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Use of a Pediatric Cardiovascular Nursing Consortium for Development and Evaluation of Quality Measures: The C4-MNP Experience

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Background: The evidence linking nursing care and patient outcomes has been globally demonstrated. Thus, it is time for translation and application of this evidence to robust measurement that uniquely demonstrates the value of nursing care and the characteristics of the nursing workforce that contribute to optimal patient outcomes.
Objective: The aim of this study was to identify and develop standardized measures representative of pediatric nursing care of the cardiovascular patient for benchmarking within freestanding children's hospitals.
Methods: Using a consensus-based approach, the Consortium of Congenital Cardiac Care-Measurement of Nursing Practice (C4-MNP) members developed quality measures within working groups and then individually critiqued all drafted measures. Final draft measures were then independently reviewed and critiqued by an external nursing quality measurement committee. The final quality measures were also made available to a national parent support group for feedback.
Outcomes: The development process used by C4-MNP resulted in 10 measures eligible for testing across freestanding children's hospitals. Employing a collaborative consensus-based method plus implementing the criteria of the National Quality Forum and external vetting period provided a strong framework for the development and evaluation of standardized measures.
Next Steps: The Consortium will continue with implementation and testing of each measure in 9 of our 28 collaborating centers. This activity will support initial development of benchmarks and evaluation of the association of the measures with patient outcomes.

Background and Problem Statement

The evidence linking nursing care and patient outcomes has been globally demonstrated (Aiken, Clarke, Sloane, Lake, & Cheney, 2008; Cho et al., 2015; Hickey, Gauvreau, Curley, & Connor, 2013; Ma, McHugh, & Aiken, 2015). The next mandate is for translation and application of this evidence to robust measures that uniquely demonstrate the value of nursing work and the characteristics of the nursing workforce that contribute to optimal patient outcomes. The absence of nurse-sensitive measures is particularly apparent in the field of pediatric nursing. The characteristics of this patient population necessitate specialized nursing care that historically has not been well delineated or evaluated (Curley & Hickey, 2006; Lacey, Klaus, Smith, Cox, & Dunton, 2006). Within the field of pediatrics, care for children with cardiac diseases is even more specialized, requiring a highly-skilled nursing staff with the knowledge and

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experience necessary to manage a complex and fragile population of patients.

To address this specialized care and quality measurement, we created the Consortium of Congenital Cardiac Care-Measurement of Nursing Practice (C4-MNP) by recruiting nurse leaders with clinical, administrative, and research expertise from pediatric cardiovascular programs across the United States. The goal of C4-MNP was to establish a national collaborative to identify nursing care actions or measurement in the complex pediatric cardiovascular care environment. The first step or phase I to accomplishing this broad objective was to learn the current state of pediatric cardiovascular nursing measurement (structure, process, and outcome measurement) in freestanding children's hospitals across the country (Connor, Mott, Green, Larson, & Hickey, 2016).

In the initial phase I qualitative study, nurse experts from pediatric cardiovascular programs participated in in-depth interviews about their existing quality measurement practices and the challenges they faced in documenting and evaluating the quality of nursing care within their programs. At the time of these interviews, there were 43 freestanding children's hospitals with cardiovascular programs that had annual volumes of greater than 50 cases. Nursing directors from each of these programs were invited to participate, and 20 responded. These programs had a median annual congenital heart defect repair volume of 279 cases (range: 107–806). In many cases, the program director was the nurse leader who was interviewed, but in other cases, alternate nurse leaders participated. All of the leaders interviewed had decision-making authority for nursing practice within their programs and were at the manager level or above.

Each interview was conducted using a semi-structured interview guide by two doctorally-prepared nurse researchers and audio-recorded for subsequent transcription. After each interview, the researchers conducted a debriefing to discuss initial interpretations and generate questions that could inform subsequent interviews. During the analytical phase, interview transcripts were coded by members of the research team, and these codes were used to generate broader themes. To ensure the integrity of the analytical process, the team returned to six of the participants for member-checking of the generated codes and themes.

The findings revealed variable practices across the country, universal difficulty generating cardiovascular-specific measures, and an inability to effectively evaluate existing measures due to the lack of national benchmarks. Many of the repeated concerns related to the need to ensure that knowledgeable, experienced nurses were available in sufficient numbers to deliver necessary care to patients and families, particularly during periods of program growth (Connor et al., 2016). Nurse leaders verbalized the importance of cardiovascular nursing-focused measurement to help justify optimal staffing models in the current environment of cost reduction and capacity needs. Measures encompassing experience, education, and retention were perceived as key for benchmarking. The quality of the work environment, adult-based care, patient/family-centered care, nutrition, pain management, prevention of device related pressure ulcers, and clinical deterioration were additional items highlighted as priority areas for measurement (Connor et al., 2016). Participants were asked about their interest in continuing involvement in the consortium and were encouraged to identify additional nurses from their sites with clinical and/or measurement expertise who would be willing to engage in the consortium's activities. Using the information gained in this study, the phase II activities described below focused on measurement development for each of the seven topics areas as well as an internal and external review of the proposed measures.

Intended Improvement and Study Question

The objective of C4-MNP phase II work was to identify and develop standardized measurement representative of pediatric nursing care of the cardiovascular patient for benchmarking within freestanding children's hospitals.

Methods

Setting

C4-MNP is a collaborative forum with representation from freestanding pediatric hospitals in the United States. Boston Children's Hospital serves as the lead site and is responsible for the coordination of consortium activities and data management. The membership of C4-MNP includes nursing administrators, clinical nurse specialists, researchers, and bedside clinicians. As the work of the consortium was disseminated, additional members were added. The 28 programs currently participating are listed in Figure 1 and have a median annual volume of 324 congenital heart defect repairs (range: 167–943). Recognizing that care of the pediatric patient is a synergy between nurse and family, the consortium partnered with the national parent support group Mended *Little* Hearts. The parent partners from Mended *Little* Hearts provided insight about family concerns and expectations. In addition, they helped to critique developed measures and generate ideas for future measure development.

Planning the Intervention

Phase II began in fall 2013 with the dissemination of the results of the phase I work via an all-site conference call. Over 40 leaders from across the sites participated in the call and committed to active involvement in the consortium's continued work. These leaders included nurses from a variety of roles within their programs, ranging from clinical nurse specialists responsible for the quality of clinical care on an individual unit to directors with oversight of an entire cardiovascular program. The themes from phase I generated discussion about areas of focus for measurement development and aided in the formation of workgroups. Utilizing member consensus, participants identified and agreed on