

# Project Management: Essential Skill of Nurse Informaticists

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**Abstract:** With the evolution of nursing informatics (NI), the list of skills has advanced from the original definition that included 21 competencies to 168 basic competencies identified in the TIGER-based Assessment of Nursing Informatics Competencies (TANIC) and 178 advanced skills in the Nursing Informatics Competency Assessment (NICA) L3/L4 developed by Chamberlain College of Nursing, Nursing Informatics Research Team (NIRT). Of these competencies, project management is one of the most important essentials identified since it impacts all areas of NI skills and provides an organizing framework for processes and projects including skills such as design, planning, implementation, follow-up and evaluation. Examples of job roles that specifically require project management skills as an essential part of the NI functions include management, administration, leadership, faculty, graduate level master's and doctorate practicum courses. But first, better understanding of the NI essential skills is vital before adequate education and training programs can be developed.

**Keywords:** nursing informatics, project management, education, essentials, TANIC, TIGER, NICA-L3/L4

## 1. Introduction: History and Definitions

In today's high-tech world, expectations of the healthcare industry is that nurses will have informatics competencies including project management skills which are critical for improved quality outcomes and safety for patients. This is not only true for nurses in graduate courses, clinical practice management roles but administrative and other leadership roles as well. The expectation is that all of these roles as well as others described below will bring well-developed skills to the job.

Nursing Informatics (NI) has evolved beyond the definition of data management defined early on by Staggers, Gassert, and Curran [1] but is still considered by many as the primary and only skill of a nursing informaticist. Today, the American Nurses Association's (ANA) expanded definition of NI suggests that, "Nursing Informatics (NI) is the specialty that integrates nursing science with 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 other stakeholders in their decision- making in all roles and settings to achieve desired outcomes." (p. 1-2) [2].

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In order to meet the Institute of Medicine (IOM) mandate of developing the nursing workforce of 2020, we must provide a mechanism to first assess and understand competencies/skills needed by the workforce [3]. While project management as NI skills are more the expectation of healthcare providers and nursing leadership, there remains a lack of understanding of what these are and how they are an essential competency of NI. McGonigle, Hunter, Sipes, and Hebda, suggest that even today “there is a lack of understanding of exactly what nursing informatics is in the way of skills needed or how they can and should be applied to practice” [4].

Presently, NI has a much broader definition, evolved from the 21 essential competencies defined by Staggers, et al., to 167 basic skills defined in the TIGER-based Nursing Informatics Competencies (TANIC) developed by Hunter, McGonigle, and Hebda, and the 178 advanced items in the Nursing Informatics Competency Assessment (NICA) - L3/L4 self-assessment tools developed by McGonigle, Hunter, Hebda, and Hill [1,6,7,10]. Chamberlain College of Nursing, Nursing Informatics Research Team (NIRT) (Hunter, et.al, 2014) developed expertise designing competency skill-assessment instruments as well as conducting research studies on competency utilization, and as such, has implemented the tools for students to self-assess skills in the NI courses [7].

The ANA (2015) *Nursing Informatics Scope and Standards* outlined above clearly defines specialty of NI as the skill to integrate sciences into nursing practice using skills to “identify, define, manage and communicate data, information, knowledge ... (p.1-2).” The standards further suggest that NI supports judgments in all positions, functions and settings; the support is achieved through the use of information constructs and information methods and practices – attributes of a NI. [2] Although the skills are now attributed to NI, historically these were originally defined as concepts of project management defined by the engineering community in the 1950s.

Sipes references the history of project management through an article by Cleland and Gareis, who relate that “...in the 1950s, project management was formally recognized as a distinct contribution arising from the management discipline” (pp. 1–4) [8, 9]. Sipes further discusses how engineering, at the forefront of project management, has become a “key management strategy in large corporations, such as IBM, and more recently, in healthcare, where there is a need to put formalized structure and management to organizational tasks” (p.12). Sipes adds that nurses “....use a structured approach when providing care to patients such as the nursing process. Patient care management requires an organizational framework—processes similar to those used in project management are used to manage patient care” (p.12) [8].

The three larger categories, defined in the tools, TANIC and NICA-L3/4, discussed above, are computer, informatics knowledge, and informatics skills. The skill sets have been extended to include major subcategories as systems integration, selection and maintenance, quality improvement, data terminologies, impact analysis, privacy/security, systems input/output, usability, data mining and structures and project management.

Project management is one of the largest but least understood essentials of the NI knowledge and skill set. It includes five major steps: Design/Initiation, Plan, Implementation, Monitor/Control and Evaluation/Lessons Learned

In the discussion below, methods of how the tools, TANIC and NICA – L3/L4, are applied in Chamberlain’s graduate courses to self-assess the NI students current skills on four levels including the project management skills. As more information is shared, such as in American Association of Colleges of Nursing (AACN) webinars presented by Chamberlain NIRT, the competency self-assessment tools are being requested by

healthcare leadership to integrate into job roles and requirements. More detail of project management attributes applicable in job roles and requirements is presented below. Many of the same project management attributes are also required for graduate students as they develop and implement practicum projects as the master's and doctoral levels.

## **2. Method**

The methods to self-assess NI skills were implemented by Chamberlain in the graduate NI specialty track in order for the faculty to better understand student skill needs. As faculty analyze students' results, they can determine gaps/needs in skill sets. Then based on analysis of the information, curricula are developed to mitigate gaps in skill levels needed by students and most importantly, as they enter the 2020 workforce. The model used in graduate courses is discussed below. Employing this process further enhances the practicum experiences as it provides an organizational framework in which to work.

### *2.1 Utilization of information from analysis*

The NI competency self-assessment tools add clarity and specificity to better understand exactly what skills are required as awareness of project management (PM) skills become more evident. To determine NI skill levels in graduate student population at Chamberlain, the TANIC and NICA – L3/L4 tools are integrated into master's level core courses. Students self-assess skills beginning the program and then again at the end of their master's graduate practicums. The application of project management skills are fully implemented in the two Chamberlain graduate NI specialty practicums – I and II. Students are required to apply skills as they develop and plan a project in Practicum I, then implement and evaluate projects at a clinical site in Practicum II, thus utilizing PM skills developed during practicums. These same skills are required in most job roles in healthcare. They learn to apply skills which are needed to be successful in both the practicums and their "real-world" projects.

## **3. Results**

Feedback from students at the end of their practicums emphasizes the success of this model as students realize the value of the skills they just implemented at a healthcare site on an actual project. Now, they say they would not only use these skills in their job roles but see how they can use them when managing everyday tasks. Today, project management skills are more recognized as a need. The organizing framework of project management is applicable in graduate level practicums, clinical practice, healthcare administration and leadership. Below are examples of some of the roles that require project management skills today.

### *3.1 Project Management as an essential skill of NI*

National organizations discussed above deliberate how nursing leaders must have computer and informatics knowledge and skills in order to be effective in their roles.

The skills discussed are project management competencies as well as others in informatics. Yet, according to McGonigle, Hill, Hunter, Sipes, and Hebda, “trying to reach the goals set forth by these organizations has been hindered by a lack of procedures and assessments available for determining nurses’ informatics competencies- what they actually require in order to be competent in their job roles” [4, pp. 104-112]. The project management skills of NI can be applied universally in many settings and job roles. Students developing projects for their practicums or research studies and everyday tasks would benefit from a more formalized structure and organization.

According to Sipes the partial list of project management skills and competencies includes such tasks as: development/implementation of work plans, design/development of systems, function as lead/project manager in all phases of the systems life cycle, and development and implementation of all organizational documents required as a project manager to successfully manage a project [8, pp.143-158]. Examples of specific project management skills listed above are seen in advertised job descriptions as well as graduate level courses, including those for the role of nurse administrators, such as nurse executives (NE), nurse managers, nurse practitioners (NP), clinical nurse specialists (CNS), informatics nurse specialist (INS), chief nurse informatics officer (CNIO), chief nursing officer (CNO), and doctor of nursing practice (DNP) student in the final practicum before graduation.

The project management skills needed by the NP and CNS are important in order to set up and manage clinics and for a DNP graduate project. An INS would need the skills above to support an electronic medical record (EMR) implementation and informatics skills to perform system/workflow analysis for a new computer system.

#### **4. Discussion**

National organizations such as those previously discussed – the IOM, ANA and others - identified a need to develop knowledge and skills including more advanced education of the nursing workforce of 2020. Yet skill sets needed to provide better, safer patient care and outcomes are sorely lacking. For example, some think that having the skill to develop a slide presentation is the only “real” skill needed that qualifies as both an informatics and PM skill. Or that data collection and analysis fulfills the job descriptions for project management and informatics.

We must assess and understand current competencies/skills, then address gaps in education by developing more relevant curricula that will meet needs of the workforce for 2020. To that point, McGonigle, Hunter, Sipes, and Hebda, suggest that even today “there is a lack of understanding of exactly what nursing informatics is in the way of skills needed or how they can and should be applied to practice” [4].

#### 4.1 Need to inform and empower

Today, to be a NI no longer requires just the skills to manage data and databases as previously discussed. It requires much more and has evolved to nearly 200 advanced skills – now more than ever expected by healthcare provider and organizational leadership as well as masters and doctoral level students and faculty. One of the most essential skills is project management. Education programs must be established that meet the needs of nurses to develop these skills, as well as empower them to enhance their practices.

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