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Nursing Informatics Strategy and Policies Committee

HMC – NI MODEL

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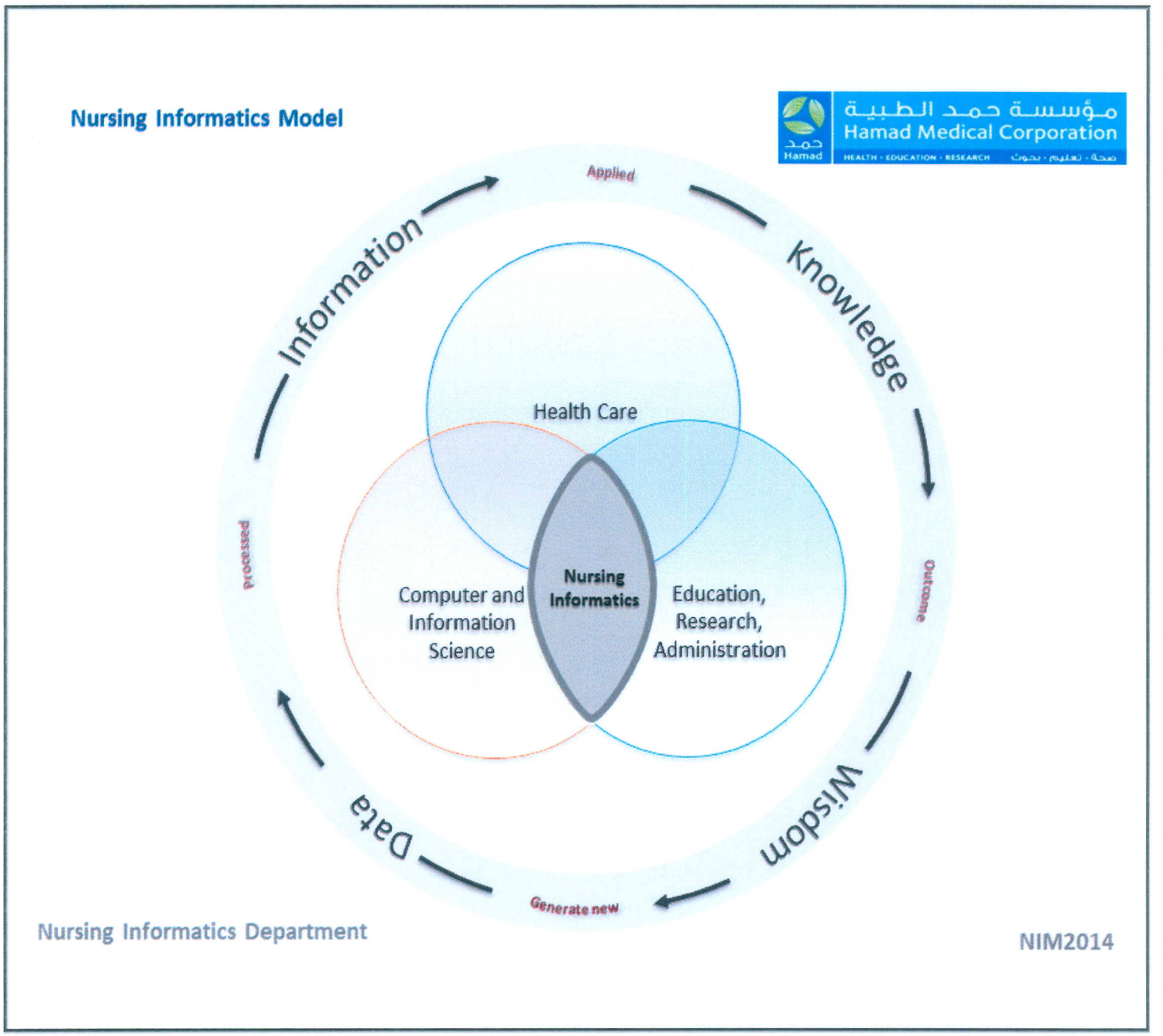
HMC NI Model


Nursing Informatics Model
Applied
Information
Knowledge
Health Care
Nursing Informatics
Computer and Information Science
Education, Research, Administration
processed
Outcome
Data
Wisdom
Generate new
Nursing Informatics Department
NIM2014

HMC NI Model Description

HMC - NI Definition

"Nursing Informatics is defined as the specialty that advances nursing practice by integrating computer and information science, education, administration and research science within healthcare with the best use of information management to improve healthcare delivery"

HMC NI Model is designed to be centered on Nursing Informatics which is encompassing three spheres at its intersection;

Healthcare is the provision of the clinical services typically through a health care system by nurses\clinicians to patients,

Education, Research and **Administration;**

Nursing Informatics **Education** builds health care professionals' knowledge and skills in computer literacy, information management and use of health care technology.

Nursing Informatics **Research** adds to the body of nursing informatics knowledge, build a literature base to expand this growing science and advance nursing informatics by incorporating nursing science, information science, and computer science to process nursing data, information, knowledge, and wisdom.

Administration provides a clear perspective and as a field of specialty influences Management's key decision-making in improving healthcare delivery.

Computer and Information Science use IT to reshape the nursing professional environment and influences the way of work.

The model describes how to utilize **Healthcare** to provide clinical practice, sharing the **Education, Research** and **Administration** science to advance the nurses' knowledge, skills and expertise aided by the **Computer and Information** science to provide the required technical knowledge. All three components overlap and collaborate to provide a superior patient care service.

The overlapping components; healthcare, education, research and administration and the computer and information science as it interacts are perceived as interdependent and synergetic. This core is circled by four elements which are represented as an outer ring of, Data, Information, Knowledge and Wisdom to form a comprehensive model of practice in Nursing Informatics.

Data are commonly presented as discrete facts; product of observation with little interpretation (*Matney et al., 2011*) which will be combined together, interpreted and constructed into meaningful information given certain context.

Information is defined as data that are endowed with meaning and purpose. It is a continuum of progressively developing and clustered data; it answers questions such as "who", "what", "where", and "when" thereby making the data useful for decisions.

Knowledge: is information that has been synthesized so that relations and interactions are defined and formalized; it is built of meaningful information constructed of discrete data points (*Matney et al., 2011*). Knowledge often answers questions of "why" or "how".

Wisdom: is an appropriate use of knowledge to manage and solve human problems (*American Nurses Association, 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.

The components of the data processing framework are interrelated in a circular form with a flux between them. Data is processed to generate information which is applied to acquire knowledge. The outcome of the knowledge will lead to Wisdom. If the nurses acquire the wisdom "where one combine his personal, social, ethical, moral, cultural and other values with one's knowledge and experience to solve complicated problems, the available data will be interpreted differently to get new information. The derived new knowledge coupled with wisdom, might trigger assessment of new data elements which is reflected in the line linking the data and wisdom.

NI Model Implications

HMC Nursing Informatics with its interdisciplinary nature is applying the three fields of Information and Computer Science, Education, Research and Administration Sciences and Healthcare Science in Nursing Informatics practice which influence the informatics solutions and strategies for promoting health and safe environment.

The model acts as the driving force behind all the informatics' practice which empowers nursing staff knowledge in Nursing Informatics research by establishing research partnership with research institute and conducting evidence based NI research which integrates evidence and research findings into practice. It also develops nursing skills and knowledge through acquiring the required NI competencies that is needed for the professional growth and for best practices to advance the use of technology in healthcare at HMC.

Transformation from one state of information complexity to another is applied in NI practice through introducing NI Change Management. It is overcoming the resistance which may result from introducing new systems, technologies or processes. NI Change Management is ensuring better planning, implementation and effective delivery of transformation through data processing.

The model provides guidance to aggregate and manage the data that is utilized in workflow design, systems' building and integration. Integrated systems will facilitate providing effective clinical application support, consultation and advocacy to nursing which in turn improves the effectiveness of clinical management and decisions, thus ensure the quality of healthcare delivery.

When referring to data processing and computer systems, latest technologies and applications in the field will be adopted to automate the transformation of information, save the time and the effort spent in manual processes and in interpreting huge data.

In summary, the model guides HMC NI practice, through setting standards and guideline for a safe and quality of healthcare delivery, defining scope of service, enhancing NI staff professional development and ensuring better outcomes.

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Chair of Joint Chair Committee

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