Model Answer of Nursing Informatics Exam

Date: 16/1/2022   **Time:** 3 Hours   **Code:** MP607   **Total Marks:** 90

Nursing informatics and informational technology are becoming a major part of today's healthcare organization infrastructure so there is the need to enhance nurse informatics` competencies with proper knowledge and skills to cope with recent technological inventions, An Electronic health record is a digital version of a patient's medical chart that is maintained by the provider over time taking into consideration ethical principles "

In the light of this statement

1. **List nursing informatics framework and purpose of nursing informatics? (10 Marks)**

Nursing Informatics Framework

The framework for nursing informatics relies on the central concepts of data, information and knowledge:

- **data** is defined as discrete entities that are described objectively without interpretation
- **Information** is data has been interpreted, organized or structured to provide meaning to the data.
- **Knowledge** as information that has been synthesized so that interrelationships are identified and formalized resulting in decisions that guide practice.

Example:

- **Data= 9:00 am -100, 4:00 am 180**
- **Information=**
- **Knowledge= my clients glucose level rises in the late afternoon. His insulin dose needs to be adjusted**

The Benefits of Nurse Informaticists:

- Nurse Informaticists promote and facilitate access to resources and references
- Support for their mission to deliver high quality, evidence-based care
- Support for better service by facilitating true interdisciplinary care
- Improvement in key relationships with Providers and care recipient
- Enable cost savings and productivity goals
- Facilitate change management
- Enhance continuity of care

2. **State the value and roles of nurse informaticists?   (10 Marks)**

The Value of Nurse Informaticists

1. Nurse Informaticists are Bi-Lingual!

- Support nursing work processes using technology .
- Re-Engineer clinical workflow & facilitate change management.

2. Analyze clinical and financial data.

3. Promote and facilitate access to resources and references.

4. Provide nursing content to standardized languages

5. Enhance continuity of care

6. Improve relationships between providers and recipients of health care

7. Enable cost savings and productivity goals

The Many Roles of a Nurse Informaticists:

- Administration, leadership, and management
- Analyzer
- Compliance and integrity management
- Consultation
- Coordination, facilitation, and integration

- Development
- Educational and professional development
- Policy development and advocacy
- Research and Evaluation

3. Explain components and barriers of nursing informatics?　　　(10 Marks)

Components of nursing informatics:

There are five major components include: Hardware, software procedures, data and people.

1-Hardware: Refers to machinery. Includes the computer itself, which is often referred to as the central processing unit (CPU), and all of its support equipment's.

2-Software: Refers to computer programs

3-Procedures: Are the policies that govern the operation of a computer system.

4-Data: Are facts that are used by programs to produce useful information.

5-People: Mean the end user of the systems

Barriers of nursing informatics.

1. some nurse may be more comfortable with paper documentation than computers
2. some nurse informatics ,followed by inadequate financial resources
3. lack of integration in computers system and software
4. it take time to become a nurse informatics
5. Other issues were lack of administrative support, staffing issues, user acceptance, problems with the organization's strategic plan, software design, and infrastructure and time management. In some cases, the technology simply wasn't available

4. Enumerate advantages and disadvantages of nursing informatics?(10 Marks)

Advantages of Nursing Informatics:

There are many advantages for nursing informatics includes the following:

➢ Necessitates the collection of structured data.

- ➤ Systematically collect data that can be transformed into information for decision making.
- ➤ Improve patient care
- ➤ Avoid medical errors
- ➤ Time is saved by eliminating the need for daily handwriting of patient assignments
- ➤ More time spent with patient and less time at nurse station
- ➤ Reduce paperwork / paper loss.
- ➤ Cost reduction (Fewer loss of charges).

Disadvantages of Nursing Informatics:

Need for training:

Nurses needed to be trained for the use of various features provided by the Personal find it difficult to understand the design of the system

- Computer malfunction.

- Impersonal effect: by making information available to anyone.

- Cost: cost of the hardware and software

- Susceptibility to network hackers

5. Discuss benefits of electronic health records? (10 marks)

Benefits of electronic health records

There are many benefits to an EHR, but to be most effective, it must be used correctly.

1. Improved Quality of Care

This improves the delivery of care on many levels, including:

- Improve accuracy of documentation and making diagnosis easier and quicker
- Start treatments immediately with automated alerts noting potential risks
- Make preventive care easier to implement
- More easily and effectively integrate evidence-based clinical guidelines

2. **Convenience and Efficiency**

Computerized records can be accessed much faster and more efficiently with just a few keystrokes. This, in turn, offers countless benefits to providers and patients alike.

For the Provider

- Improving collaboration with other providers and partners
- Reducing malpractice risk by improving documentation.
- Reducing the demands and costs of storage: the medical office not need to supply itself with costly file, folders, and so much printer paper and ink
- Facilitating easy medication management.
- Saving time by allowing patient data to be reviewed faster,

For the Patient

- An EHR system will contain a portal patients can use whenever they wish to access their own medical records. This prevents the need for unnecessary calls or appointments to obtain information the patient can easily access electronically on his or her own.
- enhancing Patient satisfaction by reducing time for responding to patient's messages and improving continuity of care

3. **Financial Incentives**

EHR system can help a physician's office to meet Medicare and Medicaid so that they can access certain incentives the federal government issues.

6. Explain principles of nursing ethics?   (10 marks)

Principles of nursing ethics

- **Informed consent**: The nurse has a responsibility to obtain a patient consent prior to any treatment or procedure. Sometimes the patient will refuse treatment. but if the patient is unconscious, the nurse will obtain informed consent from any family members .

- **Truth telling:** Nurses must remain truthful even when reporting news the patient does not want to hear. They also depend on patients to share correct information about their medicines, conditions and other issues.

- **Beneficence:** It is acting for the good and welfare of others and including such attributes as kindness and charity. The American Nurses Association defines this as "actions guided by compassion".

  - **Non-maleficence**: It is to do no harm. This includes both physical and psychological harm. More specifically, it is selecting interventions and care that will cause the least amount of harm to achieve a beneficial outcome to ensures the safety of the patient and community in all care delivery

  - **Autonomy**: States that patients should make decisions regarding their care. Nurses may try to influence patients to adopt a particular treatment strategy when that is the strategy with the strongest evidence base, but must not prevent patients making their own decisions..

  - An example of behaviours that promote autonomy is presenting all treatment options to a patient and providing them with sufficient information such that the patient can make an informed choice in concert with medical advice.

- **Justice**: It is professional obligation to be fair to all individuals regardless gender, race, religion, culture and individual financial abilities.

- **Respect**: nurse must respect all patient rights and dignity regardless gender, race, religion, culture and individual financial abilities.

- **Fidelity**: Is individual obligation to commitments that he or she made.

- **Confidentiality**: all information obtained from patient in the line of duty should not be revealed to others.

7. **Compare between electronic health records and electronic medical records?**

(10 marks)

EHRs:	EMRs:
An EHR, or Electronic Health Record, functions as an all-encompassing system that a physician can use to keep track of their patient's health information. This is usually a computer software that keeps a file of every single aspect of a patient's care record.	• Is defined as the legal record of patient care created in hospitals and ambulatory environments that is the source of data for the HER
• Digital record of complete history of health information	• Digital record of one chart
• Sharing of updated real-time information with authorized providers	• Not design to be shared outside of one individual practice
• Patient can take medical information with them	• Patient record stays at one practice
• Access to tools that providers can use for decision making	• Mainly used by providers for diagnosis and treatment

8. **List goals of nursing informatics?** **(5 marks)**

Goals of nursing informatics:

1. Optimize informatics management and communication through the use of information technology

2. Support nurses as they improve the health of population, communities, families and individuals

3. Provide leadership in the specialty of nursing informatics

4. To promote patient safety and improve outcome of health care to the patient

5. Facilitates the integration of data, information and knowledge to Support clients, nurses and other providers in their decision making in all roles and settings ، Improve communication and quality

9. List strategies for achieving nursing competencies?   (5 marks)

Strategy for achieving nursing competencies.

Interpersonal Skills:

Healthcare usually requires teamwork and collaboration.

Problem Solving Ability:

 Informatics can involve "clinical challenges, such as improving the sharing of patient data between providers .

Programming Knowledge:

 For nurses, computer programming "may give you an advantage over your competition and broaden" professional options in the informatics field, especially if staff wants to have an important role in efforts to "build information systems for healthcare organizations."

Communication Skills:

 The ability to communicate effectively "is particularly important for success in the field of health informatics."

<u>Ability to Work with Health Data Systems:</u>

Using health data systems and electronic health records is vital for achieving better outcomes in today's healthcare environment.

<mark>10. **Discuss three levels of utility competencies for the nurse to acquire? (10 marks)**</mark>

Utilities Competencies

Utility competencies are related to the process of using computers and other technological equipment within nursing practice, education, research and administration. Specific nursing informatics competencies include the process of applying evidenced based practice, critical thinking, and accountability in the use of selected applications in a comfortable and knowledgeable way.

User Level Utility Competencies

1. recognizes the relevance of nursing data for improving practice
2. recognizes limitations of computer applications
3. recognizes need for continual learning in informatics skills, applications and knowledge
4. recognizes the nature of computer - human interfaces and assesses impact on client care

Modifier Level Utility Competencies

1. understands basic and complex concepts and processes of various computer systems and how they relate to practice
2. synthesizes data from more than one source and applies to practice
3. accesses and utilizes multiple information sources for gathering evidence for clinical decision making
4. upholds ethical standards related to data security, confidentiality and clients' right to privacy
5. evaluates internet based nursing and health materials for quality, accountability, reliability and validity

Innovator Level Utility Competencies

1. participates in needs assessment, system selection, implementation and maintenance of information systems for practice
2. recognizes factors and issues related to human - computer interface interactions
3. ensures inclusion of nursing data and information in design of planned information systems
4. independently seeks learning initiatives to stay abreast of technological developments

Good luck

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