RESEARCH NOTE

Establishing a Pathway to Define Nursing Informatics Practice: Defining a Clear Scope of the Specialty Practice

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Abstract

Informatics Nurse Practice needs to be delineated and presented to the Nursing Community and relevant stakeholders in the Allied Health Profession. With the advent of the COVID-19, the Digital Economy has moved innovations in healthcare with great speed, breadth, and depth. The emergence of data scientists practicing in healthcare, together with data analysts and data scientists, blur the line between the practice demarcations between professions. It is imperative to clearly define the scope of Informatics Nurse and Informatics Nurse Specialist Practice through existing definitions of Nursing informatics Practice by International and National Organizations advocating for its advancement. This paper aims to present a clear flowchart that any practitioner can use to clearly define whether their practice in a healthcare setting with nurses involved can be considered an Informatics Nurse or Informatics Nurse Specialist practice.

Keywords: *Informatics Nurse, informatics Nurse Specialist, Informatics Nurse Flowchart, Scope of Nursing Informatics Practice*

Introduction

The Digital and COVID Economy has catalyzed awareness and innovation in technological advancements in various sectors of nursing practice. Organizations have started exploring digital transformation projects to keep transactions and processes afloat amidst the pandemic (Am, et. al., 2020; Asian Development Bank, 2020; World Economic Forum, 2019). This is evident in the proliferation of a rapid shift in traditional service delivery among various healthcare settings.

Primarily, clinical service delivery has rapidly been influenced by regulatory changes in the clinical consultation process. Teleconsultation among physicians and nurses have been common nowadays with restrictions on movement across cities and within healthcare facilities due to the threat of COVID-19 infection (IATF, 2021). The Department of Health (2021) has issued the Guidelines on the Implementation of Telemedicine in the Delivery of Individual-Based Health Services. As such, teleconsultation not only among physicians but also with nurses and their administrative support staff leads to the practice of a domain area seemingly within the practice of nursing informatics.

Likewise, educational institutions have started implementing flexible learning delivery in line with the directives provided by the Commission on Higher Education (2020). Schools offering nursing programs are among the stakeholders who have shifted to implementing didactics and practicum through remote and online learning methods. There have also been course re-designs implemented to align with the CHED Memorandum Order No. 4 series of 2020. With these education practice changes in mind, educators are also seemingly practicing within the nursing informatics domain.

Thus, it is imperative to explore whether these changes in the practice settings where nurses are involved can be considered as a practice of informatics nurse or even informatics nurse specialist roles where technology has become proliferated in their respective areas.

Theoretical Framework

Data Science and Analytics in Healthcare

Data science as a profession has been steadily increasing over the years. Despite the boost in focus and attention from various professionals, there remains an unclear definition of roles and scope of practice among data scientists and analysts (Fayyad & Hamutcu, 2020). This confusion extends to the practice of informatics nurses and informatics nurse specialists with the common application to healthcare settings and use-cases. Hence, it is important to understand first the scope of practice among data scientists and data analysts before proceeding with the scope of nursing informatics practice.

Diagrams made by Drew Conway (2010) and Grady and Chang (2015) present various high-level intersections of data science. It can be observed that both diagrams emphasize a need for domain expertise within an industry of practice. Hence, the competency of the subject matter expert is a crucial element to be considered as a data scientist for the industry that the individual will be practicing in.
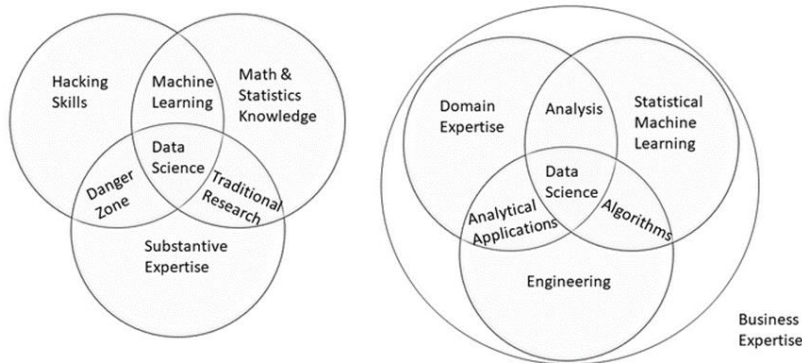

Figure 1. Data science Venn diagrams

This diagram poses significant questions on the difference between a data scientist who is practicing in the healthcare setting and an informatics nurse or informatics nurse specialist. Both professionals would be using healthcare data to process data into a meaningful format for decision-making not only by healthcare professionals but also by clients. These also require the use of information structures, information processes, and information technology to aid in the analysis, algorithms, or analytical applications leading towards solutions that aid the decision-making of the care modality stakeholders aiming to achieve better healthcare outcomes.

Nursing Informatics Definitions

Nursing Informatics is currently defined as:

Nursing informatics (NI) is the specialty that integrates nursing science with multiple information management 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 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 (American Nurses Association, 2014; Parker, 2015; Bickford, 2016).

This definition expands the application of nursing science to multiple information management and analytical sciences provided that there are emerging fields of practice within the profession. In the earlier sections, it was noted that data scientists practicing in the healthcare sector

are seemingly performing the same scope of practice among informatics nurses and informatics nurse specialists. A decision flowchart using the definition provided by the American Nurses Association (2014), as shown in Figure 2, was designed by the proponent to aid in delineating the scope of practice between professions and avoid encroachment of professional practice. Likewise, this flowchart serves as a precedent for other specialty practices to provide their stakeholders with the information they can use to quickly identify if the tasks that they perform fall within the scope of their nursing specialty practice.

Determining Your Nursing Informatics Practice (rev 0, October 10, 2021)

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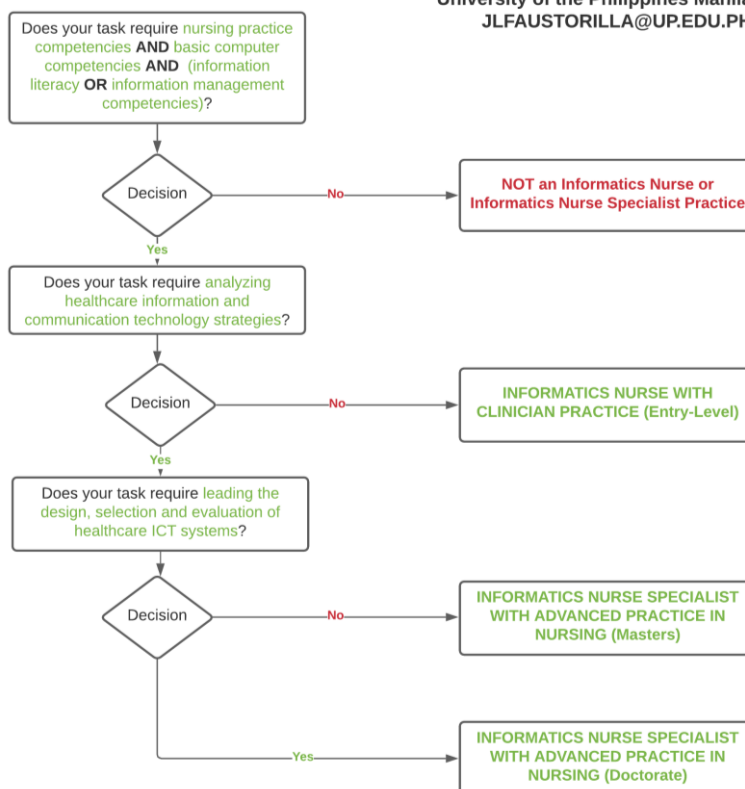University of the Philippines Manila
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Does your task require nursing practice competencies **AND** basic computer competencies **AND** (information literacy **OR** information management competencies)?

Decision — No → **NOT an Informatics Nurse or Informatics Nurse Specialist Practice**

Yes

Does your task require analyzing healthcare information and communication technology strategies?

Decision — No → **INFORMATICS NURSE WITH CLINICIAN PRACTICE (Entry-Level)**

Yes

Does your task require leading the design, selection and evaluation of healthcare ICT systems?

Decision — No → **INFORMATICS NURSE SPECIALIST WITH ADVANCED PRACTICE IN NURSING (Masters)**

Yes → **INFORMATICS NURSE SPECIALIST WITH ADVANCED PRACTICE IN NURSING (Doctorate)**

Figure 2. Determining Your Nursing Informatics Practice Decision Flowchart

The fundamental question one must answer is "Does your task require" any of the following: (1) nursing practice competencies, (2) basic computer competencies, AND (3) information literacy OR information management competencies. The first item can be addressed by checking if a task performed is in line with the Philippine Professional Nursing Practice Standards defined by the Professional Regulatory Board of Nursing (2017) in four practice domains: (1) Value-based nursing practice, (2) Knowledge-driven nursing practice, (3) Outcome-oriented professional relationship, and (4) Leadership and governance. Within each domain are standards of care that defined nursing

practice competencies that professionals need to check whether their tasks are aligned with these competencies identified in the reference standard. If this cannot be verified to be a nursing practice competency, then the task being undertaken is not an informatics nurse or informatics nurse specialist practice.

It is imperative that conditions two and three, together with nursing practice competencies, are present to consider that the task being performed falls into the practice of informatics nurse or informatics nurse specialist. The list of competencies can be accessed through the proposal for the informatics nurse specialist program and certification process presented to HIMSS as a Philippines case study (Faustorilla, 2015). Basic computer competencies can be seen in the Basic Nursing Informatics Competency Checklist provided in the competency checklist under computer skills. Information literacy or information management competencies need to also be present as a competency in the task being performed to at least be considered as an informatics nurse practice. These competencies can be verified in the Informatics Knowledge and Informatics Skills domain of the competency checklist. The task being performed is considered an informatics nurse practice if it has at least one competency for basic computer competencies and at least one of either information literacy or information management competencies.

Consequently, a task that requires analyzing healthcare information and communication technology strategies would require a combination of basic competencies and more advanced competencies identified in the Advanced Nursing Informatics Competency Checklist. Thus, a task validated to require a nursing practice competency to perform and coupled with a basic and advanced computer, and information literary or management competencies will mean that the practitioner is performing an informatics nurse specialist practice. At this practice level, it is believed that the professional nurse is prepared with at least a master's degree or its equivalent in various country practice settings.

Lastly, a task that requires leading the design, selection, and evaluation of health information and communication technology systems will require all previous competencies mentioned and expected items at the Informatics Nurse Specialist Competency Checklist to be evident in its execution. It is believed that a practitioner at this level has a preparation of at least a doctorate or its equivalent necessary for the execution of tasks.

Conclusion

The use of the Determine Your Nursing Informatics Practice flowchart presents a simple yet effective method to delineate the practice of informatics nurse and informatics nurse specialists compared to other existing and emerging professional practice that involves the use of information structures, information processes, and information technology in the healthcare setting where nurses are predominantly present. Likewise, the emergency of telemedicine and online learning in clinical

and academic settings has provided an opportunity for nurses who which to build on their informatics nurse competencies to clearly define their scope of practice toward a career in informatics nursing. The decision flowchart also provides an opportunity for nurses practicing in non-conventional industries where nurse competencies are still evident such as health maintenance organizations and business process outsourcing with health care accounts. These nurses continuously handle and process healthcare data to arrive at decisions crucial for healthcare outcomes, such as health insurance and data privacy, and can use the decision flowchart in coordination with the Nursing Informatics Competency Checklists to see gaps in informatics nursing practice and build essential practice portfolio as proof of competency acquisition in other domains. Future researchers can still test this decision flowchart with existing and emerging practices in general and specialty nursing as technology continues to aid and facilitate better decision-making in their care management and improve resource management towards better health care outcomes for their clients and stakeholders.

Conflict of Interest

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