

# History of medical record

## Introduction

A patient medical record is required to record patient information and communicate with other health professionals. Patient medical records have been developed to record patient information such as health problem, diagnosis and treatment. Paper-based medical records were used to record patient information before the development of electronic medical records. However, the records were considered ineligible, inaccurate, incomplete and unavailable when and where required. They did not have active decision-support capabilities and data collection and analysis was tiresome. The passive function for patient's medical record is no longer adequate in the current health care environment. Hence, health professionals require active tools that can provide clinician decision-support capabilities, access to relevant and accurate patient information, alerts and reminders. Hence, the electronic medical record was developed to address the shortcomings of paper-based medical records. Consequently, the changes in audience and constraints will be the basis of the investigation into the medical record genre. Berg and Bowker in their article *The Multiple Bodies of the Medical Record: Towards Sociology of an Artifact* published in 1996 examines the constraints of medical records and also change in the audience. Wager, Lee and Glaser examine the electronic medical record in their sources *Managing Health Care: information Systems: A Practical Approach for Health Management* published in 2005 and *Healthcare Information Systems: A Practical Approach for Health care Management* published in 2009. Lastly, Weed discusses medical records in his article *Medical Records That Guide and Teach* published in 1968. Thesis: Medical records have changed significantly in terms of audience and constraints as electronic medical records have been developed to address the limitations of paper-based medical records. Currently, nurses are actively involved in the writing of electronic medical records, unlike before as physicians wrote the main pages of the medical records.

## Comparison of Medical Records in 1960s, 1990s and 2000s

Weed discusses medical records in his article *Medical Records That Guide and Teach*. He examines the structure of the medical records and content. The medical records used in 1968 were unstructured as the records did not have a pre-formatted listing (Weed 2). As a result, physicians and nurses were supposed to create order by producing a narrative about the patient's condition, treatment and diagnosis. The unstructured medical record did not put forth demands on the content of the narratives by listing pre-formatted labels (Weed 2). The medical records contained patient information including the medication administered and dosage for the medication, diagnosis, laboratory tests conducted and their findings. Besides, the medical records contained information about complications associated with the treatment and patient's vital signs such as blood pressure, temperature among others (Weed 5). Moreover, the medical records contained information concerning the patient's symptoms, physical examination and treatment plans. The audience is physicians and they had to include the treatment date at the left top corner. The medical records were problem- oriented. Physicians were able to assess quality faster due to the way the problems were formulated, pursued and related to each other (Weed 3).

The physician included the title of every problem and the number for easy audit of the doctor's approach to the problem according to Weed. Moreover, the medical records contained progress notes. The doctor first discussed the problem from the patient's view (subjectively) when writing the progress notes and then provided objective data related to the patient's condition. Also, the physician stated current treatment, provided new interpretation and discussed the plan for the subsequent interval. Therefore, the progress notes were detailed and problem- oriented (Weed 4). The physician added new problems as they appeared. The doctor was forced to accept the responsibility of multiple problems in a clinical situation and give every problem the single-minded attention needed. Doctors organized the

patient's problem in a manner that allowed them to deal with the problems systematically.

The doctor was required to read the whole medical record which was illegible and hand-written and sort the data in the mind in order to understand the patient's difficulties and how each had been analyzed. However, doctors found it hard to read the records and understand the problems as they got lost and often ignored problems (Weed 7). Also, problems were missed and treated as irrelevant. Therefore, an organized medical record was required. The medical record was supposed to have a list of the patient's health problems, diagnoses and unexplained findings that are not yet clear signs of the diagnosis including abnormal symptoms and physical findings. Additionally, the problem list was supposed to be dynamic so as to be updated anytime. This allowed the combination of different problems that were found to be part of a similar diagnosis. The problem list was supposed to be separated into active and inactive problems. As a result, the following orders, plans, numerical data and progress notes were recorded under the numbered and titled problems (Weed 6).

The problem approach to organizing data in the medical records required completeness in formulating the problem list and carefully analyzing and following-through on every problem as stated in the titled progress notes according to Weed. In this case, physicians were required to gather correct data and draw logical and relevant conclusions from the data (Weed 7). A narrative progress note was not sufficient for relating different variables. The medical records did not contain flow sheets to encourage understanding and interpretation of different interrelated and changing variables. Hence, new medical records with flow sheets were required to solve the problem (Weed 7).

The medical records changed in terms of audience as shown in the article *The Multiple Bodies of the Medical Record: Towards Sociology of an Artifact* by Berg and Bowker. Berg and Bowker define a medical record as a written, typed or electronically stored document that contains different aspects of the client treatment. The medical record has an official status within the facility's system and it is stored for a certain time. The medical record is stored for a time equal to the patient's stay in the facility. Hence, the medical record is not a single object, but it is the record the doctors keep in a single folder at clinic together with other records (Berg and Bowker). A medical record plays a significant role in the provision of care to patients as health professionals including doctors utilize the record to understand the patient's condition and make a proper diagnosis and determine suitable treatment according to Berg and Bowker.

Health professionals used paper records in 1990s to record patient information. The medical records in 1990s were structured differently from medical records used in 1960s. The medical record contains patient's medical history. The temperature list mapped various variables against time in the x-axis (Berg and Bowker). The sheet was divided into weeks and days using lines. In addition, thinner lines divided the upper, graphical section of the sheet into eight-hour periods. In this case, the temperature, pulse and respiration rate were entered along the y-axis. The y-axis changed and acted as a list of various variables including weight, tension, specific gravity of urine, medications administered and bleeding time. The variables were presented that way to show how changes in a single parameter are related to changes in another parameter. Moreover, the y-axis changes and includes a mathematical operation (Berg and Bowker).

The medical record showed the patient's laboratory results. The form listing the laboratory findings consisted of columns. Every column showed the time at which the blood test was done. The forms were read from the left to the right and the physician reads the information in an orderly manner including "step by step, day by day and hour by hour". Additionally, the medical record contained other information including information from the nurse and the physician (Berg and Bowker). The medical records were meant for the doctors, nurses and consultants as they relied on the records to provide care to patients. The medical record contained progress notes, nurses' notes and consultant's notes. Doctors were required to regularly summarize the present state of affairs according to the unstructured progress notes. They were supposed to create an organized structure of their working days. The medical record

stated the actions undertaken and actions that needed to be undertaken. Also, the medical records included information about suitable interventions and those responsible for completing the task. The medical record showed the medication administered and infusion. The flow sheet's drug and infusion lists enabled doctors and nurses determine the medication administered and dosage (Berg and Bowker).

The target audience included doctors, nurses, consultants and bacteriologist. The doctor's progress notes were unstructured and the consultancy form had few, big sections with different labels including findings, advice and conclusions. The sections were meant for free text. The radiographic reports were brief, however the radiologist was free to state the image as he wished so long as the description was followed by a conclusion which answered the treating doctor's request (Berg and Bowker). The bacteriologist was required to say "no growth", "a little growth" and "much growth". The laboratory workers and nurses generated numbers that were written in the pre-formatted columns and graphs. Therefore, the medical records used in 1990s encouraged a hierarchy as treating doctors were at the top and they wrote the main pages of the medical record stating the illness trajectory and summarizing information from different sources. The consultants were supposed to fill in the consultation forms, but they were permitted to write their findings in the progress notes. Therefore, the medical records were meant for physicians, consultants, nurses, laboratory workers and bacteriologists. Nurse's notes were separated from the physician's notes and destroyed after the patient left the hospital (Berg and Bowker).

The medical records had constraints as they were criticized for not reflecting what happened properly. The chart was disorganized, illegible, ragged and thick. In addition, the progress notes, radiology reports, nurse's notes and consultant's notes were all combined in succession sequence. Therefore, the charts caused confusion instead of enlightening nurses and doctors to provide suitable care to patients. Nurses and doctors found it challenging to understand what was happening to the patient. As a result, the Iowa group introduced a NANDA classification to eliminate the hierarchy and prevent the marginalization of nursing. The language used in the medical records was the language developed by medicine. Therefore, nurses were required to record patient information in a language acceptable to doctors and administrators in the hospital (Berg and Bowker).

Consequently, Wager, Lee and Glaser examine the transition from paper-based medical records to electronic medical records. The authors provide a detailed analysis of the electronic medical record. Medical records have evolved considerably in terms of constraint according to Wager, Lee and Glaser. Electronic medical records were developed to overcome the constraints associated with paper medical records and ensure patient information is organized effectively for easy comprehension and interpretation (Wager, Lee and Glaser). The need to promote patient safety by preventing medical errors and improve the efficiency of care led to the development of an electronic medical record system. Electronic medical record is considered a center of the hospital's clinical information and as a tool to enhance the quality, safety and efficiency of care offered to patients (Wager, Lee and Glaser 110). Patient medical records are utilized by hospital's to document patient care and as a compunction tool for people involved the delivery of care. Electronic medical records are different from paper-base medical records as they are eligible, complete and available when and where they are required. They have the active decision- support capacity and hence health professionals can easily collect and analyze data. An electronic medical record is capable of electronically gathering and storing patient data, supplying the data to providers when requested and allowing clinicians to enter orders directly into an order entry system and advises health professionals by offering decision- support tools including alerts, reminders and access to evidence-based guidelines. The decision- support capabilities of electronic medical records are robust, unlike the paper medical record (Wager, Lee and Glaser 111).

The electronic medical record contains patient's information including health problems, vital signs, medications administered and allergies. In addition, the records contain reminders and alerts, health maintenance and notes. The alerts remind the health professional the patient is allergic to certain drugs and two drugs cannot be combined with each other. The reminders show the client is due for health maintenance tests including mammography. Besides, the medical record contains the patient's

demographics including age, sex, gender, ethnicity, date of birth and location. The electronic medical record shows the patient's advance directives and visits (Wager, Lee and Glaser 113).

The electronic medical record is well structured, unlike paper-based medical records. Hence, health professionals are supposed to fill the patient information based on the pre-formatted listings. They are not required to provide the information in a narrative form, but enter the information in a precise manner based on the acceptable codes (Wager, Lee and Glaser 113). Electronic medical records can be used by both physicians and nurses to record patient information about his or her condition, treatment and diagnosis.

## Interview

A medical student intern, Vue-Hao Ngoy at St. Luke Hospital was interviewed to understand the medical record used at the facility to record patient information. The student claimed that they used paper charting to record patient information, but currently they use EPIC software, electronic charting software to document and review medical records. The electronic documentation was utilized to document patient's vital signs, diagnosis, symptoms and history according to Ngoy. In addition, electronic documentation is used to record the patient's age, weight, and height, medications utilized in the past, gender and allergic reactions. The electronic documentation is utilized to review MRI, x-rays, CT scan and blood values. Also, the vital signs before and after treatment is reviewed to see if the patient's condition has improved and identify side effects. Ngoy agrees with Wager, Lee and Glaser that paper-based medical records were inaccurate, ineligible and prone to medical errors as they were written by many people. Nevertheless, the paper-based medical records have been replaced with electronic medical records to overcome the limitations of paper-based medical records. Electronic records are faster and accurate and facilitate sharing of information with other health professionals and hospitals according to Ngoy. Additionally, electronic medical records facilitate searching of patients utilizing computers.

## Conclusion

In conclusion, medical records have evolved in the past four decades due to the need to present patient information in an accurate, complete and eligible way. Hospitals have moved from using paper-based medical records to using electronic medical records as they are eligible, complete, timely and accurate. The electronic medical records improve patient care including safety and efficiency of care. In addition, nurses, physicians, consultants and other health professionals utilize electronic medical records to record patient information.

## Work Cited

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