



Pediatric Research Reports Department

## Nursing Research at Seattle Children's: Grassroots Inquiry

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It is my pleasure to highlight nursing research at Seattle Children's. This column offered by the *Journal of Pediatric Nursing* is commendable, drawing attention to nursing research activities at pediatric centers as well as pediatric units embedded within larger health care systems. First, a brief introduction to Seattle Children's is provided. Before describing the research program at Children's, I'll outline of the role of research in the world of evidence-based nursing practice and offer an argument for the needs for increased pediatric nursing research, particularly research in hospital settings.

Seattle Children's serves the Seattle area and beyond with close ties to the four state WAMI region (Washington, Alaska, Montana, and Idaho). In 2017 there was a total of over 429,000 patient visits, 361,000 ambulatory visits, and over 43,000 emergency department visits. In-patient beds number 371 and average length of stay is 5.7 days. The WAMI region accounts for 96% of patients seen at Children's. In 2017 payor mix represented 56% government sources and Seattle Children's provided \$165 million in uncompensated care. Seattle Children's employs 1911 nurses, 259 serving in advanced practice roles. Innovation is a designated values-based behavior throughout Seattle Children's and innovation and improvement are components of the professional practice model as well as structurally represented in the nursing shared-governance structure. Seattle Children's received its third Magnet re-designation in 2018.

Evidence-based practice (EBP) has gained widespread application in nursing following inaugural discussions dating from the 1990's. Writings from this era emphasize the importance of nurses providing direct care asking questions that drive research (Simpson, 1996). While evidence-based practice is a "best practice", many attempts to review and synthesize evidence reach a similar conclusion: evidence is insufficient or lacking. This evidence limitation is particularly problematic in pediatric nursing. Although there are approximately 2.9 million RNs in the United States (Bureau of Labor Statistics, United States Department of Labor, 2017) and approximately 60% of nurses work in hospital settings (National Council of State Boards of Nursing, 2019), only 5.7% of nurses report working in pediatric hospital settings and 13% in pediatric non-hospital settings (Institute of Pediatric Nursing, 2019). Yet, children under 18 years of age comprise 23% of the US population (United States Census Bureau, 2017). About 180,500 RNs provide hospital care for the

pediatric population (Institute of Pediatric Nursing, 2019). Thirteen percent of advanced practice RNs, 8.7% of CNSs, and 16% of nurse practitioners work in pediatric settings, (Institute of Pediatric Nursing, 2019).

The volume of nursing research focused on pediatric populations is proportional to the above numbers. Despite many excellent pediatric nursing researchers conducting current and past projects (e.g. see *Journal of Pediatric Nursing*, volume 34, special issue on The Hospitalized Child), pediatric nursing research often feels like an evidence desert. Paired with the numbers is the complexity of conducting pediatric research. Children are federally designated a vulnerable population with well-placed restrictions guiding research activities. Age and development are important considerations in study design and method. Pediatrics encompasses all medical specialties. Potential pediatric research subjects are frequently limited in number. Child physiology and behavior show rapid change over time. Instrumentation is challenging. These and other considerations influence the amount of available pediatric research evidence in general. Hospital based pediatric nursing is further challenged by limited evidence directly relevant to practice.

At Seattle Children's our nursing research program is centered in grassroots nursing questions derived from practice and generation of knowledge when evidence is limited. Although nursing research was an ongoing activity at Children's, the current formal nursing research structure began in 2013 with appointment of a Nurse Scientist to further develop and guide the program. This initial position involved a 25% position subcontracted with the University of Washington and grew within a year to the current 50% position. The Nurse Scientist serves within the Nursing Practice, Professional Development, and Innovation department, under the direction of Debra Ridling, Associate Chief Nurse and Senior Director, Nursing Practice and Research. Nursing research at Children's is supported via operations funds. Within the Children's nursing shared government system, nursing research is centered in the Innovations and Improvements Council. Newly hired nurses are introduced to nursing research at Children's through the Nurse Residency Program. The nursing research program is closely affiliated with the Children's Research Institute's Center for Clinical and Translational Research (CCTR) and in 2017 the Center for Pediatric Nursing Research was instituted within CCTR. Our affiliation with CCTR is particularly advantageous. Currently one designated biostatistician provides analytic support for internally funded and non-funded nursing projects. Through the CCTR funded nurses may hire clinical research associates who can support a variety of research activities including subject recruitment and enrollment, data collection, and data management.

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Nurses may also utilize REDCap web-based survey and data management as members of CCTR.

While nursing research is a recognizable entity at Children's, in reality research is highly integrated with evidence-based practice and quality improvement (QI) activities. The “umbrella” encompassing research, quality improvement, and EBP at Seattle Children's is clinical inquiry. Nurses start with a clinical (grassroots) question related to their practice. The direction depends on existing evidence, particularly evidence relevant to the specific patient population of interest. While an EBP approach is the starting point, frequently the clinically relevant questions raised by nurses lack evidence. This may be a general lack of solid evidence or more specifically, lack of evidence related to a specific age group or clinical condition. Generation of information through research is the next step. When evidence supports practice change, a “research mentality” supports QI activity, especially systematic approach, method and particularly process and outcome measures. Our overall goals is a culture of inquiry (DeGrazia, Difazio, Connor, & Hickey, 2019), starting first with a nursing question. This goal reinforces the importance of research focused on hands-on nursing care delivery (Kearney, 2018).

Nursing grants are essential to the nursing research program at Children's. The funding mechanism is open to all RNs and provides \$10,000, two-year grants. Most frequently, the funds are utilized to purchase instruments, hire clinical research associates, provide subject payments, and limited support of nurse salary. Our grant program is a mentored program – nurses receive hands-on guidance throughout application submission, conduct of the project, and writing. To date 31 grants have been funded, 7 were not implemented due to position changes. Data analysis has been completed in 16 projects and grant productivity includes six journal publications, submitted manuscripts, and a number of conference presentations. In addition to internal research grant funds, unfunded research is also supported. Nurses with existing data (research or QI) take advantage of no-cost biostatistical assistance provided through the nursing research program.

The predominant role of the Nurse Scientist is mentoring. Nurses are clinical experts with budding research interests, however their skill set may not include the conduct of research. Mentoring is one-on-one with an individual nurse or team of nurses. The focus is “just in time”, providing individual guidance specific to the project and timeline. Additionally

a number of resources have been developed to promote research and assist research activities. For example, developed online nursing research guides include those for human subjects training, writing Nursing Research Grant proposals, IRB application, EXCEL for beginners, poster and podium presentations, and writing and publishing. The Nurse Scientist works closely with CCTR and other organizational research supports, assisting nurses to access and use resources. The Nurse Scientist also promotes affiliations with academic partners including faculty and student research projects.

Like children in the first six years of life, our research program has grown! Children's hosts an annual Nursing Research Symposium, which is increasingly regional in attendance. The overall emphasis on inquiry and research in particular has stimulated increased publication by nurses. As our Center for pediatric nursing research foundation has stabilized, we have enjoyed a change in our culture of inquiry and new opportunities for collaboration and growth. Specifically, we have 3 nurses in PhD programs, have increased our academic-clinical partnerships, multidisciplinary studies, exploring opportunities for bench research, and are in the process of our first industry sponsored device study. Yet growing pains are a challenge. Without a doubt, the largest barrier to research is time. Nurses' job descriptions include research, particularly for those in the CNS role, yet the demands of a busy quaternary hospital setting compete for time.

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