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 PDSAs (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.[2] Performance and confidence in ability increase with personally and professionally satisfied employees[3]

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.

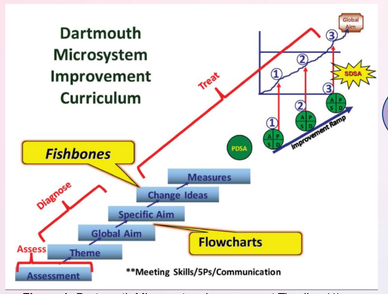

Figure 1: Dartmouth Microsystem Improvement Timeline (4)

Figure 2: 9 Characteristics of High Performing Units (5)

Methods

Colleagues

- Staff Interviews
- Clinical Microsystem Assessment Tool
- Daily Post-Huddle Surveys
- Colleague Engagement Survey

Patients

- Patient Survey
- Patient Flow Tracker/Time Study

Processes and Patterns

- IHI HRO Journey Assessment Tool
- AAP Standards for Pediatric Cancer Centers
- Toronto Sick Kids Proposed Pediatric Cancer Metrics

Patient Initials:_____ Scheduled Appt Time:_____ Date: _____

Type of Visit:

- ❑ New Patient
- ❑ Follow-up
- ❑ Nurse Only Visit
- ❑ Chemo Infusion
- ❑ Med Infusion
- ❑ Transfusion
- ❑ Procedure
- ❑ Urgent
- ❑ Other: _____

Task	Time	Comments	Initials
Arrival/Check in			
Vitals Started			

Figure 3: CCC Patient Survey

Results

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
- No emotional support/lack of trauma stewardship

Clinical Microsystem Assessment Tool

- Lowest scoring categories (3.33 out of 5) were regarding process improvement and training and resources
- 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

Colleague Engagement Survey

Topic	Score out of 5
Huddles are appropriately used in this area/unit.	2.6
My organization recognizes employees for excellent work	3
People have more than enough training and experience for the kind of work they do	3.17
Managers and directors constantly monitor workloads and reduce them when they become excessive	3.25
We often discuss and update procedures in hopes of reducing potential errors and inefficiences or just trying something new	3.25
I am treated with respect every day by everyone in my unit/area	3.33
Conflicts are resolved faily in my unit/department	3.42

Figure 4: Colleague Engagement Survey Statements with Scores <3.5 Among Nursing

Topic	Score out of 5
My suggestions about safety would be acted upon if I expressed them to management	4.45
We discuss our unique skills with each other so we know who has relevent specialized skills and knowledge	4.55
I am encouraged by my colleagues to report any patient safety concerns I may have	4.6
The staff and doctors have a friendly and caring attitude towards patients	4.64
I would feel safe being treated here as a patient	4.73
We provide excellent care to patients	4.73
I am proud to be a member of this team	4.82

Figure 5: Colleague Engagement Survey Statements with Scores <4.40 Among All Staff

Patient Survey

- Time spent before seeing clinician & length of time waiting at the office are the only statements <4.5

Patient Flow Tracker/Time Study

- Patients wait on average over 30 minutes in the Children's Cancer Center (CCC) to see a physician

Figure 6 & 7: Patient Check-in Time vs Scheduled Appt Time and Average Patient Wait Time to See Physician by Visit Type

Discussion

"People look for the confirmation that they're correct, not that they're wrong"[1]

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
- Minor deviations in patient safety protocols create waste and extra work in the CCC, yet may not add to high reliability
- Management system practices could be improved to better engage colleagues in improvement efforts

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
- 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 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
- Psychological safety could be improved by strengthening the perception that speaking up is welcome and that the opinions of others are valued

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 huddle
- Promote colleague engagement in ensuring patient safety and continuous quality improvement

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

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