

FACULTY OF ENGINEERING

Department of Industrial Engineering

Quality Improvement Activities at the IWK Outpatient Oncology Clinic

Introduction

The IWK Department of Pediatric Oncology consists of an Outpatient and an Inpatient Unit. The department works with regional hospitals in all 3 Maritime provinces as well as family doctors and other governing bodies such as, CCNS, APPHON, and COG. Patient volumes in the Outpatient clinic have doubled in the last 5 years as the hospital, where possible, is making efforts to provide care on an outpatient basis . There are roughly 50 new diagnosis per year.

This clinic is facing several issues such as:

- Delays in care, longer appointments than necessary
- Timely Updates to Chemotherapy Order Sets
- Fracking changes to patient care
- Scheduling of patients
- Use of Staff time
- Intradepartmental communication
- Interdepartmental communication



Design Process

- All improvements took place in the outpatient clinic and were focused on nursing solutions.
- All work was conducted using common LEAN methodologies
- Recommendations for when electronic medical records are adopted were made in the final report.

Gantt Chart - IWK Oncology Process Improvement Project

| | | | | | Period Highlight: | # | Pl | an Dui | ration | | Actu | ual St | art | % | Com | plete | | Actu | ual (l | beyon | nd pla | n) | 9 | 6 Com | olete (ł | beyon |
|--|------------|------------------|-----------------|--------------------|-------------------|-------|----|-------------|--------|------------|------|--------|-----------|------|-----|-------------|------|------|------------|-------|--------|-------------|--------|-------------|----------|-------|
| ACTIVITY | PLAN START | PLAN DURATION | ACTUAL START | ACTUAL DURATION | PERCENT | WEEKS | | Oct. 5 (| 578 | Nov 3 9 | | 11 12 | Dec 13 | 14 1 | | Jan 17 1 | 8 19 | | eb 21 : | 22 23 | | lar 25 2 | 5 27 2 | Apr 8 29 | 30 31 | 32 |
| Initial Observation | 2 | 4 | 2 | 4 | 100% | | | | | | | | | | | | | | | | | | | | | |
| Problem Definition | 2 | 1 | 2 | 3 | 100% | | | | | | | | | | | | | | | | | | | | | |
| Scope Change | 6 | 2 | 6 | 6 | 100% | | | | | | | | | | | | | | | | | | | | | |
| Time Study Observation | 9 | 12 | 9 | 12 | 100% | | | | | | | | | | | | | | | | | | | | | |
| Solution Development | 19 | 6 | 21 | 5 | 85% | | | | | | | | | | | | | | | | | | | | | |
| 5S/VM Day | 19 | 1 | 23 | 1 | 100% | | | | | | | | | | | | | | | | | | | | | |
| Feedback Collection | 21 | 4 | 21 | 5 | 85% | | | | | | | | | | | | | | | | | | | | | |
| Solution Implementation | 21 | 8 | 21 | 8 | 60% | | | | | | | | | | | | | | | | | | | | | |
| Time Study Observation (post- solution) | 23 | 6 | 23 | 6 | 35% | | | | | | | | | | | | | | | | | | | | | |
| Exit Interviews | 25 | 2 | | | 0% | | | | | | | | | | | | | | | | | | | | | |
| Quantify Results | 27 | 2 | | | 0% | | | | | | | | | | | | | | | | | | | | | |
| Make Recommendations | 27 | 2 | | | 0% | | | | | | | | | | | | | | | | | | | | | |
| Continue Process Improvement | 29 | 4 | | | 0% | | | | | | | | | | | | | | | | | | | | | |

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Details of Design

Note Taking in Friday Rounds

- Physicians & Family Care Coordinators are overloaded with information specific to a patient's care and no minutes or notes are taken
- A template was created to better record this critical information.

Physician Assessment Kanban

- Nurses spend time looking for physicians to find out if their patient has been seen yet
- A simple door hanger made of laminated construction paper to signal that the physician has seen a patient mounted on a hook near the top of the door.

Pre-Arrival Preparations

- Delays caused by complex forms
- Have Family Care Coordinators and Clinical Care Providers meet the day before the patient arrives to review the patient's chart
- Checklist created to verify all pieces of documentation and signatures needed to provide care are present.

Huddle Boards

- Small problems are often left unresolved and grow into larger issues
- Proven system at other hospitals and in industry to resolve small issues and escalate larger ones to the appropriate parties

Chemotherapy Order Set Improvements

- Some order sets are difficult to understand and could lead to errors.
- Created a form and rough outline of a committee to record and resolve ambiguous language in order sets

Visual Management Board

- No central place for all information needed to provide care
- Nurses having to check if chemotherapy has arrived for their patient
- Centralizes information onto one board
- Provides visual cue to nurses that chemotherapy has arrived
- Pharmacist delivering chemotherapy places a magnet over the drug they delivered.

| Nurse Patient | | Rm # | ETA | Phys. Time Pharmaceuticals | | euticals | BPMH/MC | Notes | | |
|---------------|--------|------|-------|----------------------------|-----|----------|---------|-------------------|--|--|
| lackie | Timmy | 6 | 9:15 | 10:00 | vCr | IVIG | | Today is Birthday | | |
| Jackie | James | 8 | 9:45 | 10:30 | vBl | | | LP - Sedate | | |
| Carla | Declan | 5 | 9:30 | 10:15 | vCr | IVIG | | Rct: To Vbl | | |
| | Julia | 3 | 10:30 | 11:00 | vBl | | | Ht. Wt. | | |
| lev. | Ash | 7 | 9:00 | 9:30 | vCr | IVIG | | | | |
| Joy | Brock | 4 | 10:45 | | | | | Follow Up | | |

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|-----------------|----------------|
| CELEBRATIONS | WORK OUR MA |
| ANALASABABABABA | |
| NEW IMPROVEMENT | |
| | |
| | HUD |
| PICK CHART | 1000 T |
| Implement | Challenge |
| < | Effort |
| Possible | Kibosh - D |

Model Huddle Board as described in IWK Standard Work for Huddle Boards Training, Created by Catherine Chung, Consultant, IWK - SCPI

Conclusion and Recommendations

- - unit
 - Studying issues being faced by physicians in this department
 - Breakdown intradepartmental barriers
 - Examine order sets used by other pediatric centers.
 - Study patient scheduling and reminder practices

- Breakdown Interdepartmental barriers
- Building relationships with other pediatric centers to share best practices
- Implement a standard huddle board system across the organization
- Foster a culture of continuous improvement
- Modernize technology such as, electronic medical records, office 365, tablets, etc.







The Department of Strategic Change & Performance Improvement should continue this project with a focus on Implementing designed solutions & use PDSA to improve them Studying and extending these improvements to the inpatient

The IWK Health Centre should continue their efforts to: