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I, Lisa Niehaus, hereby submit this DNP project as part of the requirements for the degree of Doctor of Nursing Practice in Population Health Leadership.

It is entitled:

Nursing Workforce Educational Needs Assessment Population Health Certificate Program

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Nursing Workforce Educational Needs Assessment Population Health Certificate Program

A project submitted to the Graduate School,

Xavier University

in partial fulfillment of the

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in the College of Nursing by

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Abstract

Nursing education transformation is necessary to change population health outcomes. A needs assessment is essential to learn practice expectations for population health competency before designing an education program. The purpose of the project was to develop a population health certificate program for post-bachelor nursing workforce. The project aims were 1) to identify population health competency needs, 2) to prioritize population health competency needs, 3) to assess the feasibility of a post-bachelor population health certificate program, and 4) to make recommendations for a certificate program. A hybrid framework of Witkin and Altschuld's three-phase needs assessment model and the PARIHS Framework Guide successfully organized project implementation and evaluation to make recommendations for the population health certificate. Purposive sampling selected six knowledgeable strategic stakeholders from academia and practice to participate in 30-to-40-minute recorded Zoom interviews. Reiterative thematic analysis of the transcripts identified and prioritized population health competencies. The triangulation comparison of the results with AACN Nursing Professional Education Essentials tested the validity of the convergence of themes. The overarching theme discovered is that the nursing workforce needs to move understanding beyond point of care encounters to population-focused needs. The needs assessment discovered compelling evidence that post-bachelor nursing workforce needs advanced development in population-focused care to improve actionable responses to change population health outcomes. The feasibility assessment determined a need for additional assessment of resources to build capability for the population certificate program.

Keywords: Learning needs assessment, needs assessment, practice competency, employee learning needs, nursing workforce, continuing education, population health competencies, population health

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Chapter 1 Background and Significance

A transformation of nursing education is required to improve population health. In this chapter, I will describe the background of the issue, the purpose, and aims of the project, and the significance of this project for nursing and an academic-practice partnership to develop a post-bachelor population health certificate program.

Background

In 2011 the Robert Wood Johnson Foundation (RWJ) and the Institute of Medicine (IOM) published the first Future of Nursing Report earmarking the need to transform nursing education to improve healthcare. The report (Institute of Medicine, 2011) emphasized preparing and enabling the nursing workforce to lead change to advance health. In 2015, the collaboration of the National Academies of Sciences, Engineering and Medicine (NASEM), the RWJ, and the American Association of Retired Persons (AARP) released a second report. The report (National Academies of Sciences, Engineering and Medicine, 2015) posited four key messages to lead change:

- nurses should practice at the fullest scope of their education and training,
- nurses should achieve higher education and training through a transformed education system promoting seamless academic progression,
- nurses should be full partners with other health professionals in redesigning health care,
- and effective workforce planning, and policymaking require better data collection and improved information infrastructure.

The Future of Nursing 2020-2030 Report (NASEM, 2021) builds on the previous reports emphasizing the need to transform nursing education and the nursing workforce to facilitate change in population health outcomes.

Nursing Practice Issue

The health of the United States is declining, and the prevalence of chronic conditions is rising despite the increase in healthcare spending (Robert Wood Johnson Foundation, 2017). The Patient Protection and Affordability Care Act (ACA) catalyzed a paradigm shift from a medical model of care for individuals to population health management to improve health outcomes of populations with similar needs (Watson Dillon & Mahoney, 2015). An essential element of the reform is changing health care delivery to enhance prevention and health promotion within the care delivery system and promote population health (Carlson et al., 2016). Changes in health care delivery shift care across multiple settings outside of the hospital setting to improve the health of communities and the patients they serve (American Organization of Nurse Executives & American Organization for Nursing Leadership, 2015). The health care systems' population-health management programs incorporate patient data analysis to develop actionable responses to change population health outcomes (AONE & AONL, 2015).

Nursing can contribute significantly to the best possible health and wellbeing for all since nurses see each person in the context of their life (Robert Wood Johnson Foundation, 2017). However, many nurses are task-orientated in the high-demand practice environment (Robert Wood Johnson Foundation, 2017). Nursing practice must be transformed to develop and facilitate all nursing roles for population-focused care (Robert Wood Johnson Foundation, 2017).

The development of nursing leadership to promote population-focused care can drive change in population health outcomes and reduce costs (Robert Wood Johnson Foundation,

2017). Training of nurse leaders in population health management is essential to guide and advocate for community health and patient population health needs (AONE & AONL, 2015). Population-focused care seeks to discover the patterns and connections across multiple systems to develop responses to the needs of the populations (Nash et al., 2021).

McGinnis et al. (2016) state that understanding behavioral patterns and lived experiences is central to responding to population health outcomes. Population health consists of analyzing population-based outcome patterns influenced by where people are born, grow, work, and age (Nash et al., 2021). These factors are the social determinants of health (SDOH). SDOH are the conditions in the environments where people live, work, and play. SDOH include education, employment, health systems and services, housing, income and wealth, the physical environment, public safety, the social environment (including structures, institutions, and policies), and transportation (NASEM, 2021). A NASEM (2021) consensus study report documented evidence on the relationship between the social determinants of health and equitable population health outcomes. Authors of the report state that nursing capacity needs to be developed to address the social determinants of health and health equity (NASEM, 2021).

Health care practitioners understanding the system patterns requires awareness that the impacts to health outcomes are beyond the point of care encounters (McGinnis et al., 2016). To move beyond the point of care encounters, practitioners need to assess the intersection of individuals across multiple systems, environmental influences, social circumstances, and behaviors (McGinnis et al., 2016). Unique, holistic, cross-sector strategic health care builds whole-person health and wellbeing capacity (Tilson et al., 2020). A population health approach considers healthcare encounters in context with dynamic interaction patterns between

individuals, their life experiences, and the services they have access to and choose to use (Roux, 2016).

Authors of Nurse Executive Competencies in Population Health (AONE & AONL, 2015) state that nursing clinical practice knowledge needs to differentiate between population health and medical care/episodes of care. Therefore, building nursing workforce capacity requires building awareness of behavioral patterns, multiple determinants of health, and variation in care delivery across the continuum of care to identify an appropriate response to improve outcomes. An adaptable nursing workforce that can provide care across the entire continuum would have knowledge of systems thinking, quality improvement, and health influences beyond the hospital setting.

Nursing Education

Transforming nursing education with population health competencies (linking health care equity to health outcomes) will strengthen nurses' capacity and expertise to address population health (NASEM, 2021). The emerging nursing workforce needs further development to address SDOH (NLN, 2019). Nursing educators urgently need to design curricula to incorporate SDOH and health outcomes (NLN, 2019).

The transformation of nursing workforce development must include the four essential population-focused concepts of holism, coordination, collaboration, and advocacy to develop nursing's full potential (Robert Wood Johnson Foundation, 2017). The National League of Nursing (2019) recommends establishing partnerships with practice and the community to develop innovative curricula. An innovative curriculum should encourage the current nursing workforce to pursue advanced degrees or participate in certificate programs to accelerate nursing workforce development to address SDOH (NASEM, 2021).

Baccalaureate-prepared nurses have education experience in health policy, leadership, systems thinking, teamwork, and collaboration, providing the foundation for complex care demands (IOM, 2011). The percentage of Registered Nurses (RNs) in the nursing workforce has increased over the past 20 years (NASEM, 2021). The proportion of baccalaureate-prepared RNs in the nursing workforce in 2020 is 59% (Campaign for Action, 2020). Targeting the baccalaureate-prepared RNs to address SDOH can reach over half of the nursing workforce. Engaging the nursing workforce to further their education necessitates innovative curricula that consider the barriers of time, money, and work-life balance (Spetz, 2018).

Population health improvement necessitates developing a toolbox of knowledge and skills in the nursing workforce to facilitate changes in outcomes (Kaminski, 2020). Since population health consists of analyzing population-based patterns of outcomes, the competency toolbox should include tools that enhance pattern recognition, identify where to find the patterns, pattern analysis, and response to patterns (Nash et al., 2021). Population health implementation incorporates the tools in strategies to confront social determinants of health and transform health care delivery (Kaminski, 2020).

Essentials for nursing education feature population-health competencies in Domain 3 (AACN, 2021a, pp. 35-39). The population health competencies earmarked in the Nursing Essentials (AACN, 2021a) illustrate the strategies to confront social determinants of health and transform health care delivery. The population health competencies include population management, system thinking, health promotion, illness prevention, and chronic disease management (AACN, 2021a). Population health incorporates collaboration across all relevant individuals and organizations involved in health care (including patients and communities) to improve health outcomes (AACN, 2021a).

The Nurse Executive Competencies: Population Health (AONE & AONL, 2015) describe population health competencies to develop nurse leaders in population health management. Nurses are natural leaders in population health since the approach is inherent in their care delivery (Carlson et al., 2016). The AONE and AONL convened a task force, Preparing Nurse Executives to Lead Population Health, to facilitate leadership skill development (Carlson et al., 2016). The population health competencies include the domains of communication, knowledge, leadership, professionalism, and business skills (AONE & AONL, 2015). The AONE and AONL (2015) state there is a need to advance current nursing practice knowledge of the healthcare environment due to the shift in healthcare delivery. Academic partnerships with practice are essential to align changes in the healthcare environment with the development of the current and future nursing workforce (AONE & AONL, 2015).

Environment

The American Association of Colleges of Nursing (AACN) established quality nursing education standards for the 840 member schools at public and private universities across the United States (AACN, 2021b). The member universities offer a mix of baccalaureate, graduate, and post-graduate programs (AACN, 2021b). The AACN, utilizing a national consensus-based process, recently updated the Nursing Essentials (2021a) to outline competency expectations for graduates of baccalaureate, master's, and Doctor of Nursing Practice (DNP) programs (AACN, 2021b). The Nursing Essentials (2021a) are indicators of high-quality nursing education standards (AACN, 2021b). The Commission on Collegiate Nursing Education (CCNE) (AACN, 2021c) assesses member colleges to ensure the quality and integrity of nursing education programs.

The AACN (2019) educational vision endorses strengthening academic programs to prepare registered nurses to translate population health into practice. AACN (2019) calls for nursing education's proactive response to transform nursing education to meet the demands of employers, prospective students, and the public. The AACN's Education Essentials (2021a) include academic-practice partnerships to prepare practice-ready graduates in population health improvement.

The AACN (2019) encourages partnerships with practice sites to develop and strengthen academic programs. The site for this project is a midwestern university with a Center for Population Health that has established practice partners. University leaders and administrators of the healthcare organization support the idea of a population health certificate. The strategic vision of academic and practice sites aligns with the development of a post-bachelor's degree population health certificate program for nurses.

A post-bachelor population health certificate program is currently in the pilot stages of development. Practice-driven nursing education design requires learning the expectations of healthcare system partners to advance the current registered nurse (RN) population and align with advanced practice nursing essentials. Dickerson (2014) states needs assessments for nursing continuing education must identify workforce development needs for knowledge skill gaps or practice gaps. Learning needs assessment is essential for effective educational program development (Bigbee et al., 2016; Espina et al., 2016; Vigolesi et al., 2020). A needs assessment helps professionals provide input in educational design and weighs the potential business impact of an education program (McGoldick & Tobey, 2016).

Project Purpose

The purpose of this project is to develop a post-bachelor population health certificate program for registered nurses. The project aims are 1) to identify population health competency needs, 2) to prioritize population health competency needs, 3) to assess the feasibility of a post-bachelor population health certificate program, and 4) to make recommendations for a certificate program.

A needs assessment to inform educational program development considers workforce practice gaps and resources needed for new program development (Witkin & Altschuld, 1995). A needs assessment for educational program recommendations consists of two distinct thought processes, identifying the key data and developing the recommendations (McGoldick & Tobey, 2016).

Witkin and Altschuld (1995) recommend a three-phase model that provides a logical structure for needs assessment bridging the two different thought processes, identifying data, and making recommendations. The Witkin and Altschuld's (1995) three-phase model is flexible and adapts the needs assessment process to determine nursing workforce practice gaps. A needs assessment is an ongoing cyclical process of strategic planning, program implementation, and evaluation (Witkin & Altschuld, 1995).

Phase 1 is preassessment, a determination of what is already known, issues, and significant areas of concern. The preassessment phase determines the boundaries, focus, purpose of the needs assessment, sources of data, and planned information utilization based on the findings. The outcome for Phase 1 is establishing the preliminary plan for phases two and three and the evaluation plan. Phase 2 is the assessment phase, where data-gathering and analysis are synthesized to set initial priority needs. The outcome for Phase 2 is establishing high-priority requirements for action. Finally, Phase 3 is post-assessment, where data utilization and action

plans are bridged. The outcomes lead to solutions, weighing alternative solutions, and formulating action plans.

Phase 1, the preassessment phase, is the current phase of the academic-practice partnership to develop the population health certificate. The practice site has already established the need to better prepare the nursing workforce in population health competencies, and the certificate program is in predevelopment. The practice site has requested competency development to enhance the transition of care to improve population health outcomes.

Definitions

Definitions of terms used for this project are listed below.

- **Academic-practice partnership:** an enhanced relationship between academic nursing and health centers to foster new education models and improve health outcomes (AACN, 2016).
- **Certificate program:** a program to advance the nursing practice through professional development to improve health and healthcare delivery (AACN, 2018).
- **Competency assessment:** assessment of the complex integration of knowledge, skills, attitudes, thinking ability, and values in the context of care (Fukada, 2018).
- **Competency needs assessment: e**valuation of the knowledge, capability, attitudes, and necessary skills for practice (Laokhompruttajarn et al., 2021) to inform education planning (Fukada, 2018).
- **Culturally congruent care:** understands the complex human-environment interconnectedness to inform the right action and response (Leininger, 2006; Ray, 2016).
- **Gap analysis:** determines the nature and cause of the performance gaps (Kaufman & Guerra-Lopez, 2013, p. 176).

- **Learning needs assessment:** learning needs assessments to identify the nursing workforce development needs for the gaps in knowledge, skill, or practice to achieve appropriate outcomes (Dickerson, 2014).
- **Needs assessment:** a systematic set of procedures to determine discrepancies or gaps, to examine the nature of the differences, and then set the priorities for the decision making in program development (Witkin & Altschuld, 1995, p. 4).
- **Population health:** holistic care, discovering patterns and connections within the lived experiences across multiple systems to develop care responsive to the needs of the populations (Nash et al., 2021).

Project Significance

This project is significant because the nursing workforce makes up the largest proportion of the healthcare workforce (U.S. Bureau of Labor Statistics, 2021). Nursing must move from a social contract to a social covenant (Fowler, 2016), advancing the nursing agenda for population health. Transforming advanced nursing education with population health competencies will strengthen nurse capacity and expertise to address health inequity.

A population health toolkit (population health competencies) is significant for population health. Since population health consists of the analysis of population-based patterns of outcomes (Nash et al., 2021), a competency toolbox will address the need. A collaborative assessment of the practice site's population health competency needs is a step in transforming nursing education.

Bridging practice needs with educational program-development guides nursing practice improvement and changing population health outcomes (Chism, 2019). This project is significant because a partnership between the university and practice site is in the initial phase of a needs

assessment. A population health certificate program can further build a relationship with the practice site and promote cohorts of students for the College of Nursing. The project will assess workforce needs to identify priority competencies for the registered nurses in practice. This project is also significant because the needs assessment process will assess the feasibility of a post-bachelor population health certificate program and make recommendations for the certificate program.

Conclusion

Building the capacity of the current nursing workforce to analyze the intersection of individuals across multiple systems, environmental influences, social circumstances, and behaviors to determine the accurate response can improve health outcomes. Transforming nursing education must provide the nursing workforce with the population health toolbox to discover the patterns and respond to the patterns across the entire healthcare delivery continuum. In this chapter, I described the background of the issue, the purpose and aims of the project, and the significance of this project for nursing and an academic-practice partnership between a university and a community partner healthcare organization to develop a post-bachelor population health certificate program for nurses.

Chapter 2 Literature Review

A learning needs assessment of population health competency is an initial and foundational step for a post-bachelor population health certificate program to prepare practice-ready nursing graduates to address population health outcomes. Chapter 2 describes the search strategy and a literature review. A nursing theory framework and a needs assessment theoretical framework follow. The chapter concludes with a recommendation for the needs assessment process.

Search Strategy

The literature review initiated in March 2021 searched MEDLINE, CINAHL Complete, and Google Scholar, utilizing multiple Boolean Phrase terms and pairings of the connector terms depicted in the PRISMA Flowchart (see Appendix A). The purpose of the literature review was to answer the following questions: 1) what are learning needs assessments and competency assessments, and 2) how the needs assessment informs educational program development. The search expanded into Education Resources Information Center (ERIC) to discover educational needs assessment models and frameworks. A review of Medical Subject Headings (MeSH) terms and article references expanded the exploration further.

The initial screening of 298 sources, including articles and books, considered the relevancy to the review questions and identified 50 sources (see Appendix A). After removing five duplicate sources, 45 remained in the review. The results of the deeper deliberation identified 18 articles for inclusion in the synthesis (see Appendix B). The analysis and synthesis of the sources follow according to the three literature review question categories: learning needs assessment, competency needs assessment, and application informing education program development.

Learning Needs Assessment

Learning needs assessment is essential for effective educational program development (Kaufman, 1979; Witkin, 1984, Witkin & Altschuld, 1995; Altschuld & Witkin, 2000; Dickerson, 2014; Bigbee et al., 2016; Espina et al., 2016; Pilcher, 2016; Vigolesi et al., 2020). Needs assessments for educational development are critical to appropriate outcome achievement and must identify the nursing workforce development needs for the gaps in knowledge, skill, or practice (Dickerson, 2014). Successful planning for educational program development must connect the performance gaps with the right educational solutions to ensure effectiveness (Kaufman, 1979).

The categories of learning needs assessments encompass formal gap analysis, organizational needs analysis, learner self-identified needs, and identification of future needs (Pilcher, 2016). A gap analysis determines the nature and cause of the performance gaps, whereas the needs assessment identifies the differences between current and desired results (Kaufman & Guerra-Lopez, 2013, p. 176). The needs assessment is a systematic set of procedures to determine discrepancies or gaps, to examine the nature of the discrepancies, and then set the priorities for the decision-making in program development and the allocation of resources (Witkin & Altschuld, 1995). A successful needs assessment gathers evidence from research, policy drivers, and practice experience to inform workforce development (Altschuld & Watkins, 2014). A successful needs assessment plan considers the recipients of the education program, the providers of the educational program, and the practice partners' goals for workforce improvement (Witkin & Altschuld, 1995).

The needs assessment process documents the workforce development needs and the educational program development needs to create strategies to meet the requirements. Witkin and

Altschuld (1995) describe two categories for data sources in the needs assessment process, opinion, and fact. The kinds of information sought in the needs assessment process help clarify the differences between facts and opinions (Witkin & Altschuld, 1995).

The learning needs assessment plan seeks to understand multiple stakeholders' perceptions of the learning needs (Bigbee et al., 2016; Espina et al., 2016; Vigolesi et al., 2020). The types of data gathered in needs assessments are either quantitative (archival records, social indicators, demographic data, epidemiological data) or qualitative (values, perceptions, opinions, and judgments of importance) (Witkin & Altschuld, 1995). Two typical qualitative data collection methods in needs assessments are questionnaires and key informant interviews, which provide perceptions or opinions of the educational necessities (Witkin & Altschuld, 1995). Witkin and Altschuld (1995) recommended multiple data collection methods to determine the appropriate gap analysis to inform academic program development. O'Neal and Fencl (2021) recommend including self-assessment to determine critical thinking, values, and beliefs in addition to assessing the application of knowledge and skills.

Competency Needs Assessment

Assessment of professional competence evaluates the knowledge, capability, attitudes, and necessary skills for practice (Laokhompruttajarn et al., 2021). Competency assessment includes the level of performance, behaviors, and measurable outcomes (O'Neal & Fencl (2021). Fukada (2018) states the importance of clearly defining competence to establish nursing education planning. Competence requires the complex integration of knowledge, skills, and attitudes in the context of nursing care (Fukada, 2018). Competency assessment includes the level of performance, behaviors, and measurable outcomes (O'Neal & Fencl, 2021). O'Neal and

Fencl (2021) state that accurate competence assessment is through validation activities (post-test, return demonstration, and case study discussion).

Competency Assessment

Wright and Bykonich (2005) state that organizations conduct competency assessments to evaluate individual or group performance, meet standards, address problematic issues, or enhance performance. Meaningful competency assessment identifies skills necessary to conduct the nature of the job (Wright & Bykonich, 2005). The review of the literature for learner competency assessment discovered articles describing competency assessment for onboarding new graduates or for continuing education (Mowry & Crump, 2013; O'Neal & Fencl, 2021) in the context of the clinical setting.

Mowry and Crump (2013) utilized an observation checklist to assess competency post-simulation immersion scenario training in the mental health clinical setting for new graduate registered nurses (RN). The observation checklist fits the return demonstration category for competency verification. O'Neal and Fencl (2021) described multiple strategies for competency assessment for onboarding and ongoing development of perioperative nurses (post-tests, return demonstration, observation of daily work, exemplar presentations, case studies, and mock events). Pilcher (2016) states that collecting evidence for learning needs assessment can include other methods than competency assessment, such as surveys and interviews (Pilcher, 2016).

Surveys

Altschuld and Witkin (2000) stated that surveys about perceptions of learning competency gaps are more prominent in the literature based on their research on the needs assessments since their 1995 publication. A needs assessment survey seeks information on the gaps in workforce competency based on the respondents' perceptions of "what the competency

is" and "what it should be" (White & Altschuld, 2012). Surveys rank the learning needs by the level of importance or degree of satisfaction (Lee et al., 2007). Witkin and Altschuld (1995) note difficulty in interpreting surveys because it is challenging to infer the respondents' thoughts. Witkin and Altschuld recommend using behaviorally anchored rated scales (BARS) to define performance.

Silsawang et al. (2014) utilized Witkin and Altschulds' (1995) three-phase model as the conceptual framework to assess stakeholders' desired graduate characteristics of a navy nursing college in Thailand. Silsawang et al.'s (2014) survey determined the differential value of desirable graduate characteristics to the current characteristics with a reliability testing score of Cronbach's α = .89. The survey study represents White and Altschuld's (2012) recommendation that surveys respondents' perceptions of "what the competency is" and "what it should be." One of the three priority needs for post-BSN graduates is transformational leadership (Silsawang et al., 2014).

Cross et al. (2006) developed the public health nursing competency instrument (PHNCI) to measure population-based-practice competence in public health nurses. Cross et al. (2006) based the instrument development on the premise that awareness and knowledge about practice implementation are prerequisites to competence. Cross et al. (2006) posits the instrument measures the ability to perform an activity instead of measuring knowledge and awareness. The 195-item instrument is designed for self-rating based on the following scale:

1. I would need to be taught the skills to accomplish this activity
2. I do or could do this activity with assistance
3. I do or could do this activity
4. I teach or could teach others to accomplish this activity.

The PHNCI represents the self-ranking of behaviorally anchored rated scales recommended by Witkin and Altschuld (1995).

Mohamadi et al.'s (2019) 30-question survey also ranked whether additional education is needed or not needed to determine academic requirements for medical surgical nurses and emergency nurses. Specifically, the survey ranked educational domains with a scale indicating: do not need education, need additional education, or need full education. The survey also represents self-ranking of behaviorally anchored rated scales recommended by Witkin and Altschuld (1995). The 314 distributed surveys (the 30-item survey pretested with a sampling of 30 nurses documented the internal survey consistency of Cronbach's $\alpha = .87$) evaluated nurses with post-BSN degrees and two years of experience. However, the study occurred in Tehran, and the education domains did not include population health competencies. Mohamadi et al. (2019) stated learning needs assessment based on current work role activities and basic knowledge is the first step for educational planning.

Bigbee et al. (2016) is an example of a 20-question survey ranking importance levels to assess program content's interest and preferences to guide interprofessional faculty development. Bigbee et al. (2016) documented the internal survey consistency by the Cronbach's $\alpha = .89$. The perceived importance of the survey topics compared between respondents was significant with $p < .5$. The Bigbee et al. study (2016) demonstrates a needs assessment survey of faculty development in interprofessional collaboration.

The survey studies, as mentioned above, Silsawang et al. (2014), Cross et al. (2006), Mohamadi et al. (2019), and Bigbee et al. (2016) illustrated different ranking styles for needs assessments and question formats. Silsawang et al. (2014) utilized a modified Priority Needs Index to determine the differential value of desirable graduate characteristics to the current

characteristics. Each study characterized steps in survey development and verification of the reliability and validity of the questions.

Interviews

Witkin and Altschuld (1995) state interviews can have an advantage over surveys. In an interview, the respondent has a greater opportunity for free expression. The interviewer has an opportunity to probe deeper into questions, seeking further information and contributing factors to the competency need. Witkin and Altschuld (1995) denote the necessity of broad-based participation of stakeholders in defining core competencies for education program development. Hung and Altschuld (2012) recommend close collaboration between the needs assessors and the stakeholders and proactive planning in the needs assessment process. Hung and Altschuld (2012) urge proactive, systematic planning to structure data collection for the needs assessment process.

Espina et al. (2016) studied perceptions of population-based practice among public health nurse leaders through a semi-structured interview to formulate a future public health nurse training model. The 30 to 45-minute phone interviews of 17 community health leaders (respondents from a list server email campaign) sought to identify the perceptions of an optimal population-focused training plan for themselves and their staff (Espina et al., 2016). The interview themes determined that community health leadership needed training in system thinking skills (Espina et al., 2016). Interviews also indicated that community health leaders needed support to transition to a population-based level of practice instead of training their staff (Espina et al., 2016). Developing leadership skills to promote a population-based approach could bridge the population-focused care competency gaps (Espina et al., 2016).

Vigolesi et al. (2020) interviewed 14 participants via the phone for 20-60 minutes each. Vigolesi et al. (2020) utilized Cohen's phenomenological methodology (Cohen et al., 2000) to

determine stakeholders' perspectives for developing a competency-based curriculum design for baccalaureate nursing education. Vigolesi et al. (2020) stated understanding the stakeholder's perspective before developing a competency-based baccalaureate nursing curriculum could result in designing a quality curriculum. Vigolesi et al. (2020) further stated seeking perceptions of nurses, academics, patients, educators, managers, or students considers multiple viewpoints to design an appropriate curriculum. (Vigolesi et al., 2020). Vigoloci et al.'s (2020) study indicated the benefit of stakeholder engagement in education program design to develop curricula that meet the desired practice competency.

Education Program Development

A needs assessment is more than data-gathering and analysis of competency gaps; it is part of the decision-making process to develop an educational program (Witkin, 1977). Kaufman (1979) describes four categories to assess in curriculum development:

- Inputs - the factors contributing to development, support, and program maintenance, such as money, time, learners, teachers, and administrators
- Processes and products - the tools, techniques, and strategies to provide the educational learning environment
- Outputs - the results of the program, such as continuing education, degrees, or certificates
- Outcomes - contributions to workforce development goals (for example, post-BSN nursing workforce education).

Espina et al. (2016) state workforce needs must be balanced with market demand in program development. A review of regional, state, and national educational offerings models provides

information on existing programs (Witkin, 1977). The trend analysis is helpful in strategic planning for future educational programs (Witkin & Altschuld, 1995).

Valentin (2001) described the resource-based strengths, weaknesses, opportunities, and threats (SWOT) for strategic planning from a marketing perspective. The business analysis of the planned education program provides the marketing balance Espina et al. (2016) recommended in the needs assessment process. Altschuld and Watkins (2014) recommend considering the strengths, weaknesses, opportunities, and threats (SWOT) analysis as part of the needs assessment process. Incorporating the resource-based SWOT analysis provides additional information on resource needs weighing the strengths and weaknesses, costs, and the differentiation of advantages and disadvantages in the competitive market (Valentin, 2001).

Defining the need is foundational to the needs assessment plan (Altschuld & Watkins, 2014). A future-orientated needs assessment requires consulting subject matter experts (Pilcher, 2016). White and Altschuld (2012) recommend multiple data collection methods, both quantitative and qualitative, to understand the complex social, institutional, or learning needs assessment for program development. Accurate competency assessment requires multiple verification methods, including self-assessment for critical thinking, values, beliefs, and applying knowledge and skills. Vigolesi et al. (2020) stated multiple stakeholder perceptions of learning needs are crucial in education program development. Understanding practice stakeholders' perceptions of competency need help define educational design for practice-ready graduates (Vigolesi et al., 2020).

Nursing Theory Framework

The underlining theme of population health improvement is understanding the patterns of life experiences that impact population health. Population health is holistic care that reveals

patterns and connections in lived experiences across multiple systems, and it develops care that is responsive to the needs of populations (Nash et al., 2021). Nursing has a social contract, moving nursing care from the bedside to a relationship and responsibility to be involved in caring practices that shape the health of populations (Fowler, 2016). Nursing must move from a social contract to a social covenant embracing human relatedness (Fowler, 2016). Embracing human relatedness is actualized through culturally congruent nursing care, where values, beliefs, expressions, and behavior patterns are discovered and understood (Leininger, 2006). Culturally congruent nursing care explores universal attributes, such as the need for food, sleep, shelter, safety, and human interaction (Andrews et al., 2003). Culturally congruent care seeks to understand the complexity of human-environment interconnectedness to inform the right action and response (Ray, 2016).

Theoretical Framework

Witkin and Altschuld's (1995) three-phase model provide a logical structure for needs assessment with the flexibility to define and assess specific areas of need through an ongoing cyclical process of strategic planning, program implementation, and evaluation. Witkin and Altschuld (1995) further state that data-gathering methods are not the needs assessment but components of the entire decision-making process. Altschuld and Witkin (2000) emphasize that the needs of the target groups are integral, and assessors need to ask whose needs are being assessed and for what purpose.

Altschuld and Witkin (2000) suggest three critical ideas for understanding needs assessments: three levels of needs, main phases of needs assessments, and systems and subsystems. Essential is the three-phase model that emphasizes engagement of a broad cross-section of service recipients, service providers, and the organization, promoting democratic

involvement and priorities. The Altschuld and Witkin three-phase model (2000) simplifies the needs assessment steps and adapts to different program development stages. Essential is that the three-phase model (Altschuld & Witkin, 2000) prioritizes the needs of the receivers of services as the first step.

The three-phase model provides a logical step process adaptable to multiple stages of needs assessment for program development. Knowledge of the three-phase process enables adaptation to the specifics of program development (Altschuld & Witkin, 2000). Phase 1 aims to investigate what is known about the needs and determine the focus of the needs assessment. Phase 2 is the assessment phase, and Phase 3 is the post-assessment phase.

Phase 1

Phase 1 of the model is preassessment, exploring what is already known (Witkin & Altschuld, 1995). The preassessment phase determines the direction and scope of the assessment. Identification of issues and significant areas of concern helps inform the commitment of the stakeholders. The preliminary evaluation of Phase 1 frames the design of the evaluation plan by determining the types of data, best sources, and methods. The target groups are identified, and those who will utilize the results are also identified. The plan for Phase 2, Phase 3, and the needs assessment are the outcomes for Phase 1.

Phase 2

In Phase 2 (Altschuld & Witkin, 2000), the primary assessment and data gathering occurs. Altschuld and Witkin (2000) describe examples for the analysis and prioritizations of needs during Phase 2. In 2010, Altschuld published a more in-depth guide for Phase 2, recommending different methods for attaining competency gaps to match the setting and the desired outcomes. Collaboration with the stakeholders can help identify the context for the

importance ranking (Altschuld, 2010). The product for Phase 2 is the criteria for action in program development.

Phase 3

Phase 3 is post-assessment, the bridge to data utilization and action plans (Witkin & Altschuld, 1995). Outcomes set priorities and criteria for solutions, weighing alternative solutions, and formulating action. Phase 3 is a crucial component of a needs assessment. Witkin and Altschuld (1995) state a needs assessment is not complete until plans are made to use the information. The needs assessor establishes in-depth criteria to process which needs are to be addressed.

Recommendations

This literature review sought to define learning and competency needs assessments. It further assessed how a needs assessment informs educational program development. The review discovered the utilization of surveys to assess perceptions of competency gaps. Surveys require careful design considerations to establish ranking styles for needs assessments and question formats. Interviews of strategic stakeholders build engagement in an educational program and connect practice goals for population health competency with educational design.

Carter et al. (2014) state that selecting the qualitative interview process depends on the study's purpose. When designing a needs assessment and establishing the focus of a needs assessment, decisions in the process should match the results desired (Altschuld & Watkins, 2014). The purpose of Vigolesi et al. study (2020) was an in-depth analysis of stakeholder perspectives about the engagement of stakeholders in curriculum design. Espina et al.'s (2016) purpose was to gather information on nursing leaders' perceptions of competency needs. Interviews of stakeholders can gather information on stakeholders' perceptions of competencies

during the preassessment phase to determine the scope of a needs assessment. Espina et al.'s study reflects the population-based practice competencies in public health practice; it illustrates the role of leaders in bridging published competency domains with practice. Interviewing key stakeholders in practice and academia could identify educational needs that inform the focus of a needs assessment, as well as identify gaps between published population health competency domains and practice.

The literature review discovered the application of population-based practice in public health (Cross et al., 2006; Espina et al., 2016). However, further clarification of population health competencies is warranted before designing needs assessment surveys in other healthcare delivery venues to match the competency need in the context of the practice site. The preassessment phase determines the assessment's direction and scope. Interviewing strategic stakeholders to learn their perceptions of population health competency is a crucial initial step of the needs assessment process.

Conclusion

The needs assessment for program development is an ongoing decision process comprising formal gap analysis, organizational needs analysis, learner self-identified needs, and identification of future needs. The process begins with proactive planning to accurately design the needs assessment to identify and prioritize competency gaps. Interviewing strategic stakeholders to learn their perceptions of population health competency is a crucial initial step in proactive planning. Collaboration between the needs assessors and the stakeholders improves the decision process by bridging data collection, utilization, and action plans.

Witkin and Altschuld's (1995) three-phase model provides a logical structure for needs assessment with the flexibility to define and assess the specific areas of need. The needs

assessment is an ongoing cyclical process of strategic planning, program implementation, and evaluation, beginning with strategic stakeholders' interviews to learn their perceptions of population health competency. In the needs assessment process, determining the competency need is the first step; however, strategic business analysis weighing resource need and market value are essential considerations to inform the decision process for educational program development.

Chapter 3 Methods

Chapter 3 begins with the implementation plan overview, reviews the project's purpose, and aims. Further details of the implementation plan framework follow. Applying the framework to the project aims with alignment to the Witkin and Altschuld Model (1995) continues in Chapter 3. The chapter concludes with a project logic model, the evaluation plan, and the project timeline.

Implementation Plan

The project's purpose was to develop a post-bachelor population health certificate program for nurses. The implementation plan was a twofold process: first, gathering data to inform the post-bachelor population health certificate program, and second, evaluating the data to make recommendations. The needs assessment for educational program development collected data on the need for the program from research, policy drivers, and the experience of practice to inform workforce development (Altschuld & Watkins, 2014). The implementation plan addressed the project aims: 1) to identify the population health competency needs, 2) to prioritize the population health competency needs, 3) to assess the feasibility of a post-bachelor population health certificate program, and 4) to make recommendations for the certificate program.

The successful needs assessment began with determining the focus and scope for data gathering and analysis during Phase 1 of the three-phase model (Witkin & Altschuld, 1995). Phase 1 was preassessment, exploring what was already known to determine the direction and scope of the assessment. AACN Nursing Essentials (AACN, 2021a, pp. 35-39) identified population health competencies that were compared with stakeholder perceptions of population health competency needs.

The implementation plan built on Phase 1 of the needs assessment process sought strategic stakeholders' perceptions of population health competency needs. It moved toward Phase 2, the action phase of the needs assessment, where data was gathered and prioritized to inform Phase 3, the population health competency recommendations for the educational program (Witkin & Altschuld, 1995). In addition to seeking key stakeholders' perceptions of population health competency needs, planning for futuristic program development included gathering information for strategic business analysis to weigh resource needs and market value (Witkin & Altschuld, 1995).

Implementation Framework

Promoting Action on Research Implementation in Health Services (PARIHS), a successful implementation framework in nursing evidence-based practice (Hill et al., 2017), structured the implementation and evaluation plan for the population health certificate needs assessment. The PARIHS Framework tool helped predict project implementation success by diagnosing and evaluating successful implementation (Harvey & Kitson, 2016). The revised PARIHS Framework Guide (Stetler et al., 2011) delineated an action-oriented task approach to plan and evaluate implementation through three core elements: evidence (E), context (C), and facilitation (F). The PARIHS framework should be customized to fit project implementation (Stetler et al., 2011). Adaptation of PARIHS framework core elements (Stetler et al., 2011) provided the structure to complete the Witkin & Altschuld (1995) three-phase model needs assessment. The project implementation twofold process, data gathering, and evaluation, was explained through the PARIHS framework in alignment with Witkin & Altschuld’s (1995) three-phase model.

Data Gathering Plan

The purpose of the needs assessment was data gathering to determine the discrepancy between "what is" and "what is needed" for workforce development (Witkin & Altschuld, 1995). Defining the scope and plan for gathering data for future analysis considered research, policy drivers, and the experience of practice to inform workforce development for the post-bachelor population health certificate.

Evidence

In the preliminary steps of the needs assessment process, learning as much as possible about the perceptions of "what is" and "what should be" conditions was necessary to clarify and prioritize the competency needs (Altschuld & Watkins, 2014). The core element Evidence (Stetler et al., 2011) identified the sub-elements of research, clinical experience, patient experience, and information to develop a shared understanding for the project implementation. Before implementing the needs assessment, a shared understanding of the competencies through research formulated the needs assessment plan.

Aim 1

The project's first aim was to identify the population health competencies. During Phase 1, exploring what was already known and defining the competencies to be measured occurred. According to Stetler et al. (2011), successful project implementation depends on evaluating the evidence (research and practice experience).

AACN Essentials for Nursing Education (2021a) designated population health competencies for graduate nursing students to establish competency goals based on standards for knowledge or performance. The AACN Essentials for Nursing Education (2021a) and the Future of Nursing (2021) published reports drive the expansion of nursing workforce capacity to address population health improvement.

Stetler et al.’s (2011) PARIHS Framework denoted that learning about clinicians' experiences was essential to clarify understanding of the evidence before project implementation. As Witkin and Altschuld (1995) stated, gathering evidence of "what is known" to determine "what is needed" moved the needs assessment process into the action phase -Phase 2. Learning about the stakeholders' perceptions helped clarify the population health competencies for the registered nurse workforce.

Aim 2

The second aim, prioritization of post-bachelor population health competencies, also began in the action phase (Phase 2) of the Witkin and Altschuld (1995) model by clarifying priority needs through the experience of key stakeholders. Clarifying population health competencies began with exploring key stakeholders' perceptions of post-bachelor population health competency needs. Key stakeholder interviews identified the perceived population health competencies (Aim 1) and identified perceived priority population health competencies (Aim 2) from the perspectives of practice and academia.

Target Population

The key stakeholders for interviews consisted of five leaders from academia and practice. An additional key stakeholder was identified through the invitation process. Prominent academic leaders were the dean of the university’s nursing college and the dean of a college of population health from another midwestern university. Prominent leaders from practice were a vice president of Employer Solutions and Population Health, a chief nursing officer, and nursing directors of an -in-hospital and value-based care settings.

Target Setting

The academic setting for a post-bachelor certificate program was a midwestern university. The university has a Center for Population Health housed in a College of Professional Sciences. The College of Professional Sciences (CPS) has a population health minor. The dean of the College of Professional Sciences supported and promoted a task force development to assess the possibility of a post-bachelor population health certificate program for nurses.

The College of Nursing was evaluating current degree programs to determine future programs for students. Publication timing of the American Association of Colleges of Nursing (AACN) new Essentials for Nursing Education paralleled the development of the college structure and the evaluation of degree programs offered to students. A Doctor of Nursing Practice in Population Health Leadership degree program in the College of Nursing illustrated the value of population health competencies for advanced nursing education at the graduate level. The AACN's new model for nursing education in Domain 3 (AACN, 2021a, pp. 33-37) featured population health competencies that span the continuum of healthcare delivery for entry-level and advanced nursing education. The AACN (2019) educational vision called for partnerships with practice sites to develop and strengthen academic programs to prepare entry-level practice-ready graduates and advanced-practice graduates with the competencies to translate population health promotion into practice.

A hospital system partner for this project promoted the professional development of nursing employees to enhance professionalism and the work environment. The practice partner encouraged continuing education for career opportunities through tuition reimbursement. The partner has a clinical ladder program for registered nurses consisting of four levels for the staff nurse in the direct caregiver role.

Individual Interview

Planning for the interview included determining the interview purpose, questions, time for the interview, and interview schedule (Witkin & Altschuld 1995). In the preassessment phase, interviews with strategic stakeholders identified topics to explore competency needs (Witkin & Altschuld 1995). Individual interviews of key stakeholders sought information on the priority-population health competency gaps and the education needed to improve nursing-workforce population health competence.

Establishing the protocol for the interview included the interview format, instructions for the interview, and the guide for data collection (Witkin & Altschuld 1995). The design for the interview was semi-structured based on the following three questions.

- What are the skillsets needed for the nursing workforce to improve population outcomes?
- What are priority-population health competency learning needs for the nursing workforce?
- What is needed in a post-bachelor certificate program to address population health competency gaps?

Each question was followed by additional probing questions to clarify and discover more information based on the response from the interviewee (see Appendix C).

I introduced the interview with my purpose, assured confidentiality, and shared my passion for discovering the population health competency needs from the practice perspective to inform the design of the post-bachelor population health certificate program and attained consent. During the initial phase of the interview, rapport was built to establish trust and engagement in the interview. The planned timeframe of each interview was 30 to 40 minutes.

The interviews occurred via Zoom and were recorded. The Zoom recording enabled a caring focus on the interviewee, listening to their story during the interview, and documenting

the verbal and nonverbal responses after the Zoom recorded session. Consent of the key stakeholders to participate in the recorded interview and Internal Review Board (IRB) approval were attained.

After IRB approval, the key stakeholders were contacted via email. The project was explained via the email script with the consent forms for recording and participation in the interview. The consent forms were based on requirements at the practice sites and the university. The intent of the interview was information gathering. Upon completion of the project, I deleted the recorded Zoom interviews.

Individual interviews clarified and prioritized the population health competency needs for program development; thus, other interviews and surveys requiring additional IRB approval did not occur. Evaluation of the interviews was formative to shaping the primary purpose of gathering information and prioritizing population health competencies.

Context

Gathering data on the characteristics of the innovation and the recipients within their contextual setting inside and outside the environment helped identify facilitators and barriers to the design, development, and implementation (Harvey & Kitson, 2016). Likewise, in educational program planning, assessing vested interest and resource allocation helped identify facilitators and barriers to program implementation (Altschuld & Kumar, 2010). A crucial step in developing the plan for a needs assessment was understanding the organization where the needs assessment is being conducted (Altschuld & Kumar, 2010). Failure to understand the organization can lead to a failure in effective change (Altschuld & Kumar, 2010). The PARIHS Framework Guide Context C's (Stetler et al., 2011) four-sub-element categories of Leadership

Support, Culture, Evaluation Capabilities, and Receptivity to Innovation/Change framed the understanding of the new educational program's feasibility.

Aim 3

The third aim of the project, assessing the feasibility of offering the post-bachelor population health certificate, continued Phase 2 to inform Phase 3 (Witkin & Altschuld, 1995), the recommendations for the educational program. The PARIHS Framework Guide (Stetler et al., 2011) core element Context assessed change readiness or project feasibility framed with the four-sub-element categories: Leadership Support, Culture, Evaluation Capabilities, and Receptivity to Innovation/Change. The needs assessment process incorporated assessing change readiness via evaluating the advantages and disadvantages of the certificate program development. The assessment of the advantages and disadvantages included the strengths and weaknesses and the opportunities and threats components of strategic planning (Altschuld & Watkins, 2014). The strategic planning reviewed the mission, vision, and values (leadership support and culture) and the mandates, costs, resources, and competition (receptivity to change) (Altschuld & Watkins, 2014).

Post-Bachelor Certificate Feasibility

The context assessment for the certificate program gathered information on the feasibility of the academic setting to develop the population health certificate and the market value. Valentin (2001) recommended a resource-based approach that considers the business venture's market value and resource analysis by comparing the costs, the advantages and disadvantages, and the competitive market. The post-bachelor population health certificate assessment included the investment inputs, available resources, market value, existing courses, and faculty needs. The budget considered funding sources, the cost of faculty, and the program's cost.

The gathering of the data on the investment inputs, available resources, market value, funding sources, the cost of faculty, and the program's cost was facilitated by relationships established with the university grants office and the university. The consultation with the university grants office financial planning expert facilitated additional contacts to obtain information about investment inputs, program development costs, and budget needs. The financial expert in grant services has experience developing the financial plan for new program development; however, additional contacts were needed to obtain the specifics sought. Part of the data gathered was the estimate of faculty load to cover the certificate program and an estimate of class size growth for existing courses. Consultation with the grant's office continues to discover funding opportunities for program development. To understand new program needs, I consulted an associate dean of professional science, director of graduate programs, and marketing to gather information on faculty needs, cost estimation, and resource management.

Consideration for the certificate development assessed the structure and processes for curricular design and implementation. My experience and relationships from developing the applied health science minor informed the structure and procedures for curricular design and implementation. The College of Professional Sciences online application process for new programs provided the descriptions and steps required. A faculty member in the College of Professional Sciences who is developing a certificate program provided more insights. The faculty chair of the nursing curriculum alerted to higher learning commission forms to be completed.

Consultation with faculty and reviewing programs and courses in the course catalog discovered existing courses to address the identified competency needs. Other considerations are certificate program history and the role of the registrar. The College of Professional Sciences has

explored the processes needed to design a certificate program as part of degree attainment in collaboration with the registrar. Consultation with the Associate Dean of Professional Sciences, who has experience and expertise collaborating with the registrar, helped identify barriers and facilitators to certificate program development.

The research to inform recommendations included other certificate programs at national and local universities for population health. To identify other programs an internet search for certificates in population health for nursing utilized the search engines Google, Microsoft, Bing, and Yahoo. I reviewed the courses offered, completion time, and costs. The review provided ideas for recommendations.

Facilitation

The three-phase model (Witkin & Altschuld, 1995), an established process to systematically assess program development, enhanced the needs assessment to plan for successful program implementation (Altschuld & Watkins, 2014). The PARIHS Framework Guide (Stetler et al., 2011) guided the process of interactive problem solving to identify the needs for change and build the support for actualizing the change. The successful implementation of the needs assessment process guided my experienced facilitation by the intersection of the two models (Altschuld & Watkins, 2014, Harvey & Kitson, 2015).

As the facilitator of the needs assessment, I will lead change across organizations and within the organization (Harvey & Kitson, 2015), pulling together teams within a supportive network. Developing collaborative leadership for visioning innovation requires strategic planning and support development (Davidson et al., 2017). According to social theory, to create agency or relationships for project development, the intentional shaping of the network is needed to formulate professional outcomes (King, 2020).

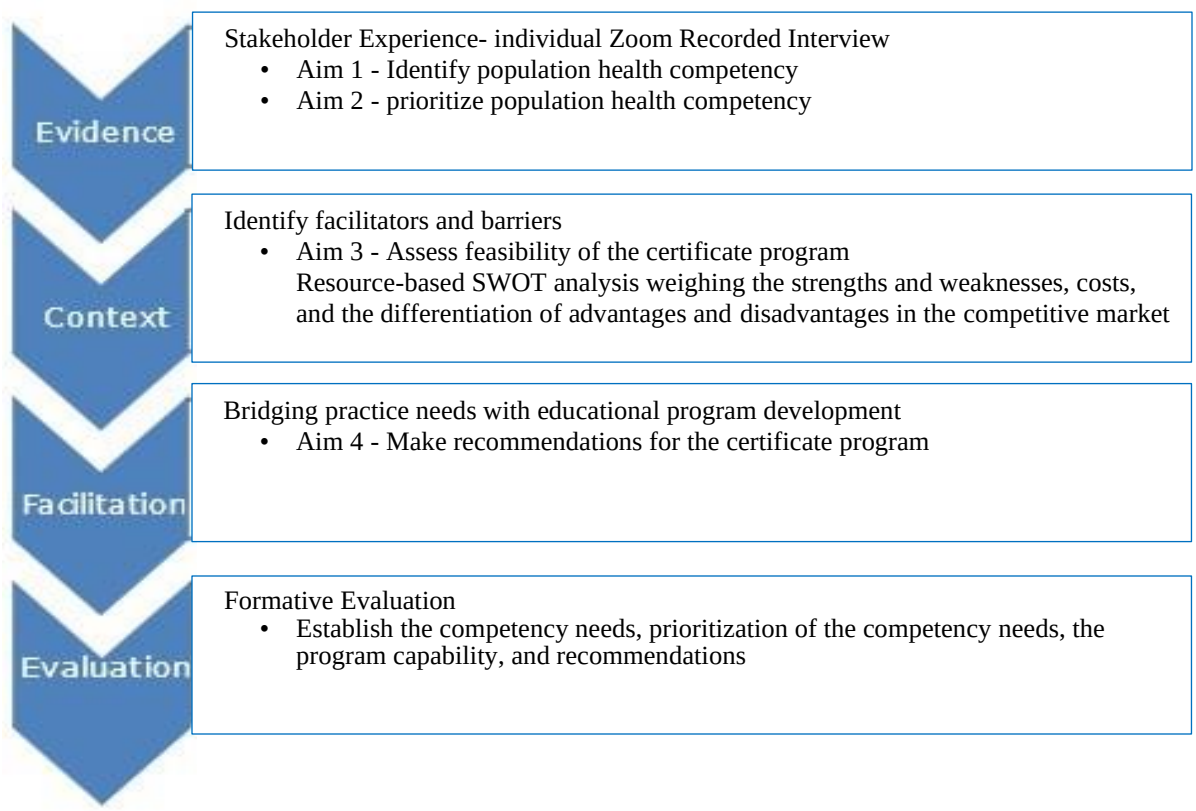
The needs assessment process was cyclic, and information discovered during Phase 2 can lead back to the preassessment phase to redefine the needs assessment's scope and focus and formulate recommendations (Witkin & Altschuld, 1995). Likewise, Harvey and Kitson (2016) described the PARIHS Framework as a dynamic process that begins with a focus and moves in a spiral through the context of the recipients and the setting to plan and implement evidence-based practice. The cyclic nature of discovery and adapting the plan to match successful implementation required my role as the facilitator to guide the implementation process.

The Doctor in Nursing Practice (DNP) leader bridges academia and practice in educational program development, building collaborative networks to guide evidence-based educational program designs. The DNP project implementation plan stepped through the four project aims based on the PARIHS Framework Guide, considering the evidence, context, and facilitation to guide the evidence-based educational program recommendations based on the information discovered in the needs assessment process.

The role of the DNP is the translation of evidence into practice (Chism, 2019). Bridging practice needs with educational program development guides nursing-practice improvement and changing population health outcomes (Chism, 2019). Assessment of asset and compacity building utilizes strengths for growth and improvement (Altschuld & Watkins, 2014). Facilitation enables the implementation, building engagement and relationships (Harvey & Kitson, 2015). As a future DNP leader in academia, facilitating the needs assessment guides the practice-driven population-health competency priorities discovery to align educational program design with practice and promote change in population health outcomes. The logic model (see Figure 1) provided an overview of the implementation and evaluation plans.

Figure 1

Logic Model



Evaluation Plan

Aim 4

The project aims: 1) to identify the population health competency needs, 2) to prioritize the population health competency needs, and 3) to assess the feasibility of a post-bachelor population health certificate program, informed aim 4) to make recommendations for the certificate program. Aim 4 evaluated the needs assessment results to recommend the certificate program. The evaluation of the needs assessment data moved the action assessment Phase 2 to utilize the results in Phase 3 (Witkin & Altschuld, 1995). The needs assessment was an integral step in program planning; however, the needs assessment was not a standalone process. A successful needs assessment must move past the needs assessment to action planning (Witkin & Altschuld, 1995). Phase 3 of the Witkin & Altschuld (1995) model developed the action plan and recommended program development. The successful project implementation plan drew from evidence and considered the relationships between stakeholders within the context of the setting (Harvey & Kitson, 2016). The evaluation of the needs assessment process, the evidence, and the context of the settings guided the recommendations for the certificate program.

Evaluation

The preassessment process, Phase 1, informs Phase 2 of the needs assessment process. Phase 2 was the primary action phase of the Witkin and Altschuld (1995) three-phase model consisting of data gathering and analysis to set the priority-population health competency needs and the feasibility of the population health certificate program. The evaluation process informed the decision-making process, Phase 3, for the program development (Altschuld & Watkins, 2014).

Interview

The process for the interview evaluation consisted of a comparison of data collected through the recorded Zoom interviews from academia and practice with the AACN Essentials for advanced population health competencies (AACN, 2021a, pp. 35-39) in nursing education. The planning for data collection and evaluation must consider the comparison within and between respondent groups, not just the rank order (Witkin, 1997). The interviews consisted of interpretive thematic analysis to identify and describe themes. The interpretive thematic analysis includes the reviewer's preconceptions and engagement in the interpretation of meaning (Levitt, 2020, p. 25). The analysis scheme discovered patterns in the skill sets needed for the nursing workforce, the priority-population health competency gaps, and what should be in a certificate program by comparing the recorded zoom transcripts from academia and practice with the AACN Essentials (AACN, 2021a, pp. 35-39).

The data triangulation comparing the themes from the interview transcripts from academia and practice with the published population health competencies (AACN, 2021a, pp. 35-39) identified and prioritized the competencies recommended for the certificate program. Triangulation in qualitative research includes comparing various data sources to discover the convergence of meaning from the information gathered (Carter et al., 2014). Triangulation is a strategy in qualitative research to test the validity through the convergence of information across the data sources (Carter et al., 2014). The interview evaluation plan is displayed in Table 1.

Table 1

Interview Evaluation Plan

Evaluation Type	Data source	Data Analysis Methods	Interpretations and presentation
Qualitative	Stakeholder Interviews	1. Theme analysis by data triangulation 2. A concept map will be developed to illustrate the relationships and	Results will document the interview findings. The evaluation report includes the concept map depicting the interview theme development to identify and prioritize competency needs. The evaluation report will document the pattern analysis of the interview transcripts. A discussion will

		theme development. The Zoom recorded interviews will be transcribed. The interviewer will review the transcripts and analyze them for patterns and priorities.	describe the interview findings and make recommendations based on the interview findings, determining if additional data gathering is needed and recommended types. A presentation will detail the results of interviews, the barriers and facilitators to project implementation, and recommendations.

Post-Bachelor Certificate Feasibility

The evaluation of the needs assessment process of program feasibility considered the strengths, weaknesses, opportunities, and threats (SWOT) analysis (Altschuld & Watkins, 2014). The SWOT analysis included investment inputs, resources, market value, courses, faculty needs, and the budget (Altschuld & Watkins, 2014). The resource-based SWOT analysis considered the strategic significance or the importance status (favorable or unfavorable) of the many factors considered for a business venture (Valentin, 2001). The determination of maximum market value considered the value to the practice site, the value to the nursing workforce, the cost differential, and the competitive position of the certificate program. Evaluation of post-bachelor certificate feasibility considered the resources and capabilities of the program to determine the maximum value.

The categories of resources and capabilities include:

- financial (the capital to start and run the program),
- physical (technology, in-class, or online),
- legal and intellectual (does the university create modules that the nurses can take for CEs, or is it a program housed at the university),
- human (faculty workload),
- organizational resources (college and university),
- information resources (is the content available to nurses in other settings),

- relational (the partnership builds relationships with the university),
- and reputational (develops cohorts for the advanced nursing degree programs) (Valentin, 2001).

I mapped the resources and capabilities analysis in a three-column table listing the factors as row headings, listing favorable factors first (weighing strengths and opportunities), then following with the unfavorable factors (weighing weakness and threats). The column headings noted the influences within the university and the influences outside the university. The result comparison will inform the feasibility of the post-bachelor certificate program.

Project Implementation Evaluation

The evaluation of the DNP project implementation was formative based on the PARIHS Framework Guide (Stetler et al., 2011) and SWOT analysis. The formative evaluation of the PARIHS Framework Guide considered the strength of the evidence and context to facilitate project implementation (Hill et al., 2017). Hill et al. (2017) described four categories of evidence to describe challenges for facilitating project implementation. The four categories (Table 2) weighed the evidence and context results, comparing levels of weakness and strength to determine what is needed to support innovation (Hill et al., 2017).

Table 2

Categories of Evidence Ranking (Hill et al., 2017)

Category F1 indicates weak context assessment with strong evidence assessment.	F4 category was the strongest rank indicating the goal for facilitation with strong evidence and strong context assessment.
Category F2 indicates both weak context and weak evidence assessment.	F3 indicates weak evidence assessment with a strong context assessment.

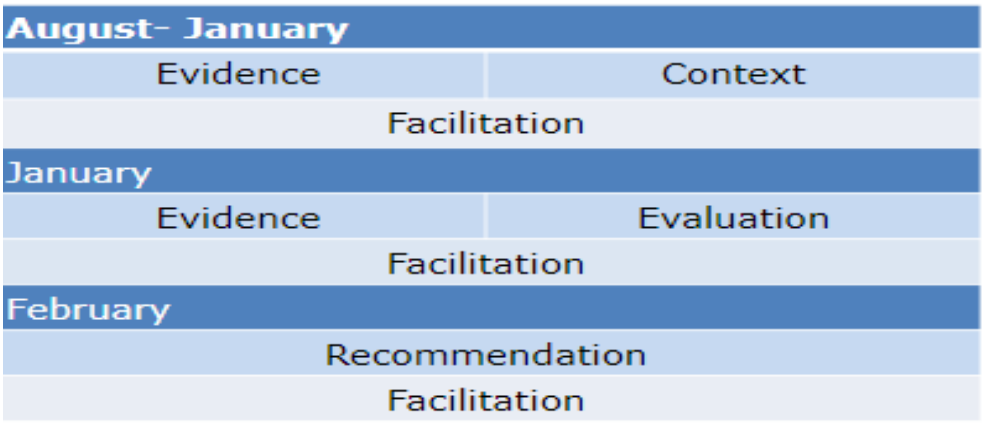
The recommendations for the population health certificate program considered the weakness and strengths comparisons of the evidence and context results to identify the feasibility of the population health certificate program. The formative PARIHS Framework Evaluation (Kitson et al., 2008) recognized what elements of the evidence and context require more development work to facilitate successful implementation or if the certificate program was feasible. The questions to be answered were:

1. Was there sufficient evidence to support a new education program?
2. Was more evidence needed to identify and prioritize population health competencies?
3. What were the barriers and facilitators to the new program?
4. What was needed to build capacity?
5. Were there other solutions to build the nursing workforce's population health competencies?

After completing the needs assessment, the questions above answered the evidence's strength and support for the population health certificate development. Figure 2 depicted the project timeline.

Figure 2

Project Timeline



Conclusion

The needs assessment for the population health certificate development was the crucial first step. A critical step for the needs assessment plan was to understand the competencies from the stakeholder's experience and the capability for the certificate program. The PARIHS framework (Stetler et al., 2011) adaptation aligned with the Witkin and Altschuld (1995) Three-Phase Needs Assessment Model and guided the project implementation and aim attainment. The evaluation of project implementation was formative based on the PARIHS Framework (Stetler et al., 2011).

Chapter 4 Results

The purpose of chapter 4 is to describe the results of the needs assessment for a post-bachelor population health certificate program for registered nurses. The PARIHS Framework Guide (Stetler et al., 2011) was the organizational framework utilized to evaluate the evidence and feasibility of the population health certificate program. The chapter begins with the evidence detailing the stakeholder interview results addressing the project aims, 1) to identify population health competency needs and 2) to prioritize population health competency needs. The chapter continues with the context evaluation and results addressing aim 3) to assess the feasibility of a post-bachelor population health certificate program by comparing the levels of weakness and strength. The chapter concludes the formative evaluation by determining the certificate program facilitation needs to address aim 4) to make recommendations for a certificate program.

Evidence

The PARIHS Framework Guide (Stetler et al., 2011) construct Evidence corresponded with Phase 2 of Witkin & Altschuld's (1995) Three-Phase Needs Assessment Model. In this actionable phase, evidence was gathered and analyzed to determine competency needs for education program development. The successful implementation considered the target audience since they have influential roles in the outcome (Harvey & Kitson, 2015). Key informant interviews produced qualitative information regarding the perceived competency needs for education program development (Witkin & Altschuld, 1995).

Participant Selection

The purposive sampling initially identified five knowledgeable strategic stakeholders from academia and the practice partners. The two representatives from academia were a dean from a college of population health and a dean of a nursing college. The nursing practice

representatives were a registered nurse (RN) and CEO of population health (at a midwestern healthcare system), a director of nursing (RN) of in-hospital units (from the same midwestern healthcare system, and the nurse (RN) director of value-based care (from a second midwestern healthcare system). The five strategic stakeholders received an email invite to participate in the Zoom recorded interview. Initially, four of the five email recipients responded, completed consent documents, and were scheduled for an interview. A sixth strategic stakeholder, a chief nursing officer (RN) from the same midwestern healthcare system as the CEO of population health, also received an invite due to the delay in consent from one of the nursing practice stakeholders from the health system.

Data Collection

The six email requests to participate in the recorded Zoom interview produced six completed consents and six completed interviews by the end of January. The interview guide questions framed the interview process, and the discoveries informed deeper inquiry to understand the meaning. After each interview, I reflected for 30 minutes and wrote brief notes in my project journal.

The six (30 to 40 minutes Zoom recordings) were transcribed (by a person other than me). A number identified the transcripts with the interviewee's name removed. The transcriber and I verified the transcript accuracy together, reading the printed transcripts and watching the recorded Zoom interviews noting the needed edits. After editing the transcripts, the transcriber reordered the interview transcripts according to the main interview questions, followed by listing each numbered interviewee’s responses.

Data Analytic Strategies

The review of printed transcripts (ordered by the interview questions) consisted of reiterative interpretive thematic analysis to identify population health meaning, gaps in population health competencies, and priority population health competencies for the post-bachelor RN nursing workforce. Initially, my thematic analysis involved underlining the population health concepts across the printed transcripts. The next review considered the underlined text and recorded my interpretation summaries and bullet points in my project journal. I created color-coded-post-it notes matching each identified population health competency from my journal entries.

The identified population health competencies included,

- the understanding of population health,
- system analysis,
- pattern analysis,
- data analysis,
- Excel fluency,
- collaboration,
- motivational interviewing,
- interprofessional practice or partnerships
- volume to value-based care,
- understanding financial aspects,
- managed care,
- social determinants of health,
- research,
- and epidemiology.

The matched the color-coded post-it notes with the underlined concepts on the printed transcripts helped visualize emerging patterns. However, I needed a deeper understanding of the emerging patterns to determine relationships, differentiate main population health competencies from sub-competencies, and establish priorities.

The following review of the transcripts compared the emerging themes through an Excel spreadsheet. The Excel spreadsheet enabled a deeper comparison across the different interviewee's responses to determine relationships. The analysis discovered the primary gap was the need for the nursing workforce to look beyond the point of care encounters to population-focused care (see Appendix D).

To confirm the consensus of emerging patterns and themes in the population health competencies, I sought the consultation of Dr. Susan Allen, experienced in interpretive phenomenological analysis, to confirm my thematic analysis and determine the consensus of emerging patterns and themes. I shared the deidentified numbered transcripts with Dr. Susan Allen, who independently analyzed the transcripts for themes and patterns. After meeting with Dr. Allen via Zoom, I confirmed consensus on the emerging patterns and themes across the six interviews.

The final thematic analysis compared the data collected from academia (two interviews) and practice (four interviews) with the AACN Essentials for population health competencies (AACN, 2021a, pp. 35-39) in nursing education to discover the convergence of meaning. I created an additional Excel spreadsheet (see Appendix E) depicting nursing education expectations retrieved from *The Essentials: Core Competencies for Professional Nursing Education. Domain 3: Population Health* (AACN, 2021a, pp. 35-39). The column headings held the competencies in the Excel spreadsheet, subdivided by entry-level expectations and advanced

levels. The rows under each column heading contained quoted sub-competencies (AACN, 2021a, pp. 35-39). In the Excel spreadsheet (see Appendix E), I bolded the font of action verbs of each sub-competency to accentuate the expected level of learning.

Interview Results

The overarching population health competency gap discovered was the need for the nursing workforce to look beyond the point of care encounters to the multiple systems affecting health (see Appendix D). Nursing education needs transformation to advance the nursing workforce's understanding beyond the point of care encounters to population-focused care. Population-focused care promotes actionable responses that may change health outcomes. The following quote exemplifies the theme that nursing education promotes an individual point of care perspective from an interviewee in the practice setting.

> "One of the flaws I see with nursing instruction is that we learn of caring for the patient over their lifespan, and that's done in segments, but we don't really do a lot of talking about how to care for the patient outside of the environment you're working in. For instance, if you are a nurse in the hospital, you only really learn how to provide care in that setting and not really think much else beyond those walls. And we have nurses who do community health, but that's kind of their only realm, and they're not taught to think much outside of that. And so, I think that we, as nurses, are used to working in silos, and I think that begins with the education itself."

The following quote from an interviewee in academia emphasized moving understanding beyond the individual point of care encounters with populations. Nurses "need to learn how to think about care differently and plan care differently than just treating an illness or performing the skills." The interviewee also said that population health-focused care is "broadening the

perspective, it adds, I think, an added dimension to the type of care we are able to provide. If you can get the student to look beyond just the individual to the population, I think that care is enhanced." The interviewee further stated nursing "needs to look for the differences and the disparities between the populations and link [them] to the actionable response." According to another interviewee the population-focus will "increase efficiency for services delivered, increase effectiveness, as well as reducing disparity."

The remaining convergence of themes and patterns in the population health competencies builds nurses' understanding of population-focused care, moving nurses beyond the point of care encounters. Theme analysis developed the concept map (Figure 3) to illustrate the relationships between priority competencies and sub-competencies needed to move nursing beyond the point of care encounters.

Figure 3

Population Health Competency Concept Map

I created the concept map via a free basic version concept mapping tool (Mural, 2021), depicting primary competency and sub-competency themes discovered by comparing the transcripts from academia and practice (key stakeholder interviews). The five bolded concepts, quality improvement, health policy, managed care, interprofessional practice partnerships, and data analysis, represent the overarching population health competency categories. The analysis of population health competencies noted managing care, and interprofessional practice partnerships were foundational to achieving population health outcomes (key stakeholder interviews); hence the placement of interprofessional practice partnerships and managed care centered beneath the primary gap beyond the point of care encounters in the population-health competency concept map (see Figure 3). The sub-categories represented by concepts grouped around the overarching population health competency categories illustrate the skillsets named by the interviewees to achieve the competencies.

Managed care has an added depth of knowledge needed to guide population health outcomes not depicted in the concept map. System understanding and financial understanding intersect and emphasize that nurses need to understand how to move the health systems from volume to value, as one interviewee articulated succinctly.

> "Population health is a focus on how to move the health system from a volume to a value perspective, and then along with that, would be all the things that are necessary to move from volume to value including broader collaborations with other providers like what you would see in an ACO type of arrangement; also, better connectivity to communities, to not only provide care but also be on top of what the issues are on the horizon, not just reactive, but be proactive; and to address issues of access and equity that are helpful or necessary frankly to move towards a true value perspective. I think; briefly, that's what I

think is the perspective that population health has in this country. It's value in that it is #1: improving outcomes, #2: decreasing variation or disparity, and #3: increasing efficiency."

To complete the data triangulation, I compared the identified population health competencies and sub-competencies from the key-stakeholder interviews (academia and practice) with the population health competencies named in the Essentials under the Domain 3 Population Health (AACN, 2021a, pp. 35-39). The priority competencies (stakeholder interviews) were managed care, interprofessional practice partnerships, data analysis, quality improvement, and health policy. The Essentials (AACN, 2021a. pp. 35-39) competencies were "manage population health, engage in partnerships, consider social impact of the delivery of health care, advance equitable population health, demonstrate advocacy strategies, and advance preparedness to protect population health during disasters and public health emergencies."

I found correlations with the competencies discovered from the key-stakeholder interviews with some differences in the categorization as a competency or sub-competency. The "manage population health competency" (AACN, 2021a, p. 36) corresponds with the competency of "managed care" discovered from the key-stakeholder interviews. A sub-competency of managed care, "understanding financial" (key-stakeholder interviews), associated with competency three, consider the socioeconomic impact of the delivery of health care (AACN, 2021a, p. 37). Key stakeholders also chose data analysis as a priority competency, whereas data analysis was an advanced sub-competency found under "manage population health" (AACN, 2021a, p. 36).

The competency "engage in effective partnerships" (AACN, 2021a, p. 37) corresponded with the competency of interprofessional practice partnerships (key-stakeholder interviews). The

sub-competencies of communication and collaboration were also sub-competencies under "engage in partnerships" (AACN, 2021a, p. 37). Motivational interviewing was an additional sub-competency discovered from the key-stakeholder interviews for effective communication and understanding the needs of the populations.

The competency, "advance equitable population health policy" (AACN, 2021a, p. 38), corresponded with health policy (key-stakeholder interviews). The advanced sub-competencies to advance equitable population health policy (AACN, 2021a, p. 38) emphasized participation in health policy development. In contrast, the key-stakeholder interviews emphasized understanding the influences of health policy on population health outcomes. As one interviewee said, there is a need for nurses:

> "Understanding what happens at policy level, at the governmental level to how that translates into managed care contracts and how that translates into beneficiary benefits, how that translates into how a hospital or health system, or physician practice gets paid, what the impact is on the individual patient or consumer."

The main concept map categories (see Figure 3) and the competencies named in the Nursing Essentials (AACN, 2021a, pp. 35-39) (see Appendix E) illustrated the population health competencies needed for nursing to lead and actualize changing population health outcomes. The aims of interviewing the key stakeholders were 1) to identify population health competency needs and 2) to prioritize population health competency needs in the nursing workforce. The comparison to the Essentials, Domain 3 (AACN, 2021a, pp. 35-39) determined that managing care and interprofessional practice partnerships are foundational competencies to improve population health outcomes. The remaining named competencies and sub-competencies build on managing care to improve outcomes.

Since the target audience of the population health certificate program is post-bachelor nurses, an imperative differentiation is the educational needs of advanced nursing practice in contrast to the educational needs of the entry-level graduate. Understanding the competencies expected and the appropriate level of education was crucial to planning a sustainable post-bachelor certificate program. Are the competencies expected by practice for the entry-level graduates, or were the competencies needed at the advanced practice level? The comparison analysis began by emphasizing the actionable verbs and phrases via bolded font in the sub-competencies across entry and advanced level nurses in the Nursing Essentials, Domain 3 (AACN, 2021a, pp. 35-39) (see Appendix E) to differentiate the levels of competency expectations.

Comparing the interview data with the Nursing Essentials Domain 3 (AACN, 2021a, pp. 35-39) discovered congruence between practice expectations and education expectations for entry-level registered nurses. Entry-level nurses should be capable of assessing population health data and developing an action plan to meet the identified needs (see Appendix E). Thus, entry-level nurses need a population-focused understanding, which broadens their assessment beyond the point of care encounters. Entry-level nurses need an understanding of "the general principles and practices for the clinical management of populations across the age continuum" (AACN, 2021a, p. 35) to inform action plans to meet the identified needs. Therefore, entry-level nurses need an understanding of "the general principles" of the competency concepts, quality improvement, health policy, managed care, interprofessional practice partnerships, and data analysis.

However, the comparison of the population-health competency practice expectations with the expected educational development expressed in the Essentials (AACN, 2021a, pp. 35-39)

discovered the actualization of population-focused care management is the level of advanced practice (see appendix E). Changing population health outcomes requires advancing practice beyond the entry-level nursing understanding of population-focused care. Advanced practice nurses determine population-focused priorities of care based on analyzing "primary and secondary population health data for multiple populations against relevant benchmarks" (AACN, 2021a, p. 35). The priority sub-competencies of the five priority population health competencies depicted in the concept map (see Figure 3) represented advanced practice expertise that supports designing the population health certificate program to advance the nursing workforce in population health management. The practice expectations also supported reviewing undergraduate education to prepare entry-level nurses' understanding of general principles and practices for the clinical management of populations.

The primary gap, understanding the population-focused care beyond the point of care encounters, illustrated the need for an initial course defining population health in the population health certificate program. There was a congruence across the six interviewees for an introductory course on population health to address the gap in understanding population-focused care. One interviewee recommended two population health courses: fundamental understanding and application and further development of population health competencies. Also, there was an agreement to complete the certificate with a practicum course featuring a capstone project, so the students experience applying population health concepts.

The five-priority population health competency categories, quality improvement, health policy, managed care, interprofessional practice partnerships, and data analysis, inform course planning for the certificate program. The curriculum map design needs to consider the differentiation of educational levels necessary to advance nursing practice and the rigor and

content to match academic credit at the graduate level, the intended population, and the intended outcome.

As one academic interviewee conveyed:

> "Creating new academic degree programs is sort of two pieces: #1: where to aim it, like where is the trajectory, where are you aiming in terms of what is the endpoint of the training, you have to know where to aim, and #2: where does that fit in with a continuum of learning? So, for example, because there are a lot of workforce development programs that are out there, certificates, workshops, [which] are at the lower end of intensity all the way up to a Ph.D. in Population Health. So, I think figuring out where a certificate fits within that continuum is important because you are going to need to identify the competency level because certainly, someone who is finishing a certificate in population health is not going to get the same level in rigor, particularly, from a science and knowledge generation standpoint as someone getting a Ph.D."

Another consideration for the curriculum plan discovered in the strategic stakeholders' interview transcripts was that the certificate programs should have seamless academic scaffolding into a graduate program. The seamless academic scaffolding affords options to build the certificate program based on nursing workforce needs and promotes advancing nursing practice with degree development. A transformed education system promoting seamless academic progression and an innovative curriculum such as certificate programs could encourage the current nursing workforce to pursue advanced degrees (NASEM, 2021). As one of the interviewees from academia suggested, the certificate program could "let people know that they are capable of graduate study." The certificate program should be "12 credits, or maybe six credits for two semesters, or four credits for three semesters, however, you want to do it, short

enough so that they can see the end but rigorous enough so that they know if they wanted to go to graduate school, they could do it." The certificate program that is scaffolding for a degree would need "seamless transition" and "transcription" to be accepted into a graduate program."

During Phase 2 of the needs assessment, the interviews of key stakeholders identified priority population health competencies and support for an innovative curriculum plan with rigor and seamless transition. Altschuld & Kumar (2010) noted that in addition to understanding the competency needs, a crucial component of the needs assessment was understanding the organization where the needs assessment is conducted. Harvey & Kitson (2016) described the PARIHS integrated framework as an effective tool for formative evaluation based on the characteristics of the innovation and the recipients within their contextual setting inside and outside the environment. The contextual setting evaluation identified facilitators and barriers to designing, developing, and implementing a population health certificate program.

Context

The PARIHS Framework Guide Context C's (Stetler et al., 2011) four-sub-element categories of Leadership Support, Culture, Evaluation Capabilities, and Receptivity to Innovation/Change framed the formative evaluation of the certificate program feasibility. The preassessment, phase one of the Witkin and Altschuld (1995) three-phase model, considered what was already known to determine the scope and focus of the needs assessment and the formative evaluation of the certificate program feasibility. Before the needs assessment project, the contextual readiness assessment of the academic setting and the practice setting determined leadership support and culture support for the certificate program; thus, the next step of the needs assessment focused on the certificate program feasibility. Analysis of certificate program

feasibility addresses aim 3) to assess the feasibility of a post-bachelor population health certificate program by comparing the levels of weakness and strength.

Costs

Program feasibility assessments evaluate resources by comparing the costs, the advantages and disadvantages, and the competitive market (Altschuld & Watkins, 2014). The feasibility assessment included the investment inputs, available resources, market value, existing courses, and faculty needs. The budget considered funding sources, the cost of faculty, and the program's cost. If the pop health certificate is $670 per credit hour and there are twelve credit hours, then the tuition per student is $8,040. If a minimum initial goal is 10-students in the first cohort, the total tuition amount would be $80,400. The faculty load for the certificate program would be one FTE. The estimated average salary for an assistant professor in a nursing college with a 9-month contract is $79,579. The estimated benefit cost for the university is $20,138.61 per year. Considering the total costs for one FTE was $99,717.61 (salary plus benefits), and the predicted first 10-student cohort tuition income was $80,400; thus, the initially estimated tuition would be at a deficit to cover faculty cost.

When starting a new certificate program, marketing to build student enrolment is critical to supporting the faculty load expectation. As part of my feasibility analysis, I met with an expert from marketing at the target university. According to the marketing representative, “if an estimated conversion rate of program inquiries is 3% which means of all the leads/inquiries, only 3% enroll in the program”. So, the initial launch of a new program to build cohorts would need a minimum of 333 leads to get the minimum 10-student cohort.

The marketing expert further stated, “If all the leads for a new program are dependent on marketing dollars, you would want a goal of about $100 a lead (industry standard for lead costs).

If you need 333 leads, to get your conversion of 3% and get your 10-students [cohort] you would want to spend approximately $33,333. The goal of $100 a lead. to get those 333 inquiries, is to nurture and recruit from the start of an application, complete an application, get admitted, and enroll into the program." The projected marketing cost of $33,333 to build the initial 10-student cohort adds to the cost deficit of $52,650.61.

Opportunities and Challenges

The opportunities for the certificate program include the support of health systems which builds on the relationship with the nursing college. The strength was that the interviewees from the practice settings expressed enthusiasm about the certificate program for the post-bachelor nursing workforce and recommended piloting the program with cohorts across the care continuum.

A challenge is nursing's work overload experienced from the COVID pandemic. As a nursing faculty member, I have witnessed the stress experienced by students balancing the workload of a master's degree with the pandemic work overload; some have paused their programs due to the pressure.

The identified gap between developing the nurses' population-focused care beyond the point of care setting and the need to develop population health competencies is another opportunity to support the certificate program. The strength was the publication of the Essentials (AACN, 2021a), calling for nursing education transformation to address population health competencies needs in the practice setting. The Essentials (AACN, 2021a) also calls for partnerships with practice to develop a curriculum to meet the needs of practice-identified gaps in population health.

The college of nursing reviewing the current curriculum to incorporate the Essentials provides an opportunity to consider the certificate program. The challenge is the changes in leadership at the college and the university. Additional challenges are that the university and the nursing college are recovering from the impact of Covid on enrollment and finances. Another barrier is that the workload of the nursing faculty at the college is overcapacity due to the increased enrollment of undergraduate nursing students.

The search for other certificate programs at national and local universities for population health was twofold: discovering prototypes of certificate programs as a step-in degree attainment and determining the market potential of a population health certificate program. The initial search across Google, Microsoft, Bing, and Yahoo populated two examples of certificates that apply to all health professionals. John Hopkins Bloomberg School of Public Health (2019) offers a Population Health Management Certificate Program online (for health professionals) with an option to apply after certificate completion, the course credit requirements for the Master of Applied Science in Population Health Management.

The Master of Applied Science in Population Health Management required twenty-five credits. The first year of study for the degree holds 12-credits that correspond with the Population Health Management Certificate Program online. The first semester for the certificate consisted of an entry non-credit module detailing academic and research ethics, and two 3-credit courses entitled Essentials of Population Health Management and Principles and Applications of Advanced Payment Models in Population Health Management. The second semester consisted of two 3-credit courses entitled Collective Impact: Developing and Leading Community Partnerships to Improve Population Health and Applications in Accountable Care; Assessing Quality and Effectiveness of Population Health Initiatives. The remaining credits of the degree

consisted of an introduction to Epidemiology (4-credits), Population and Consumer Health Informatics (3-credits), Managing Health Across the Continuum: Contemporary Models and Applications of Care Coordination, and Management (3-credits), and Statistical Concepts in Public Health 1 (3-credits).

Cornell University (n.d.) offers seven online courses for a Healthcare Management Certificate consisting of: Managing People in Healthcare Setting, Assessing your Organization's Finances, Planning Health care Investments and Marketing, Addressing Healthcare Economics, Guiding Your Organization's Costs and Budgets, Improving Quality and Performance of Healthcare Services, and Navigating the Healthcare Regulatory Environment. Each course lasts two weeks, and the program duration is four months. The Healthcare Management Certificate earns seventy professional development hours or seven continuing education units (CEU).

The two certificate programs identified two population health certificate programs that feature certificate programs for health professionals. An opportunity is a certificate in population health focusing on the competency needs of the nursing workforce. Nursing can lead healthcare organizations in adopting and disseminating best practices for population health (NACNEP, 2016). The National Advisory Council on Nurse Education and Practice (NACNEP) (2016) called for preparing nurses currently in practice for new roles in population health management through continuing education and certification in population health competencies. The NACNEP (2016), under the authority of Title VIII of the Public Health Service Act, advises and makes recommendations to the Health Resources and Services Administration (HRSA), Health and Human Services Secretary, and Congress on policy matters on the nurse workforce, nursing education and nursing practice improvement.

The opportunities and resources were available to develop an innovative population health certificate at the target university feature resources in existing programs. The target university currently has a Doctor of Nursing Practice in Population Health Leadership offered in the college of nursing. Also offered in the nursing college is an entry-level second-degree nursing graduate with a master's in nursing and clinical nurse leader. The target university also has a population health minor offered in the college of professional sciences for undergraduates. Also, the college of professional sciences has a Health Economic and Clinical Outcomes Research program and is exploring a certificate program version that features the development and execution of value-based healthcare.

The Dean of the College of Professional Sciences promotes the population health certificate. Another opportunity is the university's Center for Population Health promotes relationships within the practice settings. The Center for Population Health director supports the population health certificate program. The university has courses and curriculums that could facilitate an innovative, collaborative certificate program with collaboration opportunities within the practice setting to apply the population health competencies. The certificate program could have an option to use the certificate credits for the course credit requirements of a degree program after certificate completion.

Feasibility Analysis

The following Table 3 summarizes the resources and capabilities analysis addressing aim 3) to assess the feasibility of a post-bachelor population health certificate program by comparing strengths, weaknesses, opportunities, and threats (SWOT) (Valentin, 2001).

Table 3

Population Health Program Feasibility

	Internal Factors	External Factors

Favorable Factors	Strengths
	• partnership relationship
	• the college of nursing is reviewing the current curriculum to incorporate the Essentials
	• partnerships with practice to develop a curriculum to meet the needs of the practice
	• resources in programs already in existence
	  ○ faculty
	  ○ courses
	• Center for Population Health supports the population health certificate
		Opportunities
		• support of health systems
		• Essential's publication (AACN, 2021a, pp. 35-39)
		• expressed enthusiasm about the certificate program
		• Cohorts for student enrollment
		• identified population health competency gaps, and the priority to develop population-focused care
		• prototypes of certificate programs as a step-in degree attainment
		• market potential of a population health certificate
		• NACNEP) (2016) called for preparing nurses currently in practice for new roles in population health management

Unfavorable Factors	Weakness • Changes in leadership in the target college of nursing • Changes in leadership in the target university • The projected cost for one FTE-$99,717.61 (salary plus benefits)	Threats • the university and the nursing college are recovering from the impact of Covid on enrollment and finance

	and marketing the new program is $33,333 to build the first 10-student cohort • Tuition for a projected 10-student cohort 10-student cohort tuition income was $80,400 • the workload of the nursing faculty at the college is overcapacity due to the increased enrollment of undergraduate nursing students.	• nurses are recovering from work overload from Covid

The resource and capability analysis based on the SWOT analysis (Valentin, 2001) helped identify the feasibility and the facilitation needed to develop the population health certificate program.

The PARIHS Framework Guide (Hill et al., 2017) ranks implementation capability into four categories to analyze facilitation needs for successful implementation. The four categories (F1-F4) compare the strength or weakness of evidence and the strength or weakness of context to weigh successful implementation (see Table 2). The identified population health competency gaps and the priority to develop population-focused care provide convincing evidence for the population health certificate program. The strengths and opportunities shown in Table 3 further strengthen the evidence for a population health certificate program.

However, the weaknesses and threats (see Table 3) require management; thus, the feasibility of implementing the certificate program is the category F1 (Hill et al., 2017). Cost barriers, the COVID influences on finances, and enrollment challenge the certificate program capability. To facilitate the certificate program development and move the feasibility to category

F4 (Hill et al., 201), exploration of available resources to counteract the new program cost is needed.

Phase 3 of the Witkin and Altschuld (1995) needs assessment model is the post-assessment phase where the needs assessment findings are bridged with the action plan. The integration of the PARIHS Framework Guide (Stetler et al., 2011) with the needs assessment model successfully guided the process to identify the evidence for a population health certificate program and the capacity-building needs. The strategic business analysis weighing resource need and market value featured in the contextual analysis of the PARIHS Framework Guide (Stetler et al., 2011) successfully informed Aim 4) to make recommendations for the certificate program. The needs assessment during Phase 2 discovered compelling evidence to support the development of the population health certificate program. However, the needs assessment found that further evaluation of resources is needed to build capacity for the certificate program.

Curricular mapping of course offerings within the nursing college and the professional science college could discover courses addressing the needed competencies for population-focused care management from the clinical perspective and the business perspective. The existing courses within the nursing college and the professional science college can build the population health certificate. The curriculum mapping could verify the actual cost of the certificate program, which may offset some of the costs for the population health certificate. The curriculum mapping also needs to consider the differentiation of educational levels necessary to advance nursing practice, the content rigor, the intended population, and the intended outcome.

Conclusion

In conclusion, the interview of strategic stakeholders effectively identified 1) population health competency needs and 2) prioritized the primary population health gap to

develop the nurses' population-focused care beyond the point of care setting. The contextual evaluation addressing aim 3) the feasibility of a post-bachelor population health certificate program determined the capacity to develop the population health certificate to be F1(Hill et al. 2017). The evidence is strong to support a population health certificate; however, the weaknesses and threats need to be addressed to build the capacity for the population health certificate program. The integration of the PARIHS Framework Guide (Stetler et al., 2011) with Witkin and Altschuld's (1995) three-phase model effectively addressed aim 4) to make recommendations for a certificate program. Before successful implementation, further needs assessment of resources is needed to build the capacity for certificate program implementation.

Chapter 5 Discussion and Conclusions

This chapter will discuss the needs assessment results and make recommendations for the population health certificate program. The chapter begins with the interpretation of the results detailing Aims 1) to identify population health competency needs, 2) to prioritize population health competency needs, 3) to assess the feasibility of a post-bachelor population health certificate program, and 4) to make recommendations for the certificate program. The discussion of the limitations, barriers, and strengths follows. The chapter concludes with future recommendations, the implications for practice, future research, and application to DNP roles.

Interpretation of Results

The transformation of nursing education for population health needs to be driven by practice-identified competency needs. The Essentials (AACN, 2021a, pp. 35-39) emphasize the need by categorizing population health as one of the ten essential domains targeting nursing education transformation. The six strategic stakeholder interviews supported the need to develop the post-bachelor nursing workforce in population health. The results emphasized that population health is population-focused care, which is beyond the point-of-care encounters. The evidence shows the compelling need for a population health certificate program to advance nursing practice.

Population Health Competencies

The discussion of the results first addresses the project aims, 1) to identify population health competency needs and 2) to prioritize population health competency needs for the post-bachelor nursing workforce. The five-priority population health competency categories, quality improvement, health policy, managed care, interprofessional practice partnerships, and data analysis, represented advanced practice expertise that supports designing the population health

certificate. Managing care and interprofessional practice partnerships are foundational practice-competency expectations. The remaining competencies and sub-competencies build on managing care to improve outcomes. The strategic stakeholder interviews competency expectations matched the Essentials (AACN, 2021a, pp. 35-39) expectations that advanced-practice population health management requires the competencies to lead and actualize changing health outcomes. In contrast, entry-level nurses need an understanding of "the general principles and practices for the clinical management of populations across the age continuum" (AACN, 2021a, p. 35). The strategic stakeholder interviews provide compelling evidence that the nursing workforce needs advanced development in population-focused care to improve actionable responses and change population health outcomes.

The powerful overarching theme discovered is the need for the post-bachelor nursing workforce to understand that the care focus needs to move from the point of care encounters to population-focused needs to improve actionable responses and change population health outcomes. Authors of Nurse Executive Competencies in Population Health (AONE & AONL, 2015) support the overarching theme that nursing needs to move understanding beyond the individual point of care encounters to population-focused needs. Nursing clinical practice knowledge needs to differentiate between population health and medical care/episodes of care (AONE & AONL, 2015).

The Robert Wood Johnson Foundation (2017) denotes many nurses are task-orientated in the high-demand practice environment; thus, nursing practice must be transformed to develop and facilitate all nursing roles for population-focused care. Population-focused care develops actionable responses based on the needs of the population (Nash et al., 2021). Nursing education

must be transformed to improve actionable responses and change population health outcomes (NASEM, 2021).

There is a need to prepare the current nursing workforce for new roles in population health management through continuing education and certification in population health competencies (NACNEP, 2016). The interviews indicated a need for an education program to prepare the post-bachelor nursing workforce for advanced practice in population health. The practice partnerships with the university support an innovative certificate program that could be a step to a degree program. The strategic stakeholders from academia emphasized the rigor and content of a seamless certificate to a degree program must match the academic credit to the intended population and the intended outcome.

Leadership in the professional science college and the Center for Population Health supports the population health certificate program. The practice partnerships with the university provide relationships for collaborative, innovative certificate program development. Even though the evidence supports the population health certificate program to target the post-bachelor nursing workforce, the evaluation of aim 3 to assess the feasibility of a post-bachelor population health certificate program discovered challenges to successful implementation.

Population Health Certificate Feasibility

The PARIHS Framework Guide (Hill et al., 2017) guided the needs assessment feasibility ranking for a post-bachelor population health certificate program. Hill et al. (2017) describe four categories (F1-F4) to analyze facilitation needs for successful implementation. The feasibility assessment was the category of F1 which means the evidence is strong, but some weaknesses and threats need management before successful implementation.

Program feasibility assessments evaluate resources by comparing the costs and the competitive market (Altschuld & Watkins, 2014). The Google, Microsoft, Bing, and Yahoo search for types of population health certificates discovered two programs focusing on health professionals instead of nursing. The certificate program offered at John Hopkins (2019) is a standalone certificate that has an option to be a step-in master's degree attainment. The Cornell University (n.d.) certificate program features seven courses (lasting two weeks each) for seven continuing education units (CEU). The search only populating two population-health certificate program offerings illustrates the challenges of marketing innovative programs. Attempts through multiple search engines to find other population health certificate programs with an option to step toward a graduate nursing degree were unsuccessful. Additional searches expanding to any nursing degree program in population health were unsuccessful, even though the target nursing college has a DNP in Population Health Leadership. Marketing a new program to attract potential students is an essential need.

The estimated cost to market the new population certificate program at the target nursing college is $33,333 to build an estimated 10-student cohort. However, an estimated 10-student cohort predicted tuition income is $80,400, which is deficient to cover the cost of one FTE associate professor at $99,717.61 (salary plus benefits). Marketing to attract additional student numbers to compensate for the $99,717.61 would increase the marketing cost and increase the cost deficit of a new certificate program. Financial capacity building is needed to manage the costs of new program development.

The main challenge to starting a certificate program in nursing is estimating the potential numbers of post-bachelor students enrolling in the program. Nursing's work overload experienced from the COVID pandemic is causing students to pause seeking master in science

degrees. The practice site's interest in the certificate program and willingness to identify cohorts for the certificate could offset initial marketing costs and concerns for potential students. Additional needs assessment of resources beyond the nursing college could discover capacity within the university to offset the costs.

Recommendations for the Population Health Certificate

The needs assessment identified weaknesses that may inhibit a successful population health certificate program in the nursing college. The next step is an additional needs assessment to evaluate the potential resources in current course offerings to balance the initial costs of new program development and identify the actual cost of the certificate program. Valentin (2001) recommends a resource-based SWOT analysis to discover the building blocks of capability. The further comparison of tangible and intangible resources, such as financial, intellectual, human, organizational, and relational, could identify building blocks of capabilities (Valentin, 2001). A curriculum mapping of current courses offered at both the nursing college and the professional science college could identify existing resources to offset the cost of the new population health certificate program.

Limitations

The population health competency themes discovered in the needs assessment are limited to the scope of the practice settings. The overarching theme discovered is that nursing needs to move understanding beyond the individual point of care encounters to population-focused care. Population-focused care reflects the clinical practice knowledge advocated by Nurse Executive Competencies in Population Health (AONE & AONL, 2015). Nursing clinical practice knowledge needs to differentiate between population health and medical care/episodes of care (AONE & AONL, 2015). The triangulation comparison of the results tested the validity of the

convergence of themes across the transcripts from academia and practice with the competencies named in the Nursing Essentials (AACN, 2021a, pp. 35-39). Qualitative research across other practice settings is needed to discover the convergence of themes beyond the needs assessment.

Barriers

The goal of the first steps of the reiterative interpretive thematic analysis was to identify the frequency of the competencies occurring within the interview transcripts to determine the priority competencies. The matched the color-coded post-it notes with the underlined concepts on the printed transcripts helped visualize emerging patterns; however, determining the priority competencies by quantifying the concept's frequency was unsuccessful. The creation of the excel spread sheet facilitated a deeper understanding of the emerging patterns and helped discover the relationships, differentiate main population health competencies from sub-competencies, and establish the overarching theme.

Another barrier discovered in the feasibility analysis is the estimation of potential post-bachelor students to enroll in the new population health certificate program in nursing. The director of graduate programs at the target university cited the downward trends of nursing students enrolling in graduate programs as a major concern prohibiting any new nursing post-graduate programs. The director of graduate programs at the target university recommended broadening the certificate program beyond the nursing college to the professional science college to increase potential student enrollment. Further analysis of the potential student numbers is needed to predict tuition income. Meeting with practice sites to determine actual student cohorts is needed to improve the estimation of tuition income.

Strengths

The integration of the PARIHS Framework Guide (Stetler et al., 2011) with Witkin and Altschuld's (1995) three-phase model effectively addressed the project aims; Aims 1) to identify population health competency needs, 2) to prioritize population health competency needs, 3) to assess the feasibility of a post-bachelor population health certificate program, and 4) to make recommendations for the certificate program. The needs assessment found compelling evidence of the need for a population health certificate program to advance the post-bachelor nursing workforce. The needs assessment effectively identified advanced-practice population health competency needs to lead and actualize changing health outcomes.

The integration of the PARIHS Framework Guide (Stetler et al., 2011) effectively analyzed the capability of launching a new population certificate program at the target nursing college. The feasibility assessment found challenges that needs to be managed before launching a new program in nursing. The integration of the formative evaluation by the PARIHS Framework Guide (Stetler et al., 2011) successfully identified the need to build capacity for a successful population health certificate.

The bridging of the Witkin and Altschuld's (1995) three-phase needs assessment model and the assessment of implementation facilitation by the PARIHS Framework Guide (Stetler et al., 2011) could apply to other settings. The dynamic process of Witkin and Altschuld's (1995) three-phase needs assessment model and the PARIHS Framework Guide (Stetler et al., 2011) effectively guided the needs assessment process. Further research on the hybrid framework's effectiveness in bridging the gap between the needs assessment and the capacity building for new education programs is recommended.

Future Recommendations

The needs assessment plan successfully completed Phase 2, the gathering of evidence supporting the population-health certificate program development and the assessment of the feasibility of successful implementation. Phase 2 was the action phase of the needs assessment, where data was gathered and prioritized to inform Phase 3, the population health competency recommendations for the educational program (Witkin & Altschuld, 1995). Phase 3 is post-assessment, the bridge to action plans to create the certificate program. The feasibility analysis found challenges and barriers to successful implementation. The future recommendations are that additional assessment of the university's current resources is needed to build the capability of the population health certificate program.

Curriculum mapping of current courses in both the nursing college and the professional science college could discover potential resources to balance the initial costs of new program development and identify the actual cost of the certificate program. Neville-Norton and Cantwell (2019) state curriculum mapping is an evidence-based approach to curriculum design that can facilitate competency attainment for graduates. Curriculum mapping is a program planning method that provides quality assurance and evaluates competencies met within courses. Neville-Norton and Cantwell (2019) further advocate for collaborative course designs across programs that value a collaborative model for healthcare practice. Neville-Norton and Cantwell (2019) emphasize establishing a team with expertise in the course offerings improves the curriculum assessment.

The needs assessment discovered potential resources for courses in existing programs for the potential population health certificate program. The target nursing college currently has courses for care management of populations in the entry-level second-degree nursing graduate with a master's in nursing and clinical nurse leader. The college also formerly had nursing

courses for an administration-focused Master in Nursing Science. The nursing college also has a Doctor of Nursing Practice in Population Health Leadership. The target university also has a population health minor offered in the college of professional sciences for undergraduates. Also, the college of professional sciences has a Health Economic and Clinical Outcomes Research program and is exploring a certificate program version that features the development and execution of value-based healthcare.

An in-depth collaborative curriculum mapping of the courses by a faculty team from nursing and professional science would provide an evidence-based resource analysis to inform the population health certificate. The collaborative curriculum mapping would match the population health competence needed for graduates with the student learning objectives in existing courses. In addition, the curriculum map analysis needs to consider the differentiation of educational levels necessary to advance nursing practice and the rigor and content to match academic credit at the graduate level, the intended population, and the intended outcome. The interviews of key stakeholders identified support for an innovative curriculum plan with rigor and seamless transition to a future degree program.

An example of an innovative curriculum plan with rigor and seamless transition matched options offered at John Hopkins University, School of Public Health, featuring a standalone certificate with an option to apply the certificate toward a Master of Applied Science in Population Health Management (2022). A promising prototype for the certificate program is the Thomas Jefferson University College of Population Health's (2022) innovative offering of different pathways for workforce development. One path features building population health skills toward achieving an Advanced Practice Certificate in either Population Health or Population Health Education. Another path features a graduate certificate focusing on the

foundations of population health across five online courses. The third option is a Master of Science Degree, which builds on the foundational concepts contained in the graduate certificate.

The uniqueness of the Master of Science Degree at Thomas Jefferson (2022) is the three tracks that focus on the science of health improvement or population health management strategies. The Management strategy focus is subdivided into two tracks: a clinical application of population health for strategy and management and an employer application with a deeper focus on population health principles in business and healthcare for employee populations within organizations. The program offers opportunities for multiple healthcare professionals, including nursing, to complete either a graduate certificate in one year or apply the certificate courses toward a master's degree in two years.

Curriculum mapping of the courses offered at the nursing college and the professional college can identify courses that could match the professional track's focus on either clinical care management or the business perspective of care management. The different tracks for the certificate program could build different professions participating in the population certificate program and provide collaborative opportunities for nurses to engage with other professionals to address population health issues. The expansion to other professionals affords opportunities to demonstrate nursing leadership in population health. The multiple professional student cohorts could increase student enrolment to counterbalance the cost of one FTE faculty load.

Other resources to build capability for the population health certificate program are the relationships with practice sites. Collaborations with practice sites could identify nurses and health professionals across the care continuum to join together in a cohort to address a value-based care delivery issue. Ongoing evaluation of the population health outcomes post the student

cohort capstone implementation may demonstrate population health outcome improvement and certificate program effectiveness.

The support of the health system to promote students participating in the certificate program reduces the level of marketing needed to promote a new education program. The projected change in population health outcomes through the improved nurses' understanding of population-focused care builds the reputation for the certificate program beyond the initial cohort. The settings that participate in the population health certificate program can become student immersion sites for the pre-licensure second-degree clinical nurse leaders enabling participation in ongoing population health improvement initiatives. The engagement of the future nurse leaders at the practice sites demonstrates their value in improved healthcare delivery.

Implication For Practice

Nursing can contribute significantly to improving population health outcomes. Population-focused care in nursing enables clinical practice knowledge to differentiate between medical care/episodes of care and population health. Population health is holistic care that reveals patterns and connections in lived experiences (Nash et al., 2021). Nurses see each person in the context of their life (Robert Wood Johnson Foundation, 2017). Embracing human relatedness is culturally congruent nursing care, where nurses discover the values, beliefs, expressions, and behavior patterns and understand how the patterns influence health (Leininger, 2006). Culturally congruent care assesses the complexity of human-environment interconnectedness to inform the right action and response (Ray, 2016).

Future Research

As earlier stated, the needs assessment discovered the convergence of the theme that population-focused care needs to move beyond the point of care encounters was limited to the

scope of the practice settings. My culturally congruent holistic nursing perspective also framed the theme analysis. In-depth interpretive phenomenological research is recommended to further explore the meaning of population-focused care in nursing clinical practice across other settings. Also, interpretive phenomenological investigation of the meaning of population health to other health professionals is recommended to discover a deeper understanding of how population-focused care can inform the right action and response. Another perspective to discover a deeper understanding is the patient perspective to discover how population health can inform the right action and response based on their needs.

Application to DNP Roles

The DNP graduate as an educator is prepared with specialized knowledge to translate science into clinical practice (McBroom Butler, 2016, p. 175). The DNP graduate can influence and strengthen advanced nursing practice (McBroom Butler, 2016, p. 176). The DNP educator can bridge academia and practice to advance the nursing workforce's clinical practice knowledge and meet population health competency expectations. Bridging practice needs with educational program development guides changing population health outcomes (Chism, 2019). As a DNP graduate with facilitation expertise, I can lead the transformation of nursing education to prepare the post-bachelor nursing workforce for advanced population-focused care.

Conclusion

The hybrid framework of Witkin and Altschuld's (1995) three-phase model (a logical structure for needs assessment) and the PARIHS Framework Guide (Stetler et al., 2011) (formative implementation evaluation model) successfully guided the needs assessment process. Evaluating population health competencies and priorities discovered that population-focused care is needed to guide the right action and response to improve population health outcomes.

Nursing education transformation can significantly improve population health outcomes by advancing population-focused care in practice. Advanced population-focused care informs actionable responses that meet the needs of the population.

The PARIHS Framework Guide (Stetler et al., 2011) found financial weaknesses that need management before the successful implementation of the population health certificate program. Further assessment of resources is required to build capacity for the population health certificate program. One assessment is the curriculum mapping of current course offerings to ascertain potential resources to build capacity for the population health certificate program. Another resource capacity assessment is the identification of student cohorts from the relationships with practice partners. As a DNP graduate with facilitation expertise, I can lead the population health certificate design by bridging practice needs in population health with educational program development.

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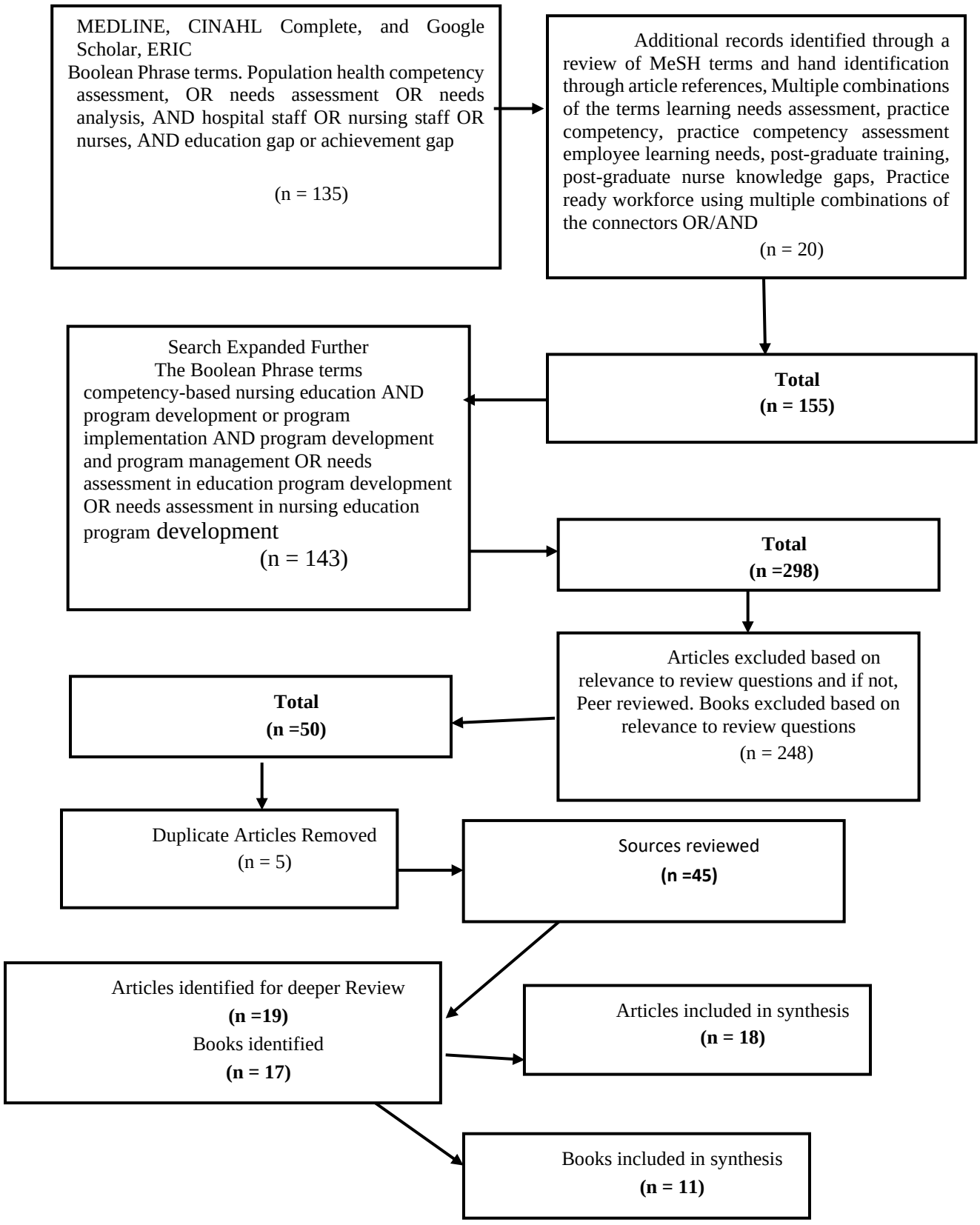
Appendix A

Prisma Flowchart of Number of Documents (Mohler et al., 2009)



Appendix B

Literature Review Matrix Needs Assessment

Note: The articles in the table are sorted according from the earliest year to the current year.

Articles occurring in the same year are alphabetized by author.

Literature Review Article Matrix					
Citation	Purpose	Additional Information	Populations	Methods	Comments
Witkin, B. R. (1977). Needs Assessment Kits, Models, and Tools. *Educational Technology*, *17*(11), 5-18.	An informational article providing Needs Assessment Kits, Models and Tools	The tools and kits resulted from Witkin's research	N/A	N/A	The models and instruments are, based on the sections: (1) goal rating procedures, (2) methods for gathering performance and other data on existing conditions, (3) discrepancy survey questionnaires, (4) complete kits for school use, (5) "futuring" techniques, (6) specialized techniques, (7) regional and state models, (8) community occupational needs assessments, and (9) communication-focused methods.
Valentin, E. K. (2001). Swot Analysis from a Resource-Based View. *Journal of Marketing Theory & Practice*, *9*(2), 54. https://doi.org/10.1080/10696679.2001.11501891	The article's purpose is to compare SWOT analysis with resource-based SWOT analysis and illustrate how more precise questions improve results.	The article provides a marketing perspective for strategic planning.	N/A	N/A	The article provides insights on resources to consider in the strategic planning for a new program design. One area is analyzing competitive offerings.

Cross, S., Block, D., Josten, L., Reckinger, D., Keller, L. O., Strohschen, S., Rippke, M., & Savik, K. (2006). Development of the public health nursing competency instrument. *Public Health Nursing, 23*(2), 108-114. doi.org/10.1111/j.1525-1446.230203.x	The article's purpose was to develop and test a measure to identify public health nurses' knowledge and skills in population-based public health nursing practice.	The evaluation team's literature review and personal expertise delineated public health nursing competencies at individual/ family, community, and systems levels. The instrument consisted of 195 items comprising population-based practice in public health.	The initial testing involved 40 regional nurses, from five upper Midwest states, with had a range of working experience who were not scheduled to participate in the educational course.	The developers utilized multiple phases of content validity testing and consulting experts locally and nationally.	The article depicted the steps utilized to test, pretest, and develop a population-based competency assessment
Lee, Y.-F., Altschuld, J.W., & White, J.L. (2007). Effects of multiple stakeholders in identifying and interpreting perceived needs. *Evaluation & Program*	An exploratory study- the goal was to describe multiple stakeholder perceptions of retention services, compare their views, and gain an in-depth understanding about reasons related to their perspectives, when different.	The context of this study was the Ohio Science and Engineering Alliance (OSEA), a statewide consortium of fifteen universities to increase retention and graduation rates of undergraduate minority students in science, technology, engineering, and mathematics (STEM) fields	Two stakeholder groups- students and faculty members/administrators Survey 1- target sample 1112 students and ninety-three faculty members/administrators Survey 2- Sixty students were randomly selected from the 145 respondents. All initial respondents in the faculty/administrator group indicated a willingness to participate in the follow-up study	The researchers utilized a mixed-method design containing elements of quantitative and qualitative approaches.	The article illustrates methods to compare stakeholder perceptions when there is a variance.

White, J.L., & Altschuld, J.W. (2012). Understanding the "what should be condition: in needs assessment data. *Evaluation and Program Planning, 35*(1), 124-132. doi-.org/10.1016/j.evalprogplan.2011.09.001	The article examines importance ranking scores in N.A. and considers problems when used as a proxy to measure the "what should be" condition.	The article is a synopsis of surveys for needs assessment and the concerns with the nature of the importance variable	N/A	N/A	The article provides information on the rating scales and importance variable potential problems and solutions.
Hung, H.-L., & Altschuld, J.W. (2013). Challenges in needs assessment: The Head Start Needs Assessment National Analysis. *And Program Planning, 38,* 13-18. doi. 10.1016/j.evalprogplan.2012.10.001	The article describes the Head Start Program multi-site Needs Assessment and the problems encountered with a secondary analysis	Head Start Program Analysis in Ohio	the Head Start Needs Assessment Survey Template was developed by a workgroup consisting of a cohort of HSSCO Directors and OHS staff	The national survey consisted of 170 items in ten priority areas. Items were rated in terms of relationships and difficulty by 4-point Likert-type scales.	Secondary data analysis can gain perspectives from the research questions and generate new questions, yet accuracy, completeness, consistency of measurement, and units of measurement are complicating factor
Mowry, M. J.; Crump, M. D. (2013). Immersion Scenarios Bridge the Education-Practice Gap for New Graduate Registered Nurses. *Journal of Continuing Education in Nursing*, *44*(7), 319–325, 2013. doi.10.3928/00220124-20130515-67	To bridge the gap for new graduates' educational immersion scenarios were developed from defined competencies and assessments for mental health nursing	The immersion scenarios facilitated the progression of new graduate R.N.s to competent nurses, and 100% of the new graduate RNs were able to independently manage care for mental health patients on a specialty patient care unit according to established standards of practice	new graduate RNs	RN Quantitative Evaluation of Immersion. During each immersion scenario, the specialty educator observed and documented the interventions of the new graduate RNs on each competency grid.	The article illustrates a type of competency verification-observation of performance. This example is in the clinical environment and is utilized to assist new graduate orientation

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncol ogy nursing forum*, *41*(5), 545–547. https://doi.org/10.1188/14.ONF.545-547	The article describes the method of triangulation-in qualitative research when there are multiple data sources.	Carter et al. (2014) state that selecting the qualitative interview process depends on the study's purpose and available resources.	N/A	N/A	Carter et al. (2014) state most qualitative researchers collect data through interviews when researching phenomena. In contrast, focus groups provide data from respondents hearing each other's ideas and providing information that may not have been made in an individual interview.
Dickerson, P. S. (2014). Needs assessment: Collecting the evidence *The Journal of Continuing Education in Nursing (45)*3, 104-105. doi:10.3928/00220124-20140224-11	Dr. Dickerson is the director of Continuing education for the Montana Nurses Association. Her descriptive article provides key questions for conducting needs assessments for continuing nurses' education.	This is a descriptive article on how nurse education planners collect data for effective learning activities. The article is in the context of the clinical setting. The data collected in the needs assessment determines where the learners are in relation to the desired outcomes.	N/A	N/A	Dr. Dickerson provides key questions for conducting a needs assessment. Dr. Dickerson emphasizes the needs assessment should explore the rationale for the education and the intended outcome. The article lists strategies to provide data for planning.
Silsawang, W., Boosabong, N. & Ajpru, H. (2014). Assessment of stakeholders needs regarding desirable characteristics of Nursing. *Social and Behavioral Sciences*, *131*(1), 470-475. doi.org/10.1016	Silsawang et al. (2014) utilized Witkin and Altschulds' (1995) Three-Phase Model as the conceptual framework to assess stakeholder's desired graduate characteristics	a navy nursing college in Thailand.	The sampling group comprised 400 persons. The majority were women (87.50%), subordinate/employees of graduates (66.25%), professional nurses (91.25%), and worked in hospitals	The ranking of the needs relied on the Modified Priority Needs Index (PNI Modified) (Wongwanich and Wiratchai, 2005). assessed by the differential value between desirable characteristics of graduates	The top three desirable characteristics are nursing ability in hyperbaric medicine, foreign language proficiency, and transformational leadership

/j.sbspro.2014.04.150			belonging to the Royal Navy (85.50%).	(I) and current characteristics of graduates (D), The formula for the calculation is as follows: PNI Modified = (I - D)/ D PNI = priority needs index. I = mean of desirable characteristics in graduates (Importance). D = mean of current characteristics in graduates. (Degree of success)	
Bigbee, J. L., Rainwater, J., & Butani, L. (2016). Use of a Needs Assessment in the Development of an Interprofessional Faculty Development Program. *Nurse Educator*, *41*(6), 324–327. doi: 10.1097/NNE.0000000000000270	Needs assessment for a faculty development program to foster collaborative interprofessional teaching and learning community	The article details faculty interest and preferences related to program content and delivery.	UC Davis health science faculty and administrators A total of 156 responses were received (18.3% overall response rate), including thirty-four administrators (22%) and 122 faculty (88%). Eighty-seven respondents were affiliated with the School of Medicine. The response rate among the School of Nursing respondents (n = 20) was 91% and among the School of Medicine participants (n = 136) was 16%	Cross-sectional survey design, anonymous electronic needs assessment survey. The internal survey consistency was evaluated to be strong (Cronbach's α = .89). Quantitative data were analyzed using the IBM SPSS version. The data pertaining perceived importance of topical areas were compared between respondents. P < .05 considered statistically significant	Emphasized that the learner needs assessment is essential for effective educational program planning. The assessment provided valuable information for the faculty development program content and program implementation; however, the article did not offer other steps in program development.

Espina, C. R., Bekemeir, B., & Storey-Kuyl, M. (2016). Population-focused practice competency needs among public health nursing leaders in Washington State. *The Journal of Continuing Education in Nursing, 47*(5), 212-219. doi.org/10.3928/00220124-20160419-06	The project's purpose was to collect additional data to help describe the training needs and make recommendations for the future training model to prepare public health nurses and other health department staff for a population-focused practice.	The emerging themes are the perceptions of an optimal population-focused training plan for PHN leaders and their staff and the knowledge gaps preventing them from realizing such a plan.	Of forty-nine eligible CHLC members, 17 agreed to participate. Community Health Leadership (CHLC) represents public health leaders from local governmental public health agencies in Washington State and makes up the primary organization for Public Health Leaders, PHN, from the state's local health departments	A team of three (from the University of Washington School of Nursing and the CHLC* leadership)-developed a semi-structured interview questionnaire. An email invitation was sent to CHLC membership in addition to an announcement at the listserv. The lead author conducted the phone interviews lasting 30-45 minutes.	PHN leaders identified needs for training in leadership and systems-thinking skill. The article recommends the Push-Pull Infrastructure model (Green and Glasgow, 2006) to promote understanding the adopters of population health competency needs (pull factors) and the drivers that pushed the innovation (push factors). The article recommended the importance of understanding the needs of the workforce countered balanced with the market demand in program development
Pilcher, J. (2016). Learning needs assessment; Not only for continuing education. *Journals for Nurses in Professional Development, 32*(4), 185-191 doi. 10.1097/NND.0000000000000245	The article provides an overview of learning needs assessments, inclusive of definitions, categories, measurement tools, and steps to the process	The article is a CE-learning module defining what a learning needs assessment is.	The population is the reader of the learning module, and the outcomes are the C.E. measure of learning. The inclusion of this article helps describe learning needs assessment. It does not provide evidence of effectiveness but has value in my reviews of the evidence	Review of the literature (30 references) to frame the descriptions of what is a learning needs assessment, measurement tools, and steps to the process	The article states the learning needs assessment is essential to educational designs. The article emphasizes matching the data collection tool to the desired learning outcomes.

			since it helps define.		
Fukada, M. (2018). Nursing competency: Definition, structure, and development. *Yonago Acta Medica, 61*(1). 1-7	Establish definitions and structures for competency definitions for nursing professionals. Fukada also researched training methods to teach competency.	Fukada reviewed research to establish the definitions and structures for nursing competency.	N.A.	Reviewed literature defining competency and the components of nursing competency and teaching competency.	Fukada noted the importance of defining nursing competency to inform the nursing education curriculum clearly.
Mohamadi, S., Borhani, F., Nikravan-Mogfrad, M., Abbaszadeh, A., Monajemi, F., & Mghaddam, H. R. (2019). Assessing of the learning needs of nurses in medical and surgical and emergency wards: Nursing continuing education requirements. *EurAsian Journal of Biosciences*, *13*(2), 695-700.	Identify learning needs for continuing education programs for clinically based nurses	The questionnaire consisted of thirty questions depicting nursing standards of care (developed from nursing literature and textbooks) which had the three ranking choices: I do not need to be educated, I need additional education, I need full education. And the participants were asked to prioritize their learning needs.	The population consisted of medical, surgical, and emergency nurses with a minimum of a BSN and six months of experience.	In a descriptive cross-sectional study identifying and prioritizing learning needs, 314 surveys were distributed. The survey's question validity was pretested by distribution to ten nurse educational supervisors—Cronbach's α 0.87.	An example of learning needs assessment in a clinical setting with questions designed through literature and textbooks defining nursing standards. The article illustrates testing question validity among practice supervisors and faculty before distribution to the hospital nurses and ranking education needs as a step-in needs assessment survey design

Virgolesi, M., Marchetti, A., Pucciarelli, G., Biagioli, V., Pulimeno, A. M. L., Piredda, M., & De Marinis, M. G. (2020). Stakeholders' perspective about their engagement in developing a competency-based nursing baccalaureate curriculum: A qualitative study. *Journal of Professional Nursing*, *36*(3), 141–146. doi.org/10.1016/j.profnurs.2019.09.003	Seeking the stakeholders' perspective in competence-based curriculum design as nurses, educators, managers, students, and academics, about the development of a competency-based baccalaureate nursing curriculum with stakeholder engagement	The three main categories of emerging themes: (1) a "bridge" that merges education and the work context, (2) stakeholder engagement – a contentious issue; and (3) stakeholder engagement – structuring a methodology.	A purposeful sample was used for this study, including Ph.D. students, clinical nurse educators, a nurse lecturer, a director of the nursing degree, a senior nurse, a member of the Italian Nurses Professional Board (OPI), and a dean of a university. A total of 14 of the 30 people contacted agreed to participate in the interviews 14 participants, seven women and seven men, whose mean age was 43.3 (SD = 10.69). Their education level was either a master's degree in nursing (71.4%) or a Ph.D. (21.4%)	Cohen's phenomenological methodology - a combination of Husserlian descriptive features and Gadamerian interpretive phenomenology. The interviews concluded when data was saturated	Engaging practice with education design is essential to help define what a practice-ready graduate is. The authors' findings are interesting that inclusion of the stakeholders could improve professional identity and job satisfaction. diverse stakeholders, such as faculty, students, professional organizations, and future employers, who could guarantee the development of a relevant curriculum
Laokhompruttajarn, J., Panya, P., & Suikraduang, A. (2021). The development of a professional competency evaluation model of nursing students. *International*	To develop a professional competency evaluation model of nursing students.	Thailand	nursing students and teachers	Four steps: 1) Studying and analyzing elements and indicators from documents, interviewing experts and focused groups, and surveyed opinions. 2) Drafting a	A global definition of professional competency and core competency skills tabulated from a multi-step process

Journal of Nursing Education. 13(2). 32-39. doi.10.37506/ijone.v13i2.14622				model by ten experts applying the multi-attribute consensus reaching. 3) Implementing among nursing students, classmates, and teachers. 4) Evaluating by participants engaged in the implementation. The statistics for data analysis comprised mean, standard deviation, median, interquartile range, the Mann–Whitney U test, and the Kruskal-Wallis test	
O'Neal, J., & Fencl, J. L. (2021). Strategies to Implement a Competency Assessment Verification Program. *AORN*	The Standardization of competency in a perioperative setting is based on collaborations with staff members and other key stakeholders (e.g., surgeons, risk management personnel) to identify and prioritize ongoing competencies.	perioperative stetting	N/A	Twenty-eight references informed the content of the article.	The study provided definitions and recommendations for the verification of competency. Noteworthy is the promotion of collaboration with multiple stakeholders to define the validation of competency.

Appendix C

Interview Guide

The interview format with the strategic stakeholders includes seven questions to help the participants focus on the domain of interest, population health competency. These questions will stimulate the participants' expression of the population health competency needs in the nursing workforce. The initial questions will guide the participants in sharing their background and establishing a focus for their experience.

1. I would like to know about your background.
    a. Where have you worked, and in what kind of care settings?
    b. Where do you work now, and for how long?
    c. What do you enjoy about your role?

2. Tell me about the meaning of the term population health to you.
    a. What does the term population health mean to you?
    b. How can population health change outcomes?
    c. How does your practice site incorporate population health?

3. Describe the skillsets needed for post BSN graduates to improve population health outcomes.
    a. What are the skills needed to assess population health for care of the individual?
    b. What are the skills needed to assess population health for care of populations?
    c. What data should be gathered to analyze population health?
    d. What are the nursing competencies for population health?
    e. How would you empower nurses to address population health improvement?

4. Which of the skills you described are priorities to improve population health?
    a. What are the gaps in nursing population health competency?
    b. How would you rank the gaps in nursing population health competency in levels of importance?
5. Tell me about Process improvement.
    a. What skills are needed for process improvement?
    b. Would you expect post- BSN graduates to understand how to gather and analyze data?
    c. What training is needed post- BSN graduates to participate in process improvement?

6. If you would design a population health certificate program, what would you include?
    a. What training is needed for post- BSN graduates to improve population health
    b. Share why you think it is important to include?
    c. How would the ideas you suggest address the population health competency gaps in nursing?
    d. Do you think a population health certificate program would be an interest in nursing workforce development for practice sites?

7. Is there anything else that you would like me to know about population health improvement?

Appendix D

Population Health Competency Gap

Pop Health Definitions	Emerging Gap Themes
I've been in nursing education long enough to know that we start out with the medical model and then we learned diseases. And then we went to a nursing model, and we learned concepts. And then we decided that all of the care was going to move out of the hospital into the community, and so, then we became community based. That's when we began to talk to students They always had public health and then we switched that to community health and that's when began to define the patient as individual's families and groups and then, when we went into that era when we were community-based programs, they became populations. And so, we began to talk with students about, not just dealing with the individual, and not just with the community, but also building and learning about the health problems of a population. And then we swung away again, back into hospital care. And/But now we're back again into population. And so, it again focuses on learning the impact and the populations have expanded. It used to be the United States, or the city in which the students were in, or the state in which the students were in, and now it's the world. And when we talk about nursing, we talk about the impact of populations within the country, but [also] the populations all over the world. It is broadening the perspective, but it adds, I think, an added dimension to the type of care we are able to provide. If you can get the student to look beyond just the individual to the population, I think that care is enhanced. It's sometimes difficult to do that, but I think that with the changes in the essentials, which will be part of what we need to use to develop the curriculum so that the population is truly	focus on providing care to individuals

going to be looked at each level of the curriculum which I think is necessary	
Population health is a focus on how to move the health system from a volume to a value perspective, and then along with that, would be all the things that are necessary to move from volume to value including broader collaborations with other providers like what you would see in an ACO type of arrangement; also, better connectivity to communities, to not only provide care but also be on top of what the issues are on the horizon, not just reactive, but be proactive; and to address issues of access and equity that are helpful or necessary frankly to move towards a true value perspective. I think briefly that's what I think is the perspective that population health has in this country. it's value in that it is #1: improving outcomes, #2: decreasing variation or disparity, and #3: increasing efficiency	needing to stratify its workforce so that nurses can develop additional expertise in these areas to drive change,
Caring for a large amount of people at once. Typically, in the past as a nurse, on a floor you get your four to five patients, you take care of them for 12 hours, and then you go home. Population health, currently, we have 15 contracts and 170,000 lives and I'm caring for all 170,000 lives. I'm trying to get every population of patient in, whether that be Medicaid, commercial, Medicare. You've got compliant, you've got non-compliant; it's a slew of everything. Year-to-year you start fresh, every year, trying to get the same people or different people that get added to your list in for that year to get them the needed care that they need.	I wish we could change those nurses that are at the bedside to look at the patient more as a whole when it comes to all of their comorbidities or issues that they have going on. Mostly when you're at the bedside you're taking care of that particular issue. So, my patients were always cardiac issues and I was monitoring their heart rhythm and their rate and making sure they were getting their metoprolol on time and that stuff, but you didn't ever think of the long-term; well, yes, their blood pressure was terrible in the hospital and you were constantly giving it and making sure it was going down and when you discharged them they go on their way, but do you know: Are they following up with their doctor? Are they going to look at their renal status? Are they making sure that all of that is being taken care of? Instead, just let's fix what we've got to fix right now and get them home. I wish that it would be more of a holistic approach at bedside.

It means caring for a population and that can be defined in a variety of different ways. But helping that population achieve its optimal health and through that optimal health, being able to manage the cost associated so that you have a good value for the interventions, and you actually have better outcomes through the interventions of population health.	I think they need an understanding of what population health is and how their role can impact the health outcomes. From a training perspective, I think nurses are well placed with that holistic view to make a really powerful impact in someone's health but it's more than just helping the individual understand their health condition. It's understanding what that individual can do even if it is in little steps that will then get them into a better health journey, and I think nurses are well-positioned for that but need additional training.
So, I guess for me population health means (and it's a big term) caring for people outside of the walls of a hospital or a doctor's office, meeting them where they are and figuring out what they need to maintain a healthy lifestyle where they live, where they work, outside of the institution.	One of the flaws I see with nursing instruction is that we learn of caring for the patient over their lifespan and that's done in segments, but we don't really do a lot of talking about how to care for the patient outside of the environment you're working in. For instance, if you are a nurse in the hospital, you only really learn how to provide care in that setting and not really think much else beyond those walls. And we have nurses who do community health, but that's kind of their only realm and they're not taught to think really much outside of that. And so, I think that we, as nurses, are used to working in silos and I think that begins with the education itself.
I think population health means (to me) a different way of improving the health and outcomes of our community or everywhere and how that approach may happen can be done in different ways for example, here at Tri-Health we could partner with businesses outside of our health care system and work with them on whatever goals that they may have whether it may be physical fitness or health fairs or just education and training to help our community become healthier and have better outcomes. Does that make sense?	Yes, and I think that's one part of it. Prevent it before it happens. I think a big piece of it too is education and awareness. [It's]getting to the level that they understand and giving them additional resources and when I say "they" I mean our community because there may be different teaching methods for this group as compared to that group or age dynamics if we were going into an extended-care facility or nursing home our goals were, maybe its nutrition or active lifestyle, or whatever the case may be, and just trialing different things or what the emphasis should be to help that population of people. We even have the opportunity with our patients who are discharged home from our hospitals;

	maybe it's diabetic education or follow up or "How can we improve the community when we're discharging a patient and they're a newly diagnosed diabetic? What kind of follow-up can we do with them to help them on this journey so they're not having to be readmitted or their health changes for some reason because they weren't following the protocol that they were [given]? So, there are so many variations to what we could do to help improve.
Note. The table depicts the definitions of population health and the gaps in population health across the six strategic stakeholder interviews. Column one contains the quoted population health definitions. Column two contains the emerging gap themes though quotes from the interviews. The rows are color coded to differentiate the different stakeholders.	

Appendix E

The Essentials: Domain 3-Population Health (AACN, 2021a, pp. 35-39)

Competency 3.1 Manage population health.	
Entry	Advanced
Define a target population including its functional and problem-solving capabilities (anywhere in the continuum of care).	**Assess** the efficacy of a **system's** capability to serve a target sub-population's healthcare needs
Assess population health **data**	**Analyze primary** and **secondary** population health **data** for multiple populations against relevant **benchmarks**.
Assess the priorities of the community and/or the affected clinical population.	Use established or evolving methods to **determine population-focused priorities** for care.
Compare and contrast local, regional, national, and global benchmarks to identify health patterns across populations.	**Develop a collaborative approach** with relevant stakeholders to address population healthcare needs, including evaluation methods
Apply an understanding of the public health system and its interfaces with clinical health care in addressing population health needs	**Collaborate** with appropriate stakeholders to **implement a sociocultural and linguistically** responsive intervention plan
Develop an action plan to meet an identified need(s), **including evaluation** methods.	
Participate in the implementation of sociocultural and linguistically responsive interventions.	
Describe general principles and practices for the clinical management of populations across the age continuum.	

Competency 3.2 Engage in Partnerships	
Entry	Advanced
Engage with other health professionals to address population health issues.	**Ascertain** collaborative **opportunities** for individuals and organizations **to improve population health.**
Demonstrate effective collaboration and mutual accountability with relevant stakeholders	**Challenge biases and barriers** that impact population health outcomes.

Use culturally and linguistically responsive communication strategies	**Evaluate the effectiveness of partnerships** for achieving health equity
	Lead partnerships to improve population health **outcomes.**
	Assess preparation and readiness of partners to organize during natural and manmade disasters
Competency 3.3 Consider the socioeconomic impact of the delivery of health care.	
Entry	Advanced
Describe access and equity implications of proposed intervention(s)	**Analyze** cost-benefits of selected population-based interventions
Prioritize patient-focused and/or community action plans that are safe, effective, and efficient in the context of available resources	Collaborate with partners to **secure and leverage resources** necessary for effective, sustainable interventions
	Advocate for interventions that maximize cost-effective, accessible, and equitable resources for populations
	Incorporate ethical principles in resource allocation in achieving equitable health
Competency 3.4 Advance equitable population health policy	
Entry	Advanced
Describe policy development **processes**	**Identify opportunities to influence** the policy process
Describe the impact of policies on population outcomes, including social justice and health equity.	**Design comprehensive** advocacy **strategies** to support the policy process
Identify best evidence to support policy development	**Engage** in strategies **to influence** policy change
Propose modifications to or development of policy **based on population findings**	**Contribute to policy development** at the system, local, regional, or national levels
Develop an awareness of the **interconnectedness** of population health **across borders**	**Assess the impact** of policy changes
	Evaluate the ability of policy to address disparities and inequities within segments of the population

	Evaluate the risks to population health associated with globalization
Competency 3.5 Demonstrate advocacy strategies	
Entry	Advanced
Articulate a need for change	**Appraise** advocacy priorities for a population
Describe the intent of the proposed change	**Strategize** with an **interdisciplinary** group and others **to develop effective advocacy** approaches
Define stakeholders, including members of the community and/or clinical populations, and their level of influence	**Engage in relationship-building activities** with stakeholders at any level of **influence,** including system, local, state, national, and/or global
Implement messaging strategies appropriate to audience and stakeholders	**Demonstrate leadership skills** to promote advocacy efforts that include principles of social justice, diversity, equity, and inclusion.
Evaluate the effectiveness of advocacy actions	
Competency 3.6 Advance preparedness to protect population health during disasters and public health emergencies	
Entry	Advanced
Identify changes in conditions that might indicate a disaster or public health emergency	**Collaboratively initiate** rapid response activities to protect population health
Understand the impact of climate change on environmental and population health	**Participate** in ethical decision making that includes diversity, equity, and inclusion in advanced preparedness to protect populations
Describe the health and safety hazards of disasters and public health emergencies	**Collaborate** with interdisciplinary teams **to lead** preparedness and mitigation efforts to protect population health with attention to the most vulnerable populations.
Describe the overarching principles and methods regarding personal safety measures, including personal protective equipment (PPE)	**Coordinate** the **implementation** of evidence-based infection control measures and proper use of personal protective equipment
Implement infection control measures and proper use of personal protective equipment	Contribute to **system-level planning, decision making, and evaluation** for disasters and public health emergencies
Note. The action verbs of the sub-competencies are bolded for comparison between practice expectations for entry and advanced practice. The managed care items are highlighted yellow to emphasize the differentiation of entry and advanced practice expectations of the nursing workforce in population-focused care management. American Association of Colleges of Nursing (AACN). (2021a). The essentials: Core competencies for professional nursing education. Domain 3 (pp. 35-39). https://www.aacnnursing.org/Portals/42/AcademicNursing/pdf/Essentials-2021.pdf. 	