

# Celebrating Quality Improvement at PHC

June 2022

Sponsored by EQSV PAC, PASS and PHC



**Providence  
Health Care**



**PHC** Physicians  
& Surgeons



**FACILITY  
ENGAGEMENT**  
Specialist Services Committee

# Introduction



**Dr. Adrienne Melck**

*Exceptional Quality, Safety, & Value  
Physician Lead*

In order to enable strong medical staff representation, collaboration, and two-way communication among physicians and leadership around Providence Health Care's strategic priorities, Providence Health Care (PHC) and the PHC Physicians and Surgeons Association (PASS) hired four Consultant Physicians and their associated Physician Advisory Committees (PACs) to activate and advance PHC's strategic pillars.

The strategic pillar of Exceptional Quality, Safety and Value centers on PHC's commitment to continually strive toward provision of exceptional, high quality and safe care to the patients and families we serve while achieving outcomes that matter most to our patients.

While PHC has several existing mechanisms to promote and facilitate quality improvement (QI) initiatives,

my PAC saw an opportunity for groups across the organization to share and celebrate their work with each other, with patient partners, and with non-clinical PHC leadership and staff. We wanted to provide a networking opportunity for healthcare providers passionate about QI to inspire innovative change ideas among each other.

While our inaugural "Celebrating Quality Improvement at PHC" event took place virtually, this year's event took place in person at St. Paul's Hospital. Here we showcase the poster presentations featured at the June 23, 2022 event. Enjoy!

**QUALITY-FORWARD**



**Exceptional Quality,  
Safety & Value**

We deliver quality care that  
matters to the people we serve.

# Increasing Adequacy of Medical Renal Biopsies in BC

Patricia Hutchinson<sup>1</sup>, Henry Ng<sup>1</sup>, Gloria Ho<sup>1</sup>, Justin Lo<sup>1</sup>, Reginald Naidu<sup>1</sup>, Ricardo Ortiz<sup>1</sup>, Ivan Tsang<sup>1</sup>, Michael Leung<sup>1</sup>, Anna Finley<sup>1</sup>, Elizabeth Ladds<sup>1</sup>, James Nugent, MD<sup>2</sup>, Alison Harris, MD<sup>2</sup>, Bobby Grewal<sup>1</sup>, Mei Lin Z. Bissonnette, MD, PhD<sup>1</sup>

## Background

Every kidney biopsy performed in BC for non-neoplastic disease is processed and interpreted at the BC Provincial Renal Pathology Laboratory (BCPRPL) located at St. Paul's Hospital. There have been many biopsies province-wide with too few glomeruli sampled, and full diagnostic and prognostic information cannot be determined by the renal pathologists when the biopsy tissue does not contain enough glomeruli. The incomplete diagnoses and absence of prognostic information makes it difficult for nephrologists to know how to optimize immunosuppression and how to predict long-term kidney function and outcomes for their patients.

There are no established guidelines for medical renal biopsy adequacy. In collaboration with radiology, we created provincial medical renal biopsy adequacy categories based on total number of glomeruli sampled:

- Ideally adequate (≥25 glomeruli)
- Minimally adequate (15-24 glomeruli)
- Suboptimal (<15 glomeruli)
- Inadequate (no diagnosis)

## Aim

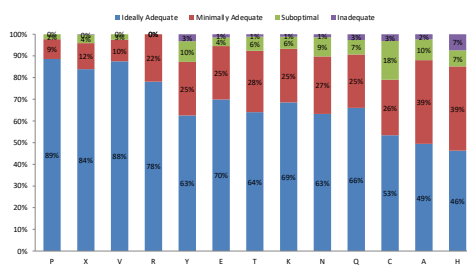
To increase the percent of ideally adequate medical renal biopsies to at least 80% at all biopsy collection sites in BC.

## Root Cause Analysis

Adequacy data for all native kidney biopsies was collected retrospectively through 2019 and prospectively for all sites in BC. Practice surveys were sent to radiology site leads and pathology laboratory sites in BC. A driver diagram was created to determine potential issues contributing to poor adequacy and to produce possible change ideas.

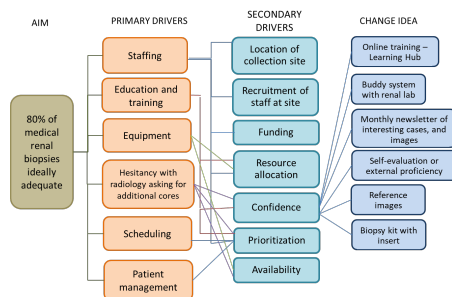
### Province-wide Biopsy Adequacy by Site

Native biopsy adequacy percentages by biopsy collection site, 2019-2021. All individual sites are de-identified.



### Driver Diagram

Confidence in biopsy assessment was prioritized because our laboratory has the ability to more easily implement changes in this area.



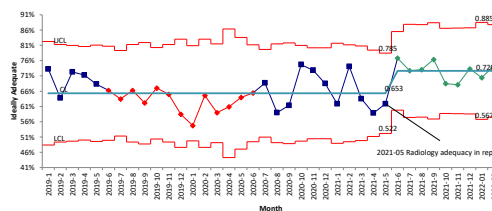
## Change Ideas – Provincial

Survey results showed radiologists at each collection site were not receiving enough feedback on quality of biopsy collection. Adequacy categories were added to the final pathology reports, which the collecting radiologist also receive. Additionally, anonymous quarterly updates on adequacy will be provided to each health authority.

To create uniformity in biopsy collection and evaluation, a provincial medical renal biopsy kit was created with instructions on tissue evaluation and handling.

### P-chart of Province-wide Adequacy by Month

Analysis shows sustained increase in percent ideally adequate biopsies after including adequacy category in the pathology report and providing radiology with adequacy feedback.



### Provincial Renal Biopsy Collection Kit

Provincial renal biopsy kits with colour-coded fixatives and instructional insert to support uniform renal biopsy collection and allocation practices across BC.



## Change Ideas by Site – Prince George

Every health authority and biopsy collection site also have area-specific quality drivers that were determined after individual site visits. Prince George did not have in-suite assessment of tissue during a biopsy and lacked a dissecting microscope necessary for tissue assessment and allocation.

Pathology, radiology, and nephrology collaborated to develop a new system where the radiology ultrasound technicians evaluate the biopsy tissue for the collecting radiologist in real-time during biopsy collection. The BCPRPL provided a dissecting microscope and lead several days of on-site training for the ultrasound technicians. The BCPRPL continues to offer virtual technical assistance and is developing online training modules and image references for continuing education. These tools will be used as we travel to all health authorities and visit each site.

## Acknowledgement

We thank PHSA PQI for their assistance in learning concepts and methods of analysis in QI. We also thank BC Renal and Provincial Laboratory Medicine Services for their support of this project.

### Partners





# Goal-directed fluid therapy in ERAS patients

Dr. Steven Wang, Dr. Jill Osborn

## Background

Enhanced Recovery After Surgery (ERAS) is an evidence-based, multidisciplinary initiative to improve recovery time for patients after major intra-abdominal surgeries. Initially for colon surgeries, there are now guidelines for a wide range of general, orthopedic, gynecological, urological surgeries.

ERAS protocols focus on multiple aspects of surgical patients' perioperative care, including but not limited to pre-operative education, fasting, postoperative pain and nausea vomiting management, nutrition, and early mobilization.

An important aspect of ERAS is to maintain optimal perioperative fluid status in patients. Too much fluids can result in delayed return of bowel function and higher respiratory complications, but too little fluids risk decreased perfusion and oxygen delivery to vital organs. Assessing the optimal fluid requirement can be dynamic and complex process, depending on each patient's physiological factors (age, sex, etc.), medical co-morbidities, invasiveness and durations of surgeries.

In addition to standardized restrictive fluid protocols, many hemodynamic monitors (eg. esophageal doppler, bioimpedance monitors) have been studied but no conclusive benefits have been identified.

## Technology

The FloTrac or Clearsight are minimally invasive hemodynamic monitoring systems developed by Edwards Lifesciences Corporation. It uses information from arterial pressure waveform from a non-invasive finger cuff or arterial line to calculate hemodynamic parameters such as stroke volume (SV), stroke volume variation (SVV), cardiac output (CO), and systemic vascular resistance (SVR) for individual patient in real time.



Clearsight finger-cuff



FloTrac sensor



Monitor screen

## Our QI Design

We aim to implement the FloTrac or Clearsight hemodynamic monitoring technology intraoperatively for moderate to high risk surgical patients undergoing major intra-abdominal surgeries. These higher risk patients could potentially benefit most from an individualized perioperative fluid therapy. We will compare the outcomes of the target patient population pre vs. post implementation of goal-directed fluid therapy intervention by matching both groups for similar patient characteristics, surgical procedures, and medical co-morbidities.



System in use in Operating Room  
•photo consent obtained from patient

## Outcomes and Future Directions

We are interested in assessing whether the intervention improves perioperative patient care and shortens recovery time to justify the cost of using them. We will also assess additional outcomes including lengths of stay in hospital, organ dysfunctions, and incidence of post-operative complications.

In the future, if there is significant benefit for the patient, we hope to extend the use of this technology in our surgical high acuity unit (SHAU) for continuing care of high risk patients in the immediate post-operative phase.

## Reference

1. Gustafsson, U.O., Scott, M.J., et. Al. Guidelines for perioperative care in elective colonic surgery: Enhanced Recovery After Surgery (ERAS) Society recommendations. Clinical Nutrition. 31(2012) 783 - 800.

## Acknowledgement

Edwards Lifesciences Corporation  
Perioperative division, Department of Anesthesiology



# Documentation of PSLS Events in Biomed's Database (TMS)

Alice Casagrande Cesconetto, Rafif Hakimi, Tony Hsieh, Yalda Ingham

## Background



- The majority of Biomed staff **does not have access to BC PSLS** due to privacy concerns
- Several frontline Biomedical Technologists cannot use PSLS to search for past patient safety events involving medical devices that Biomed supports
- Biomed staff prefers to visualize the entire history of a device in a single database
- Biomed's database** is called **TMS**, and any work done on a device is documented as a **Work Order (WO)**

## Problems



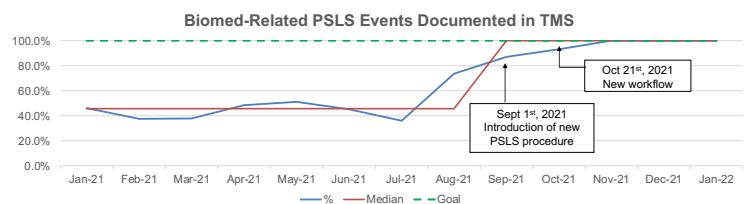
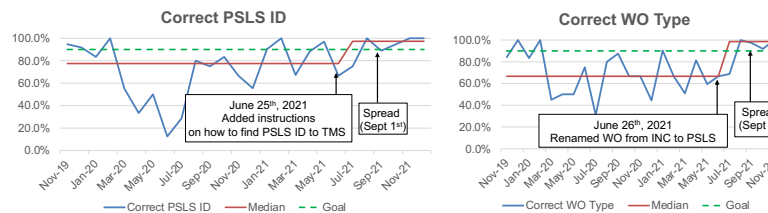
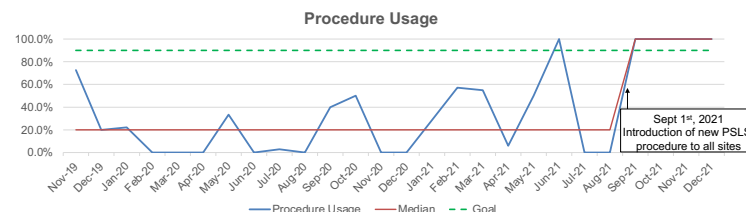
- Undocumented or poorly documented PSLS events in TMS lead to incomplete medical device records (inaccurate device history)
- Biomed staff is unable to track and trend (and potentially forecast) medical device incident data
- Missed opportunities to improve patient safety**



## Specific Aims



- By the end of 2021, Biomed shall **use the new PSLS procedure** for incident investigations for **at least 90%** of PSLS events documented in TMS
- By the end of 2021, **90% of PSLS events** documented in TMS shall have the **correct PSLS ID and WO type** associated with them
- By January 31<sup>st</sup>, 2022, Biomed shall **document in TMS 100% of Biomed-related PSLS events** as PSLS WOs



## Above and Beyond

- Closing the loop with clinical staff

Fully investigated

Partially investigated/located

Unable to locate

**Should a Medical Device Incident ARISE**

- A** Assess & Protect the Patient
- R** Report to a Supervisor
- I** Isolate the Equipment
- S** Speak to Biomedical Engineering (After Hours Number Available)
- E** Enter BCPSLS Report
  - Provide Biomed Device # in report

**Isolate the Equipment**

- Leave accessories and disposables (e.g. IV sets, bags, wires, pads) 'as is' on the device.
- Keep packaging materials if available.
- If possible, leave device turned **ON** and plugged into a power supply.
- Label the device as "PSLS" so staff are aware it was involved in an incident.
- Do not clean the device unless directed by Biomed. Label as "DIRTY" if used on a patient.
- All supporting photos and videos of the equipment are helpful.

## Acknowledgement



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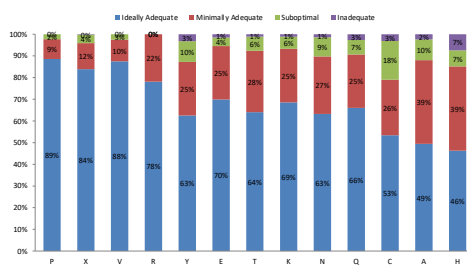
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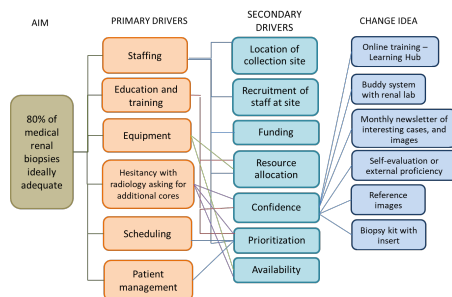
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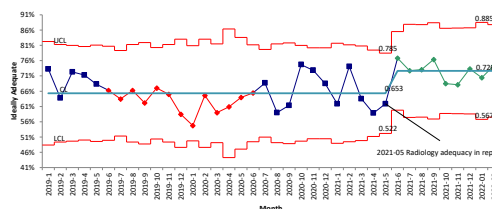
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### Partners



# Partial Oral Antibiotic Therapy for Persons who Inject Drugs

Dr. Adrianna Gunton, Dr. Quynh-Dao Dinh, Michelle Gnyra, Dr. Mary Kestler, Dr. Victoria Weaver, Michelle Wong

## Background

- Traditionally, serious bacterial infections have been treated with prolonged course of IV antibiotics
- Recent literature highlights success of using partial oral antibiotic therapy, however these studies have included very few persons who inject drugs (PWID) <sup>1,2</sup>
- There has been increasing interest in demonstrating oral regimens are equivalent, safer and cheaper

Figure 1.

Fishbone diagram for process factors resulting in low IV to oral switch

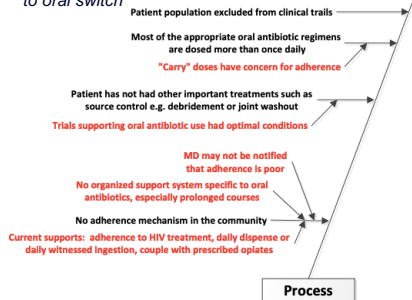
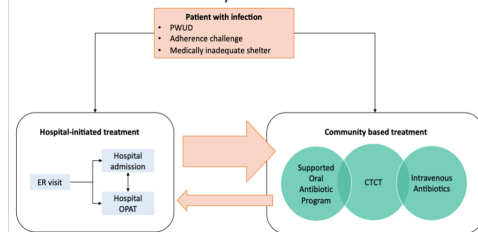


Figure 2.

Current treatment landscape in Vancouver



## Methods

- Objective:** Improve antibiotic treatment completion rates and show that partial oral antibiotics were feasible to use in PWID
- Inclusion criteria: Age  $\geq 18$  with current injection drug use, serious bacterial infection outside the CNS, received at least 2 weeks of appropriate IV antibiotics, clinically improving, appropriate oral antibiotic option
- Exclusion criteria: any condition affecting the efficacy of oral antibiotics, treating Infectious Diseases physician discretion
- Patients needed to remain in hospital for the entire treatment period

## Results

- Over a 1-year period, 23 patients eligible and 11 patients enrolled

Figure 2.

Outcomes for study participants

Yes = antibiotics completed in hospital

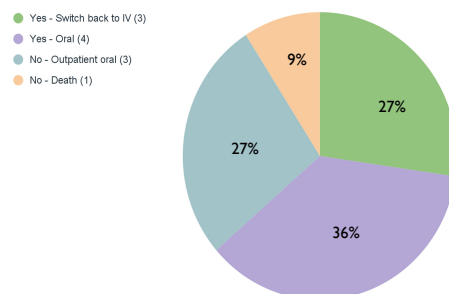
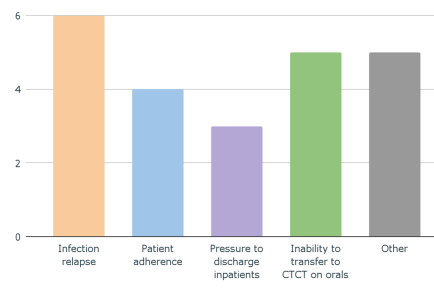


Figure 3.

Provider barriers identified to switching patients to oral antibiotics



## Discussion

- Enrollment was low  $\rightarrow$  only 23 patients eligible over a year (initial goal for 20 over 3-months)
- Low numbers of eligible patients, many with infections involving the CNS where orals are not well studied
- Identified provider barriers to this practice including concerns regarding infection relapse, patient adherence and inability to transfer patients to CTCT on orals
- Reasons for failed partial oral therapy are multifactorial, possibilities include differences in infection type and adherence and more studies are needed in more patients to draw conclusions

## Next Steps

- Advocating for changes to the admission criteria for the CTCT to include patients on oral antibiotics
- Including patients with infections involving the CNS
- Re-evaluating study continuation

## Conclusions

- Recent literature suggests success with treating serious bacterial infections with partial oral antibiotics
- Our study highlights the possibility of success in treating PWID with partial oral therapy and in the right context and with adherence support we feel oral switch is feasible and effective
- There are provider barriers identified
- Further studies in PWID are needed to demonstrate safety and efficacy of this practice

## References

- Li H-K, Rombach I, Zambellas R, Walker AS, McNally MA, Atkins BL, et al. Oral versus intravenous antibiotics for bone and joint infection. New England Journal of Medicine. 2019 Jan 31;380(5):425–36.
- Iversen K, Ihlemann N, Gill SU, Madsen T, Elming H, Jensen KT, et al. Partial oral versus intravenous antibiotic treatment of endocarditis. New England Journal of Medicine. 2019 Jan 31;380(5):415–24.



# Reducing Patient Day of Surgery Wait Times in Non-palpable Breast Surgery

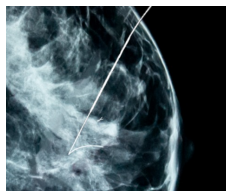
Amy Bazzarelli, MSJ Breast Clinic and Surgical and Radiology Programs

## Context

- Patient Population: Patients with non-palpable or vaguely palpable breast lesions requiring excision
- Currently, these lesions are localized with wires placed in radiology on the day of surgery
- Work completed at Mount Saint Joseph Hospital involving the Breast Clinic, Surgical Department and Radiology Department

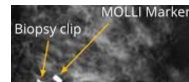
## Problem

- Operative start delays and long patient wait times for surgery occur in patients undergoing surgery for non-palpable breast lesions.
- The placement of a fine wire in the radiology department on the day of surgery requires patients to arrive early in the day. Wire placements vary in complexity and may take longer than expected, resulting in delays.



## Aim Statement

- **To decrease surgical pre-operative wait times for lumpectomy patients requiring localization in day care surgery on the day of surgery by 50% by May 31, 2022.**
- **Surgical start times will occur earlier in the day in 50% of cases.**



## Intervention

- Replace same day wire localization with magnetic seed localization placed days ahead of surgery
- Decouple the localization date from the surgery date
- Change involved approval and prioritization by management in surgery and medical device and reprocessing departments, a plan to deliver the new device, and approval to use
- Radiology and surgery department desire for change
- Change idea rolled out March 7 to April 1, 2022



## Measure of Improvement

### • Outcome Measure:

- Amount of time patients wait in peri-operative environment on day of surgery
- Patient and practitioner satisfaction

### • Process measures

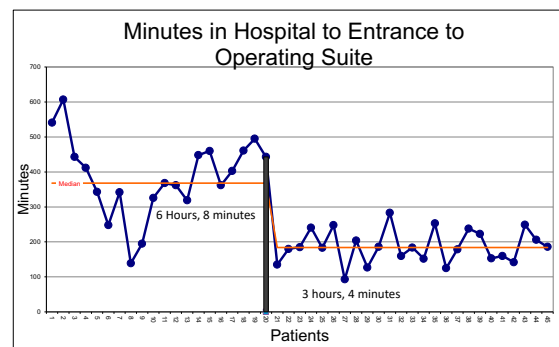
- Time of entry to hospital
- Time of OR and block start
- Patient reported outcomes

### • Balancing measures

- Travel for additional procedure

## Effects of Change

- **Patients waited 50% less time on the date of surgery**
- **Patients reported less discomfort and less inconvenience with magnetic seeds compared to wires**
- **Practitioner satisfaction improved**



## Sustainability

- St. Paul's Hospital foundation has made breast non-wire localization as a fundraising priority
- Findings of this study have been disseminated to department and regional heads of surgery, as well as to local stakeholders
- Further data collection will be upcoming regarding specimen margin status, as well as analysis of changes to OR slates, and translation to a business case

## Lessons Learned

- Seed localization improved patient care as well as practitioner satisfaction, and reduced idle time
- Multiple steps are required for implementing change, as well as sustaining it, and there are unexpected events that inevitably occur

## Acknowledgement

### • Physician Led Quality Improvement Program

- Funding from Specialist Services Committee
- Amy Chang, Stephen van Gaal, Sandra Swanson, Barb Langlois, Elaine McKevitt, Rebecca Warburton, Jin-Si Pao, Carol Dingee, Arveen Gogoani, Providence breast clinic nurses, radiology clerks and technicians, Perioperative and OR nurses and staff, Jessica Farrell, Yvette Cheong, Amie Padilla, Aileen Rankin, Rath Sivarasa, Rick Domingo, Chris Grubb, Parker Sheehan, Kelly Dawson, Karolina Ged-Piesik, Darren Barnfield, Kelly Third, Providence Health Foundation

# Reduce Readmissions between Holy Family Hospital Rehabilitation and Emergency Departments

Dr. Bonnie Law, Dr. Evan Kwong, Allison Chiu

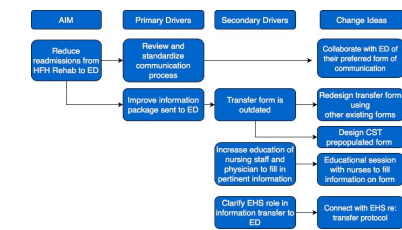


## Context

Holy Family Hospital Rehabilitation is a subacute care unit which provides inpatient rehabilitation services to the older adult population after events such as stroke, orthopedic surgeries, and prolonged hospitalizations. We are also a provincial program comprising of prosthetic training and rehabilitation for amputees. Patients are medically stable in order to participate in an active intensive rehabilitation program. We have lab work weekday mornings only. We do not have diagnostic imaging or oxygen therapy available. We refer patients with acute care needs to Emergency Departments primarily in VCH and PHC sites.

## Problem

There have been incidences wherein the patients' medical concerns were not being addressed prior to their return to Holy Family Hospital Rehabilitation. This may be a result of not having a standardized form of communication to clearly state the reason for patient transfer to ED.

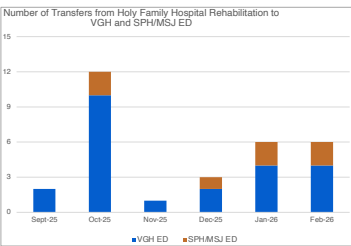
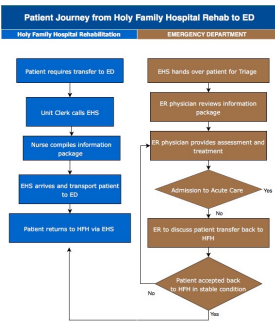


## Aim Statement

We were looking for ways to improve communication between Holy Family Hospital Rehabilitation and Emergency Departments to provide ED with easily accessible patient information and to ensure patients' return in stable condition. Improved communication will result in preventing future repeated ED visits and adverse events by 50% in 2022.

## Intervention or Strategy for Change

We had the opportunity to engage with VGH ED QI Council. Through our collaboration, we concluded that we can achieve our goal by creating a standardized form with pertinent information such as reason for transfer, physician and charge nurses' contact information, code status, patient stability criteria and goals of care documentation.



## Measures of improvement

- Number of patient transfers to ED range from 0 to 12 in any given month.
- From January to August, 2021, there were 2 readmissions to ED and 1 notable event.
- Since September 2021, there were no documented readmissions to ED or notable events.
- The use of the new transfer form was implemented in December 2021.

## Effects of Change

It is difficult to assess the exact impact with preventative measures such as improved communication through the use of a new tool; however, it is encouraging to note that the data showed there has not been any readmissions or adverse events immediately before and after the form was implemented. There is an overall sense that our efforts to improve information transfer has led to better patient care and experience. In add-on, HFH nursing has reported positive responses to using the new form.

## Lessons Learned

- Strong and supportive working relationships are key to success for implementing positive changes and impact in the healthcare setting.
- Small changes are important first steps to set the stage for further meaningful quality improvement.

## Sustainability

- Evaluation of ongoing use of the form pending CST implementation throughout the health authorities.
- The new form has been incorporated alongside the existing workflow.

## Acknowledgement

This project was funded by the SSC through the PLQI initiative.

HFH Rehabilitation Patient Resident Care Manager: Jeffrey Chan; Clinical Nurse Leaders: Rajnita Narayan and Ahadil Karim; Nurse Educator: Kamal Preet; PLQI physician coach: Dr. Trina Montemurro; PLQI physician: Dr. Eileen Wong; VGH ED QI Council: Dr. Tong Lam; Nursing, medical staff and unit clerks at HFH

**Glossary of acronyms**  
ED: Emergency Departments; HFH: Holy Family Hospital; PHC: Providence Health Care; PLQI: Physician-led Quality Improvement; SSC: Specialist Services Committee; VCH: Vancouver Coastal Health; VGH: Vancouver General Hospital;

# Improving Internal Medicine Consult Response Times at MSJ ED

Dr. Nora Cummins (she/her/hers), MSJ Associate Head of Medicine

Bruce Kung, Performance Improvement Consultant (PIC)

Ishaan Gupta, Data Analytics Lead, Data Analytics

Shannyn Sainiuk, Patient Care Manager, MSJ Emergency/ICU/Access

## Introduction/Summary:

In response to feedback from frontline clinical leaders at MSJ ED experiencing variation in MSJ Internal Medicine (IM) consult response times, IM physician leadership assembled a team to explore for presence of inter-provider variability, and other opportunities, within the control of the IM team, to further enhance ED flow through.

The review established that times varied significantly across members of the core IM group (the Group) as well as by the time of day that consult orders were placed.

The project team presented its findings to the Group and focused on the first two steps of the **ADKAR** change management framework: establishing **A**wareness and the individuals' **D**esire to reduce inter-provider variability. The data was presented as anonymized fact, with no specific or targeted request to change practice. This approach successfully raised peer-group awareness, fostered a desire to understand and reduce inter-provider variability, and ultimately resulted in measurable and thus far sustained change in post-intervention outcomes.

**Average consult order to admit decision response times for the Group have reduced by 34% or 41.5 minutes** (121.8 minutes to 80.3 minutes;  $p < .05$ ; while **Average consult order to pt. left ED times reduced by %13 or 28.8 minutes** (216.7 minutes to 187.9 minutes,  $P < .05$ ). Control charts corroborate these results at the process level through the presence of multiple indicators of special cause variation / process shifts (i.e., 9 consecutive consultation response times occurring below the mean). Control charts also confirm a reduction in Group response time variation through a narrowing of control limits post intervention.

## Project Aims:

- 1) To reduce variability in consult order to admit decision time amongst the Group
- 2) To reduce variability in consult order to patient leaves ED turnaround times (admitted pts.) amongst the Group

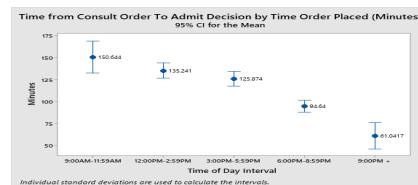


## Data extraction / Analysis:

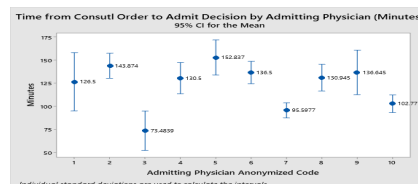
- Extracted target Cerner time stamps for all "completed" ED to IM consult orders from Jan 1, 2020- April 28, 2022 (N=3605). Orders labelled "discontinued" and "ordered" were excluded
- 10/159 MD during the study period initiated 48% of all admissions (1726/3605). For this reason and others, the team decided to focus its analysis and improvement efforts on the 10 core IM team members.

### Baseline findings (10 core IM physicians):

1. Avg. response time from consult order to admit decision (entered in Cerner) = 121.8 mins.
2. Avg. response time from consult order to pt. leaves ED = 217 mins
3. Significantly longer response times for consult request placed earlier in the day



4. Significant variation in response times between providers



## Intervention(s):

Beginning June 2021, the IM Physician lead and PIC met with members of the core team to...

- 1) Establish a safe and non judgmental/threatening environment for transparent and honest discussion,
- 2) share findings and seek genuine feedback
- 3) invite physicians to share / discuss any insights into individual practices, departmental, practices, or interdepartmental/organizational factors potentially influencing current outcomes,
- 4) invite the group to continue to self-reflect on their own practices, and
- 5) commitment to monitor variability over time.

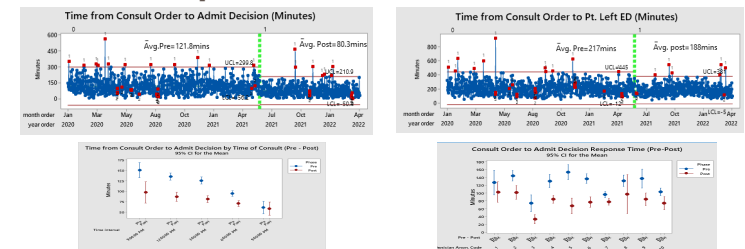
### Feedback from core team about the process:

- "Presenting relevant data to both ED and IM helped create change..."
- "...it was interesting to see how I compared to the group, and also if I changed over time. Numbers for me didn't change as much as I expected, which gave me even more impetus to change how I was doing things"
- Critical to find the balance between enabling flow and patient safety

### Examples of changes made / tested:

- Expediting the admission order in Cerner: "I used to write my full note, submit then write admitting order. Now I do the opposite..."
- Structuring my daily schedule less on geography /patient location. I used to wrap up all ward issues first till noon, then would head down to ER."
- Adjusting workflow when with students - quickly seeing pts. and putting in basic orders first rather than having the students see the patient first and then doing admission orders after reviewing.

## Outcomes / Impact:



## Future Considerations:

- Continued work with the core team to monitor response times and tests of change
- Inclusion of balancing metric: D/C from Medicine... "I thought getting discharges done was more important but now that I know ED's workflow and spatial issues, I prioritize the ED admissions when I receive them."
- Hardwiring successful practices into training and Education





# Goals of Care & Advance Care Planning Documentation

Jenica Burns (Palliative Care Nurse); Ramses Prado Mares (Performance Improvement Consultant); Dr. Eileen Wong (Medical Coordinator)

## Setting

### PHC LTC Homes (Capacity):

- Holy Family Hospital LTC (126)
- Mount St. Joseph Hospital ECU (96)
- Youville Residence (42)
- Brock Fahrni (148)
- St. Vincent Langara (196)

## Background/Problem

- Cerner implemented Nov 2019 in LTC
- **Nursing not documenting on Cerner** → hybrid charting system emerged: electronic (MDs and IDT) + paper (Nursing)
- **Serious documentation gap** identified with the method and location of recording SIC/GOC conversations
- Up to date (T)SDM information not clear

## Aim Statement

### Identify and implement for 90% of charts:

- **Standardized** place and process for documenting **GOC and SIC** conversations
- **Standardized** place for recording (T)SDM information

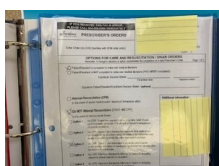
For quality care that meets the wishes, values & goals of people we serve, GOC/SIC conversations and applicable (T)SDM information needs to be effectively documented, up to date and readily accessible

## Intervention/Strategies for Change

### 1<sup>st</sup> PDSA - April 2021 start:

- Paper chart → **"Source of truth"** for all GOC/SIC conversations
- **Replace** blue DNAR sleeves and old 'Options for Care' forms with new ACP tab/divider at the front of all paper charts
- **CST users** - document in the GOC Power Form (print and place in the ACP section of the paper chart)
- **Non-CST users** - document on the ACP/SIC paper record (place in the ACP section of the paper chart)
- **Education sessions and workflows** for all staff

Old Blue DNAR Sleeves



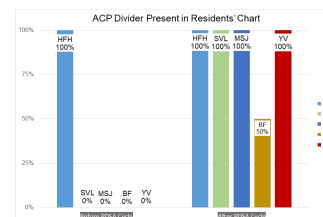
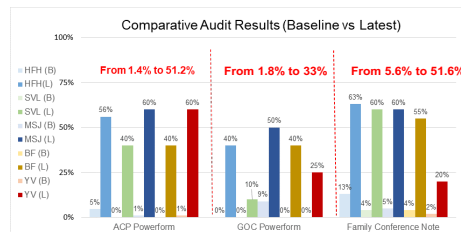
New Advance Care Planning Tab/Divider

## Effects of Change

- **Correct placement of documents improved from 20% to 91%** after the first PDSA
- **(T)SDM information** implemented into a standard location in CST as of Feb 2022

## Measures of Improvement

- Chart Audit: all care homes audited between Dec 8, 2021 and Feb 10, 2022
- Number of charts audited = 110



## Lessons Learned

- Involve IDT early and often as even seemingly small changes can result in big impacts on practice
- QI is an iterative process - be nimble, be flexible, be open to changes

## Sustainability

- Initial chart "clean up" to ensure consistent presence of documents in CST vs. in paper charts
- Biannual "chart checks" following care conference and medication reviews
- Ongoing SIC/ACP education

## Acknowledgements

**Leader for ACP:** Wallace Robinson  
**Social Workers:** Jasmine Narayan & Karen Kew  
**Unit Coordinators:** Karolyn Sidhu & Jisun Ngo  
**LTC Leadership:** Jody Burrell & Danielle Richards  
**HFH LTC Team:** Nurses & Physicians

## Definitions

Goals of Care (GOC); Serious Illness Conversation (SIC); Advance Care Planning (ACP); Long Term Care (LTC) Temporary/Substitute Decision Maker (T)SDM; Interdisciplinary Team (IDT)

# Enhanced Nursing Shift Handover

SPH Medicine

## Introduction

Nursing handover is a method of communicating essential information between nurses at shift change, which is an important transition for patient safety.

On the Medicine units at St. Paul's Hospital (SPH), staff recognized that the lack of a standardized or structured process for handover was sometimes leading to inconsistency in care, medication errors, and other adverse events.

This project aimed to:

1. increase the effectiveness of nursing handover
2. decrease the number of adverse events related to inadequate information exchange
3. improve communication and patient-centered care.

## Methods

Between April 2021 and May 2022 the project team developed and implemented a guide to assist nurses with shift handover. This work included:

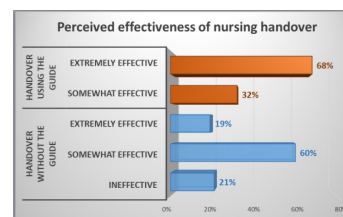
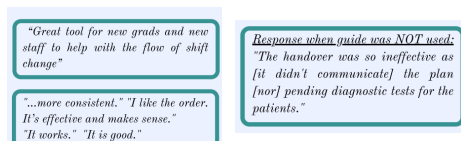
- Initial literature review of existing handover tools.
- Initial review of Patient Safety Learning System (PSLS) events related to shift handover on the units (May 2019-Apr 2021).
- Observations, focus groups and solicitation of broad feedback during development of the Guide.
- Implementation of the Guide, including incorporation into unit orientation.
- Ongoing survey of staff perception of the effectiveness of shift handover and associated improvement ideas.
- Focus groups to further evaluate the effectiveness of the Guide in supporting nursing shift handover.
- Release of monthly posters sharing progress and feedback received.
- Further analysis and review of PSLS events related to shift handover on the units (Jun 2021-Feb 2022).

## Results

Initial observations, focus groups, PSLS event review and review of existing tools highlighted the units' needs to prompt for information exchange during shift handover, which guided the iterative development of the Nursing Shift Handover Guide (pictured below). The Guide is shared during unit orientation and laminated copies are attached to SPH Medicine unit workstations. It is also available to individuals as a small card or in paper format.

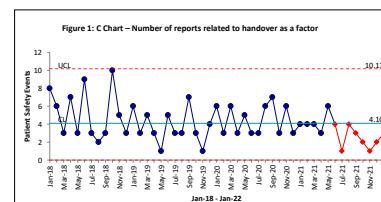
SPH Medicine Nursing Shift Handover Guide	
Content	Details
Patient Identification	<ul style="list-style-type: none"><li>• Room Number</li><li>• Name, age</li><li>• Code status</li><li>• Team</li></ul>
Alerts	<ul style="list-style-type: none"><li>• Allergies, Precautions, Violence, Certification, Falls</li></ul>
Admitting diagnosis & Past Medical History	<ul style="list-style-type: none"><li>• Reason for admission</li><li>• Chronic/ongoing conditions</li></ul>
Priority Issues and Assessment and Interventions	<ul style="list-style-type: none"><li>• Active clinical issues (e.g. GI Bleed, Delirium, CIMA, Chemo)</li><li>• Anything concerning (e.g. orientation, Vital signs, Oxygen therapy, etc)</li><li>• Specific support plans (e.g. behaviour, heart)</li></ul>
Routine Assessment	<ul style="list-style-type: none"><li>• E.g. Frequency of VS/Neuro vital signs, CIBG, etc</li></ul>
Lines/Tubes/Devices/Wounds	<ul style="list-style-type: none"><li>• Ostomies, chest tube, Foley, NG/PEG, etc</li><li>• PICCs, saline lock, and S/C butterfly location</li><li>• Mention Indication, External length of tubes/lines, next dressing change due, drainage output</li></ul>
Medications & Infusions	<ul style="list-style-type: none"><li>• Current, time sensitive, and pertinent (heparin, insulin, etc)</li><li>• PRN Usage: Analgesics/Antiemetics, etc</li></ul>
Lab, diagnostics & Outstanding tasks or orders	<ul style="list-style-type: none"><li>• Current, time sensitive, pertinent, upcoming</li></ul>
Patient-specific needs	<ul style="list-style-type: none"><li>• Diet (NPO, Pils: Crushed/Cut/Whole)</li><li>• Mobility status/concerns, elimination (e.g. bedpan/commode, last BM)</li><li>• Vision/hearing</li><li>• Patient preferences</li><li>• Patient family considerations (Essential visitors, family support for patient)</li></ul>
Discharge Plan	<ul style="list-style-type: none"><li>• Barriers to discharge</li></ul>
Invitation for questions	<ul style="list-style-type: none"><li>• Receiving nurse is invited to ask questions and seek clarification, if needed.</li></ul>
Documentation	<ul style="list-style-type: none"><li>• Both nurses sign off on "Shift Report/Handoff" under Adult Quick View</li></ul>

In the initial review of PSLS events related to handover, the project team estimated that the use of the Guide would have prevented nearly 80% (27/34) of the events.



During and following implementation, ongoing survey data (n=98) showed that when using the Guide, most people (68%) perceive handover to be 'extremely effective' and none report it to be 'ineffective'. Focus groups and qualitative survey feedback offered ideas for improvement and confirmed the Guide supports a comprehensive and efficient handover, particularly for nurses new to the profession or unit. Nurses also reported appreciation for information about patients' specific preferences, which enabled rapport to be established quickly and enhanced patient centred care.

Analysis of the number of PSLS events reported following implementation of the Guide confirmed there was no change in the overall number of events reported in the SPH Medicine units (data not shown), while fewer events related to handover were reported (figure 1). In the detailed review of these cases, the project team estimated that use of the Guide would have prevented 7/8 events identified.



Overall, this analysis suggests use of the Guide has reduced the number of adverse events related to inadequate exchange of information at shift change.

## Summary

- A standardized approach to nursing shift handover is an important element of patient safety.
- The Guide enhances the sharing of information between nurses at shift handover and increases the perceived effectiveness of handover.
- Use of the Guide may reduce the number of adverse events related to inadequate exchange of information at shift handover.
- The Guide may be implemented in similar clinical settings.

## References

1. Morris A, Hoke N. Communication is key in the continuum of care. OR Nurse J. 2015;14-19.
2. Wheeler KK. Effective handoff communication. Nurs Crit Care. 2015;10(6):13-15.
3. Lavoie P, Clarke SP, Clausen C, Purden M, Emed J, Cosencova L, Frunchak V. Nursing handoffs and clinical judgments regarding patient risk of deterioration: A mixed-methods study. J Clin Nurs. 2020 Oct;29(19-20):3790-3801. doi: 10.1111/jocn.15409. Epub 2020 Jul 31. PMID: 32644241.
4. Starmer AJ, Schnock KO, Lyons A, Hehn RS, Graham DA, Keohane C, Landrigan CP. Effects of the I-PASS Nursing Handoff Bundle on communication quality and workflow. BMJ Qual Saf. 2017 Dec;26(12):949-957. doi: 10.1136/bmjqs-2016-006224. Epub 2017 Jul 5. PMID: 28679836.
5. Kear TM, Bhattacharya A, Walsh M. Patient Handoffs in Nephrology Nurse Practice Settings: A Safety Study. Nephrol Nurs J. 2016 Sep-Oct;43(5):379-400. PMID: 30550066.
6. Pakcheshm B, Bagheri I, Kalani Z. The impact of using "ISBAR" standard checklist on nursing clinical handoff in coronary care units. NPT. 2020;7(4):266-274.

## Acknowledgements

Sandy Barr, Rodrigo Batista, Sameer Gill, Nichole Joly, Theresa Khosrovi, Mei Lai, Mary Le, Meghan MacLeod, Zoe Mulvenna, Beena Parappilly, Tammy Pollock, Cheryl Prinzen, Julia Santucci, David Taylor, Eric Tu, Holly van Heukelom





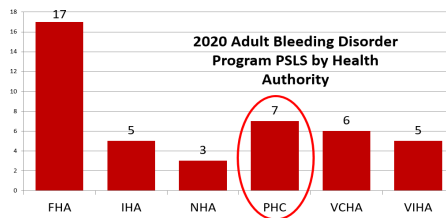
# Adult Bleeding Disorder Program of BC/Yukon

## Timing is Everything

QI Challenge Project Cohort 3: Michelle Bech MN NP (A)

### Background

Prior to 2019, the Adult Bleeding Disorder Program (ABDP) rarely documented safety concerns as many incidents occurred outside PHC. In 2019, the program began utilizing the BC Patient Safety Learning System (PSLS) to collect ABDP program safety data. In 2020, there were 43 recorded PSLs incidents, 7 were at PHC and 5 were medication errors.



Usual care by the ABDP of persons with bleeding disorders (PWBD) is to provide pre operative hemostatic recommendations with all orders placed in Cerner.

### Problem

When hemostatic medications are missed or infused late to PWBD, they tend to bleed contributing to poor outcomes. This QI project focused on the Surgical Day Care(SDC)/OR, as the majority of the missed and late medication administrations were taking place in those areas

Fig 1. Outcome of a missed hemostatic order in a PWBD



### Aim Statement

All PWBD who have surgery at SPH will have 100% of the medications/factor ordered by the ABDP is given on time in accordance with recommendations (IE: within 30-60 mins of procedure) in SDC and the OR between July 01 and Dec 31, 2021.

### Problem investigation

Using the QI Challenge Project tools (IE: Cause-effect diagram and 5 Whys Tool) the following contributing factors were identified:

- SDC/OR setting is busy and unpredictable
- OR times change with little notice
- Staffing issues
- PWBD condition is rare requiring unfamiliar medications
- Lack of education about PWBD.
- Anesthesia workflow
- Preparation of Desmopressin (DDAVP) IV by pharmacy takes @30 minutes and stable for 2 hours.
- Preparation of factor by Transfusion Medicine Lab takes 20-30 minutes and stable for 3 hours
- Program location name causing confusion

### Implemented changes

- Healthcare staff notification:** Changed OR notification of PWBD to the "printed" OR slate, not only on the electronic OR slate.
- SDC IV start order:** To ensure patients are prepared for pre op medication administration, as not all SDC patients have an IV started prior to the OR.
- SDC nursing communication order:** Nursing to remind anesthesia that the patient requires TXA medication in the OR, to ensure pre op order is not missed.
- Changed Cerner program location name:** The name "Hemophilia Program", caused confusion that all PWBD had hemophilia. ABDP CST go-live Nov 2021, name changed to "BCBledProgram" in 2022. (Was instituted after completion of QI project)

### Results

A rare events chart was used to track any improvements, as the OR may only see a single PWBD in a month. This rare events chart plots the number of procedures between a missed/late event. The test for whether, statistically, there has been a positive change is when a point exceeds the Upper Control Limit (UCL). Both areas were moving in a positive direction but neither area exceeded the UCL.

Fig 2. OR: Number of procedures between missed Tranexamic Acid (TXA) doses

Prior to any interventions, 14 cases had 4 missed TXA doses, 71% of medications were given on time. May 2021, the missed hemostatic medication case (Fig 1) was presented at anesthesia M&M rounds (yellow arrow), which provided awareness to the group. After the changes were implemented (green arrow), there were 4 cases without missed administrations.

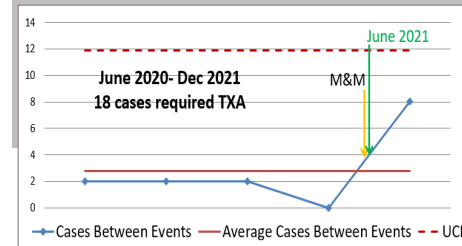
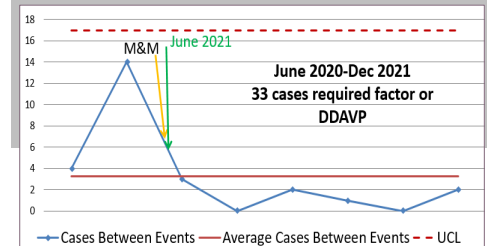


Fig 3. SDC: Number of procedures between late factor or Desmopressin (DDAVP) administration

Prior to any interventions, 22 cases had 2 late medication administrations so 91% of medications were given on time. After the changes were implemented (green arrow), there were 5/11 late medications administrations, so 55% of the medications were given on time.



### Discussion

- Awareness:** Throughout the QI project the importance of timely medication administration for PWBD was discussed extensively with healthcare professionals, leading to improved awareness.
- Education:** A 10 minute power point video was completed post QI project and shared with SDC/OR/PARR staff and can be used as a resource for new staff members.
- Resources:** A one page resource sheet was made Feb 2022 and is kept in the SDC desk resource book
- PSLS:** Program to continue to report missed and delayed medication administrations in PSLS and review the program data on a regular basis.

### Next step

- 2022 project:** The ABDP reviewed the usual ordered route of administration of Desmopressin pre operative and will investigate if the usual route of administration should be changed from IV to subcutaneous, in an attempt to further facilitate timely medication administration.



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# Post-COVID-19 Recovery Care Pathway

Raveena Garcha (Project Leader, Virtual Health & Shared Care) & Michelle Malbeuf (Program Manager, Post-COVID-19 Interdisciplinary Clinical Care Network)

## Background

- Little is known about best care for COVID-19 survivors, not the short-, medium, and long-term consequences of COVID-19 infection
- Evidence indicates COVID-19 affects the lung, hearts, brain, kidney, blood vessels and clotting system in the short-term, with likely long-term sequelae
- The uncertainty and anxiety exacerbated by physical and social isolation for the survivors is thought to be of serious consequence for at least 40% of those infected (Mazza et al., 2020)
- COVID-19 survivors require a well-coordinated shared care approach to care

## Post-COVID-19 Interdisciplinary Clinical Care Network (PC-ICCN)

- In partnership with regional health authorities, patients and research organizations across BC, the Post-COVID-19 Interdisciplinary Clinical Care Network (PC-ICCN) aims to support the best possible outcomes for people who experience persistent symptoms of COVID-19, through best practices, education and research
- The PC-ICCN established 5 Post-COVID-19 Recovery Clinics (PCRCs) throughout the province including St. Paul's Hospital, Vancouver General Hospital, Jim Pattison Outpatient Care and Surgery Centre, Abbotsford Regional Hospital, and Royal Jubilee Hospital



## Problem

- While not all patients require a referral to a PCRC, all patients need access to support, education and resources to support them in their recovery
- This is most appropriately delivered by primary care providers (PCPs), who also need support to provide these resources

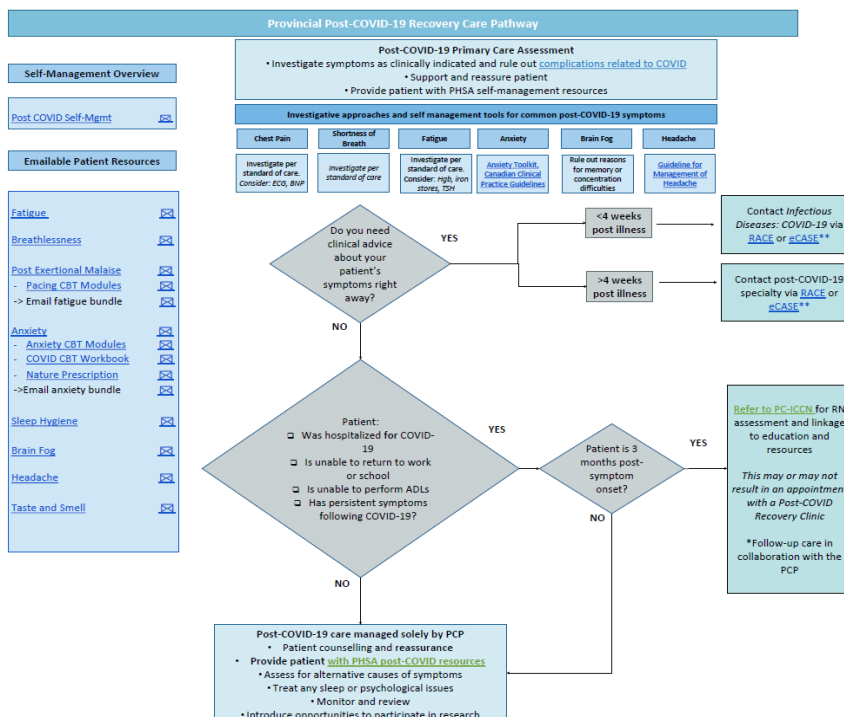
## Aim

- The PC-ICCN, in partnership with Providence Health Care, Shared Care Committee and Pathways BC, developed the Post-COVID-19 Recovery Care Pathway to address PCPs' need for support in navigating care for the post-COVID-19 patient

## Post-COVID-19 Recovery Care Pathway

- Guides primary care assessment, investigative approaches and self-management tools for common symptoms including: chest pain, shortness of breath, fatigue, anxiety, brain fog, and headache
- Emailable patient resources regarding common symptoms to be sent to patients anonymously by their PCP.
- For concerns that may not require a referral to a PCRC, the Pathway recommends PCP to contact the post-COVID-19 specialty via RACE or eCASE
- For patients who meet specific eligibility criteria, it guides the PCP to complete a referral to the PC-ICCN for assessment and linkages to resources
- Note** that not everyone will need to be referred to the PC-ICCN, but all patients should have access to appropriate care, support and education. Persons whose symptoms have not resolved within 12 weeks should be reassessed and considered for referral to the PCRC

Post-COVID-19  
Interdisciplinary Clinical Care Network  
Recovery | Care | Research | Education



\*FP to be primary contact throughout COVID-19 recovery  
\*\*RACE/eCASE can be contacted for any questions regarding care of the post-COVID-19 patient in BC

## Anticipated Benefits

- Increase in primary care capacity for post-COVID-19 care
- Knowledge dissemination
- Appropriate health system utilization
- Improvements in patient access to services

## Successes

- Interdisciplinary collaboration between PCPs and specialists
- User-friendly and familiar platform used by PCPs
- Frequent review and revision rooted in evidence

## Evaluation

There has been an encouraging uptake of the tool. As of May 2022, there have been:

- 3,193 Pathway website views
- 5,614 PC-ICCN referrals
- 422 RACE/eCASE requests for the post-COVID-19 specialty



## References

Mazza, M. G., De Lorenzo, R., Conte, C., Poletti, S., Vai, B., Bolletini, I., Melloni, E., Furlan, R., Ciceri, F., Rovere-Querini, P., COVID-19 BioB Outpatient Clinic Study Group, & Benedette, F. (2020) Anxiety and depression in COVID-19 survivors: Role of inflammatory and clinical predictors. *Brain, behavior, and immunity*. 89, 594-600.

## Acknowledgement

We want to acknowledge Margot Wilson and Claire Doherty for their efforts and contribution to the Shared Care Post-COVID-19 project. We also want to acknowledge Dr. Nardia Strydom as the family practice lead, and Dr. Adeera Levin and Dr. Jane McKay as the specialist leads. A thank you to the various family practitioners and specialists involved in Working Group meetings in the development of the Pathway. Finally, a thank you to Pathways BC for hosting this tool.

Funding for this project was provided by the Shared Care Committee, a joint collaborative committee between Doctors of BC and the BC Ministry of Health.

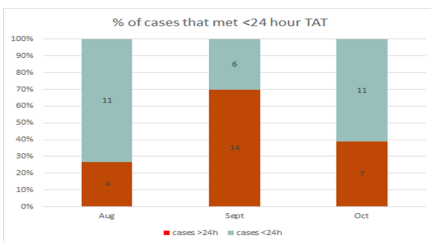


# Standardize Rush Pathology Requests at PHC

Dr. Wei Xiong MD Ph.D

## What is rush pathology request:

- Pathology diagnosis that is required for urgent patient management.
- Delay in rush pathology reports could cause suboptimal management and patient harm.
- Rush pathology turnaround time (TAT): hours from receiving to reporting (final or preliminary).
- PHC benchmark: 24 hours



## Aim statement:

To reduce the delay urgent cases to <10% by optimizing the workflow for handling urgent pathology requests by May 2021.

## Causes of delayed cases:

Data was collected between Aug 2020 and Nov 2020.

Rush requests by clinical departments:

GI: 35%  
Surgery: 28%  
Medicine: 17%

## 1st PDSA cycle

Meeting GI physicians and nurses:

- Communicate preliminary reports with ordering physicians within 24 h
- Triage rush requests on Friday, if not needed within 24h not considered rush
- Flag rush pathology cases with labels
- Schedule urgent biopsies before noon
- Standard criteria for urgent pathology requests
- Non-urgent priority cases with "ASAP" label

## 2nd PDSA cycle

Meeting surgeons:

- Rush TAT: 48 h not including weekend.
- Prioritize core biopsies in the routine category
- If pathology is needed within 24 h, will contact pathology in advance.

## 3rd PDSA cycle

Monthly report of delayed rush cases to individual pathologists

## KEY WINS:

18% reduction in the number of rush pathology requests.

Project goal was achieved: delayed cases <10

## Acknowledgement

PLQI advisors: Allison Chiu, Emma Pienaar, Dr. Andrew Shih

GI: Dr. Eric Lam, Dr. Jennifer Telford, Tamara Younger, Sandra Swanson

Surgery: Dr. Manoj Raval, Dr. Emile Woo, Dr. Jinsi Pao

Pathology: Dr. Myles, Bobby Grewal, Henry Ng

## Results

### Rush pathology requests/month



### Delayed rush pathology per month (%)



## Partners

PLQI

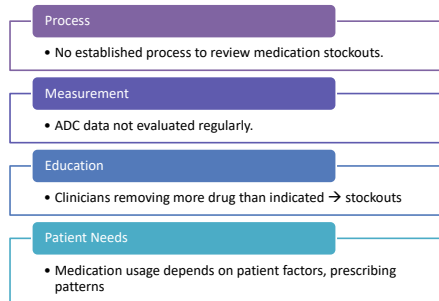
# Reducing Medication Stockouts in Automated Dispensing Cabinets (ADC)

Winnie Ma, Pharmacy Distribution Coordinator; Frank Leung, Pharmacy Clinical Informatics Specialist

## Background

- Medications are stocked in over 100 automated dispensing cabinets (ADC) at PHC and accessed hundreds of times daily on clinical units.
- Pharmacy staff top-up ADCs regularly using restock reports but stockouts can still occur.
- Stockouts lead to delays in care if nurses are unable to access medications due to ADC stockouts.

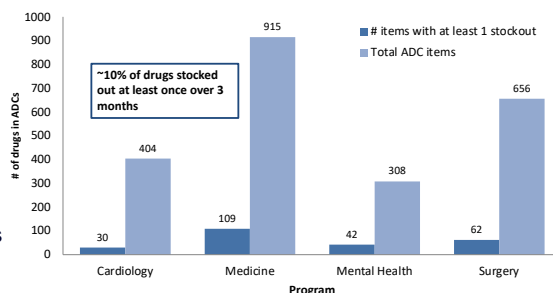
## Causes of ADC Stockouts



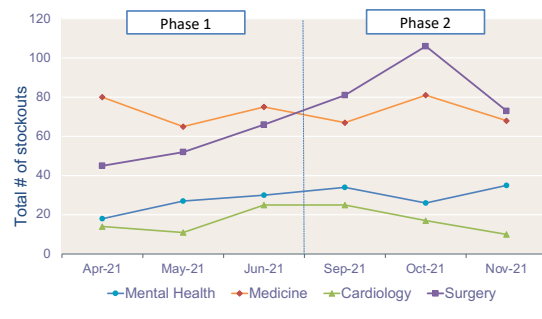
## Objectives

- Focus on select programs (surgery, medicine, cardiology, mental health).
- Collect baseline data on medication stockouts from April to November 2021 in two phases.
- Identify top 3 drug categories of stockouts in each program.
- Reduce medication stockouts by 10% by 2022.

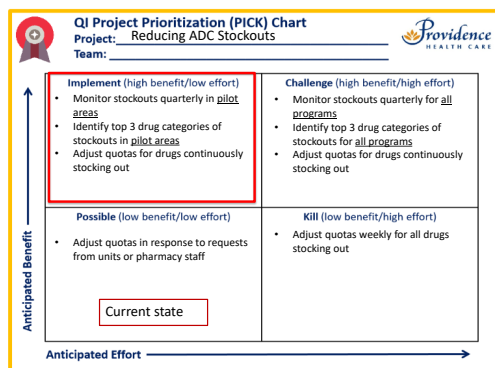
Proportion of Drugs Stocking Out



ADC Stockouts by Program

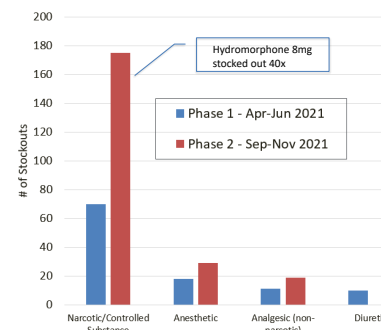


Change Ideas

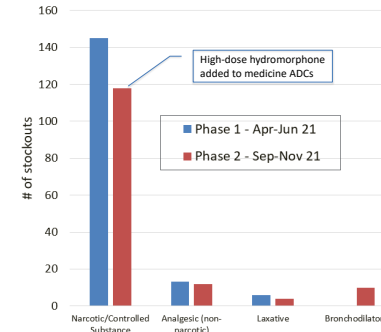


## Stockouts by Drug Category (April to November 2021)

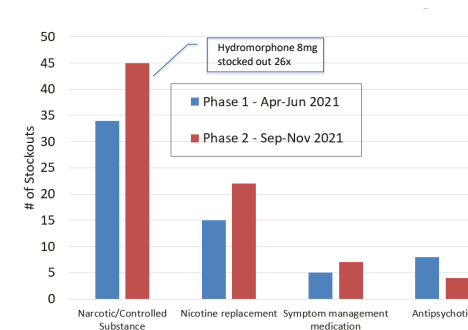
Surgery – 10ABC



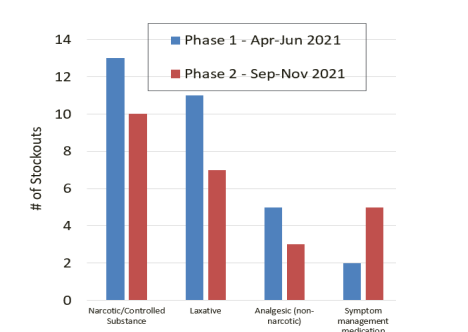
Medicine – 7ABCD



Mental Health – 8C/9A/2N/PASU



Cardiology – 5AB



## Conclusions & Next Steps

- Medication usage patterns fluctuate depending on patient population.
- Narcotic/controlled substances comprised majority of stockouts in all four programs.
- Hydromorphone 8mg tablets stocked out frequently on surgery and mental health units.
- Regular review of medication stockouts and quota adjustments for medications with sustained stockouts will improve process efficiency and reduce medication delays.

## Acknowledgement

PHC Quality & Patient Safety Team



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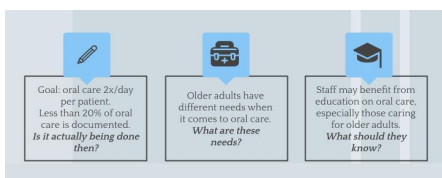


# Promoting Oral Care on an ACE Unit

**Team:** Kathy Le, Andrea Lau, Holly van Heukelom, Karen Hopkins, Shunhau To, Julie Carleton, Melanie Reid, and Sameer Desai

**Advisors:** David Taylor, Michelle Hatanaka, and Sarah Thompson

## Introduction



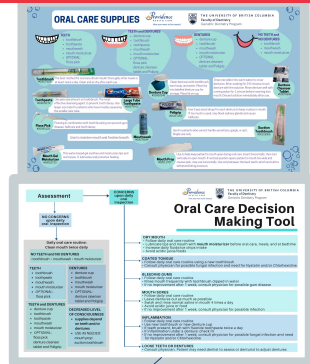
## Research Questions

1. What are the oral care experiences of acute geriatric patients before and after implementation of an oral care program on an acute geriatric unit?
2. What are acute geriatric patients' recommendations on improving patient oral care experiences?

## Interviews



## Oral Care Documents



## Sustainability

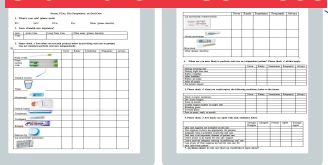


## References

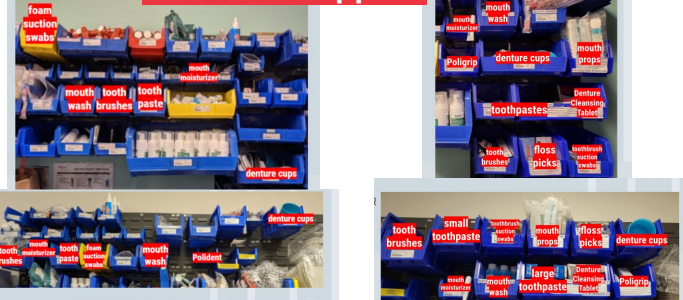
- Andersson, M., Wilde-Larsson, B., Carlsson, E., & Persenius, M. (2018). Older people's perceptions of the quality of oral care in short-term care units: A cross-sectional study. *International journal of older people nursing*, 13(2), e12185. <https://doi.org/10.1111/ijon.12185>
- Andersson, M., Wilde-Larsson, B., & Persenius, M. (2020). Oral care quality—Do human aspects matter? Nursing staffs and older people's perceptions. *Nursing open*, 7(3), 657-668. <https://doi.org/10.1002/nop.1481>
- Andrew, S., & Halcumb, E. J. (2009). *Mixed methods research for nursing and the health sciences*. ProQuest Ebook Central. <https://ebookcentral.proquest.com>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp003a>
- Coker, E., Ploeg, J., & Kaasalainen, S. (2020). Relying on nursing staff for oral hygiene care: A qualitative interpretive description study. *Geriatric Nursing*, 41(6), 881-888. <https://doi.org/10.1016/j.gernurse.2020.08.015>
- Creswell, J. W., & Plano, C. V. L. (2006). *Designing and conducting mixed methods research*. Thousand Oaks, Calif: SAGE Publications.
- Gostemeyer, G., Baker, S. R., & Schwendicke, F. (2019). Barriers and facilitators for provision of oral health care in dependent older people: a systematic review. *Clinical oral investigations*, 23(3), 979-993. <https://doi.org/10.1007/s00784-019-02812-4>
- Griffin, S. O., Jones, J. A., Branson, D., Griffin, P. M., & Bailey, W. D. (2012). Burden of oral disease among older adults and implications for public health priorities. *American Journal of Public Health*, 102(3), 411-418. <https://doi.org/10.2195/AJPH.2011.300362>
- Koelmans, S., Oei, L., Stahlschke, K., Falt, A., & Ehrenberg, A. (2020). Oral health-related quality of life and associated factors among older people in short-term care. *International Journal of Dental Hygiene*, 18(2), 163-172. <https://doi.org/10.1111/ijdh.12424>
- Kolett, M. H., Short, A., Tabak, Y. P., Gupta, V., Liu, L. Z., & Johannes, R. S. (2005). Epidemiology and outcomes of health-care-associated pneumonia: results from a large US database of culture-positive pneumonia. *Chest*, 128(6), 3854-3862. <https://doi.org/10.1378/chest.128.6.3854>
- Mark, P. E., & Kaplan, D. (2003). Aspiration pneumonia and dysphagia in the elderly. *Chest*, 124(1), 328-336. <https://doi.org/10.1161/archger.2005.04.004>
- Munro, C. L., & Grap, M. J. (2004). Oral health and care in the intensive care unit: state of the science. *American Journal of critical care*, 13(1), 25-34. <https://doi.org/10.4037/ajcc.2004.13.1.25>
- Niessen, D., van Mourik, K., & van der Sanden, W. (2013). The impact of frailty on oral care behavior of older people: a qualitative study. *BMC Oral Health*, 13(1), 61-84. <https://doi.org/10.1186/1472-6883-13-61>
- Orr, J., & Mitchell, M. (2008, June 15-19). *Prevention of hospital-associated pneumonia using a comprehensive oral hygiene protocol* (Poster presentation). 2008 APIC Annual Conference, Denver, CO, United States. [https://aapicproducts.ca/wp-content/uploads/2015/08/21105\\_Prevention\\_of\\_Hospital\\_Associated\\_Pneumonia\\_Using\\_a\\_Comprehensive\\_Oral\\_Hygiene\\_Protocol\\_handout.pdf](https://aapicproducts.ca/wp-content/uploads/2015/08/21105_Prevention_of_Hospital_Associated_Pneumonia_Using_a_Comprehensive_Oral_Hygiene_Protocol_handout.pdf)
- Paley, G. A., Slack-Smith, L., & O'Grady, M. (2009). Oral health care issues in aged care facilities in Western Australia: resident and family caregiver views. *Gerodontology*, 26(2), 97-104. <https://doi.org/10.1111/j.1741-2358.2008.00230.x>
- Salamone, K., Yacoub, E., Mahoney, A. M., & Edward, K. L. (2013). Oral care of hospitalized older patients in the acute medical setting. *Nursing research and practice*, 2013, 827670. <https://doi.org/10.1155/2013/827670>
- Sumi, Y., Mura, H., Michiaki, Y., Nagasawa, S., & Nagaya, M. (2007). Colonization of dental plaque by respiratory pathogens in dependent elderly. *Archives of gerontology and geriatrics*, 44(2), 119-124. <https://doi.org/10.1016/j.archger.2008.04.004>
- Tanaka, T., Takahashi, K., Hirano, H., Kikuchi, T., Watanabe, Y., Ohara, Y., Furuya, H., Tetsuo, T., Akishita, M., & Iijima, K. (2018). Oral frailty as a risk factor for physical frailty and mortality in community-dwelling elderly. *The Journals of Gerontology: Series A*, 73(12), 1661-1667. <https://doi.org/10.1093/geronola/gzy025>
- Thorne, S., Kirkham, S. R., & MacDonald-Emes, J. (1997). Interpretive description: a nonconventional qualitative alternative for developing nursing knowledge. *Research in nursing & health*, 20(2), 169-177. <https://doi.org/10.1002/bsc.1108>
- van Noort, H. H. J., Witterman, B. J. M., Hertog-Vorhman, V. R., Everaars, B., Vermeulen, H., & Huisman-de Waal, G. (2020). A context analysis on how oral care is delivered in hospitalised patients: A mixed-methods study. *Journal of Clinical Nursing* (John Wiley & Sons, Inc.), 28(11-12), 1991-2003. <https://doi.org/10.1111/jon.15130>
- Zimmerman, S., Sloane, P. D., Ward, K., Wretman, C. J., Steams, S. C., Poole, P., & Preisser, J. S. (2020). Effectiveness of a Mouth Care Program Provided by Nursing Home Staff vs Standard Care on Reducing Pneumonia Incidence: A Cluster Randomized Trial. *JGIM network open*, 3(6), e204321. <https://doi.org/10.1001/jamnetworkopen.2020.4321>

## Project Timeline

## Oral Care In-Services



## Oral Care Supplies



## Oral Care Plans



## Oral Care Charting



## Acknowledgements

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