Title

Organising nursing practice into care models that catalyse quality: A clinical nurse leader case study

Journal

Journal of Nursing Management, 26(6)

ISSN

0966-0429

Authors

Bender, Miriam
Spiva, LeeAnna
Su, Wei
et al.

Publication Date

2018-09-01

DOI

10.1111/jonm.12596

Peer reviewed

Accepted: 13 November 2017

DOI: 10.1111/jonm.12596

ORIGINAL ARTICLE

WILEY

Organising nursing practice into care models that catalyse quality: A clinical nurse leader case study

Miriam Bender PhD, RN, Assistant Professor[1] | LeeAnna Spiva PhD, RN, Assistant Vice President[2] | Wei Su PhD, Program Manager[3] | Lisle Hites PhD, Associate Professor[3]

[1]Sue & Bill Gross School of Nursing, University of California, Irvine, CA, USA

[2]Nursing Operations and Practice, WellStar, Atlanta, GA, USA

[3]Department of Health Care Organization and Policy, University of Alabama, Birmingham, AL, USA

Correspondence
Miriam Bender, Sue & Bill Gross School of Nursing, University of California, Irvine, Irvine, CA, USA.
E-mail: miriamb@uci.edu

Funding information
The study was funded in part by the Commission on Nurse Certification.

Aims: To determine the power of a conceptual clinical nurse leader practice model to explain the care model's enactment and trajectory in real world settings.

Background: How nursing, organised into specific models of care, functions as an organisational strategy for quality is not well specified. Clinical nurse leader integrated care delivery is one emerging model with growing adoption. A recently validated clinical nurse leader practice model conceptualizes the care model's characteristics and hypothesizes their mechanisms of action.

Methods: Pattern matching case study design and mixed methods were used to determine how the care model's constructs were operationalized in one regional United States health system that integrated clinical nurse leaders into their care delivery system in 2010.

Results: The findings confirmed the empirical presence of all clinical nurse leader practice model constructs and provided a rich description of how the health system operationalized the constructs in practice. The findings support the hypothesized model pathway from Clinical Nurse Leader structuring to Clinical Nurse Leader practice and outcomes.

Conclusion: The findings indicate analytic generalizability of the clinical nurse leader practice model.

Implications for Nursing Management: Nursing practice organised to focus on microsystem care processes can catalyse multidisciplinary engagement with, and consistent enactment of, quality practices. The model has great potential for transferability across diverse health systems.

KEYWORDS

case study, clinical nurse leader, healthcare organization, nurse care model, quality and safety

1 | INTRODUCTION

Nurses comprise the largest sector of the health care workforce, with over three million currently employed in the USA alone, more than four times the number of physicians (Health Resources and Services Administration, 2013). This provides a powerful incentive to fully leverage nursing scope of practice—the roles, responsibilities and functions that nurses are educated, competent and licensed to perform—into care models that consistently meet quality mandates. The majority of the literature on the organisation of nursing care delivery focuses on nurse staffing levels, conceptualized as a structure of care, typically through nurse–patient ratios or through metrics such as nursing hours per patient day (Brennan, Daly, & Jones, 2013). This conceptualization has been examined through observational research to determine the impact of nurse staffing on patient morbidity and mortality. Systematic reviews confirm the relationship between nurse

staffing and improved patient outcomes, but conclude the evidence is too weak for specific practice recommendations (Brennan et al., 2013; Shekelle, 2013). To strengthen this knowledge base, a better understanding of 'how' nursing knowledge and practice improves patient outcomes is needed (Kitson, Muntlin Athlin, & Conroy, 2014; Spetz, Harless, Herrera, & Mark, 2013; Yakusheva, Wholey, & Frick, 2014).

2 | CLINICAL NURSE LEADER INTEGRATED CARE DELIVERY

Clinical nurse leader (CNL) integrated care delivery is a nursing model launched in 2003 by the American Association of Colleges of Nursing (AACN) to advance a new approach to nursing practice (AACN, 2007). Clinical nurse leaders are being implemented across the health care spectrum (Bender, Williams, & Su, 2016) with a small but growing literature showing improved patient quality and safety outcomes (Bender, 2014; Duffey, 2017; Miller & Schaper, 2015; Murphy, 2014) and improved nurse satisfaction, turnover and leadership practices (Guillory, 2012; Kohler, 2011) post implementation.

Despite promising early data, until recently clinical nurse leader practice and the mechanisms by which CNL-integration into care delivery leads to reported outcomes were underspecified, with no clear understanding of what CNL practice 'is', or the pathway leading to reported outcomes (Williams & Bender, 2015). To reduce this significant knowledge gap, a multi-disciplinary team worked to develop (Bender, 2016a, 2016b), refine (Bender et al., 2017) and empirically validate (Bender, Williams, Su, & Hites, 2017) a CNL Practice Model conceptualizing the model's characteristics and hypothesizing their mechanisms of action. In these studies, CNL practice was validated as an ongoing process of continuous clinical leadership, whereby clinical nurse leaders continuously enact four core practices: (1) facilitate effective ongoing communication, including the creation of multimodal communication tools and rounding structures; (2) strengthen intra and inter professional relationships by establishing a network of multi-professional microsystem partners; (3) create and sustain teams by bringing people from all disciplines and departments affected by care processes to work together and improve them; and (4) support staff engagement via an ongoing, consistent supportive presence, the provision of resources based on in-the-moment needs, and by empowering staff to perform to their full scope of practice and identify and create solutions for patient care needs. The study also validated the Readiness and Structuring elements that are necessary to enable the enactment of continuous clinical leadership practices by clinical nurse leaders at the microsystem level. The appropriate readiness and structuring of CNL practice results in outcomes that include both improved care environments and improved care quality and safety (Figure 1).

3 | STUDY PURPOSE

To confirm that the CNL Practice Model provides a robust framework to generate an evidence base for CNL-integrated care delivery, it is important to empirically test the model in practice (Corry, Clarke, White, & Lalor, 2013). The purpose of this study was to determine the power of the CNL Practice Model in explaining the care model's enactment and trajectory in real world settings. The aims of the study were: (1) to confirm the empirical presence of model constructs; and (2) to compare observed operationalization pathways to the hypothesized pathway derived from the CNL Practice Model at one regional health system.

4 | METHODS

A case study design and mixed methods were used to achieve the study aims. The assumption behind the design and methods is a pragmatist orientation to knowledge generation that understands the world as objective in some instances and subjective in others; i.e. reality consists of layers 'of completeness, order, recurrences which make possible prediction and control, and singularities, ambiguities, uncertain possibilities, processes going on to consequences as yet indeterminate' (Dewey, 1925, cited in Feilzer, 2009). The approaches used in this study made possible the ability to observe and document these different layers and to produce knowledge about both the patterns and the singularities that co-exist in the phenomenon of interest.

A case study is an empirical inquiry that investigates a phenomenon of interest within its real life context to better describe and understand

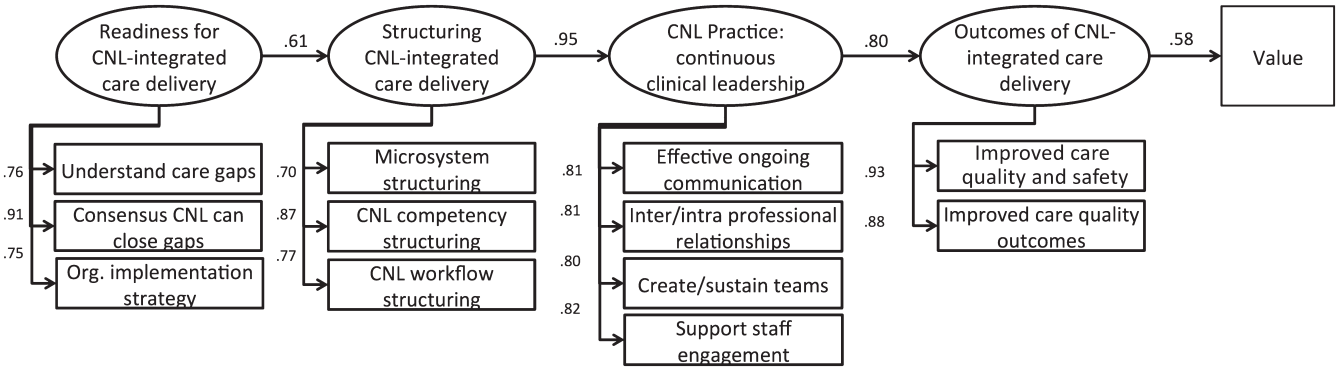

FIGURE 1 CNL practice model, with structure equation modelling pathway estimates (Figure adapted from Bender et al., 2017)

it (Yin, 2013). Case study is well suited for research aimed at generating an advanced understanding of the empirical manifestation of theoretical concepts, for example CNL Practice Model constructs, especially the potentially diverse manifestations depending on local context-dependent dynamics (Barratt, Choi, & Li, 2011; Bitektine, 2007; Yin, 2013). The case study model testing approach used for this study is pattern matching, a logical analytic technique that compares an empirically based pattern, the one observed in a case study, with a hypothesized one made before data collection, i.e. the CNL Practice Model domain pathways (Yin, 2013). The model stipulates a complex pattern of events over time; the work of the case study is to generate empirical data that can be matched, or not, to the model. If the hypothesized pathway or pattern is found in the empirical data, inferences can be made and confirmed. If other pathways emerge, or if expected pathways do not emerge, this information can be used to refine the model and begin testing anew.

The case was a regional Southwest US health system comprising five affiliated hospitals and 160 physician clinic networks that launched its CNL initiative in 2010 in response to a perceived need to improve the coordination of services across the continuum of care. The case was chosen because of its characteristics and accessibility. The health system's CNL initiative was rolled out at four hospitals and two clinic networks. These embedded cases provided diverse settings within a single case from which to identify potential contextual factors influential to the phenomenon of inquiry. The case was therefore large enough to generate adequate amounts of data but small enough to ensure that the resources needed to conduct the study were available.

Mixed methods were used to collect data, which occurred over a 9-month period, from December 2015 to August 2016. As stated above, the use of qualitative and quantitative methods in a single study ensures that patterns, interpretations and singularities are all captured and synthesized to produce a comprehensive and nuanced account of a phenomenon of interest (Feilzer, 2009).

Clinicians and administrators that interacted with clinical nurse leaders or were involved in the adoption of CNLs into their setting's clinical units comprised the survey and interview sample. Participants who did not interact with CNLs (for example finance department staff) were identified with a survey item, and excluded from the study. Since the target population size was unknown, network sampling was used to gain access to the sample. Network sampling involves obtaining information from a specific community or group tied by a common relationship; in this case involvement with CNL initiative. We worked with a study champion in each setting to identify appropriate email listservs to distribute the survey link, and placed flyers on all units. The method is considered a reasonable substitute for probabilistic sampling when the target population size is unknown (Salganik & Heckathorn, 2004; Trotter, 2012).

A validated CNL Practice Survey (Bender et al., 2017) was administered to quantify the empirical presence of model domains. Survey items were answered on a scale of 0–100 to the question 'To what extent do you feel each item/statement is/was present for the CNL implementation?' with 0 indicating 'not at all present' and 100 indicating 'fully present'. The survey was formatted for electronic administration. Survey data were exported into SPSS format. Aggregate domain and component scores were computed by averaging across individual item scores. Bivariate correlation analyses that tested relationships between domains were then performed using aggregated domain scores. Structural equation modelling (SEM) was conducted to test the interrelationships between the CNL Practice Model hypothesized pathways and observable data (see Bender et al., 2017 for a detailed description of the SEM method used). Analyses were performed in SPSS v22 and Mplus 7.0.

The qualitative methods involved collecting and analysing interview/focus group data to characterize the operationalization of model domain pathways. A purposeful sample of clinicians/administrators involved in the system's CNL initiative was approached to participate in interviews and focus groups, to ensure multi-disciplinary perspectives were captured. Interview/focus group data were analysed using deductive and inductive qualitative content analyses (Elo & Kyngas, 2008; Hsieh, 2005). Qualitative data were first deductively coded onto the existing CNL Practice Model domains and components. All qualitative data were tagged to the professional role from which the data were generated to enable descriptive analysis of coding variation by profession. Data coded onto model components were inductively analysed to derive categories corresponding to the system's operationalization of model domains/components. The findings were then mapped back onto the model to confirm, or not, model pathways and to identify any new or emerging patterns. Institutional Review Board approval for all study procedures were obtained before study commencement.

5 | RESULTS

5.1 | Presence of model domains

The final survey sample included 209 surveys that were either fully or partially completed (Table 1). Thirty three percent of participants were from hospital 1, 18% from hospital 2, 15% from hospital 3, 15% from hospital 4 and 14% from the clinic network. Fifteen percent of the participants were CNLs, 33% were staff RNs, 5% were physicians or pharmacists, 19% were administrators or managers, and 28% had other clinical or support roles. Survey responses confirmed the presence of all CNL Practice Model domains and components at all case study settings (Table 2). For the survey instrument, Cronbach's alphas suggested excellent internal consistency reliability for all domain and component survey items in the current study (Table 2). For the sample overall, Domain 1 (Readiness) had the lowest score, or presence, (69.70, *SD* 21.07) while Domain 3 (CNL Practice) had the highest score, or presence (78.73, *SD* 25.25). This pattern was similar for each setting, in that Readiness for CNL integrated care delivery scored the lowest, while CNL Practice scored the highest, except for Hospital 3, for which Domain 4 (Outcomes) scored the highest (76.35).

Bivariate correlation analyses between domains were performed to determine the relationships between domains in the case (Table 3). All correlations were strong (r = .57 to .93) and significant at the .01 level. Domain pathway relations were tested using SEM. Unlike the

TABLE 1 Survey and interview/focus group participant demographics

Demographic	Frequency	Percent (%)
Survey participants	**(Total *n* = 209)**	
Roles		
CNL	31	14.8%
Staff RN	69	33.0%
Physician/ pharmacist	10	4.7%
Other clinical role	47	22.5%
Administration/ management	40	19.1%
Other	12	5.7%
Settings		
Hospital 1	69	33.0%
Hospital 2	37	17.7%
Hospital 3	32	15.3%
Hospital 4	32	15.3%
Clinic network	29	13.9%
Other	10	4.8%
Interview/focus group participants	**(Total *n* = 57)**	
Roles		
CNL	25	43.9%
CNL director	4	7.0%
CNS	2	3.5%
Executive nursing director	2	3.5%
MD	6	10.5%
Nurse educator	3	5.3%
Patient	7	12.3%
Staff RN	4	7.0%
Unit manager	4	7.0%
Settings		
Hospital 1	16	28.1%
Hospital 2	15	26.3%
Hospital 3	14	24.6%
Hospital 4	10	17.5%
Clinic network	2	3.5%

SEM model tested in the model validation study, only associations between domains were estimated, and not domains plus components. Absolute and comparative fit indices were calculated to determine how well the specified model fit the sample data. With large sample sizes, the SEM chi-square test is often significant; an acceptable adaptation is the ratio of Chi-Square to degrees of freedom, with a ratio of 5 or less considered a reasonable fit (Hooper, Coughlan, & Mullen, 2008). A comparative fit index (CFI) value of 0.90 or greater indicates good fit (Hooper et al., 2008; Hu & Bentler, 1999). For Standardized Root Mean Square Residual (SRMR), values of .08 or below are considered an acceptable fit (Hooper et al., 2008; Hu & Bentler, 1999). Based on these criteria, the model had adequate fit to the data: $\chi^2(6) = 24.27$, $p < .001$; $\chi^2/df = 4.05$; CFI = 0.95; SRMR = 0.07.

5.2 | Operationalization of model domains

A total of 57 participants were interviewed from all case study settings, including 25 CNLs, six physicians, seven patients, 10 nursing managers/directors, and nine additional clinical providers, including educators, staff RNs and Advanced Practice Nurses (Table 1). A rich and descriptive picture emerged in terms of the ways in which the health system operationalized all model domains and components (Table 4). Readiness was operationalized as a set of clear expectations for CNL practice, a system-wide yet tailored education strategy about the care delivery redesign, and ensuring CNL readiness for practice. Structuring involved administrative redesign of care delivery, including changes in evaluation, reporting and communication structures, with the main focus for CNL workflow being microsystem care processes and dynamics. CNL competency and CNL workflow excerpt coding mapped onto each other in a one-to-one relationship. For example 'Clinical Systems Leadership' emerged as the CNL competency articulated most frequently by participants, with all excerpts also mapping onto the workflow structure 'Focus on care processes/dynamics.'

The operationalization of CNL Practice involved 30 ongoing activities, including 11 communication and nine staff engagement support strategies. Relationship building was noted as a time-intensive element of CNL practice, in terms of seeking connections and becoming a real-time liaison between all professions entering the clinical microsystem. One patient articulated her experience of this connectivity as 'interdepartmentalizing', in that she saw the CNL as the person who knew all the departments and individuals involved in her care and ensured they were all talking and sharing information with each other, many times with the CNL as the mediating information source. The participants shared details of how CNLs created and sustained teams, including doing the 'small stuff that makes the team' (as one physician articulated it), for example by making sure everyone knew what time interdisciplinary rounds were happening and creating checklists and worksheets as information-sharing and documentation tools for multiple care providers. The CNL was seen as the one person on the unit that by his/her presence was able to keep 'asynchronous knowledge alive' (as another physician articulated), meaning that information obtained by many sources and by diverse people were retained by the CNL and made freely available during formal/informal meetings or rounds. As for staff engagement, knowledge sharing was also a key component, with the 'in-the-moment', 'elbow-to-elbow' element articulated as a key clinical supportive practice.

Outcomes were operationalized as engagement with and enactment/consistency of best practices, staff growth, process instead of task thinking, and shared understandings of care processes. By 'knowing the process' CNLs keep others 'compliant': many care providers spoke to the ways in which CNLs make sure they do not resort back to 'what's comfortable' by 'teaching why' and through daily supportive

TABLE 2 CNL practice model survey Cronbach's alpha and domain/component scores

Domain/ component	Cronbach's alpha	Total sample *M* (*SD*)		Hosp 1	Hosp 2	Hosp 3	Hosp 4	Clinic network	Other
		n = 209		*n* = 69	*n* = 37	*n* = 32	*n* = 32	*n* = 29	*n* = 10
Domain 1	0.9	69.7	21.1	70.5	67.7	65.7	69.7	79.5	59.2
Component 1	0.8	77.5	19.5	77.8	75.0	71.3	77.9	88.8	71.9
Component 2	0.9	69.2	25.2	69.0	67.4	65.1	70.9	81.8	48.7
Component 3	0.9	63.0	27.2	63.5	59.5	64.3	63.0	69.9	50.5
Domain 2	1.0	74.8	23.4	77.2	70.8	73.6	72.1	81.6	67.2
Component 1	1.0	80.7	23.5	81.2	79.1	77.7	78.7	89.7	77.1
Component 2	0.9	69.5	24.1	72.4	67.1	71.1	66.8	70.1	60.1
Component 3	1.0	75.5	26.1	77.7	71.5	72.7	74.7	82.7	66.2
Domain 3	1.0	78.7	25.3	80.5	75.8	75.0	77.7	86.1	72.2
Component 1	1.0	78.1	25.2	79.2	75.5	75.1	79.0	84.8	68.4
Component 2	1.0	79.5	26.0	81.7	76.5	74.6	79.4	85.7	73.4
Component 3	1.0	78.8	26.7	80.3	78.2	74.9	75.7	86.6	71.9
Component 4	1.0	78.0	26.9	79.7	73.2	75.3	75.4	87.2	75.3
Domain 4	1.0	76.3	24.1	78.0	71.2	76.4	72.2	81.8	82.1
Component 1	1.0	74.8	24.8	77.5	70.5	74.9	69.3	78.9	79.5
Component 2	1.0	77.5	24.8	78.8	71.9	77.8	73.9	83.3	84.8
Domain 5	0.9	73.9	25.4	74.9	68.7	75.8	72.6	79.2	72.2

mentorship to create a sense of value in quality processes. Peer accountability was also described as a beneficial outcome. Managers spoke about the 'relief' of being able to focus on the administrative accountabilities and having a 'weight off my shoulder' in terms of knowing clinical quality is being led by the CNLs. 'Value' was operationalized as trust in CNLs and an assumption that their practice is a necessary function of microsystem care delivery. Participants told stories of relying on CNLs for information and for being a sounding board to help with decision-making. Many talked about a sense of predictability, or how 'organised' a unit was with a CNL on it. The CNLs equated the care team valuing them with 'trust'. One physician explained it as the CNL being 'vetted' through witnessing their daily practice, so that the physician would trust the CNL's assessment of information in an immediate way that he would not if it came from a nurse he did not know.

This trust was mentioned many times, but as one CNL articulated, the trust that built confidence and consistency on the unit was not visible from a measurement standpoint; 'its not showing CNL return on investment like a QI project at the system level would'. Other clinicians that experienced the loss of a CNL on their unit described a similar, palpable yet not measurable, phenomenon of difference. One physician commented on noticing how the 'quality of rounds' deteriorated when a CNL left the unit, for example by physician orders not being entered timely, which the physician described as losing the 'benefit' of the rounding structure itself. Other elements of CNL practice were also described as similarly 'there' but not easily measurable, such as a sense of organisation and consistency on the unit, and a 'negotiate[d] vision'.

5.3 | Comparing operationalized with hypothesized model pathway

The CNL Practice and the Outcomes of CNL integrated care delivery, including its Value, did not emerge in settings where there were insufficient Readiness and Structuring elements, for example ambiguity about expectations for practice or CNLs not being consistently present in the microsystem. These empirical findings support the hypothesized model pathway, providing preliminary confirmation of the model's explanatory capacity. In terms of Readiness, clear expectations for practice were critical to all other downstream functions. There were numerous stories of initial failures directly attributed to a lack of understanding about what CNLs should be doing. This lack of initial Readiness was confirmed in the survey data results, where the Readiness domain consistently scored the lowest of all domains. The majority of respondents articulated a clear vision as the critical first step for the CNL workflow to be implemented appropriately. Otherwise, participants saw unit level managers using CNLs as additional staff nurses, as a 'glorified charge nurse', or as assistant managers, instead of creating appropriate CNL practice workflows based on a CNL competency structure. The way in which this was overcome over time was the process mapping of CNL competencies and workflow against other system roles, which provided key insights and improvement in creating structures ready for change.

One microsystem Structuring component that changed in most settings as a result of early implementation failures was the structure of CNL reporting, from a microsystem manager to a mesosystem director of CNLs for each setting. The need for CNL oversight that was

TABLE 3 Correlations between CNL practice model domains

		Domain 1: Readiness	Domain 2: Structuring	Domain 3: CNL Practice	Domain 4: Outcomes	Domain 5: Value
Domain 1: Readiness	Pearson correlation	1				
	n	177				
Domain 2: Structuring	Pearson correlation	0.7**	1			
	n	169	173			
Domain 3: CNL Practice	Pearson correlation	0.6**	0.9**	1		
	n	176	173	185		
Domain 4: Outcomes	Pearson correlation	0.6**	0.8**	0.8**	1	
	n	174	171	178	180	
Domain 5: Value	Pearson correlation	0.7**	0.8**	0.7**	0.8**	1
	n	176	173	182	180	184

**Correlation is significant at the .01 level (2-tailed).

one step removed from the unit level was seen as a way to ensure that CNL practice was consistently enacted across microsystems, and as a way to create stable boundaries around the CNL workflow. Before this oversight existed, unit-level managers and CNLs themselves expanded or contracted the boundaries of CNL practice based on their own interpretations of what a CNL 'should' do. One CNL director described the situation as 'a bit of a paradox because the CNLs were marginalized without [mesosystem] leadership but felt they could 'do everything'. Now my job is to take requests and use a consult process to see if this is something the CNLs should be doing.' A CNL described it as 'CNLs were getting pulled into everything. The director now helps buffer, ensuring appropriate activities … now we are being held more accountable'.

Participants brought up this initial perception of CNLs having to do everything, and yet not being successful at anything, as a symptom of the need for CNL readiness for practice in addition to, or as a precursor to, appropriate CNL structuring and CNL practice. Many CNLs and managers described a lack of the necessary training to be successful in their role. What became apparent over time was that CNL readiness involves a formal orientation process where explicit expectations for practice and additional training occurs as part of the transition to the CNL workflow. This orientation at first was 'basically CNLs orienting themselves and making their own role', which led to much of the confusion and failure that was identified above.

In addition to CNL readiness, all settings needed to be made ready for the restructured care delivery system for it to be successfully enacted. In the beginning, many health system clinicians and administrators first learned about the CNL by simply bumping into them in the course of their own daily workflow. This haphazard introduction to CNL practice did not engender clarity: staff RNs thought CNLs were educators; administrators saw CNLs doing QI projects and took them away from their unit practice to do system-wide projects. It became apparent over time that a much more formal and rigorous education strategy was needed to introduce the CNL to the health system. But this was difficult to operationalize. One CNL described it as the fact that 'the role is so unique that it can't easily be represented in an abstract form like a Powerpoint'. Another CNL recognized the need for 'interactional education'. One director described this as the need for CNL stories, a 'day in the life' or 'problem solved by CNL' story to articulate the unique workflow. It was also recognized that the education would need to occur in diverse venues and in diverse modes depending on the target audience. Participants articulated the many modalities developed over time to create an effective education strategy; presentations at physician meetings, elevator speeches to system level administrators, regular standing updates at pertinent system-level meetings, formal introduction to the role for all new hires; and one-on-one discussions with staff RNs.

6 | DISCUSSION

An interesting finding was the change in reporting structure that resulted in consistent CNL practice. A previous study determined that less CNL practice consistency and/or a CNL-manager reporting structure was associated with significantly lower scores of perceived success than greater consistency and/or a different reporting structure (Bender, Williams, and Su, 2016; Bender, Williams, Su, & Hites, 2016). This study sheds light on those findings and furthermore links the two factors as interdependent. When CNLs were reporting to their unit managers in this study, it resulted in workflows and practices that were driven by individual preferences and in-the-moment needs. When the CNLs reported to a meso-system level director, the director was able to ensure all CNLs were practising within the same boundaries, and held both CNLs and managers accountable for CNL

TABLE 4 Operationalization of CNL practice model domains and components

Domain	Components	Operationalization of component by health system	Code excerpt count
Readiness	Understand care delivery gaps AND consensus CNL can close gaps	Understanding is more than high-level theory; needs to be filled with clarity on expected practice	32
		Top leadership understanding drives forward movement	30
		Without understanding, there is no clear expectation downstream	22
		CNL suggests other roles not effective	4
	Organisation-level implementation strategy	Orientation/onboarding process	18
		Background experience relevant	17
		Transformational leadership skills	17
		Self-advocacy for CNL functions	11
		Communication skills	6
		Interactive education	14
		Map (of CNL functions to other system roles) used as education tool	10
		Education important form of buy-in	8
		Education stages: pre-rollout and ongoing	8
		Education tailored to audience (clinical, administrative, etc.)	6
		Education sets realistic expectations	1
Structuring	Microsystem level structuring	Micro and macro reporting structure	50
		Manager and CNL are an aligned team	44
		Map CNL functions against other system roles	43
		Leadership (not disciplinary) authority	25
		Evaluation tool specific to CNL competencies and workflow expectations	24
		Connected to leadership communication chain	20
		Appropriate CNL to patient/bed/microsystem ratio	19
		Micro and macro reporting structure	50
	CNL competency structure	Clinical systems leadership	77
		Quality improvement and safety	35
		Clinical prevention and population health	25
		Health care policy and advocacy	22
		Interprofessional collaboration	22
		Informatics and health care technologies	19
		Translating and integrating scholarship into practice	18
	CNL workflow structure	Focus on care processes/dynamics	77
		Focus on quality measures	35
		Focus on high risk patients	25
		Resource for entire team	22
		Focus on rounding	22
		Focus on data	19
		Focus on provider best practice	18

(Continues)

TABLE 4 (Continued)

Domain	Components	Operationalization of component by health system	Code excerpt count
CNL Practice	Facilitate effective ongoing communication	Real-time information/data exchange	18
		Coordinate communication	14
		Communicate the 'why'	9
		Negotiate shared vision	8
		Relational communication	8
		Transformational communication	7
		Real-time education	6
		Continuous feedback looping	5
		Translate abstract data	5
		Sounding board	4
		Advocacy	3
	Strengthen intra and inter professional relationships	Liaison between all professions	15
		Connect to gain trust	10
		Seek out and share information	8
		'Interdepartmentalizing'	5
		Relationships takes time	2
	Create and sustain teams	Teams for QI	5
		'Does the small stuff that makes the team'	4
		CNL keeps asynchronous team knowledge alive	2
		CNL knowledge of disciplinary expertise drives team selection	2
		Drives team thinking	2
	Support staff engagement	Supportively reinforce best practice	29
		In-the-moment assistance	18
		'Go to' person for information/knowledge sharing	13
		'Elbow-to-elbow' education	6
		Work together on projects	6
		Mentorship	4
		Practice role model	4
		Shared governance	2
		Staff champion	2
Outcomes	Improved care environment	Engagement in best practice activities	12
		Staff growth/support	8
		Best practice enacted	7
		Consistency in best practices	6
		Shared understanding of care processes	6
		Process, not task, thinking	5
	Improved care quality	Improved quality indicators	11
		Spread of microsystem QI to macrosystem	4
		Financial return on investment	1
		Microsystem CNL projects rolled out system wide	3

(Continues)

TABLE 4 (Continued)

Domain	Components	Operationalization of component by health system	Code excerpt count
Value	–	CNL practice assumed as necessary care delivery component	22
		Trusted	17
		Learning curve to seeing CNL functions as valuable	14
		Not valued if CNL practice not clear	12
		Perception CNLs drive best practice	12
		Good working microsystem relationships	7
		Not valued if not visible in microsystem	6
		Not valued if perceived as prioritizing macrosystem over microsystem	4

competency performance, with the result of stable CNL practice and outcomes.

Another analytic insight was the difficulty in capturing the complexity of CNL integrated care delivery through standard metrics. While many respondents spoke about specific improvement they felt or saw, many expressed a frustration that the positive dynamics they 'felt' could not be translated into a quantifiable metric. Improvements such as 'owning one's practice', 'holding asynchronous knowledge', and 'negotiated vision' are not easily measured. The avoidance of missed care, and stopping errors before they happen is nearly impossible to measure in a standardized way. This tension between perceived improvements in care dynamics and the lack of metrics to quantify perceived improvement has been noted in the literature. Saver and colleagues (Saver et al., 2015) recently documented the inadequacy of current quality measures to capture what is important for improving health outcomes, noting that most metrics are based on easily measured proxy endpoints, and not the core principles of quality. Others have championed a systematic process of identifying conceptual underpinnings of quality as a critical first step towards developing relevant metrics 'that matter' (Byron et al., 2014; Institute of Medicine (IOM), 2013). To realize that goal, the model's empirical characteristics identified in this study need to be compared against other case study findings to determine the extent to which CNL Practice Model domain operationalization varies across contexts, how context influences variation (or vice versa), and effects on outcomes, which will provide the basis for developing metrics that are responsive to these core principles and therefore accurately operationalize model constructs.

7 | IMPLICATIONS FOR NURSING MANAGEMENT

This study examined a nursing model of care that in one regional health system was able to directly influence multiprofessional care processes and catalyse an environment where clinicians felt empowered to work in teams and solve ongoing clinical problems that arise in day-to-day practice. The data provided evidence supporting the constructs, including the hypothesized pathways that comprise the model's mechanisms of action. It provides concrete details on how the health system prepared for and structured the model of care, and how the model was implemented over time, with what effects, and to what consequences. We believe this comprehensive, theory-informed, and contextually sensitive approach to developing an evidence-based model of nursing care delivery has great potential for transferability to health systems and nursing managers considering care delivery redesign as an organisational strategy to achieve consistent patient quality outcomes.

ORCID

Miriam Bender http://orcid.org/0000-0003-2457-1652

REFERENCES

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

Barratt, M., Choi, T. Y., & Li, M. (2011). Qualitative case studies in operations management: Trends, research outcomes, and future research implications. *Journal of Operations Management*, *29*(4), 329–342. https://doi.org/10.1016/j.jom.2010.06.002

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. https://doi.org/10.1016/j.profnurs.2015.06.007

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

Bender, M., Avolio, A., Baker, P., Harris, J. L., Hilton, N, & Hites, L., … Williams, M. (2017). Developing the clinical nurse leader survey instrument: A modified Delphi study. *Journal of Nursing Care Quality*. https://doi.org/10.1097/NCQ.0000000000000310 [Epub ahead of print]

Bender, M., Williams, M., & Su, W. (2016). Diffusion of a nurse-led healthcare innovation: Describing certified clinical nurse leader integration into care delivery. *Journal of Nursing Administration*, *46*(7–8), 400–407.

Bender, M., Williams, M., Su, W., & Hites, L. (2016). Clinical nurse leader integrated care delivery to improve care quality: Factors influencing

perceived success. *Journal of Nursing Scholarship*, *48*(4), 414–422. https://doi.org/10.1111/jnu.12217

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

Bitektine, A. (2007). Prospective case study design: Qualitative method for deductive theory testing. *Organizational Research Methods*, *11*(1), 160–180.

Brennan, C. W., Daly, B. J., & Jones, K. R. (2013). State of the science: The relationship between nurse staffing and patient outcomes. *Western Journal of Nursing Research*, *35*(6), 760–794. https://doi.org/10.1177/0193945913476577

Byron, S. C., Gardner, W., Kleinman, L. C., Mangione-Smith, R., Moon, J., & Sachdean, R., … Scholle, S. H. (2014). Developing measures for pediatric quality: Methods and experiences of the CHIPRA pediatric quality measures program grantees. *Academic Pediatrics*, *14*(5 Suppl), S27–S32. https://doi.org/10.1016/j.acap.2014.06.013

Corry, M., Clarke, M., White, A. E., & Lalor, J. (2013). Developing complex interventions for nursing: A critical review of key guidelines. *Journal of Clinical Nursing*, *22*(17–18), 2366–2386. https://doi.org/10.1111/jocn.12173

Dewey, J. (1925/1958). *Experience and Nature*. New York: Dover Publications.

Duffey, 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

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Feilzer, Y. M. (2009). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, *4*(1), 6–16.

Guillory, S. M. (2012). *A study to examine the relationships between the leadership style of nurse managers and the leadership style of clinical nurse leaders and the leadership behaviors of their staff nurses*. Doctoral Dissertation, Our Lady of the Lake University.

Health Resources and Services Administration. (2013). *The US nursing workforce: Trends in supply and education*. Bethesda, MD: Health Resources and Services Administration Bureau of Health Professions.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60.

Hsieh, H.-F. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Institute of Medicine (IOM) (2013). *Delivering High-Quality Cancer Care: Charting a New Course for a System in Crisis*. Washington DC: The National Academies Press.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26. https://doi.org/10.3102/0013189X033007014

Kitson, A. L., Muntlin Athlin, A., & Conroy, T. (2014). Anything but basic: Nursing's challenge in meeting patients' fundamental care needs. *Journal of Nursing Scholarship*, *46*(5), 331–339. https://doi.org/10.1111/jnu.12081

Kohler, M. (2011). *Exploring the relationships among work-related stress, quality of life, job satisfaction, and anticipated turnover on nursing units with clinical nurse leaders*. Doctoral dissertation. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=c8h&AN=2011387333&site=ehost-live

Levit, L. A., Balogh, E., Nass, S. J., & Ganz, P. (2013). *Delivering high-quality cancer care: Charting a new course for a system in crisis*. Washington, DC: National Academies Press. https://doi.org/10.17226/18359

McCready, J. S. (2010). Jamesian pragmatism: A framework for working towards unified diversity in nursing knowledge development. *Nursing Philosophy*, *11*, 191–203. https://doi.org/10.1111/j.1466-769X.2010.00444.x

Miller, D. A., & Schaper, A. M. (2015). Implementation of a follow-up telephone call process for patients at high risk for readmission. *Journal of Nursing Care Quality*, *30*(1), 63–70. https://doi.org/10.1097/NCQ.0000000000000069

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), e53–e57. https://doi.org/10.1016/j.mnl.2014.05.010

Salganik, M. J., & Heckathorn, D. D. (2004). Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology*, *34*, 193–239. https://doi.org/10.1111/j.0081-1750.2004.00152.x

Saver, B. G., Martin, S. A., Adler, R. N., Candib, L. M., Deligiannidis, K. E., & Golding, J., … Topolski, S. (2015). Care that matters: Quality measurement and health care. *PLoS Medicine*, *12*(11), e1001902. https://doi.org/10.1371/journal.pmed.1001902

Shekelle, P. G. (2013). Nurse-patient ratios as a patient safety strategy: A systematic review. *Annals of Internal Medicine*, *158*(5 Pt 2), 404–409. https://doi.org/10.7326/0003-4819-158-5-201303051-00007

Spetz, J., Harless, D. W., Herrera, C.-N., & Mark, B. A. (2013). Using minimum nurse staffing regulations to measure the relationship between nursing and hospital quality of care. *Medical Care Research and Review*, *70*(4), 380–399. https://doi.org/10.1177/1077558713475715

Trotter, R. T. (2012). Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives. *Preventive Medicine*, *55*(5), 398–400. https://doi.org/10.1016/j.ypmed.2012.07.003

Williams, M., & Bender, M. (2015). Growing and sustaining the clinical nurse leader initiative. *JONA*, *45*(11), 540–543. https://doi.org/10.1097/NNA.0000000000000260

Yakusheva, O., Wholey, D., & Frick, K. D. (2014). What can we learn from the existing evidence of the business case for investments in nursing care: Importance of content, context, and policy environment. *Medical Care*, *51*(4 Suppl 2), S47–S52.

Yin, R. K. (2013). *Case study research: Design and methods*. Thousand Oaks, CA: Sage publications.

How to cite this article: Bender M, Spiva L, Su W, Hites L. Organising nursing practice into care models that catalyse quality: A clinical nurse leader case study. *J Nurs Manag*. 2018;00:1–10. https://doi.org/10.1111/jonm.12596