بسم الله الرحمن الرحيم

Definitions

✓ **Nursing Informatics (NI)** is the application of computer science and information science to nursing. NI promotes the generation, management and processing of relevant data in order to use information and develop knowledge that supports nursing in all practice domains.

✓ **Nursing informatics** "is the specialty that integrates nursing science with multiple information and analytical sciences to identify, define, manage and communicate data, information, knowledge and wisdom in nursing practice."

- **Nursing informatics,** the application of computer technology to all fields of nursing—nursing service, nurse education, and nursing research."

- **Nursing informatics** is a combination of nursing science, information science, and computer science to manage and process nursing data, information and knowledge to facilitate the delivery of

✓ **medical informatics** The scientific field that deals with biomedical information, data and knowledge-their storage, retrieval, and optimal use for problem-solving and decision-making.

Nursing Informatics Requirements

1. A bachelor's degree in nursing (BSN), at minimum.

2. A master's degree and certifications, particularly for executive roles (chief nursing informatics officer).

3. Experience and/or strong understanding of working in a clinical setting.

4. Strong technical skills; ability to quickly adapt to emerging technologies and innovation.

5. Strong project management skills.

6. An affinity for obtaining, analyzing and strategizing about data.

7. Understanding of medical economics.

8. Strong interpersonal skills.

9. Leadership experience.
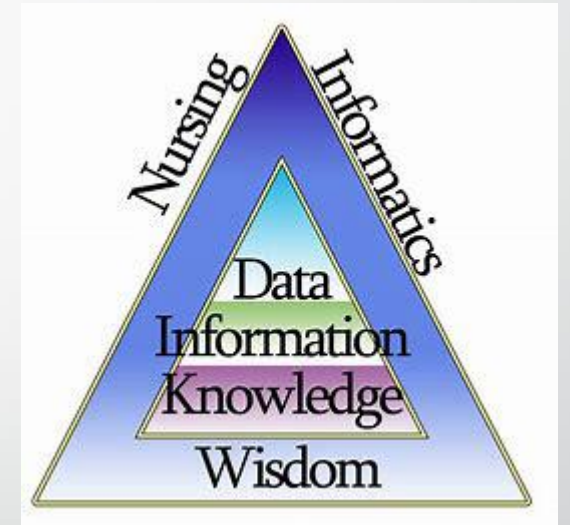
Benefits of Nursing Informatics in Healthcare

- **Better Documentation**
- **Fewer Medical Errors**
- **Cost Savings**
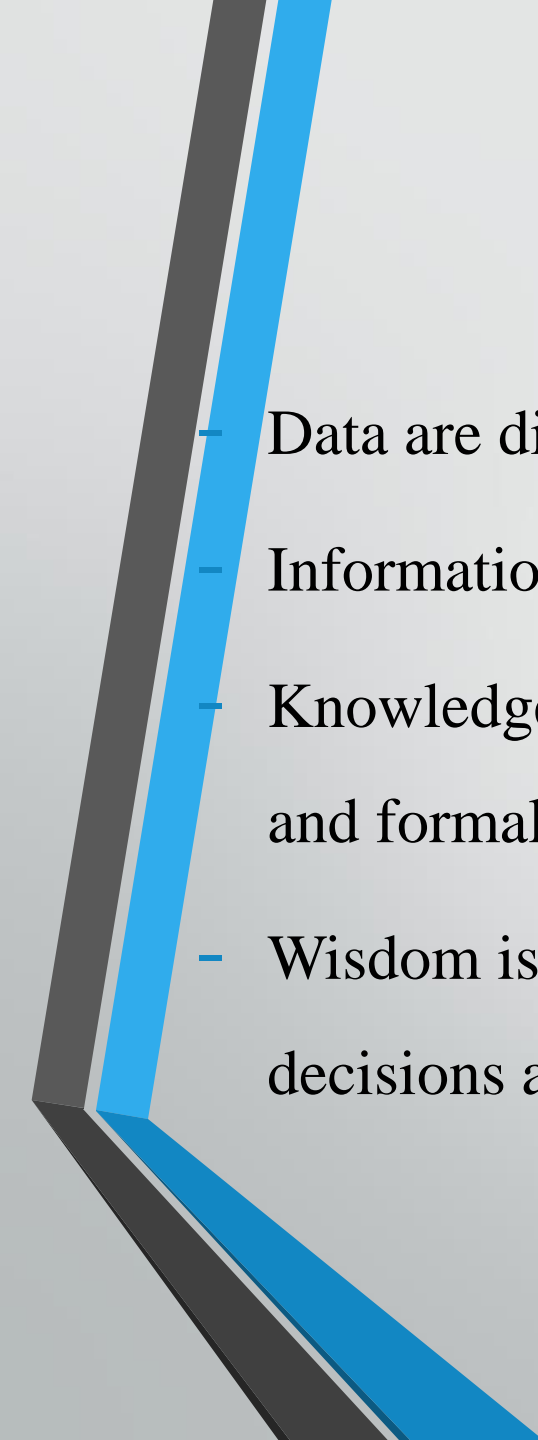- **Improved Care Coordination**

Scope of Informatics

1. Data, information, knowledge and wisdom

2. Communication and information management

3. Types, capabilities, and limitations of technology

4. Legal and ethical considerations of information

- Data are discrete entities that are described objectively without interpretation.

- Information is data that are interpreted, organized, or structured.

- Knowledge is information that is synthesized so that relationships are identified and formalized.

- Wisdom is the appropriate use of data, information and knowledge in making decisions and implementing nursing actions.

Example

☐ **Data**

☐ Age

☐ Number of home care visits

☐ Blood pressure

☐ Disease

☐ Weight

☐ Number of workload units of service

☐ **Information**

☐ Prevalence of patient falls by nursing unit, by month – this year compared to last year

☐ Prevalence of stage 1-4 decubitus ulcers, by quarter

☐ % distribution of workload units of service and intervention by activity category by nursing unit, by month

☐ **Knowledge**

☐ Effectiveness of hip pads in preventing hip fractures

☐ Decubitus ulcers treatment protocols

☐ Relationship between different nurse-staff mix configurations, nursing interventions and client outcomes

☐ Care maps for specific health conditions

Informatics Nurse Specialist Standards of Practice

1. Standard I. Identify the Issue or Problem
2. Standard II. Identify Alternatives
3. Standard III. Choose and Develop a Solution
4. Standard IV. Implement the Solution
5. Standard V. Evaluate and Adjust Solutions
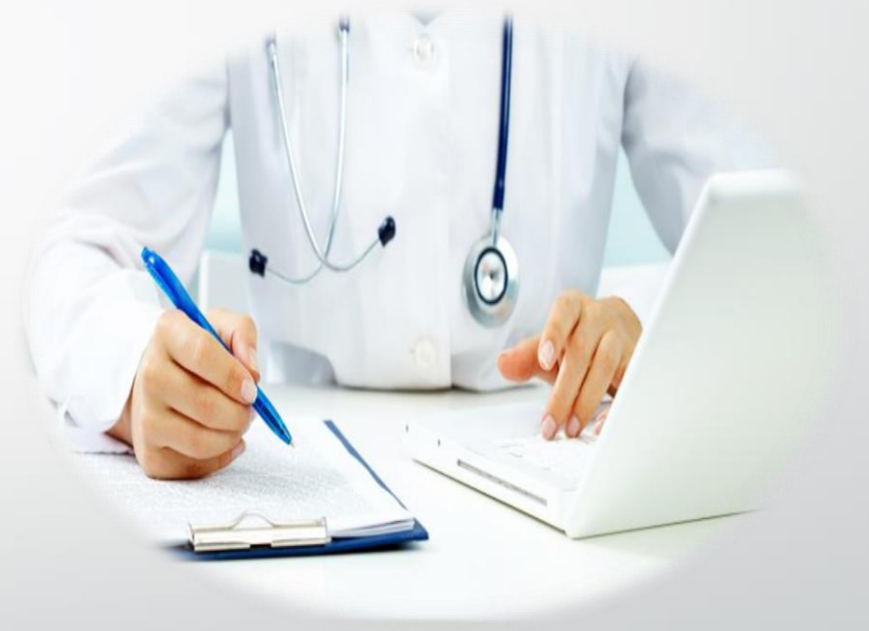
Area/ types of Informatics Competencies

1. **Computer Literacy:** a set of skills that allow individuals to use computer technology to accomplish tasks.

2. **Informatics Knowledge:** a set of cognitive processes that allows the individual to recognize what, when, and where information is needed and to locate, evaluate, and use that information appropriately.

3. **Informatics Skills:** the technical ability to use tools and techniques to improve information and knowledge access, integration, management and use.

Levels of Informatics Competencies

1. Beginning Nurse

- Has basic computer skills

- Uses applications

- Uses sources of data

- Uses technology for care delivery, communication, and decision support

- Respects and protects patients' rights to privacy and confidentiality of information

2- Experienced Nurse

- Understands the value of data and information

- Uses technology to trend and aggregate individual and population-based patient information for decision support and communication

- Evaluates quality of information sources

- Advocates for technology solutions that improve care delivery

3- Informatics Nurse Specialist

- Uses advanced systems and tools to manage, evaluate, integrate, and communicate data, information and knowledge

- Assesses current capabilities and limitations of technology and their impact on users and organizations

- Manages IT projects across the systems life cycle

- Actively seeks to improve the information and knowledge available for clinical decision-making

4- Informatics Innovator

- Conducts research related to nursing informatics
- Influences top-level decisions and policy design which impact clinical information management
- Builds theoretical models of NI
- Evaluates system level informatics initiatives

Roles of the Informatics Nurse Specialist

1. Project Management
2. Consultation
3. Education
4. Research
5. System Development
6. Decision Support/Outcomes Management
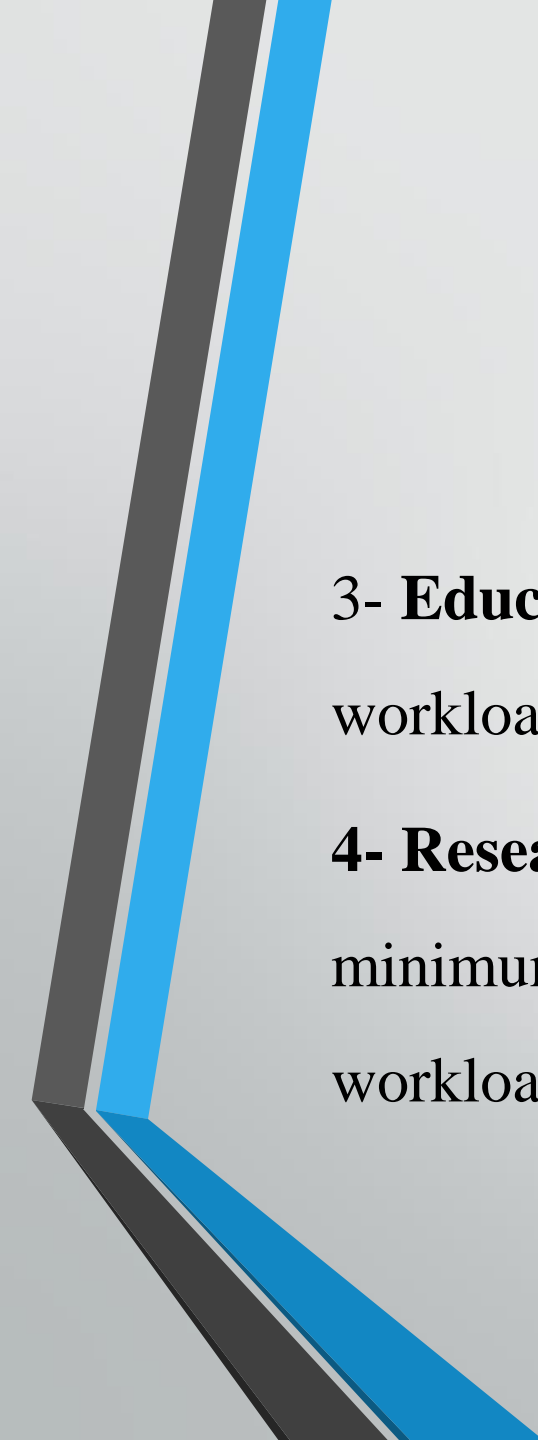7. Policy Development
8. Entrepreneur

Applications of nursing informatics

1. **Clinical Practice**: Recording of patient assessment data in an electronic health record. Recording of workload and interventions as a by-product of electronic charting.

2. **Administration:** Analysis of MIS reports generated from a spreadsheet software application, Review of outcome indicators using a decision-support software application and Recording of workload and interventions as a by-product of electronic charting.

3- **Education**: Distance learning/teaching via the internet and Recording of workload and interventions as a by-product of electronic charting.

4- **Research:** Evaluation of nurse-sensitive outcome measures using a standard minimum data set, Use of knowledge bases via the internet and Recording of workload and interventions as a by-product of electronic charting.