Children’s Cancer Center as a Clinical Microsystem: Assessment

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Background & Purpose

Clinical Microsystems
- Defined as small, organized groups of clinicians and staff working together with a shared purpose to provide the best possible care to a defined set of patients
- Provide a frame for performance improvement efforts at the local level, which are essential for organizational success
- The Dartmouth Institute has created a clinical microsystem model for improvement, which includes an assessment of the 5Ps (Purpose, Patients, People, Processes and Patterns) leading to formulation of themes, global aims and specific aims followed by idea generation and testing using sequential PDAs (figure 1).

Characteristics of High-Reliability Organizations
- A study conducted by Dartmouth in the 1990s identified key characteristics of high-performing clinical Microsystems (figure 2). Karl Weike and Kathleen Sutcliffe identified characteristics of high-reliability organizations, which have been applied to health care. Specifically, our children's hospital has successfully deployed these principles to improve quality of care and patient safety.

The Importance of Colleague Engagement to High-Reliability
- Training, continuing education resources and colleague support are directly related to colleague engagement.7 Performance and confidence in ability increase with personally and professionally satisfied employees.8

Purpose: We chose the Children's Cancer and Infusion Center at the Lehigh Valley Reilly Children's Hospital as a model cell for using the clinical microsystem approach, high-reliability principles and employee engagement theory to guide an assessment of the children's cancer and infusion center and explore opportunities for improvement.

Methods

Staff Interviews
- Selective communication of ideas
- Not adequately trained on insurance, limited new hire training, limited continuing education resources
- Physicians seeing patients in timely fashion is inefficient and variable

Clinical Microsystems Assessment Tool
- Lowest scoring categories (3.33 out of 5) were regarding process improvement and training and resource.
- Highest scoring category, and the only category with a score above 4 out of 5, was regarding patient focus in the CCC

Daily Post-Huddle Surveys
- Statements about effectiveness, efficiency, how pertinent discussed information was and how on task discussions were all scored below 4.75 out of 5

Results

Colleague Engagement Survey
- Patient flow survey validated results of a previous study done in the CCC that showed patients waiting >30 minutes to see physician
- Lack of consistent processes, such as whether or not a patient got roomed, when physicians saw patients and when labs were ordered, created lag time during the patient flow journey

Communication and Information Sharing
- Variability, inefficiency and uselessness of daily huddles was identified as an issue
- Staff concluded that safety and high reliability could be improved with better communication and information sharing
- Psychological safety could be improved by strengthening the perception that speaking up is welcome and that the opinions of others are valued

Discussion

Colleague Engagement for High Reliability
- Lack of training and information access, specifically among nurses, created an unsupportive environment when new staff began working at the CCC
- Trauma stewardship was identified as an issue in both staff surveys and staff interviews
- CPHON certification among nurses was identified as an opportunity for improvement

Patient Flow
- Assessment of the patient flow journey validated results of a previous study done in the CCC that showed patients waiting >30 minutes to see physician

Communication and Information Sharing
- Variability, inefficiency and usefulness of daily huddles was identified as an issue
- Staff concluded that safety and high reliability could be improved with better communication and information sharing
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Conclusions

High Reliability
- The CCC will become a model of high-reliability systems, tools, practices and behaviors for other areas to follow, both at Lehigh Valley Reilly Children's Hospital (LVRCH) and other children’s hospitals

Patient Flow
- Improve the patient flow process to reduce wait times and improve both the patient and family experience as well as the colleague experience

Colleague Engagement
- Create consistent and reliable processes for common functions with more effective education and training for staff, and improved communication and information sharing
- Improve psychological safety
- Improve trauma stewardship and reduce risk of burnout

Daily Huddle
- Improve the efficiency and effectiveness of morning huddles
- Promote colleague engagement in ensuring patient safety and continuous quality improvement

Intervention techniques addressing daily huddle, patient flow and colleague engagement are recommended

REFERENCES
4. Adapted from The Dartmouth Microsystem Improvement Curriculum (12 pg 9)

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