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Multi-stakeholder qualitative research methods to impact culture of care practices in the ICU

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Recent research suggests that pediatric critical care may have exchanged decreased mortality for increased morbidity with children and families struggling to perform at their pre-morbid levels after a pediatric intensive care unit (PICU) stay.[1] As a result, PICU providers are now turning their attention to improving short and long-term outcomes for their patients while the patient is still in the ICU. A growing body of research investigating potential targets for intervention includes the impact of critical illness on emotional health outcomes[2] and delirium and associated effects on cognition and survival.[3,4] Pertinent to the article by Zheng et al's article,[5] recent research suggest that rehabilitation services implemented in the ICU in critically ill adults and infants improves patient-centered outcomes, and is changing clinical practice.[6–8] The same appears to be true for children as continuing evidence suggests that the practice of prolonged bedrest is no longer considered appropriate in critically ill children.[9] Limited but promising evidence with pediatric patients suggests that early mobilization is safe and feasible in critically ill children.[10–12] In the current climate of evidence-based medicine, ICU-based rehabilitation, like other interventions, is urged to prove its worth (and safety) via rigorous scientific research often resulting in the use of limited methods to explore complex therapeutic issues. In addition to the need for efficacy studies, surveys of providers demonstrated numerous challenges (e.g., staff and family

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perceptions of benefit and adequate rehabilitation human and equipment resources) to applying ICU-based rehabilitation interventions that need solutions for best implementation and outcomes results.[13,14] A deeper understanding of the perceived challenges and benefits seen from various stakeholder viewpoints may be harder to define. This is where qualitative research, designed to explore the complexity of human behavior and generate deeper understanding of illness behaviors and therapeutic interactions, is needed.

Zheng and colleagues have done just that in their excellent paper on the implementation of in-bed cycling intervention as a new method of early mobilization. By interviewing patients, family caregivers and clinicians on their perspective on the use of in-bed cycling, the authors explore barriers and facilitation to both early mobilization overall and in bed cycling in particular. Understanding the implementation of a new intervention from a multi-stakeholder point of view promotes broader understanding and increases the likelihood of successful implementation of a new approach.

The use of qualitative research methods in the formative stages of implementation has been part of social science research for many years. Zheng et al's work follows the important steps of sampling, codebook development, triangulation, multiple coding, and peer debriefing to ensure quality and usefulness of their findings.[15] Qualitative interviews are structured conversations and as such are both art and science. As a science, there are general rules and normative standards that should be followed and as with art, techniques can be modified to reflect the needs of research. As Michael Quinn Patton described, "The analysis of qualitative data involves creativity, intellectual discipline, analytical rigor and a great deal of hard work."[16] Though the analysis is based on the descriptions presented by the interviewees, the interpretations in the final reports are those of the researcher(s), thus many of the data analysis techniques used in this study allowed for structure and flexibility, important components of qualitative data analysis.[17] In terms of structure in this study, the five-member research team consistently used the same coding techniques to develop their codebook (similar to a data dictionary in quantitative parlance), each interview was coded independently by two investigators using the codebook. For flexibility, new codes were only added to the codebook with the agreement of at least two of the investigators and any conflicts were resolved by a third independent coder. For both structure and flexibility, the research team collaboratively participated in the thematic analysis of the codes to reflect what the interviewers said and answer the research purpose or question. In this case, what are the impressions of the different stakeholders regarding early mobilization as a method of therapy in the PICU and what are the perceived barriers and facilitators to its implementation.

Findings from the study show that overall parents, clinicians and patients support the use of early mobilization including in-bed cycling. Barriers to in-bed cycling (an even newer concept than early mobilization) included combined low prioritization by staff with low patient motivation and a lack of physiotherapy resources and confidence in safety of the intervention. Facilitators included 1) positive research staff attitude, 2) certain features of the ergometer which made it interesting and fun for the patient and families, 3) experience and familiarity with the ergometer, and 4) recognition of the benefits for the patient. Perhaps what stands out in these findings is how patients and clinicians viewed collaboration and

engagement in research as facilitating the implementation of the novel therapy. The findings highlight the growing interest and benefits in engaging patients and families in health and health care related research.[18] Engagement in the research process and seeing the research team and clinicians work together in this study seemed to foster the trust of parents in the health care team and belief and interest in trying a new therapy. Based on their findings the authors call for prioritizing rehabilitation as an integral and early part of the critical care treatment, providing dedicated resources and using a team approach that includes family engagement to address the identified barriers and necessary changes in practice culture.

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