

NUR 599 :

40 multiple choice and 10 matching

questions Midterm exam:

To prepare for the exam, be familiar with the following topics/concepts from the

- General principles of Nursing Informatics

Informatics provides the knowledge, skills, and understanding that allow medical professionals to harness the tools at hand and to use them well to enact improvement. The relationship between informatics and healthcare is multifaceted. Informatics has gained recognition as a specialty area that applies concepts from computer, cognitive, and information sciences, as well as other emerging areas, to manage and communicate data, information, knowledge, and wisdom.

- Nursing informatics (NI)

the specialty that integrates nursing science and computer science information science and cognitive science with multiple information and analytical sciences to identify, define, manage, and communicate data, information, knowledge and wisdom in nursing practice.

NI supports nurses, consumers, patients, the interprofessional healthcare team, and all other stakeholders in their decision-making in all roles and settings to achieve desired outcomes. This support is accomplished through the use of information structures, information processes, and information technology.

Knowledge:

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The awareness and understanding of a set of information and ways that information can be made useful to support a specific task or arrive at a decision; abounds with others' thoughts and information. Information that is synthesized so that relationships are identified and formalized.

Understanding that comes through a process of interaction or experience with the world around us. Information that has judgment applied to it or meaning extracted from it. Processed information that helps to clarify or explain some portion of our environment or world that we can use as a basis for action or upon which we can act. Internal process of thinking or cognition. External process of testing, senses, observation, and interacting.

Knowledge acquisition

The act of getting knowledge.

Knowledge brokers

People who know where to find information and knowledge. They generate some knowledge but are mainly known for their ability to find what is needed. More experienced nurses and nursing students become knowledge brokers out of necessity—needing to know.

Knowledge builder

Person who examines, interprets, and compares clinical data and trends

with an eye toward improving clinical practice based on the available evidence.

Knowledge-centric

Knowledge is the central focus.

Knowledge consumers

Users of knowledge who do not have the expertise to provide the knowledge they need for themselves.

Knowledge dissemination

Distribution and sharing of knowledge.

Knowledge domain process (KDP) model

Model that represents knowledge construction and dissemination in an organization.

Knowledge exchange

The product of collaboration when sharing an understanding of information promotes learning to make better decisions in the future.

Knowledge generation

The creation of new knowledge by changing and evolving knowledge based on one's experience, education, and input from others.

Knowledge generators

Nursing researchers and nursing experts—the people who know; they are able to answer questions, craft theories, find solutions to nursing problems or concerns, and innovate practice.

Knowledge management systems (KMSs)

Repositories of information that contain the latest collective expertise based on experience and research. The knowledge is typically stored in a computerized system that promotes easy access for use.

Knowledge processing

The activity or process of gathering or collecting, perceiving, analyzing, synthesizing, saving or storing, manipulating, conveying, and transmitting knowledge.

Knowledge repositories

Collections of information made available to an organization's workers to support and inform their work.

Knowledge user

Individual or group who benefits from valuable, viable knowledge.

Knowledge workers

Those who work with information and generate information and knowledge as a product.

Wisdom:

Wisdom is the application of knowledge to an appropriate situation. In the practice of nursing science, one expects actions to be directed by wisdom.

Wisdom uses knowledge and experience to heighten common sense and insight to exercise sound judgment in practical matters. It is developed through knowledge, experience, insight, and reflection. Wisdom is

sometimes thought of as the highest form of common sense, resulting from accumulated knowledge or erudition (deep, thorough learning) or enlightenment (education that results in understanding and the dissemination of knowledge). It is the ability to apply valuable and viable knowledge, experience, understanding, and insight while being prudent and sensible. Knowledge and wisdom are not synonymous: Knowledge abounds with others' thoughts and information, whereas wisdom is focused on one's own mind and the synthesis of experience, insight, understanding, and knowledge. Wisdom has been called the foundation of the art of nursing.

Scientific Underpinning

the DIKW Paradigm

The conceptual framework underpinning the science and practice of NI centers on the core concepts of data, information, knowledge, and wisdom, also known as the DIKW paradigm.

Data

: The smallest components of the DIKW framework. They are commonly presented as discrete facts; product of observation with little interpretation (Matney et al., 2011). These are the discrete factors describing the patient or his/her environment. Examples include patient's medical diagnosis (e.g. International Statistical Classification of Diseases

[ICD-9] diagnosis #428.0: Congestive heart failure, unspecified) or living status (e.g., living alone, living with family, living in a retirement community, etc.). A single piece of data, known as datum, often has little meaning in isolation. Information: Might be thought of as "data + meaning" (Matney et al., 2011).

Information is often constructed by combining different data points into a meaningful picture, given certain context. Information is a continuum of progressively developing and clustered data; it answers questions such as "who," "what," "where," and "when." For example, a

combination of patient's ICD-9 diagnosis #428.0 "Congestive heart failure, unspecified" and living status "living alone" has a certain meaning in a context of an older adult. Knowledge: Information that has been synthesized so that relations and interactions are defined and formalized; it is a build of meaningful information constructed of discrete data points (Matney et al., 2011).

Knowledge

is often affected by assumptions and central theories of a scientific discipline and is derived by discovering patterns of relationships between different clusters of information. Knowledge answers questions of "why" or "how." For healthcare professionals, the combination of different information clusters, such as the ICD-9 diagnosis #428.0 "Congestive heart failure, unspecified" + living status "living alone" with an additional information that an older man (78 years old) was just discharged from hospital to home with a complicated new medication regimen (e.g., blood thinners) might indicate that this person is at a high risk for drug-related adverse effects (e.g., bleeding).

Wisdom:

An appropriate use of knowledge to manage and solve human problems (ANA, 2008; Matney et al., 2011). Wisdom implies a form of ethics, or knowing why certain things or procedures should or should not

be implemented in healthcare practice. In nursing, wisdom guides the nurse in recognizing the situation at hand based on patients' values, nurse's experience, and healthcare knowledge. Combining all these components, the nurse decides on a nursing intervention or action.

Benner (2000) presents wisdom as a clinical judgment integrating intuition, emotions, and the senses; using the previous examples, wisdom will be displayed when the homecare nurse will consider prioritizing the elderly heart failure patient using blood thinners for an immediate intervention, such as a first nursing visit within the first hours of discharge from hospital to assure appropriate use of medications (para. 2).

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The Foundation of Knowledge Model:

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The Foundation of Knowledge model (

[Figure 1-2](#)

) permeates this text,

reflecting the understanding that knowledge is a powerful tool and that nurses focus on information as a key building block of knowledge. The application of the model is described to help the reader understand and appreciate the foundation of knowledge in nursing science and see how it applies to nursing informatics. All of the various nursing roles (practice, administration, education, research, and informatics) involve the science of nursing. Nurses are [knowledge workers](#), working with information