

EFFECTIVENESS OF WEB-BASED CASE NOTE OVER PAPER-BASED CASE NOTE IN HEALTH CARE DELIVERY

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ABSTRACT: Web based case-note, provide a platform for health care givers where they can easily access patients' case note online. It enables physicians to record patient histories, display test results, write prescriptions, enter orders, receive clinical reminders, use decision-support tools, and print patient instructions and educational materials. It has the potential to improve quality of health, streamline workflow and increase efficiency in health care delivery. The study was conducted at three hospitals in Nigeria. 100 medical doctors, 100 nurses and 100 medical health record officers who have used the web based case note were interviewed using a well structured questionnaire and oral interview. Parameters used in measuring the performance of web enhanced patients case note over paper based case note include: accuracy, accessibility, retrieval time and confidentiality. Result obtained were analysed using the spss software. Mean \pm SD and t-value of Retrieval time, confidentiality, accessibility and accuracy were significantly higher in web based casenote compared to paper based casenote. Web based casenote allows simultaneous, remote access to patient data by all authorized health care providers, it facilitates faster retrieval of medical record, accurate record of patients and improve patient data confidentiality

Keyword: Web based, paper based, case note and patients



Introduction

Healthcare is getting more complex every day. Today, multiple specialists are involved in most patients' healthcare, and paper records cannot keep practitioners completely informed. Records must be available electronically so professionals can review a patient's history, including allergies and medication use, and thereby deliver the best care possible. A survey conducted by the Medical Records Institute, shows that providers rank the ability to share information as the first benefit of EHRs, followed by better quality of care, improved workflow and documentation, and reduction of medical errors. A patient's case note refers to the systematic documentation of patient's medical history and care across time within one particular health care provider's jurisdiction. It includes a variety of types of "notes" entered over time by health care professionals, recording observations

and administration of drugs and therapies, orders for the administration of drugs and therapies, test results, x-rays, reports, etc. Some years ago, people thought there must be an alternative to a healthcare system that almost never provides practitioners timely and efficient access to a patient's complete health history. As the intricacies of healthcare increased, it became more and more likely that practitioners would not be fully informed about their patients' previous treatment. Practicing healthcare in this "partially blind" manner had become a habit. Clearly, the quality of care could be improved substantially if all relevant information were available to each practitioner. Thus the idea of electronic health records (EHRs) was born [1]. The idea of recording patient information electronically instead of on paper has been around since the late 1960's, when Larry Weed introduced the concept of the Problem Oriented Medical Record into medical practice [2]. Until then, doctor's usually record only their diagnoses and the treatment they provided. Weed's innovation was to generate a record that would allow a third party to independently verify the diagnosis. In 1972, the Regenstreif Institute developed the first medical records system. Although the concept was widely hailed as a major advance in medical practice, physicians did not flock to the technology [2]. In 1991, the Institute of Medicine, a highly respected think tank in the US recommended that by the year 2000, every physician should be using computers in their practice to improve patient care and made policy recommendations on how to achieve that goal [3]. A web based casenote is a digital version of a paper based case note that contains all patients' medical history from one practice. With a web based casenote, health care givers are provided with the platform where they can easily access patients' case note online. Physicians can view patients' medical history anywhere and communicate with them without necessarily seeing them. It has the potential to improve quality of health care, streamline workflow and increase efficiency in health care delivery [4,5]. The aim of this study is to determine the effectiveness of web enhanced patient case note in health care delivery.

METHODOLOGY

This study was conducted at three hospitals in Nigeria. Three hundred respondents were used in carrying out this research which consist 100 medical doctors, 100 nurses and 100 medical health record officers. The respondents were interviewed using a well structured questionnaire. The web based case note system enables physicians to record patient histories, display test results,

write prescriptions, enter orders, receive clinical reminders, use decision-support tools, and print patient instructions and educational materials online. Web based casenote was compared to paper based case note and the result was analysed using the SPSS software.

MEASURES

Measures used in measuring the performance of web enhanced patients case note over paper based case note include: accuracy, accessibility, retrieval time and confidentiality.

Accuracy: it is a measure of how patient's data are documented and obtained without error.

Accessibility: it is a measure of the ability of health care givers to have access to the medical record of patients anytime, anywhere.

Retrieval time: this is the time it takes the health care giver to retrieve patients record from the paper based case note or web enhanced casenote.

Confidentiality: it is a measure of how patient's casenotes are kept from third party's view.

These standards had been set by the government through Privacy Acts and through regulation of professional licensing and accreditation bodies.

RESULT

The result obtained from the structured questionnaire and oral interview was analysed using One-sample test. Mean \pm SD and t-value of Retrieval time, confidentiality, accessibility and accuracy were significantly higher in web based casenote compared to paper-based casenote as shown in table 1.

TABLE: 1 SHOWS COMPARISON OF MEAN \pm SD OF PAPER AND WEB BASED CASENOTE ON PARAMETERS USED

| Parameters | paper based casenote mean \pm SD | web based casenote mean \pm SD |
|------------|---------------------------------------|-------------------------------------|
|------------|---------------------------------------|-------------------------------------|

| | | |
|-----------------------------------|---------------------------|---------------------------|
| Retrieval time(sec) t(p-value) | 56.00±18.19 5.33(0.03) | 44.00±16.46 4.63(0.04) |
| Confidentiality t(p-value) | 42.66±10.79 6.33(0.02) | 57.33±15.70 6.85(0.02) |
| Accessibility t(p-value) | 31.67±10.41 5.27(0.03) | 61.67±12.58 8.49(0.01) |
| Accuracy t(p-value) | 43.33±13.50 5.56(0.03) | 56.67±16.50 5.95(0.03) |

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Discussion

Traditionally, paper based case note was used in recording patient medical record. Due to problems associated with it web enhanced patient case note was introduced for health care givers to document patient casenote. Results obtained in this study showed that web based case note has higher efficacy than the traditional paper based casenote. Use of electronic medical records

allows healthcare professionals to access the information they need almost instantly and patients are treated in a timelier manner. Similar to this study, Jack Tsai and Gary Bond reported that electronic records had dramatically more complete documentation and faster to retrieve than paper records, they suggested that implementing electronic medical records to replace paper records may be a fruitful avenue to advancing the quality of documentation for patients [6]. Results from this present study show that web based case note has the potential to improve quality of health care, streamline workflow and increase efficiency in health care delivery. This study has also proved that web enhanced patient case note is more effective in health care delivery than paper based casenote. It allows for simultaneous, remote access to patient data by all authorized providers, facilitates faster and better communication among providers, reduces errors which results in better health care and lower cost, facilitates safer data and improve patient data confidentiality, allows for flexible data layout and therefore integrates easier with other information resources, makes the searching and finding of data considerably easier and allows for incorporation of various related data and records may be continuously processed and updated as supported [7,5].

Conclusion

Web based casenote allows simultaneous, remote access to patient data by all authorized health care providers, it facilitates faster retrieval of medical record, accurate record of patients and improve patient data confidentiality.

Limitation of Study

The initial cost of web based case note is the major limitation identified by the interviewee which was reportedly higher compared to paper based casenote.

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