LESSONS AND INSIGHTS FROM THE IMPLEMENTATION OF THE COHORT MODEL FOR A PEDIATRIC INTENSIVE CARE UNIT: AN INTEGRATED MIXED METHOD RESEARCH

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Background: A new cohort model for different subspecialty patients is envisioned as the future for pediatric intensive care units (ICUs). This model creates smaller diagnosis pools, allowing concentration of expertise and collaboration of ICU physicians with subspecialists and nurses. We implemented the cohort model ICU with 4 primary ICU cohorts: surgical, neurology, pulmonary and oncology. We sought to examine the perception of ICU staff and subspecialists regarding the new model and to assess how the organizational change affected working environment.

Materials/Methods: We conducted an integrated mixed methods research (IMMR) consisting of a pre and post cohort surveys, operational observations and semi-structured interviews of the ICU staff. We used systematic approach to developing a survey using teamwork and psychological safety as conceptual frameworks. Through an iterative process, we derived a 29-item, 5-point Likert Scale questionnaire. Descriptive statistics and Friedman's test were used to determine differences in participants' perceptions across ICU cohorts. Sensitized by the quantitative data, an independent intensivist conducted a thematic analysis from the filed notes and interviews. The IMMR findings were presented to 8 ICU staff and subspecialists for member checking and gaining new mixed insights for the final report.

Results: A total of 308 and 269 responses from pre- and post-cohort surveys were analyzed. Analyses of survey items pertaining to teamwork and psychological safety showed significant differences among cohorts for 13 items before and for only 9 items after the cohort model. Though 87% of physicians viewed the new model as positive, only 76% of nurses did so. A significant proportion (nursing 55%, physicians 46%) perceive room for improvement in the area of psychological safety within the new communities. Five themes identified included: Community-from disruption to redistribution, Transforming identity-expert and generalist, Vision for advancing the field, Expansive learning from focused practice and Subspecialists embracing super-specialization.

Conclusions: Using IMMR, we gained valuable mixed insights about work environment from our participants. The cohort model implementation was viewed as disruption but helped form new, distributed communities of practice and reduced variability around teamwork and psychological safety across subspecialty cohorts. Organizational strategies were identified to address issues and enhance the cohort model ICU.