administrative record-keeping and the like, has become the basis of many commercial information systems today. As I also mentioned earlier, these systems were for the most part 'stand-alone systems' which served individual organisational units within the hospital. As such, these departmental systems were not designed as vehicles for access to a complete patient record. While remote access to a record of a particular department might be provided, the departmental systems were not intended to allow a review of information not specifically recorded by the system. The primary emphasis of departmental systems was restricted to admissions functions, order entry/discharge capture, and patient billing. In short the objective of such systems was primarily directed towards serving the needs of a single department, regardless of the type and amount of information contained in their databases.

Until now the goals of research remain set on the creation of electronic computer-based patient care record (CPR) system(s) which, by definition, are systems whose design is management of the entire patient record. Such a design could involve a physically distributed system with logical central control of the entire record of a centrally located complete CPR in a single database. The key factor is the presence, through some mechanism or other, of central knowledge, control and organisational integrity of the entire record. The central control should allow a single terminal to access the entire

record regardless of the location of the data. More than just permit access, the system should be able to integrate the data in ways that are not possible in a single departmental system where the data may have originated. That is, the central controlling system should provide integrated and coordinated extended use of data to facilitate, for instance, the compilation of integrated reports, the generation of alerts and reminders, and complex data searches across many departmental data elements. Further, a CPR system should ensure consistent terminology across all of the data elements in the patient record, regardless of their origin.

Efforts are being made world wide to develop comprehensive CPR systems. However, because the costs involved are astronomical, hospitals CPR policies have overridingly been directed towards a piecemeal one-department-at-a-time strategy, with x-ray, laboratory, and out-patient units as the favoured contenders. The CPR systems for clinical functions to date all qualify as 'partial', as opposed to 'full' systems. In effect, there is at present no CPR system with the capacity to process and traffic information from all departments in a hospital.[81] In other words, a sufficiently comprehensive system to manage the entire patient record has yet to be developed. However, there are quite a number of partial CPR systems in operation whose functions go well beyond routine data collection, storage, and the distribution of data supplied by one or more departmental systems. The next section provides an overview of some of these systems.

3.4.2.2 Historical landmarks of CPR systems. The overview which follows summarises a few key characteristics of selected operational systems which effectively utilise some portions of CPR. It should be noted that this overview does not set out to parallel the extensive accounts found in the literature. Rather, it was the intention to concentrate on a handful of systems which embody one or more features which typify the current state of CPR development.

PROMIS. The Problem-Oriented Medical Record System was developed and implemented in the early 1970s by Weed and his colleagues at Vermont

[81] Steve Troll, 'Computerising the Clinical Record', The British Journal of Health Care Computing and Information Management, 12(7): 1995, p. 34

Medical Centre. The system is based on Weed's paper-based Problem-Oriented Medical Record in which, as we saw earlier, all diagnostic and therapeutic actions are tied to an obvious or underlying patient problem. Designed for routine use by physicians, PROMIS was intended to replace the paper medical record in order to streamline the quality of patient care through a unified system of patient history documentation. However, as the PROMIS system was found to be inflexible in practice, it has never gained widespread acceptance, although there are institutions where it is used.[82] PROMIS integrates functions to both record and view complete medical histories, data collected during physical examinations and investigations, and progress notes. In addition, tests and prescriptions can be ordered on-line. It should be noted that the system is not designed to support clinical research.

Griffiths reports that in 1980 Fischer et al conducted a study in two wards, one of which used PROMIS, and the other POMRs. The investigators found that in both wards a considerable amount of time was spent on documentation. Nurses and pharmacists were enthusiastic about PROMIS, but physicians were not. In spite of the evaluation, which was favourable to PROMIS, the physicians continued to use paper-based records.[83]

RMIS. The Regenstrif Medical Information System was developed at Indiana University Medical Centre for use in out-patient departments by doctors, nurses, radiologists, and pharmacists. Implemented in 1972, the system stores problem lists, laboratory investigation results, prescription data, vital signs, and discharge summaries. Another attribute of RMIS is that it supplies automatic reminders about clinical events that may require corrective action. Evaluation of the system revealed that physicians continued to use paper medical record histories, and examination and follow-up during clinics.[84]

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[82] Gio Wiederhold and Leslie E. Perreault, 'Hospital Information Systems' in E. H. Shortlife *et al.*, Medical Informatics: Computer Applications in Health Care, Chicago, Illinois, Addison Wesley Company Ltd., 1990, p. 237

[83] Siân Griffiths, Evaluating An Electronic Health Care Record For Rheumatology, M. D. Thesis, University of Sheffield, p. 57

[84] Siân Griffiths: Evaluating An Electronic Health Care Record For Rheumatology, M. D. Thesis, University of Sheffield, p. 57

TMR. The Medical Record was developed at Duke University Medical Centre in the 1970s. It was originally conceived for use by physicians in out-patient clinics, but was later adapted for use in inpatient settings.

TMR is designed to store and retrieve all data contained in the paper medical record, aside from images such as x-rays. However, the system does integrate an option to link such imaging systems to in-patient systems. TMR also supports a complete list of diagnoses and procedures, as well as subjective and physical findings, laboratory data and therapeutic interventions.[85]

COSTAR. The Computer-Stored Ambulatory Record System, (COSTAR), one of the first systems capable of producing a computer-based patient record, was developed in the late 1960s by the Laboratory Computer Science Department of the Massachusetts General Hospital. Its functions include patient registration (allowing the creation of a Master Patient Index), out-patient schedules, and the access to clinical information from which encounter reports, status reports, and diagnosis-related flowcharts can be produced. These functions are programmed in such a way that they can be used independently of one another. This means that it is not necessary to implement the entire package in order to use a particular feature.[86] The benefits of the system include clinical care, clinical investigation, and quality assurance.

COSTAR was evaluated by the Internal Medicine Department of the University of Nebraska. It was found that in comparison with the paper record, nurses and clinical staff were able to locate information more easily, and to answer telephone calls more quickly. At the same time, patients in the COSTAR group spent more time in clinics because entering data into COSTAR was a time-consuming business which slowed down the clinical process. In the hospital at large, COSTAR did not replace paper records.

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[85] Siân Griffiths, Evaluating An Electronic Health Care Record For Rheumatology, M. D. Thesis, University of Sheffield, p. 59

[86] See Octo G. Barnett *et al.*, 'COSTAR, a Comprehensive Medical Information System for Ambulatory Care', B. T. Blum (ed), Proceedings of the Sixth Symposium on Computer Applications in Medical Care, Washington DC, IEEE Computer Press Society, 1982, pp. 8-18

Both methods were used, although the investigators did not assess the content of recording in COSTAR and in the paper records.[87]

Griffiths cites a quantitative study of user views conducted by Young *et al* when COSTAR was piloted in the UK. More than half of the physicians participating in the pilot project had ceased to use COSTAR within nine months. Of those who continued to use the system, a considerable proportion reported that they did not find COSTAR output helpful.[88]

OMR. The Out-Patient Medical Record was developed in the 1970s at the Bethel Israel Hospital in Boston to provide back-up for General Medicine and Primary Health Care clinicians at hospital-run community clinics located away from the main hospital. OMR permits clinicians to enter, edit, and display problem lists; health promotion and disease prevention screen sheets; flowsheets, and progress notes. One important attribute of this system is that its use is not restricted to any particular professional group. Hence, it is used extensively by all members of the health care team. The system prompts clinicians in the administration of influenza vaccination.

When compared with paper records, it was found that doctors recorded more problems on the computerised problem list, and devoted more words per problem than they did on paper. The study did not assess the quality of data recorded.[89]

ICU. In the United Kingdom. The Intensive Care Unit (ICU), also known as the Intensive Treatment Unit (ITU) of the John Radcliffe Hospital in Oxford, provides a good example of departmental CPR. The system holds up to 80% of all clinical patient data in electronic form. It is a client/server network of clinical workstations which holds all test results, drug prescriptions, daily progress notes, and discharge summaries. Once a patient is discharged, a summary report is printed out and inserted into his paper folder. The computer-based record is archived electronically for audit purposes.

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[87] Siân Griffiths, Evaluating Electronic Health Care Record in Rheumatology, M. D. Thesis, University of Sheffield, p. 60

[88] Siân, Griffiths, Evaluating Electronic Health Care Record in Rheumatology, M. D. Thesis, University of Sheffield, pp. 60-61

[89] Siân Griffiths, Evaluating Electronic Health Care Record in Rheumatology, M. D Thesis, University of Sheffield p. 61

Similar systems are in operation at the Royal Brompton and Great Ormond Street hospitals in London, and the Royal Infirmary at Edinburgh. At the Wirral and Burton hospitals, two pilot EPR sites are currently in place.[90]

In both Europe and North America, attempts are being made to define standards for EPR. In Europe work is concentrated on the Good European Health Record (GEHR) initiative while in America the focus is on the Health Level (HL) 7 standard.[91]

3.5 Inherent qualities of patient record systems

3.5.1 Patient paper record (PPR) systems

One advantage of the paper record is its universal familiarity. This ensures that new users need not acquire new skills or behaviour patterns in order to be familiar with proper routines.

Another advantage is that individual records are highly portable, and can conveniently be carried to the point of care or anywhere else where it is needed. As long as they are not too voluminous and large, paper records are convenient to browse through and easily scanned. This feature allows users to organise data in various ways, and helps them to look for patterns or trends that are not stated clearly or explicitly. Once in hand paper records are not subject to down time as computer systems are.

Barnet *et al* raise the point that the paper medical record system allows great flexibility in the recording of data, and that paper records lend themselves to the uninhibited recording of subjective views and impressions. Furthermore the paper record allows health professionals to concentrate on what to record rather than on the act or mechanics of recording.[92]

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[90] Steve Troll, 'Computerising the Clinical Record', in the British Journal of Health Care Computing and Management ..., 12(7): 1995, p. 34

[91] P. McKenna, 'Towards the Paperless Hospital - Implementing the Electronic Patient Record at Edinburgh' in Current Perspectives in Health Care Computing (Conference Proceedings), Harrogate, (18-20 March), British Journal of Health Care Computing Ltd., 1996, p. 262

[92] Octo G. Barnett, 'Computers in Medicine', Journal of the American Medical Association, 263(19): 1990, pp. 2631-2633.

The literature however, is awash with accounts of the deficiencies to which paper medical records are prone. In some cases, studies have been conducted to support the case against the properties of paper records. Most of these studies focus on the content of records, the format of records, aspects of access, retrieval, and availability, and on record linkage and rather.

A palpable disadvantage of the paper record is that data may often be missing, illegibly written, or inaccurately recorded. This charge is supported by many researches. Burnum reports that '[m]edical records which have long been faulty contain more distorted, deleted and misleading information than ever before'. Regarding why data can be missing from the medical record, he puts forward three reasons. In the first instance, questions may not have been asked, examinations not performed, or tests ordered. Secondly although information may have been requested and duly provided, the clinician either failed to record it or else, delays occurred in entering the information in the record. The third possibility is that information was requested and delivered, but subsequently misplaced or lost.[93]

A study conducted by Tufo and Speidel on record availability, missing data, and the recording of laboratory results revealed that 43-70 per cent of records investigated failed to present evidence of general medical information of use in preventive medicine.[94]

It is difficult to retrieve data from paper medical records because it may be bulky and jumbled. Alternatively, it may be difficult to make sense of illegible handwriting. In the case of patients with chronic problems, the sheer weight of records can be imposing, if not daunting, while the time constraint may prevent the user from taking full advantage of the information available.

Another downside of the paper records which has an impact on data retrieval is that results and reports tend to be filed on flimsy sheets of paper which are usually not displayed in a way that allows information to be detected easily. Furthermore, flimsies are frequently lost because they are inserted in folders as loose sheets.

Yet another problem with the paper record is that it is sometimes not available for instant access. That is, the folder may be in use by another user,

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[93] John F. Burnum, 'The Misinformation Era: The Fall of the Medical Record' Annals of Internal Medicine, 110(6): 1989, pp. 482-483

[94] Henry M. Tufo and Joseph J. Speidel, 'Problems with Medical Records', Medical Care, 9(6): 1971, p. 512

in transit, or missing altogether. The Tufo and Speidel study revealed that medical records were unavailable for up to 30 per cent of patient visits. The following reasons were given to account for this. First, patients were being seen in two or more clinics on the same day, the inference being that the paper record can only be seen in one place at any given time (a major disadvantage); second, charts were not forwarded — physicians kept them in their offices; and third, records were misfiled. In the researchers' view, problems of this kind were due to a combination of poor indexing, lack of efficient tracking systems and inadequate storage facilities.[95]

A further serious handicap of paper records is that if an only copy is lost, it may never be retrieved. Format is another drawback which impedes the use and effectiveness of the paper medical record. The findings of the study conducted, revealed that the reliability of hospital discharge data depended on the organisation, orderliness and logic of the medical record, nor is the standard format of the paper record conducive to dealing with multiple problems over prolonged periods of time.[96]

The illegibility of written notes is one of the biggest problems associated with PPR. Because PPR systems are free text, specific aspects of patient records are often inconsistent from one set of notes to another, and from one clinic to another. PPR management systems by their very nature employ a tedious redundant data recording process that is prone to human error.

3.5.2 Computer patient record (CPR) systems

CPR has the potential to mitigate against most of the problems identified with manual records systems. In effect CPR may be expected to improve aspects of medical record keeping.

In the first instance, CPR allows the user, wherever he might be in the hospital, instant access to any patient file provided that computer terminals are available throughout the hospital. Further the system provides multiple users with the ability to simultaneously access a given patient file at the same

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[95] Henry M. Tufo and Joseph J. Speidel, 'Problems with Medical Records', Medical Care, 9(6): 1971, pp. 512

[96] Henry M. Tufo and Joseph. J. Speidel, 'Problems with Medical Records', Medical Care, 9(6): 1971, p. 516

time. This eliminates a common problem encountered in many health care facilities with paper-based patient record system, namely the patient's medical record can not be at more than one place at the same time, unless copies are made. The multiple access function of the CPR system significantly enhances the efficiency of all individuals which require access to the patient record. Thus CPR systems have the potential to improve exchange of information among caregivers without them necessarily seeing each other.

Second the shortcomings of poor and illegible handwriting that are inherent in manual record systems are eliminated in CPR systems. CPR systems also allow repeated observations to be viewed in the form of graphical representations.

Among other advantages, back-up ensures that information stored in a CPR system will not be lost. Furthermore, clinicians can extract information more rapidly from CPR systems than from paper-based record systems, while coding allows programmes to be written in such a way as to facilitate access to allow all information relevant to screening programmes, for instance. In the case of programmes with built-in interactive prompt facility, this function can be enabled along with other data entered at the time of consultations. Such programmes also serve to remind doctors of the existence of guidelines, or the need to make further observation or, to amend the guidelines for the case in hand.

CPR systems potentially obviate the need for costly repeat tests, the need for which is usually attributed to the result(s) of the initial test being misplaced, or lost in transit, or inexplicably going missing.

CPR systems can reduce or eliminate labour-intensive tasks commonly associated with PPR systems, notably filing, manual retrieval, and photo-copying manual records.[97] For nurses CPR systems do away with many administrative tasks that are documentation-intensive. It has been shown, for example that automation of the kardex with a CPR reduces the time nurses traditionally devote to documentation by between a half and a full hour per shift.[98]

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[97] Peter Peterson, 'Computerized HIS as a Tool in Quality Medicine', Computers in Health Care, 11 (10): 1990, pp. 37-38

[98] Jayne Thomas, 'Minimize Paper Work, Maximize Patient Care', in Computers in Health Care, 13(3): 1992, p. 34

In the final analysis, the greatest value of CPR systems lies in the capacity to enhance the quality of patient care. This conclusion is confirmed by a study conducted at the Wishard Memorial hospital which found that by linking terminals in doctors' offices, nursing stations, laboratories, pharmacy departments and other departments, computerised systems led to more efficient operations and improved patient care[99]. But beyond enhancing productivity, CPR systems offer the added benefit of enabling hospitals to measure the quality of services they deliver and the efficiency of their staff — two issues that have long concerned hospitals.[100]

In spite of these benefits, CPR systems have deficiencies as well. One disadvantage is the length of time it takes to complete data entry into the system in comparison with a paper-based system.

Griffith reports that a study conducted at Dudley Road Hospital in Birmingham which indicated that all doctors preferred hand-written notes to computer printouts. The reason for this was because forms are more quickly completed by hand. Also doctors found that the process of conceptualising and writing their own notes helped them to 'crystallise' thought. In this hospital, by the way, hand-written notes were found to be concise and legible.[101]

Griffiths further cites a study which suggests that 'the use of computers to document patient information could adversely affect the way in which patients relate to doctors', but observes that other studies do not confirm this.[102]

Another dilemma of working with CPR systems is how to reconcile the medical convention of recording free-form narrative on blank paper with the computer's demand for structure and a predefined vocabulary. Barnet suggests that the most successful compromise is for the physician to record

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[99] Alice Bredin, 'Taking Good Care of Patients' Computerworld, 24 (12): 1990, p. 105

[100] Paul Shoemaker, 'CPR — Desirability vs. Practicality', Health Systems Review, 25 (6) 1992, pp. 24-26

[101] Siân Griffiths, Evaluating Health Care Record in Rheumatology, M. D. Thesis, University of Sheffield p. 53

[102] Siân Griffiths, Evaluating Health Care Record in Rheumatology, M. D. Thesis, University of Sheffield, p. 53

information on a structured form incorporating a combination of coded and narrative formats.[103]

3.6 Purposes and uses of the medical record

3.6.1 Overview

The medical record was initially created to introduce continuity of care into the health management of the patient. This still remains its essential role. In time, however, the record has progressively come to assume an increasing number of secondary functions, beginning with its use in medical education, medical auditing, research, and epidemiological surveillance. As a document in its own right, it also has considerable administrative and legal significance. Because of these varied functions, use of the record is no longer restricted to the health care sector, as was the case in the past. Today's medical record serves a broad spectrum of both medical and non-medical users which is too extensive to enumerate, but which includes administrators, medical, social and historical researchers, insurance underwriters, and the legal profession. Some of the uses of the medical records are discussed below.

3.6.2 Patient care

As was noted, and will be noted time and again in the course of this study, the medical record, over and above all its many other uses today, is pre-eminently an instrument of patient care, and 'the husbandry of an institution's limited resources during this care'.[104] Most significantly of all, the medical record is a document of permanent relevance to an individual's history of health care delivery, which accompanies him throughout life.

As a medical tool, the record's function can be compared to that of a watchdog: it oversees that the patient receives the appropriate attention and

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[103] Octo G. Barnett, 'Application of Computer-Based Medical Record Systems in Ambulatory Practice', The New England Journal of Medicine, 310(25), 1984, p. 1645

[104] Joel D. Howell, 'Preserving Patients Record to Support Health Care Delivery Teaching and Research, in Nancy McCall and Lisa Mix (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 33

treatment. No medical complaint, however how minor in character, should fail to be investigated. No physician, however, can be expected to memorise every detail pertaining to every one of his patients. In this context it is of paramount importance that every item of information relating to the patient and his state of health is entered into the record if it is to remain readily available in both the short and long term.

Indeed, the proper recording of patient data is indispensable, possibly even determinant, to accurate diagnoses and the efficient administration of treatment. In the longer term, this also ensures that those concerned with the patient's care at some future date will be in a position to establish what surgery has taken place in the past, and whether intolerance, allergies, or specific responses to particular drugs and forms of medication are present. In addition, the record can serve as an important guideline to latent conditions, or the long term after-effects of earlier treatments and interventions.[105]

There are also circumstances under which a deceased person's medical record may be of benefit to the surviving relations. If, for example, the physician knows that one of a patient's parents was hypertensive, or subject to a chronic disease, this knowledge will help him to assess the patient's own risk of developing a similar condition.[106]

A well-maintained medical record can also help to save time, cut cost, and promote the patient's best interests at one and the same time. For instance, with recourse to accurate and readily available details of medical examinations, diagnoses and findings from earlier admissions, the provider is saved the time and cost of conducting needless repeat investigations, while the patient is saved the discomfort of undergoing them.

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[105] Malcolm T. MacEachern, Medical Records in the Hospital, Chicago, 1937, pp. 4-7

[106] Joel D. Howell, 'Preserving Patients Record to Support Health Care Delivery, Teaching and Research, in Nancy McCall and Lisa Mix, (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, pp. 37-38

3.6.3 Health services planning

Patient records serve as a basis for statistical data on which administrators rely in the planning of health services. Within hospitals patient records supply the raw material for statistical data needed to compile reports for medical administrations, medical staffs and external agencies. Without information on such variables such as length of stay, types of services rendered for different illnesses, drugs administered, and so forth, it is difficult to run a hospital completely. Data drawn from extended series of files also comes into its own when insight is needed into changes over time.

Cakrtova distinguishes two types of statistics drawn from the medical record: (a) statistics describing health services in terms of facilities, personnel and activities, and (b) morbidity statistics drawn from the diagnostic information in medical records.[107]

Statistical abstracts and summaries, be they issued weekly, monthly or annually, are computed in order to keep lay administrators, medical staff and external agencies updated. Within health care institutions, statistics play an important role in quality assurance programming. As Munger notes, 'the compilation of statistics [provides] an excellent check upon the efficiency of the hospital as a whole and the individual physician treating the patient'.[108]

Statistical analyses on the other hand, provide the means for evaluating both the clinical management of patients and optimising the distribution of health services. Future or projected expansions of facilities, as well as the allocation/reallocation of resources, may be determined on the basis of analysis and interpretation of data on shifting pattern of disease.[109]

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[107] Marie Cakrtova, 'The Value of Medical Records to the World Health Organisation' in Proceedings of the Third International Congress on Medical Records, (25th -29th April, 1960), Roye Mansell and Jackson Norman (ed.), Edinburgh, E. S. Livingston Ltd., 1960, pp. 32-33

[108] Claude W, Munger 'Medical Records' in Arthur C. Bachmeyer and Gerhard Hartman (ed.), The Hospital in Modern Society, New York, The Commonwealth Fund, 1943, p.400

[109] Marie Cakrtova, 'The Value of Medical Records to the World Health Organisation', in Royle Mansell and Jackson Norman, (ed.), Proceedings of the Third International Congress on Medical Records, Edinburgh, 1960, p. 32

3.6.4 Medical education

The medical record is acknowledged to have played a critical role in advancing the practice of medicine. In teaching hospitals, especially those connected with medical schools medical records (current and non-current) are used extensively for research for in-house and related medical training. Not until the twentieth century, though, did records become a fundamental tool in medical education. As we explained earlier in this chapter, it is Walter Cannon who is credited with having been instrumental in effecting changes in teaching through the uses of cases.

Munger[110] and MacEchearn[111] note further that the medical record is worth studying not only by medical students, but also by already qualified and practising physicians, arguing that in order to produce good records, a doctor must know how to diagnose the case properly. In so doing, he develops his memory and judgement as well as his store of knowledge. For Munger[112], 'there is no more effective teaching method than citing a case to illustrate a point'.

3.6.5 Clinical/biomedical research

Clinical records have been found to offer plenty of scope for conducting a variety of studies. Many important research areas rely strongly on large bodies of data distributed over many files created over extended time-spans. However, it has been observed there are inherent obstacles to fully exploiting their potential information value.

One such difficulty relates to the fact that the primary purpose of the clinical record is to document evidence that is of use to diagnosis, the selection of treatment, following the progression of disease, and drawing up prognoses. As a result of this orientation, the medical record will usually

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[110] Claude W. Munger, 'Medical Records', in Arthur C. Bachmeyer and Gerhard Hartman, (ed.), The Hospital in Modern Society, New York, 1943, p . 400

[111] Malcolm T. MacEachern, Medical Records in the Hospital, Chicago, Illinois, 1937 p.5

[112] Claude W. Munger, 'Medical Records', in Arthur C. Bachmeyer and Gerald Hartman, (ed.), The Hospital in Modern Society, New York, 1943, p. 400

omit particular types of data that may be required for other kinds of investigations.[113] Similarly, this limits its utility for retrospective comparative studies of, say, the history of a certain type of patients in relation to the population or group at large. When used in such contexts the routine case record has to be supplemented by forms that are specifically designed for the study. All the same, as long as it is used with discernment or under conditions which reduce the bias of the data as recorded, the medical record remains a useful research tool, as the literature demonstrates.[114]

Howell shows that the clinical records of the deceased have been found useful in negotiating research when no living subjects can be found to supply the information required. In retrospective studies, clinical notes have been invaluable in establishing that new diseases which had previously been diagnosed as something else, were present before being recognised as distinct entities. This happened in the case of AIDS, for example.[115]

Howell has incontrovertibly demonstrated the seminal importance of medical records to retrospective research. In his analyses of research reports (published in 1988 in *The New England Journal of Medicine*, and *The Annals of Internal Medicine*), he established that no less than 13% of data consisted of information emanating from the records of patients who fell outside the groups originally targeted for study. While admitting that his findings would 'vary depending upon the what type of was journal surveyed', Howell was left in no doubt that patient records were far more widely used in retrospective research than had previously been thought. Citing Kirkland and

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[113] Marie Cakrtova, 'The Value of Medical Records to the World Health Organisation', inRoyle Mansell and Jackson Norman, (eds.), Proceedings of the Third International Congress on Medical Records, Edinburgh, 1960, p. 35

[114] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research', in Nancy McCall and Lisa Mix, (eds.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, pp. 38-39

[115] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research', in Nancy McCall and Lisa Mix, (eds.) Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 39

Molgard, he further established the considerable extent to which Mayo Clinic patient records have been used in epidemiological studies.[116]

Cakrtova similarly reveals the significance of case records for epidemiological research, particularly with reference to hospital morbidity surveys in which the use of in-patient records in combination with out-patient data may provide the best representative picture of morbidity rates in communities. While mass surveys, may, for instance, indicate the frequency of gross nutritional deficiencies in a population, it is the hospital case history which records the sub-clinical manifestations of nutritional disorders, that will complete the picture of the impact of an inadequate diet in the human body.[117]

Another area of research that can effectively be carried out on the basis of clinical material is cancer research, in which objective evaluations of different treatments depend on the classification of cancer according to clinical stages.[118]

Whether used to simply check facts or to re-examine past trends, patient records are recognised to have an important contribution to make to medical science.

3.6.6 Social and historical research

Recognition of the importance of the patient record as an invaluable primary source in historical research is a comparatively recent phenomenon. Over the past twenty years, however, the use of medical records has become standard practice in a range of disciplines and fields of historical interest. Traditionally, the focus of interest in history was concentrated on the actions and ideas of important personages and key events in society. In relation to

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[116] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research', in Nancy McCall and Lisa Mix, (eds.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 39

[117] Marie Cakrtova, 'The Value of Medical Records to the World Health Organisation', in Royle Mansell and Jackson Norman, Proceedings of the Third International Congress on Medical Records, Edinburgh, 1960, pp. 35-36

[118] Marie Cakrtova, 'The Value of Medical Records to the World Health Organisation', in Royle Mansell and Jackson Norman, (ed.), Proceedings of the Third International Congress on Medical Records, Edinburgh, 1960, pp. 35-36

medical history, key events were defined by their publication in medical journals, and their description (by historians who usually had a medical or scientific training) confined to such published accounts. Only occasionally were patient records directly consulted; when they were, it was in very specific contexts such as, for instance, the introduction of graphic records of anaesthesia.[119]

The current status of medical records as source material in historical research is largely due to the development of a widespread interest in social history and, by extension, the study and interpretation of data relating to ordinary people. The new breed of social historians (which embraces scholars from backgrounds as diverse as anthropology, ethnology, evolutionary psychology, sociology, population studies and genetics), was initially instrumental in demonstrating the value of birth records and parish registers as prime sources of information on the life patterns of the masses. From this, according to Risse and Warner[120], followed an interest in the use of hospital records as documentary evidence of trends in the administration of health care.

In the field of medical history, patient records have been associated with recent studies on a number of topics which include health care in eighteenth century Edinburgh, nineteenth century anaesthesia and therapeutics, and twentieth century use of medical technology. From the point of view of twentieth century medical history, the contemporary tradition of medical record-keeping has proved particularly fruitful in enabling historians to document care practices among a wide range of physicians in many medical and medicine-related fields of specialisation. Medical records also contribute to an understanding of the interaction between hospital organisations and the practice of medicine.[121]

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[119] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research, in Nancy McCall and Lisa Mix, (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, p. 39

[120] C. B. Risse and J. H. Warner, 'Reconstructing Clinical Activities: Patient Records in Medical History', Social History of Medicine, 5: 1992, pp. 183-206

[121] Joel D. Howell 'Preserving Patient Records to Support Health Care Delivery Teaching and Research', in Nancy McCall and Lisa Mix, (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 40

3.6.7 Other uses

When it comes to matters of the law, the medical record is of tremendous value to patients, health care providers and third party payers alike. Hospitals and other health care institutions, health professionals, and in particular, physicians, have found that the maintenance of good records provides a strong measure of protection from persons who may, through ignorance or by design, sue them unjustly.

The medical record is also of legal benefit to patients. In disputes involving insurance claims, employee liability claims, or suits and damages for malpractice, the court can always subpoena a true statement of a patient's care and treatment on the basis of the record.[122]

The medical record also has an important function for third party payers with reference to risk pooling — the management of the financial resources to guarantee adequate reserves to cover the anticipated costs of a cared group. The third party payer, as the indemnity insurer, has always depended on accurate estimating the cost of care for indviduals or groups of individuals; in order to price insurance at the appropriate level. The medical record may well come to be an invaluable instrument in risk pooling by facilitating evaluations of individual or group risk. In the case of the former category, access to clinical information should permit much finer estimates of an individual's future health care needs. For group estimates, these could be derived either from summations across individuals, or from pooling individuals to describe a population in greater detail. Detailed clinical information about a subject population will permit more accurate assessment of its anticipated health care expenses.

The data in the medical record needed for risk selection comprise those demographic and clinical indicators known to be predictive of morbidity and mortality.

Patient records also play a critical role in quality assurance programmes. Analysis of patient records can aid in the evaluation of the clinical management of patients, the performance of health care professionals and the distribution of health care services. Records analysis can identify problems and indicate areas where improvement is needed. This type of analysis may

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[122] Malcolm T. MacEachern, Medical Records in the Hospital, Chicago, Illinois, 1937, p. 6

be used for internal review within the organisation, or it may be mandated by organisations external to the hospital. A quality assurance programme consists of the following components:

'on-going evaluation of needed care to identify deficiencies in the quality or administration of health care services [and] on-going programmes to ensure the appropriate use of hospital services periodic retrospective analysis of the performance of the health care delivered'.[123]

3.7 Conclusion

The transition of the medical record from the tablets of antiquity to today's patient folders, or electronic data banks, has followed, as we have seen, a continuous line of succession, even if progress has been quicker in some periods than others.

We are now in an era in which the proper care of the sick and impaired by medical and non-medical health personal alike is the institutionalised goal of all health care establishments worth the name. We are also in an era which holds out great promises in the care and treatment rendered to patients on the basis of modern medical record methodology and management, which in itself is *prima facie* evidence both of the care and treatment which today's patient is entitled to expect, and of the competence of the medical record keeping-profession.

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[123] Joel D. Howell, 'Preserving Medical Record to Support Health Care Delivery, Teaching and Research, in Nancy McCall and Lisa Mix, (ed.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 38

4 *Organisation of the medical records function*

4.1 Introduction

In order to function effectively as an instrument of patient care, all medical records systems must be well organised to meet the standards required of the medical staff, and the hospital's patient administration services. Paramount, of course, is patient care, for which hospital medical records — indeed, hospitals — exist. In fact, it is not overstating the case to say that the medical record and its contents play an important role in the delivery and quality of service the patient receives in a hospital, clinic, or other type of medical institution or health facility.

The accuracy of information contained in the patient's medical record, the speedy retrieval, and the availability of this information for utilisation by medical, nursing and other hospital staff is essential, and with this in mind, those medical records staff responsible for locating and delivering the medical record will realise the importance of their role and the necessity to create and maintain efficient and effective medical records systems.

In general medical records departments exist 'to collect, process, maintain, retrieve, and distribute patient records ... to [those staff or personnel] with legitimate reason to have [access]'.[1] In addition medical record staff have a responsibility to '... maintain the [paper] record, ... reviewing the records ... for completeness', before and after each episode of care and before the record is returned to the filing area.[2]

The medical record has a wider agenda where its existence and content are useful beyond the institutional walls, and which reflects the multiplicity of

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[1] Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory care, Rockville, Maryland, Aspen Systems Corporation, 1984, p. 13

[2] Maurice Avery and Bonnie Imdieke Medical Records Management in Ambulatory Care, Rockville, Maryland, 1984, p. 13

outside uses that the patient record has come to serve. As I have already discussed in the previous chapter, patient records are a source of statistical information for the administrative apparatus of the health service, medical research, and educational and public information planning. They are also a reliable source of reference in the event of litigation and to insurance companies,[3] in which connection the compilation of diagnostic information for legal and insurance purposes is another of the tasks that is often performed by medical records staff. In response to these developments, the mandate of the contemporary medical records department far exceeds the traditional conception of the record-keeper's brief.

The ever-increasing reliance of all manner of government agencies, as well as a wide range of health care schemes and projects, on data obtainable only from medical records, continually intensifies the burden of pressure on medical records departments in all kinds of ways.

Standards of efficiency and effectiveness within medical records departments inevitably vary from hospital to hospital. The quality of performance is, however, dependent on factors such as the availability of both physical and financial resources and the calibre of personnel providing the many medical record services. Equally important, is the priority which hospital administrators attach to their medical records services; their recognition of the importance of the service and their support for the service. This, in particular, refers to recognising that if the medical records department is well equipped, staffed and well organised, then the completeness, accuracy and availability of the patient file will be likely to be assured, and the hospital and its constituent departments as a whole will be in a better position to organise and manage the patient's care and general well-being through the curative process to which the hospital is committed.

In Ghana the medical records service has always been considered important, but never more so than now, when it is expected to underpin some of the initiatives that are part of the current health sector reforms. New techniques of resource management, medical audit management, and plans to introduce a

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[3] Michael Pegano, Communicating Effectively in Medical Records: A Guide for Physicians, London, Sage Publications Inc., 1992, pp. 2-3

national health insurance policy, all demand an optimally effective and efficient medical record service.

Nonetheless, in spite of the importance accorded to the role of the medical records services, the indications are that this function generally suffers from a lack of adequate attention within health institutions, and at higher levels of the Health Services hierarchy, leading to a number of organisational problems.

This chapter examines how the medical records service is organised in the Ghanaian hospitals surveyed. In this context I shall be concerned with two broad issues: firstly, I shall examine how medical records departments are organised internally. In this regard I shall concentrate on staffing structures and organisational charts; the existence, or non-existence, of written policies and procedures; and the interaction between medical records departments and other departments. Furthermore, I shall examine issues relating to staff training and development. Finally, based on findings, I shall summarise the observations and consider conclusions reached in respect of the overall medical record services provided.

4.2 Organisational structure/charts

The importance of organisational structure and development enhances systems, and this is not difficult to establish theoretically. An organisational chart provides an instant picture of an operational task load, those responsible for overseeing the discharge of those tasks, and those responsible for their physical execution. The most common organisational models are line organisation, staff organisation, a combination of the two, and functional organisation. In line organisations, authority is delegated linearly downwards via a departmental and executive hierarchy. In staff organisations, authority is channelled downwards on a function-led basis. Line and staff, as the name implies, combines elements of both types. Functional organisation refers to a system in which authority and control are exercised by heads of departments within a given field of specialisation.[4] Hospital departments, including medical records

[4] Edna K. Huffman, Manual for Medical Record Librarians, (5th ed.), Berwyn, Illinois, Physician Record Company, 1963 p. 458

departments, usually fall into this last organisational category, the type I am, therefore, concerned with here.

Medical records departments in Ghanaian hospitals constitute a service division under the lay administration. The department is directly answerable to the hospital administrator, who is the head of the lay administration.

Medical records departments are under the control of Medical Records Officers (MROs). The title MRO is a generic term used to designate all heads of medical records departments. The role of the MRO is administrative in nature; it is the MRO's assistants who supervise the technical aspects of the medical records function. Below the supervisors are Medical Records Assistants (MRAs), otherwise known as support staff, who have no formal qualification in relation to the medical record service they provide, but receive informal training on the job. At present the only formal entry requirement for medical record support staff ranges from Middle School Leaving Certificate (i.e. ten years of basic education) to General Certificate of Education — O Level. It is often the case that support staff with many years of working experience are 'glued' to particular tasks in which they become very proficient. Such tasks include the coding of diseases, patient registration, record indexing and filing, and the compilation of monthly and annual statistics. In terms of career progression, the highest grade open to MRAs is Technical Officer Grade I.

Unlike MRAs, MROs (heads of departments) are required to be formally trained and qualified in medical records services, or related disciplines. The survey revealed two categories of MROs, differentiated by formal training and qualifications. Firstly, there are MROs with a formal training and qualification in medical record services. Secondly, there are MROs with a formal training and a qualification in statistics, but no professional grounding in medical records services. The formal title of the latter is Biostatistician, employed to fill vacancies when there is a shortage of candidates with the appropriate qualification in medical record services.

The career progression for MROs with a statistics background runs from Assistant Biostatistician to Chief Biostatistician. For personnel with a medical records qualification, the career ladder follows the Technical Officer route, from Technical Officer Grade I to Chief Technical Officer.

The survey revealed a very simple organisational and authority structure among medical record staff. To reiterate, MRAs report to supervisors who are

answerable to the heads of records departments. None of the medical records departments, however, maintained or displayed a diagram or chart showing this procedural and functional interaction. Furthermore, there were no written job descriptions for members of the records department staff.

Notwithstanding this absence of organisational charts and formal job descriptions, there appeared to exist no conflict among staff with regard to duties and reporting relationships. It was observed that instances of responsibilities overlapping were minimal, or often non-existent.

In the teaching hospitals, MRO's did express a desire for job descriptions and organisational charts. In teaching hospital A with a 134-strong staff complement, the wider medical records functions alone make it important to maintain good organisational charts routinely updated as required.

Opinion about the necessity for medical records departments to issue well defined job descriptions and organisational charts, was somewhat divided. A number of Heads of medical records departments in regional hospitals did not see any need for charts because they had only a very small staff complement. In the regional hospitals the staff complements within medical records departments range from 9 to 25 persons. When stressing a need for an organisational chart Koontz states:

> managers who believe that team spirit can be produced without clearly spelling out relationships are fooling themselves and preparing the way for politics, intrigue, frustration, buck passing, lack of co-ordination...and other evidence of organisational inefficiency.[5]

However, according to Huffman's observations, the organisational chart is no guarantee for efficient organisation or effective management. Where they do come into their own, however, is as an aid to concretising the logistics of the organisational structure as a whole, and monitoring its internal cohesion. Huffman notes further that keeping organisational charts lessens the likelihood of responsibilities and functions overlapping.[6]

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[5] Harold Koontz, *et al*, Essentials of Management, (4th ed.), New York, McGraw-Hill Book Company, 1985, p. 259

[6] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 461

It is noted that there are some officials at the CHIM[7] (Centre for Health Information Management) who acknowledge the necessity to reorganise the medical record service, and furthermore to attract and appoint qualified personnel. Future plans in respect of reorganisation of the service should certainly not fail to take into account the need for functional organisational structures, together with functional job descriptions, for all staff at each level within the medical records service.

Indeed, according to one official at the Ministry of Health headquarters,[8] there are plans in the pipeline to conduct an in-depth analysis of job functions within the medical records function. This should assist in providing the guidelines for defining job content and job description and identify recruitment criteria. Huffman describes this as 'that part of the job analysis which provides specifications required of the worker based on opinion supported by fact and required for ideal performance...a statement of the qualifications necessary for the job based on the needs of the job'.[9]

In my view, a workable organisational structure based on clearly defined and accurate job descriptions can be successfully implemented, providing the current deficiencies inherent in the staffing structure of the medical records service are eliminated. Reorganisation should at the very least eradicate some of the current anomalies in the present staffing structure at the senior levels within the medical record service. Currently, there is little differentiation made in the upper echelons between, for instance, expertise in medical records or statistical analysis. This seems illogical, considering medical records posts demand expertise in medical records management together with specific knowledge of all administrative tasks related to the patient registration procedures. There is cause for concern in respect of the current anomaly where the coding task is performed by staff with no formal training in medical records; the medical records department is expected to have the necessary competence to undertake

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[7] Interview with Messrs Awuah Barima and J. B. Danquah, (Former Chief Biostatistician & Head of Medical Records and Chief Biostastistician respectively), February, 1997

[8] Interview with Mr Isaac Adams, Head of Information, Monitoring and Evaluation, PPME Directorate, February, 1997.

[9] Edna K. Huffman, Manual for Medical Record Librarians, Berwyn, Illinois, 1963, p. 465

these often complex procedures. It is simply not sufficient or good practice to use people with a statistical training for complex medical records procedures. In the context of the new Ghanaian Health Service, every effort should be made to maintain clearly a defined distinction between the role of a statistician and that of a medical records specialist. At present, due to the endemic lack of qualified personnel, recruitment criteria are much less stringent than they should be, and for this reason, senior level appointees do not meet the formal requirements necessary for either grade or more importantly the competence required to undertake the duties of the post.

Hence it follows that before any initiatives are undertaken to address the introduction of a standardised, functional organisational structure for the medical records service, the question of staffing needs to be addressed first and foremost.

Another aspect of staffing which requires review is the issue of managerial responsibility and professional answerability. In particular, while departmental heads of medical records units should be answerable to the hospital administration in regard to their conduct of management, at professional level they should be answerable to the Centre for Health Information Management (CHIM), as the umbrella body responsible for overseeing the medical records functions nationally. This issue will be explored further in Chapter 8.

4.3 Policies and procedures

In the survey I was interested in researching whether medical records departments maintain clearly defined policies and procedures, and if so to what extent. I was specifically interested in this in the context of the notion, or generally accepted view, that written standardised policies and procedures provide a framework within which records management activities can be systematically planned and executed to achieve their targets. Rakich, Longest and Darr define policies as follows:

> policies are officially expressed or implied guidelines for decision-making, and thinking within the organisation. They set boundaries of

> permissible activity and decision-making within which managers and employees may act.[10]

The authors classify policies into two types — general and operational. General policies apply to the organisation as a whole, and are formulated by senior management, while operational policies relate to particular units or departments, and may be formulated by individual managers as long as these are consistent with general policy. The authors distinguish between policies and procedures thus:

> Procedures are guides to action. Unlike policies which are guidelines for thinking and decision-making, procedures suggest actions for specific situations. They are generally expressed as pre-established sequences of steps involved in performing a particular task, and thinking within the organisation. They set boundaries of permissible activity and decision-making within which managers and employees may act. Formal procedures serve as a guide, and they direct employees in the discharge of their duties.[11]

The medical records departments surveyed maintain policies which guide them through specific areas of the medical record service. Common to all, for instance, are policies on access to patient records, confidentiality, and security. No hospital, however, has a policy on how to handle old patient records. It was also noted that existing policies were not always documented, and differed from hospital to hospital. For instance regional hospital A allows certain categories of patients to take their records home while the rest including the teaching hospitals do not. From the information given on this point, it was understood that in the absence of nationally agreed policies and guidelines on access and confidentiality, such matters are treated and handled with the utmost discretion and circumspection. Thus circulation of the patient record is limited to parties directly involved in the patient's treatment, including those concerned with the relevant diagnostic procedures. External requests from other hospitals,

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[10] Jonathan S. Rakich, *et al*, Managing Health Services Organisations, Philadelphia, Pennsylvania, W. B. Saunders Company, 1985, p. 220

[11] Jonathan S. Rakich, *et al*, Managing Health Services Organisations, Philadelphia, Pennsylvania, 1985, p. 221

employers insurance agencies ect. for access are dealt with on an *ad hoc* basis. Hospitals do not normally put obstacles in the way of enquirers; however information is dispensed in accordance with existing guidelines which in most instances require a minimum of formality.

Areas in which medical records departments were found to maintain consistent procedures include patient registration, the creation and processing of patient records, the locating of misplaced records, inter-departmental records transfer,[12] the processing of third party insurance claims, and release of information. Here again, though, it was noted that such procedures were not documented in any comprehensive way.

During the survey, no enquiry was made as to how the lack of written policies and procedures affects medical records operations in general. However, there is no denying that the absence of a system of written instructions can lead to indecision and vagueness.

The Ghanaian situation presents a sharp contrast with, for instance, the West Glasgow University National Health Service Trust Hospitals in Glasgow, and the Royal London Hospital, both of which have comprehensive medical records policies as well as procedural manuals which cover all of the wide spectrum of issues related to medical records services. The medical staff and all other hospital staff interacting with medical records are expected to follow as required and when necessary the instructions set out in the medical records manual. This manual is issued to everyone directly or indirectly involved in tasks related to medical records. Procedural manuals furthermore double as training manuals and are used by the Health Records Managers and Supervisors when training new recruits.

Unanimously, heads of Ghanaian hospital medical records departments expressed a wish for policy directives and procedural manuals as guidelines for their operations. They also hoped that hospital administrators would actively cooperate and back them in this regard. The rewards of such initiatives could not fail to be immediately apparent. Firstly, staff at all levels would experience a tremendous boost of confidence and security from having a standard source of common reference on which to rely. In the present situation, staff are forced to depend too much on their own judgement and initiative in interpreting — and

[12] These issues will be given wider coverage in chapter 5.

issuing — oral instructions, or assessing unexpected situations. Relieving the individual of this extra, needless, burden of responsibility, will almost certainly lead to a reduction of the human error factor. Secondly, though not secondary in importance, great savings in time could be achieved, not least at decision-making level, where a better delimitation of duties, responsibilities, and areas of specific responsibility, would undoubtedly streamline the managerial process. Ultimately, in Holt's authoritative opinion, written instructions, policies, and procedures, 'clarify thought...Recorded experience aids in the prediction of comparable events'.[13] Huffman echoes this perception when she states that 'procedures are developed for repetitive work in order to enhance uniformity of practice, to facilitate personnel training and to permit the development of controls and checks in workflow'.[14] On the basis of what I heard and observed, it is clear to me that in order to enable medical records departments to optimise their operations, hospital authorities should make it a priority to introduce and define clear policies and directives.

The development, formulation, implementation and monitoring of appropriate policies and procedures should be the responsibility of a medical records quality monitoring team which is lacking in the Ghanaian medical records service. It is important that the committee principle, which has so often been tried and tested in the field elsewhere, and which is both flexible and adaptable, could be quite easily tailored to suit Ghanaian requirements.[15] Serving in an advisory capacity, such committees would monitor and assess existing medical records procedure for accuracy, adequacy, and completeness, with a view to formalising mandatory criteria of promptness, completeness, and clinical relevance. In this context, the medical record advisory committees would also be charged with the formulation and implementation of policy recommendations with reference to the content and completion of medical records. Development and enforcement of medical record policies and procedures in the Ghanaian context is discussed in greater detail in Chapter 8.

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[13] David H. Holt, Management: Principles and Practices, (3rd ed.), Englewood Cliffs, New Jersey, Prentice-Hall Inc., 1993, p. 132.

[14] Edna K. Huffman, Manual for Medical record Librarians, Berwyn, Illinois, 1963, p. 471

[15] See section 4.5 for further discussion on the medical records committee.

4.4 Interdepartmental interaction

Hospitals have been and will continue to be amongst the most complex of organisations in terms of differentiation of activities, specialisations, and diversity of personnel. The diversity of personnel ranges from the most highly skilled and educated physicians and administrators to those who require minimum skills to cope with their job. Correspondingly, there exists a wide diversity of goals and targets for the different types of hospital personnel and sub-units.[16]

The activities of all the constituent sub-units, or departments, are collectively focused on the one common objective: the care of the sick. To secure this objective, a high degree of cooperation is vital, and good working interaction amongst all those directly or indirectly involved in the patient's treatment. By inference, an efficient medical records system, regardless of the type and size of the hospital, depends on active cooperation between the administration and staff of each individual department, and this must include the medical and nursing staff.

Within the hospital environment, the medical records department is in constant contact with virtually every unit which is directly or indirectly involved in patient care. Most of these departments do have an input into the creation of the patient record, which should be designed to be a complete and comprehensive compilation of the observations, measurements, notes, and findings of health professionals from the time of a patient's admission to time of discharge. Among the specific transactions which make the medical records department a functional centre of traffic are seeing to the timely completion of records, the filing and retrieval of records, and extracting statistical information for administrative and other purposes. The frequency of inter-departmental traffic in itself requires a commitment to smooth working relationships and consensual attitudes.

The survey sought to determine the quality of prevailing relations between medical records and other departments. Responses suggest that medical records

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[16] Basil S. Georgopoulos, 'The Hospital as an Organisation' in Jonathan S. Rakich *et al*, Hospital Organisation and Management: Text and Readings, (2nd ed), New York, Spectrum Publications Inc., 1978, p. 19

departments are very supportive of the lay administration. Requests from the administration, it was noted, were given highest priority, and treated with respect. This, of course, is scarcely surprising, as medical records departments come under the authority of the lay administration, from which they also derive their budgets and material resources. Furthermore, they look to the administration for the 'enforcement' of basic rules regarding medical records issues.

With respect to other units such as x-ray, pharmacy, nursing, and social welfare, the general consensus is that relations between these and the medical records departments are cordial, although conflicts do arise from time to time. These, however, tend to be minimal, and easily resolved.

A completely different picture emerged when it came to the relationship between the medical staff and the medical records department. There, almost without exception, mutual antagonism appeared to be the norm, although the magnitude of conflict did vary from hospital to hospital. Specific misunderstandings and disputes usually centred on missing case notes, while lack of respect and appreciation for medical records staff on the part of physicians is an on-going source of friction. Another cause of bitterness cited was the lukewarm attitude on the part of some medical staff with respect to completing records. Medical records officers questioned indicated that when it comes to completing the medical record, the cooperation they need from physicians is normally not forthcoming. Such cooperation, according to them, is difficult to extract when faced with physicians who consider the performance of this function rather negatively.

Commenting on the situation the MRO in Regional hospital C indicated that he simply does not have the ability, or position, to influence medical staff to adhere to basic medical records procedures. This weakness could be the result of a lack of vested authority in medical records personnel, who are generally perceived as low-grade, low status staff whose views carry no weight. Needless to say, getting the cooperation of medical staff would in some instances require changing strongly ingrained habits and notions.

In my estimation, the negative attitude of many members of the medical profession toward medical record personnel is not due to any deliberate, preconceived ill-will or prejudice. Rather, it is the culmination of non-existent or inadequate medical record policies and procedures, in conjunction with a lack of

effective coordination of services between separate functions, each with its own degree of autonomy. In the previous section, I noted that hospitals are lacking in well-developed, formally documented medical records policies and procedures. The absence of such formalised policies and procedures leaves all categories of personnel to their own devices as far as medical records issues are concerned.

There is every reason to believe, that once clearly defined and agreed policies and procedures are in place, many of the present bottlenecks and pressure points will have been resolved. Clarification of the function of the medical records department as a whole, and the role and duties of each individual within the unit, will undoubtedly go a long way to strengthen existing bonds while at the same time healing strained relationships. As was intimated earlier, there is a strong case to be made for appointing to each hospital an advisory committee with special responsibility for drawing up policies and procedures, and overseeing their introduction and implementation.

One way of achieving good working relationships amongst departments in a hospital is by effectively coordinating all services within the hospital. Further I suggest that in dealing with medical staff and other health professionals, medical records department heads can only gain by exercising as much tact and diplomacy as they can. When a defensive stance undermines working relations, the effect is certain to rebound on efficiency. More importantly records staff need to be well qualified academically and backed by agreed policies and procedures.

4.5 Medical records committee

Even though a negative answer was anticipated, survey respondents were nonetheless specifically asked whether their hospitals had medical records committees. My interest in this point was based on the conviction that medical records problems can best be assessed, and solutions devised, through group deliberation and judgment, in the form of committees. Based on my observation of such British hospitals as, for instance, the Royal London Hospital and the West Glasgow University NHS Trust, committees contribute a great deal to the efficiency and effectiveness of the medical record function.

The fact that no Ghanaian hospital has recourse to a medical records committee to back up the medical records operation is thus to the detriment of the function, since the burden of responsibility for organisation and management — development, analysis and evaluation of medical records; records preservation; compilation of statistics; safeguarding of information; general supervision of the department — rests totally with the individual MRO. On the surface it would, therefore, seem that MROs, considering their pivotal position in coordinating all record functions across the hospital, enjoy a status in accordance with the importance of the function. However, this is not the case. The researcher heard, and observed that the MRO status ranks low within the hospital hierarchy. As a result of this MROs are virtually without influence outside their own departments. Due to lacking status and authority, they find themselves in no position to insist on the cooperation needed from other departments, in order to achieve an efficient, effective and coordinated medical records function.

Against this specifically Ghanaian scenario, there can be no doubt the medical records function as a whole would greatly benefit if this were underpinned by a committee of authoritative individuals drawn from the different units and departments whose paths cross that of the medical records department.

A model which would be worth considering in this connection is the Royal London Hospital Trust which have a well-established Case Notes Committees (composed of the Health Records Manager, the Director of Patient Services, the Patient Service Manager, and one representative from the medical staff and from computer services) to oversee, monitor and regulate the (integrated) medical

records function in all five of the associated hospitals.[17] At the Royal London Hospital for instance the Committee meets bi-monthly, and refers all its decisions and deliberations to the guidelines and directives set out in the Trust's internal Medical Records Policy and Procedural Manual. Besides acting in an advisory capacity, the Committee is also mandated to rescind existing policies and to formulate, implement and enforce new ones, and to amend the Medical Records Policy and Procedural Manual accordingly.

To introduce the committee principle into the medical records service in Ghanaian teaching and regional hospitals would not require elaborate formalities, since Section 42 (1)[18] of the Ghana Health Service and Teaching Hospitals Act of 1996 already makes provision for the establishment of committees at the discretion of hospital management. There are no structural obstacles, therefore, to the establishment of medical records committees which, as the survey revealed, are both needed and wanted by the hospitals concerned. The size and composition of committees — but not their mandate — would, of course, not be standardised, because as was mentioned earlier, Ghanaian government hospitals vary considerably in size.

In Chapter 8, proposals will be put forward for the formation and institutionalisation of medical records committees, taking into account factors that are specific to the Ghanaian perspective. For the present, let it suffice to say that such committees, when established should be permanent standing committees, with the necessary authority to administer all aspects of the hospitals medical records function.

4.6 Personnel training and development

The advantages of well-organised and targeted training and development is universally emphasised in the literature.[19] There would appear to be no doubt

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[17]The Royal London Trust Hospitals include: The Royal London Hospital, St. Bartholomew Hospital, Queen Elizabeth Children Hospital, The London Chest Hospital, and Mile End Hospitals.

[18]Ghana Health Service and Teaching Hospitals Act, (Act 525), 1996

[19] See for example: David H. Holt Management: Principles and Practices, Englewood Cliffs, New Jersey, 1993, pp. 383-388, C. S. Deverell, Business Administration and

that an organisation which offers its staff adequate training options will reap its own rewards. Providing such facilities invariably promotes proficiency and performance levels, fosters good morale, and encourages motivation. In addition, staff will feel a greater sense of loyalty towards an employer who is committed to their well-being and personal development within the organisation.

Holt draws the following distinction between training and development:

> Training usually refers to efforts to upgrade employees' skills or focus on work related topics beneficial to both the employees and the organisation. Development is intended to provide general knowledge about theoretical concepts to enrich organisations through improved human resource programmes and to sensitise managers to their responsibilities.[20]

He elucidates further how:

> training programmes are associated with 'vocational teaching' of specific skills for non-management employees...development programmes prepare employees for advancement for expanded responsibilities.[21]

Medical records functions, as was briefly outlined in the introduction, require specific skills which are quite distinct from formal educational qualifications. Thus, depending on departmental requirements, new recruits might be trained in disease coding, compilation and analysis of statistics, approaches to filing and retrieval, etc. It therefore stands to reason that support staff, regardless of formal qualifications in medical records service, will require to receive comprehensive training if they are to cope effectively with the demands of their jobs.

Management, London, Gee & Co. Publishing Ltd., 1980 pp. 118, and Koontz et al, Essentials of Management, (4th ed.), New York, 1985, pp. 333-340.

[20] David H. Holt *et al*, Management: Principles and Practices, Englewood Cliffs, New Jersey, 1993, p. 385

[21] David H. Holt, *et al* Management: Principles and Practices, Englewood Cliffs, New Jersey, 1993, p. 371

Medical Records Officers interviewed not only fully appreciated that Medical Records Assistants (MRAs) require further skills, but are making efforts to provide MRAs with the necessary basic expertise to enhance their performance.

Training needs are common to all hospitals surveyed, and the functions concerned include patient registration procedures, compilation of statistics, coding of disease, and elementary records management techniques.

Responses indicate that the orientation MRAs receive after taking employment is limited to basic background information about the hospital setting and authority relationships, and a brief introduction to medical records administration. Orientation programmes, according to heads of medical records departments, are not organised in any systematic way in most hospitals.

Orientation programmes for medical records personnel vary from brief, informal introductions to lengthy and formal, but unstructured, programmes. Responsibility for such programmes is also not clearly defined. Often, the responsibility is passed from the hospital administration to heads of medical records departments, with each believing the other to be responsible for briefing and orienting new employees. Unfortunately it is the MRAs who in the short and long term pay the penalty for the lack of structured, coordinated induction into their new career.

In the view of some heads of departments, responsibility for new employee orientation is a task that should be shared between the hospital administration and the department itself. Additionally it should be mentioned that such programmes would only benefit MRAs if the content is well thought-out, and structured to their needs.

The importance of smoothing an employee's way by orienting him in his new job and its place within the organisation as a whole, requires no justification. Andrew Carnegie,[22] the pioneer in this field, supported his famous dictum, 'an organisation's most important asset is its people', with the observation that 'a programme that is sensitive to the needs of the employees can promote mutually satisfying relationships between all staff'. Holt likewise maintains that 'employees who are effectively oriented view themselves as active, vital

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[22] Cited in C. S. Deverell, Business Administration and Management, London, 1980, p. 47

members of the organisation'. Thus orientation can result in improved employee relationship, heightened productivity and improved services'.[23]

Aside from orientation programmes, MRAs are given on-the-job training. This type of training procedure is common to all hospitals surveyed. Newly-recruited MRAs are assigned to 'old hands' in different fields of specialisation, who teach them how to perform specific tasks. Many MRAs agree that much of the knowledge they now have about medical records was gained through years of working experience, working day to day on the job.

The onus of on-the-job training most often falls on supervisors and other experienced hands or, in some cases, on Heads of medical records departments who cannot afford the time for training while continuing to fulfil their operational responsibilities.

While some MRAs feel that the types of duties they are required to perform are better learnt on the job, others are of the opinion that total dependence on this kind of training is not good enough, because it focuses exclusively on the skills, knowledge and procedures required for the single, specific job in question. In the longer term, such training fails to prepare them adequately for upward mobility in the service.

From the survey it emerged that many MRAs are in favour of on-the-job training in combination with a formal, structured in-service training programme. Structured in-service training schemes are a matter of long-term investment in time, effort, and resource, which no organisation undertakes lightly, or half-heartedly. Nevertheless, as Holt notes, such schemes are critical to the development of quality staff.[24] The literature further supports the view that some of the knowledge and skills needed by support staff are better acquired through formal, properly structured in-service training programmes and continuing education.

Certainly MRAs maintain that well structured, in-service training would prepare them more adequately for examinations into the higher grades, while at the same time boosting their morale and enhancing their performance.

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[23] David H. Holt *et al*, Management: Principles and Practice, Englewood Cliffs, New Jersey, 1993, p. 385

[24] David H. Holt *et* al, Management: Principles and Practice, Englewood Cliffs, New Jersey, p. 385

At present, revision courses for promotion examinations organised by the Public Services Commission are inadequate in scope and depth; medical records procedures are not covered in sufficient detail. The examinations are targeted solely at staff seeking promotion to Technical Officer Grade II and III. Training opportunities for those aspiring higher are non-existent at the moment.

The aim of formal, structured, and well-coordinated training programmes (whatever the method of training) is to upgrade the performance of support staff, raise their self-esteem, and give them the confidence to take up the challenge of new and expanding roles. From the organisational point of view, the major argument for running formal training schemes for support staff is to ensure that those with management potential can be prepared to take up supervisory positions. This, in the long term, offers the best assurance for continuity of management.

The survey revealed that management training schemes are non-existent for Heads of medical records departments. The impression which emerges is that Heads of departments over the years have suffered from lack of training opportunity and planned development. In practice, this prevents them, and by extension the administrative functions they perform, from achieving the higher efficiency levels that could be achieved if regular management training and refresher courses were available.

The importance of providing personnel in administrative positions with management training is well summed up by Deverell:

> the completely untrained administrator who is trying to learn the art of administration is an expensive luxury...Even the trained administrator will of course ultimately have to learn some part of his trade. But he will learn it more quickly if he has a modicum of systematic training...[25]

In addition to management training, Heads of medical records departments should also be provided with opportunities for continuing education in their field of specialisation, so that they can keep abreast with developments world-wide. In the latter regard, access to professional journals and the current literature, and the possibility of attending local and international seminars, would be very fruitful.

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[25] C. S. Deverell, Business Administration and Management, London, 1980, p. 16

In Chapter 8 I set out my proposals for the development of training schemes which health authorities might find worth considering.

4.7 Observations and conclusion

Following my observations and interviews, it is possible to draw a number of conclusions relating to the organisation of the medical records service. The medical records service lacks sufficient representation at the higher levels of the Health Service organisational hierarchy. The official position is that responsibility for the organisation of medical records service lies with the Centre for Health Information Management (CHIM), which comes directly under the Directorate of Information and Research.

The purpose of CHIM is to compile statistical information required for health services planning and organisation. Further, it is expected to provide professional advice on medical records affairs, including staffing of medical records units nation-wide. However, the indications are that CHIM has so far concentrated all effort on the collection and collation of statistics. Its role in organising medical records services appears to be neglected. In my view, therefore, the medical records service is represented only on paper: in practice, there appears to be no spokesman for the interests of the medical records function and profession within the higher levels of the Health Service's organisational hierarchy.

An area of medical records service which has been particularly vulnerable to the counter-productive impact of long-term neglect of the higher management functions, is departmental continuity and managerial succession patterns in hospitals. Development of the function in terms of quality and status is not only a matter of supportive management, but also of the calibre of the individual MRO.

At present, it would seem, Medical Records Officers rarely possess these skills to a sufficient degree. In short, the Medical Records Officers in charge of the hospital medical record departments surveyed do not achieve optimum targets. At the same time, it should be stressed that in most cases it is not they who are the culprits, but the structural conditions under which they have to

work. Nor, for that matter, does the performance of MROs fall below that of other heads of Health Service functions.

With reference to management succession, there are no provisions for training higher medical record personnel. In particular, Medical Records Assistants, it emerged in interview, have little short-term prospect of promotion. This, in turn, is detrimental to incentive, so that staff are not motivated to take on extra responsibilities. The net result of this has been that hospital medical records departments have no continuity of management to build on.

With the shortage of successors to the present generation of MROs, a dearth of structured training and development to prepare staff for higher posts, and no management succession policy within hospitals, it is not surprising that standards of management and, by inference, the medical records service generally, is already on a downward curve. This development can be expected to accelerate unless staff development is taken in hand at highest level.

On a more hopeful note, research also reveals that in spite of a poor salary structure, low status and inadequate working conditions and resources, medical records staff nonetheless exhibit extraordinarily high levels of commitment to the performance of the services they provide, and in their dedication to the patient. This will undoubtedly prove a vital building block in reversing the current trend in the context of the reorganisation of the Health Service as a whole.

To sum up, the problems besetting the medical records service in Ghana can be attributed to consistent neglect, over many years, at the institutional and ministerial policy-making levels of the Health Service. Outside medical records circles, there has been little demonstrable interest in creating the necessary conditions to promote growth in the function and to streamline it in keeping with a high-grade public service. That the service runs as well as it does is a testimony to morale within the profession itself.

In the longer term, the medical records service will have a crucial role in underpinning the reform of the health sector which is already in progress. But in the immediate future, the biggest challenge facing policy makers and hospital administrators is to reorganise the function to accommodate existing demand.

5 *The organisation and control of current records*

5.1 Introduction

As I described in some detail in Chapter 2, health care is information-dependent and cannot be effectively dispensed without reference to a patient's past history. In a paper record system the first rule of good record keeping practice is to assure that patients' case notes are in physically good state and are available when and where needed. However, the critical factor determining the value of records is not so much their physical condition — that they are in a well-organised and legible state should be taken for granted — but the usefulness/relevance of the information they contain, as well as the efficacy of the indexes and other finding aids which make that information accessible. Thus, while I discuss in this chapter the physical management and control of records, I have also examined issues relating to quality of recorded information and the type of indexes kept for purposes of data retrieval.

5.2 Physical control of records

5.2.1 Records creation, identification and co-ordination

In all the hospitals surveyed the patient record is opened at the time of registration or admission. From admission through to discharge all the requisite/essential data are documented on basic, standardised forms issued by the Ministry of Health. (See Appendix 3). Further documents are appended during the course of treatment. The record is closed after a patient has been treated and discharged. All documentation is held in a folder designed to Ministry of Health specifications.

In all the hospitals surveyed numbering is the means of linking a patient to his record: when registering for admission or an appointment patients are formally allocated the identification number by which they will be known in

the records. Different identification numbering systems are used in the teaching and regional hospitals.

The teaching hospitals maintain the unit numbering system, whereby a non-transferable number assigned on the first visit is retained in perpetuity. At both hospitals unit numbering is used in combination with a unit record system — the system of keeping all of an individual's in-patient and out-patient notes in a single folder — which thus provides a cumulative, on-going profile as a frame of reference for continuity of care. This method averts the creation of multiple case notes, which is uneconomical from the point of view of record storage resource. The only room for error is when incoming patients are inadvertently re-registered under a new number because they are not known to be readmissions. Because of the administrative bother of rectifying supernumerary identification numbers and files creation, patients reporting or brought in are always questioned closely on this point, even though new registrations are always verified against the Master Patient Index (MPI), which contains skeleton information on all patients ever seen by the hospital.

The regional hospitals maintain a serial registration system under which a patient is assigned a new number on each admission. As new numbers are assigned so new folders are correspondingly opened and filed in chronological sequence of creation. Hence the number of locations in which an individual's medical records are dispersed over the filing system correlates with the number of times s/he is admitted.

Each of the two record handling systems described has its strengths and weaknesses. As an instrument of medical care the unit record is indubitably superior because a complete dossier is always available when needed for reference or comparison. Where serial registration comes into its own is in the effortless ease with which current records can be purged of inactive material, which is simplicity itself. All it takes to tell whether a record is ripe for consignment to inactive storage is to check its number for dueness, and then remove it from one shelf and re-house it on the other. At regional hospital A the process is smoothed out further by the practice of taking the current year as the first two digits of the identification number; i.e. Record Number 95/123456 originates from 1995. As all the records of a particular year are grouped together in chronological order of creation, purging could not be more convenient for the record staff.

With the unit system, on the other hand, the purging process is extremely laborious and time-consuming to perform. The fact that medical record

number is not an indicator of record activity, implies that a file is not due for transfer until the entire contents have reached the due date. In practice this means that the date of origin of every item in every folder has to be separately scrutinised at set intervals, and that no folder may be purged until the most recent document has reached its due date. Were it not for this, the advantage of the unitary over the serial system of numbering would be beyond dispute. Administratively, therefore, the serial system is more convenient. In terms of patient care, as was mentioned earlier, the unitary system stands unrivalled as a vehicle for patient care.

From every point of view it is advisable that the Ghanaian regional hospitals should follow the teaching hospitals in switching to the unitary system. Besides considerations of patient care, this will also ensure maximum co-ordination once current feasibility studies have blueprinted the introduction of nation-wide health insurance.

5.2.2 The patient folder: structural features and contents

The patient folder has two basic records functions to perform. At the most basic level, a folder is a container for a collection of assorted documents which would be less secure if they were filed individually. In addition, the external cover protects the paperwork from wear and tear. Secondly, keeping a patient's files together makes it possible to organise the documents in a predetermined order to ensure that each category of information is readily accessible for reference. A good folder, therefore, has to be strong and durable, and designed to facilitate the internal organisation of the papers stored inside.

During the survey Ghanaian hospital folders were seen to be very poor both in quality and design. The standard issue MoH manila folder is so thin that it deteriorates very quickly, while the spine is so weak that folders buckle on the shelf, unless very tightly packed. The internal construction is as utilitarian as it could be: just an open pocket, with no fastening device, across the bottom half of the right inside. This just about suffices to contain the paperwork, but makes it almost impossible to organise properly. Flimsies, in particular, are prone to drop out when the folders are opened — and, of course, when people are in a hurry, items are not always put back exactly where they belong. As if these inadequacies were not enough, the folders are

also inconvenient in size — less than A4 length. Such deficiencies in an absolutely vital piece of equipment are a constant source of aggravation and time-wasting both for the medical record staffs who spend an inordinate amount of energy trying to keep folders — covers and contents — in reasonable condition, and for the medical personnel who use them.

By contrast, the folders of the West Glasgow hospitals are constructed of a robust grade manila, are large enough to hold both A4 and foolscap, and have a triple-fold spine with an in-built fastening device. To increase durability, the covers are laminated, inside and out. Designed to go with the folders are self-adhesive, coloured identification slips that go on the spines. (See pictures 5.1-5.3). Visual pre-coding is not just practical, but also gives the filing shelves a neat and workmanlike appearance. The fastening device is particularly well-designed in that it extends along the full length of the spine and is of the same thickness throughout so that when closed the folder lies flat and compact, with no bulges to be damaged by constant shelving and re-shelving. An additional advantage of this design is that the harmonica spine, besides supporting the fastener, also allows for expansion as the paperwork grows in bulk. The one structural inconvenience is that dis- and re-assembly becomes more fiddly the further down in the pile a document is located.

The Royal London and many other British hospitals use the same, or a very similar, folder, except that lamination, being more expensive, is an optional feature.

Picture 5.1a

Picture 5.1b

Pictures 5.1 (a & b): Colour coded files, Western General Hospital (West Glasgow University NHS Trust)

Picture 5.2a

Picture 5.2b

Pictures 5.2 (a & b): Colour coded files, Gartnaval General Hospital (West Glasgow University NHS Trust)

Picture 5.3a

Picture 5.3b

Pictures 5.1 (a & b): Colour coded files, Royal London Hospital

From the number of accidents to folders he observed in Ghanaian hospitals, it is crystal clear to the researcher that the Ghanaian hospital folder is simply not up to its job, and should be replaced by a product which is as good in quality and construction as the type found in British peer establishments.

The investment this would take is considerable, but not overwhelming when bearing in mind that the medical record function is already designated for thorough overhaul. Although folders might seem a peripheral issue in the overall scheme of reform, there is no doubt that the initial cost would soon be offset by improvement in operational efficiency and productivity at the very heart of the records function.

Internally, an effective folder should be constructed to ensure that the complex and varied collection of documents which make up the patient's history can be distributed in a logistically consistent and easily retrievable order.

One of the areas considered in the study concerns the internal organisation of Ghanaian hospital folders. The survey showed that all the hospitals organise folders internally in the same way. Incoming documents, from medical reports, progress notes, and temperature charts to general correspondence, are filed in the record in chronological order of receipt, with the most recent on top. Thus the history of an entire episode of care, from admission to release, is presented in the form of a single, complete and continuous record. The positive aspects of non-differentiated, chronological filing are that: (1) documents from different sources relating to the same stage of the history are concentrated together; (2) a comprehensive picture of any individual episode of care is always instantly at hand. The chief disadvantage is that it takes time and effort to retrieve and assemble for comparison parallel data generated at different times or by earlier episodes. Here it should be reiterated that the interior of the folder comprises a single storage pocket, so that it is difficult to see how else the folder could be organised.

In the West Glasgow hospitals, and many other hospitals in Britain and elsewhere, where internally divided folders are used, documents are filed chronologically in separate compartments according to provenance and type. This method has the great advantage of offering virtually instant access to a complete, sequential assembly of any one of the dozens of categories of information — from blood test results to rejected insurance claims — which collectively make up the patient history. Because it is so easy to isolate just

the specific information required, those who use files intensively are unanimous in preferring the multiple compartment type of folder. Doctors, in particular, find it highly inconvenient when their notes are not together. But there is one, not inconsiderable, disadvantage to separating data according to source and type: if this is done, it is not easy quickly to form a comprehensive picture of an individual's problems, condition, and treatments at any specific moment.

Each of the two systems of filing outlined above represents a school of thought; each has its advantages and disadvantages, and it would be difficult to categorically state which is better or, indeed, 'right'. One hospital might opt for the one method, and another for the other: choosing either is simply a matter of preference and perceived convenience.

This survey reveals that Ghanaian hospitals do not question the present system, and would appear to have no discernible desire to depart from the traditional, institutionalised method of straight chronological filing they have used since post Independence. Should change be introduced through government initiatives to bring the medical record function in line with mainstream international practice, a certain amount of conservatism will have to be overcome, especially among senior personnel, who may have trained in Europe and elsewhere several years ago. Inevitably some measure of compromise will be necessary.

As far as the researcher is concerned, the existing system is as good as any, and there would seem to be no imperative to change it as long as documents are in and not outside the folder, and organised in a predetermined way to make information easily accessible.

In this perspective, therefore, the only urgent issue in the records filing function is to address the false economy of entrusting precious records, irreplaceable instruments of patient care, to badly-designed folders of inferior quality.

5.2.3 Tracing and tracking records

Regardless of how patient records are filed, the important thing is to know where a record is — in or out of file — or should be, when needed. Even when not in file, case notes should at all times be comparatively straightforward to locate. All tracing and tracking systems, whether manual

or computerised, are designed to: (1) monitor the trajectories of issued-out records and, (2) provide a means of telling whether a record is in or out of file. How quickly and easily they perform these functions is mainly a matter of detail (design; technical sophistication). In the course of his study, the researcher established that different systems of registering loans and returns are in use at regional hospitals B and D, and at regional hospitals A, C, and the two teaching hospitals, respectively. Regional hospitals B and D use simple booking-out notebooks, with pre-headed columns: borrower's name, user's name (if different), date of issue, record identification number, purpose (clinical, research, etc.) for which the record is required, date of return and signing-off. Chronological listing, although perfectly reliable, has one important drawback: it is time-consuming physically to have to go through the book(s) to establish where, and with whom, an out-of-file record is located. At regional hospitals A and C, and the two teaching hospitals, loans and returns are registered on tracer cards, slightly larger in size than a case folder. The card system works with slightly more detailed information, in that the department as well as the identity of the user is put on record. The procedure is that when a folder is issued out it is replaced by a card in the files; when a folder is returned the card is removed, the last entry deleted, and the card kept in a rack or box, until the next time. Cards are used (successively reassigned) over and again until all entry spaces are used up. The tracer card system is very simple and straightforward to use, with not much room for error, and provides a far more reliable guide to out-of-file location than notebooks do. Clearly, then, the tracing and tracking systems in place in Ghanaian hospitals are perfectly good. Nevertheless, human error is rife, and as medical records staff report, and the researcher observed, that problems of records location are endemic. The most often-cited reasons for records being lost temporarily or permanently, invariably involved one or more of the following errors:

- misfiling
- files not being returned to records department for shelving after borrowing
- files being borrowed without being issued out
- borrowers unofficially passing on loans to second parties, who pass them on to third parties, and so on.

In short, when files are not on the shelves, there is endless potential for them to go off-course within the record library and in the hospital at large. It is important to distinguish between these two situations, though. When records are mislaid within the department, this can (usually) be rectified; when they go astray in the hospital matters are more complicated. No MRO in any of the hospitals visited was without complaint about user habits, the chief grouch being an utterly unscrupulous, irresponsible attitude towards records borrowing, especially among doctors, but among other hospital staff as well. One reason for this is that records is a low status department within the hospital hierarchy. Lack of respect for the department is reflected in disdain for its 'rules', especially by doctors who have the highest status and prestige in the hospital. Thus 'rules' on borrowing and returning records are widely ignored. But this has a second, even more serious, consequence for the record function. Although access to the stacks is in theory restricted to the department, general personnel, and doctors in particular, have no compunction about simply by-passing the staff to walk straight in and help themselves to the records at will. The fact that staff are authorised to stop them from doing this cuts very little ice in situations where the department is over-loaded with work at all times — too busy, for instance, to respond instantly to requests — while their lowly status effectively prevents them from challenging their 'superiors' under any circumstance.

The practical outcome of this is that staff often have no clue where records might be; either because the information on tracer cards is out of synch with reality, or because records have just disappeared — been informally removed from circulation. The record searches which often have to be undertaken to recapture files lost in these ways, often involve record staff having to shift through stack after stack of charts in department after department. Given that the use of and demand for medical records is an on-going affair, the need to tighten up tracing and tracking procedure need scarcely be emphasised. Rates of records lost are horrific everywhere. In teaching hospital A, for instance, the MRO said that about three out of ten records cannot be immediately located when requested. In teaching hospital B, the researcher observed an occasion when nine sets of records urgently wanted for clinic were not where they should be. In the event, five of these were eventually retrieved by closing time, though not before departmental staff had spent most of the interim in hunting them down. On another day in the same hospital no less than the records of twelve re-admissions could not be found.

In the regional hospitals matters are no different. MROs concede to an average 40 per cent of case note requests drawing a blank. Of these, some may be only temporarily misplaced, others may unexpectedly surface in odd places, but far too many never turn up at all.

There is no doubt that Ghanaian hospitals must improve their performance in this regard, irrespective of how inventive and flexible record staffs might be in a crisis: it cannot be stressed enough that it is patient welfare which is at stake in such situations. The researcher comes to the conclusion that the best way to reduce the excessive incidence of misplaced patient files rests less with a change of structure than firm determination to come to grips with the obstacles stopping the existing tracing systems from doing their job as well as they were designed to do.

The one way to make a tracer system work is to counteract the human error factor. At the Royal London Hospital, as the researcher could see from observation and interview, a manual system very similar to that used in Ghanaian teaching hospitals is found to be perfectly effective and efficient. Why the level of performance is so different is because the Royal London system is backed up by rules and regulations which the management support and enforces. A very stringent policy on borrowing procedures and unauthorised access is therefore commonly obeyed. Records scarcely go missing with anonymous users to unrecorded destinations, and tracer cards are updated at once if a case note is for any reason whatsoever, even momentarily diverted from its intended route. The medical record library is strictly out of bounds to all general hospital personnel, so that no one but medical records staff is in a position to remove and file records. Mrs. Don Beaver, the Royal London Health Record Manager, freely admits that she has no doubt that were it not for the administration's commitment to upholding record library rules and regulations, the system would not be working so successfully. As a contributory factor, she also mentioned a high level of commitment and conscientiousness among medical records staff. But she also informed the researcher that the present level of efficiency and morale was a relatively new phenomenon. Until about a few years ago the Royal London records department, like its Ghanaian counterparts now, was badly over-stretched because of under-staffing and increasing volumes. However, the introduction of a limited computerised tracking system had taken much of the pressure off.

At the West Glasgow NHS Trust hospitals, which the researcher also studied in this connection, manual tracking has been completely replaced by a computerised system that makes keeping tabs on records movements simple and trouble-free, and allows telephone reservation. Still, as the Health Records Manager, Mrs Mary Jack explained to the researcher, without set rules and procedural regulations, which again are enforced from above, the reliability and success of the system would not be assured. It is a rule, for instance, that no record may be removed from file, or its destination for whatever reason changed, without simultaneously updating the computer.

Another, even more sophisticated, tracking system that is gaining increasing currency in wealthy countries, is bar code technology. With scanners stationed throughout the hospital to log records traffic, light terminals to sign records in and out, and on-line booking and reservation facilities, the need for paperwork has been eliminated entirely. Other services the system delivers include 24-hour monitorship of all records movements; listings of records out of file for extended periods; and customised reports and statistics. Wherever it is in use, this technology is said to have significantly improved the quality of medical record services.[1]

At the University of Texas Southern Medical Centre, which processes about 114,000 record requests per year, bar code technology has resulted in a 99 per cent retrievals success rate, with an average delivery time of 15 minutes, where previously this might have taken days. At the University of Iowa hospitals and clinics, where the annual turnover in patient record requests runs to an annual 600,000+, a similar system has likewise had spectacular results. On-line reservations, for instance, reduced telephone traffic by 83 per cent within two months of installation, while the rate of records requests satisfied went up from 82 per cent to 93 per cent over the same period. These are excellent examples of the impact of advanced tracing and tracking technology on health care delivery.[2]

Computer technology is never bought cheaply (even if cost does vary according to the sophistication of the individual system). This being so, it

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[1] Lynn Kuehn and Margaret Stewart, 'Data Access and Retention' in Mervat, Abdelhak, *et al* (eds.), Health Information: Management of a Strategic Resource, W. B. Saunders Company, Philadelphia, Pennsylvania, 1996 pp. 190-191.

[2] Lynn Kuehn and Margaret Stewart, 'Data Access and Retention' in Mervat, Abdelhak, *et al* (eds.), Health Information: Management of a Strategic Resource, Philadelphia, Pennsylvania, 1996, pp. 192-193

makes no sense for a hospital to embark on this kind of option unless there is an imperative need for it. In the Ghanaian situation today, a simple computerised Patient Administration System, (PAS) with record tracking module along the lines of the ones at the West Glasgow hospitals, would suffice to iron out certain key obstacles, especially those relating to monitoring records movements. In this context, it is salient to note that at the time of the survey, not one of the hospitals studied was in a position to give even a rough estimate of the annual volume of record movements handled. This cannot but adversely affect efficiency and productivity in the health care delivery service as a whole. Fortunately, according to Mr. Adams, of the Ministry of Health Headquarters there are plans afoot for the introduction of PAS in government hospitals as part and parcel of a wider information management strategy for the health sector generally. This, however, is a longer-term proposition. As far as the immediate situation is concerned, the researcher maintains that a good proportion of the system's present deficiencies would resolve themselves if only hospital administrations were more wedded to a policy of firmly-enforced procedural rules and regulations. The example of the Royal London Hospital, where this is the case, and where a very similar system displays none of the Ghanaian problems, bears this out. By inference, the reason why Ghanaian hospital tracing and tracking functions now under-perform is not so much because they are manual in kind, but because they are not run in a disciplined way. In the hospitals studied, basic procedural rules were either lacking altogether or, where they were theoretically in force, not complied with. One day, as the cost of technology falls apace, advanced tracer systems will doubtless become the universal norm. In the meantime, even though the advantages of discrete computer support should not be underestimated, the researcher feels that his study findings offer satisfactory grounds for arguing that the manual systems of the Ghanaian teaching and regional hospitals have by no means run out potential. The great obstacle to performance is the low esteem in which the function stands. What is needed above all, is a programme of re-education, especially for medical staff, in combination with properly enforced rules and regulations for records library use.

Looking farther ahead, this approach is also the way to lay the foundations for a time when ever more complex technologies will come with ever more complex procedural rules. As future purchasers of such systems, Ghana's hospital administrations would do well to value today's still-

adequate manual systems as an opportunity to institutionalise a spirit of shared allegiance to first principles for the common good.

5.3 Retrieval of information

5.3.1 Filing methods

Filing systems exist to facilitate fast identification and retrieval of patient records. In the words of Avery and Imdieke 'efficient filing systems hold documents in known, consistent, prescribed, manner, so that the records can be found, retrieved and handled quickly, easily and accurately'.[3]

In Ghanaian hospitals files are numbered in straight chronological sequence of medical record number (0001235 after 0001234 and before 0001236, etc.), and shelved accordingly. The pros and cons of straight numerical filing are as follows:

Advantages:

- personnel can easily be taught to use the system

- if consecutively numbered records are needed for study it is easy to pool and file them

Disadvantages:

- because clerks deal in entire numbers, records are easily misfiled: the more digits, the greater the chance of error

- transposition of numbers occurs easily — 324534 is readily converted into 325434, for instance

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[3] Maurice Avery and Bonnie Imdieke, Medical Records in Ambulatory Care, Rockville, Maryland, Aspen Systems Corporation, 1983, p. 26 For detailed discussion on filing methods in medical records see also: Kathleen A Waters and Gretchen F. Murphy, Medical Records in Health Information, Aspen Systems Corporation, Germantown, Maryland, 1979, pp 455-460. Jennifer Cofer, (ed.) Health Information Management, (formerly Manual for Medical Records Management by Edna K. Huffman), Physician Record Company, Berwyn, Illinois, 1994, pp. 284-288.

- most filing occurs in the area of the file housing the medical records with the highest numbers (representing the latest patients); this section therefore tends to be crowded with competing clerks, which is both stressful and conducive to error.

Administratively, straight numerical filing makes it logistically almost impossible to assign responsibility for particular sections of the file. From this it follows that the higher the volume (and numbers) of records handled, the more apparent the disadvantages become. Hence, it may be said that a straight numerical system is manageable only as long as figures remain below six digits.

Over recent decades the record libraries of the larger British hospitals, such as the Royal London and the West Glasgow NHS Trust, have turned to a variation of the straight numerical filing: terminal digit filing, according to which records are schematised to a right to left reading. Thus 0001235 breaks down into 000-12-35, and is filed under the primary guide 35, and the secondary guide 12. Thus all files ending with 35 form a group within which they are sub-grouped again under 12.

Study shows that the functional superiority of terminal digit filing can account for as much as a 33 per cent improvement on operating time over the traditional, numeric method.[4] Broken down into constituent factors, the main time-saving factors of terminal digit filing fall roughly into two groups.

Actual time saved through greater operational convenience:

less time taken to read off a short series of numbers; less mental agility required to memorise only one pair of digits at a time; locating shelf slots is faster; sorting is unhampered by gaps in the sequence of filing

Time saved through reduced incidence of errors:

likelihood of involuntary mental transposition of numbers is reduced; less incidence of misfiling; less time spent on retrieval of lost files

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[4] Irene Place, Filing and Records Management, Englewood Cliffs, New Jersey, Prentice-Hall Incorporated, 1966, p. 67

Further, structural advantages are that:

- order is unaffected by frequent removals
- order is unaffected by dropout numbers
- the distribution of numbers is unaffected by the quantity of items within the group
- identical organisation of each section of the file facilitates distribution of the workload

In Glasgow and London filing procedure is further streamlined by colour-coding terminals in blocks of 0-9, ensuring instant identification of misfiles — and, indeed prevents misfiling from occurring in the first place. (Refer to figures 5.1-5.4). While colour coding is not a prerequisite of terminal digit filing, the experience of the West Glasgow Hospitals and the Royal London Hospital demonstrates that in conjunction with terminal digit filing the system is infinitely more easy to oversee and use.

The British hospitals visited are very large institutions. As models, therefore, their filing systems are relevant only to the Ghanaian teaching hospitals, where unit numbering has resulted in current stocks running into six figures.

Nonetheless, discussions with CHIM and MROs during the survey showed that none of the hospitals visited has contemplated switching over to terminal digit filing. At the same time, the researcher was left in no doubt that eventually, terminal digit filing would have to be introduced, at least where the teaching hospitals are concerned.[5] To the researcher too, it seems logical that any such move should be concentrated on these two hospitals. Besides the advantages mentioned above, such a change would also make it feasible to monitor accountability for the files as a whole by assigning responsibility for particular blocs to specific staff, a feature of terminal digit filing which particularly impressed the researcher when observing filing procedure in Glasgow and London.

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[5] Interview with Messrs D. Darko, Principal Biostatistician, Awua Barima, Chief Biostatistician and Head of Medical Records J. B. Danquah , former Chief Biostatistician--all of the Ministry of Health (Centre for Health Information Management-CHIM), February 1997., and Messrs Andrew Amaning and E. K Appah-Medical Record Officers in the teaching hospitals, January, 1997 and March 1997 respectively.

5.3.2 Indexes

In the medical record function indexes show what information may be obtained from which patient records, and facilitate the retrieval of information from the record by providing statistical data. Avery and Imdieke define an index as 'the organised listing of data pertaining to one subject or source of information, which facilitates the retrieval of information by helping to locate records and the information within the records and by providing statistical data.'[6]

The type of indexes commonly kept in the medical record function are the Master Patient Index (MPI), the diagnostic index, and the operations index. An index 'can be manually maintained in a ledger format or on cards, or it can be the output of a computer [programme]'.[7]

The survey indicated that indexes are only maintained at the two teaching hospitals, both of which keep a MPI and a disease/diagnostic index. The MPI consists of a card index arranged alphabetically by name; cards are 5"x3" and are kept in metal, purpose-designed cabinets. The primary function of the card index is to provide entry into the filing system. At both hospitals the information on index cards is nominal, no more than required to prompt the location of a particular patient record and includes the patient's full name and home address, registration number, date of birth, sex, and the date of first attendance. (See figure 5.1) This information is appropriately entered on index cards at the same time as a new patient is being registered. Both hospitals depend on the MPI to guarantee that no patient is assigned more than one number, which would ultimately result in more than one record for that patient. The index is also used to determine the patient's identification number when the record is requested by name rather than number. At both hospitals sampling of cards showed that although hand-written, information was legibly recorded.

None of the regional hospitals surveyed keep MPI. Rather they keep records of patients in columnised notebooks. Some of these notebooks are of the Kalamazoo type in which the name of patients, registration number, address and date of attendance are recorded. These are kept on a yearly basis

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[6] Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1983 p. 122

[7] Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1983, p. 122

address and date of attendance are recorded. These are kept on a yearly basis and names are recorded in chronological order of attendance rather than alphabetical. It therefore becomes very difficult to trace the file of a returning patient (being admitted to the same speciality), who has misplaced or forgotten his/her identification number. In this situation the patient's identification number can be retrieved by reference to the attendance note books, provided the patient can recall the year of first attendance. Even where this is possible it always becomes cumbersome to trace a patient through attendance books in which names have not been alphabetically arranged.

For purposes of research the two teaching hospitals also keep a disease classification or diagnostic index, a method of indexing which permits 'the actual case records, or lists of details, of all patients with a given disease, [to be] retrieved from the files and assembled together for special study'.[8]

In both hospitals the disease/diagnostic index file is composed of 5"x8" cards which record the patient's unit number, sex, age, date of discharge, length of stay, secondary diagnosis(in alpha-numeric codes), treatment outcome, and the name of the health institution in that order. (See figure 5.2).[9] At the very top left-hand corner of an index card is recorded the main disease for which data are being compiled, with the corresponding ICD codes appearing at the extreme right. The patient unit number is included to cross-reference with the basic record. The indexes are created after termination of treatment on the basis of information extracted from the medical record. As in the case of MPIs, the disease/diagnostic index cards at both hospitals were legibly and carefully written out by hand. For purposes of information retrieval the cards in the index are filed alphabetically by type of disease and then within each disease classification, by numerical order. For example, A00.1 ... A99.9; B00.0 ... B99.9; ... Z00.0, Z00.1, ... Z98.9, Z99.9.

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[8] Bernard Benjamin (ed.), Medical Records, (2nd ed.), London, William Heinemann Medical Books Ltd., 1980, p. 89

[9] The disease index cards displayed in the text contains real entries. Dead cases are entered red. Entries recorded in blue represent patients whose condition improved and have been discharged. Disease codes are alpha-numeric. Starting form 'A' to 'Z' each letter of the alphabet represents a disease classification and numbered from 00 to 99. Each represents a major disease entity. A fourth character after the decimal point indicates other variety of the main disease. For example J represents diseases of the respiratory system. J18 is assigned to Pneumonia; J18.0 for Bronchopneumonia; J18.1 for Lobar pneumonia. (See page 525 of the International Classification of Disease - 10th version).

These two indexes are the means of access into the patient record by surname in the case of the MPI, and by category of medical disorder in the case of the disease/diagnostic index. In addition, these indexes also have a research value independent of the accompanying case notes. Taken in conjunction, for instance, the MPI and the summarised information in the disease/diagnostic index enable such research as quantitative studies on the incidence of disease, population spreads, and related topic, often providing data of continuing use to researchers from a far broader background than the medical sciences alone.

Because of these wider functions, the two types of indexes are held in perpetuity in both teaching hospitals and also in their British counterparts even if the corresponding or accompanying medical records are disposed of.

Name ESHUN Unit No. 501664
(Surname)
BENJAMIN Date of Birth 14YRS
(First Name(s))
Address: HSE. No. B890/5 SEX M ✓ F
BUBIASHIE (TICK)
ACCRA
Date: 23/9/92

MASTER PATIENT INDEX CARD
KORLE-BU TEACHING HOSPITAL
EYE

Figure 5.1 Master Patient Index Card

DISEASE CLASSIFICATION INDEX CARD

LOBAR PNEUMONIA CODE No. J18·1

Regd. No.	Sex	Age	Date of Discharge	Days in Hospital	Secondary Diagnosis	Result	Health Institution or Hospital	Cost
723205	F	89	16/5/97	2	B54	DIED	K'BU	
728269	m	38	29/5/97		N18	DIED	"	
718802	m	14	8/4/97	5	—	Imp.	"	
724394	m	45	11/5/97	6	—	DIED	"	
723199	m	29	20/5/97	7	—	Imp.	"	
710545	F	45	26/5/97	11	—	"	"	
738453	F	33	2/6/97	14	—	"	"	
738714	F	21	25/5/97	4	—	DIED	"	
731405	m	42	16/7/97	7	K75.0	Imp	"	
731530	m	35	22/7/97	13	—	"	"	
737432	F	14	11/8/97	5	—	"	"	
738615	m	41	25/8/97	8	—	"	"	
731268	m	20	10/7/97	8	B19.9	"	"	
734837	m	30	26/7/97	6	—	"	"	
735656	m	26	28/7/97	3	—	"	"	
735615	F	23	14/8/97	29	—	"	"	

Ref. No. 51 — MR/6

Figure 5.2 Disease Classification Index Card

The big problem with the indexes in both the teaching hospitals is one of limited floor space and equipment. Neither hospital has filing cabinet capacity in excess of a 200,000-card MPI whereas this ceiling has already been over-reached in both hospitals. Moreover, as was mentioned earlier, index filing cabinets are housed in record departments which are already cramped, with no accommodation for expansion. The only way to make room for the constant inflow of new cards, therefore, is to withdraw older cards from the drawers as new ones arrive. In both hospitals, as described earlier, such cards, which are officially still in circulation, are packed in labelled boxes that are kept in easily accessible places for reference when needed. In fact these cards are often kept in conditions under which they are guaranteed to be lost in future — not to speak of the present — as sources of reference for patient care and research.

Taking the experience of the Glasgow hospitals as a yardstick, it would appear that the solution to the constraints which lack of space imposes on index storage and retrieval, lies in computerisation. In Glasgow automated index systems have not only completely eliminated problems of physical storage space, but have immeasurably improved quick access to data, as well as enhancing patient registration procedure as a whole. As a reference/research tool, the possibilities of the disease/diagnostic index has also been greatly expanded by the possibility of retrieving data fields relating to specific categories of patient/populations of patients by either diagnosis or procedure.[10]

However at the time of the survey MROs were already looking forward to the advent of automated card indexes by the introduction of the trans-hospitals Patient Administrative System (PAS), which are among the already-approved components of the health reform agenda. It is believed that the present problems should be resolved in the not too distant future with the introduction of PAS, although no definite time-frame for implementation has as yet been set for this. Beyond doubt is that without intervention the obstacles described will not only continue to act as drawbacks in the effective utilisation of the hospital indexes, but will irrevocably result in their loss through progressive deterioration.

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[10] Interview with Mrs Mary Jack, Health Records Manager, West Glasgow Hospitals National Health Service (NHS) Trust, June, 1998

5.3.3 Coding

The patient record, as was noted earlier, is a key source of information used for a wide range of statistical and analytical purposes both within hospitals and in wider social and economic contexts. As research, planning, monitoring, and so forth, rely on the collation and comparative analysis of highly differentiated data, information has to be broken down and presented in manageable components. To expedite this, the different categories and classes of information extracted from the patient record are therefore indexed in code.

Simply defined, 'coding is a numerical assignment that provides an organised approach to data retrieval...using numerical equivalent to identify such data components as diagnoses, operations, procedure, reason for visit, pathology specimens, injuries... and ill-defined conditions'.[11]

Of the many available data extraction coding schemes,[12] the system approved by the Ministry of Health in Ghana is the tenth version of the International Classification of Disease (ICD-10), a comprehensive classification system to schematise mortality and morbidity rates. It is structured on a numerical code, with each number corresponding to a type of disease, injury, and other grounds for health care encounters. The primary function of ICD is to present data for statistical presentation. Secondly, it serves to 'index medical records by disease in order to facilitate retrieval operation'[13]

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[11] Kathleen A Waters and Gretchen Frederick Murphy, Medical Records in Health Information,

[12] Some coding and classification schemes developed over the years include the Standard Nomenclature of Diseases and Operations of the American Medical Association (SNODO), the Systematised Nomenclature of, Medicine (SNOMED), Current Medical Terminology (CTM) and Current Procedural Terminology (CPT), The International Classification of Disease (ICD). The ICD was developed by the World Health Organisation (WHO) and used by all its member states. Currently in its tenth version it is revised every decade to keep abreast of constantly changing knowledge about diseases. For extensive discussion on the origin, purposes and uses of these coding and classification schemes see: Bernard Benjamin, Medical Records pp. 74-93. Kathleen Waters and Gretchen Murphy, Medical Records in Health Information, pp. 466-470. Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1983, pp. 118-119

[13] Maurice Avery and Bonnnie Imdieke, Medical Records in Ambulatory Care, Rockville, Maryland, 1983, p. 119

In the light of the on-going reforms currently being implemented throughout the health sector, the need for accurate and reliable data for evaluation and strategic planning of future health care needs and resource allocation becomes ever more imperative. Thus coding has become a major activity of medical record departments, especially in the teaching hospitals with their diagnostic indexes and wide variety of specialist cases.

All the hospitals surveyed follow basic ICD coding procedure: upon completion of diagnoses, treatment, and discharge, records are returned to the medical record department where the essential features of the patient's episode of hospitalisation — principal diagnosis/es and principal procedures — are abstracted and coded. As everything is done by hand, coding is a very demanding process: every record has to be methodically scrutinised and analysed from beginning to end, and data have to be meticulously matched to codes.

The ICD system is designed for an environment where source documentation (case notes) is maintained to a high degree of detail and accuracy. In Ghana, however, there is a stream of opinion within the Centre for Health Information Management (CHIM),[14] which MROs endorse, that patients' discharge summary sheets and other documentation contain insufficient and or inconsistent data on procedures, diagnoses and treatment. Some of these inconsistencies, as was explained, are legitimate because final documentation may include the results of tests and other findings not available at the time of earlier documentation; the record may also indicate diagnostic variations that reflect changes in the patient's status. Some inconsistencies however, reflect errors on the part of practitioners responsible for recording the diagnostic assessment. For example a patient record may include an operative report on hernia but the final diagnosis may indicate that he had pneumonia. Such inconsistencies, as was explained, are very common.

The survey bore out the CHIM/MRO view, revealing furthermore that inconsistencies and omissions, are more often than not simply ignored, or at any rate not rectified. Here, again, we encounter more evidence of the utter contempt in which the medical record function is held by the medical

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[14] Interview with Messrs Darko, Barimah and Danquah, of the Centre for Health Information Management February, 1997

fraternity — to the extent that its members can barely see the utility of accurately completing patient documentation.

It was also observed that none of the hospitals has in place any mechanism for monitoring or evaluating entries for error, which may well signify hospitals documentation as a whole is medically incomplete and/or inaccurate.

At present medical record data quality control is at the discretion of physicians, who are not, however, expected or obliged to co-operate in coding procedure. The latter is the province of MROs, who supervise coding staff who carry out their work with virtually no written protocols and instructions to guide them. The researcher furthermore noted that at not one of hospitals observed was there in place any method to systematically and routinely control and monitor the level of coding accuracy. No support mechanisms from the administration and the medical leadership have so far been devised to address this long-standing problem.

Self-evidently, these inadequacies are bound to be reflected in any the future research and planning. Inevitably, any research or evaluative studies based on data coded from defective information will be distorted. The implications of this are potentially disastrous for policy-planning and long-term, strategic resource allocation.

The potential use of ICD-coded data ranges from the study of the incidence and treatment of disease, to executing clinical audits, providing support in the contracting out of patient care provisions, and the monitoring of goods and services in an internal market. In Ghana the use of ICD-coded data is limited to the first of these purposes, and then mainly at the medical schools for teaching.

As part of the current health services reforms, feasibility studies are underway for the possible introduction of a national health insurance scheme. Should this become a reality, coding will become an even more significant issue as this could be part of the patient billing process. Insurance companies too, will require more accurate data on which to base reimbursement schedules.

In the United Kingdom and elsewhere where coded information is already integral to billing and contract monitoring, standards of coded data are subject to well laid-down policies, guidelines, and procedures. At the Scottish hospitals visited and at the Royal London Hospital, abstracting and coding are subject to qualitative and quantitative standards and rules of

conduct, while the quality of data is monitored through internal audits. All these measures are documented in policy and procedural guidelines.

Source documentation is similarly safeguarded by procedural rules and through qualitative and quantitative monitorship by a review panel composed of medical record officers, representatives of medical staff and other personnel involved.

Across the Atlantic, medical record departments uniformly follow the Practice Standard for Health Care Data laid down by the American Medical Record Association Council on Professional Practice, to ensure the production of data to standardised quality criteria.[15] All these are practical lines of action from which Ghanaian hospitals could take their cue.

To produce reliable and accurate coded information depends on more than good quality source documentation, though. Even where case notes are well- structured , accurate, and complete coding can go badly wrong if performed by those with insufficient training. Assessing the *'Impact of the Medical Record Credential on Data Quality'*, Murphy-Muth notes that 'the presence of a qualified staff is essential for producing quality data'.[16]

Re-echoing this view Murphy- Muth cites Finnegan:

> A medical record service must have sufficient resources to employ qualified coders if it is to produce accurate coding. The authors of ICD-9 assume coding personnel are familiar with diagnostic and procedural terminology. In addition, coders should be familiar with anatomy and disease process. All of these competencies are included in the curriculum for accredited record technicians.[17]

In every hospital surveyed it is commonplace to find staff with no formal training and qualifications in coding. It emerged that staff entrusted with coding have generally been in the record department for some time and their previous responsibilities have either been in filing, patient registration, or

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[15]See Susan M. Murphy-Muth, Medical Records: Management in a Changing Environment, Cincinnati, Ohio, Aspen Publishers, 1987 pp. 41-47.

[16] Susan M. Murphy-Muth, Medical Records: Management in a Changing Environment, Cincinnati, Ohio, 1987, p. 82

[17] Rita Finnegan, 'Data Quality and DRGs', Chicago, Illinois, American Hospital Association, 1983, cited in Susan Murphy-Muth, Medical Records: Management in a Changing Environment, Cincinnati, Ohio, 1987, p. 83

compiling statistics. It would appear that coding staff are assigned to this function purely on the assumption that length of service within the department and a familiarity with patient records will be sufficient preparation for this specialised task. Training is on-the-job and consists of being directly instructed and occasionally monitored by MROs (who do have professional training in coding).[18] Apart from supervision by MROs there appears to be no other authority to monitor the quality of coded information.

In the United Kingdom many initiatives at national and institutional level have been undertaken to train qualified coding personnel. The Institute of Health Record and Information Management (IHRIM) sets the authorised standards and organises the proficiency examination for clinical coders. In Scotland training is provided and overseen by the Scottish Clinical Coding Centre in Edinburgh. At the Scottish hospitals coding staff commence training almost immediately after taking up their appointment, and are required work towards the basic IHRIM qualification. In England the Clinical Coding Support Unit of the National Health Service Executive was established in 1990 to oversee and organise training programmes for coding.[19]

In the United States of America there are similar institutions to train coders, and employment in the profession is restricted to fully-qualified Accredited Record Technicians.[20] All this underscores the importance attached to coding in these countries.

In Ghana there are no institutions where coders can obtain formal training or professional qualifications. While thought is being given to this, the gap could be filled by well-designed informal, in-service training schemes. It is also essential that such training should involve the medical staff who originate the medical documentation that is coded.

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[18] Some of the MROs were trained in Europe in Medical Records with professional coding qualifications. As Departmental Heads with administrative duties, they have delegated coding the function to other staff for whom they (MROs) provide training.

[19] Interview with Mrs Mary Jack Health Records Manager, West Glasgow University NHS Trust, June, 1998 and Mrs Don Beaver Health Records Manager, London Royal Hospitals NHS Trust, August, 1998

[20] Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1983, p.121. Also Susan Murphy-Muth Medical Records: Management in a Changing Environment, Cincinnati, Ohio, 1987, pp. 49-50

While the training of staff should not be delayed, the researcher is inclined to think that at institutional level the quality of information in the patient record is an even more pressing issue, which should be taken in hand first. As a first step this would require the establishment of a regulatory body, supported by every health institution in the country, to standardise and supervise all aspects of data quality.

The second major step in upgrading the quality of clinical information measure would be to make clinicians formally liable for the accuracy of diagnoses and procedures entered in discharge summaries. In addition to this, medical staff should also be officially obliged to assist coders in resolving any problems connected with their area(s) of competence.

All these and other measures relating to the production of accurate data and coding should be stated in clear policy statements, guidelines, procedures, and rules of practice and professional codes of conduct. In future, when the Patient Administration System is introduced, coding in Ghanaian hospitals will be computer-assisted. Once this is in operation, issues of source documentation, data quality, and coding will no longer be areas of concern but prerequisites for efficiency. This, therefore, is the time to establish the foundation for computer-assisted data processing and coding.

5.4 Conclusion

What I have tried to do in this chapter has been to examine how current records are organised and controlled in the hospitals surveyed. In the process, I have identified areas of weakness, and pointed out the possible causes of such weaknesses. Where improvement is needed I have offered suggestions for change based on what I saw in British peer establishments. However, this does not imply that I think that the British scenario should be transplanted wholesale. Rather, I believe that those elements which suit the Ghanaian environment and requirements should be adopted and modified.

Generally, though, it would appear that most of the problems touched upon in this chapter can be reduced to inefficiency which is rooted in an absence of basic institutionalised policies, guidelines and procedures. The repercussions of this lacuna cut right across the board of the organisation and management of current records.

6 Management of non-current patient records

6.1 Introduction

> Records disposal is one area in which organisations appreciate the potential for cost savings and efficiency improvements. It is not uncommon to find many current records storage areas with large volumes of records that have outlived their usefulness. In addition many organisations expend large sums of money on commercial repositories for the storage of records that could legally have been destroyed.[1]

Smith, in effect, is saying that it is a mark of organisational dysfunction when institutions fail to counterbalance records creation with structural arrangements for their removal from the system once their working life, or life cycle, is over. Schellenberg, who sometimes prefers the term *disposition*, defines disposal as: '...all actions taken with respect to [non-current] records that determine their "ultimate fate"'. [2]

The accepted, possible courses of action for disposing of records due for retirement range from intermediate, temporary storage to complete deaccessioning, i.e. destruction. Determination of a record's *ultimate fate* depends on one criterion only: its anticipated future value (if any) as a source of reference. Where a record is adjudged to contain data of administrative, legal, or financial interest, transfer to a record centre for intermediate storage is the customary tactic. Where a record is designated of lasting value for research, teaching, or related purposes, consigning to an archival agency for permanent retention is considered the appropriate strategy. Where the value of a record's primary and/or secondary function(s) is anticipated to attract

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[1] Peter A. Smith, *et al*, Introduction to Records Management, Melbourne, Macmillan, 1995, p. 53

[2] Theodore R. Schellenberg, Modern Archives: Principles and Techniques, Chicago, Illinois, University of Chicago Press, 1975, p. 94

intensive and/or widespread use, the more durable, though costly, medium of microfilm, which also has the advantage of being easily reproducible, will be thought the right form of preservation. Finally, where the information carried by a record has no conceivable further use, destruction is the usual recourse. Needless to say, the procedure of determining a record's value should be subject to rigorous evaluation criteria, clear-cut policies, and stringent control mechanisms, so as to prevent the possibility of value judgments in these matters.[3]

This chapter is devoted to analysis and interpretation of field data on how Ghanaian government-run regional and teaching hospitals regulate the management of medical records which qualify as non-current or obsolete. I shall analyse the problems I observed, and discuss how these could be alleviated by reference to solutions found in the literature, the strategies adopted by other countries, and the scope for remedial action provided by existing Ghanaian structures.

6.2 Records accumulation and storage

To say that all Ghanaian government hospitals suffer grave and endemic problems of non-current storage is not to jump to conclusions, but to state what even an untrained eye could readily discern.

At the two teaching hospitals medical files are declared non-current 10 years from the last recorded date of attendance. Teaching hospital A officially carries no pre-1985 non-current stock, but closer inspection revealed that in reality a few records going back to 1983 were included. The exact total at the time of survey was not known, but a conservative estimate put the non-current medical record holding at approximately 200,000. This collection was quartered in a sizable, unmarked single-storey concrete outhouse, located about half a mile from the medical records department. Also accommodated there were records which had not yet been declared non-current, but had been transferred from the medical records department to make way for newer records. (See pictures 6.1 and 6.2.)

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[3] Theodore R. Schellenberg, Modern Archives: Principles and Techniques, Chicago, Illinois, 1975, p. 94

Picture 6.1: Teaching hospital A. Old patient files awaiting indiscriminate destruction at the time of the survey

Among this consignment of current files in non-current storage were found records created as recently as 1991-1993; post-1994 series were retained in the medical record department. The physical conditions in which the non-current collection was kept and its state of preservation at the time of survey was as follows. The building was air conditioned, and the records arranged in numerical sequence on wooden shelving which was filled almost to capacity. The records were in a reasonably good state of preservation. To this should be added that all pre-1983 material had already been destroyed; that plans were underway to transfer 1994-1996 records from the department to this building; and that arrangements had already been made with a paper

recycling plant to dispose of all patient files which had not been used for ten years and longer.[4]

Picture 6.2: Teaching hospital A. Patient files not yet declared 'non-current' but withdrawn from active storage in order to create space for newer files

At teaching hospital B the non-current record holding dated from 1981 to 1990. The number of files was estimated to be around 150,000, and was spread over two separate locations. Pre-1988 items were kept in a room about 200 yards from the main medical records department. Here storage

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[4] Evidence of this arrangement was seen in correspondence with reference KB/ G 70 of 3rd October, 1997, signed by the Chief Administrator.

conditions were found to be far from ideal. The room was filled to capacity with all shelf space exhausted, so that some of the records had had to be put on the floor. (See picture 6.3).

Picture 6.3: Teaching hospital B. Patient files declared 'non-current and held in a records storehouse

Some of the records were covered in dust, but most were found to be in a good state of preservation. In result of this room being full, patient files from 1989 onwards were being accommodated in the medical records department, alongside with current records. Some of these older records had been tied up in bundles of 50 and placed on top of the 'current' records shelves, some were stored in metal or wooden cabinets, while yet more were packed into rough wooden crates.(See picture 6.4). It was noted that to facilitate access, sheets of

paper bearing the names and identification numbers of the patients to whom the records relate had been tied in with the bundles. Unfortunately, however, the bundles were not arranged in any logical order, a situation which the researcher thought was likely to make retrieval quite daunting, not to say time-consuming, and particularly frustrating when a search was urgent.

Picture 6.4 Teaching hospital B. Medical records library housing 'current' and 'non-current' patient files

One problem which constantly asserts itself in the teaching hospitals is the spiraling number of new records generated year by year. In teaching hospital A, with a total bed capacity of 1,600, including baby cots, the picture is as follows:

In 1994 the number of new patient files created was approximately 22,000, rising to about 26,000 in 1995, and an estimated 29,000 in 1996. Volumes over

the same period for teaching hospital B, which is far smaller with a total bed capacity of about 966, including baby cots, are: 18,000 in 1994; 21,000 in 1995; and 23,000 in 1996. Whether or not figures will continue to grow at this rate in the future will depend entirely on the number of people referred to these hospitals for specialist.

Meanwhile, to exacerbate this inordinate annual increment, the overall number of files accumulating in the teaching hospitals also continues to mount by the year because there are no general policies and guidelines on disposal. Self-evidently, this snowball effect has its repercussions in problems of storage, accessibility, and maintenance. As a new crop of records annually joins the existing paper mountain, records updating becomes increasingly prone to error, which in turn easily leads to confusion between 'current' and 'non-current' stock and makes systematic access to them tiresome and difficult. In both hospitals shortages of enough and appropriate storage facilities make keeping proper order in the record bases an impossible task.

Another cause for concern was the leeway for documents to accumulate inside the case folder. Volumes of 100 to 160 documents in a single file are by no means rare, and in exceptional cases this number can rise to as many as 200 items. There are situations in which it is not unknown for a mere ten or less patient files to consume an entire one linear metre of shelving.(Refer to picture 6.3). On the whole, though, the average number of files housed per linear metre is closer to 30. In the majority of cases the inordinately swollen files evolve through multiple in- and/or out-patient readmissions for a recurrent condition, or to successions of admission for fresh complaints over the years. The reason why this should result in over-sized files is because the teaching hospitals maintain the convention of unitary numbering, so that every time a patient returns his record is reactivated, and its due retention term automatically shifted forward. Based on our observations, it is not unfair to comment that the majority of such files are in a sorry state of disarray which makes access to information extremely inconvenient. This particular problem could easily be resolved if the hospitals adopted a policy of defining more precisely the circumstances under which a medical record should be formally closed and a new one opened.

At the regional hospitals the same problems of 'non-current' records accumulation and storage were found to prevail, only on a less grandiose scale, as these hospitals are far smaller in terms of bed capacity (between 150 and 309), the number of wards, and the number of patients seen.

The strategems resorted to by teaching hospital B for housing old patient records were the norm in regional hospitals. Thus regional hospital A

retained most of its old files, bundled into 50s or 20s according to size, inside the records department on top of the 'current' records shelves. (See picture 6.5). The spillover was accommodated at floor level.

Picture 6.5 Regional hospital A. Medical records department housing old and new patient files

A rough estimate put the number of old records housed in this way at ±28,000. Medical record staff were not able to give exact covering dates for records retired from 'current' storage. It was remarked, though, that the collection included records dating from between 1990 and 1992. The state of the records was reasonably good, but because they had not been arranged in any systematic order, access to individual records looked likely to be a problem.

Elsewhere in regional hospital A, traces of in-patient records originating from the 1980s were found in an otherwise completely dilapidated, disused room (See picture 6.6). However, these records could not be quantified as

they were in a state of advanced decay and mixed in with miscellaneous hospital records which had similarly been dumped in this room. Because of their state of deterioration, it seemed improbable that these files should have retained any value.

Picture 6.6: Regional hospital A. An abandoned records storehouse where older patient files and administrative records have been left unattended for many years

Regional hospital B estimated that its 'non-current' in-patient stock ran to some 45,000 records which were kept in a room not far from the medical records department. (See picture 6.7) The dates of these records were between 1989 and 1993. Record staff explained that there were no earlier records, as

these had either been destroyed in situ, or had else simply succumbed to deterioration. Records for the period 1994-1996 were found to be in the medical records department.

Picture 6.7: Regional hospital B. 'Non-current' records storehouse

An even more serious problem existed in regional hospitals C and D, where there were no separate storage facilities for old records whatsoever, and these were simply kept together with 'current' files in the records department. (See pictures 6.8 and 6.9).

The case in regional hospital C was somewhat special, because this hospital operates a decentralised record-keeping system whereby records are housed on the wards (of which there are eight) under the supervision of medical record assistants who take instruction from the hospital Medical Record Officer. Here again, staff were not able to give any exact figure for the number of old records held, but believed it was probably not likely to exceed 20,000; these records were all created between 1988 to 1993; earlier series had been destroyed.

Picture 6.8: Regional hospital C. Department of Child Health housing old and new patient files

Regional hospital D had about 19,000 old records of which the dates were difficult to discern. As in the other hospitals, the records were tied up in bundles and kept on top of the 'current' records shelves in the records department. Judging by this hospital's rather modest number of old records in comparison with the quantities seen elsewhere, it was clear that a greater proportion of old files had been eliminated.

Picture 6.9: Regional hospital D. The medical records department housing 'current' and 'non-current' records

A striking distinction between teaching and regional hospital patient folders was that those of the latter tended to be noticeably less bulky. This is because the regional hospitals operate a serial numbering system which allows new files to be opened on each admission. A second reason for the greater manageability of regional hospital folders is that by contrast with the teaching establishments, separate in- and out patient records are kept. In terms of storage, this works out at a capacity of roughly 80 files per linear metre of shelving, i.e. more than twice the number accommodated in the teaching hospitals.

The survey revealed a failure by the medical records departments of all government hospitals to organise their records in any systematic way. From information gathered, as well as from personal observation, every one of the hospitals was afflicted by problems of unregulated records accumulation, shortage of space for current records, and lack of adequate storage provisions for non-current records. In every case, this syndrome presented itself as a major obstacle to efficient records management, as these conditions made it extremely difficult to maintain due standards of order.

Lack of formalised policies and procedures to deal with the different phases of medical records management further intensifies these structural problems. Nowhere are proper records transfer arrangements in place, or proper, established systems to ensure that records can be located when needed.

Arrangements are invariably *ad hoc*, and dependent on the initiative of medical records personnel. Personnel is an additional perpetual, and particularly problematic issue. None of the hospitals investigated retains medical record staff with the requisite training in archive or records management. The majority are drawn from a background and training in statistics, with little specific knowledge of managing records.

From what was observed in Ghana it very much looks as if storage troubles in some hospitals are making patient records a liability rather than an asset. It is only when records are '... created, maintained, and disposed of in an orderly manner, [that they] ... can be an invaluable asset.'[5]

The storage situation seen in government hospitals calls for urgent remedial action through improved storage provisions and the implementation of centrally-defined and enforced retention and disposal schedules, a strategy which is consonant with the accepted authoritative view

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[5] Maurice Avery, and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, Aspen Systems Corporation, 1984, p. 81

that effective records management has two major components, namely: 'the development of a retention and disposal schedule and related controls for the disposal of records; and the identification and use of appropriate storage facilities and systems for "non-current" records.'[6] How these two principles could be introduced in the Ghanaian context is discussed below.

6.3 Retention of medical records

In its simplest definition, retention signifies 'keeping something so that it can be used in future'.[7] In the context of the records 'life-cycle' concept, retention management implies ensuring that records found to be of continuing value for administrative, research, and other purposes are kept for a set period.

Records which are destined to have a longer life-span because of their value to the creating agency and to society in general, follow one of two routes: transfer to inactive storage for specified periods, pending destruction at a later stage, or transfer to archives for permanent storage.

In Chapter 3 it was noted that in addition to its primary function as an aid in patient care the information carried by the medical record is a source of otherwise unobtainable data which is used, for example, in health services planning, and in medical and social research. In its own right the record is an authoritative document which may be called upon as evidence in all kinds of medico-legal contexts relating to former patients. The seminal feature of these further uses is that these place the medical record at the interface of medical and public interests. Hence, even when a record may have outlived its medical function, it retains an intrinsic value that may come to bear in a variety of situations. Ideally, then, health establishments — certainly government hospitals — should cater for the different uses of old medical histories through a commitment to retention periods of at least several decades. But the reality is that not many health institutions can afford the space, personnel, and resources to voluntarily hold records much beyond the term required to discharge their minimum obligations towards the patient and the medical professionals answerable for his treatment. The solution

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[6] Jay Kennedy and Cherryl Schauder, Records Management: A Guide for Students and Practitioners of Records Management, Melbourne, Longman Cheshire, 1994, p. 53

[7] Kathleen A. Waters and Gretchen F. Murphy, Medical Records in Health Information, Germantown, Maryland, Aspen Systems Corporation, 1980, p. 434

must therefore lie in making medical records subject to set, mandatory retention periods for duration which are consistent with their potential range of different uses and different potential uses and users.

In Ghana, as established by survey, regional and teaching hospitals at present have different interpretation of the length of time for which records should be kept. As I have already noted, periods of retention vary from between three to five years at regional hospitals, to ten years at the teaching hospitals. For some hospitals, especially the regional hospitals, it appears space constitutes the primary determinant for withdrawing records from 'current' stock. Furthermore, records destruction takes place without reference to the requirements of longer-term planning, research, and so forth. Survey also revealed this situation has evolved because of a lack of statutory, or regulatory retention requirements applying specifically to medical records.

Nonetheless, the frame of existing legislation does allow for the institutionalisation of such arrangements. Teaching and regional hospitals, by virtue of being government-controlled, and by extension public agencies, fall under the Public Records Administration Act (PRAA) of 1997.[8] While the Act makes no direct mention of medical records, it does provide the basic parameters within which institutional policies and procedures could be developed to guide the management of patient records through the life cycle on the basis of viable retention and disposal schedules.

Looking to the United States and Great Britain, and also to The Gambia, Ghana's close neighbour,[9] we can obtain a good picture of how different types of statutory and regulatory guidelines work in practice, and also how the experiences of these countries could serve as examples to Ghana.

In Great Britain the statutory guidelines for the retention and destruction of health records in England and Wales are covered by the Department of Health Circular HC(89)20 and for Scotland by the Scottish Health Memorandum 60 of 1958 (SHM58/60) as amended by the National Health

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[8] Public Records an Archives Administration Act (PRAAA), Act (535), 1997. Until the promulgation of the PRAAA legislation governing the management of public sector records fell under the Public Archives Ordinance (PAO) of 1955 and the Public Archives Regulations LN258/58 of 1958 which provided the old National Archives with procedures for exercising authority under the PAO.

[9] See Government of The Gambia, Report on Records Management (Medical Records) GA 17, 1995, p. 5, A Report Prepared by the International Records Management Trust under assignment from the Overseas Development Administration (now the Department for International Development).

Service management letter (MEL) (1993) 152. Table 6.1 on gives a summary of the minimum retention periods obtaining in Great Britain.

While these terms are 'not legally binding... in general they reflect the statutory time limits for legal action to be taken [and thus] 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 of medical negligence'.[10]

In the United States, most states, by either statutes or regulations, maintain minimum retention requirements applying specifically to medical records. Actual retention periods vary — from three years in Arizona, to perpetuity in Missouri — and typically run from the date of discharge or the most recent patient care usage.[11] In some states different retention terms may apply to minors, incompetents, and sufferers from a certain disabilities. Some states single out for longer or permanent retention specific portions of the medical record, such as discharge summaries; conversely, some states permit specific portions of the medical record, such as nursing notes, to be retired in advance of the rest of the record. Furthermore, the American Hospital Association and the American Health Information Management Association (formerly American Medical Record Association) insist that the destruction of records after ten years is conditional upon hospitals retaining basic data which must at least include dates of admission and discharge, names of the physicians responsible, records of diagnoses and operations, operative reports, and discharge summaries all records destroyed. In states which do not have statutory or regulatory requirements with specific application to medical records, these are subject to limitatory legislation.[12]

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[10] Hamish Maxwell-Stewart *et al* Hospital Patient Case Records: A Guide to Their Retention and Disposal, London, St. Bartholomew Hospital, 1996, p. 3

[11] See a state by state account on this in Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, Aspen Systems Corporation, 1984, pp. 87-104

[12] Maurice Avery and Bonnie Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1984, p. 83

Table 6.1 The minimum retention periods recommended by the Department of Health, in Health Circular HC(89)20 and the Scottish Office in MEL(1993)152 and SHM 58/60

TYPE OF RECORD	ENGLAND & WALES	SCOTLAND
OBSTETRIC	25 years; 8 years if child's death was prior.	25 years from birth (including stillbirth).
CHILDREN AND YOUNG PERSONS	25 years from birth; 26 years if patient was aged under 17 on conclusion of treatment; 8 years if death was prior.	25 years from birth; 3 years if death was prior.
MENTALLY DISORDERED	20 years from conclusion of treatment; 8 years if death was prior.	Indefinitely for records created prior to 1 January 1961; all other records 3 years from death.
ONCOLOGY	8 years from conclusion of treatment.	3 years from death; destruction thereafter subject to consent from consultant in charge.
PRE 1948	8 years from conclusion of treatment.	Embargo on destruction of all pre-1948 records.
CLINICAL TRIALS	8 years from date of last trial (EU directive).	15 years from date of last trial (EU directive)
ALL OTHER	8 years from conclusion of treatment.	6 years from date of last entry; 3 years if death was prior.

Hamish Maxwell-Stewart et al, Hospital Patient Case Records: A Guide to their Retention and Disposal, p. 3

This is also the case in The Gambia, where an 8-year minimum retention period for patient records was comparatively recently adopted under the provisions of the Limitation Act of 1987 and the Public Records Act of 1993.[13]

In Ghana the Limitation Decree of 1972 governing tort and contract actions[14] could similarly offer a sound legal foundation for developing retention and disposal schedules for government hospital medical records. As a rule, statutes of limitation indicate the time within which lawsuits for claims and damages may be brought. In Ghana the Limitation Decree already provides for suits for negligence, nuisance, and breach of duty becoming statute-barred after three years, or twelve years in exceptional circumstances. As this coincides with the period during which health institutions are most likely to need records in connection with malpractice suits, the Limitation Act provides a ready-made starting point for drawing up a minimum retention policy for medical records. It goes without saying that all legal angles should be thoroughly investigated.

In most instances, the law presents no hurdles to the development of retention terms. Where conflict comes is over the different requirements of the different interest groups which must be taken into consideration. This is hardly surprising since the record serves different purposes at different times to different people. As Hamish Maxwell-Stewart *et al* have remarked, even among the medical profession there is no consensus on this point. Some clinicians think that to cover the eventuality of patients re-attending, either all, or at least some records should be available for clinical reference over a reasonably prolonged stretch of time. Others believe that a record should be kept for the duration of the patient's life,[15] while a third school of thought maintains that even when legally and clinically obsolete, patient records represent a source of valuable information for epidemiological and other kinds of research which may lead to advances in health care that benefit the community as a whole. More arguments for not destroying records are that they can be a useful resource for teachers, and that where minimum data sets, hospital statistics, or other summary data have been collected or abstracted,

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[13] Government of The Gambia, Report on Records Management, (Medical Records), GA 21, 1995, p. 5, A Report by the International Records Management Trust under assignment from the Overseas Development Administration (now Department for International Development).

[14] Limitation Decree, (N. R. C. D. 54), 1972

[15] Hamish Maxwell-Stewart, *et al*, Hospital Patient Case Records: A Guide to their Retention and Disposal, London 1996, p. 4

permanent retention guarantees that information can always be checked against its source. All these considerations provide grounds for thinking in terms of permanent preservation for either entire record series or selections.[16]

It follows from this that in coming to decisions on retention strategies suited to Ghana, usage is certainly one area that merits serious consultation with the main interest groups, that is different kinds of historians, statisticians, epidemiologists, and clinicians. Some would argue that there is virtually no research demand for old records in Ghana (even in epidemiological and historical work) other than for relatively short-term clinical objectives. Nonetheless, it would be disastrous to take this at face value and assume that the low level of current demand under conditions as they are, is any yardstick for how much interest there could be under different, more attractive structural conditions.

From the hospital perspective, it should not be too difficult to assess long-term requirements for old patient records. The two important principles to be borne in mind are that: a) a 'non-current' patient record need not be destroyed simply because it has outlived its clinical function; it may contain information of interest to third parties; and b) a 'non-current' patient record need not be preserved (in any form) when its contents is unlikely to be of interest to third parties.

Developing and implementing a medical record retention policy is never a simple matter, so many factors must be considered, and some hard and fast rules can be set down. The important lesson to be learnt from the British, American, and Gambian examples — which seem to function well enough — is that the key to a viable retention policy is to avoid any attempt to impose universal rules, but to apply different criteria to different kinds of medical records.

Taking into account the many factors to be considered in setting such criteria, it is essential that the drawing up of appraisal procedures for the determination of appropriate retention periods for different categories of records should be based on close consultation between archivists and hospital administrative staff, and medical records officers. No other way is likely to produce systematic and thorough framework which takes equally into account the needs of hospitals and third party users. Although this demands compromises by all concerned, there is encouragement to be drawn from Burkes' view that the hospital environment is preeminently suited to team

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[16] Hamish Maxwell-Stewart *et al* Hospital Patient Case Records: A Guide to Their Retention and Disposal, 1996, pp. 5-6

appraisal.[17] Schellenberg goes further in contending that a good outcome must of necessity owe as much to the experience of subject specialist as it does archival knowledge.[18]

Another reason for stressing the importance of across-the-board professional opinion when determining the *ultimate fate* of hospital medical records is that very particular considerations apply in regard of confidentiality, access, and conditions of use, not to mention security, i.e where and under which conditions the records are kept. To quote Nancy McCall, addressing an international conference in 1991:

> In order to reach a resolution about the fate of twentieth century hospital records... a rapprochement must be made between the archival and health care professions. Until good working relationships are established between these two professions, positive changes cannot be effected in the archival management of hospital records.[19]

In Ghana the essential legal groundwork for collaborative decision-making on public records management between institutions and the Public Records and Archives Administration Department (PRAAD) has already been prepared by the enactment of the Public Records and Archives Administration Act in 1997. The Act gives both the Director of PRAAD and heads of public agencies a broad mandate for action.

Under Section 8 of the Act, the Director is charged with the development and implementation of record-keeping policies, and with the promotion of records management principles, standards, and guidelines in government-run organisations. The Director is also empowered to monitor record-keeping practices in the public sector for general competence, adequacy, and compliance with policies, standards, and guidelines as set out by the Act. Reciprocally, public institutions are expected to cooperate with the Department in promoting efficient records management programmes, and to ensure, among other things, that retention schedules are developed and implemented.

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[17] Frank G. Burke, 'Archival Cooperation', The American Archivist, 46(3): 1983, p. 300

[18] Theodore R. Schellenberg, The Appraisal of Modern Records, 1956, p. 27

[19] Nancy McCall *et al*, 'Critical Issues in the Preservation of Hospital Archives: An International Perspective', The Watermark, Newsletter of the Association of Librarians in the History of the Health Sciences, 14(4): 1991, p. 49

Health authorities and hospitals would be well advised to take advantage of the possibilities opened up by the 1997 Act by grasping the opportunity to consult PRAAD on how to regulate the life cycle of their medical (and administrative) records. Once cooperation has been set in motion, the much-needed regulations, policies, and procedures (within PRAAD parameters) for all aspects of hospital record management retention should surely follow. Policy issues are explored further in Chapter 8.

6.4 Dealing with the storage problem

6.4.1 Overview

In the previous sections of this chapter we described the problems of hospital records accumulation and storage shortage, stressed the connection between these problems and the lack of guidelines and protocols on records retention and disposal; and emphasised the desirability of government hospitals developing workable evaluation procedures as blueprints for retention and disposal programmes. It is essential that any such programmes should incorporate a variety of options offering proven solutions to the question of records accumulation.

These options, according to the literature, are:

(i) destruction of all patient files no longer required for continuous patient care
(ii) files conversion into space-economical formats
(iii) retention of only a small proportion of total record holdings[20]

Whichever of these courses of action is selected, the choice should always be determined by reference to the value and physical characteristics of the records. In what follows, these three options are reviewed and their applicability to the Ghana situation discussed.

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[20] See for instance: King's Fund, Hospital Clinical Records: Proceedings of a Symposium at the King's Fund Centre in Collaboration with The Wellcome Institute for the History of Medicine, August 1985, and Barbara Reed, 'Retention of Medical Records at Sydney Hospital' Australian Medical Record Journal, December, 1987, p. 7

6.4.2 Destruction of all files no longer needed for continuous patient care

This has always been considered a somewhat radical approach to which institutions would not normally resort unless all other possibilities have been exhausted. Accepting that not every individual patient case file should be kept in perpetuity is not, under normal circumstances, an argument for destroying the lot. Reed has argued that, in the case of hospitals, whose leading role in medical research is reflected in their records, this would be a particularly disastrous strategy.[21] Indeed, whenever this approach was brought up as a solution during survey, medical records personnel, and health administrators, were unanimous in thinking that some the records generated could be useful to research in the long term, and ought therefore to be preserved. However, formal quantification of the requirement for and utility of medical records in research and long-term audit still awaits study in Ghana.

6.4.3 Files conversion into space-economical formats

The principal options here are microform and electronic optical disc. Microform involves photographic miniaturisation on to film (microfilm) or fiche (microfiche). Optical disc technology involves electronic conversion on to CD-ROM. The latter is fast becoming the favoured option among well-endowed and intensively used research organisations in the wealthy parts of the world. However, as optimal use of the technology requires, to begin with, widespread distribution of expensive equipment, this not a feasible solution for Ghana at present.

Survey revealed that both teaching hospitals had discussed microfilming as a solution to the storage problem. Health authorities at the Ministry of Health headquarters confirmed this, but at the same time intimated that as yet no firm decision had been taken in this matter.

Micro technology offers the advantage of eliminating bulk storage, while preserving documentation in its entirety. As film occupies only about '[two

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[21]Barbara Reed, 'Retention of Medical Recoards at Sydney Hospital' Australian Medical Record Journal, 17(4): 1987, P. 7

per cent] of the space required for paper records',[22] this avenue — always granted that the requisite financial resources are available — is generally considered the best solution for archives.

A number of English hospitals have found microfilming an invaluable tool for alleviating space problems. At the Royal London Hospital, for instance, where it was first introduced in the 1950s, microfilming non-current records has since become standard practice in all the hospitals which now form the Royal London Hospital. The cutoff point at the Royal London is eight years from the last date of attendance.

As with any other medium, the advantages of microform technology are accompanied by certain technical, administrative and financial problems. A major technical drawback with microfilm is that the technology itself is changing and developing so rapidly that replacing equipment can be a problem. Thus the latest printer-readers, for instance, require (expensive) modification to be usable for older films. The same is sooner or later true of all the essential equipment. Furthermore, as the technology advances, manufacturers regularly phase out older items of material. In fact, things are moving so fast that Hamish Maxwell-Stewart *et al* predict that in '50 to 100 years [the technology] is likely to be obsolete and spare parts unobtainable'.[23] In the meantime interest is already shifting increasingly to optical disc technology, and it is argued that as the cost of this falls it will soon become cheaper than microfilm. However, as I noted earlier, since there is at present no question of introducing optical disc technology in the Ghanaian medical record function, this option will be discussed no further.

The cost of setting up a microfilm facility, even an upgraded old one, is substantial. Aside from capital investment in equipment and related, staff must be recruited, salaried, trained, and provided with living accommodation. Maintenance, especially of cameras, which are delicate instruments requiring regular servicing and repair work, is another expensive, on-going cost. Another cost and inconvenience is that film requires elaborate and expensive storage arrangements. Reels must be individually wrapped in acid-free paper and kept in controlled, atmospheric conditions conforming to specified limits of temperature and humidity.

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[22] Hamish Maxwell-Stewart *et al*, Hospital Patient Case Records: A Guide to Their Retention and Disposal, London 1996, p. 9

[23] Hamish Maxwell-Stewart *et al*, Hospital Patient Case Records: A Guide to Their Retention and Disposal, 1996, pp. 12-13

Administratively, the preparatory stages of microfilming entails considerable work for staff, as files must be in meticulous order for the camera. After unwanted material has been extracted, papers must be unfolded and smoothed, clips and staples removed, targets inserted, and so forth. All in all it has been estimated that in terms of man hours the cost of this preliminary process equals, or perhaps even exceeds, the cost of the film and filming combined.[24]

Observation at the Royal London Hospital bore this out. Patient files were individually checked to isolate documents earmarked for filming, which included out-patient letters, discharge summaries of in-patient episodes, anesthetic sheets, and operation notes. The whole process was made a little easier because the documents listed for filming were standardised and for that matter easily identifiable. It was also noted that having to enter patients' names and numbers by hand is a very time-consuming business.

From the user's point of view, retrieval is an obvious inconvenience, even with a comprehensive index (another labour-intensive activity for staff). Although automated retrieval systems exist, these are so expensive most organisations only invest in them if there is a very real need for quick access. Updating records is therefore difficult, as is accessing complete records when case histories are over different reels filmed at different times; it has been observed that '...a reel of microfilm resembles a ward journal, both containing many records bound together in the same volume, and both systems negate the inclusion of supplementary material without splicing or rebinding'.[25] While microfiche 'is designed to overcome these disadvantages... it is more expensive than microfilming.'[26] Significantly, Hamish Maxwell-Stewart *et al* report that since the late 1970s and early 1980s microfilm has been becoming increasingly unpopular in Great Britain 'following the finding of the Committee on Departmental Records that the costs involved were comparable with storing the material in its original paper format'.[27]

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[24] Jerry McDonald, 'The Case Against Microfilming' The American Archivist, 20(4): 1957, p. 350

[25] Hamish Maxwell- Stewart *et al*, 'Selecting Clinical Records for Long Term Preservation: Problems and Procedures', Wellcome Institute for the the History of Medicine, Publication No.5 p. 27

[26] Hamish Maxwell-Stewart *et at*, 'Selecting Clinical Records for Long Term Preservation: Problems and Procedures' ..., p. 27

[27] Hamish Maxwell-Stewart *et al*, 'Selecting Clinical Records for Long Term Preservation: Problems and Procedures' ..., p. 27

When weighing the pros and cons of microfilm in relation to the storage problems of Ghanaian hospitals, I am of the opinion that this would not be the most expedient solution, even if government could and is prepared foot the bill. Three reasons can be put forward for this view.

First, the stockpiles of records currently held in the teaching hospitals, though worrying, are not so overwhelming as to justify microfilming as a solution. Hospitals are facing storage problems mainly because basic retention and destruction policies are lacking. A records disposal programme structured on well-designed procedures will go a long way towards alleviating the storage problem.

Secondly, the long-term research value of the records has not been ascertained. Unless the contents of medical files are of special significance, or unless they have a high research and reference value, permanent retention on microfilm may not be the most appropriate response to the bulk problem in government hospitals.

The third consideration is that Ghanaian hospitals have no experience of this technology; and no existing equipment or expertise base. Under these circumstances it would be inappropriate to look to microfilming as a strategy to reduce space occupied by supernumerary records. Also, the hospitals at present lack a systematic approach to overall handling of medical records through the life cycle. Until a well-structured medical records management programme, backed up by well thought-out policies and procedures, is in place, any attempt to apply any form of bulk reduction technology is likely to compound problems rather than resolve them. Reed perfectly sums up the situation when she reasons, '[f]or a microfilming programme to be an effective solution to records problems it needs to be an integrated part of the records system, not an attempt to solve only the problem of... old records'.[28]

For the same reasons that I find microfilming inadvisable I would also advise against optical disc technology, even if this were financially feasible.

6.4.4 Retention of only a small proportion of total record holdings

This third solution which the literature advocates for dealing with problems of volume and bulk is retention of a small percentage of records. This can be done by two approaches, weeding or sampling.

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[28] Barbara Reed, 'Retention of Medical Records at Sydney Hospital', Australian Medical Record Journal, 17(4): 1987, p. 8

Weeding, also known as culling, is a procedure to reduce volume by removing portions of records which are adjudged inessential (beginning with duplicates and irrelevant material).[29] Sometimes this may eliminate an entire set of files from the collection. Properly done, weeding can reduce bulk while at the same time saving records of value. If performed with lesser expertise, however, the result can ruin the integrity of what would otherwise have been a perfectly good reference collection.

In the hospital context, weeding within individual folders enables securing the preservation of selected portions of all patient records, and divestment of material of lesser worth. The process involves the rapid assessment of the value of material in relation to its possible future use. This can be an extremely time-consuming procedure, and should only be embarked upon if the items to be removed are easily identifiable, and if their removal will make a demonstrable difference to the total volume of records.[30] As a safeguard, at least one study has suggested that whenever weeding is undertaken, it is useful to retain prototypes of what was removed, so that the complete operational contents of files can still be reconstructed for research purposes.[31]

One problem with weeding is that the choice of record selected for elimination can have serious implications for historical research or for the set of collection as a whole.[32] It was noted earlier in Chapter 3 that the contemporary medical record contains a vast array of primary, secondary, and tertiary data originating from health care professionals and others concerned with the patient's course of treatment and its outcome. Thus, to quote just a fraction of the types of document found in a patient folder, an individual record might hold all or any of the following: admission and discharge notes; consultants' and doctors' progress notes and reports; procedural and operative notes, nurses' notes; social workers' notes; paramedical notes; medication records; order sheets; pathology and autopsy

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[29] Hamish Maxwell-Stewart *et al.*, 'Selecting Clinical Records for Long Term Preservation: Problems and Procedures' ..., p. 29

[30] Hamish Maxwell-Stewart *et al*, Hospital Patient Case Records: A Guide to their Retention and Disposal, London, 1996, p. 15

[31] Nancy E. Peace, 'Deciding What to Save: Fifty Years of Theory and Practice' in Nancy E. Peace (ed.), Archival Choices: Managing the Historical Record in an Age of Abundance, 1984, p. 12

[32] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research' in Nancy McCall and Lisa Mix, (eds.), Designing Archival Programs to Advance Knowledge in the Health Fields, Baltimore, Maryland, Johns Hopkins University Press, 1995, p. 42

records; laboratory and X-ray reports; photographs; patient demographic, financial, legal and insurance data; correspondence; and a final discharge summary. A cull of this assembly might involve saving only, say, the admission notes and discharge summary. The appeal of this approach is that it offers the possibility of jettisoning the portions of little information or historical value while preserving those of interest.

This immediately raises the moot question of how to tell what material is likely to be of interest in time to come. Howell articulates with great cogency the difficulties of gauging the extent to which items of information which are taken for granted by today's criteria, might not one day be of specific significance to research. He puts the case thus:

> '... medical history at one time focused on the great moments in medicine and the eternal search for truth. Now, however, many medical historians are interested in understanding how people in the past reached their conclusions whether or not we would think them correct. For example researchers are interested in analysing how physicians in the past used information about the patient's temperature in making decisions about how to treat that individual.'[33]

The inference of this is that items as order sheets or nursing notes, for instance — both categories that are not normally retained in a weeding operation — have the potentiality of one day becoming unique sources of data on contemporary patient care and on how nurses were trained. In short, attempting to forecast which elements of records will be of interest to posterity is *ipso facto* guesswork, and useless exercise. In this perspective, the best strategy could well be to preserve complete records wherever this is practicable.[34]

Also against weeding is the cost in time and labour which is entailed in sifting through every record to determine what is worth saving, even when, as is in Ghanaian hospitals, standardised forms are used. In the final event, it is not even certain whether weeding, when performed as a means of space-

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[33] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research , in Nancy McCall and Lisa Mix, (eds.), Designing Archival Programmes to Advance Knowledge in the Health Fields, Baltimore, Maryland,1995, p. 44

[34] Joel D. Howell, 'Preserving Patient Records to Support Health Care Delivery, Teaching and Research, in N. McCall and L. Mix, (eds.), Designing Archival Programmes to Advance Knowledge in the Health Fields, Baltimore, Maryland, 1995, p. 44

saving, justifies the end in relation to cost. According to Maxwell-Stewart, 'where weeding has been pursued it has proved expensive in relation to the relatively small resulting gains in space and accessibility'.[35] Reed echoes this, and cites one instance, the New York Hospital, where culling was rejected in favour of filming.[36]

For Ghanaian hospitals it might be more appropriate to consider sampling, the second approved method of retaining only a proportion of non-current records. With sampling the objective is to reduce the volume or quantity of records while at the same time preserving general information content in a usable form. The underlying principle is the assumption that the majority of large series of standardised records (of which patient files are a prime example) will be required for research based on aggregate data. As Schellenberg note, taken on their own most files of this kind have limited research value; only in large numbers do they acquire importance.[37]

In Great Britain a number of health institutions currently practice sampling to limit their holdings of non-current records. The first moves in this direction date back to 1954, to the Grigg Report recommendation that British government departments should keep only such documents as could be reduced in a statistical sample.[38] In the wake of this a British Records Association report found that without adopting some form of sampling, hospitals and other repositories would be unable to handle even existing record stockpiles.[39] Today, sampling is an essential recourse for hospitals where there are policy or financial constraints on large-scale microfilming (as in the case of establishments falling under the Greater Glasgow Health Board in Scotland), but the necessity of preserving at least some records for research is nonetheless accepted.

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[35] Hamish Maxwell-Stwart *et al*, 'Selecting Clinical Records for Long Term Preservation: Problems and Procedures', Wellcome Unit for the History of Medicine, University of Glasgow, Publication No.5, p. 29

[36] Barbara Reed, 'Retention of Medical Records at Sydney Hospital', Australian Medical Records Journal, 17(4): 1987, p. 8

[37] Theodore R. Schellenberg, 'The Appraisal of Modern Public Records', (Bulletin No.8 of the U.S National Archives), Washington, 1956, p.6

[38] Great Britain, Report of the Committee on Departmental Records, (MND9163), Sir James Grigg, Chairman, London, HMSO July 1954, p. 30

[39] British Records Association, 'Preservation of Medical Records', The Lancet, 1: 1960, February 13, p. 379

Generally, archival practice recognises four types of sampling: purposive, specimen, systematic and random.[40] All these have their strengths and weaknesses:[41] With hospital records a combination of statistically valid random sampling and purposive sampling of significant is considered a good method for securing the requisite raw material for both research in the social sciences and medical research based on aggregate data. To provide researchers with specific evidence, recommended practice also advocates the retention of files of particular significance.

While it is sometimes feared that a purposive sample will ruin the accuracy of the random sample, this risk may be overcome by the intellectual separation of the two sets of records.[42]

Another option for hospitals is a combination of a random sampling and preservation of standardised forms from files scheduled for destruction. This procedure was highly effective, for example, in the case of the military medical files of British Great War pensioners.[43] With reference to patient files, the most usual type of standardised form is the summary sheet, which is composed of summarised information from each file, and is compiled after discharge. As a rule, summary sheets are restricted to single-page accounts itemising grounds for admission, physical findings, test results, therapy notes, progress notes (including complications) during, and final diagnosis. This is the approach which the British National Health Service advocates.[44]

An instance of the implementation of this option is described by J. H. Mitchell. This involved a scheme put into effect in a Scottish hospital in 1967, whereby if a patient had not re-attended within six years of the last date of attendance, any discharge summaries were removed from the file and

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[40] Felix Hull, The Use of Sampling Techniques in the Retention of Records: A RAMP Study with Guidelines, Paris, Unesco, PG 1-82/WS/16, 1981, p. 44

[41] See Felix Hull, The Use of Sampling Techniquesin the Retention of Records: A RAMP Study, Paris, Unesco, PG 1-82/WS/16, 1981, p. 44 See also Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot Or How to Preserve Non-current Clinical Records Without Being Burried in Paper', Archivaria, 41, 1996, p. 69

[42] Felix Hull, The Use of Sampling Techniques in the Retention of Records: A RAMP Study with Guidelines, Paris, Unesco, PG 1-82/WS/16, 1981, p. 44

[43] John M. Winter, The Great War and the British People, London, Macmillan, 1986, p. 96

[44] Benard Benjamin, Medical Records, London, William and Heinemann Medical Books, 1977, p.185

retained; while the folder and other contents were removed to another storage facility to await final destruction when the store was full.[45]

From Kearsey comes a note of warning that this kind of procedure should not be perceived as a substitute for proper records management, and that health institutions should not be tempted to resort to it as an expedient solution for storage problems. The time when this procedure comes into its own is when records become due for destruction. Furthermore, the system depends on discharge summaries being standardised, and on widespread adoption among hospitals.[46]

It is also argued that discharge summaries on their own do not always provide enough information for all applications. However, if they are retained in conjunction with a random sample of an entire collection, sufficient material will be preserved for most types of research.

Sampling is a strategy which is particularly appropriate for record series containing essentially homogeneous information.[47] Prime candidates are patient files, in the case of which sampling can be organised according to type of illness. However, this is useful only when hospital records are arranged in this way in the first place; if not, problems of identification and arrangement would cancel out the advantages. In such cases, (random) sampling of the institutional records as a whole will still serve to preserve a certain proportion of files relating to individual illnesses, as long the sample is sufficiently comprehensive to be representative of the entire collection of patient files.[48]

Sampling and weeding are two of the options open to hospitals which are considering the retention of some files for research purposes, but have decided not to make extensive use of microfilm. If properly applied, both these techniques can substantially reduce the volume of original records without harming their research potential. The destruction of any set of

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[45] J.H. Mitchell, A New Look at Hospital Case Records, London, H.K. Lewis, 1969, p. 108. See also J.H. Mitchell, *et al* 'Summaries and Selective Destruction as a Solution to the Hospital Records Storage Problem' The Lancet, 2: 1967, October 28, p. 933

[46] Irene Kearsey, 'Some Problems in Placing Modern Medical Records in Public Archives', Archives and Manuscripts, 17: 1989, p. 188

[47] Felix Hull, Sampling Technique in the Retention of Records ..., Unesco, Paris, 1981, p. 27

47 Hamish Maxwell-Stewart and Alistair Tough, 'Cutting the Gordian Knot, ...' Archivaria, 41: 1996, p. 69

records is irreversible; however, with archival assistance, hospital administrators can carry out procedures of this kind in the confident knowledge that the long-term research value of their records has not been harmed.

Another option for coping with problems of bulk and storage is to abstract old medical records that are not of sufficient importance to put on microfilm, but which would otherwise be destroyed altogether. This applies to records which are not important to research but are still consulted from time to time to check birth dates, childhood conditions which may affect adult health, and so forth. Abstracts should, above all, be brief, and by and large confined to essential data such as name, hospital number, diagnosis, operation, X-ray verification, death, physician's name, and dates of admission and discharge.[49]

In this connection, card summaries have certain advantages in terms of low capital outlay, storage, the facility with they can be introduced into new charts in the event of re-admission, and the possibility of indexing summaries according to disease. In addition, cards are easily scanned by physicians, and are more legible than most physicians' handwriting, which often leads to misreading of abbreviations. Finally, retention of the unit system is less complex than with microfilming. On the downside, however, cards suffer from the disadvantages that lack of space restricts entries to the absolute basics; that they are prone to being lost in the course of handling charts; that they are subject to damage and deterioration even when handled with extreme care. Furthermore, being summaries or copies of original files, cards do not qualify as admissible court evidence.[50]

Given the storage problems now facing government hospitals in Ghana, I take the view that sampling offers the most viable means of resolving the issue of bulk. At the same time, while urging hospitals to take this path, it is not being suggested that sampling is the definitive answer to records retention. As Maxwell-Stewart *et al* have stressed, sampling, by whichever method, is inevitably bound to lead to loss of at least some features of the original records population.

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[49] Emmanuel Hayt, Medico-Legal Aspects of Hospitals Records, (2nd ed.), Berwyn, Illinois, Physician Record Company, 1977, p. 56

[50] Emmanuel Hayt, Medico-Legal Aspects of Hospital Records, (2nd ed.), Berwyn, Illinois, 1977, p. 56

6.5 Conclusion

In every hospital included in the survey (so presumably in every other hospital in the country as well) records staff felt that shortage of non-current storage space was the greatest obstacle to effective records management – an understandable point of view when one looks at the evidence (see pictures in Section 6.2 of this chapter). In reality, as I have ascertained, this issue is symptomatic of quite another problem. For this problem we must look to the very fount of authority.

By some curious oversight Ghana has no national policy on medical records; no centrally-determined criteria for the retention, disposal and ultimate fate of old records which hospital medical records departments could translate into viable institutional strategies and provisions for life cycle management. Without the requisite provisions for old records, there is no alternative but to keep records safe and in theory accessible within the department for as long possible. When the space demands of newly-created records becomes too acute the oldest non-current records are relegated to virtual lumber-rooms. There they remain until capability there gets completely out of hand and a mass cull takes place – or records deteriorate of their own accord. Worse still, because the volume of newly created records rises year by year, records are being retired earlier and earlier. Although in theory (by custom) teaching hospitals keep current records for ten years and regional hospitals for three to five years from the date of last attendance, the true situation is that lack of storage space in records departments appears to be the sole determinant for retiring records from active storage.

To bring order into institutional non-current records management will therefore require a three-pronged approach. First, well-defined national records policies and guidelines will have to be developed. Second, hospital managements – who will have to provide logistical support in the form of storage facilities and general administrative backup – will have to be mobilised. Thirdly, records departments will have to restructure their management and organisational practices.

Regarding the first matter, this is inseparable from the issue of appraisal criteria on the basis of which retention, preservation and destruction schedules can be formulated to ensure longer-term documents collections of manageable dimensions. Two sets of identification and selection criteria will have to be developed: one for in-hospital non-current collections and the second for ultimate consignment to destruction or archival repositories. The first is by far the most urgent problem. Another question, which can wait, is

abstracting or microfilming neither of which are solutions to stockpiles, but techniques for dealing with old records. For the time being, the important thing is to establish criteria for identifying and selecting the comparatively minor component of interesting non-current material that hospitals should keep in designated record centres.

These criteria should in my opinion be set by a joint panel of medics, PRAAD, and CHIM in its reorganised form as proposed in Chapter 8 , Section 8.6.1. Furthermore, I suggest that these criteria should be guided by a policy of bulk reduction through sampling.

Not until schedules and procedures are in place will hospitals be able to embark on life cycle management and ensure that the fruit of their achievements in patient care can come into its own in mapping out the nation's future.

Finally it needs to be said that many hospital records officers are fully aware of the deplorable consequences of the mismanagement which has been forced upon them and are avid for the day when they can begin to work on a productive, efficient basis.

7 Patient confidentiality and privacy

7.1 Introduction

In the physician-patient relationship[1] each party has two roles, in one of which he is stronger and the other weaker. The physician, as the carer on whom the life of the patient depends, is a powerful, authoritative figure. On the other hand, as a provider of services, he is dependent on the client who pays him in one form or another — be it in the form of gifts to his temple in earliest times, or nowadays, in cash or through institutional channels. The patient, for his part, is at one and the same time a supplicant for the physician's good offices, and his paymaster. Confidentiality, that is trust in the doctor on the patient's side and respect for the patient's trust on the doctor's, is the mechanism which softens the edges of this highly complex interaction. For the patient, the knowledge that his most private secret will be in trustworthy hands creates the necessary platform to consult and confide in the physician. As for the physician, he cannot function professionally without the patient's trust, while at the most basic, pragmatic level, failure to observe his end of the confidentiality bargain would eventually cost him his client(s).

Before modern times, when the doctor was an essentially autonomous operator engaged in one to one relationships with patients, this arrangement was clear-cut and straightforward. Today, when doctors work as part of extended teams of health care professionals, matters are more complicated. Nonetheless, the traditional concept survives: doctors in theory continue to maintain the secrecy of the consulting room, while patients though aware that data are circulated, continue in the assumption that their professional information will be treated as private.

In this chapter, which is the last of the case study, I shall examine the extent to which patient medical information is legally and ethically protected in Ghana.

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[1] For a detailed account on patient-doctor relationship from ancient times to the present, see Lain P. Entralgo, Doctor and Patient, World University Library, 1969

7.2 What is Confidentiality?

Simply defined, 'confidentiality relates to disclosure or non disclosure of information'.[2] Confidentiality as understood in health care arena may be explained as a commitment to share or release patient information only in a controlled manner that will not unduly violate the patient's desire to limit disclosure of his personal information.

When used with reference to medical data the terms confidentiality and privacy tend to be used interchangeably. Cofer, noting that though not strictly synonymous, the two concepts are quite similar in relation to medical information, defines privacy as '... the right to be left alone'[3]. A more elaborate interpretation from the British Medical Association reads:

> Privacy is a fundamental right which allows individuals to decide the manner and extent to which information about themselves is shared with others. Such personal control is at the core of legislation enabling patient access to health records and reports. Self-determination in this respect is also central to the preservation of dignity and integrity of the individual. ...[4]

On Kindred lines, Hoyt see privacy as ' ... a concept that applies to individuals with respect to others. It concerns access to information and disclosure of facts in the first instance'.[5] This links up with Cofer's perception of confidentiality as 'a special case of the right to privacy', namely 'keeping a secret'[6] implying

> ... that two people are involved in precludes sharing with a third. Confidentiality becomes an issue however, only when the third person is involved, that is, only when there is need to hare the secret.

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[2] Institute of Medicine (IOM), Health Data in the Information Age, Washington DC, National Academy Press, p. 147, 1994

[3]Jennifer Cofer, Health Information Management, Berwyn, Illinois, Physician's Records Company, 1994, p. 576

[4]British Medical Association (BMA), Medical Ethics Today: Its Practice and Philosophy, Plymouth, Lartimer Trend and Company, 1993, p. 36

[5] Eugene Hoyt, 'Privacy, Confidentiality, Privilege, and the Medical Record, (Part I), Journal of the American Medical Record Association (AMRA), August, 1986, p. 21

[6] Jennifer Cofer, Health Information Management, Berwyn, Illinois, 1994, p. 577

> Medical confidentiality, then, is concerned with the restrictive use of information obtained from and about the patient.[7]

In short, in the medical field the notion that confidence should be respected is primarily seen as an aspect of privacy, something that belong to the patient. In the broader perspective, confidentiality may also be seen as a constituent element of an effective health care system, but for which patients might be less inclined to expose themselves to the scrutiny of health care professionals.

As far as the dual nature of confidentiality is concerned, Siegler remarks that:

> In the first place, it acknowledges respect for the patient's sense of individuality and privacy. The patient's most personal physical and psychological secrets are kept confidential in order to keep a sense of shame and vulnerability. Secondly, confidentiality is important in improving patient's health — a basic goal of medicine. The promise of confidentiality permits people to trust (i.e. have confidence) that information revealed to a physician in the course of a medical encounter will not be disseminated further. In this way, patients are encouraged to communicate honestly and forthrightly to doctors. This bond of trust between patient and doctor is vitally important both in the diagnostic process ... and subsequently in the treatment phase, which often depends as much on the patient's trust of the physician as it does on medications and surgery.[8]

Thus confidentiality may be perceived as a tool, a means to an end (provision of effective health care), and as an end in itself, (protection of privacy).

7.3 Professional / ethical duty of confidence

In the literature, four main justifications are most often cited in support of medical confidentiality. First come respect for privacy and autonomy. The second, which relates narrowly to this, concerns 'the implicit and sometimes explicit expectation or promise of confidentiality'. The third argument is the moral charter of the intimacy of the doctor-patient relationship, which is

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[7] Jennifer Cofer, Health Information Management, Berwyn, Illinois, 1994, p. 577

[8] Mark Siegler, 1982, 'Confidentiality in Medicine: A Decrepit Concept New England Journal of Medicine, 307(24): 1982, pp. 1519-1520

based on the patient's trust in the physician. This trust encourages the patient to speak freely on the one hand, while information that would otherwise not be divulged facilitates the doctor's diagnosis and treatment of the case. Fourth in importance is that confidentiality 'protects the patient form the repercussions which might ensue or rebound on him if his personal information were widely available and indiscriminately used'.[9]

In Ghana, as in Great Britain, the United States of America and most another countries where the social ethic demands institutionalised safeguards for patient confidentiality, this facet of medical care is — in principle, at least — guided by the moral and ethical tenets of the Hippocratic Oath. In the classical wording (one of several recognised translations), the relevant clause of the Oath requires the doctor to swear:

> Whatsoever things I see or hear concerning the life of men, in my attendance on the sick or even apart therefrom, which ought not to be noised abroad, I will keep silence thereon, counting such things to be as sacred secrets.[10]

In spite of twenty-five centuries of social change having passed since this concept was first conceptualised, the universal validity of the oath's insistence of secrecy remains unchallenged.

In the Ghana Medical Association Code of Ethics the principle is framed as follows:

> It is against the professional conduct of a practitioner to disclose voluntarily without the consent of the patient, information which he obtained in the course of his professional relationship with the patient. A practitioner may, however, disclose such information in the public interest, and shall make such disclosure when required to do so by statute or a court of law[11]

In Great Britain the requisite precepts of confidentiality are set out in the General Medical Council publication *Confidentiality: Providing and Protecting*

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[9] Institute of Medicine (IOM), Health Data in the Information Age, Washington DC, 1994, pp. 148-149

[10] Cited in Institute of Medicine (IOM), Health Data in the Information Age, Washington DC, 1994, p.148

[11] Ghana Medical and Dental Council, Professional Conduct and Ethics (Guides and Regulations), see section under professional secrecy, (undated), p. 7

Information, (Interim Guidance). In blue printing the doctor's responsibilities and obligations in releasing information in the various clinical situations, the Medical Council similarly stresses the importance of patient consent.

> Doctors hold information about patients which is private and sensitive. This information must not be given to others unless the patient consents or you can justify the disclosure. When you are satisfied that information should be released, you should act quickly to disclose all relevant information. This is often essential to the best interest of the patient, or to safeguard the well-being of others.[12]

Correspondingly, the American Medical Association Principle of Ethics insists that

> A physician must not reveal the confidence entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of the patient, unless he is required by law, or unless it becomes necessary to protect the welfare of the individual or the community[13]

From the ethical standpoint there can be no doubt that information contained in the medical records should as far as possible be kept confidential, and ideally never be released to third parties. However, without information sharing between and among health care providers it is simply not possible to supply quality patient care. Hence, because of the way in which health care is organised and because of the already myriad and continually expanding uses of the medical record , modern health delivery systems cannot sustain absolute confidentiality, and will be less in a position to do so as time goes on.

As far as the Ghana Health Service is concerned, patient information will normally be given for official schemes sponsored by Regional and District Health Administrations. These include Hospital Activity Analysis, Hospital In-Patient Enquiry. Mental Health Enquiry and Cancer Registration schemes which require the collection of data by medical record staff. In addition there are public health regulations, which in principle contravene the confidentiality ethic. An example of this is the requirement binding hospitals

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[12] General Medical Council, Confidentiality: Providing and Protecting Information, (Interim Guidance), January, 1999, p. 1

[13] See Eugene Hoyt, Journal of the American Medical Records Association, August, 1986, p. 21

and medical personnel to report cased of communicable diseases to the appropriate public authority.

Outside the health sector, there are a number of third parties with a legitimate vested interest in obtaining medical information or evidence about the individual. These include insurance companies and employers seeking verification of absenteeism on medical grounds, or in connection with settlement or refund of hospital fees.

In all these situations, guidance specifying procedures for disclosure of patient information is provided by Circular H/H256/08.B of 24th July, 1974 and *Notes for Guidance on Legal Matters ref. LEG/TRD/MISC.7/75* of April 1975.

The study revealed that confidentiality of medical information has not been a major issue in the Ghana Health Service. According to the Medical Record Officers and Health Administrators interviewed, there have been no major or publicised instances of breach of confidentiality, nor has the matter ever been in the public spotlight. From the formal legal point of view, however, it would appear that legislation on confidentiality does not offer comprehensive protection against unauthorised disclosure of information.

7.4 Patient-doctor relationship as defined by the *Law of Evidence*

Ghanaian common law does not recognise the confidential or privileged status of the communication between patient and physician. Under Ghanaian common law the concept of privilege communication applies to three relationships only: lawyer-client, husband-wife, and minister/priest and parishioner. Accordingly, traditionally, doctors had no common law obligations to keep medical information about their patients secret or confidential. To correct this situation and to regularise the confidential nature of the relationship between physician and patient, the Evidence Decree was enacted, by which clinicians are legally bound to preserve the confidentiality of patient health information.[14]

Significantly, the Evidence Decree restricts protection to mental patients. In the words of Boateng, this protection '... in a limited fashion grants a privilege against the disclosure of a professional communication between

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[14] J. Ofori-Boateng, The Ghana Law of Evidence, Accra, Waterville Publishing House, 1993, p. 182

doctors of psychologists and their mental patients'[15] where 'privilege', in the meaning of the Evidence Decree, is interpreted a follows:

> ... a privilege is a right to refuse to disclose a fact, or to prevent others form doing so. A privilege may permit a party to decline to answer interrogations or disclose a document, prior to trial. Under a privilege, a sickness may also refuse to answer a question, or produce a thing or document as evidence. Privilege is thus an example of where on the ground of public policy, or justice, relevant facts which are ordinarily admissible may be inadmissible; or immunity granted to persons competent to be witnesses, thereby exempting them from being compelled to give evidence. The privilege may therefore not only attach to a witness or a party; it may also be a privilege attached to things, documents or oral statements.[16]

Section 103 (1) of the Decree stipulates that

> A person has a privilege to refuse to disclose and to prevent any other from disclosing a confidential communication between himself and a physician or a psychologist or any other persons who are participating in the diagnosis or treatment under the direction of the physician or psychologist if the communication was made for the purpose of diagnosis or treatment of a mental or emotional condition.[17]

Section 103 (2) defines confidential communication:

> '... a communication is confidential if it is not intended to be disclosed to third persons other than those reasonably necessary to the transmission of the communication or persons who are participating in the diagnosis or treatment under the discretion of a physician or psychologist'.

Thus the Law in essence debars physicians and psychologists from divulging confidential information on mental patients that was obtained in a professional capacity on the understanding that possession of this information would advance the cause of the patient's care and treatment.

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[15] J. Ofori-Boateng, The Ghana Law of Evidence Accra, 1993, p.182

[16] J. Ofori-Boateng, The Ghana Law of Evidence, Accra, 1993, p. 152

[17] See Evidence Decree, (N.R.C.D 323), 1975

Where the Law stands firm is that physicians and psychologists may not reveal information about a patient before court and in other legal situations without the consent of the patient : the privilege to disclose or not to disclose confidential information rest with the (adult) patient. To this the mental patient, as long as he is able to look after his own affairs, is no exception. Waivers to the rule are applicable, though, in cases where the severity of patient's physical or mental conditions impairs his ability to look after and understand, his own affairs. If the patient, due to the conditions of his health, is totally incapable of understanding anything at all, his privilege to refuse to disclose may be claimed or waived by a committee. If the patient is an infant, a legal guardian may claim or waive privilege on his behalf.

It should be noted that in the event of a patient or his representative waiving this privilege, a physician or a psychologist would not be prohibited from making disclosures, and could even be compelled to do so by court order. The major point to be emphasised in this context is that the Evidence Decree does not apply precisely to out-of-court disclosure of medical information, being applicable only to disclosure made in the course of judicial or quasi-judicial proceedings. As out-of-court disclosure of private or confidential medical information does not contravene the provisions or the law, an aggrieved patient is denied the option filing a civil case for damages on grounds of violation of the Law. Patients suing physicians, psychologists, or hospitals for damages arising from unauthorised out-of-court disclosure of information, are, therefore, forced to seek recourse in the muddy waters of common law tort or contract law.

A major limitation of the Law of Evidence, as mention earlier, is its applicability to the records of psychiatric cases — the reason being that mental and emotional disturbances carry social stigma. Ofori-Boateng criticises this reasoning as follows:

> There is no doubt that certain degrees of mental and emotional disturbances can stir up social aversion and discrimination. But there is also no doubt that other degrees of such emotional disturbances do not. Similarly, some diseases such as leprosy or diseases indicating immorality, if suffered by certain groups of people, may have devastating social results. Indeed, under customary law and practice, insanity, leprosy or alcoholism will disqualify equally a candidate to an *Akan* stool without doubt. It is submitted that perhaps a better approach for law reform should be to treat all communications between a doctor and his patient relating to all ailments not just mental disturbances, as *prima facie* confidential,

> leaving the court a discretion to deal the disclosures in chambers if necessary.[18]

Yet another shortcoming of the legislation is that doctor-patient privilege does not assure the patient's privacy by law, or assure the confidentiality of records. As the notion of privilege has no roots in Ghanaian common law, it exists purely by statutory enactment. As matters stand, then, privilege can only be invoked in litigation actions to prevent physicians and psychologists from testifying on patient communications or patient records without the patient's consent. In this regard, the patient mainly relies on protection under the Hippocratic tradition. Fortunately, this is strongly upheld by Ghanaian health institutions.

7.5 Patient access to the medical record

In Ghana patients have no common law or any statutory right of access to their medical record. The back cover of every Ministry of Health patient folder bears the warning: *Confidential — Not to be Handled by the Patient,* and this effectively debars patients from insight into their medical data. When patients require such information in connection with insurance or legal matters, this is passed on directly to the third party in accordance with a set of procedures outlined in the *Code of Practice in relation to Medical records.*

The professional literature on patient access to records indicates that from the 1970s to mid 1980s it was the norm in many countries to deny patients automatic access to information in their medical records. The issue of non-access grew into a protracted debate which polarised opinion into two schools of thought: proponents of patient access and supporters of non-access, with each party justifying its stand on a variety of grounds.

Westin attributes the traditional non-access approach to that component of medical profession which holds that access could be harmful both to the patient and to the integrity of the record itself. Advocates of this position sought to demonstrate that the patient would not understand the technical language of the medical record and might even misinterpret it. Also, since the medical record might contain speculative diagnoses and comments, patients might even produce a confused and anxious state of mind which would have a negative effect on their overall condition and their response to treatment in

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[18] J. Ofori- Boateng, Accra, 1993, The Ghana Law of Evidence, Accra, 1993, p. 184

particular.[19] Gallop, in this context, adds that patients might learn information from their records that could influence them in terminating treatment, or encourage them to treat themselves.[20]

Against this, advocates of patient access to medical records argued that:

(1) Access would make the patient better equipped to participate and take responsibility for his health , as this would enable him to take a more informed and active interest in decisions affecting his care[21]

(2) Patterns of health care delivery have changed. In a situation where health care is provided by a succession of specialist in a variety of settings the patient can no longer rely on the memory or the records of the physician for knowledge about his medical history. Patients, therefore, need to be experts on their own health history;[22]

(3) As patients may authorise disclosure of their confidential medical records to any one they choose, they should equally be in a position to acquaint themselves to the contents of the record, and the possible implications and consequences of his disclosure;[23]

(4) Patients have the right to act as consumers of health care. The documentary evidence in the record would empower them to make informed decisions about their care and the providers of that care;[24]

(5) In some circumstances the medical record is the sole source of information on a life history. This applies, for instance, to adoptees seeking to reconstruct their origins;[25]

(6) Access to medical records without the need to resort to the courts decreases the incidence of malpractice.[26]

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[19] A. F. Westin, 'Medical Records: Should Patients Have Access'? Hasting Centre Report, 7(6): 1977, p.26

[20] M. R. Gallop, 'Confidentiality of Medical Records' Occupational Health Nursing, 25(11): 1977 p. 14

[21] A. F. Westin, 'Medical Records: Should Patients Have Access'? p. 26

[22] A. F. Westin, 'Medical Records: Should Patients Have Access'? p. 26

[23] A. F. Westin, 'Medical records: Should Patients Have Access?', p. 26

[24] A. F. Westin, 'Medical Records: Should Patients Have Access'? p. 26

[25] A. F. Westin, 'Medical Records: Should Patients Have Access' p. 26

[26] M. F. Anthony, 'Issues relating to Patients' Access to their Medical Record' Medical Record News, 48(6): 1977, p. 85

Further support for the benefits of access is found in the medical literature. One study supports the view that records are improved by patient's access: 'The accuracy of the clinical record is facilitated by the patient's access to the record'.[27]

In this debate, arguments in favour of access have largely come to prevail, as a consequence of which the principle of patient access is now accepted more widely. In Britain, for instance, there are four statutes covering the patient's right of access to his medical record. The first is the Data Protection Act of 1984, which introduced specific rights of access in relation to computerised records. The second is the Supreme Court Act, 1981, on the disclosure of records, but which is part of the general law rather than specific to the health care context. The others are the Access to Medical Reports Act, 1988, and Access to Health Records Act, 1990. The former gives patients the right to see medical reports compiled for insurance and employment purposes. The latter gives patients access to health records created after November 1, 1991, and to earlier recorded information when this is of assistance to him understanding subsequent events and developments. The Act places no restriction on doctors in giving the patient wider access, or access to the entire record, and there is no suggestion that that access should be available by formal application only. However, 'patient access outside the scope of the provisions of the Act remains at the doctor's discretion'.[28]

Doctors are encouraged by the British Medical Association 'to give patients access to all health information held about them, unless the doctor believes [this would be to the detriment of an individual's health], or unless the confidentiality of other people'[29] are at stake — the two ground on which information may be withheld under the law.

These statutes have their counterparts in the USA, although the conditions under which health care institutions grant patient access to the record differ from state to sate. Also, as the existing legislation and regulations on the procedures involved vary from state to state, conditions of access are not universally defined. As a result of this American statutory regulations on

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[27] See Australia Senate Community Affairs References Committee, Access to Medical Records, Camberra, Senate Community Affairs Reference Committee, 1997, p. 32

[28] The British Medical Association (BMA), Medical Ethics Today, Plymouth, 1993, p. 49

[29] The British Medical Association (BMA), Medical Ethics Today, Plymouth, 1993, p. 49

access range from exhaustively defined procedural protocols to vaguely defined requirements which allow institutions virtually complete freedom of interpretation.[30]

It would appear that policy-makers at the Ghanaian Ministry of Health take their cue largely from the traditionalistic non-access school of thought. There is, indeed, a growing stream of opinion that this approach has lost credence in the light of growing social interest in people's right to access information which is not only important to their welfare generally, but affects their very life. Besides, it is becoming increasingly common to refer to patients as clients, and to perceive them as consumers of health services who are entitled to place certain demands on the levels of service and professional care provided. For this reason alone the patient requires the benefit of access to information on his health and treatment if he is to exercise an informed voice in decisions relating to his care.

It is also widely argued that denial of access to the medical record is anomalous in a day and age when the onus is increasingly on people to set their own priorities and base their life on educated decisions. As matters stand in Ghana, the patient is in no position to take an active, informed part in determining the course of his health.

In the light of developments elsewhere and in the light of existing concern over the issue of patients right to information, the researcher tends towards advising Ghanaian health institutions to re-evaluate the present philosophy of non-access. A policy that sanctions arbitrary rejection of a request to inspect the charts is simply no longer acceptable. It cannot be long before this will lead to widespread recourse to the courts.

At the same time, it is not being proposed that clinical information should be made freely available to everybody at all times; undeniably, situations exist in which disclosure of information could be deleterious, and, therefore, undesirable. Rather, I favour a change of emphasis, so that patient access to health information becomes the norm and non-disclosure the exception. Furthermore, on the basis of experience elsewhere, I feel that when the right of access comes to be considered in future, any provisions to this end must be enforced at law and subject to being set aside only by due process of law.

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[30] See Laura A. Clark, 'A State by State Evaluation of Patient Access to Hospital Medical Records, Journal of the American Medical Record Association, 58(6): 1987, pp. 16-23

7.6 Conclusion

As far as patient confidentiality in Ghana is concerned, the Hippocratic tradition within the medical profession, supported by internal hospital rules, seem to be working well on the whole. As much as possible medical information is restricted to third parties with legitimate needs. External applications for patient information to people and organisations with legitimate need are processed internally within established hospital guidelines involving minimum formalities in the majority of cases.

Two problems, however, emerged from the study. The first is that existing legislation on confidentiality is woefully inadequate. In this regard the individual is insufficiently protected by law. The case is that once information has passed into a hospital's possession there are no restrictions on its use for purposes other than those for which it was obtained. It is, therefore, high time for specific legislation on the dissemination of medical information to or within spheres of interest which are at a more remote remove from the patient. Ghana also needs a solid legal framework for prosecuting unauthorised disclosure, which would also help to discourage infringement of patient privacy and confidentiality.

The second problem relates directly to people's access to information on their own health. At the moment, this is not yet a matter of public opinion. The research, unearthed no cases of upheavals, or signs of a major public or private campaign on the patient right of access to the medical record. Nevertheless, there is latent discontent, and the possibility that in the not too distant future feelings might one day run high should by no means be discounted.

To sum up, the entire issue of confidentiality, privacy and the security of patient records requires serious scrutiny, especially now that reform is in the process of setting new parameters in the nature and delivery of health care.

8 Considerations for reform

8.1 Introduction

This chapter of the thesis presents solutions in the form of recommendations and suggestions, to the problems of the medical record function in Ghana, as identified and analysed in section II. In framing this set of solutions, I have often, though not always, been guided by those aspects of health records management and procedure I observed abroad, in Britain and The Gambia, which seemed to me best suited to what I feel is needed in Ghana. Equally, though, I have rejected solutions which might be appropriate in a foreign environment, but not in Ghana, and have instead given my own interpretation of a feasible half-way house somewhere in between the realities of today and a vision for an optimal future.

8.2 Computers: a long-term agenda for improvement, not a panacea

With the modern medical record we see at one end of the scale the traditional, all-paper patient folder, and at the other the imminent advent of the all-electronic medical record. In between we have the computer-assisted medical record, or patient administrative system, the range of which runs from computerisation of a handful of routine operations to fully integrated, on-line handling of entire functions. No medical records department in the world has as yet managed to keep pace with developments towards the total computerised record. Still, rapid growth is taking place in this direction, and the use of limited computer technology, or partial computerisation, in the administration of particular medical records functions and procedures is a fact of life.

The medical records procedures most commonly computer-aided are: patient registration, master patient index, assignment of new patient numbers, delinquent records listing, medical record discharge abstracts, indexing of statistical information for reports, patient billing, patient chart tracking, and coding procedures. The advantages computer applications

have over manual handling are speed, precision and flexibility. Large amounts of different categories of information can be concentrated in a single file (i.e. patient record), and these different categories of patient data are easy to isolate and retrieve.

Hospitals the world over have found that computerisation of routine tasks, especially in areas most prone to human error, significantly raises efficiency. At the Royal London Hospital, for example, the records department has long been successfully supported by a comparatively simple computerised patient administration system (PAS). In particular, computerisation of the MPI, for automatic assignment of new numbers to first admissions and retrieval of numbers for returning patients, has immeasurably speeded up registration process. As an added bonus, the medical records department has been relieved of the chore of supplying the registry and doctors with patient identification numbers. Problems normally associated with manual MPIs — misfiling, errors of number assignment, and awkward, time-consuming registration procedures — have all been reduced to a minimum, if not entirely eliminated. The Royal London system also incorporates a computerised checkout module for keeping track of patient records.

The West Glasgow Hospitals formerly also had a PAS system of this type until 1986, when the group upgraded to a multi-user clinical information network integrating all patient demographic and administrative data. West Glasgow has been building on this foundation with a view to eventually realising the ultimate goal: the all-electronic patient record, complete with all medical notes, etc., and an electronically generated prescriptions facility.

As described earlier in Chapter 5 the medical record systems of the Ghanaian hospitals surveyed are entirely manual. (This is also true of other hospitals in Ghana.) The survey revealed a general consensus among hospital administrators and medical records officers that introducing computers for medical records processing would help alleviate some of the present endemic hindrances to efficiency. On the basis of experiences in London and Glasgow, there is no reason to doubt this. At the teaching hospitals, for instance, computerisation would certainly make registration less unwieldy. Another prime candidate at both hospitals would be the master patient index, whose card holdings have far outstripped storage capacity. The tracer system would also benefit greatly from conversion.

The Ministry of Health is contemplating the acquisition of a basic computerised PAS. If this goes through, then my advice would be to confine

the initiative initially to pilot projects in the two teaching hospitals. If successful, the programme could later be extended to regional hospitals.

In all this it should not be overlooked that the backbone of success of any computerised PAS remains the paper-based system it is designed to support. In the case of the Ghanaian systems, these are at present in a state of disarray requiring drastic overhaul. Problems at purely operational level, for instance, include unacceptably high incidences of double files registration, issue of non-sequential registration numbers, and botched entry of patient information entry. Structurally, there is also the problem of teaching and regional hospitals maintaining different numbering systems, for which the solution, plainly, is a rationalised, standardised system.

As Piers Cain has remarked 'computers will not clean up a mess that exists already. They will simply process that mess much faster. If organisation's existing procedures are muddled, if they have incomplete data ... a computerised system will not disentangle the problem'.[1] The inability of computer applications to compensate for inefficient management of manual systems is further amplified by Benjamin. 'The computer does not *contribute* information. It cannot make a record more complete or more accurate. On the contrary, it faithfully reproduces every inaccuracy and every deficiency. The computer can be relied upon to carry out with standard efficiency any intermediate processing of data that may be required to produce intelligible feedback but at the heart of the system lies the complex and properly structured medical record'.[2]

Against this background, (costly) computerisation in Ghana would have to be preceded by (cost-effective) comprehensive reform of the medical records management structures.

The application of computers in the medical records function in Ghana will have implications and bring challenges which are universal to the introduction of computerised systems. Among other things this involves issues of cost, the training and education of users, and management of the confidentiality of data and patient privacy.

Cost would include both fixed costs, such as the purchase and installation of computer equipment, and supplies, including software. Variable costs, or recurrent expenditure, for the maintenance of hard and software, the

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[1] P. Cain, 'Implications of Electronic Records', paper presented at a Seminar of public administrators and directors of archives in Commonwealth Africa, Nairobi, March, 1996

[2] Bernard Benjamin, Medical Records, London, 1980, p. 159

procurement of stationery and related, or expanded purchase to meet future needs, would be another major item.[3]

Cook notes that 'it is common for computer systems to be installed in the context of specially-funded experimental projects', an excellent way to embark on automation, as long as there is a 'supporting agency' to bear the cost, in which case expert analysis and supervision can be bought in without the burden of a long-term commitment, adding that 'there should, however, always be a plan for maintaining the system at the end of the project.[4]

In Ghana, the introduction of computers into the public sector invariably involves donor assistance. In the central administration of finance for instance, computers were introduced as part of a donor project to enhance control over the machinery of public financial management.[5] Inevitably, donor assistance will also have be sought for computerisation of the records function. Fortunately, the current health sector reform programme would provide a very apt framework for the authorities to seek donor assistance for such an initiative.

Re-education of records personnel into the use of the individual system(s) selected, and computers generally, could fall under the same umbrella, as could preparations for negotiating the management of data protection /right of access both within the hospital environment and in relation to external users and other interested third parties. This would involve technical capabilities to secure and maintain confidentiality in tandem with legislation, while at the same time making provision for making certain categories available for approved uses.

Leaving such specifics aside, though, and returning to the realities of the Ghanaian situation, it would be an error of judgment to perceive the replacement of the old manual systems by top-of-the range computer systems or applications as a magic cure-all. For as Cook has noted, 'computer systems are not always a good answer: sometimes they introduce inflexibilities, unnecessary complex methods, or antagonize the staff so much that the end is worse than the beginning.'[6] Besides, as I hope to have made clear, not all the present weaknesses can be attributed to the manual nature of the current systems. Taking the British exemplars and the literature as a yardstick, the

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[3] Michael Cook, Archives and the Computer, (2nd ed.), London, Butterworth, 1986, pp. 48-52

[4] Michael Cook, Archives and the Computer, (2nd ed.), London, 1986, pp. 48-52

[5] Pino Akotia, 'The Management of Public Sector Financial Records: Implication for Good Government' Ph.D Thesis, University of London, 1997

[6] Michael Cook, Archives and the Computer, (2nd ed.), London, 1986, p. 9

conclusion must be that the use of computers will not reap the hoped-for benefits to efficiency unless the management of the functions they are supposed to enhance is first reestablished on a new footing of solid, well-defined procedural guidelines, operational rules, and enforceable policies.

8.3 Education and training

8.3.1 Overview

At present Ghana has no formal educational and training provisions for medical records management, nor has it in the past. Up to the late 1970s the Ministry of Health sponsored people overseas to obtain their medical records qualifications, but in the early 1980s this had to come to a halt because of lack of funds. No alternative arrangements were made to compensate, and this has been the position since. In the meantime, other sectors of the health care delivery system moved forward. Today, then, the medical record function is expected to be efficient and effective in servicing and supporting sophisticated health care and research structures at levels far beyond its own level of development. The answer, of course, is to regularise the situation. As of now, the only available medical records training is by on-the-job apprenticeship. Individual hospitals do offer staff orientation, induction, and in-service training programmes, but these tend to be a purely departmental affair, with no backup from higher management, and they are not organised sufficiently systematically to be of much benefit. In particular, in the absence of either institutional set standards, or external, national criteria, formal responsibility for course content is, one might say, ill defined. Professionally trained instructors, that is MROs, do their best, but they are very thin on the ground, and none have post-1982 qualifications. Furthermore, as Ghanaian hospitals do not keep procedural handbooks, teaching is entirely by word of mouth.

In the light of the changes and reforms now going on in the health sector, this would seem an opportune moment to reflect seriously on this issue. The merest glance at the current condition reveals a glaring need for training and development at every level of the service. In the lower job functions, clerks are patently in need of basic skills development, while the managerial level is desperately short of qualified professionals and sub-professionals equipped to deal with the continually increasing scope of demand on the service, especially recently, since the current period of reform began, since when

demand has been accelerating in leaps and bounds. However, the picture is not entirely dark or hopeless. Here and there in the health sector the realisation is growing that things cannot go on as they have been, and moves in the right direction are being made. In what follows, I shall review initiatives towards improvement already in progress, and put forward some longer-term ideas to extend and consolidate these.

8.3.2 Korle-bu: integrating further and vocational educational structures

Awareness in the health care community that lack of competence and professionalism in the records function is attributable to neglect of professional training provisions and facilities for records personnel has been spearheaded by the Department of Community Health of Korle-Bu Teaching Hospital. Indeed, the Department has formalised its recognition of the gravity of the situation in a proposal to the Dean of the Ghana Medical School, in which Professor Osei, Head of Department of Community Health, states that:

> The department is keen to develop a programme to train students in Medical Records and Health Information Systems. The need to train personnel engaged in medical statistics...has been stressed in various areas of the Health Information System. New cadres of staff are needed with a sound scientific background to provide quality data collection and processing service to assist in the formulation of policy and implementation of health programmes at the local and central levels. Valuable data are collected at many areas of the health care system....In several health facilities untrained staff are found in the records offices resulting in poor quality of health information. They are unable to provide suggestions and feed back to the health providers who provide the health data ...[7]

The programme, which is still at the provisional stage, envisages a formal course of instruction in medical records at Certificate level. The curriculum includes courses in the following areas:

- Health Care Delivery Systems
- Health Information Systems

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[7] See correspondence dated 12/12/97 (in the form of a proposal), entitled 'Establishment of a Certificate Course in Medical Records and Health Information Systems', submitted by the Head of Department of Community Health to the Dean of the Ghana Medical School.

- Biostatistics and Epidemiology
- International Classification of Disease
- Demography
- Health Forms Design
- Management

Each course unit is further sub-divided into a number of subject areas. In addition to this syllabus the course also comprises a practical component, project work, and a long essay. The programme is framed to be full-time, with 40% devoted to lectures, 50% to field attachments, and 10% reserved for project work and the long essay. It is also intended that the programme should be hospital-based, with physical facilities to be provided by either the School of Hygiene, Danfa Health Centre, or both.

This combination of academic and practical work has been very carefully structured to link up formal class work with practical experience of the work environment in which students are likely to spend the rest of their careers. Korle-Bu stress that an academic-cum-hands-on concept was deliberately chosen to parallel the pattern of mainstream medical education from surgery to physiotherapy. This outlook is to be sincerely applauded, since the outcome would not only give medical records personnel more parity with professionals in the more highly regarded branches of health, but also give students a vital experience in common with future colleagues in other branches of the medical world.

With this type of schedule, the most important thing is to create the right kind of balance between the theoretical and the practical. For the practical part of training, the Korle-Bu proposal suggests that responsibility be shared between themselves and the Centre for Health Information Management (CHIM).

The curriculum for this draft training schedule is similar to that of the Institute of Health Record Information and Management (IHRIM) course in Britain, which covers health records practice, health records theory, personnel management, medical technology, clinical data classification, data management and computing. As can be seen, the Korle-Bu concept amounts to by and large the same and, like the British qualification, is designed to produce alumni with a sound, well-rounded knowledge of the basic functions performed by a medical records department. All in all, the curriculum is entirely appropriate for a Certificate-level programme. I would qualify this, though, by saying that I believe that the long essay requirement could be a bit daunting for sub-professionals, and that this could better be

reserved for the next level up. Also, it seems to me, there is a case for excluding the management module from the Certificate syllabus, and instead offering a medical terminology module, which could easily be stretched to include a rudimentary introduction to human anatomy and physiology. This is very relevant to staff engaged in diagnostic coding.

Excellent though the programme looks, and much as Korle-Bu is to be congratulated for originating it in the first place, I would still like to see the curriculum — which, after all, is still in development — analysed and reviewed for possible modification by an appropriate panel before it is formalised. To this end, I would recommend the appointment of a technical panel to thrash out proper job analyses, which would ultimately also ensure satisfactory job functions descriptions for the sub-professional ranks. A point which the Korle-Bu proposal omits, but which the panel should address is the question of formal accreditation of the Certificate. In my view the simplest solution would be a MoH recognised qualification.

Instructors for the programme are anticipated to be drawn from the Ghana Medical School and other salient departments of the University of Ghana, as well from among formally trained MROs. A small oversight which strikes me in the Korle-Bu design is mention of an entry requirement; for a Certificate-level course, one would assume this to be G.C.E Ordinary Level, with a minimum of 5 passes or its equivalent.

At the time of writing the proposal is awaiting ministerial assent. The project is still in its infancy, and there will surely be a great deal more preparation before the programme actually gets going. On the whole, especially as a 'first', it cannot be faulted on seriousness of purpose and commitment to the development of the function; with the requisite support from the powers-that-be, there is every reason to believe that it will be successful and the desired outcome achieved. It is very much to be hoped that all the parties involved or otherwise interested will give their earnest consideration to what might eventually well become the foundation stone of higher-level training in institutional medical records management.

8.3.3 Professional training and qualifications

> The fulfillment of the mission of the ... record service depends on the availability, training and commitment and productivity of its staff. While the contributions towards this end by non-professional and sub

> professional staff members are highly important they are in large measure dependent on effective professional direction.[8]

This statement really says it all. Professional training beyond Certificate level should be a major goal for the records function, so that eventually Ghana will have a population of locally trained, highly competent Diploma and Higher Diploma graduate medical records personnel.

The IHRIM Diploma course in Britain, now upgraded to a Postgraduate Diploma, is geared to give a thorough understanding of the nature and functions of medical health records, together with a comprehensive grounding in the intellectual and practical principles of managing and organising institutional services delivery. Being a postgraduate course, the examination syllabus comprises both optional and mandatory elements, together with a 15000-word dissertation on a subject approved the Course Director of IHRIM. Successful graduates are automatically eligible for associate membership of IHRIM.

In the United States, the American Health Information Management Association (formerly American Medical Record Association) has been instrumental in the development and refinement of the content and quality of educational programmes, as well as having contributed to many other advances in medical records education. From modest beginnings (not unlike those in Ghana today) as hospital-based vocational training, medical records education is fully integrated into the academic system, with universities and colleges across the country offering options within a medical records framework which range from foundation courses in management and information sciences, across the spectrum of the medical, behavioural and cognitive sciences, to high-powered professional medical records programmes. The same schools also specialise in post-first degree vocational qualifications.[9]

AHIMA also coordinates independent study programmes as a unique alternative to traditional college-based learning. Such home study programmes, which are flexibly structured to allow students to set schedules

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[8] H. G. Jones, The Records of a Nation: Their Management, Preservation, and Use, New York, McClelland and Stewart Ltd., 1969, p. 209 NARS.

[9] Mildred Leger and Mary Alice Hanken, 'The Health Information Management Profession', in Abdelhak Mervat *et al* (ed.), Health Information Management: Management of a Strategic Resource, W. B. Saunders Company, Philadelphia, Pennsylvania, 1996, p. 54

to suit themselves, are designed to give skills training in specialised areas of records data management.[10]

In Ghana it is time that MoH/GHS began to explore the possibilities of establishing senior and professional-level medical records training. A diploma schedule should be developed to offer an integrated package of advanced study to prepare practitioners for expanded roles in professional practice. A committee on this should be set up with the mandate to make definite recommendations which lead to practical steps being taken towards the development of such a programme. Whatever form a training programme on this level would take, active university cooperation is essential. In the final event, the course content should be absolutely targeted on guiding students towards a deeper knowledge and understanding of medical record-keeping techniques, giving them thorough proficiency in all the technical aspects in the function, while at the same time making sure they acquire the management skills they need.

The Department of Library and Archival Studies in the University of Ghana already offers Masters and Diploma courses in records management, and a degree programme is about to begin very soon. The School of Administration in the University of Ghana likewise has management courses which could be of use to medical records managers. Why, therefore, should these two institutions not be induced to join forces in assisting in the design of a curriculum for medical records management? The Department of Community Health of the Ghana Medical School will surely be glad of cooperation from any interested university department with something to contribute to the development of Diploma and other higher level medical record curriculums integrating both theoretical and practical instruction. Finally, a formal curriculum at this level should in any event open up an entirely new vista of career opportunity and promotions in the records service.

As far as facilities are concerned, those already available more than suffice. The relevant departments in the University of Ghana will undoubtedly put classrooms and lecture halls at the disposal of the course, and will also grant library facilities, including the main University library and Medical School collections. The only special acquisitions needed would be set reading matter and textbooks — including journals.

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[10] Mildred Leger and Mary Alice Hanken, 'The Health Information Management Profession' in Abdelhak Mervat *et al*, (ed.), Health Information Management: Management of a Strategic Resource, Philadelphia, Pennsylvania, 1996, p. 55

8.3.4 Management training and continuing education

The survey showed that MROs have no opportunities for management training. This is a great disadvantage to the service, because this interfaces with so many of the current reform activities, especially areas of resource management, improved information systems, and the evaluation of quality care.

Without a due complement of MROs with management expertise, hospitals will find it difficult to nurture in-house records talent. Therefore, important as it is to look ahead to long-term management training for senior staff, in the short run attention had better been paid to launching management training schemes for incumbent MROs.

What is needed is a coordinated drive, supported at all levels of the medical records service — and indeed the health sector as a whole — to ensure that hospitals have a sufficiently competent staff to train their junior and incoming recruits and trainees. The crux of the matter is that MROs must have the mechanisms of modern management at their command as well as the technical tools of their trade.

Two institutions that can be relied on to design short-term management development programmes are the Ghana Institute of Management and Public Administration (GIMPA) and the Management Development and Productivity Institute (MDPI), both of which exist to provide management training for senior public sector personnel.

Continuing education and orientation among senior staff (other than formal training) is another issue which needs to be considered. It is an important aspect of senior records job functions — especially the MRO — to keep abreast of the field, with materials and methods continually changing and evolving. One way of ensuring this is by following the international, professional journals and other current literature. The libraries of both teaching hospitals already subscribe to a number of international and national medical and related professional journals. Given provision is made for this, the current subscription lists could easily be extended to include medical records publications, starting with the authoritative *Journal of the American Health Information Management Association* and the *Journal of the Institute of Health Records Information and Management.* In time, of course, when institutions are computerised, the Internet will become the standard, low cost source of articles and other information (including remote learning programmes), as well as an avenue for developing international contacts. In addition to this, the MoH/GHS could sponsor MROs to attend international

conferences, seminars, workshops, forums and other meeting grounds, perhaps on a rotation basis, as and when there are funds.

While formal educational and training programmes are matters which may be viewed in a longer perspective, the issues of management training and continuing education should be settled as soon as possible. It is fair to state that while on-the-job MROs have a wealth of experience, they also need management skills if they are to remain good at their jobs.

Health authorities have a key role to play in the development and advancement of the medical records function. This is a responsibility that has to be formally acknowledged. The progress which has taken place in medical record education in Britain and the United States is a reward of hard work and dedication. What has been achieved there can also be achieved in Ghana.

In this context, the Korle-bu proposal for a certificate schedule may well one day be the bridgehead to an entire structure of across-the-board medical records education. That will be the day when the Health Information Management Association of Ghana is founded.

8.4 Policy development and enforcement

The cornerstone of effective and efficient records management, as I have reiterated many times over in this thesis, is an infrastructural framework of policies, and procedures. It is from this framework that the medical records committee, as part of the larger organisational structure, derives its frame of reference and authority.

Donald precisely puts his finger on the importance of maintaining an institutional policy framework:

> Often firms have felt no need for an explicit statement of priorities of their objectives. Consequently the goals of many enterprises are held solely in the minds of senior management and may not be properly known to staff. When the policy changes as a result of the chief executive reassessing priorities, his decisions may be misunderstood and inadequately funded."

In the Ghanaian scenario, comprehensive policy formulation is urgently needed to cover the following areas of record management: data quality issues, records retention and destruction, third party access to old records,

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" A. Donald, Management, Information and Systems, Oxford, Pergamon Press, 1979, p. 4

proper cataloguing of old records, and movement and circulation of case notes. Existing policies and procedures, as revealed by the survey, are essentially nothing more than fragmented, inchoate bits of instruction which are in most cases not even comprehensively documented. The virtual absence of medical record policies in hospitals is a concomitant of the absolute lack of any national policy, a situation which has left medical record departments to sink or swim by their own devices.

The two issues which in particular need urgent settlement by national directives are first the retention, and destruction, of obsolete patient records, and second, security and confidentiality of patient information.

The Ministry of Health and Ghana Health Service issue no standard(s), let alone guidelines, for the length of time that patient records should be kept. Yet among and within hospitals divergences rage about appropriate retention schedules. The outcome has been that patient records are kept or discarded *ad hoc*, often with little thought for their long-term value. My recommendation in this matter is that it be seriously investigated and national policy guidelines drawn up to ensure uniformity of practice. These guidelines should take into account legal requirements, present to medium-term use, and potential future use; and they should apply across the Ghana Health Service. The legislative framework for this is already in place under Sections 5, 8 and 9 of the Public Records Administration Act 1996.

As far as confidentiality of patient information is concerned, patient protection at present derives largely from the ethical codes governing the medical profession, and from the relatively slight legal coverage afforded by the traditional tort and invasion of privacy laws. The most straightforward way to compensate for this lack of legal provision would be the development and implementation of a strong, enforceable national policy. This should, above all, ensure that access to patient information is restricted to legitimately interested parties, and then only for ethically justifiable purposes. To be a meaningful deterrent to improper encroachment, the MoH and the GHS policy on patient privacy should be comprehensive, detailed, applicable to all hospitals and health care institutions, and to cover all patient-identifiable record systems kept in health institutions.

The survey revealed that intra-organisational access and disclosure are somewhat difficult to monitor. Thus there exists also a case for policy determination on internal control practices. To be clarified first, among other things, is which categories of staff are directly responsible for patient care and have access to notes. This would form the point of departure for a national policy within which individual health care institutions can delimit the

appropriate degrees of access for the different professional health care classifications. Policy should also cover internal security for a range of special circumstances and situations. Finally, all institutional recommendations would need to be ratified at the highest level of the GHS, and made enforceable.

Self-evidently, national guidelines for the management of medical records should emanate from the MoH, the GHS, and PRAAD jointly, and take the form of a general policy statement. In broad outlines, this statement should authorise or oblige health institutions to implement national guidelines in accordance with their own particular needs and circumstances, and to draw up the appropriate internal procedural rules and regulations for smooth records management.

8.5 Administrative arrangements at operational level

8.5.1 Overview

The picture which emerges from my account in Section II of medical records management in selected Ghanaian government-run hospitals is a generally low standard of record-keeping, as characterised by a high incidence of missing case notes, overcrowded record departments, uncontrolled records retirement and destruction procedures, and a poor quality of recorded information. Closer examination brought to the fore at both national and institutional level a lack of coordinated, comprehensive policies, guidelines and procedures for the management of medical records. As a by-product of this Ghana has no appropriate training provisions for records personnel — who might otherwise have been equipped to compensate to at least some extent for the overall absence of formal direction in which the service flounders. Probing deeper into root causes led to the inescapable conclusion that the obstacles to efficiency in the medical record service have their origins in managerial marginalisation of the function throughout the health care system.

Not only are national and institutional arrangements for an effective service lacking, but little, if anything at all, is being done to provide the administrative support which the service needs in order to deliver acceptable and sustainable standards of performance. It may be said that at present administrative arrangements for the management of the records function are but a shadow of what they should be; a state of affairs that could lead to far-

reaching trouble in the future. What the medical record service at this point needs in order to be prepared for the challenges that health sector reform will undoubtedly impose, is thorough organisational and managerial overhaul from top to bottom at both institutional (operational), level and national policy level.

In this section I shall focus on some administrative initiatives at the operational level which, if taken, should lead to vastly improved standards of services delivery, while at the same time readying records departments for the challenges and demands which the establishment of a national policy body and structures (the subject of section 8.6) is bound to bring. To this I would add that in shaping these initiatives I was informed by what I learned from observing proceedings in British peer establishments on the one hand, and my discussions with Ghanaian hospital medical record officers on the other. By and large, my perspective on administrative, operational reform is based on West Glasgow practice, which attracted me for its clarity and simplicity. The proposals which follow can be seen as a coordinated design for a reform package of which the pillars are: the organisational chart, the medical records committee, policy and procedures development, the institutional handbook or manual, formalised institutional standards.

8.5.2 A practical guide to operational reform

8.5.2.1 Organisational charts: In Chapter 4 I ascertained that none of the record departments investigated in Ghana maintained organisational charts specifying inter-departmental areas of responsibility and demarcating clear lines of authority and answerability.

The concept of the organisational chart is well established in the theoretical literature. Its function is to give a visual, diagrammatical representation of the totality of the department's functions and the roles of its members in the execution of these functions. In appearance, the chart must be as self-explanatory as the London Underground map: a linear plan schematising the relationship between the different strands and components of the organisational and operational life of the department. Furthermore, it should be prominently posted for anyone to see at any time. As a practical tool in the efficient running of the department, the chart, in defining and distinguishing individual and departmental functions and areas of responsibilities, provides a frame of reference and a guide against which the day to day conduct of affairs can be measured. Carefully planned, and

properly used, the organisational chart will, for instance, help to avert duplication or overlapping of departmental activities. Internal cohesion will be enhanced because personnel are aware of their own and each others' tasks and responsibilities, and how these fit into the overall scheme of the department's role and commitments as a constituent part of the hospital as a whole.

That failure to keep charts contributes to organisational confusion is highlighted by the kinds of operational glitches that are endemic in the Ghanaian situation, but would be inconceivable in, for instance, West Glasgow (or London, or Edinburgh, for that matter), where the role of the organisational chart as an operational aid to coordinating and monitoring activities and people is taken for granted.

With all the sympathy in the world for the raw deal the service has had in Ghana, it is difficult to explain, or excuse, neglect of such an elementary organisational principle as the departmental organisational chart. This, then, is one contributory cause of operational malfunction which the country's government-run hospital medical record departments should address without delay as a first step towards clearing the cobwebs in preparation for broader, structural, reform of the service. In advocating this, I do not underestimate the upheaval involved in thinking through and formalising every aspect of departmental objectives and functional operations. Hence I feel that such an initiative should be spearheaded by the two teaching hospitals, which have highly diversified task-loads and large staff complements to coordinate and organise. At the regional hospitals, with smaller departments to keep track of, the issue is less pressing, and could be deferred until as and when.

A model of organisation worth considering is that of the West Glasgow medical record department. Of the different systems I have studied and seen in action, this one struck me as particularly amenable to adaptation to Ghanaian requirements. This is a no-frills system, very straightforward in its *modus operandi*, highly efficient — and according to the West Glasgow Health Record Manager, who in her position, would otherwise be the first to complain — *the* way to meet the very demanding criteria of Scottish Health Service (see figure 8.1).

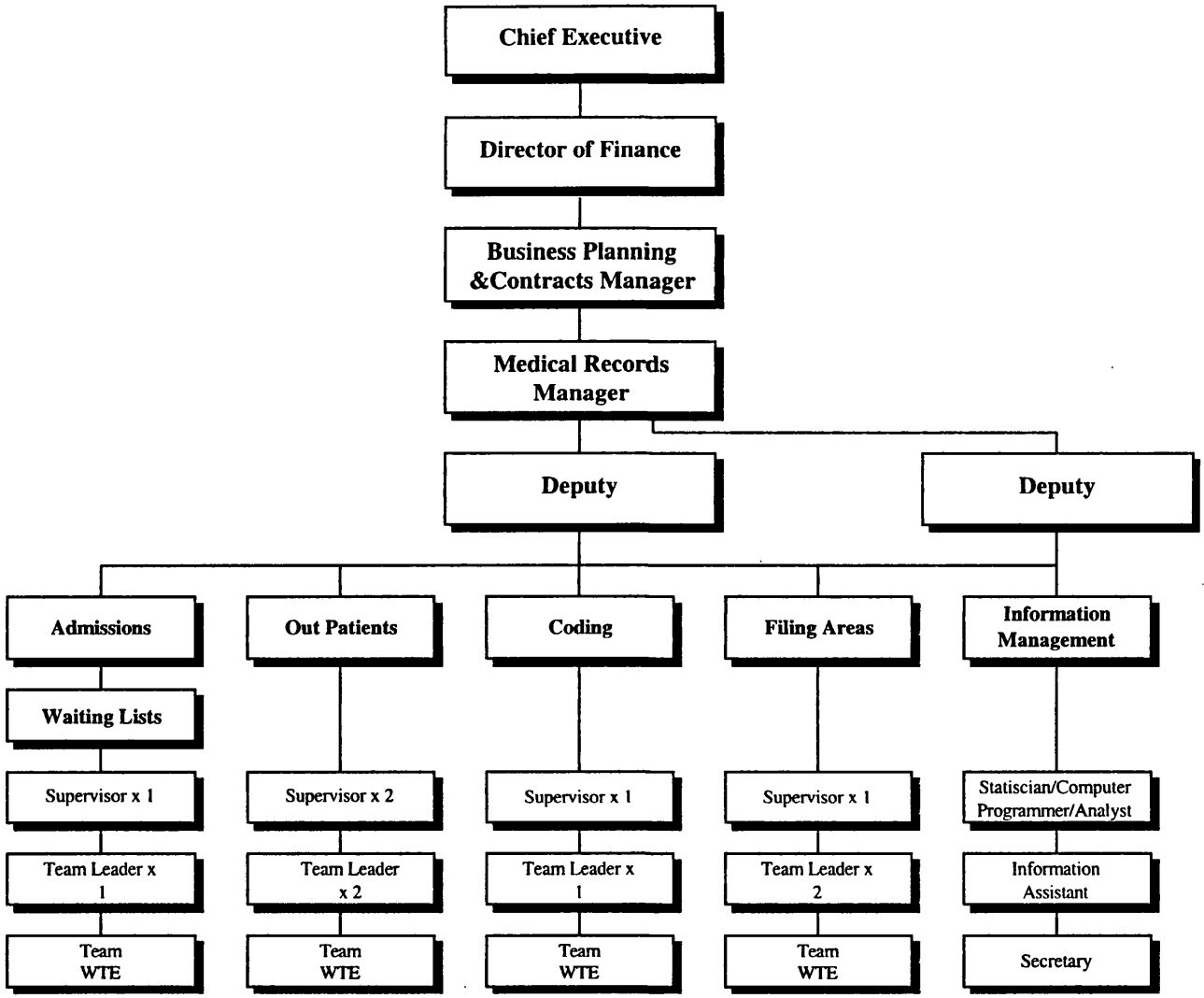

Figure 8.1

Medical Record Team process administratively 220,000 Out Patient episodes per year, and 80,000 In Patients per year. The WGHUNHS Trust is divided into two main sites approximately 2 miles apart. Each site houses in patient beds and out patient consultation areas. The main site at the Western Infirmary provides an Accident & Emergency Service, together with Intensive Care facilities. Each site provides a full range of laboratory and radiology services.

Source: Medical Records Department
West Glasgow University NHS Trust

The West Glasgow organisational chart shows a very simple structure which is based on the department's five main functional areas: Admissions and Waiting List, Out Patients, Coding, Filing, and Information Management. Significant to note is the linkage between functions and job titles, making it possible to take in at a glance what the functions are, who does what, and who directs and supervises whom. A second important feature to note is how the chart correlates groups of tasks with teams of people.

Looking at the chart, we see assigned to each function a permanent team headed by a Supervisor who is responsible for the day to day running and organisation of the team's work, and for ensuring that all quality standards and time scales are met. In addition, the Supervisor plays a key role in the induction and on-site training of new staff. The monitoring of performance and attendance begins with the Supervisor, who reports and is accountable to the Deputy Health Records Manager, the next rung up.

Supporting the Supervisor — in a much junior, hands-on supervisory role — is a Team Leader with the greater share of the responsibility for organising and taking practical charge of the operational details of the team's remit. (As a matter of interest, this post is a comparatively recent departure at West Glasgow. It was in the first instance intended to take the onus off the Supervisors — who often have teams as large as 20-50 to manage and coordinate — and secondly, to reinforce quality control and productivity. Another benefit of this arrangement of splitting the different levels of team management between the Supervisor and the Team Leader is that it greatly facilitates flexibility of staff deployment.)

At the apex of this organisational structure stands the Health Records Manager, who is answerable for overall services delivery. As such, he is in control of departmental policy development, management and organisation, in-service training and development, and assessing the progress of new staff. He furthermore acts as Secretary to the Trust Health Record and Out-Patient Committee, and also automatically sits on all other hospital committees whose areas of competence touch upon his own department's sphere of activity. Thus he is a member of the permanent Information Technology and Strategy Group, and the Health and Safety and Standards Group, as well as of many short-life panels and *ad hoc* committees which may at any time be evaluating and discussing the implementation of new Scottish Ministry of Health directives, or changes emanating from the Chief Executive or Management Board.

Assisting the Manager are two Deputy Managers. One is specifically charged with personnel affairs, including recruitment. The other looks after

information management. It will be apparent that the backbone of this structure is a coordinated, cooperative approach to executing the services performed by the department. The function of Health Records Manager, as will be clear, is essentially administrative in nature, leaving the Supervisors to organise the practical, technical aspects of the work. The organisational approach as a whole is characterised by a clear-cut separation of the principal departmental areas of activity; unambiguous definition of individual and group responsibility; simple lines of authority, unity of command, and manageable spans of control.

Given that all hospital records departments by and large carry out the same functions, there is no reason why an organisational model of this kind, with adjustments to suit local conditions and circumstances, should not in principle work as well in Ghana as it does in West Glasgow. At the same time, simple though the structure I have described might be, its success in Ghana would depend on certain conditions being met.

First, as I pointed out in Chapter 4, the anomalies of the existing staff structure should be corrected: realistic staff grading and structures must be matched to the responsibilities of the function. Secondly, and related to the first, is the need for in-depth analysis of job functions in the medical record service, a process that should in itself go a long way towards formulating guidelines for laying down jobs content and jobs descriptions, as well helping to identify recruitment criteria. Thirdly, and even more importantly, the MoH and the GHS should seek to attract qualified personnel into the service, while stepping up training programmes to equip existing staff with the skills required to cope with the demands of their jobs.

Nothing can compensate for lack of adequate staff. It may be a truism, but it remains a fact that whereas good staff may sometimes bring a bad organisation safely to its objectives, poor staff — even with a well-designed structure and first class methods — will bring it to its knees.

A self-evident point that should nonetheless not remain unsaid is that an organisational chart is not an end-all in itself, but, as I said earlier, a visualisation and constant reminder of how everything and everyone fits and works together. Unless this is clear to one and all, no amount of organisation will accomplish the desired effect. To turn to Drucker, 'Good organizational structure does not by itself produce good performance. ... But a poor

organizational structure makes good performance impossible, no matter how good the individual managers may be.'[12]

8.5.2.2 Medical records committee: The realisation of an organisational structure is but one step in the right direction. Also to be taken into account is that organising, administering, and maintaining the medical records department is a major responsibility — a burden which medical records managers can scarcely be expected to shoulder successfully alone in a complex environment like a hospital. For this reason hospitals the world over recognise the need for a records committee. 'Committees,' as Gratto says, 'have become a fact of life in modern organisations.'[13]

His definition of a committee is:

> ... a group of persons ...in an [organisation] who function collectively on an organised basis to perform some administrative activity. A committee is more than an informal group that may meet, even regularly, to discuss an issue and share ideas. ... The emphasis in a committee concept is the creation of an intentional structure with an organised basis of activity and interaction and specific accountability and function. The predominant characteristics of the committee is a group deliberation on a recurring basis.[14]

My experience of the Royal London Hospital Trust and West Glasgow University Hospitals speaks volumes for the importance of medical record committees. The Medical Record Managers (Don Beaver and Mary Jack respectively) are convinced that their records committees, by providing medical staff with a forum through which to exercise their responsibilities, contribute a great deal to the effectiveness and efficiency of the departments. In both London and Glasgow, for instance, it is the records committee which supervises the maintenance of medical records to the required level of completeness. The committees are also responsible for reviewing and evaluating the quality of medical care delivered to the patient on the basis of regular reports.

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[12] Peter Drucker, cited in C. S. Deverell, Business Administration and Management, Gee & Co. Publishing Ltd, (4th ed), London, 1980, p. 47

[13] Joan G. Liebler, Managing Health Records: Administrative Principles, Germantown, Maryland, an Aspen Publication p. 159

[14] Joan G. Liebler, Managing Health Records: Administrative Principles, Germantown, Maryland, 1985, p. 160

Across the Atlantic, the establishment of hospital records committees is among the set requirements of the Joint Commission on Accreditation of Hospitals. The directive on this stipulates that hospital medical staff should exercise their responsibility for medical records primarily through medical records committees.[15]

The record committee concept as practised in hospitals in Britain, America, and elsewhere, provides exactly the kind of power base for which the Ghanaian hospital record departments are crying out; especially in a situation where policy and procedures still have to be set up, and where medical record officers are barely in a position to enforce basic rules simply because the record function enjoys no respect whatsoever within the hospital generally. Record committees would provide the kind of status and authority needed to administer and support the medical record function within the institution structure.

Acknowledging the importance of committees in the administration of hospitals, Section 42 of the Ghana Health Service and Teaching Hospitals Act 1996 provides that 'a Teaching Hospital Board may appoint such committees as it may determine to assist in the discharge of its functions and may delegate to the committee any of its functions as it may think fit'.[16] Sub-section 2 recommends the appointment of the following types of committee:

- Finance and Administration Committee
- Technical and Planning Committee
- Human Resource Management Committee
- Disciplinary Committee

Further, Section 47 of the Act[17] provides for the establishment in each teaching hospital of a House Committee to be responsible for communicating and explaining to hospital staff the policies and directives of the Board, and to assist the hospital's Chief Administrator in the performance of his functions. In conjunction, such committees form a departure point for consolidating lines of authority within the medical authority structure, and providing support for the nursing and administrative services structures. While making no mention of medical records committee, the Act by no means

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[15] Maurice Avery and Bonnie, Imdieke, Medical Records Management in Ambulatory Care, Rockville, Maryland, 1984, p. 86

[16] Ghana Health Service and Teaching Hospital Act, (Act 525)., 1996, p. 18

[17] Ghana Health Service and Teaching Hospital Act, (Act 525), 1996, p. 19

restricts committees to those specifically named. The teaching hospitals thus have all the latitude they need to establish any type of committee.

Important is that as and when the teaching hospitals do come to establish medical record committees, these should be institutionalised as sub-committees of the House Committees. Similarly, regional hospitals records committees, if established, should form sub-committees of the Hospital Management Committees. The salient point is that for the medical records committee to have genuine authority, responsibility should be vested at a level with unimpeded access to the seat of power, the Hospital Board. It is for this reason that it is essential that the medical record committee should have the status of a sub-committee of the existing statutory committees.

This leaves the question of committee membership. While the precise composition of its medical record committee is for the individual hospital to determine in accordance with the scope of its operations, and so forth, this should under all circumstances be representative of all interested parties within the hospital. Certainly these would include the Head of Nursing Administration, the Health Services Administrator, and a representative of the Medical Director. As may be discerned from figures 2.3 and 2.4, these are all heads of heavyweight departments with authority in the line organisation of the hospital administrative structure.

With the British and other examples in mind as a guideline, I would advise that the Ghanaian records committees should be set up as permanent, standing committees. While the individual members may change, or rotate, from time to time, the overall composition should be continuous in terms of number, the distribution of representation, and the core mandate. Record committees should draft their own terms of reference for exercising responsibility for medical record issues. Their mandate, above all, should be that the medical record function moves forward — and that the committee is invested with the necessary authority to see that it does so. From this follows that a medical record committee must be empowered to ensure that its decisions are binding, by commanding the necessary authority to monitor the policies, procedures, and standards it formulates and sets.

Concerning the specifics of the committee's remit — the precise scope of its competency; the exact details of its function — in ensuring due standards of record-keeping, these should be clearly spelled out, as should its spheres of duty and authority. Most importantly, committees should have, in black and white, complete administrative support. As a consultative and decision-making body, there is no need for the committee to concern itself with the everyday basics of running the medical record service. That is the business of

the Medical Record Officer. Still, as experience in London and Glasgow shows, it is helpful and morale-boosting for the departmental staff if the circulars and documents they issue have the endorsement of being put out in the name of the Committee.

8.5.2.3 Procedural manual: Though this may seem an over-obvious thought, rules and regulations are pointless unless they are followed. To ensure that the rules and regulations are observed, these must therefore be accessible to all, hence the need for procedural manuals. The Royal London and West Glasgow manuals set out general institutional record policies and standards, together with specific guidance on operational procedure. The manual, in other words, is a practical, instructional handbook to efficient records management, and the institutional source of reference for all transactions involving records. The benefits of instructional manuals is summed up by Deverell:

> Standard procedures are of service to the employee, who is protected from errors arising from his own unsupported interpretation of oral instructions and explanations. He has not to work out his own methods of performance but is able instead to benefit from the experience and knowledge of others. There is a saving of time at all levels of management, a clarification of duties, responsibilities and the limits of authority. Administrative control is strengthened. Personnel matters are uniformly handled. In general, the writing down of instructions, policies and practices clarifies thought. Recorded experience aids in the prediction of comparable events.[18]

To translate this into an everyday context: when in doubt, consult the manual. The policy and procedural manual is both a guide to departmental policy on all record-related issues and eventualities, and a practical, instructional handbook to the approved, institutional methods, standards and procedures. As the authoritative source of reference on every aspect of the department's organisation and operations, the manual also functions as the authoritative textbook for in-service training, evaluation and development. For this reason alone it should be written in clear, uncluttered language.[19] This last-named,

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[18] C. S. Deverell, Business Administration and Management, London, 1980, p. 99

[19] Candy Schwartz, and Peter Hernon, Records Management and the Library, Norwood, New Jersey, Ablex Publishing Corporation, 1993, p. 166

educational use is very important to ensuring uniformity of practice and cohesiveness of purpose in a department.

In the Ghanaian situation, where policies and manuals are yet to come, their introduction, beyond all doubt, will open up for hospital managements an unprecedented opportunity to build up and nurture, from scratch, an entirely new generation of motivated, well-coordinated records professionals. In fact, the manual is a career-long source of knowledge and reassurance against which the professional can at all times gauge how well he is measuring up to his job. This brings us directly to the point that manuals are useless unless they kept updated — either re-issued, or amendments circulated to all users - as policies, regulations, and procedures change. Characteristic of both the Royal London and Glasgow manuals is the great emphasis placed on quality of services delivery as an expression of pride in the profession and in the institution.

Ghanaian authorities should note that in London and Glasgow the medical records committee, as the body in charge of framing records policy, is likewise responsible for framing — and amending, as required — the institutional policy and procedural handbook. After all, '...a policy does not exist unless it is in writing'[20] and that policies need to be re-written and updated when necessary to reflect the changing requirements of and demands on records departments as time goes on.

8.5.2.4 Standards quality and control: At London and Glasgow the procedures for setting and monitoring due standards of performance follows well established paths. In both environments responsibility for this falls within the province of the medical record committees, as stipulated, in Glasgow, by the Guide to Good Practice and Procedural manual:

> The Trust Record and Out Patient Committee will ... [set] exacting Standards, against which the Health Record Manager will be able to measure the performance of the Health Record Service. This will ensure that the Health Service is recognised as being a vital part of the hospital and that the high standards set, are complied with in full.[21]

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[20] Maurice Avery and Bonnie Imdieke, Medical Records in Ambulatory Care, Rockville, Maryland, 1984, p. 135

[21] See West Glasgow Hospitals University NHS Trust, 'Health Record Service, A Guide to Good Practice and Procedure Manual.' (undated)

Setting standards in essence amounts to selecting and implementing the best possible — and feasible — operational systems and procedures to perform records services efficiently and consistent standards. Some areas of records activity can barely be managed and organised properly at all if there are no set standards to act as a yardstick. Major examples of this are records creation, storage, filing and retrieval, and issues relating to completeness of collection(s).

In the case study I indicated that at present there exist in Ghana variations between individual medical record units in term of efficiency and effectiveness. I also indicated that whether or not a particular medical record department may be considered efficient depends on the ingenuity and resourcefulness of its Medical Records Officer. The only way to ensure that all records departments perform equally well, and that under-performing departments raise their standards, is to make them conform to national minimum standards and monitoring mechanisms, which at present do not exist. This is a situation which needs urgent correction. Moreover, the process of identifying and setting standards will in itself help to identify where improvement is most needed, be it in particular hospitals, or particular functions of the service. In the meantime, hospitals would be well advised to proceed to develop their own standards for measuring internal efficiency, as defined and formulated by the record committee in collaboration with the Medical Record Officer. In the Ghanaian situation it would be advisable not to set unrealistically high standards which may not be achievable. Standards should be set at a level which is broadly achievable within the scope of existing resource. Furthermore, records committees and Medical Record Officers should review and amend standards as and when necessary.

8.5.3 Conclusion

Successful reform of the institutional, operational wheels will ultimately depend on the endorsement and support of hospital managements: initiatives 'from above' are not always greeted with enthusiasm. I would therefore propose that the impetus for administrative arrangement in records departments should in the first instance originate at the crux of a hospital: its management, which is in the best position to determine appropriate time-frames and schedules — hopefully with the assistance of a records committee.

8.6 Provisions for administrative arrangements at the national level

8.6.1 The case for a central, national coordinating body

In Ghana, as I explained earlier in Chapter 4, there is no central organisation with mandate and resources needed to give direction to the sum total of medical records delivery services, or to coordinate medical records issues on an on-going basis. Officially, the function is not at present entirely unrepresented at national organisational level. In theory, the job of overseeing medical records falls under the Centre for Health Information Management (CHIM), the MoH agency currently responsible for the collection and collation of data for government statistical use. In fact, as I was able to ascertain in the field, CHIM's exercise of its medical records responsibility has more or less been confined to the collection and collation of statistical information for central health care planning. More recently, CHIM has been attempting to put a national slant on the function. However, its existing platform of authority is too ill-defined, and its resources and sphere of influence too limited to suit a directional, facilitating, coordinating leadership role, or to capture national attention for this. Thus, as the situation stands, formal mechanisms for setting priorities, and representing the medical record function at central level have yet to be established. What is needed, therefore, to pull together the function in this era of reform and time to come, is an initiative specifically mounted to overcome this deficiency.

Whatever form this initiative is destined to take, it should be under the aegis of the GHS. Further, the first step should under all circumstances consist of an exploratory orientation project to reconnoitre the best options for an organisational apparatus, and to identify and marshal the necessary resources and executive support. An action group, working committee, or whatever, is required.

All this could be accomplished within the existing legislative structure, as provided by Section 10 (1) of the Ghana Health Service and Teaching Hospitals Act, which leaves the way wide open:

> The Council may with the approval of the Minister create such units or divisions within the Service at the national level as it may consider necessary for the efficient discharge of the functions of the Service and may with the approval of the Minister abolish or re-organise any unit or division.[22]

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[22] Ghana Health Service and Teaching Hospitals Act, (Act 525), 1996

A formal proposal for organisational reform of the function at the national level already exists. This is a British initiative, framed by the International Records Management Trust (IRMT), in the context of a report commissioned by the Overseas Development Administration (now the Department for International Development - DfID) in 1997. Before proceeding to outline my own vision of an appropriate national medical records framework, I shall briefly outline the IRMT proposal.

8.6.2 The IRMT approach

The conclusion of the IRMT report 'Information Management in the Ministry of Health', reads that the medical records function should be accommodated under the umbrella of a British-type Information Management and Technology Strategy Group (IM&TSG). The Group would be directly accountable to the GHS, and its mandate would be to 'provide direction and guide the development of a framework for the coherent development of the MoH/GHS information system.'[23] The IM&TSG would have three strategy sub-groups: Information Technology, Training and Education, and Medical Records/Data Quality. The Report further advises the establishment of regional and hospital-based IM&T sub-groups, whose role would be to develop, interpret and implement national strategy. In addition to this, the report advocates the creation of a national Information Management Department to provide an executive support function for the IM&TSG and associated strategy sub-groups.[24] Section 10 (1) of the Ghana Health Service and Teaching Hospitals Act would impose no hindrances on an entirely new departure of this kind.

8.6.3 An alternative approach

I may as well say straight out that I do not subscribe to the IRMT's approach. What I should like to see is a reorganised CHIM, with an expanded mission

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[23] See Government of Ghana (MoH/GHS), 'Information Management: A Collaborative Scoping Study, Vol. 1, 1997, a report prepared by the International Records Management Trust (IRMT), GH 64, p. 18

[24] Government of Ghana, (MoH/GHS), Information Management: A Collaborative Scoping Study, Vol. 1, 1997 ..., (IRMT), GH 64, pp. 18-21

empowerment, and the budget to see this through. I suggest this alternative to the IRMT path on three grounds. First, CHIM is a decent, solid outfit. Founded in 1980s it has built up — often against the odds — a good group of people with a useful range of skills between them. On the way, it has accumulated considerable experience, and unparalleled knowledge of the Ghanaian situation. Secondly, building on what already exists would mean very much less investment in start-up operating costs than would the creation of a brand-new, fully fledged, and far more complex organisational structure to take its place. Thirdly, as far as the records function is concerned, an IM&TSG would do no more than CHIM is already supposed to be doing, but lacks the mandate and resource to deliver. To this may be added that redress of the predicament of the record services can brook no extraneous delay.

My proposal for the reconstitution of CHIM is that it should function, as I have already intimated, within the GHS, not the MoH, and that its status and position within the structure of the GHS be unambiguous and clearly delineated. To bring this about, I would suggest two options, in my opinion equally feasible, for the GHS to consider. The first is conversion of CHIM into a GHS department with a large measure of autonomy. The second is to detach CHIM from the GHS to some degree in the form of a semi-autonomous department, or as one of the major constituent divisions of the GHS. I give preference to the second arrangement, because this would ensure that the Centre is invested with:

1. sufficient status to make its decisions binding
2. sufficient authority to enforce implementation of its decision
3. sufficient budgetary control to deploy its resources flexibly to the best advantage of the function

Returning to the first option, a reorganised, departmental CHIM, might function effectively as an executive department of the GHS Policy, Planning, Monitoring and Evaluation Division (PPMED).

Whatever format is ultimately decided on, I would emphasise that if the choice falls on a Centre, its mandate should provide for a formal structure from the national through the regional to the hospital and institutional level, have a large measure of autonomy, and be able to command the (human and material) resources necessary to its appointment to discharge its function(s). For maximum coordination, there should be a sub-office in each region.

At central level, the role of the new-look CHIM should be expanded from that of a supplier of purely analytical/biostatistical data to the health sector to

that of a broader-based provider of records and information management expertise, and the approved consultant on all health sector-related information technology issues. I foresee the organisation as having at least three functional areas: Medical Records and Data Quality, Information Technology, and Training and Education.

The Medical Record and Data Quality Unit should be responsible for all matters concerning management and operational systems. The Training and Education Unit should be responsible for coordinating nation-wide staff training and development. The Information Technology Unit should provide expertise and consultancy services, as well be responsible for the development of programmes to support the application of information technology. While each of the three central sub-divisions would be totally accountable for its own sphere of national responsibility, joint responsibility would be exercised for strategy development, the formulation of broad policy guidelines, and across-the-board coordination of records and information management.

At regional level, the role of the sub-offices would be to provide a critical link between headquarters and the region. In this capacity, these offices would also serve as a buffer in reconciling and balancing out the agendas of the regional authorities health establishments institutions with national interests and priorities. The regional offices would also be responsible for assisting in the implementation of central policy into institutional action schedules by providing support in form of guidelines, protocols, and procedures. They would also ensure coordination between health institutions within the region, monitor the implementation of institutional programmes, and provide feedback to both the regional institutions and headquarters.

The GHS should provide the new agency with detailed terms of reference. Efforts at reorganising the present CHIM would of course entail the issues of staffing and material resources. As regards staffing, qualified staff should be recruited to augment the existing CHIM workforce, bearing in mind the functions of the new organisation.

In order to be effective, the organisation should be allocated an appropriate level of resources. To set the stage for reorganisation, a committee would have to be appointed to see to all this. Membership should necessarily include some of the senior officials of the present CHIM.

8.7 Intermediate and long-term records storage

During my investigation of Ghanaian government hospitals, I established that all of these institutions lack:

- facilities specifically reserved for the accommodation of old records;
- provisions for the physical maintenance of old records
- structural provisions for the organisation and management of old records as part of the information system
- procedural guidelines for the retention, respectively destruction, of old records
- policy on retention schedules.
- formal arrangements for access to old records

As, in spite of the lack of provisions, large stocks of old records are nonetheless kept, the result is the chaos I described in Chapter 6, which tallies with the situation pictured by Benedon:

> Very often attempts at economy cause records to be kept in inaccessible and unattractive surplus areas such as garages, basements and attics. The undesirable features of these become apparent once it is necessary to obtain information from records in storage. It takes only a few unsuccessful attempts to locate records in poorly maintained areas to discourage further use, or at best, it will result in the storage of items for which requests will be very limited or non-existent. We then have a backlog of inactive records in expensive office equipment and space with little, if any, concern over those records in storage. If changes in personnel and company operations should occur, there is then a mass of unidentified records in the storage areas. A subsequent attempt to destroy some of these records incurs cost which could have been avoided had a sound initial approach been taken to their housing.[25]

8.8 Solutions

8.8.1 Administrative

Solutions have in the first place to be found for non-current stock eating up record department space. Within record departments, effective identification

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[25] William Benedon, Records Management, Englewood Cliffs, New Jersey, Prentice Hall Inc., 1969, p. 65

and classification procedures must be developed to ensure that records are transferred to intermediate storage (i.e. record centres) the minute they become non-current.

At the intermediate storage stage, procedures must be developed to remove inactive stock to permanent, or long-term storage (i.e. archives) after set periods, to prevent a situation analogous to that currently existing in record departments from developing.

At the archival stage, procedures must be developed to ensure that at the end of set retention periods material of permanent value is transferred to central repositories, and the remainder destroyed. Throughout this cycle provision must be made to ensure that non-current stock is professionally managed, so that it remains easily accessible to a range of users from medical students to social and historical researchers.

Throughout, record centres and archives must be operated as an integral part of a hospital records management strategy; that is high-quality service at minimum cost in terms of accommodation, operating cost and staffing. What all this adds up to is:

- the development of appropriate, enforceable policies on retention/disposal schedules
- professional management
- the creation of hospital record centres and archives.

8.8.2 Record centres

In an ideal world, every hospital would have a purpose-built record centre. As considerations of cost preclude this, the next best option is to make the most of what is available: to repair, expand, and properly equip existing, improvised 'facilities', wherever feasible. This, as the survey showed, would be possible in most of the hospitals visited.

At the two teaching hospitals, the present intermediate storage facilities have excellent, economical, conversion potential as proper record centres. In regional hospitals A, B, and D refurbishment would also be a feasible proposition, as the areas now used for old records have enough capacity in theory to house a significant proportion of the records now crowding medical records departments. Once the broken-down old furniture, disused equipment, and mountains of discarded records are removed, and basic security arrangements, ventilation, and shelving installed, there is no reason

why such spaces should not become perfectly functional, if slightly unorthodox, record centres. Regional hospital C is less promising material in this respect. Although conversion could be attempted, this would be a false economy, as the ultimate cost of repair and refurbishment would probably outstrip the cost of building a new, purpose-designed facility.

Under all circumstances, before proceeding to refurbish or build, hospital administrations should consult the Public Records And Archives Department (PRAAD) on technical details such as capacity, storage conditions, shelving, and so forth.

If the record centre is to provide the medical records department with an organised outlet for out-dated records, there must be formal, systematic transfer procedures, backed up by properly-defined retention schedules and policies to enforce these. Setting up hospital record centres is thus not just a matter of capital outlay, but also a commitment to rigorous operational rules, an overall policy on old records, and a professional staff to see these through. It is, however, essential that this step be taken, as this is the only way to alleviate the intolerable pressure that medical records departments are experiencing, and have been experiencing for decades.

The most important principle, perhaps, of a record centre from the organisational perspective is that this should be absolutely detached from the records department. These two facilities have completely different functions, and should have separate staffs.

As the Record Centre also caters for external users, it would be desirable for the MoH/GHS to be responsible for appointing chief record centre administrators with overall managerial responsibility. Preferably such individuals should be Diploma-level records managers or archivists. To determine the exact staffing needs of individual record centres, I would advise that hospital authorities consult with PRAAD on matters regarding appropriate staff complements and appropriate jobs and functions descriptions.

8.8.3 Archives

Archives are to record centres what record centres are to medical records departments. Although archival storage imposes different administrative demands than does intermediate storage, the hospital archive can be seen as a logical extension of the record centre. As such, the two facilities functions best operate in tandem. This is another argument for putting in charge of

record centres highly-trained archivists or records managers with the necessary skills to run the archive as well. Provided, that is, that the volume of material is manageable for a single individual. If not, more than one archivist should be appointed.

As the survey revealed, Ghanaian hospitals make no allowances for longer-term value of medical records for academic and social research. The introduction of archives, operated by archivists trained to manage a research and reference centre, should rectify this state of affairs.

When setting up archives, hospitals should consult PRAAD, particularly with reference to policies, plans, and procedures to structure the archives and to ensure operational consistency. Points to take into account in this connection would be to make sure that hospital managements invest archivists with enough authority to act in the best interest of the records in their charge, without interference either from within or without the hospital. Besides the effort and dedication all this will take, prising out the necessary budgets for record centres and archives will undoubtedly prove to be the greatest single challenge to setting up hospital record centres and archives. All the same, I would advise hospital managements to make the strongest possible representations to government for the necessary funding, because this is the only route to streamlining institutional medical records services.

8.8.4. Special records coordination and planning committees

With such a broad agenda of storage, retention and related issues to address, I would strongly advocate that hospitals set up special committees or panels to work out how their particular institution can best manage the record department record centre archive chain. I would also recommend that the PRAAD consultant to the hospital, representatives from the regional and central CHIM and the MoH/GHS should sit on these on these bodies.

A reciprocal — possibly standing — committee at central level would be desirable. Its membership would in turn include representatives from the individual hospitals, who would report to their own hospital committees on prospective or proposed national policies, strategies, and procedural guidelines.

8.9 Reform logistics: pulling the threads together

8.9.1 Overview

In this chapter I have restated and drawn together the main issues arising from the case study, and presented recommendations, in the form of concrete proposals, for redressing the obstacles to efficient medical records services delivery which were identified.

Close analysis of my findings and observations indicated that these obstacles are not so much a question of stumbling-blocks to be addressed one by one, as a matrix of interrelated problems that require an integrated approach. In consonance with this, my recommendations, taken together, represent a holistic package of interactive initiatives to bring medical records management and performance up to standard. The proposals broadly concern:

- the introduction of computers into the medical records
- improving the quality of recorded information
- policy development and enforcement
- establishing archival and intermediate storage facilities
- medical records education and training provisions
- administrative structures and management arrangements at national and operational (local) level

Even the most cursory glance at this list shows that, computerisation aside, we are here concerned with a restatement of the primary objective of the medical record itself (to be a reliable carrier of patient information), and with the basic prerequisites for running a medical record operation at all.
To be tackled, in short, is that the Ghanaian medical record services have no formal framework. There are no centrally-defined structures or policies, or indeed nationally-set targets, to slot the function into the wider national information network. As a consequence of this hospital administrations, with no central directives to take into account, have failed to accord their record services due recognition as a core functional constituent of their organisation. These voids are reflected in every aspect of practice at the grass roots, institutional operational level.

8.9.2 Setting priorities

The big question arising which has not so far been addressed is which of the proposals outlined should take precedence? In other words, which should come first and why, and who should be responsible for what?

This question brings me to territory, namely blueprints for action, which have no formal place in this thesis. Nonetheless, it would be unnatural if, after an intensive four-year intellectual engagement of which this chapter, *Considerations for Reform*, is the culmination, I had not also been reflecting on the *how*, *what*, and *when*. In this light I would therefore emphasise that my suggestions in this respect should in no wise be interpreted as a formal attempt to schedule reform. If asked, though, I would say that the reform process should be phased on a short- medium- and long-term basis, rather than implemented in-the-round all at once.

For one thing, inadequate though the service is at present, it is essential that reform should in no wise interfere with the day to day routine work of record departments and, by extension, disrupt the hospital as a whole. This will undoubtedly also be a proviso for gaining sympathetic interest, as well as formal, centrally-ordained cooperation from hospital managements, who can be sure to feel that any service is better than no service. Second, it is important that the tradition of piecemeal, *ad hoc* decision-making should cease once and for all. Reform should therefore be staged in such a way that one step sets the framework and prepares the way to the next.

My own sequence for the introduction of my proposals would broadly speaking be along the following general lines:

Short term: Communiqué to all hospitals that the record function and services are to be reformed. → Establishment of central structural and administrative apparatus. → Establishment of local structural and administrative apparatus.

Medium-term: Formulation of a central policy and procedural framework, including provisions for enforcement → Formulation of institutional policy and procedural frameworks, including provisions for enforcement → Establishment of institutional administrative structures for high-quality data generation→ Clearing the decks gradually as a preliminary to new institutional records management methods and operational systems → Full implementation of new records management

and operational systems. → Certificate level education and training.

Longer-term: Diploma/Higher Diploma level Education. → Computers→ Archival repositorities.

This conception, as will be clear, is based on the premise that every step should provide the building-blocks for the next. My order of priorities is based on the following considerations.

The record service lacks a sense of direction. The creation of a structural apparatus for formulating national policies and objectives would resolve this, and thereby set the scene for everything else. Therefore the immediate short-term strategy should be to create the parameters within the service as a whole should be developed.

As poor management practices in the service are to a large extent rooted in lack of an overall lack of policy framework, this should be the next target, followed by the articulation of the administrative and procedural guidelines through which policy can be translated into action. After this, all the rest is a matter of detail on how to integrate national objectives and local needs.

Concerning the steps to be taken at central level — the CHIM, and so forth — as described in section 8.6.3, this should be straightforward enough. I would simply urge the MoH and GHS to establish their respective areas of responsibility as soon as possible and to delay no further in launching the first principles of reform. Pending formulation of the central policy and procedural framework, hospitals could in the meanwhile be preparing for the introduction of the institutional policy, and the structural and procedural apparatus for managerial and operational reorganisation. Preferably, record committees would be set up immediately. In any event, tentative lines of communication should be established between record departments and the hospital administration. To prepare the groundwork for what is to come, preliminary sorting of non-current stockpiles could begin immediately at a modest pace. The record department should be cleared of all non-current material, and old non-current stockpiles sanitised of material which is physically beyond restoration and preservation. At the same time existing storage facilities should be cleaned up and the remaining non-current material arranged in some logical order pending the formulation of retention and disposal schedules. Preliminary discussion of new numbering systems could begin, together with a review of existing shelving capability. MROs could start to monitor the quality of patient notes entries more closely as a

run-up to the stringent criteria to come. Data Quality Unit (i.e. if this is established) and the Public Records and Archives Administration must work in patnership to this effect. These are but a few suggestions for the initial steps of a comprehensive, longer-term agenda for reform.

The development of formal medical records education and training at the Diploma level and beyond must also take a back seat for the moment. Arrangements to this effect must be considered after the Certificate programme has fully taken off. Initiatives to set up Diploma courses should rest with the Staff Training and Development Division of CHIM in collaboration with the MoH, GHS and the University of Ghana. In-service training and continuing education programmes should be organised by individual hospitals on a CHIM-backed basis.

As for the longer-term objectives, no time scale can at present be set for computerisation of the medical record service. As and when the service can develop no further without this, independent experts will have to be called in to assess what is needed as a basis for government to proceed with an investment programme. I would propose that the CHIM Information Technology Unit be responsible for strategic planning in this respect.

About archival repositories no more need be said than what I have already discussed in Chapter 6 and this chapter.

8.9.3 Facing the challenges of reform

At central level my proposed agenda should not cause undue strain. The capability is already there; all that needs to be done is some thorough brainstorming, after which the new bodies and agencies, once established, will no doubt slot into the system, bar an initial hiccup or two.

For hospitals, however, the agenda may seem daunting at first sight. To make light of this would be unrealistic. What I would also say, however, is that once the plunge to initiate improvement is taken, the burden of carrying this through will prove less onerous than has the strain of coping with the present situation. Furthermore, the instant the first small victory is won, enthusiasm and a sense of accomplishment can be counted on to carry the momentum forward faster and faster.

8.9.4 Future research agenda

The findings of this study are pointers to a few recommendations for future research efforts.

The first effort should be directed toward an empirical investigation of the present quality of data in patient records. The study unearthed a continual problem with records completion, deadlines, and accuracy and consistency of diagnosis. This information was obtained from MROs and CHIM officials. As this issue fell outside the remit of my study I am not in a formal position to comment. (Doubtless, these views could reflect bias or prejudice; but on the other hand the interviews were one-to-one, and there was complete consensus. Furthermore, as this matter was raised a propos, the interviews did not reveal the true dimensions of the problem in full.) To gain objective insight into this problem, an empirical study is recommended.

I would suggest that any empirical study of data quality should look at coding practices as well as the quality and of medical record documentation. The two teaching hospitals could be used for this study which may require a group approach, and should be based on a representative sample of patient records held in medical records departments.

9 Conclusions and summary of recommendations

9.1 Conclusions

The health sector in Ghana has since 1993 been undergoing fundamental, broad-based and far-reaching organisational and structural reform. The main targets of this medium-range programme, which is now in its second phase (1997-2001), are the expansion and development of basic medical facilities and the improvement of overall standards of care and efficiency. The principal mechanism for change has been reorganisation of the Ministry of Health and the creation of a *Ghana Health Service*. The latter is due to become operative at the end of 1999 and will be run as a decentralised service, leaving the Ministry of Health to concentrate on national issues of policy development, regulation, monitoring and evaluation.

Improved information management is perceived as a key strategy to support the reform process itself and to underpin the successful provision of health care services in time to come. With this has come the recognition that information is a vital resource which needs to be managed in its own right.

This new priority on health information makes it desirable to clarify the position of the medical record within the information chain. Until now the dual status of the medical record as an essential element in the care of the individual patient and as a vital source of morbidity and health services data has barely been considered. By this token insufficient importance has so far been attached to the central role which medical records have to play in the implementation of both of the two main reform objectives, and, in the longer term, in future resource allocation, planning, performance review and related matters. In fact, medical records data can be considered as the raw material of the health information system.

This study, which examines current practices of medical records management in seven representative regional and teaching hospitals, comes at a time when the medical record function in Ghana is palpably in need of reconstruction in order to cope with the challenges posed by the current

health sector reforms. Techniques, procedures, and facilities have been examined, disclosing a large number of hindrances and obstacles to efficient and effective service delivery, for some of which ideas for improvement have been put forward. In this context, it is hoped that the study might provide the necessary background for an informed discussion. The conclusions set out in this chapter are based on a synthesis of the findings of the case study.

My investigation has focused on a number of broad issues, including the reorganisation of records departments, the organisation and control of recorded information, and patient confidentiality and privacy. The study revealed that present arrangements for managing medical records are a legacy of a bygone age; they are trying to accommodate methods and systems geared to the patient turnover and medical procedures of forty or fifty years ago. While the systems in the regional hospitals are close to breaking point the teaching hospitals have been introducing improvements, but not to a sufficient extent to adequately cope with the rising and changing demands of the health service. Broadly speaking, records management and provisions in all the hospitals surveyed are symptomatic of poor institutional practice resulting from piecemeal development rather than foresight and considered overall planning. Development, it would seem has more often than not been a question of responding to crises and short-term needs, with medical records staffs resorting to *ad hoc* initiatives with the approval of, but rarely cogent direction from, hospital administrations.

The study formally established that the medical record systems in Ghanaian hospitals are entirely manual. Paper is the standard medium for recording, storing, and communicating information, and this is unlikely to change in the foreseeable future. In the course of my investigation, hospital records personnel often cited this as the main cause of inefficiency in services delivery, a view shared by the central authorities. Contrary to mainstream opinion, however, I would argue, and hope to have justified in this study, that the reason why medical records systems fail to perform to expectation is not because they are manual in nature, but because the medical record function is suffering from laisser-faire and lack of management commitment, as exemplified by a virtual absence of central guidance in the form of policies and procedures, as well as serious under-investment in human and material resources. It is this situation which is responsible for medical records mismanagement across the entire health service.

Quality improvement and cost containment are the major concerns of the current reform. Quality assurance; utilisation management; monitoring appropriateness, effectiveness and outcome; clinical practice guidelines; and

value purchasing are all prominent responses to challenges of quality and/or cost with which the health sector is grappling. Each of these initiatives increases legitimate demand for complete, accurate, readily accessible patient data. But the survey revealed that the quality of recorded information in patient records appears to be generally suspect, a scenario which probably prevails in all health institutions, not only those surveyed. Hence, if reform objectives are to be met, something will have to be done to enable health institutions to maintain medical records that are documented accurately and in a timely manner, are complete, and readily accessible for prompt retrieval of information, including statistical data.

Before proceeding to my main findings and solutions for some of the most urgent obstacles to efficiency in the Ghanaian hospitals record services today, I would like to digress, as a preliminary, with a few words on the subject of computerisation as an instrument of reform. This is an area in which I would urge exercise of the greatest caution, the more so as it is already on the longer-term national reform agenda. Undeniably, innovative state of the art computer applications are being used to great benefit in medical records management in hospitals in Britain and elsewhere. Undeniably, too, such well-established institutional computerised systems would work to equal advantage in Ghana. To begin with, the introduction of computers would be beneficial in that this would:

1. speed up the generation of statistical reports for management use
2. establish the master patient index
3. assist in medical records procedures
4. generate and facilitate retrieval of more detailed information which is useful for evaluation programmes and research purposes

However, when one comes to examine these anticipated results more closely, it becomes apparent that not all the added value is necessarily entirely contingent on the use of computers. Where computers, as is well known, come into their own is in enhanced results in terms of acceleration and simplification of more elaborate procedures. And although some may dispute this view, in my opinion it should not be assumed that the problems with the manual records systems can be resolved by the introduction of computers alone. More bluntly, developing and using the familiar manual systems and procedures to full potential should be perceived as the essential point of departure towards introducing computer backup. As matters stand, superimposing computer applications on ineffectively managed manual

systems would in all probability only aggravates existing problems. Nor can any realistic appraisal of computerisation needs be made until things are up and running as well as they can with present means. In this light, computers should not be seen as an instrument of change, but as the icing on the cake. The progress of computerisation in the developed countries is littered with the debris of indiscriminate purchasing policies and false starts. Ghana should in this respect take its cue from others' mistakes, past and present. At this stage of development wholesale investment in potentially superfluous materiel and human resource for the record function — when the technology is besides still constantly improving and comparatively still over-priced — can be anticipated to lead to catastrophically costly mistakes which the health sector can ill afford.

To conclude, I hope I have made very clear that on the basis of what I observed in the study I see the introduction of computers as an issue and area of expertise distinct from my own concern, that is reform of the record function in its present state, and that in my view any aspirations to computerise ought for now to remain on the back burner.

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One of the more compelling challenges facing hospitals is how to deal with the endemic problem of older records clogging up records departments and other storage areas. As the survey revealed, there is virtually no consensus among hospitals concerning at what stage, how often, and to what extent to save patient records. In endeavouring to gain control of non-current records stockpiles the teaching and regional hospitals have all practised a piecemeal approach. This philosophy has failed to produce the desired results. Bottlenecks are shifted down the line because makeshift strategems, however enterprising and creative, are bound to fail simply because they do not slot into a coherent, total records programme. Records were and continue to be indiscriminately destroyed in bulk, irrespective of their future value, as and when paper mountains threaten to turn into avalanches.

Clearly the issues surrounding the preservation of patient records are too critical for such a haphazard approach. By all the canons of records management, lack of storage space can never validate the wholesale consignment of records to destruction. Valuable material should under all circumstances be saved. Furthermore, as the volume of new, space-demanding patient records generated increases apace, sooner or later a day of reckoning will come of which the consequences are too intolerable to even

contemplate. Rather than await that moment, remedial steps should be undertaken now. In Chapter 6, in which I discussed this problem and possible courses of action, I advocated sampling as a feasible, cost-effective way for the regional and teaching establishments to resolve their problems of storage space, without throwing the baby out with the bathwater.

From this naturally arises the issue of at long last legitimising the position as to archival and other longer-term storage interests. This would remove what has to all intents and purposes been an insurmountable barrier to any records related historical research. Here effective liaison between individual health institutions and the national Public Records and Archive Administration Department, (PRAAD) is an absolute imperative. Under current legislation the PRAAD mandate places no restrictions on its potential competence to assist in establishing retention and disposal schedules in the form of policies, guidelines, and protocols that would set the framework for a holistic approach to the management of patient records. For institutional medical record-keeping adjustment to this kind of order will demand not only an organisational reorientation, but a certain amount of psychological readjustment. Where records managers have until now enjoyed unchecked autonomy on their patch, they will have to learn to knuckle down to stringent observance — under PRAAD supervision — of the procedural rules and regulations imposed to achieve standardised performance and results. Response to any subsequent new archival measures will have to be prompt and effective in order to ensure that in future precious space and costly man-hours in records departments will never again be wasted on unmanageable accumulations of obsolete patient records.

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In every aspect of professional medical record-keeping a commitment to patient privacy is acknowledged as a paramount principle. As the survey established and I described in Chapter 7, confidentiality laws are lacking in Ghana. Current legislation focuses on the records of psychiatric patients only. Otherwise, the established medical ethic provides the chief safeguard for confidentiality. This study advocates the passing of more confidentiality laws to cover the inviolacy of all patient records.

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Organisationally the medical record function is in urgent need of drastic overhaul. The solution to all the problems I identified in the case study lies in the development and implementation of medical records management strategies which take an integral, programmatic approach to the creation and maintenance of records in conformity with the *life cycle* principle of records management. The backbone of this approach will have to be effective institutional arrangements supported by coherent directives from central level. In Chapter 8 I outlined a set of structured proposals to establish the foundations for the development of efficient and effective medical records management at all levels of the health care system.

Central to reform of the function is that at institutional or local/operational level hospital administration should become accustomed to perceive the medical record service as one of their prime responsibilities. This awareness should be made to filter down through the hospital hierarchy as a whole. To effectuate this, hospital managements and senior medical staff in partnership with medical records officers should therefore internally promote the importance of committing care and resource to the evolution and development of an efficient records service. Top management should also do all it can to ensure coordination and cooperation in working relations between the different hospital units and the medical records department. Above all, any hospital management planning to initiate a comprehensive medical records programme should develop this in consultation and partnership with PRAAD in order to ensure that soundest principles of records life management are consistently applied throughout and in every detail of the process.

It cannot be reiterated often enough that initiatives at local level will need support at national level. In my proposals in Chapter 8 I have therefore provided for the creation of two national regulatory and coordinating bodies to lend formal, structured backup to hospital-generated medical records reform programmes.

First, I advocate the establishment of a central government mechanism to provide a pivot and frame of reference for hospital initiatives. How this agency fits into the overall picture I define below under *Policies and procedures.*

Second, I advocate the institutionalisation of medical record-keeping as an autonomous profession in the form of a strong, independent, national professional association. In Ghana there exists at present no such body to (a) oversee codes of conduct, and (b) provide the profession with a platform, a public niche from which to assert an authoritative, collective voice. The root cause of this vacuum is that at independence medical records training was

not integrated into the structures of formal, tertiary education, but the colonial convention of sending prospective records officers overseas continued. Not being normally anchored in the system has left medical records people out on something of a limb, without the group ethos that comes of a shared training. (By contrast, Britain has the Institute of Health Record Information and Management (IHRIM), and the U.S the American Health Information Management Association (AHIMA), both officially recognised bodies with a mandate to provide leadership and the resources and influence to represent the function and its interests in the corridors of power.)

The creation of such two authoritative bodies regulating respectively the service and the profession also dovetails with the awareness-raising within hospitals I spoke of earlier, by reinforcing the status of medical record-keeping in relation to other areas of professional expertise within the institutional environment.

In developing my recommendations and proposals in Chapter 8, I have sought to integrate all the principal instruments which the establishment, support, and maintenance of an effective and efficient records function demands. While stressing the urgency of reform at local/operational level, I have at the same time also consistently sought to emphasise that the individual institutional record system exists to feed into the wider, national streams of medical records information and public interests. For the collective medical record services to perform well as a totality it is therefore important that coherent reform of the function should be based on a balance between the promotion of institutional enterprise and the creation of central mechanisms to guide, support, and monitor these in accordance with the overall targets and objectives of the on-going national health reform programme. For this reason I have tried to ensure that my proposals allow for very open lines of communication between hospital administrations and the central institutions which ultimately bear the burden of responsibility for the country's medical record services, and whose funding and allocations and policies will ultimately set the level of performance which the medical record service is required to deliver.

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Here follows a summary of the main proposals set out in Chapter 8, in which specific actions are targeted at specific problems emerging from my case study findings (Chapters 4-7).

9.2 Summary of recommendations and proposals

9.2.1 Records management

Improving the quality of recorded information

To overcome deficiencies in the quality of recorded information, I recommend that:

- Medical records departments, with the assistance of hospital administrations andrecords committeeprovide written policies, standards and procedures, including guidelines on the documenting and completing of records (see 2. *Operational level*),

- Medical records officers, supported by records committees and senior medical staffs, provide regular orientation sessions for medical, nursing, and paramedical staffs on the importance of accurate record-keeping

- Senior doctors routinely supervise and verify the accuracy, adequacy, and legibility of all patient information documented by their juniors; or attending doctors be made responsible for the qualitative review of records of their own patients; or hospitals must device some method of independent evaluation of the records by selected members of the medical staff. In this case when a doctor has completed the records of his patients, the records are ready for review by those designated to serve in this capacity.

Managing older records

As the survey revealed, no hospital has so far managed to avert accumulations of non-current records from building up. Hospital managements should take comfort from the fact that there is a well-established, universally recognised solution to this problem, namely a records disposal system. This is my advice on how hospitals can constructively set about putting in motion such a system:

- Health authorities should consult Public Records and Archives Administration Department (PRAAD) and work out, under the umbrella of already existing legislation, a working partnership aimed to develop

retention and destruction schedules tailored to the individual institution's specific needs. More importantly PRAAD must be involved in the development of a total records management programmes for health institutions.

- Any records retention programme should be supported by a structure of policies and procedures, as provided for under the Public Records Act of 1996

- Legal advice should be sought in the development of retention schedules

- Once retention schedules have been established, hospital administrations should assume responsibility for ensuring that rigorous procedures are put in place for periodic, routine culling and destruction of obsolete records that have outlived their stipulated retention terms.

- To secure the efficient operation of retention schedules, it is proposed that these should be coordinated and overseen by medical records committees (see 2., *Operational level*).

- Hospital managements should actively support and cooperate in maintaining retention and destruction schedules by:

1. seeing to the enforcement of records policies and procedures
2. providing the necessary logistics.

- To ease congestion in records departments health managements should make provision for a record centre, or a viable alternative where this is not possible, to facilitate the smooth transition of records from active use to their ultimate destinations.

- Record centres should be operated as part of an overall records management programme.

9.2.2 Organisational and structural arrangements

Operational / local level

As established in the case study, poor standards of hospital records management may in part be blamed on the lack of an established

administrative apparatus to provide leadership and guidance. To provide an efficient and effective records management at institutional level, the following remedial actions are recommended:

Medical Records Committees

These should be established in all hospitals as an administrative initiative. The composition of the medical records committee should invariably include, but not be limited to, the following:

1. the Medical Record Officer
2. the Health Services Administrator
3. the Head of Nursing Administration
4. a representation of the medical staff

• It is recommended that the representative of the medical staff be made the chairman and health service administrator the medical record officer the secretary of the Committee. Arranging meeting must be a joint responsibility of the chairman and secretary.

• Working within detailed terms of reference, the general mandate of an institutional medical records committee should be to take broad-based responsibility for assisting in the development and maintenance of effective and efficient medical record systems. Records committees should work within detailed terms of reference.

Policies and procedures

• Hospitals should develop and maintain stringent medical record policies and operational procedures.

• Once established, these should be published in the form of clearly set out manuals or handbooks for institutional use.

• To ensure consistency across health institutions, records policies and procedures should be developed in conformance with a national policy framework. In this context it is proposed all policy issues should be settled in close consultation with CHIM, as the body responsible for determining

central guidelines for all health institutions to follow (see below, *National level*).

- All policies developed at institutional level should be ratified at highest level within the GHS.

- Enforcement of institutional policies and procedures should rest with medical records committees, which should also periodically review these for continued relevance to changing norms and circumstances.

- Institutional policy formulation and the preparation of policy and procedural manuals or handbooks should be the responsibility of medical records committees.

Institutional organisational charts

- No hospital record department should be without an organisational chart to help clarify the individual's tasks and areas of responsibility.

- The organisational chart should be functional in that it should comprehensively reflect the various functional units of the record department, and clearly demarcate lines of authority and responsibility.

The development of a workable organisational chart requires the following preliminaries:

1. The MoH/GHS should correct existing anomalies in staff structure
2. Job functions should be closely analysed to ensure unambivalent job descriptions
3. Staff grading and structures should closely parallel the responsibilities of job functions
4. Only staff with the appropriate level of qualifications should be recruited for existing vacancies

Evaluation and monitoring

Records departments must establish minimum operational standards as a yardstick for performance. Standards should be reviewed from time to time as and when required by circumstances and developments.

National level

- All institutional reform initiatives should be assured of central level support through the agency of a national coordinating body. To this end it is proposed that the Centre for Health Information Management (CHIM) should be re-organised and mandated to play this role.

- A new, reorganised CHIM should preferably become a sub-department of the Ghana Health Service (GHS) with a large measure of operational autonomy.

- Alternatively, a re-organised CHIM could operate, with a due measure of freedom, under the GHS Policy, Planning, Monitoring and Evaluation Division (PPMED).

- The reconstituted CHIM mandate should go well beyond the Centre's traditional function of compiling and collating biostatistical data for the health service. Broadly speaking, CHIM should provide leadership in the development and coordination of a national framework for the development of comprehensive records and information systems.

- More specifically, CHIM should guide and direct this development towards the consolidation of a coherent, overall records and information system which can reliably service the health sector. Detailed terms of reference should be provided by the GHS.

- Given this broad-based mission, the key attributes of a re-organised CHIM should include:

1. sufficient authority to make and implement decisions to be observed nationally
2. a scope of activities with a national orientation
3. representation of medical records departments at central level

- Organisationally CHIM should have, at the very least, the following sub-divisions:

1. Medical Records
2. Information Technology
3. Training

• To ensure that it has sufficient latitude to perform effectively and respond flexibly to situations as they arise, it is further proposed that a re-organised CHIM should be invested with:

1. a large measure of autonomy
2. adequate resources
3. authorisation to attract, as and when needed, additional staff with the requisite levels of education and expertise

Regional Organisation

• The activities of CHIM should also be represented at the regional level. Regional branches mandated to translate national policies into institutional actions plans should therefore be established in each of the country's ten administrative regions.

• In particular, the regional offices should be responsible for drawing up guidelines, protocols, and procedures to suit the institutions within their areas of jurisdiction.

• CHIM regional branch offices should also serve as a link between local institutions and CHIM headquarters.

• CHIM regional branch offices should coordinate all activities within the region, implement institutional programmes, and provide feedback to both local institutions and CHIM headquarters.

9.2.3 Education and training

The survey revealed that Ghana has no formal education and training programmes for medical records personnel. What training mechanisms exist were found to be far too low level and lacking in systematic organisation to be of much benefit to recipients. A well-organised training structure is required to redress this situation. Proposed is that:

• The Ministry of Health give serious thought to the Korle-Bu proposals aimed at developing a professional certificate-level, hospital-based training programme for medical records personnel

• The appointment of a special committee to review these proposals for further action

• High-calibre staff should be attracted into the senior positions of the medical record service by opening up high-level formal training options alongside the certificate programme advanced by Korle-bu. A — possibly postgraduate — training programme leading to the award of a Diploma is recommended

• This prospective Diploma programme should be pitched to offer advanced training in medical records practice and have a management flavour in keeping with the more responsible functions candidates will be destined to fulfill

• University involvement in the development of a Diploma syllabus is indispensable. In this connection it is strongly advocated that the Training Division of the Ministry of Health should liaise with the Department of Library and Archival Studies in the University of Ghana

• It is essential that side by side with formal training schedules, provision should also be made for continuous education in the form of short refresher courses, seminars, and workshops to keep records practitioners abreast with current developments. Responsibility for the organisation of continuous education programmes should fall under CHIM, with funding either from the MoH or GHS.

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9.3 Final remarks

Carrying out all these proposals to a successful conclusion will require more than policy planning, organisational measures, and funds. In the course of this study, when describing the shortcomings of the medical records function in Ghana, the cause of at least some of the misdemeanours contributing to the

low esteem in which the service and its practitioners stand have had to be attributed to factors outside the control of under-trained medical record staffs who worked to death under impossible, structural conditions. We have seen registration schedules running aground because the man in the street is not acculturated to sticking to scheduled appointments. We have seen total operational chaos in medical record departments because the doctor in his ivory tower is not acculturated to sticking to commonsensical lending — and returning — rules imposed from 'below'.

What is needed above all to change the face of Ghanaian medical record-keeping is changes of attitude. The top echelons of power need to be more aware that medical record information fuels the national information systems as blood fuels the heart. Institutions need widespread willingness from all concerned (that is, virtually the entire hospital) to put the requisite policies and organisational innovations into effect and to respect these ever after. Medical records departments, which have too often kept going on a diet of dogged optimism and quiet commitment to the function, need to be energised into a new sense of future and purpose.

I hope that my study will contribute to the reform of the medical record function that my sponsors and I had in mind. Certainly thinking about and writing this thesis in London, far away from home, has changed me.

When I embarked on this project four years ago, I anticipated a more or less straightforward path from setting my study parameters, researching the literature and visiting some foreign flagship hospitals to know the established ways of doing things, to collection and analysis of my Ghanaian data, evaluation of my findings against how things ought to be, and then translating my conclusions into a tidy package of perceptive observations and clear-sighted solutions. Of course I cannot help but wish that this has in some measure been achieved.

The entire process of reflecting on complexities of change and transition which have in different ways played a role in bringing about the current state of medical record-keeping in Ghana today — the evolution of the medical record itself from mysterious, Palaeolithic markings in hidden caves to computer printouts; how and why particular conventions emerged to grow into universally accepted norms; how societies change; the history of Ghana since independence — have made it increasingly vivid to me that when we refer to change we are speaking of transformations without end.

During my time in Britain I have seen both the Major and Blair governments involved in continual change to the NHS which was created in 1948. At the time of writing the *Ghana Health Service* has yet to celebrate a

single anniversary. Considerable work is to be accomplished and practical difficulties overcome. However, with proper coordination, making the best of available resources, and a healthy grip on realities there is no reason to doubt that the Ghanaian medical record services have the capacity and potential to be instrumental in the creation and maintenance of a healthful society.

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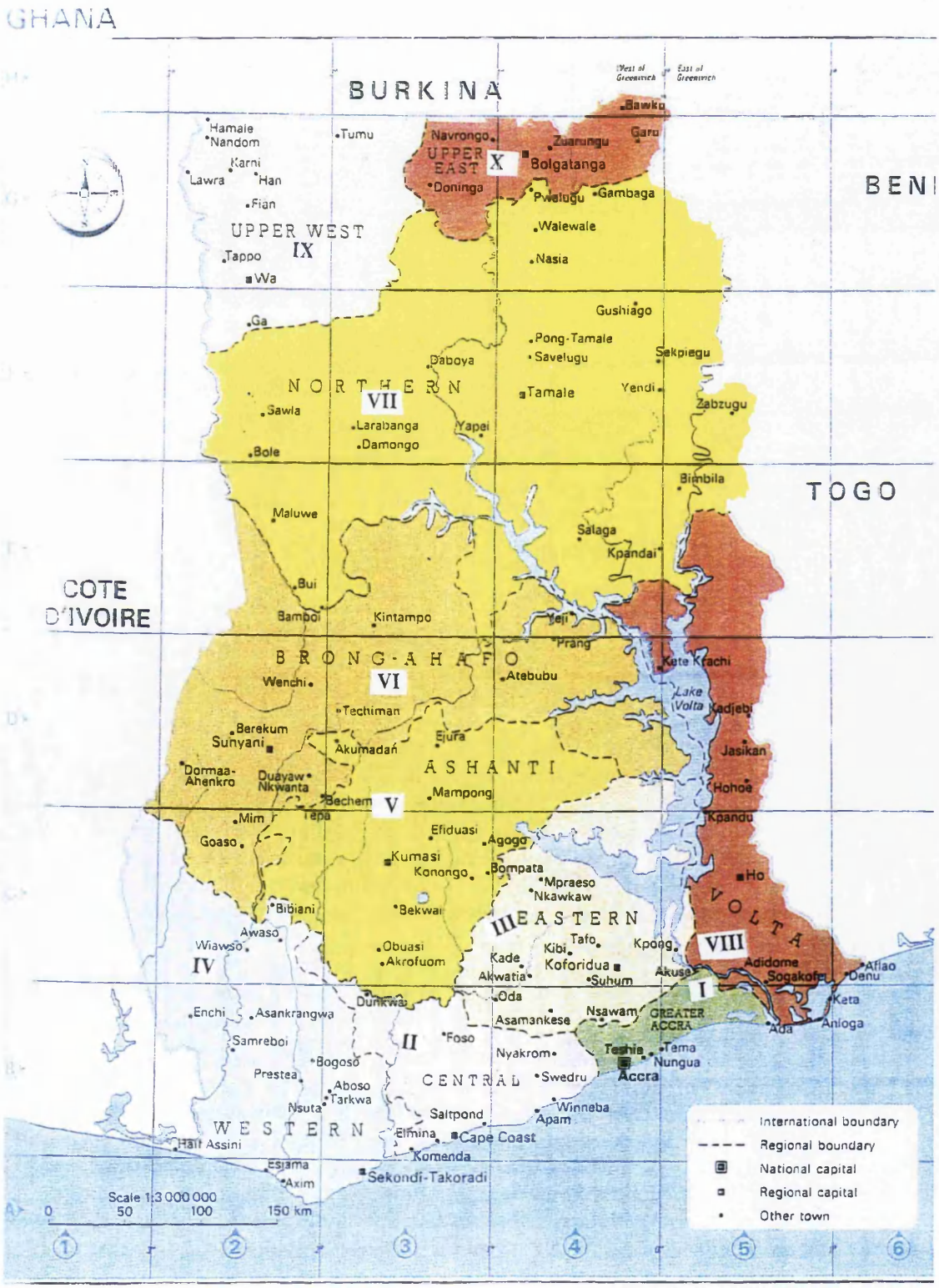
Appendix 1

Map of Ghana showing the ten administrative regions of the Country



Social Studies Atlas for Ghana, Longman Group UK Ltd.

APPENDIX 2

Regional Location of Teaching and Regional Hospitals in Ghana

HOSPITALS	TOWN/CITY	REGION (Refer to Appendix 1)	IDENTIFICATION ON MAP
Korle-Bu Teaching Hospital*	Accra	Greater Accra	I
Komfo Anokye Teaching Hospital*	Kumasi	Ashanti	V
Cape Coast Central Hospital*	Cape Coast	Central	II
Koforidua Central Hospital*	Koforidua	Eastern	III
Effia-Nkwanta Hospital	Sekondi-Takoradi	Western	IV
Sunyani Central Hospital*	Sunyani	Brong-Ahafo	V
Tamale Government Hospital*	Tamale	Northern	VII
Ho Hospital	Ho	Volta	VIII
Wa Regional Hospital	Wa	Upper West	IX
Bolgatanga Regional Hospital	Bolgatanga	Upper West	X

* Hospitals included in the survey.

Appendix 3

Sample of patient records forms used in Ghanaian hospitals. For the purpose of illustration, forms from the Korle-Bu Teaching Hospital have been used. Forms are designed to MoH specification

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1. Identification (front) sheet
2. Discharge summary
3. M. R. 12 Surgical Out-Patient
4. Ophthalmic Out-Patient
5. Ear, Nose and Throat (E.N.T)
6. Dental
7. Orthopaedic Out-Patient
8. M. R. / 19 Medical Out-Patient
9. M. R. / 14 Continuation Sheet
10. M.H.F / 27 X-Ray Request form
11. Request for Laboratory Services
12. M. R. / 16 Report Mounting Sheet
13. Investigation Chart
14. Treatment Sheet
15. Nurses Notes
16. Temperature Chart
17. In-Patient Treatment Costing Sheet
18. Fluid Intake - Output Chart

MINISTRY OF HEALTH

Front Index Sheet

Surname	First and Middle Names	Unit No.
Address	Occupation	Employer's Address
Date of Birth / Age / Sex	Previous Admissions Month..... Year..... Month..... Year.....	
Nearest Relative Address	Relationship	
Phone No.		
Maternity Only	Husband's Name and Address	
Date and Hour of Admission	Attending Physician and Department	Ward

Provisional Diagnosis (To be recorded within 24 hours after admission)

.....

.....

.....

.....

Final Diagnosis	Code Number
.....	.....
.....	.....
.....	.....
.....	.....
Complication and Associated Disease (Post-admission or post-operative)	
.....	.....
.....	.....
.....	.....
Operation	.....
.....	.....
.....	.....
.....	.....

Date of Discharge..... Dept. Trans to..... Dept. Discharged from.....

.....

Result on Discharge	Cured	Improved	Not Improved	Died	Inpatient Days	Fees Paid & Receipt No.

Autopsy

.....

.....

Consultation 1. 4.

With 2. 5.

3. 6.

.....

Signature of Attending Physician

.....

Approved

Physician

REGD. No.

DISCHARGE SUMMARY

SURNAME (Block Letters)	FIRST NAMES	SEX	AGE

DEPARTMENT	WARD	X-RAY NUMBER/REF.

DISCHARGING PHYSICIAN/SURGEON	DATE OF ADMISSION	DATE OF DISCHARGE

FINAL DIAGNOSIS

DATE:

SUMMARY

KORLE BU TEACHING HOSPITAL

DOCTOR

SURGICAL OUT-PATIENT

SURNAME (Block letters)	FIRST NAMES	REGD. No.

DIAGNOSIS	X-RAY NUMBE

DATE	CLINICAL HISTORY

DATE	CLINICAL NOTES

Ref. No. 28 form MR 12

DOCTOR

OUT-PATIENT

SURNAME (BLOCK LETTERS)	FIRST NAMES	REGISTERED No.

DIAGNOSIS

DATE	HISTORY

	V.R.					V.L.				
	Sph.	Cyl.	Axis	Prism	V. A. with Glasses	Sph.	Cyl.	Axis	Prism	V. A. with Glasses
DISTANCE										
READING										

DATE	CLINICAL NOTES

DOCTOR

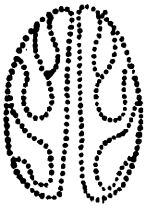
E. N. T.

SURNAME *(Block Letters)*	FIRST NAMES	REGD.NO.

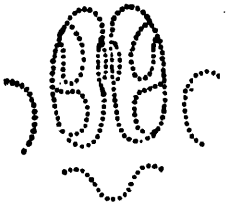
DIAGNOSIS	X-RAY NUMBERS

C.C.O. SYMPTOMS	PREVIOUS AND FAMILY HISTORY

Fauces



Nose



N. Phar.

Phar.

Tonsils

Disch.

P.n. Disch.

Cacagus

Sept

Olf.

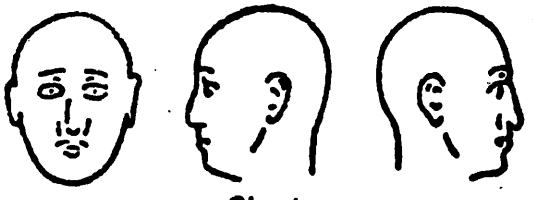
Teeth

Cacos.

Headache

Etor.

Larynx

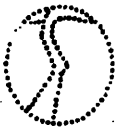


Glands

Treatment

R	EARS	L
	Meatus	
	Disch.	
	Pain	
	Tinnitus	

M T



	Voice	
	Watch	
64 32	T. F.	32 64
	C	
	256 T.F. 256	
	A.C.	
	B.C.	
	A.B.C.	
	Rinne	
	W	
Gellé		Gellé
	Upper Limit	

Paracus

Nausea

Vertigo

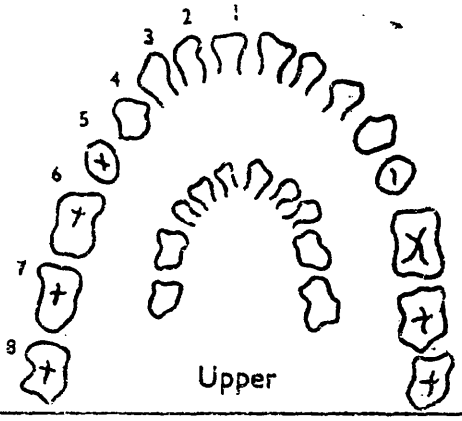
Nystag

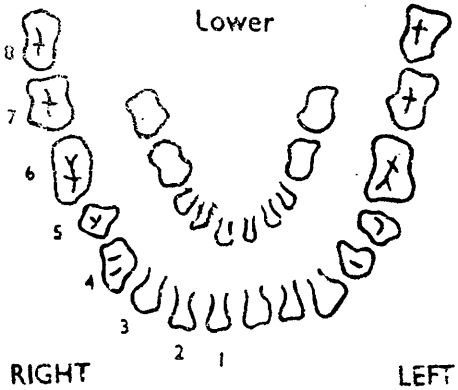
Falling

SURNAME (BLOCK LETTERS)	FIRST NAMES	REGISTERED N

DIAGNOSIS	X-RAY NUMBERS

RIGHT LEFT





RIGHT LEFT

CLINICAL HISTORY

DATE	TREATMENT

DOCTOR	MEDICAL OUT-PATIENT

SURNAME (BLOCK LETTERS)	FIRST NAMES	REGISTERED NUMBER

DIAGNOSIS	X-RAY NUMBERS

HISTORY

CLINICAL NOTES

MINISTRY OF HEALTH

DOCTOR

CONTINUATION SHEET

SURNAME (BLOCK LETTERS)	FIRST NAME	REGISTERED No.

DIAGNOSIS

DATE	CLINICAL NOTES

Form M. R. /14

MINISTRY OF HEALTH, GHANA

X–RAY REQUEST FORM

Name of Patient.....Age.....

Ward/Address.....

Brief Clinical History.....

.....

.....

Radiological Investigation Requested.....

.....

.....

.....

Medical Officer/Dr.....

Station/Address.....

X-Ray Serial No.....

Previous Serial No./Previous Exam. Details.....

.....

.....

.....19.....

Ref. No. 5 Medical Hospital Form 27

REGD. No.	_____HOSPITAL REQUEST FOR LABORATORY SERVICES Bacteriology ☐ Haematology ☐	PATH. No.

Chemical Pathology ☐ Histopathology ☐ Parasitology ☐

Indicate by a tick department required

SURNAME *(Block Caps)*	Other Names	Age	Sex
Clinician	Ward or Dept.		

Clinical Summary and Diagnosis

Material and Tests

Date of Request	Signature of Doctor

REPORT *(for Laboratory use only)*

Jaleda Ventures
Tel: 666998

Report Mounting Sheet

Form MR/16

SURNAME (BLOCK LETTERS)	FIRST NAMES	REGISTERED NUMBER

INVESTIGATION CHART

NAME OF PATIENT:.....

DATE	REQUEST	DATE SAMPLE TAKEN

TREATMENT SHEET

NAME.. AGE..

SEX.. WARD..

DRUGS	TIME													
	6													
	10													
	2													
	6													
	10													
	6													
	10													
	12													
	2													
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	6													
	10													

Printed by Best Time Press, Accra

KORLE-BU TEACHING HOSPITAL

NURSES NOTES

USE RED INK FOR NIGHT NOTES

Name:.....

Ward:.....

Medical Record No. .....

Sex:.....

Age:.....

Doctor:.....

Diagnosis:.....

HOSPITAL REGULATIONS: The signature of a nurse shall accompany each entry.

Date	Hour	NOTES

4 HOUR CHART

Name: .... Age: ....Ward: ....C. P. No.: ....

Date							
Time	2 6 10 2 6 10	2 6 10 2 6 10	2 6 10 2 6 10	2 6 10 2 6 10	2 6 10 2 6 10	2 6 10 2 6 10	2 6 10 2 6
Temperature 105							
104							
103							
102							
101							
100							
99							
98							
97							
Pulse Rate 160							
140							
120							
100							
80							
60							
Respirations 40							
20							
Bowels							
Urine							
Day of Disease							

Printed by FRANVIAN VENT

KORLE-BU TEACHING HOSPITAL

In-Patient Treatment Costing Sheet

Patient Name: ______________________ Admitted: ______________ Discharged: ______________

Patient Number: ______________________ Type of Patient: ________ Paying, ______ Free, ______ Corp.

Hospital Ward: ______________________ [Corp Name: ________________ Debtor No: ______]

Date	ITEM				Provider's Signature
	Description	Qty	Unit Price	Amount	

PRINTED BY: ERISON PRESS LTD. ACCRA. TEL: 301596.

FLUID INTAKE - OUTPUT CHART

Name..

Age.............................. Sex....................... Ward...

Diagnosis...

Date and Time	INTAKE		OUTPUT							
			N.G. Suction			Urine		Stool		
	Kind of Fluid	Amt.	Time	Amt.	Colour	Time	Amt.	Time	Amt.	Colour

Printed by Best Time Press, Accra Tel: 220230

Appendix 4

Interview schedule

For Hospital (Health Services) Administrators

SECTION A

General Questions on Hospitals: Organisation, Management, Functions and Services Provided Ect.

1. Name of hospital / health facility
2. Type of hospital: (a) General (b) Specialised (c) Teaching (d) Other.
3. When was this hospital / health facility established and by what authority?
4. Name the units / divisions /departments / in this hospital and briefly state the functions of each.
5. What services are provided by this hospital?
6. What are the aims and objectives of this hospital?
7. Which category of the population does this hospital serve?
8. Does this hospital have an organisational chart? (a) Yes (b) No
9. Describe how this hospital is organised and administered / managed. State areas of responsibility and authority relationships as defined by the organisational chart.
10. If this hospital has a governing body, state its functions and responsibilities.
11. How many wards are there in this hospital?
12. What is the maximum bed capacity?

13. How many new patients are admitted annually?

14. Does this hospital have any functional relationship with other health care facilities? (a) Yes (b) No

15. If Yes, describe this relationship

16. How is this hopital funded?

SECTION B

Questions Relating to Medical Records Operations

1. Who is in charge of the medical records department?

2. How many medical records support-staff do you have in this hospital? State their background, level of education and specialisation.

4. State the functions of the medical records department.

3. What training opportunities, (if any), are there for medical records staff? Describe.

5. Which other units / divisions / departments / are involved in medical records issues?

6. How do they relate with the medical records department?

7. Is there a medical records committee or a body which oversees the functions of the medical records departmant? (a) Yes (b) No

8. If Yes, what are its duties and responsibilities?

9. Do you know of any statutes / regulations / legislation regarding medical records?

10 Is the medical records system in this hospital manual or computerised?

11. If manual, do you intend to computerise the system? Why and when?

12. In what ways do you think the use of computers can assist the operations of the medical records department?

13. Which functions of the medical records service should be given priority and why?

14. Assuming this hospital intends to computerise medical records service. What in your opinion are the major difficulties likely to emerge and how can they be resolved?

15. State the major objectives of such a computerised medical record service.

SECTION C

Non-Current (Inactive) Records Management

1. When are medical / patient records considered non-current / inactive?

2. Where are non-current records stored?

3. Can you estimate the quantity of non-current records held in this hospital?

4. Indicate the covering dates of these records.

5. Does this hospital possess a collection of medical records corresponding to hospital archives?

6. Are there any principles and practices in this hospital which are applied to non-current records?

7. Is there an approved authority / policy / regulation specifying retention periods and methods of destroying records? (a) Yes (b) No

8. If No, describe how this hospital carries out records disposal.

9. Do you have adequate storage space to meet current and future needs?

10. Who takes care of non-current records? Or who services and maintains the record storage area?

    (a) A trained staff in Records Management / Archives Administration
    (b) Untrained but experienced in record-keeping
    (c) Trained in some more or less relevant way. Explain further.

11. How are non-current records accessed? Or how are the records kept in order to make them easily accessible when needed

12. Describe the procedures for transferring non-current records from the records department to the storage area.

13. What general and/or specific problems does the records department face in managing non-current records?

14. How do you think these problems can be solved? State problems which can solved in the short, medium and long term.

SECTION D

Release / Disclosure of patient information

1. Who owns the medical / patient record?

2. Does the patient or ex-patient have a right of access to his or her record (a) Yes (b) No.

3. Is information held in the patient record considered confidential between the patient and medical staff or health practitioners?

4. Is the patient record a confidential document between the patient /ex-patient and the hospital?

5. State the purpose for which information from the medical record may be disclosed.

6. Are patients informed about the purposes for which information in their medical records may be used? (a) Yes (b) No.

7. If Yes, by what means are they informed?
   (a) Leaflet
   (b) Notice Boards
   (c) Wall Posters
   (d) Other (Specify)

8. Who in this hospital or outside can have access to patient records?

9. Who in this hospital has the right of control for the disclosure of medical information to enquirers?

10. Is permission required from the patient before information is released to enquires? (a) Yes (b) No

11. Is permission required from the attending physician? (a) Yes (b) No

12. How is information from the patient record protected from improper disclosure? Or what procedures are there to safeguard confidential information?

13. In what form is information released to enquirers?

14. Does this hospital have a policy (written or unwritten) relating to medical records and conflict resolution?

Appendix 5

Interview schedule

For Medical Records Officers /Biostatisticians

SECTION A

Personal

1. Name

2. Educational background. Indicate the degrees dipolmas, certificates you hold and in what disciplines. Include other professional training and qualifications relating to your job.

3. How long have you worked in the medical records department?

4. State your present designation / post / position

5. For how long have you held this position?

6. State your present salary. (Optional)

SECTION B

Questions Specific to Functional Operations and Administration of the Medical Records Departments

1. What are your duties as a Medical Records Officer or Head of Department?

2. To whom are you responsible in this hospital?

3. How many support-staff work in this department?

4 State their educational background including any professional training.

5. Do you have an organisatiional chart for this department which specifies roles and a responsibilities for each position?

6. Do you have written job description for each position?

7. What are the funtions of the medical records department.

8. Which other units/departments are involved in medical records issues?

9. Describe the nature of any relationship between these departments and the medical records department.

10. Is there a committee or a body which oversees the general organisation and management of medical records? (a) Yes (b) No. If Yes, who are the members of the committee? State its functions and its relationship with the medical records department

11. Is there a programme of training for staff of this department? (a) Yes (b) No

12. If Yes, describe the nature of this programme indicating who is resposible.

13. What opportunities are there for medical records staff to acquire new skills or further qualifications in order to gain promotion? For instance is there any opportunity and support for attendance at professional training, courses seminars, workshops and lectures to upgrade the knowledge of medical records staff?

14. Does this department have a procedure manual which guides the operations of the departmant?

15. Is the medical record system in this hospital manual or computerised?

16. If manual, what future plans do you have for introducing computers?

17. In what ways do you think computerisation could be of benefit to this department?

18. Assuming this hospital intends to computerise the medical records service. What in your opinion are the major difficulties likely to emerge and how can they be resolved?

19. State the major objectives of such a computerised medical record service.

20. What problems do you face in this department regarding the services you provide?

21. How do you think these could be resolved?

22. Do you have any general comments you may want to share?

SECTION C

Non-Current (Inactive) Records Management

1. When are medical / patient records considered non-current / inactive?

2. Where are non-current records stored?

3. Can you estimate the quantity of non-current records held in this hospital?

4. Indicate the covering dates of these records.

5. Does this hospital possess a collection of medical records corresponding to hospital archives?

6. Are there any principles and practices in this hospital which are applied to non-current records?

7. Is there an approved authority / policy / regulation specifying retention periods and methods of destroying records? (a) Yes (b) No

8. If No, describe how this hospital carries out records disposal.

9. Do you have adequate storage space to meet current and future needs?

10. Who takes care of non-current records? Or who services and maintains the record storage area?

    (a) A trained staff in Records Management / Archives Administration

(b) Untrained but experienced in record-keeping
(c) Trained in some more or less relevant way. Explain further.

11. How are non-current records accessed? Or how are the records kept in order to make them easily accessible when needed

12. Describe the procedures for transferring non-current records to the storage area.

13. What general and/or specific problems do you face in managing non-current records?

14. How do you think these problems can be solved? State problems which can solved in the short, medium and long term.

SECTION D

Release / Disclosure of patient information

1. Who owns the medical / patient record?

2. Does the patient or ex-patient have a right of access to his or her medical records?

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4. Is the patient record a confidential document between the patient/ex-patient and the hospital?

5. State the purpose for which information from the medical record may be disclosed

6. Are patients informed about the purposes for which information in their medical records may be used? (a) Yes (b) No.

7. If Yes, by what means are they informed?
   (a) Leaflet
   (b) Notice Boards
   (c) Wall Posters
   (d) Other (Specify)

8. Who in this hospital or outside can have access to the patient records?

9. Who in this hospital has the right of control for the disclosure of medical information to enquirers?

10. Is permission required from the patient before information is released to enquires? (a) Yes (b) No

11. Is permission required from the attending physician? (a) Yes (b) No

12. How is information from the patient record protected from improper disclosure? Or what procedures are there to safeguard confidential information?

13. In what form is information released to enquirers

14. Does this hospital have a policy (written or unwritten) relating to medical records and conflict resolution?

Appendix 6

Interview schedule / discussion checklist

For selected CHIM officials

1 When was the Centre for Health Information Management established?

2. Who was the 'architect' behind the establishment of this institution?

3. By what authority was it established?

4. Under which division of the Ministry of Health does the CHIM operate?

5. Why was CHIM established?

6. Who is the Head of CHIM? Indicate his designation.

7. State the functions of CHIM.

8. Have these function remained the same since CHIM was established?

9. What is the present staff strength of CHIM?

10. What specific role does CHIM play in the organisation of the medical records service in the Ministry of Health?

11. What in your opinion is the present state of the medcial records service?

12. What problems does the medical record service face?

13. What plans and strategies do you have to counteract these problems?

14. As an instituion what problems does CHIM face in the performance of its functions?

15. In what ways is CHIM supported by the Ministry of Health?

16. Would you say CHIM is well equipped in terms of personnel and logistics to cope with its activities?

17. What plans are there to strengthen CHIM in the light of the demands imposed by the on-going health sector reforms?

18. Do you have any general information you would wish to share?

Appendix 7

Discussion checklist

For selected official at the Ministry of Health

-Funtions of the health care system
-Type of facilities and how the are distributed
-Organisation and delivery of health service
-Relationship between the public/
government and private sector
-Current health sector reforms.
-Why the reforms
-Organisational arrangements; the creation
of the Ghana Health Service
as a distinct entity; the rationale
-General problems of health services delivery
-Strategies for meeting future challenges

Appendix 8

Observation checklist

1. Environmental Issues

Location of mdical records departments:
How accessible in terms of distance to wards,
out-patient departments, admitting areas
and the central administration
Are medical records departments arranged
in such a way that work flow is uninterrupted?
Adequate space for personnel to function properly?

2. Records Management

(a) Current Records

Admission and registration procedures
Initiation of the patient record;
Number assignment.
Record forms: sizes and content; quality of paper
Folders; method of filing within folders
Filing system; centralised or decentralised
Record unit; individual or family
Filing procedures
Coding procedures
Creation of master patient indexes; storage equpimnent
General equipment and supplies
Standards of facilities

(b). Non-current records
Storage areas: facilitiy standards
Physical condition of records
Filing and retrieval

APPENDIX 9

List of Officials Interviewed

INSTITUTION	NAME OF OFFICIAL	POSITION/DESIGNATION	DATE	REMARKS
Korle-Bu Teaching Hospital	Air Commodore K.K. Pumpuni	Chief Administrator	January, 1997	Informal discussion
	Peter Mensah	Health Services Administrator	January, 1997	
	Andrew Amaning	Principal Biostatistics Officer (Head of Records Dept.)	January, 1997	
	Alex Arhin Snr	Biostatistician (Assistant Head of Dept.)	January, 1997	
Komfo Anokye Teaching Hospital	E. Offei Asiedu	Principal Health Services Administrator	December, 1996 and April, 1997	Interviews conducted twice since information obtained from first interviews in December was lost
	E.K. Appah	Senior Technical Officer (Head of Records Dept.)	December, 1996 and April, 1997	
Koforidua Central Hospital	Francis Martey	Senior Technical Officer (Head of Records Dept.)	February - March 1997	
	Ebo Afful	Health Services Administrator	February - March 1997	

Tamale Government Hospital	K. Boramah	Senior Health Services Administrator	March, 1997	
	Kofi Asabere	Senior Technical Officer (Head of Mdical Records Dept.)	March, 1997	
Cape Coast Central Hospital	E. Abaka	Ag. Health Services Administrator	December 1996	
	J. Ansah	Technical Officer Grade I (Head of Medical Records Dept.)	December 1996	
Sunyani Central Hospital	Ben Bediako	Health Services Administrator		
	J. Ahenkora	Technical Officer (Grade I (Head of Records Dept.)	March - April 1997	
The Centre for Health Statistics (CHIM), Accra	Awnah Barimah	Chief Biostatistics Officer	March, 1997	Mr. Seth Deyongster, the head of Department was not available for interview at the time of the survey as he was on leave.
	E. Larbi	Biostatistician	March, 1997	
	J.B. Banquah	Former Biostatistician	March, 1997	
	Prince Boney	Planner (Information Systems)	March, 1997	

APPENDIX 10

The Following Officials of the Ministry of Health were Consulted for Informal Discussions

NAME OF OFFICIAL	POSITION/DESIGNATION	DATE	REMARKS
Dr. A. Asamoah-Baah	Acting Director of Medical Services	February, 1997	
Dr. Ahmed	Epidemiology Unit	February, 1997	
Isaac Admas	Head of PPME Directorate (Policy, Planning, Ministoring, and Evaluation)	February, 1997	
V. Darko (Mrs.)	Dirctor, Health Administration and Support Services	February, 1997	

---

1. THREE is no moment of my life,
No place where I may go,
No action which God does not see,
No thought he does not know.

2. Before I speak, my words are known,
And all that I decide,
To come or go: God knows my choice,
And make himself my guide.

3. If I should close my eyes to him,
He comes to give me sight;
If I should go where all is dark,
He makes my darkness light.

4. He knows my days before all days,
Before I came to be;
He keeps me, loves me, in my ways —
No lover such as he.

Brian Foley (1919 -)
based on Psalm 139
