



# Health Records Paper to Paperless

**GD Mogli**



# Contents

## PART ONE

1. Medical Records..... 1
2. Historical Background of Medical Record  
Administration ..... 10
3. Development of Medical Records ..... 18
4. Medical Record Policies ..... 30
5. Standards for Medical Record Services ..... 168
6. Medical Record Systems ..... 179
7. Medical Record Procedures..... 200
8. Quality Assurance Standards..... 254

## PART TWO

9. Hybrid from Manual to Electronic Records..... 263
10. Establishment of a Central Medical Record Archives  
Training and Research Department (CMRATRD)..... 274

## PART THREE

11. Historical Background of Information Technology (IT) .. 285
12. Designing, Developing and Management of  
Information Technology ..... 291
13. Historical Background of Health Information  
Technology..... 299
14. How to Computerize the Medical Records  
Management System ..... 307
15. Electronic Health Record ..... 346
16. The Strategic EHR Planning..... 351
17. Challenges of EHR Adoption..... 357
18. Limitations of Electronic Health Records..... 363
19. EHR Functional Requirements Specifications ..... 368
20. Checklist for Assessing HIM Department  
Readiness and Planning for the EHR..... 375
21. Electronic Health Records Standards..... 383
22. Technology Infrastructure Assessment ..... 391

23. EHR System Implementation and Maintenance.....	405
24. Standardization of Paperless Health Records .....	423
25. MRM Professional's Endurance in the 21st Century .....	430
26. Tips for Evaluating Electronic Health Record Software ..	440
<i>Terms and definitions</i> .....	446
<i>Annexure</i> .....	477
<i>Bibliography</i> .....	479
<i>Index</i> .....	487

# Historical Background of Medical Record Administration

### **INTRODUCTION**

Individual Medical Records, as they are known today, have evolved over the last couple of centuries. However, the considerable advances made in the art and science of Medicine through the millennia, as evidenced by the following treatises, both Indian and Foreign, would not have been possible without keeping careful records of the meticulous examinations, treatment and follow-up of the ailing persons. References to these achievements are found in many inscriptions and tablets, art-forms such as icons, frescoes and in the caves and temples of Ajanta and Ellora and on the Buddhist stupas of Amaravathi and Nagarjuna konda.

There is an ample evidence that in India the science of Medicine of "Ayurveda" flourished many centuries before the birth of Christ. There are innumerable references to the state of Medicine and Surgery in Indian epics like Mahabharata and Ramayana. The earliest recorded reference to medical concepts and medical practice in India is found in Atharvaveda, the last of the four great Vedas. Sufficient details are furnished in this Veda to enable diagnosis of diseases. The first Indian Textbook of Medicine 'Atreya Samhita' was written by the sage Atreya during the Sutra period, which followed the Vedic ages. This book served the purpose of a comprehensive compendium of details which were otherwise scattered. 'Agnivesha Samhita' is another record of the art of healing and is the best available textbook of those times. It contained about twelve thousand verses and was in use from the 15th century AD.

## Charaka Samhita

“Charaka Samhita” represents the viewpoints of numerous scholars through many centuries. It begins with practices from the period of Agnivesha and ends with those propounded by Drīdhabala who lived fifteen centuries later. This samhita is an excellent record of a glorious period of creative Indian Medicine. “Sushruta Samhita” is the first India Book of Surgery. Sushruta described twenty sharp and hundred and one blunt instruments useful in surgery. Special tablets to be administered in preparation for major surgery have been listed in this work. Native methods of anesthesia also have been described.

## Vagbhata's Ashtanga Hridaya

“Ashtanga Hridaya” introduced a number of new drugs as well as modifications and additions in surgery. “Bhava Prakasha” is the last of the principal medical works of the medieval period and this was written around 1160 AD.

## Unani Tibbia

The system of Medicine, whose origin can be traced back to the Ancient Greet Medicine was introduced in India by the Muslim rulers and, by the 13th century AD, this system of Medicine was firmly entrenched in places like Delhi, Aligarh, Lucknow and Hyderabad. The Hakims, who practiced this system, were quite willing to use the effective drugs of the Ayurveda system also and included them in their pharmacopoeia. The first translation



**A** Primitive medical records carved in wood, chipped in stone—dating back to 5000 BC

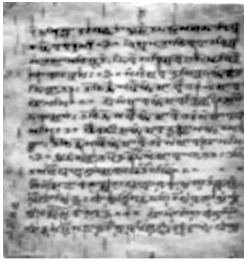


**B** Art forms like icons and frescos in caves and temples of Ajanta and Ellora and on Buddhist monastery of Amarvati and



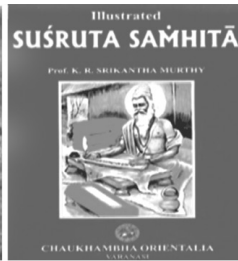
**C** Indian epics like Mahabharata and Ramayana

**Figs 2.1A to C:** The primitive medical records kept in different ways—dating back to 5000 BC, e.g. Charaka Samhita



The first textbook of medicine  
Atreya Samhita  
during the  
Sutra period

A



Sushruta  
Samhita (400 BC)  
became the first  
Indian textbook  
of surgery

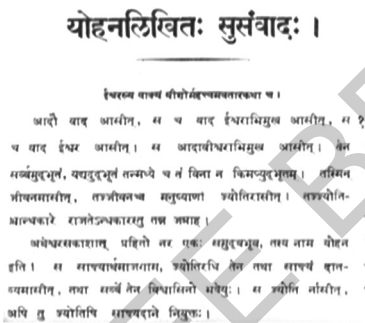
B



Ashtanga  
Hridaya by  
vagbhata  
described  
surgical  
procedures

C

**Figs 2.2A to C:** The first text book of Sutra period, and sushruta Samhita (400 BC). Ashtanga Hridaya—describing surgical procedures



Indian medical text  
bookstranstated from  
Sanskrit to Persian by Ali  
Mohammed Ben Ali Ismail



Unani Tibbia system of medicine  
was set up in 13th century by  
Muslim rulers

**Fig. 2.3:** The Indian medical book written in Sanskrit that was translated to Persian language by Ali Mohammad Ben Ali Ismail. Another picture shows the Unani Tibbia system was set up by Muslim rulers in the 13th century

of the 'Ashtanga Hridaya' from Sanskrit to Persian was by Ali Mohammed Asseli as Tibb Shifa Mohammed Sahi in the year 1474 and is considered to be an outstanding piece of work. Homeopathy, which was propounded by Samuel Heinemann (1755-1843) of Germany, gained foothold in India during 1819 and 1839. It is a system of pharmacodynamics based on the natural laws of cure. Homeopathy is practiced in several countries, but

India claims to have the largest number of practitioners of this system in the world.

However, the history of India with the successive invasions and finally colonial rule of the British Raj brought a decline in indigenous systems of medicine. Many allopathic medical missionaries came from other countries to set up mission hospitals and dispensaries.

### Portuguese and French Influence

Modern medicine was first introduced in India by the Portuguese in the 16th Century. Albuquerque in 1510 established the first hospital, the Royal Hospital in Goa and this was handed over to the Jesuits in 1591. In the entire East and West, this hospital was considered as one of the best hospitals. A crude form of medical teaching was started in 1703 and by 1842 this developed into the school of surgery and Medicine (Fig. 2.4).

The Ecole de Medicine de Pondicherry (School of Medicine, Pondicherry) was established in as early as 1823 by the French Government.

### British Influence

The Medical Department of the East India Company was created in 1740. It comprised the British Military Surgeons and their local assistants. Lord William Bentinck appointed a committee to



**Fig. 2.4:** Portuguese and French invasion and influence in India during the 16th and 19th centuries.



**Fig. 2.5:** British Flag hoisted in India during the 18th century

work out the principle by starting a medical education in India in 1833. This committee laid down a medical curriculum. Under this scheme, the first medical school was established in 1835 in Madras and named as Madras Military Medical School.

In 1824, a medical school was opened in Calcutta, and the same was converted into a Medical College in January 1836.

The Grant Medical College in Bombay was formally opened on 3rd November, 1845 because of the initiative taken by Sir Robert Grant, the then Governor of Bombay.

### **Early Medical Records**

The first real physician of record in Egypt was Imhotep. He lived in the Pyramid Age (about 3000–2500 BC). Imhotep has been credited with the authorship of the Edwin Smith Papyrus, which is one of the most valuable ancient medical documents that appears to have been written about 1600 B C. This papyrus is now in possession of the New York Academy of Medicine. It deals with forty eight cases of clinical surgery in a roll over fifteen feet long and thirteen inches wide. Another instance is the Ebers Papyrus belonging to a period ante-dating the exodus of Israelites from Egypt.

Greek medicine has been influenced by contributions from Egypt, Babylon and Assyria. In its turn, Greek medicine introduced scientific approach into the art of healing.

### **Modern Medical Records**

Medical Records, as they are known today, including the name of the patients together with their medical histories and the results of



treatment, were found on the columns in the ruins of the temples at Epidaurus, a seaport to the west of Athens, across the Gulf of Aegina. Hippocrates, the father of Medicine (around 460 BC), was the author of the oath named after him, which is taken by the physicians even today. He maintained detailed case reports of his patients.

Rome also, at its zenith, produced famous physicians like Galen but the later periods like the Byzantine, Jewish, and Mohammedan and the early medieval period saw decline in the quality of medical knowledge contemporaneous with a fall in the moral and ethical status of the people. We have few medical records of these periods.

The Saint Bartholomew's Hospital, London, England is the only hospital still in existence, whose records and manuscripts have been preserved since its inception in 1137 AD. This hospital has the credit of having the first medical record department. One of the books on original manuscripts edited by Sir Norman Moore contains 28 original case histories. During the reign of King Henry VII (1509-1547 AD), rules were drawn up for the management of St. Bartholomew's Church, and the confidentiality of the medical record was one of them. Andreas Vesalius (1501-1564 AD), a Belgian anatomist, well-known for his great contributions to Anatomy, kept records of his work carefully. Importance of medical record keeping was gradually well established as significant generalizations were impossible without them. The first incorporated hospital, the Pennsylvania Hospital in the United States, was established by Benjamin Franklin in 1752. This hospital still has unbroken, detailed medical record from those days. The first Alpha Index card was introduced in USA in 1873.

The New York Hospital and the Massachusetts General Hospital, Boston are among those that have maintained Medical Records since the early part of the 19th century. The latter hospital appointed Mrs Grace Whiting Myers (1859-1957) as its Medical Record Librarian. She was later the founder President of the Association of Medical Record Librarians of North America.

The American Hospital Association discussed the subjects of Medical Records for the first time at a convention held in 1902. The problems of lack of uniformity in Medical Record maintenance, lack of centralized authority in the hospital to look after this work, as also the indifference of older doctors towards this important work, were highlighted.

It would be enough to mention the following landmarks in the history of medical records to bring us to their present stage. Among the significant milestones on this highway are:

1. Efforts to standardize the Medical Record Keeping since 1918.
2. Organization of National Medical Record Associations, USA (1928), Canada (1942), Great Britain (1948), Australia (1952), and Indian Association of Health Records was formed on 12th July, 1972 in JIPMER, Pondicherry. It has four state branches at Bangalore, Hyderabad, Madras and Pondicherry respectively.
3. Founding of the International Federation of Medical Records in Stockholm in 1968.

The necessity of worldwide participation of medical record personnel was felt. It could help in establishing international standards. Uniform systems could make statistical comparison

**TABLE 2.1:** Table illustrating the number of International Congress on Medical Records held, year, number of participants, number of countries represented and the names of the host countries.

<i>Congress</i>	<i>Year</i>	<i>Participants</i>	<i>No. of countries represented</i>	<i>Host Country</i>
I	1952	306	9	UK
II	1956	723	12	USA
III	1960	346	17	UK
IV	1963	1000	18	USA
V	1968	700	19	Sweden
VI	1972	420	24	Australia
VII	1976	2000	23	Canada
VIII	1980	550	24	Netherlands
IX	1984	294	17	Auckland
X	1988	2700	26	USA
XI	1992	NA	18	Canada
XII	1996	300	36	Germany
XIII	2000	375	26	Australia
XIV	2004	4000	39	USA
XV	2007	NA	NA	South Korea
XVI	2010	NA	NA	Italy
XVII	2013	NA	NA	Canada

possible and disease classification could be developed on international pattern. This thinking has proved right and the first International Congress on Medical Records was held in London in 1952.

The necessity of worldwide participation of medical record personnel was felt. It could help in establishing international standards. Uniform systems could make statistical comparison possible and disease classification could be developed on international pattern. This thinking has proved right and the first International Congress on Medical Records was held in London in 1952.

The number of participants and countries at each Congress can be seen in Table 2.1.

### World Health Organization

The federation was originally recognized by the World Health Organization (WHO) in 1968 at which time they were invited to participate in the first World Study group on Hospital Medical Records held in Geneva in November 1969. Since then, the World Health Organization has organized workshops and conducted various educational programs in different countries for the benefit of Medical Record/Health Statistical Personnel.

Since January 1979, the relationship between World Health Organization and Federation of Health Records Organization is now on a formal basis as a non-government organization.



World Health Organization

**Fig. 2.6:** WHO recognized the Federation of Health Records Organization in 1968 and invited it to participate in the first World Study Group on Hospital Medical Records held in Geneva in 1969

# Health Records Paper to Paperless

This is a unique practical book of immense use for medical and healthcare professionals, medical educational institutions, and health institutions. The salient features of the book are mainly classified into three parts:

**Part I:** Deals with traditional medical records with historical background, development of medical records, medical policies and standards, medical record systems and procedures and quality assurance standards.

**Part II:** Encompasses hybrid from manual to electronic records, establishment of a central medical record archives training and research department.

**Part III:** Includes how to computerize medical record and management system, historical background of information technology (IT) and health information technology (HIT), how to implement electronic health records including strategic planning, standards, challenges, limitations, and functional requirements specifications, checklist for readiness and assessment of technology structure, standardization of paperless health records, medical record management professional standards in 21st century and tips for evaluating electronic health record software.

**GD Mogli** PhD (Medical Record Administration) MBA FHRIM (UK) FAHIMA (USA) is presently the Visiting Professor of Medical Information in Mahatma Gandhi Institute of Medical Sciences, Sevagram, Maharashtra, India. He is the Fellow of American Health Information Management Association (FAHIMA), USA; Fellow of Health Record Information Management (FHRIM), UK; and Doctorate in Medical Record Administration, Chief Executive Officer of 'Dr Mogli's Healthcare Management Consultancy' and Senior Consultant, eHealth Management, HEARTCOM INC., Branch Office in India, Main Office in USA.



He is also a Visiting Consultant to World Health Organization (WHO). He is having a wide experience in the Healthcare Delivery System in general and Medical Records/Health Information Management in particular. During his four decades of career, he has received many distinguished awards and credentials from professional organizations and countries wherever he served. In 2004, the American Health Information Management Association (AHIMA) has awarded him as one of the 2004 Triumph Award nominees for 'Honoring Those Who Make a Difference'. He is the first person to have HIM Fellow from UK and USA, first AHIMA Fellow outside USA. He is a listee of the International Biographical Centre (IBC) Leading Health Professionals of the World-2008, and as such, stands testament to the efforts made by him in the arena of eHealth Management.

He has served as a senior consultant advisor and WHO consultant to the Ministries of Health of India, Afghanistan, Kuwait, Saudi Arabia, Oman, Bahrain, Qatar and UAE. He was, during his course of work, involved in service, academic and scientific research, and published five professional books and 78 articles in national and international journals of repute.

He has widely traveled, participated and presented professional papers in almost all international conferences held throughout the world 1976 onwards. He visited countries such as USA, Canada, Netherlands, UK, Germany, France, Japan, Australia, New Zealand, South Korea and Malta, etc. He conducted professional workshops, conferences and seminars in UK, New Zealand, Bahrain, Saudi Arabia, Qatar, Oman and UAE.

He has served in various capacities as Secretary, President and Council Director at state, national and international levels. He was Council Director, Member of Publications Committee and Chairman of 'Developing Countries Committee' of International Federation of Health Records Organizations. He is an active member of AHIMA (USA), IHRIM (UK), IFHRO (World), IAMI (India) and ICHA (India), and serving in academic advisory board to educational institutions. Currently, he is involved in healthcare management consultancy research and five of his books are under publication. As a Dean of Oman Institute of Technology, he had collaborated with University of Loma Linda, Duquesne University and State University of Chicago.

Dr Mogli has published the following books:

- Managing Medical Records
- Handbook on Medical Certification on Cause of Death
- Medical Records Organization and Management
- Paramedics 6-in-1-Handbook
- Patient Care Research
- Medical Records Policies and Procedures.

**Available at all medical bookstores  
or buy online at [www.jaypeebrothers.com](http://www.jaypeebrothers.com)**



**JAYPEE BROTHERS**  
**Medical Publishers (P) Ltd.**  
[www.jaypeebrothers.com](http://www.jaypeebrothers.com)

Join us on [f](https://www.facebook.com/JaypeeMedicalPublishers) [facebook.com/JaypeeMedicalPublishers](https://www.facebook.com/JaypeeMedicalPublishers)

Shelving Recommendation  
**HOSPITAL ADMINISTRATION**

ISBN 978-93-5152-427-4

