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Enhancing Patient Care and Nursing Practice Through Computer Applications in Healthcare

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A B S T R A C T

The creation and assessment of programs, instruments, procedures, and frameworks that help nurses manage patient data or support their nursing practice is known as nursing informatics. Nurses may obtain vital information about patients' health and treatment plans from electronic health records in a timely manner thanks to computers. A computer-based patient record, or CPR, is an electronic patient record housed in a system created especially to assist users by offering alarms, reminders, clinical decision support systems, links to medical information, and other resources in addition to comprehensive and accurate data accessible. Computers are utilized for assessment, patient monitoring, documentation, telemedicine, and electronic medical records in both clinical and community settings. The most practical form of clinical information has been made available to hospitals through the use of computer systems. Nursing is the centre of information flow in all kinds of healthcare organizations, so advances in the science and technology of nursing informatics will improve the information available to nurses for clinical practice, management, research, and education, as well as support their role as communicators. Therefore, one of the most crucial parts of enhancing the health care delivery system is the use of computer programs for nursing practice and patient care delivery.

Keywords: Nursing Informatics, Computer- Based Patient- Record, Patient Care, Nursing Practice

Introduction

Even though the earliest computers were developed in the 1930s, they were not yet suitable for everyday use. Hospitals and healthcare facilities started to have computers by the 1980s for basic usage. The Electronic Medical Record System (EMR), also referred to as computerized medical records, electronic prescriptions, personal digital assistants, computerized automated cancer detection, and computerized theatre management applications are all examples of the computerization of health care delivery. A computer might be used to order lab tests and receive the results.

The requirement for a messenger to deliver a written paper result to the patient unit for interpretation had been eliminated.

Meaning of Informatics:

- Informatics comes from the French word "informatique" which means "computer science".
- Informatics is defined as computer science + information science.

Nursing Informatics

Informatics refers to the science of computer information

systems. Nursing Informatics is the science of using computer information systems in the practice of nursing. It is defined by the American Nurses Association (ANA, 2001).[1]

Components of Application Programme In Computer

Computer programs, also called applications or software who instructs the hardware to perform certain tasks. The most commonly used software programs are word processors, databases, spreadsheets, utilities such as communications, and presentation graphics programs.

Word Processing

- Word processing has the ability to save and manipulate words is probably the most used computer application.
- The word processing program has numerous options to permit the user to specify the typeface, spacing, and page layout.
- Document can be automatically checked for spelling, grammar.
- Documents can also be individualized by merging them with name and address lists and can include pictures, tables and charts, and graphical designs.

Databases

- Detailed information is managed using these apps. Individual records that reflect the information about a person, product, or area can be found within a database file.
- The record includes fields that are specific to the record. A pharmacy has a database that lists every medication it has in stock (a record) along with the strength, quantity, location, price, and manufacturer for each (the fields). An example of this would be a hospital client database that has a record for each client that contains separate fields for age, gender, diagnosis, primary care provider's name, and so on.
- An electronic address book is the most popular kind of database. Data is entered by the user into the vacant spaces and can be retrieved in a number of formats for printing or viewing.
- Database programs are powerful because they can swiftly search through enormous amounts of data and fields for patterns, and then assist the user in creating intricate and detailed reports.

Spreadsheets

- Words and numbers are manipulated by these applications.
- The program can execute a wide range of complex operations on the data by using formulas and instructions that are entered or built into the software. The data are organized in cells that are formatted into columns and rows.
- Spreadsheets are helpful for staffing, scheduling, invoicing, research, and other analytics in addition to being widely used for budget management.

Communications

- Communication devices require software to guide the computer in connecting to a remote device and knowing what data to send or receive.
- These programs use one or more standard protocols depending on the form of communication, such as fax or file transfer, in order to communicate effectively with the distant site.
- An important type of communications software is electronic mail (e-mail). E-mail has a standard method of communication worldwide.

Presentation Graphics Programs

- The advancement in color printing and computer display hardware, software programs to create charts, graphs, tables, pictures, videos, audio, and other non-text files have become increasingly popular.
- Many integrated software packages include graphics programs that can easily exchange materials with word processing and spreadsheet programs.
- User can create slide shows for use in teaching or research presentation.[1]

Significance of Nursing Informatics

- Nursing informatics facilitates communication.
- Nursing informatics allows articulation of organized information.
- Nursing informatics leads to credibility.

Application of Nursing Informatics

Nursing clinical practice

1. Work lists to remind staff of planned nursing interventions.
2. Computer generated client documentation.
3. Electronic Medical Record (EMR) and Computer Based Patient Record (CPR).
4. Monitoring devices that record vital signs and other measurements directly into the client record.
5. Computer generated nursing care plans and critical pathways.
6. Automatic billing for supplies or procedures with nursing documentation.
7. Reminders and prompts that appear during documentation to ensure comprehensive charting.

Nursing Administration (Health Care Information System:

1. Automated staff scheduling.
2. E-mail for improved communication.
3. Cost analysis and finding trends for budget purpose.
4. Quality assurance and outcomes analysis.

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Nursing Education

1. Computerized record keeping.
2. Computerized assisted instruction.
3. Interactive video technology.
4. Distance learning- wed based courses and degree programme.
5. Internet resources- formal nursing courses and degree programme.
6. Presentation software for preparing slides and handouts-powerpoint and ms words.

Nursing Research

1. Computerized literature searching- CINHAL, medline and wed sources.
2. The adoption of standardized language related to nursing terms- NANDA etc.
3. The ability to find trends in aggregate data, that is data derived from large population groups- SPSS.[1,2]

Use of Computer in Health Care Delivery System

Human Resources

- All employers must maintain a database, computerized or not, on each employee.
- In addition to the usual demographic and salary data, the database for licenses or certified health care personnel has unique fields for areas such as life support certification, health requirements (like-tuberculosis testing, hepatitis immunization, rubella), and performance appraisals.
- Administrators can use these human resources database to communicate with employees, examine staffing patterns, and create budget projections.

Medical Record Management

- It is expensive to keep records, but it is even more expensive not to be able to access what is in them.
- Therefore, nurses require computer programs that allow client records to be searched for trends such as the most common presenting diagnoses, number of cases by diagnosis-related groups, most expensive cases, length of stay or total number of days the case was open, client outcomes.
- Nurse informatics can assist administrators with the design and implementation of systems that allow for such searches to be generated, analysed, printed, and distributed.

Facilities Management

- Many aspects of managing buildings which are non-nursing services can be facilitated by computer.
- Heating, air conditioning, ventilation, CCTV and alarm systems are computer controlled. Security devices such as readers that scan identification cards, bar codes, magnetic strips permit only authorized personnel to enter client or private areas.
- Computer also manages and report inventory, tracking everything from pillowcases to syringes.

Budget and Finances

- The advantages of computerized billing are that – claims are transmitted much more quickly, likelihood of complete and accurate in comparison of handwritten documents.
- Computers can also affect cost savings by reducing the clerical services time needed for accounts payable and receivable.
- The budget itself is generally a spreadsheet program. This software allows tracking as well as forecasting and planning.

Quality Assurance and Utilization Reviews

- The positive result of a health care organization's services and activities should reflect in front of both internal and external stakeholders.
- Quality is considered a process and not an end point. Applying this perspective, computerized systems are ideal for taking a snapshot view of the institution's quality indices at any time.

Accreditation

- The Joint Commission on Accreditation of Healthcare Organization (JCAHO) has mandated that hospitals have online mechanisms to monitor quality indicators, so as to reduce the difficulty and time involved in the accreditation process.
- Healthcare agencies must maintain databases of policies and procedures, standards of care, and employee accomplishment of JCAHO requirements such as continuing education and in-service trainings.
- JCAHO has also required a move to computer systems that assess outcomes rather than processes.
- Another aspect of accreditation review is demonstrating adequate staffing for the number and acuity of clients. Each agency, whether hospital, outpatient, or home cares, must use a method of determining the number of hours of nursing care required for its current clients.
- This method can consider the severity of the client's illnesses, length of time needed to perform certain procedures, training and expertise of the nursing staff, and any other parameters desired.[3]

Use of Computer in Health Care

As technology has advanced medicine, computers have become a bigger and bigger part of the health care field. Whether its databases used to keep patient files, or computers being used to help doctor's interface with more advanced scanning equipment, the importance of computer technology is steadily increasing.

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- **Information Systems**

Computer in health care can be used as a information system for the physician, nurses, patient and the other health care providers. It used for Accounting, scheduling, monitoring. Databases

- **Telemedicine**

Includes remote monitoring devices and videoconferencing and used to connect specialists to patients in remote locations, it can transmit information from prisons, an ambulance, and other challenging situations.

- **Diagnostic**

Computer and computer software is used for diagnosis of disease. It can be used for the examination of internal organ of the body. Some of the delicate surgeries can be performed with the aid of computers.

- **Monitors**

Passive monitors, such as those used on EKG machines and other technologically advanced scanners, function off of a computer. The internal computers in the monitors will interpret all of the data being collected (the small surges of electric pulses that are the language of a computer) and then display it in a meaningful way.

- **Laboratories**

Running tests on tissues and fluids is a basic part of any medical laboratory. However, there are automated machines that are attached to computers that will run simple tests that don't require anything more than the completion of simple tasks. Centrifuges and other machines may therefore be run by computers that are programmed for their tasks by lab technicians.

- **Sanitation**

Computer use is so common in the health care field (with some hospitals having a computer in literally every room) that sometimes-special cleaning care has to be taken. Computer keyboards especially may transmit bacteria and disease, which can be deadly if the computer, is in an operating room. Therefore, it becomes very important that computer keyboards are frequently sanitized and kept clean so that there is as little risk as possible.[3]

Uses of Computer in Nursing Practice

Many activities of the registered nurse involve collecting, recording, and using data. Computers are well suited to assist the nurse in these functions.

Documentation of Client Status and Medical Record Keeping

In a typical 8-hour providing direct client care by a nurse, as much as 1/3rd of the time may be spent recording in client's record. Additional time is spent trying to access data about the client that may be somewhere in the medical record to standardized forms, policies, and procedures.

Also, nurses need to be able to gather broader client information such as length of stay for specific diagnoses. Computer can assist with each of these.

Bed-side Data Entry

- Admission, Discharge and Transfer (ADT): This system enables nurses to get a client's basic biographical data prior to the client arriving at the unit.

The nurses save making numerous phone calls when a discharge or transfer is entered into the computer, as it immediately notifies all relevant departments (such as nutrition, housekeeping, and pharmacy). It is also easy to find out information regarding beds and where a client is located on the unit.

- Documentation for Nursing: Among the electronic types of nursing documentation are nursing assessments, client care plans, medication administration records, nursing notes, and discharge plans. The benefits of computerized documentation are numerous. Because it is typewritten, it is readable. The initials or name of the person entering the data, together with the time of each entry, can all be encoded into the computer.
- In a format chosen by the organization, the computer can hold standard nursing care plans that nurses can use as a starting point for creating unique client care plans.
- The computer is frequently set up to print a list of medications that need to be taken at specific times of the day on its own. A nurse gives the medication to a patient using a printout, records it on the computer, and the computer produces a reminder if the drug is not administered and recorded within the allotted time after the planned time.
- A computer can calculate medication dosage more quickly and precisely. By selecting words that are appropriate for a specific client from a list of pre-programmed options, nurses can swiftly enter their notes.

Computer-Based Client Record

- **Electronic Medical Records Systems**

A computerized version of a medical record is called an electronic medical record, or EMR. Maintaining electronic medical records makes it easier for nurses to access patient information from anywhere, including clinical notes, laboratory results, and automated checks for drug and allergy interactions. Systems that maintain track of additional pertinent medical data can be included under the umbrella term "Electronic Medical Record." EMRs can

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be very beneficial when properly managed, notwithstanding the possibility that they will violate a patient's right to privacy regarding their medical records (Mandl et al., 2001). The EMR has four potential approaches to enhance healthcare. These are the following:

1. Constant availability of client health information across the life-span
2. Ability to monitor quality
3. Access to warehouse (stored) data, and
4. Ability for clients to share in knowledge and activities influencing their own health.[2,3,7]

Specific Applications of Computers in Nursing Practice

Improved Documentation

Although it has always been seen as a significant aspect of the nursing profession, documentation is now more necessary than ever for providing high-quality care. Admittance Among the computerized forms of nurse administration are nursing assessments, client care plans, medication administration records, nursing notes, patient transfers, and discharge plans. This paperwork has the benefit of being readable and having the ability to hold standard nursing care plans in a format specified by the institutions, which nurses can use as a guide to create customized client care plans.

Community and Home Health

- Computer networks are being used in innovative ways in home settings.
- A computer placed in a high-risk client's or family's home allows them to access information on a variety of topics, search the Internet, or e-mail a health care provider with questions and concerns.
- Clients can also record data about their health status that can be transmitted to the health care provider at the central network computer. Examples-successful use of this approach includes monitoring women at risk for preterm labour, person with AIDS etc.

Case Management

- Case managers must be able to track a group of clients-the caseload.
- Software programs allow the case manager to enter client data and integrate this with predesigned care tracking templates.

Information Systems

- Accounting - saves time and money
- Scheduling – appointments
- Monitoring – blood pressure, heartbeat
- Databases – A database is an organized collection of information
- Information entered in areas called fields
- Extensive use of databases in biotech.

Confidentiality

- Confidentiality of patient information must be strictly enforced.
- Access codes and passwords are used.
- Only authorized workers have access to patient information.
- Confidentiality-the principle in medical ethics that the information a patient reveals to a health care provider is private and has limits on how and when it can be disclosed to a third party.

Improved Coordination of Care

Nurses are often called upon to help coordinate the care of their patients. This often means relaying information from physicians, therapists, pharmacy, billing, and more, both during care and at discharge. Without all of the necessary information, patient care could suffer. Informatics improves the coordination of this information, allowing nurses to give their patients all of the information they need, improving both outcomes and the satisfaction with care.

For Diagnostic Procedures and Tests

Reduced Costs

Medical errors cost nearly $40 billion every year, and many of those errors are preventable with informatics. Not only does information provide nurses with alerts to avoid errors, it also helps to automate certain tasks, both improving nurse productivity and preventing some of the costs associated with health care.

Reduced Medical Errors

Patient safety is a primary concern of any health care provider, and nurses are often on the front lines of ensuring that their patients are kept safe and preventing medication errors, misdiagnoses, falls, and other problems. Health informatics provides important data that can prevent these errors.

Telemedicine

- Includes remote monitoring devices and videoconferencing
- Used to connect specialists to patients in remote locations
- Can transmit information from prisons, an ambulance, and other challenging locations
- Families can watch the care of high-risk newborns that are still in the hospital.

Bioinformatics

- The use of computers to store retrieves, analyze or predict the composition or the structure of bimolecular.
- "Bimolecular" include your genetic material
- Nucleic acids
- And the products of your genes: proteins.

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Human Genome Project

- Computers play an important role in the Human Genome Project.
- The goals of the Human Genome Project are: –
- Identify all the approximate 30,000 genes in human DNA,
- Determine the sequences of the 3 billion chemical base pairs that make up human DNA,
- Store this information in databases,
- Improve tools for data analysis.

Computers in Biotech

- IBM is working on a supercomputer called Blue Gene which may decipher some of the mystery behind how proteins work.
- "Computational biology," or "bioinformatics," can collect information "without having to do the experiment" This could make it easier to design drugs because we can make a reasonable prediction of the structure with a computer. Bioinformatics
- Bioinformatics is the term coined for the new field that merges biology, computer science, and information technology to manage and analyze data, with the ultimate goal of understanding and modeling living systems.[4,6,7]

Uses of Computer in Community Setting

The Main uses of Computers in Community are:

- Gathering of epidemiological and administrative statistics
- Patient appointments- identification system
- Patient assessment and data gathering
- Monitoring
- Documentation
- Special need application

Nursing Softwares

Probably the most overlooked and underappreciated resource in the operating room which nursing professionals require is nursing that performs multiple services. It minimizes non-clinical time, improves the management and facilitates access to information allowing them to do the job they were trained to do that delivers patient care.

Nursing software include a series of modules that address each nursing phases of surgery case and more. It includes:

1. Pre-admission testing
2. Pre-operative
3. Intra-operative
4. Post-operative

Technical breakthroughs that will make you a better nurse

Better Communication

Some hospitals are incorporating advanced communication systems, in which nurses and other members of the health care team can text message, speak and receive patient alarms through their smart-phone devices using specialized apps. This concept replaces antiquated paging systems, and helps the whole nursing unit stay in touch and work more efficiently with each other.

Electronic health Records

Soon, the days of endless paperwork, filling out patient charts, and having doctors' fax over medical records will be gone as more and more hospitals and facilities convert to HER, which allows healthcare providers to access patient information with a few keystrokes. With an extensive patient history easily accessible and all in one place, it cuts down on human error, alerts nursing staff to possible drug interactions, and keep track of diagnostic test results.

Real Time locating Systems

Just as GPS tracking has revolutionized the way we travel, a system of tagging and tracking medical equipment can increase hospital efficiency. Using radiofrequency identification tags, ultrasound, and/or infrared, the system helps nursing staff locate the nearest blood pressure machine.

Better diagnostic Tools

It makes everyone's life easier-both RNs and patient-when diagnostic exams can be performed non-invasively. Thanks to new technologies, there are more options available now to perform minimally invasive tests and treatments. This helps lower risk of infection, and over time, is more cost effective. Some examples include nanotechnology like handheld biosensors that can detect a range of diseases from miniscule body specimens. Another example is Texas children's hospital's use of ultrasound technology to place peripheral IV.

Tech Driven Drug Delivery

Many hospitals are implementing drug delivery systems in the form of implantable devices that release medication into patients. This aid RNs since they can schedule complex dosing to ensure patients get the medications they need in the right amounts and at exactly the right moment. Not only does this reduce human error, but it allows nurses to focus on other aspects of patient care.

Patient Lifting Technology

Here's a scary stat, but one that if you are an RN, will probably not surprise you: records showed that more than 2,400 of its nursing staff suffer deliberating injuries every year from lifting patients.

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The safe patient handling program, "says the article. While many hospitals have such technology in various units, VA hospitals are trying to make the technology the norm for every patient room. Since the implementation of the program in the VA hospitals, they report a 40 percent reduction in nursing injuries from moving patients.

Pager

It is a system that can be just one button push-for service transmitter and a single pager to call someone to front desk or exam room. The largest system for calling staff, patients, and doctors, work using simple browser-accessed software that is easy to install and use.

Pager System Used in Health Care

- Easy and minimal setup and training
- Most equipment is plug and play
- Very wide coverage scalability, from few-hundred feet, to building-wide, to campus-wide, to multi facility and global.

Advantage Points for the Major Modes of Healthcare Messaging and Paging:

- Staff to patient (wait-room)
- Staff to staff (local to wide area)
- Doctor paging (local to wide area)
- Patient to staff (nursing homes, exam rooms)

Patient Paging

- Patient paging system is used to make wait experiences vastly more pleasant and private. In patient paging use, the variety of capabilities and advantages include:
- Eliminate overhead or out-loud calling of patient's names to reduce noise and comply with privacy requirements.
- Eliminate uncomfortable and unsanitary weight room crowding.
- Send private text instructions to patients to direct them to destination or call a number.
- Use pager devices appropriate for the public rather than staff because they are conspicuous, durable, and cleanable.
- Provide coverage to areas where the cell phone network can't reach.

Staff to Staff Paging

Staff paging system range from extremely simple push-for-service, one-pager systems all the way to complete all- staff to any staff anywhere systems. The advantage of this system has a very wide variety of equipment that all works together and mix and match to suit mission. In staff to staff healthcare use, the variety of capabilities and advantages include

- Staff pagers are small and inconspicuous or silent and may be worn or pocketed all day. They can display text messages or be vibrate/beep only for economy.
- Reduce equipment needs by assigning pagers only to those who need them and only for their work shifts.
- Assure communication success by using any or all available messaging modes with a single message launch to text pagers, cell phone aid/or email.
- Administer, track, record and maintain message.

Patient to Staff Paging

The transmitters are ideal for emergency use as they are small, brightly colored, and battery powered so they can be conspicuously mounted anywhere to walls, rails, bedside and bathrooms, without need of any wiring.

The transmitters have single, obvious "service" button.

The transmitters can send the same message to multiple pagers simultaneously.

The transmitters have an automatic repaving feature to ensure response.[1,5,6]

Medical Records Department (MRD)

Definition

The Medical Records Department (MRD) prime objective is the provision of patient Medical Records in a timely manner to different hospital units in order to assist clinicians, allied health professionals and other hospital staff in the provision of quality care to patients.

- A patient record is the repository of information about a single patient. This information is generated by health care professionals as a direct result of interaction with a patient or with individuals who have personal knowledge of the patient (or with both). Traditionally, patient records have been paper and have been used to store patient care data.
- A Computer-Based Patient Record (CPR) is an electronic patient record that resides in a system specifically designed to support users by providing accessibility to complete and accurate data, alerts, reminders, clinical decision support systems,[3] links to medical knowledge, and other aids.
- A primary patient record is used by health care professionals while providing patient care services to review patient data or document their own observations, actions, or instructions.
- A secondary patient record is derived from the primary record and contains selected data elements to aid nonclinical users (i.e., persons not involved in direct patient care) in supporting, evaluating, or advancing patient care.[4] Patient care support refers to administration, regulation, and payment functions. Patient care evaluation refers to quality assurance,

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utilization review, and medical or legal audits. Patient care advancement refers to research. These records are often combined to form what the committee terms a secondary database (e.g., an insurance claims database).

- A patient record system is the set of components that form the mechanism by which patient records are created, used, stored, and retrieved. A patient record system is usually located within a health care provider setting. It includes people, data, rules and procedures, processing and storage devices (e.g., paper and pen, hardware and software), and communication and support facilities.

The main purpose of the medical record is

- To record the facts about a patient's health with emphasis on events affecting the patient during the current admission or attendance at the health care facility, and
- For the continuing care of the patient when they require health care in the future.
- A patient's medical record should provide accurate information on:
- Who the patient is and who provided health care?
- What, when, why and how services were provided?
- The outcome of care and treatment.

The Medical Record has Four Major Sections:

- Administrative, which includes demographic and socioeconomic data such as the name of the patient (identification), sex, date of birth, place of birth, patient's permanent address, and medical record number.
- Legal data including a signed consent for treatment by appointed doctors and authorization for the release of information.
- Financial data relating to the payment of fees for medical services and hospital accommodation.
- Clinical data on the patient whether admitted to the hospital or treated as an outpatient or an emergency patient.

Components of a Medical Record

The FIRST SHEET marks the start of the inpatient medical record for a patient who has been admitted to the hospital, and they are now considered INPATIENTS. A patient who has been admitted to the medical facility is called an INPATIENT. In a medical facility, inpatients typically spend at least four hours and sometimes overnight in a bed. The medical record grows while the patient is in the ward, with numerous forms added as medical staff treat and tend to their needs.

The physical medical record will eventually consist of the following:

- medical record forms
- a clip or fastener to hold the papers together
- dividers between each admission and outpatient notes
- a medical record folder

The Department Also Provides Numerous Functions and Services

- Creation, storage and maintenance of patient's medical record.
- Reporting of statistical data to the Department of Health and Hospital Executives.
- Monitoring the quality of medical record content.
- Maintaining a patient's right to confidentiality and privacy by adhering to information release guidelines and ensuring records are kept in a secure environment.
- Clinical coding.
- Forms design.
- Management of policies on health privacy, patient registration, records management and archiving, and medical record documentation.

Computerization of Medical Record Procedures

Numerous processes, including patient identification and admission and release protocols, have been automated in a number of nations. As we go through the Manual, we will talk about how Medical Record Departments can become more successful and efficient by automating certain processes. Prioritizing the development of a straightforward, efficient manual medical record service over computerization is crucial, even though computerization could help with the efficient management of medical record services. If manual systems are not built and maintained effectively, computerization will not be able to fix all of the issues.

Development of Medical Record Policies And Procedures

Policies

A policy is a set of rules that a government or healthcare facility adopts and uses to define goals and make decisions. MROs are free to create department-specific policies, but they must stay within the department's purview and not interfere with organizational policies of the hospital. Approval of the policies concerning medical record services is typically the duty of the Medical Record Committee and Senior Hospital Management, with input from the MRO. Medical record policy is the foundation for several processes in the medical record department.

Policy on Retention of Medical Records

When developing a retention policy, it is important to remember that medical records should be kept by the hospital as long as required under the Statute of Limitations (retention for legal requirements) or the country's record retention regulation. Before determining a retention policy,

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the hospital administrator should review the record usage after discharge.

Purpose of Medical Records Department

The medical record is indispensable from the point of view of the patient, the doctor, and the hospital and for medical education and research.

The Patient

- It serves to document the clinical history of the patient's illness and course of the disease.
- It serves to avoid omission or unnecessary repetition of diagnostic and treatment measures.
- It assists in continuity of care in the event of future illness.
- Provides necessary information for insurance, contributory health schemes or for the employment purposes.
- Useful for the patient for his/her further follow up treatment.
- To receive quality care
- It creates a means of communication between patient and care providers.

The Doctor

- Assurance of quality, quantity, and adequacy of diagnostic and therapeutic measures undertaken.
- Well documented medical records provide support for the physician defence in the event of a medical malpractice action.
- Assurance of orderly continuity of medical care.
- Evaluation of medical practice.
- An aid in research and the continuing education of health professionals.
- A protection in the event of legal question.
- Safeguard the physician and surgeons from the integrity

The Hospital

- Document the type and quantity of work undertaken and accomplished.
- Furnish proof of the type and quantity of care rendered to the patient
- Evaluate the proficiency of the individual doctor, for administration and clinical purposes.
- Evaluate the services of the hospital in terms of accepted norms and standards.
- Protect the hospital in the event of legal matters.
- Serve as an administrative record of personnel performance and staffing needs, for budget preparation, justification for physical facility allocation and utilization, for statistical data for administrative use and evaluation, for estimating equipment and supply utilization and needs.
- Assist in future program planning.
- Medical education and research:
- Recorded observations are the basis for all clinical research.
- Further the education of doctors and other health personnel.
- Medical records supply pertinent data for the use by public health authorities for control of diseases.
- planning, organization and staffing
- The main factors that govern the organization of work in a medical record

The Nurses

- Useful for patient present and future health care
- As a written collection of information about a patient's health and treatment
- Essential for the continuing care of the patient.
- To provide information on a patient care to other health care professionals.
- Well documented medical records provide support for the nurses defence in the event of a medical malpractice action.

Management

- Important part of a patient management
- Helps in proper evaluation of the patient.
- Helps to plan treatment protocol.

Administration

- Medical record is useful to the administrator to manage the hospital and use these as yardstick for controlling the hospital.
- Help medical/health record workers in developing countries to develop and manage the medical record and health information services in effective and efficient manner.
- It has been written for clerical staff with a basic understanding of medical/health record procedures.
- To ensure documentation of compliance with institutional/professional or governmental regulation.

Medical Records Department Is Organised As Under: -

- Office for Medical Record Officer (MRO) And Asst. MRO.
- Assembly and Deficiency Check Desk-
- Incomplete Record Control Desk
- Coding and Indexing Desk.
- Discharge Analysis and Vital Statistics Desk
- Document Processing Area Comprising Of:
- Record Storage: *Active Record Storage *Inactive Record Store.[1,2]

EDP [Electronic Data Processing]: -

EDP means Electronic Data Processing. Generally, in all companies there is a department that looks after all

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the work of computers. Some companies call it as IT Department and some companies call this department as E.D.P. Department. I am mentioning hereunder the roles of EDP Manager & EDP Department.

Types of Data Processing

Modern data processing employing machines and other devices falls into two basic categories:

Mechanical Data Processing

Mechanical processing system uses a combination of manual procedures and mechanical equipment. The system uses various devices such as typewriters, sorters, calculators, collators, tabulators, duplicators, and verifiers.

Electronic Data Processing

In electronic data processing different types of input, output, and storage devices may be interconnected to an electronic computer to process data. Electronic Data processing.

Computer Files

Computer files are files maintained in computer readable form. A computer file is a resource for storing information, which is available to a computer program and is usually based on some kind of durable storage. A file is "durable" in the sense that it remains available for other programs to use after the program that created it has finished executing. Computer files can be considered as the modern counterpart of paper documents which traditionally are kept in office and library files, and this is the source of the term.

Types of Computer Files

Computers can store information on several different storage magnetic disks, magnetic tapes etc. A computer can store millions of bytes of data or information. So that we can store and access data easily from the storage device the operating systems provides us data file system. .doc, .xls, .png, .jpeg, etc are various extensions for various files.

Role of E.D.P. Manager

1. Looking after E.D.P. Department
2. Approval for New Systems in the Company.
3. Approval and Sanction for New Server requirements.
4. Managing duties of EDP Staff.
5. Planning for Networking in newly built departments.
6. Future requirements and contact between CEO and other department heads.
7. Co-ordination between all departments.
8. Rate procurement with the suppliers of IT materials.
9. Responsible to implement new projects like SAP etc.

Role of EDP Department

1. An EDP department is responsible for all database management.
2. Networking planning, implementation are also the responsibility of EDP Department.
3. Installing new system, up gradation of systems in various departments.
4. Securities like Anti-Virus, Internet Security and responsible for firewall etc.
5. Daily backup management of all the data of company.
6. Restore the data for user whenever required.
7. Solve user's problem at their sight or by other communication.
8. Managing Exchange Server.
9. Managing all server data like new reports creation and other timely reports.
10. Generally, in some companies EDP Department also looks after payroll work as this is the confidential work.
11. Printing of reports on Line Printer through networking.
12. Fill the requirement of stationary, printer cartridge and all consumable.
13. Monthly backup of Tapes / External Hard Drives.
14. Creation of Original Software / systems list in the company.
15. Managing wireless network.
16. Photocopy machines, scanners, fax machines and PSC printers, laser printer, Dot Matrix Printer, Line printers all are come under the EDP Department.
17. Training to the user about new systems.
18. Repair and reinstall the old systems and if not possible in company then make returnable gate pass and send them to the vendor for repair. Elements of Electronic Data Processing[2]

Characterstics of Good Patient Records

- **Complete:** sufficient data to identify the patient, justify diagnosis and warrant treatment and outcome
- **Adequate:** all necessary forms and all relevant clinical information
- **Accurate:** capable of quantitative analysis

Functional Components of a Computer Based Patient - Record System

- Integrated view of patient data
- Clinical decision support
- Clinical order entry
- Access to knowledge resources
- Integrated communication support

Advantages of Computerized Patient Record

- Have the patient's entire history
- Can flag drug reaction problems
- Can eliminate redundancy in record keeping

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- Eliminate the need for taking repeated histories
- Reduce error, if utilized properly

Disadvantages of Computerized Patient Record:

- Very expensive to setup
- Less secure
- Require standardized coding system, which force all users to use entries that the computer can understand (1)(2)(3)

Conclusion

The use of computers has benefited nursing education, nursing research, client monitoring, decision-making, and bedside documentation, among other things. It has also reduced paperwork and increased administrative efficiencies. It has also improved the quality of healthcare, reduced medical errors, decreased costs associated with healthcare, and increased access to affordable care. Regretfully, when computers are misused, they can accentuate weaknesses within an establishment. Utilizing the features, functionalities, input and output modalities when a nurse would find it most helpful is the true problem.

The requirement for a messenger to deliver a written paper result to the patient unit for interpretation had been eliminated.

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