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A clinical nurse leader competency framework: Concept mapping competencies across policy documents

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ABSTRACT

To ensure Clinical Nurse Leaders (CNL) are prepared to function to the full scope of their master's level education, the American Association of Colleges of Nursing published a 2007 White Paper and a 2013 update articulating expected end-of-education and CNL practice competencies. The Commission on Nurse Certification published a CNL job analysis in 2016, which identified a core set of knowledge, skills, and abilities for entry-level practicing CNLs, as the basis for the CNL certification exam. While all share core themes, the language and organization of competencies differs across the three policy documents, resulting in potential ambiguity about expected CNL knowledge and practices, and how they differ from other nursing roles. This effort identified, analyzed and synthesized CNL education and practice concepts listed in each document to refine understanding about CNL competencies and harmonize concepts across documents. The product of this effort is a cohesive CNL competency framework that aligns across the education-to-practice trajectory. The CNL competency framework can be used to guide CNL curriculum and certification review, and may have use in implementing and evaluating CNL practice integration.

Introduction

The Clinical Nurse Leader (CNL) has been described as the first new nursing role in, now, over 45 years (Gabuat et al., 2008). According to the American Association of Colleges of Nursing (AACN) website (https://www.aacnnursing.org/Portals/42/CNL/CNL-Certification-Presentation.pdf) there are over 90 programs offering a CNL degree and over 7000 certified CNLs. The landmark 2007 AACN CNL White Paper (hereafter labeled '2007 White Paper') was the first to specifically delineate the education requirements for degree obtainment and to provide a sketch of the CNL role (AACN, 2007). In 2013, the AACN published an updated *Competencies and Curricular Expectations for Clinical Nurse Leader Education and Practice* (hereafter labeled '2013 Update'). This document is explicit in stating "these competencies replace the competencies of the *White Paper Of The Education And Role Of The Clinical Nurse Leader*" while acknowledging that "the background, rationale, and description of CNL practice as well as the assumptions for preparing the CNL [from the 2007 White paper] remain particularly relevant" (AACN, 2013, p. 4). In addition to this update, the Commission on Nurse Certification conducted a CNL job analysis in 2016 (hereafter labeled '2016 Job Analysis') that set out to "identify the core set of knowledge, skills, and abilities" of a certified CNL, as the basis for the development of the national-level certification exam (Tan, 2017, p. 3).

Utilization of policy documents in the literature

To determine how the 2007 White Paper, 2013 Update, and 2016 Job Analysis have been utilized and/or cited to guide CNL practice, education, research, we updated a 2014 CNL systematic literature review (Bender, 2014) by searching PubMed and CINAHL for CNL articles published from 2013 to 2018. The combined search returned 166 unique non-journalism articles on CNL topics such as implementation/practice case reports, education initiatives, and research. We report on the policy document's use in the section below.

Case reports

There were 19 CNL case reports published before 2013 (i.e. before the 2013 CNL update was published), all of which cited the 2007 White Paper as their guide. There were 10 CNL case reports published since 2013, two of which did not cite any document (Rivet et al., 2013; Wienand, Shah, Hatcher, & Jordan, 2015). Three of the 10 case reports

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(Bender, Connelly, & Brown, 2013; Duffy, 2017; Rankin, 2015;) referenced the 2013 CNL update, while three reporting on initiatives that began before 2013, cite the 2007 White Paper as their guiding document (Murphy, 2014; Shipman et al., 2013; Wilson et al., 2013).

Education initiatives

The search of articles published from 2013 to 2018 identified a total of 19 reports of academic initiatives to develop and implement curriculum in CNL master's programs. Educational topics included: CNL faculty development and innovations (Beck et al., 2018; Webb & McKeon, 2014); coursework for teaching CNL skills (Gerard, Rn, Grossman, & Godfrey, 2012; McKeon et al., 2009; Moore, 2013; Norris, Norris, Webb, & McKeon, 2012); clinical immersion innovations (Ailey, Lamb, Friese, & Christopher, 2015; Jukkala, Greenwood, Motes, & Block, 2013; Lambton, 2010; Lammon, Stanton, & Blakney, 2010; Moore, Schmidt, & Howington, 2014; Nance-Floyd & Zomorodi, 2018; Wesolowski, Casey, Berry, & Gannon, 2014); Online/virtual teaching innovations (Fox, 2017); student mentorship (Gazaway, Anderson, Schumacher, & Alichnie, 2018); and overall curricular development (Maag, Buccheri, Capella, & Jennings, 2006). Of the 12 articles published on or after 2014, 55% do not explicitly mention the 2013 CNL Update as their guide for competency development: for example Hicks and Rosenberg (2016) mentions the 2007 CNL White Paper and the AACN *Essentials of Masters* documents as guiding their curriculum. Importantly, 33% of the articles on academic initiatives were published before the 2013 Update to the 2007 White Paper was published, and so may be out of date in terms of driving CNL curriculum (all cited the 2007 White Paper).

Research

In CNL research, one article cited the 2016 CNL job analysis, in a study identifying the types of roles certified CNLs self-identified with in the literature (Clavo-Hall, Bender, & Harvath, 2018). In a separate research effort, the "Essentials of Competence" from the 2013 Update was used to generate survey instrument items corresponding to CNL competencies, as part of a program of research developing, refining, and validating a CNL Practice Model (Bender et al., 2018 (JNCQ); Bender, Spiva, Su, & Hites, 2018 (JNM); Bender, Williams, Su, & Hites, 2017 (JAN); Bender, 2016a (JNM); Bender, 2016b (JPN)).

Summary of literature review

All three policy documents comprise a wealth of theory and knowledge about CNL expectations for educational knowledge attainment and practice. While there appears to be extensive usage of the 2007 White Paper and increasing usage of the 2013 Update as guides for CNL education, practice, and research, the literature suggests that CNLs and health systems continue to struggle to define the "role of the CNL" even while using these policy documents as guides for practice (Bender, 2014, 2017).

Objective

To our knowledge there has not yet been an explicit attempt to analyze and synthesize knowledge across all three policy documents to gain a potentially more robust and explicit understanding of CNL competencies for practice. Therefore, the purpose of this effort was to identify, analyze and synthesize CNL concepts listed in the 2007 White Paper, the 2013 Update, and the 2016 Job Analysis to generate a richer understanding of CNL education and practice competencies. The goal was to create a cohesive CNL competency framework that aligns across the education-to-practice trajectory.

Approach

A modified concept mapping approach was used to organize and represent ideas within a focused topic, in this case CNL competencies (Rosas & Kane, 2012). The concept mapping team consisted of the study authors, who represent expertise in CNL education (faculty in CNL programs), research (investigators in research focused on the CNL), and practice (having practiced as a certified CNL). We say modified, because traditionally the beginning stages of concept mapping involve having a group generate "statements" about a topic of interest that are then vetted: in this effort, the "statements" were already-identified competencies that came directly from the three CNL policy documents, so there was no need for a vetting process. We also did not conduct statistical analyses of the process to identify popular/unpopular competencies, since all competencies remained in the final product.

First, an excel database was created for each of the three policy documents (2007 White Paper, 2013 Update, and 2016 Job Analysis) that explicated the organizing framework, or matrix, for competency mapping in that document. Unlike the 2013 and 2016 documents that organize competency statements into Masters essentials or practice domains, the 2007 White Paper uses an organizing matrix that includes "fundamental aspects", "core competencies", "required curriculum" and "broad areas." For the 2007 document, all statements listed under each component of the matrix was placed into the database, with each framework component comprising an excel column, and each statement comprising a row within the column. The 2007 White Paper also introduces the overarching framework of "CNL Foundations" under which "required curriculum" elements are organized. The excel database for the 2013 document had the two column headings of 'essentials of competence' and 'competency' as defined in the document, and a third column 'theme' which represents a more general categorization (by the authors) of the concrete detailed competency statement. The excel database for the 2016 document had three columns defined by the document matrix; 'domain', 'subdomain', and 'competency'.

Once agreement was reached by all three authors on the matrix for each document, the work began to synthesize the three matrices into one overarching framework. This process underwent several iterations, with cycles of feedback and revision. The goal was not to impose a false uniformity across documents, but to coordinate common themes and explore the conceptualization of competencies across documents. Finally, as conceptual insights were made about overarching CNL competencies, they were shared and discussed via email, and consensus attained on final insights.

Results

The findings include the matrix produced for each document, and the final CNL Competency Framework (Table 1 and Fig. 1) that synthesized competencies across documents. Each matrix and the CNL Competency Framework is described in the sections below.

The 2007 White Paper

The 2007 White Paper was the first document to explicitly articulate the entry level competencies for the CNL. The White Paper lists ten assumptions for preparing CNLs that were not included in the matrix, because they were considered principles more than competency statements. The final matrix for the 2007 White Paper organizes all competency elements by the three overarching "CNL foundations" of clinical leadership, clinical outcomes management, and care environment management. The matrix includes the 17 "Fundamental Aspects" of the CNL role and the set of nine "broad areas" of the CNL role. The 2007 White Paper matrix also incorporates the thirteen CNL education "core competencies," and components of "required curriculum" which provides a set of necessary knowledge and skillsets specific to CNL education.

Supplemental Table 1 shows the final matrix for all competency statements in the 2007 White Paper. There was considerable statement overlap across each component of the matrix that supported horizontal alignment: for example, 'lateral integration of care' was in both the

Table 1
Synthesis of concepts across the 2007 White paper, 2013 update, and 2016 job analysis.

CNC/AACN[a] Foundation/domain	2016 Job Analysis Sub-domain	2013 "fundamental aspects"	2013 "essentials of competence"	2013 author-defined competency "themes"	2007 "required curriculum"	2007 "core competencies"	2007 "broad areas"	2007 "fundamental aspects"
Clinical leadership	Horizontal leadership		1. Science and humanities	Multi-modal communication	Horizontal leadership	Communication	Educator	Leadership in the care of the sick in and across all environments
	Healthcare advocacy	Advocacy for patients, communities, and the health professional team	6b. health advocacy	Advocacy	Advocacy		Client advocate	Client and community advocacy
	Implementation of CNL role				Analysis of CNL role Effective use of self		Member of a profession Lifelong learner	
	Patient assessment		1. Master's level nursing practice	Expert assessment		Assessment Critical thinking	Clinician	Clinical decision making
	Ethics					Ethics		
	Lateral integration of care	Lateral integration of care for individuals and cohorts of patients		Lateral integration across continuum	Lateral integration of care			Lateral integration of care for a specified group of patients.
	Interprofessional communication and collaboration (Moved from 'care environment management')	Team leadership, management and collaboration with other health professional team members	7. Interprofessional collaboration	Interprofessional communication/ collaboration				
	Team coordination (Moved from 'care environment management')				Team coordination		Team manager	Team management and collaboration with other health professional team members
Clinical outcomes management	Illness/disease management	Clinical leadership for patient-care practices and delivery, including the design, coordination, and evaluation of care for individuals, families, groups, and populations		Design/implement/ evaluate care delivery	Illness/disease management	Illness and disease management Human diversity Designer manager/ coordinator of care Provider and manager of care		Design and provision of health promotion and risk reduction services for diverse populations; Design and implementation of plans of care; Mass customization of care; Population-appropriate health care to individuals, clinical groups/units, and communities;
	Health promotion and disease prevention & injury, reduction/prevention management	Risk anticipation for individuals and cohorts of patients Accountability for evaluation and improvement of point-of-care outcomes, including the synthesis of data and other evidence to evaluate and achieve optimal outcomes	8. clinical prevention and population health		Health promotion/ disease reduction/ prevention management	Health promotion/ risk reduction/ disease prevention Global health care	Outcomes manager	Risk anticipation Accountability for evaluation and improvement of point-of-care outcomes; Delegation and oversight of care delivery and outcomes;

(*continued on next page*)

Table 1 (*continued*)

CNC/AACN[a] Foundation/domain	2016 Job Analysis Sub-domain	2013 "fundamental aspects"	2013 "essentials of competence"	2013 author-defined competency "themes"	2007 "required curriculum"	2007 "core competencies"	2007 "broad areas"	2007 "fundamental aspects"
	Knowledge management (moved from care environment management)	Participation in identification and collection of care outcomes		Data driven care/ analysis/change	Knowledge management			Participation in identification and collection of care outcomes
	EBP (moved from care management environment)	Design and implementation of evidence-based practice(s)	4. EBP	EBP appraisal/design/ implementation/ evaluation	Evidence based practice			Provision of evidence-based practice
	Healthcare policy		6a. health policy		Healthcare policy (moved from environment management)			
Care environment management	Healthcare systems/ organizations		2. Organization/ systems leadership	Systems knowledge implementation/ evaluation	Healthcare systems and organizations	Healthcare systems and policy	Systems analyst/risk anticipator	
	Quality improvement and safety		3. QI and safety	QI development/ implementation/ evaluation	Quality management/risk reduction/patient safety			
	Healthcare finance and economics	Stewardship and leveraging of human, environmental, and material resources		Economic/finance knowledge	Healthcare finance/ economics			Development and leveraging of human, environmental and material resources
	Healthcare informatics	Information management or the use of information systems and technologies to improve healthcare outcomes	5. Informatics and healthcare technology	Informatics/technology assessment/ implementation/ utilization	Informatics	Nursing technology and resource management information and healthcare technologies	Information manager	Education and information management; Management and use of client-care and information technology;

[a] Commission on Nurse Certification (CNC) and American Association of Colleges of Nursing (AACN).

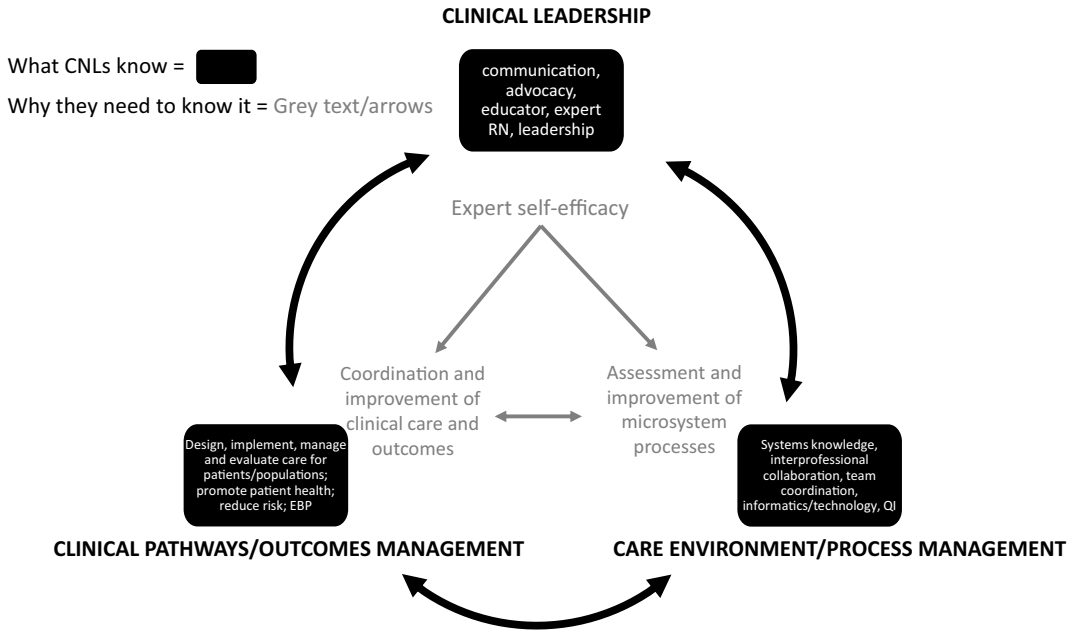

Fig. 1. The CNL Competency Framework.

'required curriculum' and 'fundamental aspects'. Other statements, although not in precise language, did horizontally line up in meaning across components of the matrix: for example, team coordination (required curriculum) with team manager (broad areas) and team management (fundamental aspects). For the remainder of the statements, the authors decided through discussion and consensus how the statements aligned across the components of the matrix: For example, illness/disease management (required curriculum) aligned with 'population appropriate healthcare to individuals, clinical groups/units, and communities' (fundamental aspect), which itself aligned with 'designer, manager/coordinator of care' (core competencies), which allowed the authors to link those statements together within the CNL Foundation of Clinical Outcomes Management.

2013 competencies and curricular expectations

In 2013 the AACN published an update of the expected CNL competencies, revised to "reflect CNL practice within the changing healthcare environment" (AACN, 2013, p. 4). The competencies delineated in the 2013 document were to "replace" the competencies in the 2007 White Paper, and also to align CNL competencies with AACN 'general master's' level expected competencies. Instead of being organized under the 2007 White Paper foundations (clinical leadership, clinical outcomes management, and care environment management), CNL-specific competencies were listed within the more general nine "Master's Essentials" competencies: Background for practice in science and humanities; organizational and systems leadership; quality improvement and safety; translating and integrating scholarship into practice; informatics and healthcare technologies; healthcare policy and advocacy; interprofessional collaboration; clinical prevention and population health; master's level nursing practice. Within these essentials there are 79 CNL-specific competencies delineated in the 2013 document. We noted that many individual statements were similar across the nine Master's Essentials: for example, "demonstrate the ability to develop and present … a budget" (Essential #3) and "contribute to budget development" (Essential #2). Through content analysis of each statement, we created 'themes' independent of the Master's Essential within which the statement was housed. Thematic content analysis of all 79 CNL-specific competency statements produced 12 themes: (1) Advocacy, (2) data driven care analysis/change, (3) design/implement/evaluate care delivery, (4) EBP appraisal/design/implementation/evaluation, (5) economic/finance knowledge, (6) expert assessment, (7) informatics-technology assessment/implementation/utilization, (8) interprofessional communication/collaboration, (9) lateral integration across continuum, (10) multi-modal communication, (11) QI development/implementation/evaluation, and (12) systems knowledge/implementation/evaluation. (Supplemental Table 2).

2016 Job Analysis

The 2016 Job Analysis was sponsored by the Commission on Nurse Certification (CNC) to delineate the knowledge, skills, and abilities (KSA) required of a certified CNL, as the basis for the CNL certification exam. The KSA were organized in the 2016 Job Analysis around the three overarching "CNL Foundations" in the 2007 White Paper. In addition, subdomains, or "major" competencies, were delineated within each foundation. Competency subdomains for nursing/clinical leadership included: horizontal leadership, healthcare advocacy, implementation of the CNL role, lateral integration of care services, patient assessment, and ethics. Competency subdomains for clinical outcomes management included: illness/disease management, health promotion and disease prevention & injury reduction/prevention management, and healthcare policy. Competency subdomains for care environment management included: knowledge management, healthcare systems/organizations, interprofessional communication and collaboration skills, team coordination, quality improvement and safety, evidence based practice, healthcare finance and economics, and healthcare informatics. In analyzing the more specific competency statements for each competency subdomain, it was noted that each statement was a unique, unambiguous and clear expression of the competency subdomain. In fact, initial attempts at thematic analysis of the specific competency statements resulted in each statement being its own theme. Supplemental Table 3 shows the 2016 Job Analysis matrix.

The CNL competency framework

Once the competency mapping exercises were done for each document, the work proceeded to map the three matrices into a single overarching framework. After reviewing each matrix, it was decided to align all three documents via the three overarching CNL foundations

delineated in the seminal 2007 White Paper; clinical leadership, clinical outcomes management, and care environment management. A synthesis excel database was created, organized around the three CNL Foundations (Table 1, column 1). Columns two through nine represent the elements, or column headings, from the three document-specific matrices. Competency statements and author-defined competency themes were mapped as rows under the appropriate column heading to one of the three foundations and to each other as applicable. Many competencies mapped easily onto each other across all three policy documents: for example, advocacy was listed (with some qualifying adjectives) across all documents, and within most documents. This meant there was one row within the clinical leadership foundation where advocacy is listed within the majority of cells across all three document's competency elements (i.e. table columns) in the framework. Other competencies required more effort to determine alignment. For example, the 17 'fundamental aspects' (Table 1, column 9) in the 2007 White Paper needed to be aligned to the 10 fundamental aspects listed in the 2013 update (Table 1, column 3). Through discussion, it was determined that the 2013 fundamental aspect 'clinical leadership for patient care practices and delivery, including the design, coordination, and evaluation of care for individuals, families, groups and populations,' was a rich competency statement that encompassed four of the 2007 fundamental aspects: Design and provision of health promotion and risk reduction services for diverse populations; design and implementation of plans of care; mass customization of care; and population-appropriate health care to individuals, clinical groups/units, and communities. We also noted that the core competencies of 'illness and disease management' and 'health promotion/risk reduction/disease prevention' in the 2007 White Paper (Table 1, column 7) and 2016 Job Analysis (Table 1, column 2) condensed into the Essential (Table 1, column 4) #8 of the 2013 Update; 'clinical prevention and population health'. One example of competencies that were explicit in some documents but not in others is the competency 'knowledge management,' which was explicit in both the 2007 White Paper and the 2016 Job Analysis, but not in the 2013 Update. However, in the 2013 Update the fundamental aspect 'participation in identification and collection of care outcomes' matched the theme 'data driven care/analysis/change', both of which fit best within the 2013 Essential #8; clinical prevention and population health.

Through this iterative process, all competencies were aligned across all documents, with the exception of three competencies for which specific mapping remained unclear: EBP, knowledge management, and healthcare policy. Knowledge management and EBP were placed under the Care Environment Management foundation in the 2016 Job Analysis, but are under the Clinical Outcomes Management foundation in the 2007 White Paper. While we felt they could conceivably belong to either foundation, we decided to keep them under the foundation Clinical Outcomes Management based on the alignment with driving clinical care delivery for patients. The competency of Healthcare Policy was placed under Care Environment Management in the 2007 White Paper, but in Clinical Outcomes Management in the 2016 Job Analysis. Realizing that policy is an important part of context that CNL practice may influence, the authors decided to align healthcare policy with Clinical Outcomes Management, as policy also has a significant influence over how clinical care is delivered. Finally, based on discussion between authors and discussion with attendees of the 2019 CNL Summit Learning Lab describing this effort (https://www.aacnnursing.org/cvweb/cgi-bin/documentdll.dll/view?DOCUMENTNUM=3213), the authors placed the competencies 'Interprofessional Communication and Collaboration' and 'Team Coordination' within the Clinical Leadership foundation.

Discussion

The findings were synthesized into a CNL Competency Framework (Table 1 and Fig. 1) that explicitly aligns competency statements across all three CNL policy documents. The three CNL Foundations, first articulated in the 2007 White Paper and again utilized in the 2016 Job Analysis, provided a robust basis for the competency mapping and synthesis process. The process resulted in key insights, pictorialized in Fig. 1, and discussed in more detail in the following sections.

Clinical leadership

Clinical Leadership competencies that remained linguistically stable across all three documents were advocacy and lateral integration of care. The general theme of master's level expert clinician appeared in all documents, but with different language. The theme with the most disparate language, yet aligned conceptual linkage, was horizontal leadership, in which competencies such as multi-model communication, educator, and 'leadership in the care of the sick' were grouped. Furthermore, it was agreed among the authors and by a multidisciplinary group of attendees (n = 38) at the 2019 CNL Summit that the competencies of interprofessional communication/collaboration and team coordination, while essential for care environment management, belonged in the Clinical Leadership foundation, as communication and teamwork are leadership skills that are needed to skillfully enact the other two foundations.

In author discussions, it was suggested that horizontal leadership and lateral integration could be considered two sides of the same coin, and that all concepts together within the foundation of Clinical Leadership, including ethics, advocacy, and analysis of the CNL role, are valid descriptions of lateral integration of care. In an unpublished concept analysis of lateral integration (Bender, unpublished) it was noted first that there was no concise definition of the concept, although certain attributes were repeated across multi-disciplinary descriptions (the concept was found in law, business, and other fields), including: solving complex problems; attuning to multiple perspectives; systematic linking of disparate groups; attaining similar goals; attention to the effect a plan has on other plans; flattening the hierarchy; and streamlining for resource efficiency.

In considering themes underpinning the CNL foundation of Clinical Leadership, the authors concluded this overarching competency expresses attributes of CNL self-efficacy that enables, or perhaps is required a priori, for a CNL to achieve their role functions. Without expert self-efficacy in skills such as communication, advocacy, and the ability to attune to multiple perspectives, a CNL cannot adequately accomplish role functions such as coordinating care delivery with multiple disciplinary goals across care settings. The conceptualization of Clinical Leadership as a CNL self-efficacy competency aligns with the growing clinical leadership literature in general. A recent review of the literature identified clinical competence, effective communication, and an engaging and positive attitude as general attributes of clinical leaders (Mannix, Wilkes, & Daly, 2013). Another meta-analysis concluded clinical leadership is a "complex process" that drives service improvement and the effective management of teams (Willcocks, 2011). Another literature synthesis summarized clinical leadership as a complex process of managing relationships at the microsystem level to facilitate the restructuring of multi-relational care delivery processes (Millward & Bryan, 2005).

Understanding CNL clinical leadership as self-efficacy also aligns with existing scholarship on the CNL role in practice. In a program of research to identify mechanisms by which CNL practice leads to reported quality and safety outcomes, a CNL Practice Model was developed and empirically validated that conceptualizes CNL-integrated care delivery. In these studies, CNL practice was validated as an ongoing process of continuous clinical leadership, whereby CNLs continuously enact four core practices: facilitate ongoing multi-modal communication; strengthen intra and inter professional relationships, create and sustain clinical teams, and support staff engagement (Bender, Spiva, et al., 2018; Bender, Williams, Su, & Hites, 2017). These practices were considered the mechanisms by which CNLs accomplish their

accountabilities, such as care coordination and quality improvement. Together, the clinical leadership and CNL practice research literature provides evidence supporting the CNL Clinical Leadership competency as expert self-efficacy, which is essential for CNL role success.

Clinical outcomes management

A greater understanding of Clinical Outcomes Management emerged through the competency mapping exercise. Clinical outcomes management represents a data-driven approach by CNLs to coordinate and improve clinical care as the mechanism for ensuring optimal patient quality and safety outcomes. The 2007 White Paper explicitly described a fundamental aspect of the CNL role as the design and coordination of healthcare that is population appropriate. This includes being knowledgeable about the expected outcomes of care, and monitoring outcomes as the basis for care evaluation and improvement. Appropriate clinical care is care that promotes health and reduces risk of harm and disease. CNLs use, implement, or create healthcare policies and evidence-based-practice to enable appropriate clinical care. This was indeed found to be the case in the CNL literature, which includes reports of CNL-involved care delivery projects to improve clinical outcomes. For example, one project involved an interdisciplinary team to implement a newborn safety clinical care bundle that improved 'unsafe sleep situations' with mothers and babies (Lipke et al., 2018). Another CNL-led project involved using the Plan-Do-Study-Act methodology to evaluate the outcomes of a CNL-implemented bundled rounding process for skin assessment and documentation, which identified areas for improvement in skin documentation and reporting (Polancich et al., 2017). These reports highlight the Clinical Outcomes Management foundation in action with CNLs, and suggests that Clinical Outcomes Management may be the clearest and most consistently enacted CNL competency in practice.

Care environment management

The competency mapping effort helped to clarify the Care Environment Management competency as the work CNLs do to assess and improve microsystem structures and processes with the goal of making patient care more streamlined. This is distinct from coordinating clinical care via the Clinical Outcomes Management competency. The distinction is illustrated by considering that a CNL can develop, coordinate, and optimize clinical pathways *despite* care environment barriers to the care pathway. For example, a CNL can work with the clinical team to ensure an appropriate transition of care for a particular patient despite structural barriers such as a lack of automated order entry or a standardized procedure for medication delivery.

Using the Care Environment Management competency, the CNL recognizes the structural barrier as a microsystem process, distinct from the clinical pathway, that can be redesigned or improved. This is where systems knowledge, quality improvement, informatics, and the ability to leverage resources comes into play. A CNL works within the system to change structures and processes so that (for example) taking a patient for an imaging scan down in the hospital basement is not a 6-hour ordeal because there is no standardized procedure, or notices that the electronic health record does not allow for easy access to vital patient information in one screen, and works to create a new interface to make that information visible to all CNLs and staff (unpublished CNL stories). In other CNL research this ability to improve care structures and processes also manifests as a CNL outcome, in that clinicians within a clinical microsystem begin to 'think process' instead of orienting to care as a series of clinical tasks to accomplish; "that through daily supportive mentorship [CNLs] create a sense of value in quality process" (Bender, Spiva, Su, & Hites, 2018, p. 5). The overall outcome is the production of stable clinical microsystem practices that help to reduce clinical variability, thus improving care quality (Bender, Murphy, Cruz, & Ombao, 2019).

Implications for CNL practice

The CNL Competency Framework developed in this project helps to make sense of an emerging topic in the CNL literature; the CNL novice-to-expert trajectory. As explained in a recent paper, CNLs within the VA healthcare system identified "the unique challenge of being both an expert nurse and novice CNL at the same time" as they started their practice (Kaack et al., 2018, p. 3). CNLs expressed frustration at the sense that, as master's prepared nurses, they were expected to 'hit the ground running' to fulfill leadership goals of rapid improvement in clinical performance indicators, but felt they didn't know where to start. This was also the case in another study conducted at a large regional health system, where there was a significant lack of understanding about clear expectations for CNL practice at the start of the initiative (Bender, Avolio, et al., 2018; Bender, Spiva, et al., 2018). This resulted in many CNLs taking on the workflows of other roles, such as staff RN (i.e. taking patients) or charge nurse (i.e. managing the bed flow) or assistant management (i.e. accountability for administrative functions), instead of enacting CNL competencies in practice.

In the VA report (Kaack et al., 2018), it was recognized that CNLs had to develop a new perspective within their practice context, and they established a practice development model that made explicit the stages CNLs would move through as they changed their perspective and established their role. The first stage prioritizes relationship building and establishing trust and credibility with microsystem clinicians and administrators. The next step focuses on assessing and understanding microsystem structures and practices and clinical care outcomes. Once this is accomplished, CNLs can then begin the work of changing elements of care delivery or microsystem processes to improve clinical outcomes. Importantly, the paper is explicit in referencing leadership skills as the modality for engendering trust and credibility, which is the necessary first step for utilizing other foundational competencies to coordinate care delivery and improve clinical outcomes. In the other report (Bender, Spiva, et al., 2018; Bender et al., 2019) the lack of readiness for CNL practice was addressed through an initiative that focused specifically on CNL leadership growth and development, which acknowledged the need for expert communication skills, including 'emotional intelligence,' 'crucial conversations,' and coaching, as fundamental skills that drove the CNL's ability to accomplish what was originally expected from them: clinical care pathway coordination and process improvement.

In summary, when comparing this effort's findings with the emerging CNL practice research literature, an inference can be made that CNLs must first attain and manifest expertise in clinical leadership competencies such as communication and advocacy as the basis for achieving subsequent improvements in clinical pathway outcomes and microsystem care processes. The unique focus of a CNL is the unique pathways and processes by which patient care delivery occurs at the microsystem level, assuming that care pathways are unique for each clinical microsystem based on structural characteristics (i.e. how many beds), patient population and acuity, number and variety of clinical service lines involved with the patient population, etc. Because each microsystem is unique, a CNL must first become embedded within the microsystem to effectively coordinate what happens within it. Clinical Leadership competencies are what makes this embedding possible and should be highlighted in CNL care model implementation.

Implications for CNL education

Nurse educators face challenges as they recruit students to their programs, ready them for the CNL certification exam, and prepare them for CNL practice. The CNL role has gained momentum, yet the adoption of the role has been varied in practice settings. Educators continue to struggle with preparing students for practice settings that have not yet embraced the CNL role or title. Questions nurses ask when discerning a CNL education track is how it will benefit them even if there are no

formal CNL roles in their organizational settings? The CNL Competency Framework can make it easier for students to understand explicitly what they can expect to achieve in practice with their masters' level CNL competencies, whether in a formal CNL role or not. As stated earlier in this paper, there is still confusion about CNL competencies and roles. One recent study found that almost half of Model C CNL graduated students felt they weren't using their competencies in practice (Shatto, L'Ecuyer, Meyer, Shagavah, & Mooney, 2018). This effort has consolidated many concepts into a framework that these students could potentially use to map onto their current practices, and hopefully better 'see' how their CNL education is playing out in practice.

For educators, the CNL Competency Framework highlights the fact that the CNL competencies related to clinical leadership are building blocks for developing CNL self-efficacy and expertise in managing the pathways of clinical outcomes and the processes of care environment, and thus offers rationale for their inclusion in CNL curriculum. It creates a powerful motivation to develop CNL curriculum that teaches CNLs social skills such as communication, self-management, and emotional intelligence (Bertram, L'Ecuyer, Shatto, Marquard, & Carril, 2018), and to develop modalities that focus on collaboration skills and team problem solving (Fox, 2017).

Finally, the insights from this effort may help educators as they prepare their students to take the CNL certification exam. Pass rates for the CNL certification exam is a validation of CNL program excellence (L'Ecuyer, Shatto, Hoffmann, & Crecelius, 2016). The exam is based on the work of practicing CNLs, defined via the 2016 Job analysis, while most education curriculum, as described in a previous section, is based on the 2007 and 2013 AACN policy documents. This can create challenges translating student education knowledge to the practice knowledge embedded in the CNL certification test items. This effort has done the work of explicitly linking CNL education with practice competencies, making the process of translation potentially more streamlined when developing exam workshops or study materials.

Limitations

The rigor of this effort aligns with published recommendations for concept mapping (Rosas & Kane, 2012) and was conducted by experts in CNL education, practice, and research. In terms of validity, the competency statements aligned in both language and organization across documents, suggesting the robustness of the CNL Competency Framework. Additional alignment of the CNL Competency Framework with recent and ongoing CNL practice and research activities further attests to the validity of the findings and implications. We did not eliminate any competency statements, adding rigor to the process (i.e. there were no potentially biased decisions to eliminate unpopular concepts). And finally, in terms of reliability, the effort resulted in a consensus product that took time and effort to achieve, although it is acknowledged that it is the sum of a collaborative process of judgment, not certain knowledge, and other interpretations are certainly possible.

Conclusion

This effort aimed to map competency statements found in CNL educational and practice policy documents to gain greater clarity in defining foundational CNL competencies and how they function in the CNL practice role. The analysis clarified three central foci of the CNL: practice leadership and influence; the patient's clinical care pathway, and the microsystem's structures and processes. Each foundational CNL competency targets one of these foci, and creates a cohesive link between CNL education and CNL practice. The CNL Competency Framework can be used to guide CNL curriculum, for example organizing a course focusing on multi-modal communication, justified by the fact that it is a defining mechanism CNLs use to embed themselves in their practice settings. It can be used to develop certification review workshops, helping to make visible the links between what they have learned in their education and how that knowledge can be implemented in practice. Finally, it may have use in implementing and evaluating CNL practice integration. For example, each CNL foundation can serve as the basis for creating specific CNL accountabilities in communication, care (re)design, and process improvement, and also serve as a tool for self-assessment and potential growth opportunities (for example training in crucial conversations, or advancing to a black belt in Six Sigma). In summary, the CNL Competency Framework can serve as a useful tool in creating well-defined CNL education programs and practice roles.

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Declaration of Competing Interest

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References

Ailey, S., Lamb, K., Friese, T., & Christopher, B.-A. (2015). Educating nursing students in clinical leadership. *Nursing Management - UK, 21*(9), 23–28. https://doi.org/10.7748/nm.21.9.23.e1304.

American Association of Colleges of Nursing (2007). White paper on the education and role of the clinical nurse leader. Retrieved from http://aacn.nche.edu/publications/whitepapers/clinicalnurseleader07.pdf.

American Association of Colleges of Nursing (2013). *Competencies and curricular expectations for clinical nurse leader education and practice*.

Beck, M., Bradley, H. B., Cook, L. L., Leasca, J. B., Lampley, T., & Gatti-Petito, J. (2018). A paradigm shift from brick and mortar: Full-time nursing faculty off campus. *Nursing Education Perspectives, 39*(2), 107–109. https://doi.org/10.1097/01.NEP.0000000000000211.

Bender, M. (2014). The current evidence base for the clinical nurse leader: A narrative review of the literature. *Journal of Professional Nursing, 30*(2), 110–123. https://doi.org/10.1016/j.profnurs.2013.08.006.

Bender, M. (2016a). Clinical nurse leader integration into practice: Developing theory to guide best practice. *Journal of Professional Nursing, 32*(1), 32–40.

Bender, M. (2016b). Conceptualizing clinical nurse leader practice: An interpretive synthesis. (2016). *Journal of Nursing Management. 24*(1), E23–E31. https://doi.org/10.1111/jonm.12285.

Bender, M. (2017). Clinical nurse leader integrated care delivery: An approach to organizing nursing knowledge into practice models that promote interprofessional, team-based care. *Journal of Nursing Care Quality, 32*(3), 189–195. https://doi.org/10.1097/NCQ.0000000000000247.

Bender, M., Avolio, A., Baker, P., Harris, J. L., Hilton, N., Hites, L., et al. (2018). Developing the clinical nurse leader survey instrument. *Journal of Nursing Care Quality, 33*(4), 300–308. https://doi.org/10.1097/NCQ.0000000000000310.

Bender, M., Connelly, C. D., & Brown, C. (2013). Interdisciplinary collaboration: The role of the clinical nurse leader. *Journal of Nursing Management, 21*(1), 165–174. https://doi.org/10.1111/j.1365-2834.2012.01385.x.

Bender, M., Murphy, E. A., Cruz, M., & Ombao, H. (2019). System and unit-level care quality outcomes after reorganizing frontline care delivery to integrate clinical nurse leaders: A quasi-experimental time series study. *Journal of Nursing Administration, 49*(6), 315–322.

Bender, M., Spiva, L., Patrick, S., Meffert, S., Moton, L., Clark, S., ... Mount, A. (2019). Participatory research in action: Clinical nurse leader co-knowledge production and quality improvement in a seamless trajectory. *Journal of Nursing Care Quality*. https://doi.org/10.1097/NCQ.0000000000000386 (Published online ahead of print).

Bender, M., Spiva, L., Su, W., & Hites, L. (2018). Organizing nursing knowledge and practice into care delivery models that catalyze quality: A Clinical Nurse Leader case study. *Journal of Nursing Management, 26*, 563–662. https://doi.org/10.1111/jonm.12596.

Bender, M., Williams, M., Su, W., & Hites, L. (2017). Refining and validating a conceptual model of Clinical Nurse Leader integrated care delivery. *Journal of Advanced Nursing, 73*(2), 448–464. https://doi.org/10.1111/jan.13113.

Bertram, J., L'Ecuyer, K., Shatto, B., Marquard, S., & Carril, K. (2018). Advancing soft skills: Leadership seminars for clinical nurse leader students. *Creative Nursing, 24*(2), 110–115. https://doi.org/10.1891/1078-4535.24.2.110.

Clavo-Hall, J. A., Bender, M., & Harvath, T. A. (2018). Roles enacted by clinical nurse leaders across the healthcare spectrum: A systematic literature review. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing, 34*(4), 259–268. https://doi.org/10.1016/j.profnurs.2017.11.007.

Duffy, P. (2017). Implementing the clinical nurse leader role in a large hospital network. *Nurse Leader, 15*(4), 276–280. https://doi.org/10.1016/j.mnl.2017.03.014.

Fox, O. H. (2017). Using VoiceThread to promote collaborative learning in on-line clinical nurse leader courses. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing, 33*(1), 20–26. https://doi.org/10.1016/j.profnurs.

2016.08.009.
Gabuat, J., Gabuat, J., Hilton, N., Hilton, N., Kinnaird, L. S., Kinnaird, L. S., et al. (2008). Implementing the clinical nurse leader role in a for-profit environment: A case study. *JONA: the Journal of Nursing Administration, 38*(6), 302–307.
Gazaway, S. B., Anderson, L., Schumacher, A., & Alichnie, C. (2018). Effect of mentoring on professional values in model C clinical nurse leader graduates. *Journal of Nursing Management*. https://doi.org/10.1111/jonm.12633.
Gerard, S., Rn, M. G. M., Grossman, S., & Godfrey, M. (2012). Course strategies for clinical nurse leader development. *Journal of Professional Nursing, 28*(3), 147–155. https://doi.org/10.1016/j.profnurs.2011.11.012.
Hicks, F. D., & Rosenberg, L. (2016). Enacting a vision for a master's entry clinical nurse leader program: rethinking nursing education. *Journal of Professional Nursing : Official Journal of the American Association of Colleges of Nursing, 32*(1), 41–47. https://doi.org/10.1016/j.profnurs.2015.06.002.
Jukkala, A., Greenwood, R., Motes, T., & Block, V. (2013). Creating innovative clinical nurse leader practicum experiences through academic and practice partnerships. *Nursing Education Perspectives, 34*(3), 186–191.
Kaack, L., Bender, M., Finch, M., Borns, L., Grasham, K., Avolio, A., et al. (2018). A clinical nurse leader (CNL) practice development model to support integration of the CNL role into microsystem care delivery. *Journal of Professional Nursing, 34*(1), 65–71. https://doi.org/10.1016/j.profnurs.2017.06.007.
Lambton, J. (2010). Clinical simulation as an instructional strategy for animating the clinical nurse framework. *Journal of Professional Nursing, 26*(3), 176–181. https://doi.org/10.1016/j.profnurs.2009.12.003 (RN MS, E.).
Lammon, C. A. B., Stanton, M. P., & Blakney, J. L. (2010). Innovative partnerships: The clinical nurse leader role in diverse clinical settings. *Journal of Professional Nursing, 26*(5), 258–263. https://doi.org/10.1016/j.profnurs.2010.06.004.
L'Ecuyer, K. M., Shatto, B. J., Hoffmann, R. L., & Crecelius, M. L. (2016). The certified clinical nurse leader in critical care. *Dimensions of Critical Care Nursing, 35*(5), 248–254. https://doi.org/10.1097/DCC.0000000000000202.
Lipke, B., Gilbert, G., Shimer, H., Consenstein, L., Aris, C., Ponto, L., et al. (2018). Newborn safety bundle to prevent falls and promote safe sleep. *MCN. the American Journal of Maternal Child Nursing, 43*(1), 32–37. https://doi.org/10.1097/NMC.0000000000000402.
Maag, M. M., Buccheri, R., Capella, E., & Jennings, D. L. (2006). A conceptual framework for a clinical nurse leader program. *Journal of Professional Nursing, 22*(6), 367–372. https://doi.org/10.1016/j.profnurs.2005.11.002.
Mannix, J., Wilkes, L., & Daly, J. (2013). Attributes of clinical leadership in contemporary nursing: An integrative review. *Contemporary Nurse*. https://doi.org/10.5172/conu.2013.3505.
McKeon, L. M., Norris, T. L., Webb, S., Hix, C., Ramsey, G., & Jacob, S. R. (2009). Teaching clinical nurse leaders how to diagnose the clinical microsystem. *Journal of Professional Nursing, 25*(6), 373–378. https://doi.org/10.1016/j.profnurs.2009.04.001.
Millward, L. J., & Bryan, K. (2005). Clinical leadership in health care: A position statement. *International Journal of Health Care Quality Assurance, 18*(2/3), xiii–xxv.
Moore, P. (2013). The academic story: Introducing the clinical nurse leader role in a multifacility health care system. *Journal of Professional Nursing, 29*(5), 264–269. https://doi.org/10.1016/j.profnurs.2012.10.007.
Moore, P., Schmidt, D., & Howington, L. (2014). Interdisciplinary preceptor teams to improve the clinical nurse leader student experience. *Journal of Professional Nursing, 30*(3), 190–195. https://doi.org/10.1016/j.profnurs.2013.09.013.
Murphy, E. A. (2014). Healthcare reform—A new role for changing times: Embracing the clinical nurse leader role—A strategic partnership to drive outcomes. *Nurse Leader, 12*(4), 53–57.
Nance-Floyd, B., & Zomorodi, M. (2018). Clinical site development for the clinical nurse leader in a rural primary care setting. *Journal of Nursing Care Quality, 33*(2), 95–99. https://doi.org/10.1097/NCQ.0000000000000322.
Norris, T. L., Norris, L.,. T., Webb, S. S., Webb, S.,. S., McKeon, L. M., McKeon, M.,. L., et al. (2012). Using portfolios to introduce the clinical nurse leader to the job market. *The Journal of Nursing Administration, 42*(1), 47–51. https://doi.org/10.1097/NNA.0b013e31823c18e3.
Polancich, S., Coiner, S., Barber, R., Poe, T., Roussel, L., Williams, K., et al. (2017). Applying the PDSA framework to examine the use of the clinical nurse leader to evaluate pressure ulcer reporting. *Journal of Nursing Care Quality, 32*(4), 293–300. https://doi.org/10.1097/NCQ.0000000000000251.
Rankin, V. (2015). Clinical nurse leader: A role for the 21st century. *Medsurg Nursing, 24*(3) (199–201– 198).
Rivet, C., Rivet, C., Steeves, S., Steeves, S., Brennan, D., Brennan, D., et al. (2013). A closer look at hybrid nurses. *Nursing Management, 44*(2), 38–42. https://doi.org/10.1097/01.NUMA.0000424017.37551.af.
Rosas, S. R., & Kane, M. (2012). Quality and rigor of the concept mapping methodology: A pooled study analysis. *Evaluation and Program Planning, 35*(2), 236–245. https://doi.org/10.1016/j.evalprogplan.2011.10.003.
Shatto, B., L'Ecuyer, K., Meyer, G., Shagavah, A., & Mooney, E. (2018). Experiences of master's prepared clinical nurse leaders at three years post-graduation. *Journal of Professional Nursing*. https://doi.org/10.1016/j.profnurs.2018.06.001 (IN PRESS).
Shipman, S., Shipman, S., Stanton, M., Stanton, M., Hankins, J., & Hankins, J. (2013). Incorporation of the clinical nurse leader in public health practice. *Journal of Professional Nursing, 29*(1), 4–10. https://doi.org/10.1016/j.profnurs.2012.04.004.
Tan, R. J. B. (2017). *Clinical nurse leader job analysis*. 1–170.
Webb, S., & McKeon, L. (2014). A model for preparing faculty to teach model C clinical nurse leader students. *Journal of Nursing Education, 53*(7), 421–425. https://doi.org/10.3928/01484834-20140617-05.
Wesolowski, M. S., Casey, G. L., Berry, S. J., & Gannon, J. (2014). The clinical nurse leader in the perioperative setting: A preceptor experience. *AORN Journal, 100*(1), 30–41. https://doi.org/10.1016/j.aorn.2013.11.021.
Wienand, D. M., Shah, P. R., Hatcher, B., & Jordan, A. (2015). Implementing the clinical nurse leader role: A care model centered on innovation, efficiency, and excellence. *Nurse Leader*. https://doi.org/10.1016/j.mnl.2014.11.011.
Willcocks, S. (2011). Identifying clinical leadership functions. *British Journal of Healthcare Management, 17*(3), 96–100.
Wilson, L., Orff, S., Gerry, T., Shirley, B. R., Tabor, D., Caiazzo, K., & Rouleau, D. (2013). Evolution of an innovative role: The clinical nurse leader. *Journal of Nursing Management, 21*(1), 175–181. https://doi.org/10.1111/j.1365-2834.2012.01454.x.