Physician Led Quality Improvement
Cohort 5
2021 - 2022

Quality Improvement Project Posters

Vancouver CoastalHealth

Providence HEALTH CARE
How you want to be treated.

PQI PHYSICIAN QUALITY IMPROVEMENT
Specialist Services Committee

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INTRODUCTIONS

The Physician Led Quality Improvement initiative is funded by the Specialist Services Committee (SSC), a partnership between Doctors of BC and the Ministry of Health. The vision of PLQI is to “empower physicians to enable a continuous improvement culture, to achieve excellence in care for patients and families, where BC is a model for health and wellness globally” - PQI Vision, Mission, Values

Since 2017, VCH/PHC PLQI has had a yearly cohort of physicians and typically take on 25 new physicians each year. The cohorts have grown each year, and so have the number of projects/physicians supported doing Quality Improvement (QI) work.

Amidst an ongoing pandemic, each Cohort 5 member persevered and led a QI project. This booklet showcases the effort and results of 27 different QI projects that took place at Vancouver Coastal Health, Providence Health Care, Community-based Practices from 2021 to 2022.

This is the second year of the Poster Booklet production to highlight the great work that has been completed this year.

We are proud of the lessons learned and the results of these projects. We are also proud to share some feedback from our Cohort 5 about the PLQI Program:

“Great course, will strongly recommend colleagues to consider.”

“Overall very worthwhile program and am very pleased that I was able to take part, thank you!”

“Inspired to continue with change and QI initiatives”

“I feel the program has given me the tools needed to work on QI in my department and was an excellent introduction into the area”

“Learned that there are always barriers and challenges but being flexible and changing the measures or the approach can still lead to positive change”

PHYSICIAN LED QUALITY IMPROVEMENT

PLQI provides training and hands-on experience on QI projects, ultimately promoting a culture of learning, openness, and dedication to quality improvement in the health care system.

QI training provided by PLQI focuses on capability development through an educational “dosing strategy” approach. This creates a pathway where physicians can participate in training at varying levels, depending on their interest. Participating physicians receive funding and support to design, plan, test, and implement their learning action projects with multidisciplinary teams.

Advanced Cohort Training — L3

- Cohort length: Ten months from August to May annually
- Interactive training days with lectures, group activities, and workshops
- Full project support and mentorship from PLQI coaches & faculty, program advisor, and data analysts
- Project endorsement from VCH and PHC medical and operational leaders
- Access to data, QI resources and template

L2 — Intermediate Training

- Two half-days, offered multiple times a year
- Introduction to what is Quality Improvement in health care
- Topics include: Model for Improvement, how to collect data, crafting an aim statement, and the importance of patients voice and more!

IHI Open School — L1

Online courses offered by Institute for Healthcare Improvement (IHI) Open School:

- QI 101: Introduction to Health Care Improvement
- QI 102: How to Improve with the Model for Improvement
- QI 103: Testing and Measuring Changes with PDSA Cycles
- Dr. Don Berwick presentation - Overview of QI in Healthcare for BC

VCH/PHC PLQI TEAM – 2022/23

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Providence Health Care QI Project Posters

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

Amy Bazzarelli, Amy Chang (Program Advisor)

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

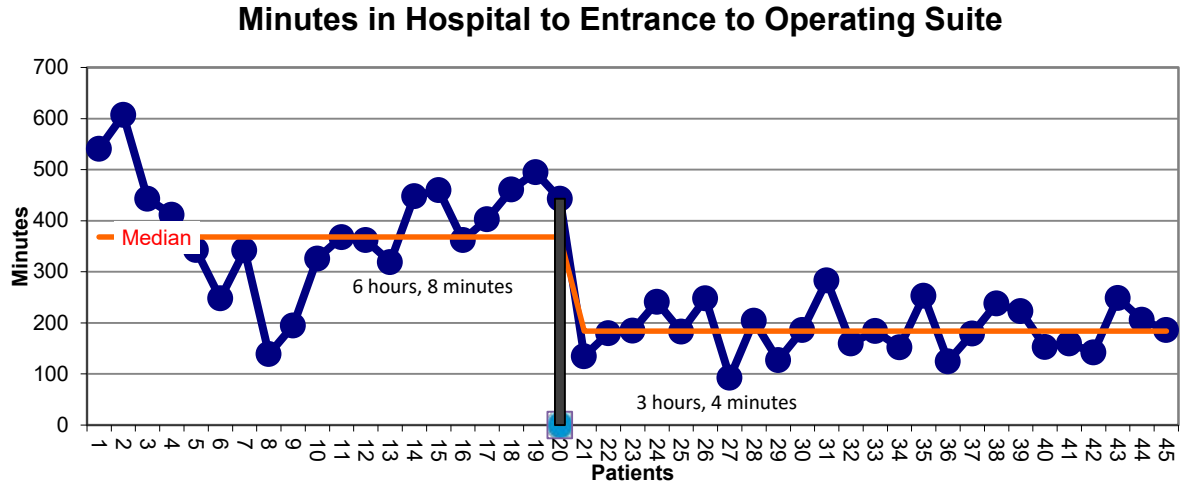
- Decrease patient surgical wait times for lumpectomy patients requiring localization in the pre-operative area (day care surgery) on the day of surgery by 50% by May 31, 2022.
- Surgical start times will occur earlier in the day in 50% of cases.

INTERVENTION OR STRATEGY FOR CHANGE

- 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

MEASURES 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 date of surgery
- Patients reported less discomfort and 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 disseminated to department and regional heads of surgery, local stakeholders
- Further data collection will be upcoming regarding specimen margin status, analysis of changes to OR slates, and translation to a business case

LESSONS LEARNED

- Seed localization improved patient care, 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

Acknowledgements

- Funding from SSC
- 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, Rathi Sivarasa, Rick Domingo, Chris Grubb, Parker Sheehan, Kelly Dawson, Karolina Ged-Piesik, Darren Barnfield, Kelly Third, Providence Health Foundation

Glossary of acronyms

PLQI: Physician-led Quality Improvement; SSC: Specialist Services Committee; VGH: Vancouver General Hospital;

For questions or for comments, contact Amy Bazzarelli at: abazzarelli@providencehealth.bc.ca

Rapid Kadian Titration Optimization in RAAC

Olivia Brooks

CONTEXT

- The rapid access addiction clinic (RAAC) at St. Paul's Hospital offers same-day addiction medicine care access
- Approximately 30 patients seen per day, about 75% require opioid agonist therapy (OAT)
- Slow release oral morphine (Kadian) is an evidence-based form of OAT
- The RAAC created outpatient rapid Kadian titration to help stabilize patients more rapidly in the context of the opioid overdose crisis

PROBLEM

- There has been variability in this practice among physicians, creating different expectations for patients and trainees
- Resulted from:
    - Lack of evaluation of the current program
    - Lack of consensus on optimal protocol

AIM STATEMENT

- **To achieve 100% consistency with rapid Kadian titration protocol by May 2022 at the RAAC**
- **Will provide a safe and effective way to titrate Kadian rapidly**

MEASURES OF IMPROVEMENT

Outcome Measures:

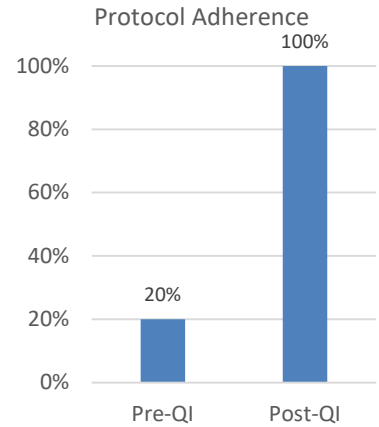
- % titrations with short-acting Morphine (MOS) doses within protocol range
- % titrations with post-titration kadian dose increase in line with the protocol

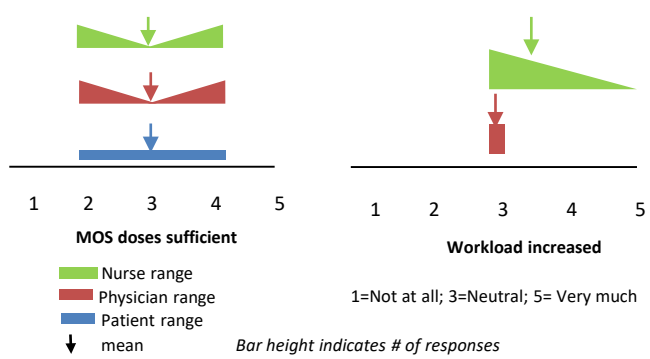
Process Measures:

- % titrations where patient left during post-dose observation
- % medication adverse events related to sedation /withdrawal

Balancing Measures:

- Patients turned away;
- Workload increases for nurses





Bar height indicates # of responses

INTERVENTION OR STRATEGY FOR CHANGE

- Baseline chart review and physician survey to determine how current protocol was being delivered and to get a sense of prescribers' experiences
- Assembled working group (physicians, clinical pharmacist) to revise current protocol based on feedback and expertise
- Collaboration with CNL, Addictions Nurse Educator
- PDSA cycle to implement new protocol (dosing, monitoring and safety parameter changes)

EFFECTS OF CHANGE

- Streamlined 2 option protocol, simplified from 4 options
- Single short acting morphine dose with clear administration parameters
- Pharmacological basis for dosing strategy
- 100% adherence with first PDSA cycle without reducing # of patients seen or substantial increase in workload

LESSONS LEARNED

- Project has resulted in streamlined protocol that is safe, effective and easy to use
- More consistency among providers
- Main QI Tip: Not all systems are currently designed for QI work, so be prepared to provide education about how QI works while running different phases of your project

SUSTAINABILITY

- EMR template, pre-printed order will assist in protocol adherence at point of care
- Protocol repository with evidence summary will assist with onboarding and uptake of future protocol updates

Acknowledgements

List here the people who helped you through the project that are not listed as co-authors above and acknowledge funding from SSC

Glossary of acronyms

PLQI: Physician-led Quality Improvement; SSC: Specialist Services Committee; VGH: Vancouver General Hospital;

For questions or for comments, contact Olivia Brooks at: osmb919@gmail.com

Reduce Readmissions between Holy Family Hospital Rehabilitation and Emergency Departments

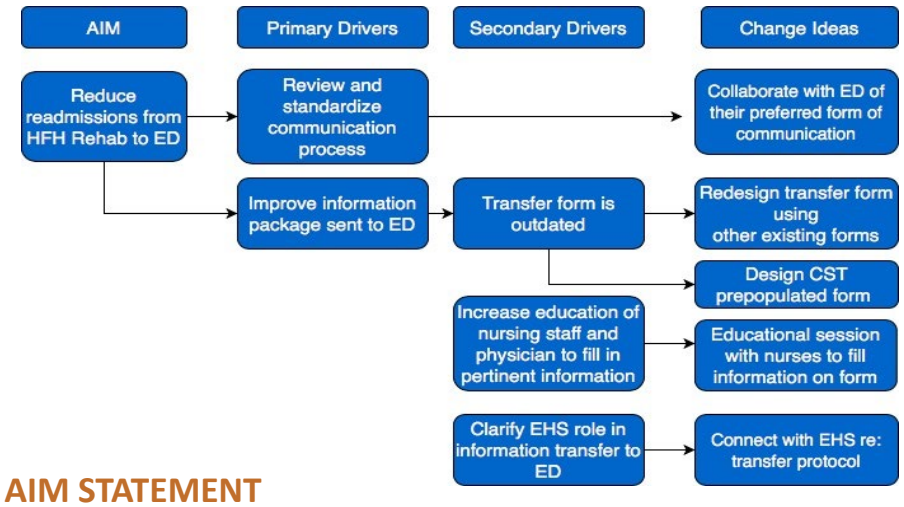
Dr. Bonnie Law, Dr. Evan Kwong, Allison Chiu

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 normally medically stable in order to participate in an active intensive rehabilitation program. We have lab work weekday mornings only. We do not have other diagnostic imaging as well as oxygen therapy available. We refer patients with acute care needs to Emergency Departments primarily in VCH and PHC sites.

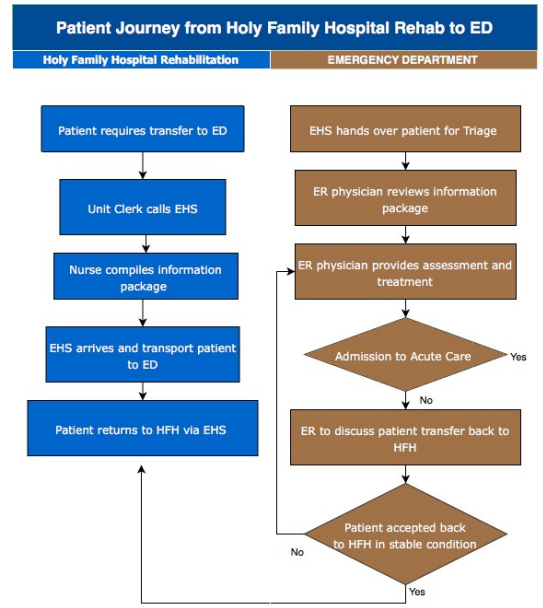
PROBLEM

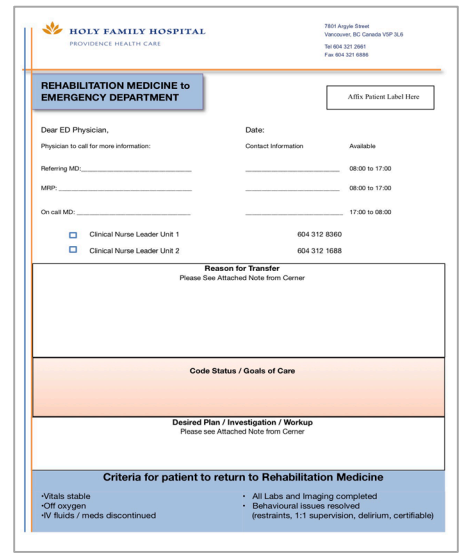
There have been incidences wherein the patients' medical concerns were not being addressed prior to their return to Holy Family Hospital Rehabilitation. This may be a result of not having a standardized form of communication to clearly state the reason for patient transfer to ED.



AIM STATEMENT

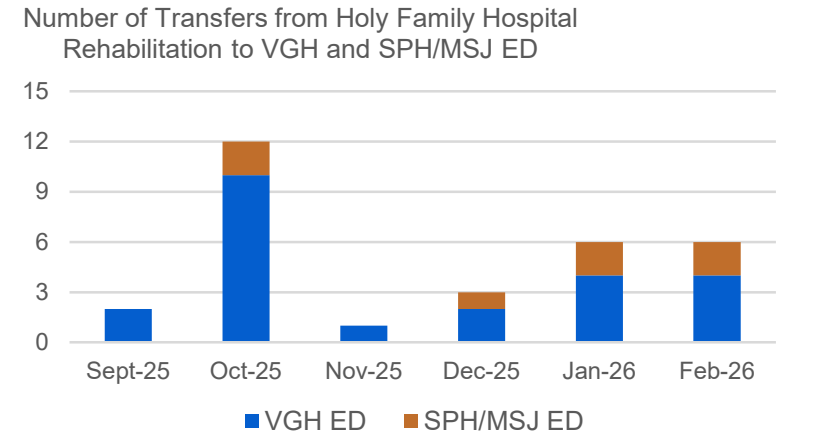
We were looking for ways to improve communication between Holy Family Hospital Rehabilitation and Emergency Departments to provide ED with easily accessible patient information and to ensure patients' return in stable condition. Improved communication will result in preventing future readmissions and adverse events leading to repeated ED visits 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. The form includes important information such as reason for transfer, physician and charge nurses' contact information, code status, patient stability criteria and goals of care documentation.



0 readmissions and notable events

All patients returned in stable condition

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 and 1 notable event.
- Since September 2021, there were no documented readmissions or notable events.
- The use of the new transfer form was initiated 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 addition, HFH nursing staff 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

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

Acknowledgements

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; CST: Clinical Systems Transformation
VGH: Vancouver General Hospital;

Improving rates of Screening for Sexually Transmitted and Blood Borne Infections among Patients Initiating Care at the Rapid Access Addictions Clinic

Dr. Julia MacIsaac, Rachelle Funaro RN, Sam Gill RN, Dr. Genevieve Kerkerian, Dr. Emma Mitchell, Enrique Fernandez Ruiz, PhD

CONTEXT

The Rapid Access Addiction Clinic at St. Paul's Hospital is a low-barrier clinic offering assessment and treatment of substance use disorders. The clinic's mandate is to provide short-term stabilization and referral to ongoing care in the community.

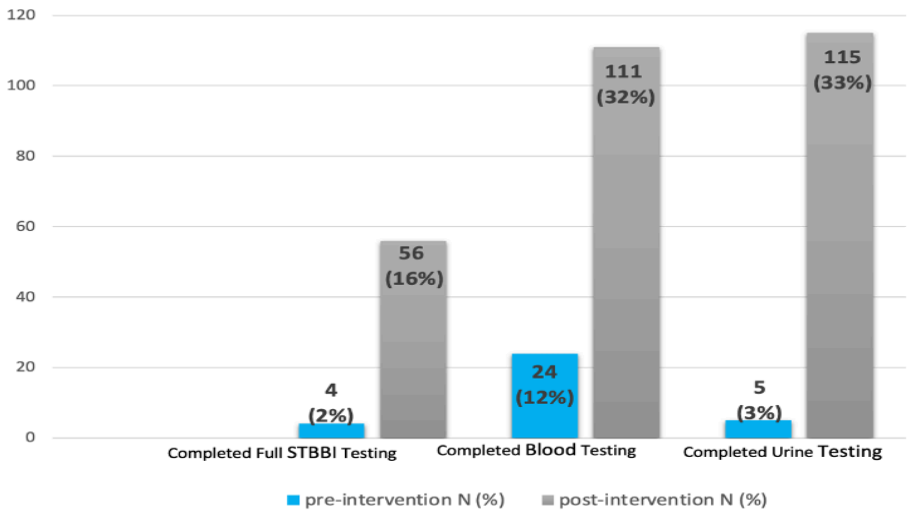
PROBLEM

Despite the high prevalence of STBBIs among patients seeking addiction medicine care, screening rates were low. There were no clinic screening guidelines. Patients often had difficulty getting to the lab to complete phlebotomy. At baseline, only 7% of new intakes completed screening for STBBIs and only 65% were even offered screening.

AIM STATEMENT

We aimed improve the rate of STBBI screening of new intakes at the RAAC by 50% by April 2021 (to be completed within first 30 days of care). The STBBIs screen included HIV, Hepatitis B and C, syphilis, gonorrhea and chlamydia.

Percentage of New Intakes Completing Full Screening, Blood or Urine screening testing Before and After Interventions Implemented



Blood only :
- HIV, Hepatitis C, Hepatitis B, Syphilis testing

Urine only:
- Urine gonorrhea and chlamydia

INTERVENTION TIMELINE

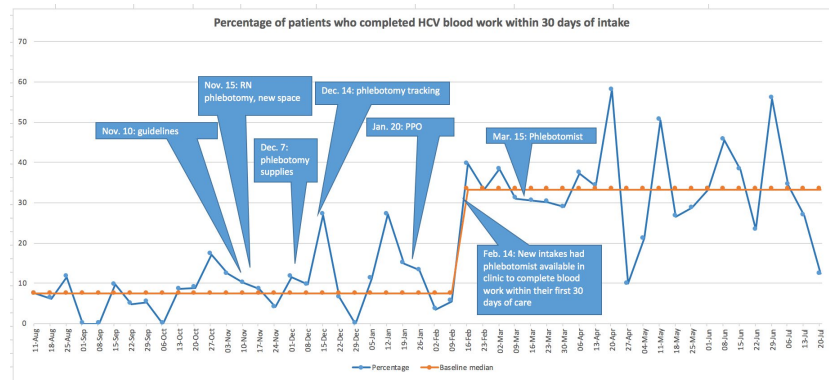
Nov 10, 2020	Nov 15, 2020	Dec 7, 2020	Jan 20, 2021	Feb 1, 2021	Mar 16, 2021
Screening guidelines created	Triage RN performing phlebotomy	Phlebotomy supply cart	Pre-printed order sheets	Urine GC/CT collection containers in triage area	Phlebotomist in clinic 2.5 days per week

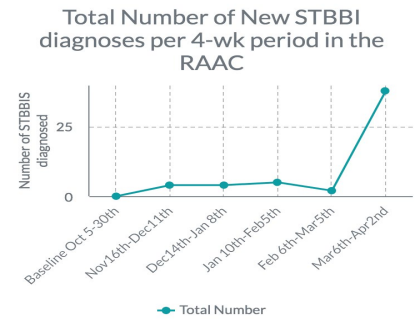
EFFECTS OF CHANGE

The changes resulted in higher rates of screening from a baseline of 7% of new intakes to 32%. The clinic saw a large increase in the new STBBI diagnosis rates, allowing the clinic to scale up treatment capacity for these infections

MEASURES OF IMPROVEMENT

Hepatitis C screening was used as a proxy for the full STBBI screening. The average percentage of new intakes eligible for screening (i.e. no known HCV and not recently screened) was calculated over a three month period and averaged at 89% . The number of new intakes screened per week, expressed as a percentage of all new eligible intakes that week was graphed on the run chart below.





LESSONS LEARNED

The combination of set STBBI screening clinic guidelines along with provision of low barrier, on site phlebotomy and urine collection were necessary co-interventions for the change to occur.
The addition of routine urine gonorrhea and chlamydia screening is a relatively easy to implement in clinics that already routinely collect urine samples for urine drug screens

SUSTAINABILITY

We have ongoing funding for a half time phlebotomist, which facilitates ongoing screening. The education provided to clinic staff has created a culture shift and awareness of the importance of screening. An embedded STBBI clinic now allows for co-location of services and improved access to care.

Glossary of acronyms

STBBI: Sexually transmitted & Blood Borne Infections
RAAC: Rapid Access Addictions Clinic

Acknowledgements

This project was funded by the SSC through the Physician Led Quality Improvement Initiative. The authors would like to thank Scott Harrison RN, Brynn Grierson RN, Andy Ryan MD, Cole Stanley MD, Seonaid Nolan MD and Sukhpreet Klaire MD for their support.

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Same-day Discharge Laparoscopic Hysterectomy

Dr. Fariba Mohtashami

CONTEXT

Hysterectomy is the most commonly performed major gynecological surgery and same day discharge is possible and safe in majority of these patients. With increasing Technicity Index (number of hysterectomies performed laparoscopically and vaginally divided by total number of hysterectomies) majority of patients can be safely discharged home on the day of surgery.

PROBLEM

- Hospital admission during the current Pandemic is a major concern for many patients requiring surgery. Currently, majority of patients stay one night at SPH after laparoscopic hysterectomy. This leads to unnecessary hospital stay for the patient when they can be home and also unnecessarily uses hospital resources. The current Canadian standard is same day discharge for selected patients.

AIM STATEMENT

To discharge **80%** of eligible hysterectomy patients on the **same day** at SPH by **Dec 2022**.

STRATEGY

- ✓ Met with stakeholder
  - ✓ Agreed on future process
  - ✓ Supported the process
- ✓ Developed clear patient exclusion criteria
  - ✓ Agreed by Anesthesia Group
- ✓ Updated patient information booklet
- ✓ PDSA with Dr. Mohtashami's patients
- ✓ Prepared RX for adequate pain/ nausea management at home

Before VS After

Current	Inpatient	Patient Room 10A	Next Day
Future	Outpatient	Surgical Day Room	Same Day

MEASURES OF IMPROVEMENT

Outcome Measures

- % of laparoscopic hysterectomies are discharged same day
- Patient satisfaction

Balancing Measures

- # of readmissions within 24 hours
- Rate of complications within 30 days

Jan – Mar 2022

9	Same day discharge (out of 12 patients)
0	Readmission
0	Complication

NEXT STEPS

- Present in ObGyn Departmental Meeting to get buy in
- Distribute the exclusion criteria document and updated patient information package to surgeons' office
- Submit the booking package as **outpatient** - with no hospital bed being held

LESSONS LEARNED

- Leading a project that improves overall patient care at St Paul's hospital
- Meeting the stake holders at SPH and learning about the operational governance
- Meeting other researchers at PHC and discussing future collaboration

SUSTAINABILITY

- Educate the chief resident involved in the surgery about the importance of adequate pain and nausea medication upon discharge
- Get NSQIP data for long term measurement
  - Measure visit to emergency department or readmission rate within 24 hours
  - Percentage of patients who needed unplanned admission

Acknowledgements

Dr Jane Lea, Ms. Hing Yi Wong, Dr David Wilkie, Dr Jim Kim, Ms. Virginia Carlton, Ms. Fariba Hajialiakbari, Ms. Amy Hamil, Mr. Darren Barnfield, Ms. Jany Chan, Ms. Julie Pitchur

For questions or for comments, contact Fariba Mohtashami at: fariba.mohtashami@ubc.ca

Improving Equity for Patients who use Substances in the St. Paul's Hospital Emergency Department

Dr. Kira Rich

CONTEXT

- The focus of the project: improving equity for patients who use substances in the St Paul's Hospital Emergency Department.
- The project started in September 2021 and is ongoing.

PROBLEM

- It was noted that ED patients who use substances are disproportionately placed in an undesirable area known as Triage Hallway (THALL) = chairs in the hallway beside the exit.
- Patients placed in THALL are twice as likely to leave the ED before their treatment is complete (AMA).
- ED patients with opioid overdose who leave AMA are more likely to die within a year (8% vs 5%)[Moe et al, 2017.]
- The causes of the problem were investigated through formal and informal discussions with ED staff.

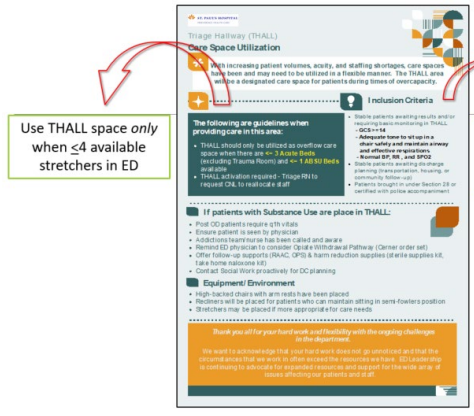
AIM STATEMENT

To increase equity in the ED for patients who use substances, and to decrease the rate at which these patients leave AMA by 10% by May 2022.

INTERVENTION OR STRATEGY FOR CHANGE

- A protocol was created to discourage use of the THALL space, and to outline patient criteria for safer placement in THALL when necessary.
- The THALL protocol, created in collaboration with ED Nursing leadership, was emailed to all ED nurses and physicians, triage nurses were educated about it, and it was posted in the ED in November 2021.
- An Opioid Withdrawal Order Set was announced in December 2021, and was incentivized starting March 2022.
- Use of the Order Set is encouraged by email, word of mouth, and posters in the ED. Staff are publicly thanked and prizes are given for using the Order Set.

Use THALL space *only* when ≤4 available stretchers in ED



If THALL needed, ensure patient's GCS & vital signs normal

MEASURES OF IMPROVEMENT

- Placement in THALL *decreased* following THALL protocol – see Figure 1.
- Substance use patients *decreased* as portion of THALL patients – see Figure 2.
- Percentage of appropriate patients (normal GCS & vital signs) *increased* following THALL protocol – see Figure 3.
- Overall AMA rate *decreased* following THALL protocol – see Figure 4.
- AMA rate *increased* in THALL – see Figure 5.
- Use of Opioid Withdrawal Pathway *increased* with incentivization.

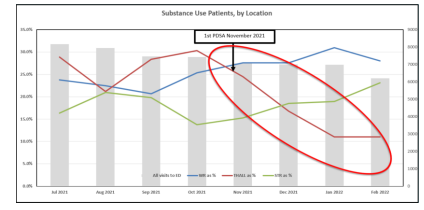


Figure 1

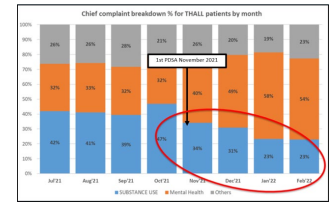


Figure 2

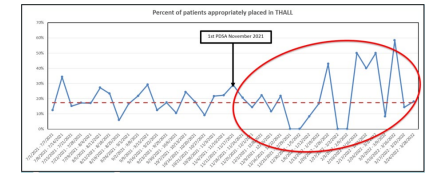


Figure 3

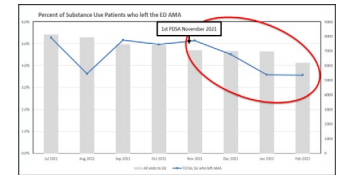


Figure 4

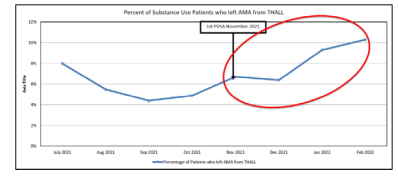


Figure 5

EFFECTS OF CHANGE

- A new protocol improved appropriate use of an undesirable care space, improving conditions for patients using substances.
- Although overall AMA rates improved during this period, AMA rates in THALL actually increased, an undesired effect. This was likely because patients placed in THALL were more coherent.
- With incentives, more physicians ordered treatment for patients with opioid withdrawal, improving care for these patients.

LESSONS LEARNED

- I am proud of the collaboration with the team of ED nurses & physicians.
- There is much to do to improve equity for ED patients who use substances.
- Undesirable care spaces are likely to be associated with patients leaving AMA in other settings.
- A new protocol was effective in reducing use of an undesirable care space & led to placement of more appropriate patients in the space.
- Encouragement and incentivization was effective in changing practice.

SUSTAINABILITY

- All initiatives to continue beyond the PLQI cycle:
  - Using ED Cube to continue monthly data draws to assess ongoing progress.
  - Incentivizing Opioid Withdrawal Order Set to nurses.
  - Using comments from patient interviews conducted January 2022 to provide positive/constructive feedback to staff.
  - Defining times of day with more substance use presentations to advocate for more timely Addictions support.
  - Ultimately, creating a dedicated safe space for Addictions support.

Acknowledgements

Sandra Chow, Dr. Andrew Kestler, Enrique Fernandez, Moses Li, Cindy Elliott, Liz Dogherty, Glyn Townson, Ishaan Gupta, ED patients, nurses, physicians and all other staff

Glossary of acronyms

ED: Emergency Department
THALL: Triage Hallway
AMA: Against Medical Advice
PDSA: Plan Do Study Act
GCS: Glasgow Coma Scale

For questions or for comments, contact Dr. Kira Rich at: krich@providencehealth.bc.ca

Increasing Hepatitis C Screening in the St. Paul's Hospital Emergency Department

Dr. Ruphen Shaw, Sandra Chow, Dr. Andrew Kestler

CONTEXT

Hepatitis C virus infection is a leading cause of chronic liver disease globally, and despite a high prevalence among people who use substances, there are significant barriers to diagnosis and treatment.

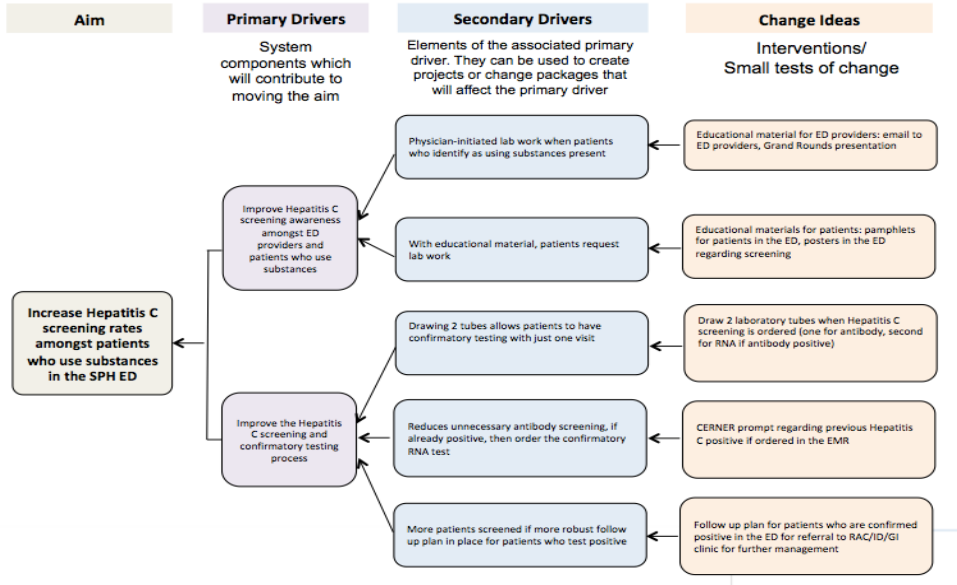
PROBLEM

- The St. Paul's Hospital (SPH) Emergency Department (ED) is an access point for this high-risk population and screening presents an opportunity for education, prevention, and curative treatment with the advent of direct-acting antivirals.
- Enhancing HCV screening in the ED can increase diagnosis rates and connect patients to treatment, especially if there is no access to primary care.

AIM STATEMENT

Increase Hepatitis C screening at the St. Paul's Hospital Emergency Department in patients who use substances by 15% over a period of 10 months

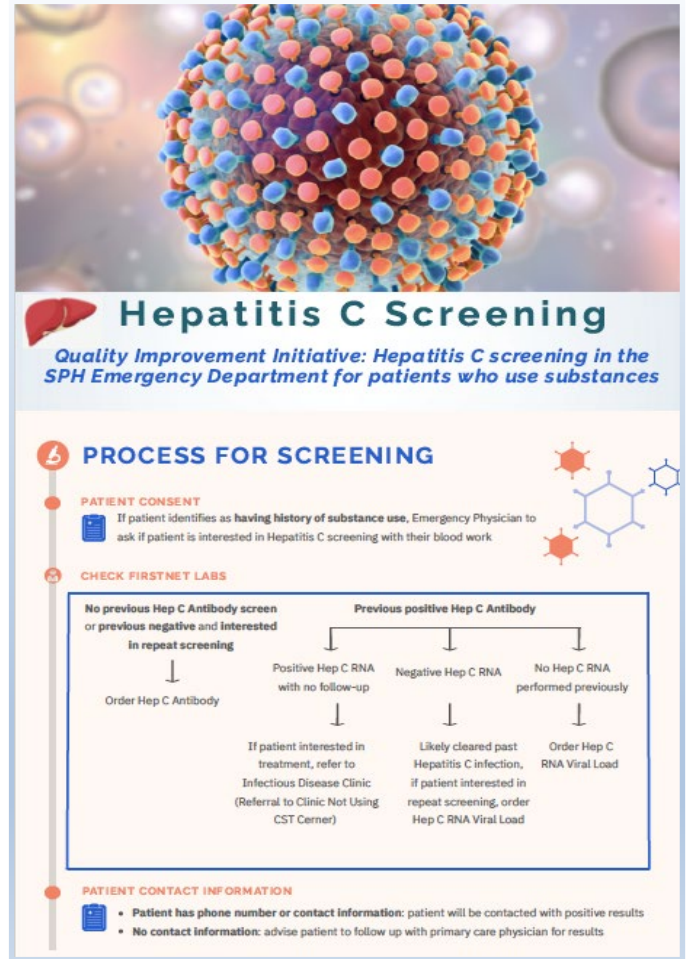
INTERVENTION



MEASURES OF IMPROVEMENT

Outcome Measures: Number of Hepatitis C screening tests performed and number of positive Hepatitis C tests

Dates	Hepatitis C antibody tests ordered	Positive Hepatitis C tests
January 23-February 22, 2022 (pre-intervention)	149	30
February 23-March 25, 2022 (post-first PDSA cycle)	197	34
March 26-April 22, 2022 (post-second PDSA cycle)	136	16



LESSONS LEARNED AND EFFECTS OF CHANGE

- Increased screening after first PDSA cycle by 32.2%, above the stated aim; however, this was not sustained with the second PDSA cycle.
- Patients expressed interest in screening for Hepatitis C and treatment but when following up with patients, met anticipated challenges with contacting patients without phone numbers or contact information.
- Identified new barriers to confirmatory HCV screening; SPH lab and BCCDC systems-level change required to streamline process.
- Encountered redundant tests with Hepatitis C antibody ordered for patients who were previously positive.

NEXT STEPS

- Streamline process at SPH laboratory with reflexive Hepatitis C RNA performed on positive anti-HCV results.
- CERNER prompt to reduce redundant HCV antibody screening for patients who have previously tested positive.
- Implement more effective strategies for contacting patients without contact information regarding their results.
- Health outcomes and economic analysis of expanding Hepatitis C screening program.

SUSTAINABILITY

- Improve use of CERNER and EMR to implement sustainable changes to physician ordering practices.
- Ongoing communication collaboration with SPH laboratory, Microbiology, and Infectious Disease for screening and referral.

Acknowledgements

PLQI Team
Medical Microbiology: Dr. Nancy Matic
SPH Laboratory: Willson Jang
ID: Dr. Mark Hull

Glossary of acronyms

PLQI: Physician-led Quality Improvement
SSC: Specialist Services Committee
SPH: St. Paul's Hospital
HCV: Hepatitis C Virus
ED: Emergency Department
PDSA: Plan-Do-Study-Act

For questions or for comments, contact Ruphen Shaw at: ruphen.shaw@vrhb.org

Standardize Rush Pathology Requests at PHC

Wei Xiong MD Ph.D

DESCRIPTION OF CONTEXT

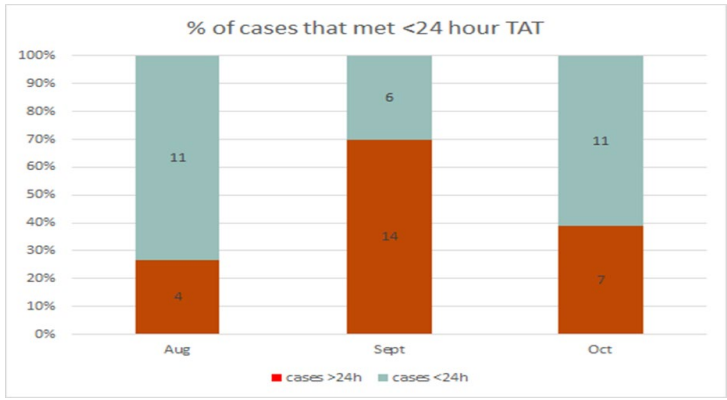
Rush pathology request: pathology diagnosis that is required for urgent patient management.

- 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).

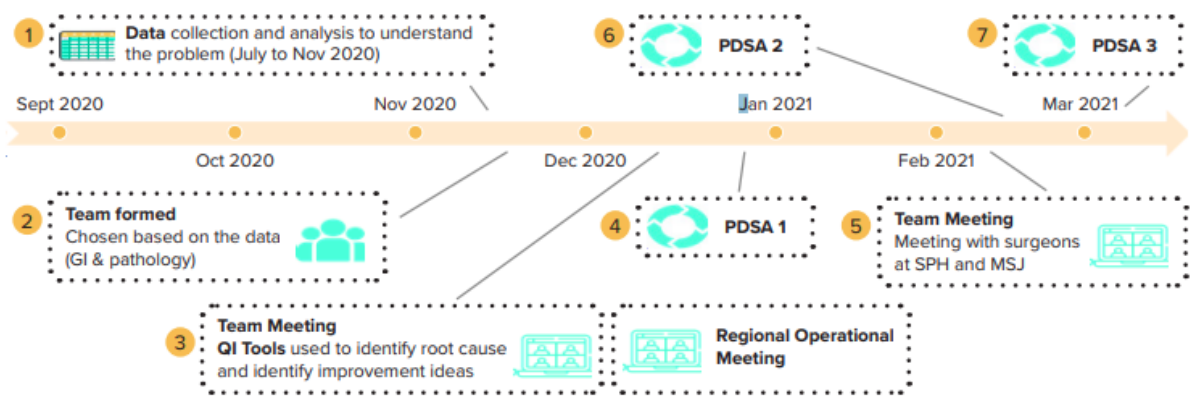
PHC benchmark: 24 hours

AIM STATEMENT

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



PROJECT TIMELINE



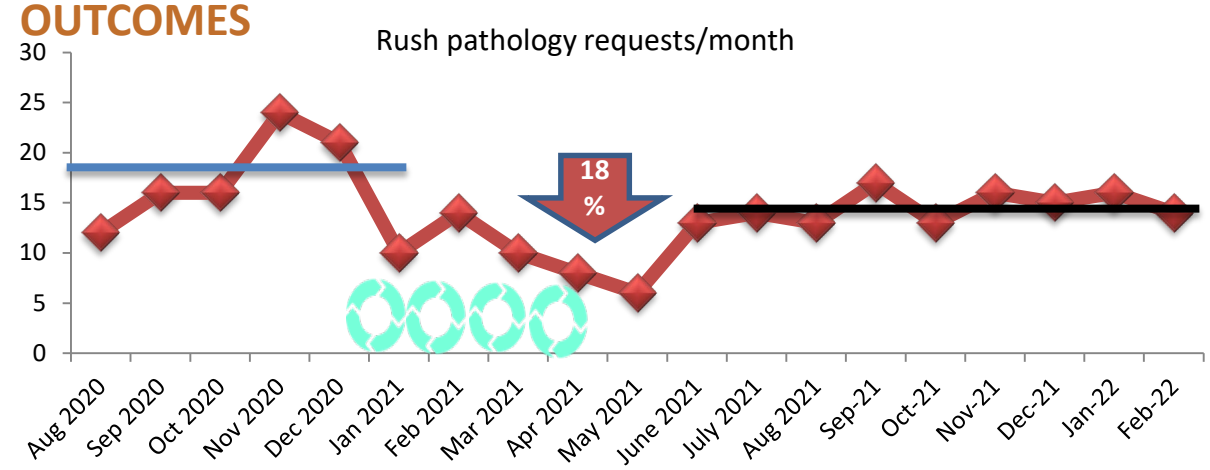
Key changes in Pathology:

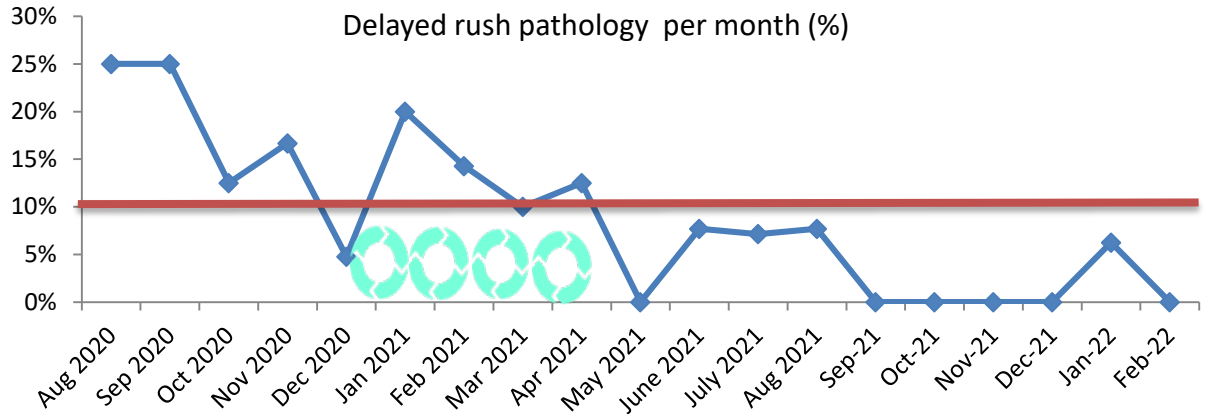
- Rush TAT: 48 h not including weekend.
- Prioritize core biopsies in the routine category
- Communicate preliminary reports with ordering physicians within 24 h
- Triage rush requests on Friday, if not needed within 24h□not considered rush

Key changes in Gastrointestinal:

- Flag rush pathology cases with labels
- Schedule urgent biopsies before noon
- Standard criteria for urgent pathology requests
- Non-urgent priority cases with “ASAP” label

OUTCOMES





KEY WINS

- 18% reduction in the number of rush pathology requests
- Project goal was achieved: delayed cases <10%

Glossary of acronyms

TAT: turnaround time
PDSA: plan-do-study-act
PHC: Providence Health Care
GI: Gastrointestinal

Acknowledgements

- 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

For questions or comments, contact Dr. Wei Xiong at: wei.xiong@vch.ca

Community-based QI Project Posters

Increasing Care Capacity and Improving Care Quality at Infinity Medical Specialists Clinic

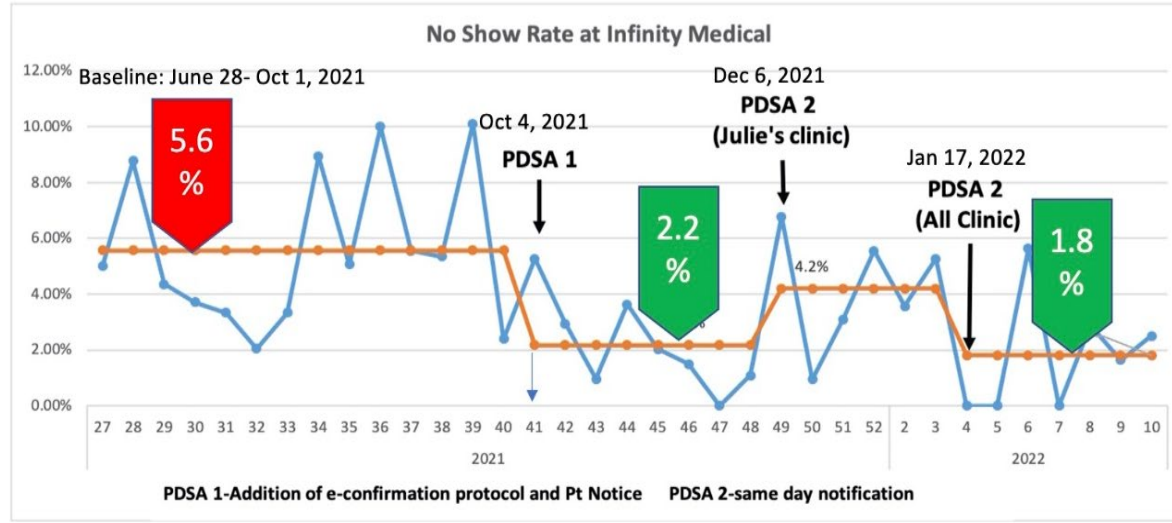
Julie P. Chou, Hing Yi Wong, Enrique Fernandez Ruiz, Rochelle Szeto and Cole Stanley

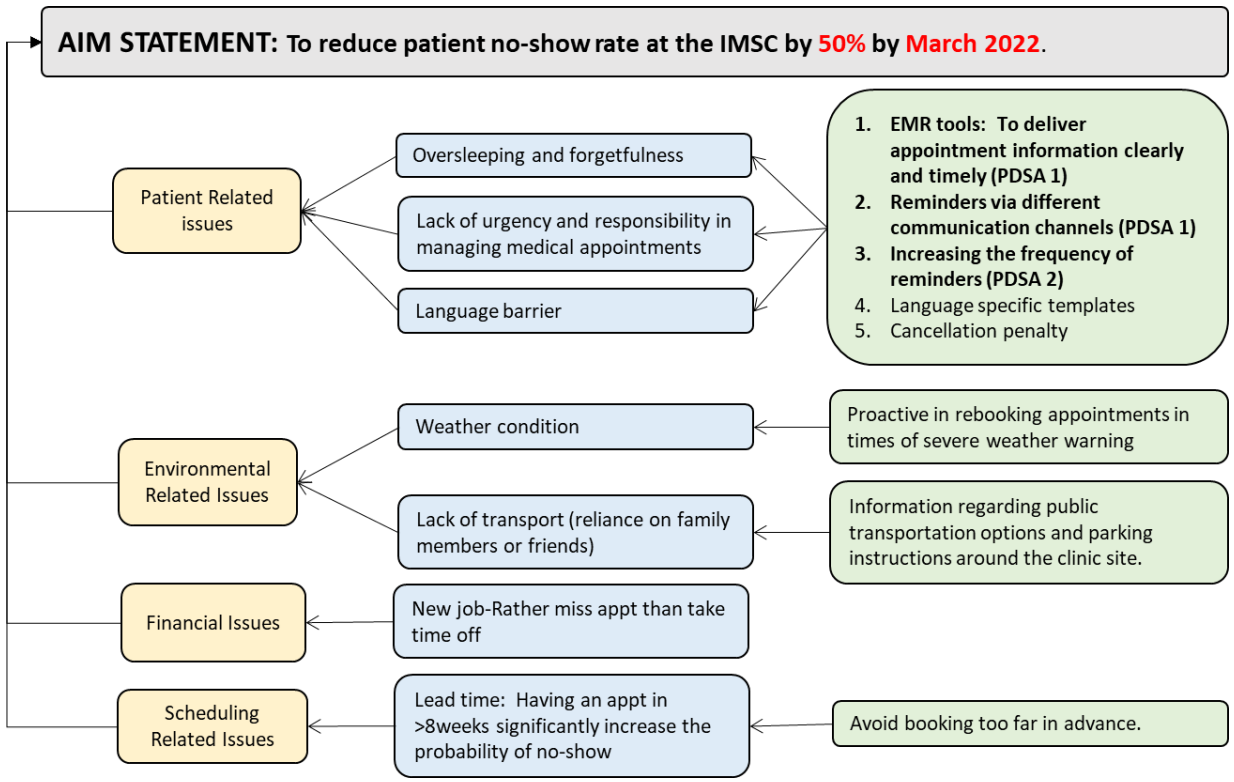
CONTEXT

Infinity Medical Specialists Clinic is a multi-specialty collaborative medical specialists clinic located in East Vancouver. Our physician group is comprised of a variety of medical specialists including cardiology, nephrology, general internal medicine, physiatry, and respirology. We look after patients collaboratively under one roof with one EMR and shared support staff.

PROBLEM

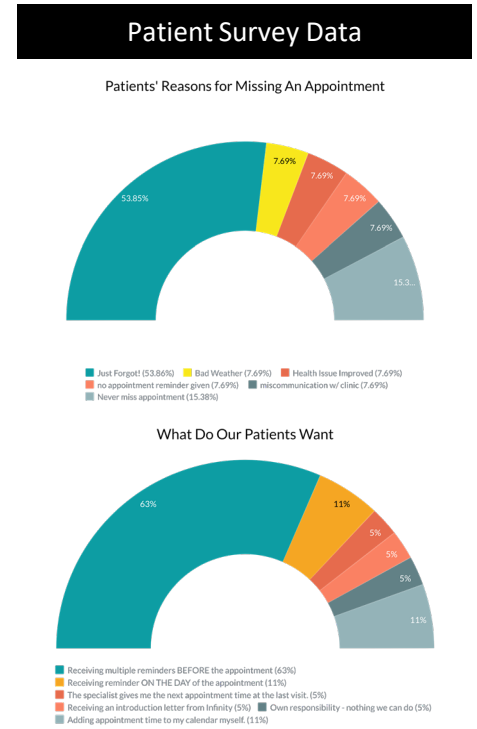
Non-attendance for appointment is a well- known problem that negatively impacts health care resources utilization. Patient no-shows result in wasted appointments, prolonged wait time for prospective patients, delayed diagnosis and/or treatment for patients who missed their appointment and ultimately increase overall health care costs for all payers.





LESSONS LEARNED

1. **Patient engagement matters!**
2. Seasonality to patient no-show rates: observed a transient increase of no-shows during Christmas and New Year holidays.
3. Our subgroup analysis showed different no-show rates for different specialties. Is it because of our specialty vs. specific physician-patient relationship?
4. Perception and reality might not correlate: Even though after our PDSA cycle 2, many of us had felt a reduction in our no-show numbers. However, the data showed no further improvement.
5. Cognizant of the pandemic impact: As we resume more in-person appointments, our interventions might need to shift and change to retain the success.



SUSTAINABILITY

1. Interventions for PDSA 1 are now outlined in the training manual for future staff members.
2. Engagement and buy-in from the frontline staff: Additional change ideas to be tested.

For questions or For comments, contact Julie Chou at: jchou@infinitymedical.ca

Acknowledgements

Authors are grateful for the funding from SSC. Special thanks to the IMSC team: Wanley Poh MOA, Janz Pascual MOA, Anna Kang MD FRCPC, Courtney Young MD MBA FRCPC, Michelle Wong MD MSc MPH FRCPC, Fergus To MD FRCPC, Evan Kwong MD MSc FRCPC.

Joy in Work: A PQI Project at Chaldecott Medical Clinic

Dr. Fiona Duncan, Erin Casey

CONTEXT

- Chaldecott Medical Clinic is a community-based, full-service family practice clinic with 4 physicians and 3 support staff in the Dunbar neighbourhood of Vancouver
- We embarked upon a project to understand how we might bring joy back into our work lives

PROBLEM

- We have lost the joy of work that drew us to careers in medicine and that gives us purpose in our professions. We know that this negatively impacts us and the care we provide to our patients.
- Meeting as a group, we started by identifying those things that lead to a 'good day' and those 'pebbles' that get in our way. We then trialed a variety of changes, which we thought would be both achievable and effective, and measured how the changes impacted us and our patients.

AIM STATEMENT

- Our goal was to improve the experience of joy in work in our clinic by 50% over one year by implementing, and adjusting, a number of changes designed to address some of the barriers to having a 'good day' at work.

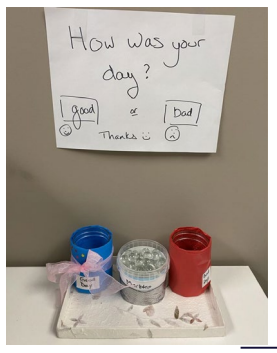
INTERVENTION OR STRATEGY FOR CHANGE

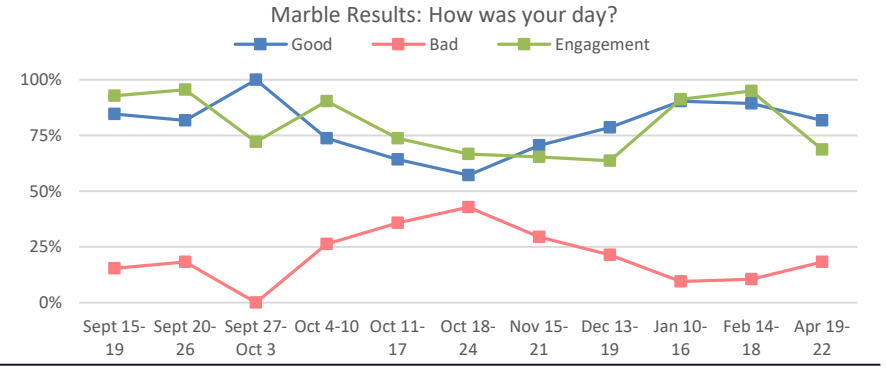
- Proposed changes were identified by soliciting input from office staff and physicians regarding barriers we experience and suggestions for how those might be overcome. We decided on which issues to tackle based on perception of ease and impact of implementation.
- We met with staff and physicians periodically to update on the impact of, and ongoing process for, the changes.
- To date, we have implemented four significant changes in our clinic, including the processes for:

flu vaccine appointments	prescription renewals	non-urgent appointment booking	managing referral notifications

MEASURES OF IMPROVEMENT

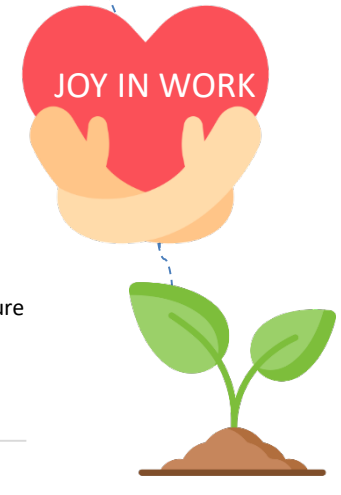
- Measures designed according to the Institute for Healthcare Improvement (IHI) Framework for Improving Joy in Work: IHI White Paper
- Overall effect of change was measured through two key measures:
  - 'How Was Your Day' marble exercise (ultimately measured daily for one week per month)
  - Burnout Inventory (Non-validated using as an informal comparison measure vs diagnostic tool, administered anonymously approximately every 6-8 weeks)
- Interventions were measured in a variety of ways, including through the Patient Experience Tool to try and capture the impact on patients.





EFFECTS OF CHANGE

- At an office level, we saw improvements in efficiencies, standardization and automation, in addition to a greater sense of teamwork and engagement. This should ultimately lead to increased joy in work in our clinic.
- We anticipate an indirect positive impact on patient care through improved standardization and improved joy of work.
- Changing 'the way we do' a variety of things in the clinic was stressful for both staff and physicians, with some being better able to adapt than others. The ongoing effects of the pandemic made these changes even harder to incorporate.



LESSONS LEARNED

- **Most proud:** We effectively implemented numerous changes and now our office is shifting to a 'change' organization
- **Main Message:** Build on your small wins to achieve your larger goals. And be prepared to adjust…everything
- **Transferable:** Ask staff and colleagues what matters to them. Then develop and implement change ideas with them. Measure the impact – it shows we care
- **Patients/Systems of Care:** Our current work lives are not sustainable. By affecting change where we can, we will improve sustainability
- **Quality Improvement:** It is worth the effort

SUSTAINABILITY

The standard has been set in our clinic: we have successfully become a 'change organization', with staff and physicians excited for and expectant of a culture of change improvement.

Acknowledgements

Allison Chiu, Dr. Cole Stanley, PQI Team and Program (with funding from SSC); Chaldecott Medical Clinic staff, colleagues and patients. For questions or For comments, contact: fiona.duncan@ubc.ca

Advance Care Planning in Patients over Age 70 in Family Practice

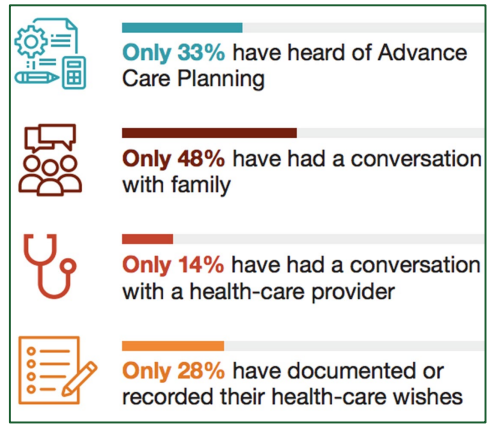
Dr. Nam Phuong Julie Nguyen

CONTEXT

Community family practice in East Vancouver, mainly Vietnamese patients

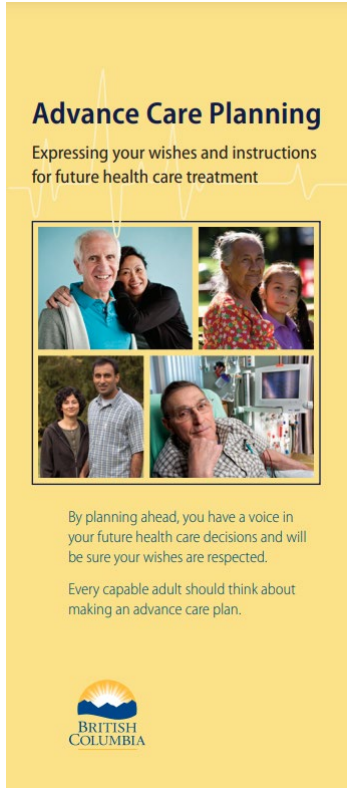
PROBLEM

- BC public opinion poll 2020: 76% of British Columbians agree that it is important to talk about what matters most for their future health care with those close to them and their health care provider
- Lack of ACP discussion/documentation for patients
- EMR audit: only 33% had Advance Care Planning
- ACP increases likelihood that patient's wishes were known and followed, i.e. goal concordant care 86% vs 30% of the time (*Detering, K. BMJ. 2010;340:c1345*.)



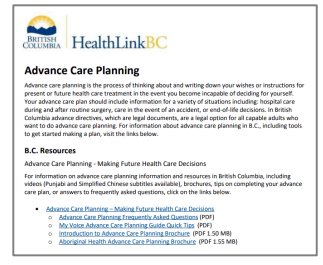
AIM STATEMENT

> 50% of patients over the age of 70 in at Lotus Medical Clinic to have a Advance Care Planning



INTERVENTION OR STRATEGY FOR CHANGE

- Found ACP documents in English and Vietnamese – either printed out for patients or emailed to patients
- Printed out ACP information documents at work station and pdf on all work stations
- Integrated ACP discussion to routine prevention (vaccines, SDM, emergency contact)
- Created typing template for ACP and vaccine reviews
- Added ACP info to email signature and website
- Most changes were done within 1 week
- Trial of getting patient's chart to the hospital by fax



MEASURES OF IMPROVEMENT

- Created codes in EMR (ACP, ACPFull)
- Ran audit every month to see how many had documented ACP – see Figure One Run Chart

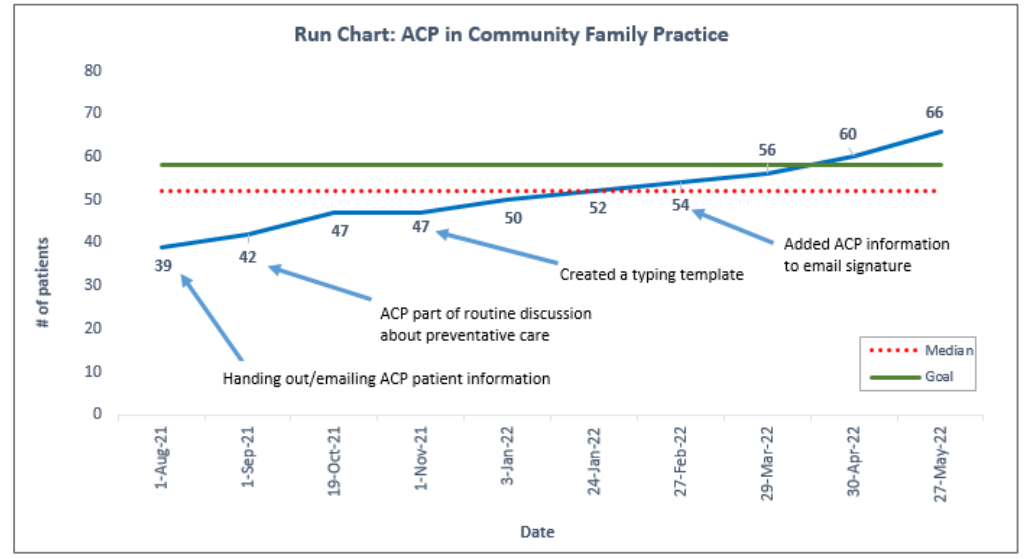


Figure One

EFFECTS OF CHANGE

- More patients with documented ACP
- Decreased the amount of time spent explaining what care planning is
  - Average extra time to discuss ACP was 6 minutes
- Impact: Yet to be determined as most patients have not had to make decisions about their care during this time frame
- This would likely improve patient centered care and wishes during acute illnesses
- Unanticipated effects: more pneumococcal/shingles vaccinations, documentation of emergency contact and SDM

LESSONS LEARNED

- If you are a family doctor, your patients are open to this discussion
- Not everyone who is healthy wishes to be full code
- Some patients did not really want to be part of the discussion, some asked to discuss with their kids instead

SUSTAINABILITY

I will encourage other doctors to do it and share my resources

Acknowledgements

Sandra Chow, Rochelle Szeto, Dr. Cole Stanley, Dara Lewis, Wallace Robinson, Dr. John Yap, Dr. Jane Gustafson, Dr. Nick Graham
This project received funding from SSC

Glossary of acronyms

PLQI: Physician-led Quality Improvement
SSC: Specialist Services Committee
ACP: Advance Care Planning

For questions or for comments, contact Dr. Julie Nguyen at npjnguyen@gmail.com

Data-Driven Opioid Agonist Therapy Outreach

Dr Daniel Raff

CONTEXT

- Conducted at Portland Hotel Society Columbia Street Clinic. A team-based care site with nurses, medical office assistants, a social worker and physicians servicing the downtown eastside population.
- During the dual health emergencies including the ongoing and escalating opioid crisis
  - In 2021 opioid toxicity deaths = 2232 (compared to 1767 in 2020, 295 in 2011). **6.7 deaths per day.**[1]
  - In 2021 opioid toxicity death rate = 43 per 100,000 (compared to 34.3 in 2020, 6.6 in 2011)[1]

PROBLEM

- Overdose deaths are increasing yearly despite efforts.
- OAT (opioid agonist therapy) is effective at reducing overdose, infectious complications, overall mortality
- There are frequent unplanned OAT discontinuations (a 2018 study showed a discontinuation rate of 14.9%)[2]
- The mortality rate is much higher in individuals off of OAT, particularly so in the first week after discontinuing OAT
  - The relative risk OFF of OAT is 3.4[3]
  - It is up to >10 in the first week off of methadone (a type of OAT)[3]

AIM STATEMENT

- By **May 2022**, we aim to reduced **unplanned OAT discontinuations** from **high doses** by **10%** at the Clinic
  "High doses" included methadone doses >= 90mg and slow release oral morphine (SROM) doses >= 700mg

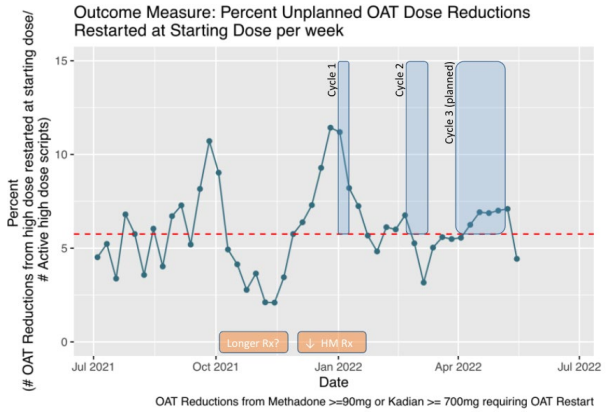
INTERVENTION OR STRATEGY FOR CHANGE

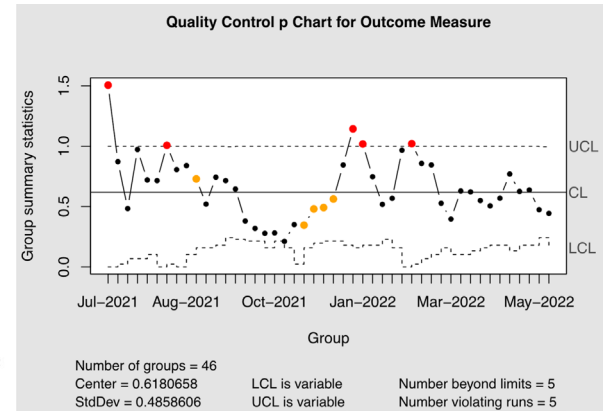
Intervention: Outreach to individuals who had missed consecutive OAT doses requiring script cancellation

	Date	Method for identifying patients	Outreach Days	Outreach people
PDSA 1	Jan 2022	Manual Fax Review - Reviewed missed dose faxes and called patients with to restart OAT.	2	Dr. Raff
PDSA 2	Mar 2022	Expiring Scripts Only - Developed Oscar Query for all expiring OAT scripts.	4	Dr. Sutherland & Dr. Raff
PDSA 3	Apr 2022	PharmaNet Query - Developed a query of PharmaNet via Medinet that identified individuals with consecutive missed doses resulting in script cancellation.	7	Dr. Raff

MEASURES OF IMPROVEMENT

- Outcome measure - unplanned OAT discontinuations from high doses (# unplanned OAT discontinuations, eg: 5 or more missed days of methadone / total number of individuals on high doses). This was derived from EMR data.
- Process measure - unplanned OAT discontinuations caught before restarting at lowest dose. Per guidelines if someone misses 3 or 4 days of methadone their dose can be reduced by 50% but if >=5 days missed must restart at lowest dose.
- Other balancing measures were recorded manually, such as number and success of outreach attempts, and physician time required.





EFFECTS OF CHANGE

- Unfortunately, there was insufficient successful outreach to provide a significant change to the outcome measure.
  - Challenges included: limited prescriber time/capacity, challenges in reaching patients
  - During this project there were at least 13 individuals who had an unplanned OAT discontinuation avoided; however, this number was not statistically significant for the outcome measure in the context of a highly fluctuating baseline

LESSONS LEARNED

- From a QI perspective: utilize team members who have more time early in the project. Plan short and fixed QI cycles to avoid analysis paralysis.
- Even a statistically unsuccessful QI project can have off-target wins - in this case developing an OSCAR and MediNet query that lowers the barrier for further outreach.

SUSTAINABILITY

- There is confirmed funding for a dedicated nurse prescriber which will allow for scaling of data-driven outreach.
- Both MediNet Query and OSCAR query will be utilized by the nurse prescriber moving forward.

Acknowledgements

From PHS: Dr. Christy Sutherland, Norma MacKenzie, Krystyna Kozlowski
From PLQI: Dr. Stephen van Gaal, Hing Yi Wong, Emma Piennar, Enrique Fernandez Ruiz

References

[1]*Illicit Drug Toxicity Deaths in BC January 1, 2012-January 31st, 2022. BC Coroners Service. Posted March 11, 2022*
[2]*Characterizing opioid agonist treatment discontinuation trends in British Columbia, Canada, 2012-2018 . Drug and Alcohol Dependence 2021.*
[3]*Opioid agonist treatment and risk of mortality during opioid overdose public health emergency: population based retrospective cohort study. BMJ 2020.*

For questions or for comments, contact Daniel Raff at: daniel.raff@fraserhealth.ca

Vancouver Coastal Health
QI Project Posters

Creation of an Anesthesia "Notable Event Rapid Response Team"

Oliver Applegarth MD MEd FRCPC

WHO DID WE SET OUT TO STUDY?

The Department of Anesthesiology, Pharmacology and Therapeutics at Vancouver General Hospital

THE PROBLEM

- This work was an extension of my cohort 4 project, "Analyzing VGH's Critical Incidents"
- I had created a standardized approach to the analysis of our notable events (previously known as CI's) and ensured a reasonable turnaround time for feedback to the department
- The main threat to the work in Apr 2021 was sustainability
- For Part 2, I formed a "rapid response team" of 8 Dept members who could analyze individual cases once handed to them.
- All other aspects of the project (forms, method of analysis, methods of feedback) were consistent

AIM STATEMENT

All submitted notable events will be analyzed by a member of the VGH Anesthesia Notable Event Rapid Response Team (NEERT) within 3 weeks, with results of the analysis fed back to stakeholders within a total of 7 weeks

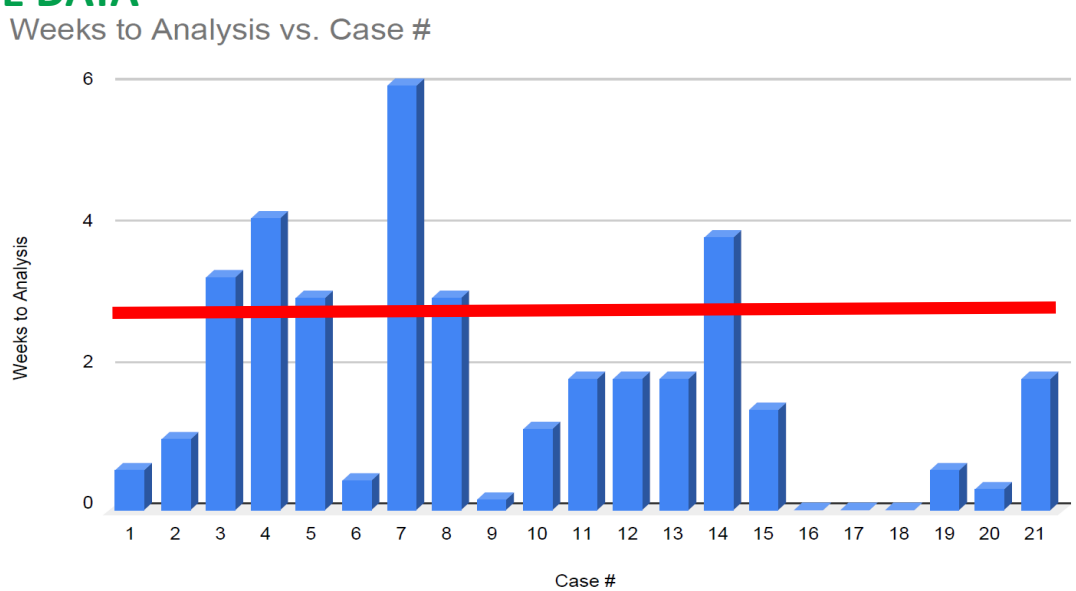
THE STANDARDIZED TECHNIQUE

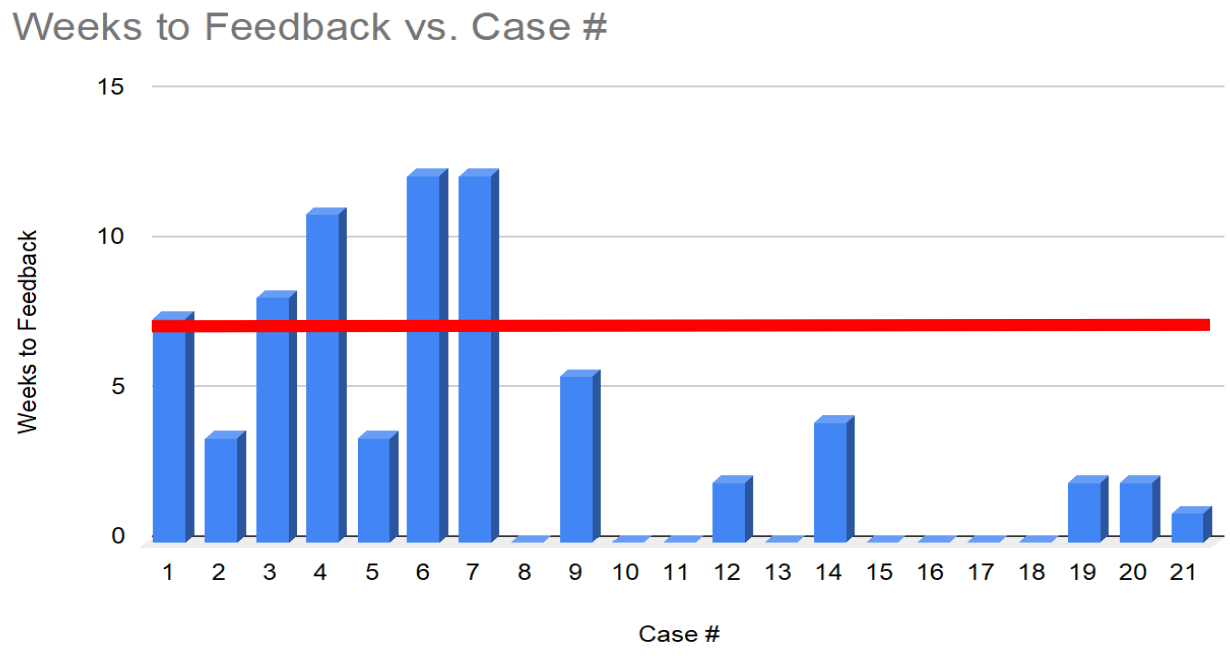
- We utilized the standardized approach to analysis created within my PLQI cohort 4 project
- The approach was adapted from the Canadian Incident Analysis Framework (CPSI, 2012)
- Cases were handed to a NEERT member, based on that member's availability

DATA SET

- 21 cases were submitted between Sept 2021 and Mar 2022
- Bar Charts 1 and 2 outline the cases chronologically (cases 1-6 were submitted in calendar 2020, and 7-14 in 2021)

THE DATA





DISCUSSION

- The NEERT concept worked well. They accepted cases, and in most instances analyzed them and feed results back to the dept within the seven week period outlined in the AIM statement
- This was especially true for cases 1-12 (cases submitted by Dec 2021)
- The data for the period of Jan-Mar 2022 was less robust. This is mainly due to the omicron variant of COVID, which affected both myself and my department in a dramatic fashion.
- As with part 1 of this work, the ability to quickly analyze and feedback results of the cases was inversely proportional to the complexity of the case (more complex cases require a multi-faceted approach)

FUTURE DIRECTIONS

- Re-organize the AIM statement to reflect variations in the complexity of the submitted cases
- Consider different means to feeding back "simple" cases versus "complex" cases
- I did not set out to study the systemic change that should arise from analysis. This is a crucial next step
- Categorize root causes to understand common recurrences

SUSTAINABILITY

- Sustainability of this work improved dramatically compared to part 1 (cohort 4) of this project

Acknowledgements
Dr. Enrique Fernandez Ruiz
Dr. Kelly Mayson
Dr. Jacqueline Trudeau
Dr. Calvin Au

For questions or comments, contact Oliver Applegarth at: oliver.applegarth@vch.ca

Maximizing Joy in Work – Onboarding for Engagement in VA Department of Anesthesiology

Dr. Andrea Brovender, Allison Chiu

THE VANCOUVER ACITE (VA) DEPARTMENT OF ANESTHESIOLOGY

- **Large academic department** embedded in a tertiary care centre that delivers specialized adult care to patients across British Columbia
- **Recruiting** to support surgical service expansion
- High level of **acute** work in a **high stress** environment
- Multiple interfaces with different clinical areas and operational / administrative groups = organizational complexity

PROBLEM

- Expansion necessitates onboarding 4-8 staff physicians and 4-6 locum physicians per year
- **Onboarding** has been **inconsistent/ haphazard** and relied on **physicians individual skills** to navigate a complex system. The result was lost opportunities to harness creativity and enthusiasm in research, education, program building and quality improvement
- Onboarding has been shown to **protect against loss of engagement** over the first years of practice
- **Engagement** has a preventative effect on **burnout** and can positively influence **productivity** and **retention**

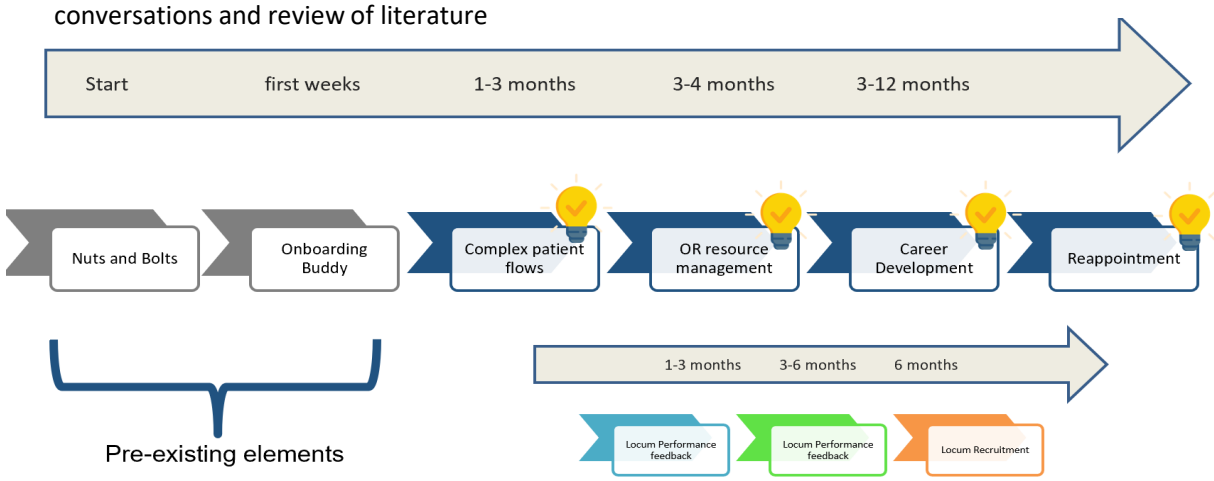
AIM STATEMENT

To improve satisfaction scores related to the onboarding process of locums, provisional staff and department leaders from their baseline to greater than 8/10 by May 2022

- Creation of a structured onboarding program to be applied to locums and new staff during their first 6 months of practice aiming for >95% compliance with steps/ tasks
- Measurements of physician engagement initially and at 8 months

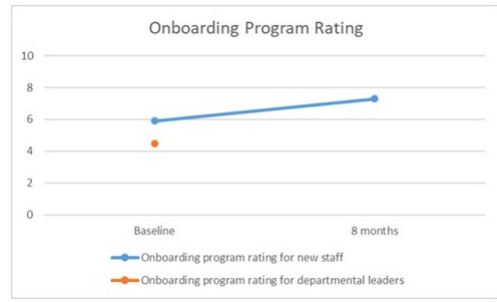
ONBOARDING PROCESS

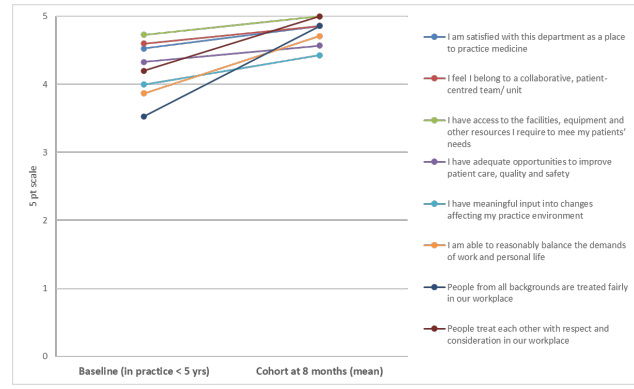
- Informed by a survey of departmental staff with < 5 years and departmental leaders, private conversations and review of literature



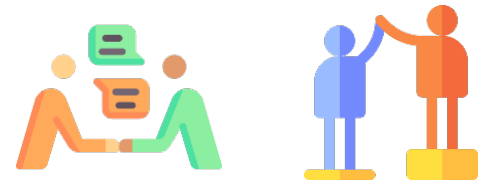
MEASURES OF IMPROVEMENT

- Improvements in global rating, and several measures of engagement





EFFECTS OF CHANGE



100% compliance, high appreciation of the buddy system

6 new staff connected with both step-ahead and senior mentors

- ✓ Departmental leadership has improved understanding of the professional goals of staff, their talents and areas for development/ support of both staff and departmental infrastructure
- ✓ Connections made to fellowship training, QI training, leadership development, funding supports
- ✓ Increased efficiency of process to evaluated and recruit locum physicians to the department
- ✓ Channels of communication between OR staff and VADA have assisted in closing onboarding gaps

LESSONS LEARNED

- **Prioritize relationships** over documents/ handbooks
- **Engagement and wellness are interrelated**. Joy/ meaning/ purpose in work and tangible support protects against burnout
- When mentorship relationships are allowed to develop naturally **implicit biases are in play and physicians from socially marginalized groups are offered less mentorship and sponsorship** overall. Structured mentorship programs may advance **inclusion** and **equity** within a department

SUSTAINABILITY

- Goal setting, road mapping and questions around support and resources are now included in our reappointment process
- Creation of Human Resource tools: staff tracking spreadsheet, conversation guides, mentorship resources

Acknowledgements
With Gratitude to the VADA onboarding committee: Drs Applegarth, Choi, Hamidizedeh, Lee, McEachern, Meikle, Moore, Mullane, Park, Rieley, Trudeau, and also Drs. Huttunen, Rose, Kisilevsky, Wilson, and Dawson.
Thank you to Dr. Jane Lea, physician advisor, PLQI & Supported by Physician Engagement Funding through the SSC

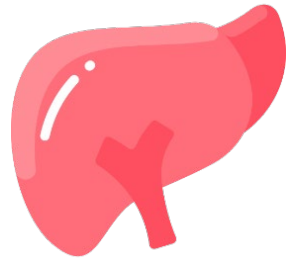
For questions or For comments, contact Andrea Brovender at: andrea.brovender@vch.ca

The road to Early Extubation in Liver Transplant Recipients

Stephanie Chartier-Plante, Kristen Kidson, Allison Chiu, Steve Moore

CONTEXT

- Vancouver General Hospital (VGH) is the sole liver transplant center for the province of British Columbia
- Concept of early extubation taken from cardiac surgery
- Allow optimization of resources utilization without compromising patient safety or comfort



PROBLEM

- In 2019-2020,
  - Mean ventilator time for liver transplant recipient > 24 hours (28 h 55m)
  - Mean icu los for liver transplant recipient 4 days, 4 hours, 59 minutes
  - Mean overall LOS post transplant is 19 days
- Surgical factors (high reoperation rate), Anesthesia and ICU related factors (lack of experience with early extubation in this population) and patient related factors (needs to determine favorable patients characteristics were the main barriers

AIM STATEMENT

100% of VGH patients meeting early extubation criteria extubated within 4 hours of their liver transplant and transferred back to the transplant floor within 12 hours of their transplant by May 2021

INTERVENTION OR STRATEGY FOR CHANGE

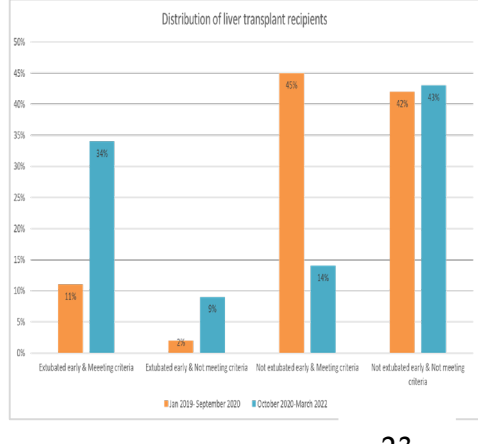
- Early extubation protocol Implemented October 2020 after approval by ICU and Anesthesia
- New Pre printed orders to facilitates transfer to transplant ward
- Meetings to implement MASSIMO monitoring on transplant ward for safer early transfer
- Updates q 6 months in the ICU with posters and review at ICU QI/QA rounds

MEASURES OF IMPROVEMENT

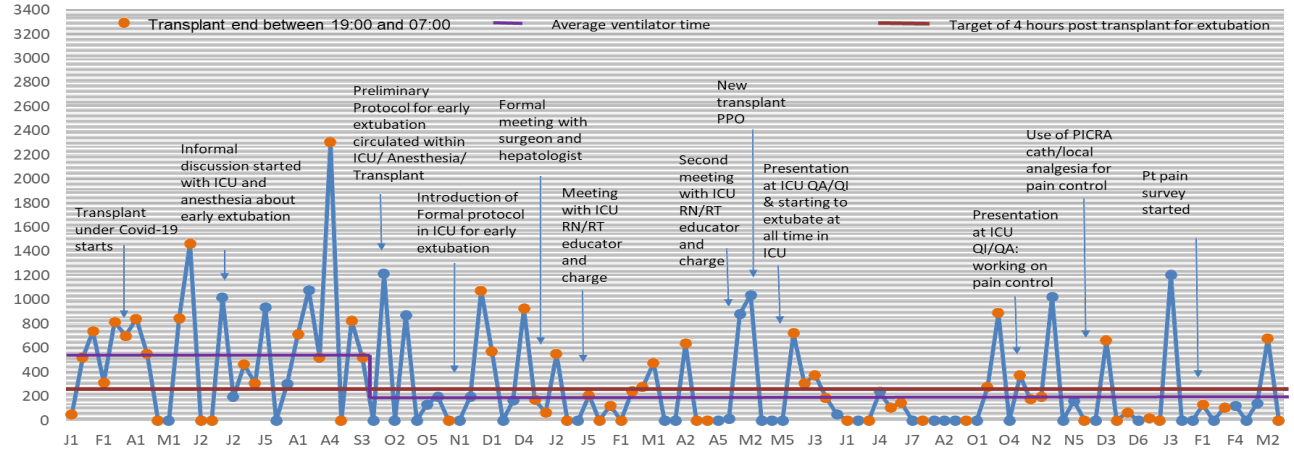
- Hours on the ventilator, ICU LOS in hour, Overall LOS in day post transplant was collected
- Balancing measures: Return to ICU, reintubation, reoperation within 48 hours of extubation
- Pain survey to assess patient experience of post operative pain, distribution started in February 2022, only 3/7 patients answered

EFFECTS OF CHANGE

- Increased in the proportion of patients meeting criteria and extubated early before (19%) and after (59%) protocol implementation
- Successful and safe early extubation 0f 43% of our liver transplant recipients
  - Only one return to ICU and no reintubation in the first 48 hours post extubation in this population
- Slight decrease in ICU LOS from 28 hours to 23 hours among patients extubated early
- Decrease in Overall LOS from 9 to 7 days in patients extubated early
- Obtained Massimo monitoring for the transplant ward to facilitate safer transfer from ICU

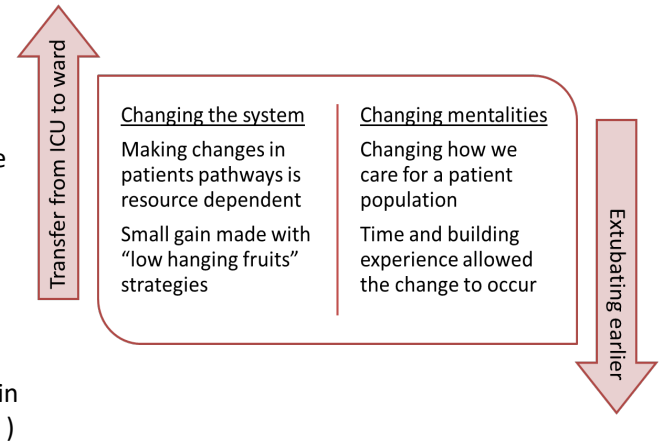


Minutes on the ventilator for liver transplant recipients meeting early extubation criteria for 2020-2022



LESSONS LEARNED

- QI project has helped to make and showcase rapid changes in the transplant program.
  - We successfully and safely introduced a early extubation protocol using available resources
  - This could be replicated in other transplant centers.
- With QI, we contributed to successfully change mentalities about care of liver transplant recipients.
- Systems changes such as making changes in pathway (early transfer from ICU to Ward) is resources dependent and takes more time



SUSTAINABILITY AND FUTURE

Integrated the PLQI project with the Liver transplant integrated practice unit (IPU)

- ICU LOS and ventilator time as Objective and key results (OKRs)

Plan to published our protocol with a cost analysis of the protocol implementation

Acknowledgements

Thank you to VGH liver transplant team, VGH ICU, VGH transplant anesthesiologist and PLQI team
Support and Funding from SSC

Glossary of acronyms

VGH: Vancouver General Hospital; LOS: Length of stay, ICU: intensive care unit

For questions contact: Stephanie.chartier_plante@vch.ca

Triage Project

Colleen Fulton (Lead), Sandra Chow (PLQI), Krista Shackleford (Quality), Dr. Jane Lea (PLQI Mentor)

CONTEXT

- The Triage Project is being undertaken on the Labour and Delivery Unit at Lion's Gate Hospital.
- Staff involved/collaborated: Nursing, Midwives, Physicians, Managers/Operations, and Quality.

PROBLEM

- There are several barriers preventing timely Outpatient Induction of labour (IOL) on the labor and delivery unit.
- Delayed IOL contributes to longer length of stay (LOS), delayed patient care, and dissatisfaction.
- From the study, 27% of inductions had delayed start times.
- Based on average outpatient LOS data, we hypothesized that 'time to provider assessment' was one cause of delay.

14 of 51 Inductions (27%) had delayed start times

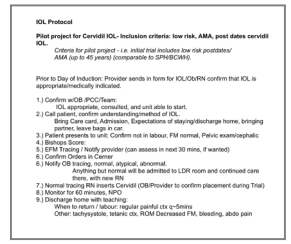
AIM STATEMENT

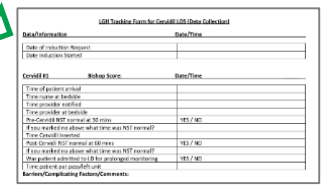
- **To decrease LGH labor and delivery outpatient length of stay to less than 3 hours by June 2022.**
- Intended result: That this project feeds into a larger LDR improvement collaboration to create a Labour and Delivery Triage space.

INTERVENTION OR STRATEGY FOR CHANGE : October 2021 – July 2022

- Step 1: Process Map to represent both current and future states of the IOL Process – see Figure 1 and 2
- Step 2: Collaborate with units that already have RN initiated Cervidil IOL as standard care
- Step 3: Creation of LGH specific Cervidil IOL protocol
- Step 3: **Stakeholder buy in**
- Step 4: RN Data collection – current LOS, time to nurse assessment, time to provider assessment
- Step 5: Pilot project comparing LOS for RN initiated IOL to current process

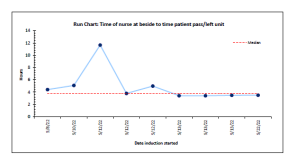
Stakeholders updated at unit/department meetings, conversations on the unit, and individual meetings with management.

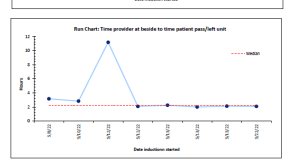




MEASURES OF IMPROVEMENT

- Our first PDSA compared if Registered Nurse (RN) initiated Cervidil inductions could reduce outpatient LOS without compromising patient safety/satisfaction. Data collection by RN includes: patient total time on unit, time assessed by nurse, time assessed by provider, time of non-stress test.
- Run charts to discern median time at bedside (RN and Provider).
- As of May 2022, the median time of nurse at beside to time patient leave the unit is 3.8 hours, and median time of provider at bedside is 2.2 hours.
- The plan is to compare LGH LOS data to data from hospital sites that have already implemented RN led IOL's.





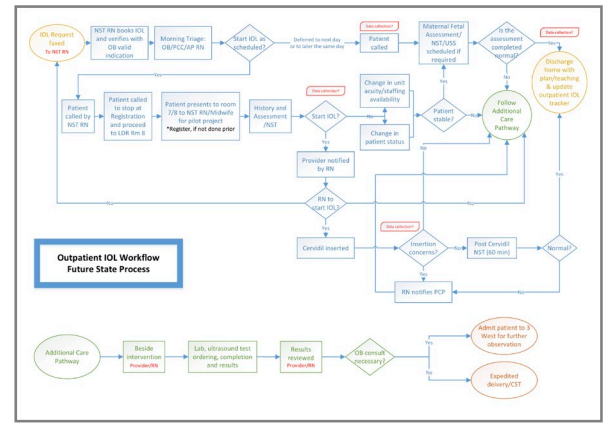


Figure 1

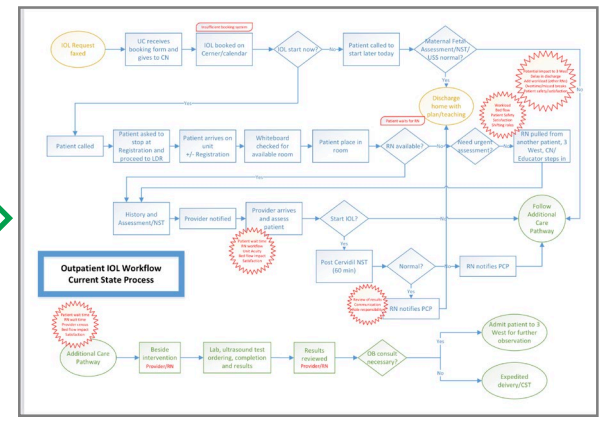


Figure 2

EFFECTS OF CHANGE

- Unit is accepting of Quality Improvement framework to test change ideas and collaborate for improved patient care.
- Quality Improvement initiative has positively impacted staff morale, imbued a sense that change is possible and can be initiated by clinical staff and supported by managers.
- Increased interdisciplinary collaboration and renewed sense of positive change not focussed on pandemic response.

LESSONS LEARNED

- **Stakeholder buy in is critical to the success or failure of any change idea and this process is so valuable but can be very time consuming.**
- If RN inductions similar to larger institutions can be implemented in a facility the size of LGH as a standard of care, then they could be implemented as standard of care across the VCH health authority.
- Streamlining the induction process increases patient safety, satisfactions and can make a unit run more efficiently.

SUSTAINABILITY

- Collaborating with Team Based Quality Improvement (TBQI) and Perinatal Quality Committee through an embedded quality improvement framework will move this project from an individual PLQI training project to larger and ongoing LDR collaboration.

Acknowledgements

Co-authors, Deanna McArthur + LGH RN's, LGH staff, physicians.
Thank you for the funding from LGH's Facility Engagement.

Glossary of acronyms

PLQI: Physician-led Quality Improvement
LGH: Lion's Gate Hospital
LOS: Length of stay
IOL: Induction of labour
NST: Non-stress test

For questions or For comments, contact Colleen Fulton at: colleen.fulton@vch.ca

Reducing Incomplete New Treatment Order Sets at Richmond Cancer Clinic (RCC)

Jeremy Ho, Ann Enno, Lisa Chao, Vince Wong and Glenda Au-Yeung

CONTEXT

- Richmond Cancer Clinic is an outpatient full service chemotherapy center at Richmond Hospital.
- When a new treatment is ordered for a patient, the physician is responsible for completing several components including: 1) clinic referral form, 2) orders sheet, 3) allergy sheet, and 4) printing off the pre-printed orders (PPO) from BC Cancer Agency (BCCA) website.
- The new treatment order set needs to be completed before the treatment can be booked, as the unit clerks needs to know the specifics of the treatment being organized, the pharmacist needs to obtain approval from BCCA, and nursing may need to make arrangements for the patient before treatment is started.

PROBLEM

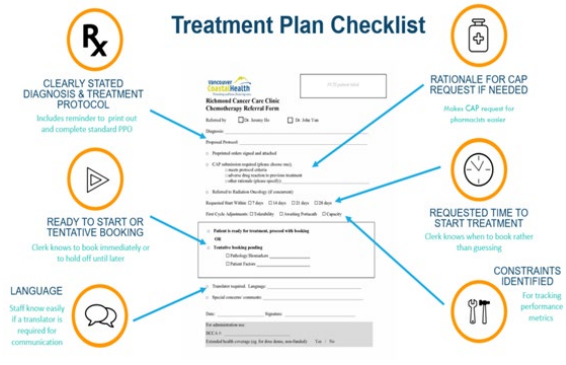
- A review of 20 charts concluded that up to 50% of new treatment order sets were incomplete in at least one component.
- When an order set is incomplete, it is returned to the physician resulting in the appointment booking being delayed.
- The unit clerk may try to anticipate the incomplete physicians' orders and book the treatment incorrectly which would later need to be changed, leading to duplication of work.
- Communicating important patient details for appropriate booking of the patient including desired time to start treatment, concurrent radiation protocols, pending investigations or consultations, and rationale for pharmacy to apply to BCCA for funding were gaps identified in the current process.

AIM STATEMENT

- **To reduce incomplete new treatment order sets by 50% within 6 months at RCC.**
- **To facilitate communication of important patient details related to treatment booking and obtaining approval from BCCA.**

INTERVENTION OR STRATEGY FOR CHANGE

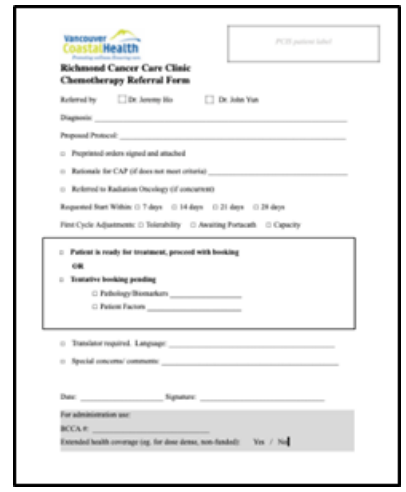
- Developed new Treatment Plan Checklist to replace existing clinic referral form as a reminder to complete all components.
- Included new fields for communication of patient details related to treatment booking and BCCA approval.
- Validated with unit clerks, pharmacy and nursing.
- New treatment order set packages were placed in each physician's office in a visible location.
- Meeting with physicians regarding expectations on the completeness of new treatment order sets and that unit clerks would not process orders until complete.



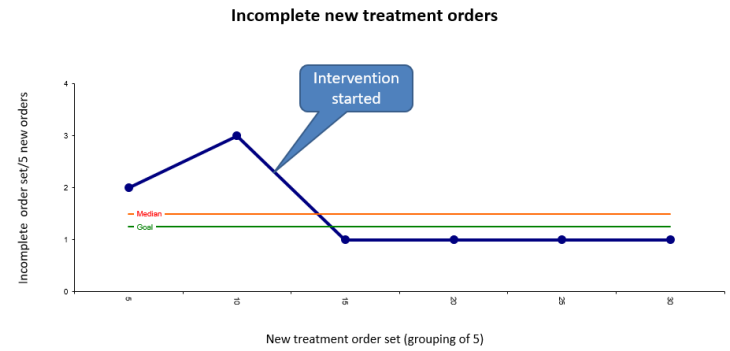
MEASURES OF IMPROVEMENT

- Tracked the number of incomplete treatment order sets/5 new orders
- Feedback from unit clerks, pharmacy and oncologists regarding impact on workflow and communication

Chemotherapy Referral Form


Vancouver Coastal Health

Richmond Cancer Care Clinic
Chemotherapy Referral Form



EFFECTS OF CHANGE

- Immediate reduction of incomplete new treatment order sets.
- Unit clerks felt clarity of orders and booking parameters was improved.
- Pharmacy appreciated the information regarding BCCA approval.
- Oncologists did not notice any increase in work with the new checklist.

LESSONS LEARNED

- Physician involvement in QI projects can be very powerful force in spurring change.
- A quick success helped boost the team's morale and desire to take on future QI projects.

SUSTAINABILITY

- Developed Standard Operating Procedures so that any new oncologists/locums are aware of the new process/expectations.
- Regular check-in with unit clerks to see if there is any regression.

Acknowledgements
Sandra Chow
Stephen van Gaal
Funding provided by SCC

Glossary of acronyms
PLQI: Physician-led Quality Improvement
SSC: Specialist Services Committee
VGH: Vancouver General Hospital
PPO: pre-printed order

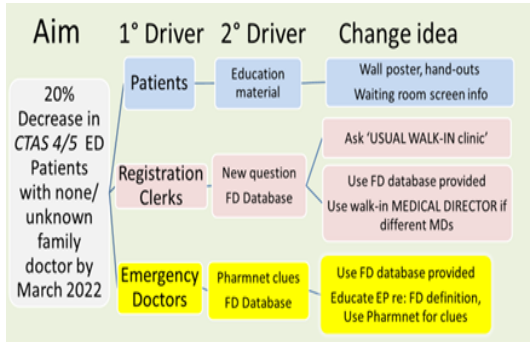
For questions or For comments, contact Jeremy Ho at: jho3@bccancer.bc.ca

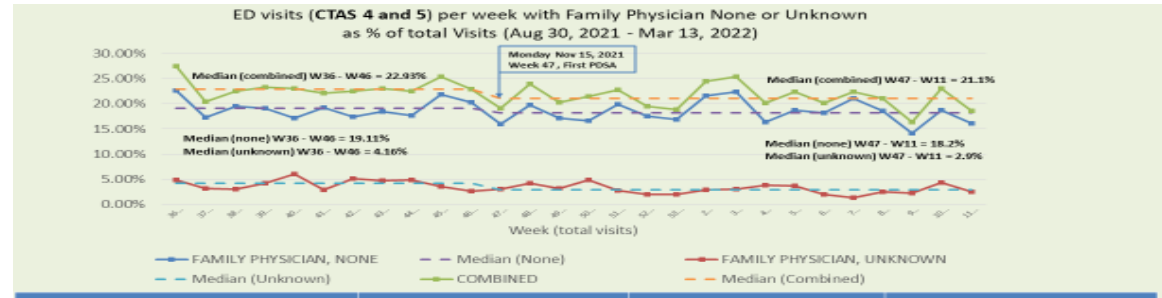
Improving Family Doctor Documentation in the Emergency Department (ED)

Dr. Paul Huang, Allison Chiu, Ethan Zhang, Johnny Yip, Dr. Jane Lea

CONTEXT

- 20% of Richmond ED patients are documented with no family doctor names: 16% with 'none' and 4% as 'unknown'.
- Missing family doctor documentations adversely affects continuity of care.
- Contributing factors: inadequate information from patients, missing hospital database information, and staff/patient unawareness that consistent usage of one walk-in clinics makes that clinic the de facto family doctor





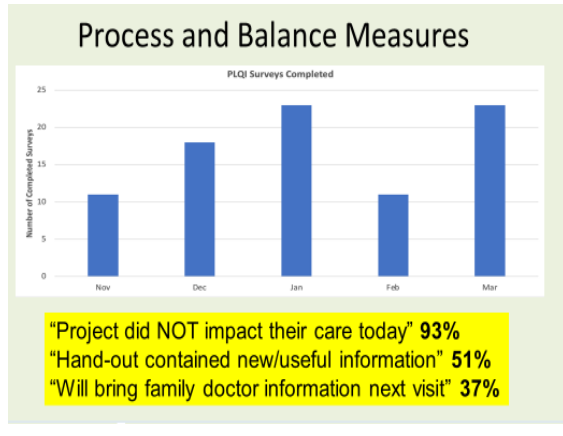
MEDIANS	PRE	POST	% DECREASE
None	19.1%	18.2%	5%
Unknown	4.2%	2.9%	30%
None + Unknown	22.9%	21.1%	8%

AIM

- Primary aim: 20% decrease in missing documentation of low acuity patients. This subgroup was chosen to allow providers more time to address the family doctor issue.
- Secondary aim: help patients find a family doctor, thereby improving continuity of care.

STRATEGY FOR CHANGE

- Educate patients/staff with posters.
- Provision of Richmond Family Doctor database to make searches easier.
- Ask emergency doctors to identify potential family doctors using Pharmanet.
- Patient engagement advisors gave input for patient surveys.
- Health Information Management distributed instructions to registration clerks and monitored family doctor responses to mistaken documentations.
- Group emails, departmental meetings, Slack channels, YouTube demos, and one-to-one discussions.



MEASURES OF IMPROVEMENT

- Run chart of median changes in percentage of patients with 'unknown' and 'none' family doctor before/after project start.
- Patient survey of project effects and community doctor complaint rates (no change) used as process/balance measures.

EFFECTS OF CHANGE

- 30% decrease in low acuity patients with 'unknown' family doctor status.
- 5% decrease in the 'none' group—probably identification of patients' family doctors (e.g. walk-in clinics) rather than actual reduction in patients with no family doctors.
- 8% overall decrease in the two groups combined.

LESSONS LEARNED

- Solicit input from all stakeholders at onset and throughout course to reduce resistance to change.
- Continual personal encounters in addition to virtual methods of communication to maintain motivation.
- Combine peer influence with authoritative voices to increase project credibility and possibly compliance.
- Start smaller than planned to minimize effects from early problems that can create more negative impact than anticipated.

SUSTAINABILITY

- Challenges to sustainability: new CERNER EMR system, updating posters and family doctor database, motivating emergency staff to incorporate into workflow, and training of new staff.
- Opportunities: the concepts of patient educational posters and database for easier searches are applicable to all departments; collaborate with the Urgent Care Clinic that has expanded and taken on a role to facilitate finding family doctors for patients.
- Other local hospitals face the same magnitude of problem which should be tackled with similar collaborative QI approaches.

Acknowledgements
Enrique Fernandez Ruiz (data analyst); Shinta Suwita, Cherry Pacheco (Health Info Mgmt.); Denise Ralph, Kim Tsang (Richmond Division of Family Practice); Lisette Montessori, Mandy Man (Richmond Hospital QI group); Beth Rizzardo (Patient voice advocate); Drs. Richard Chan, Matt Kwok (RH ED physicians); all unit and registration clerks, ED nursing staff, and PLQI/DoBC initiative team.

Glossary of acronyms
CTAS: Canadian Triage and Acuity Scale (for urgency-to-be-seen)

For questions or For comments, contact
Dr. Paul Huang at: paul.huang3@vch.ca

Vascular Surgery Diabetes Pathway: Optimizing Inpatient Care and Outpatient Follow Up

Dr. Jordanna Kapeluto

CONTEXT

The patient population with peripheral vascular disease and diabetes (DM) represent a high-risk group. Where diabetic foot ulcers are present the 5-10 year mortality rate approaches 50% with a two-fold higher risk of death compared to DM at baseline. Hospital-based treatment accounts for 77% of total cost of care and is more costly than other DM related admissions. Optimization of inpatient DM care affords the opportunity to address continuity of care with respect to glycemic control and cardiovascular risk factors; along with minimizing peri-operative complications related to DM.

AIM STATEMENT

PLQI Project Goal: (1) To reduce LOS of vascular surgery patients with DM or hyperglycemia by 20%; (2) To reduce peri-operative complications related to DM; (3) Improve time in range (TIR) for glycemic parameters by 30% in hospital; (4) Ensure continuity of care for DM management in the outpatient setting.

INTERVENTION

1. Development and evaluation of a nurse-initiated automatic referral pathway for endocrine consult
2. Endocrine assessment and management of hyperglycemia in hospital
3. Referral to Vancouver General Hospital Diabetes Education Center and longitudinal follow up

MEASURES OF IMPROVEMENT

1. Process measures
    1. Percentage of consults
    2. Time to consult request and consultation completion
    3. Allied health feed back
2. Outcome measures
    1. Glycemic parameters (TIR – 5-10 mmol/L, average glucose)
    2. Length of stay
    3. Peri-operative outcomes (NSQIP data)

RESULTS

Baseline consult rate prior to intervention was 12.5%; following product introduction improved to 67.9%.

Average time to consult (days from time of admission) improved to 3.1 days from 7.75 days.

LOS did not improve post-intervention in the target population. LOS was uniformly noted to have increased in the project timeframe between patient with and without DM. The delta LOS between patients with and without DM did improve from +1.95 days pre-intervention to +0.38 days post-intervention.

RESULTS

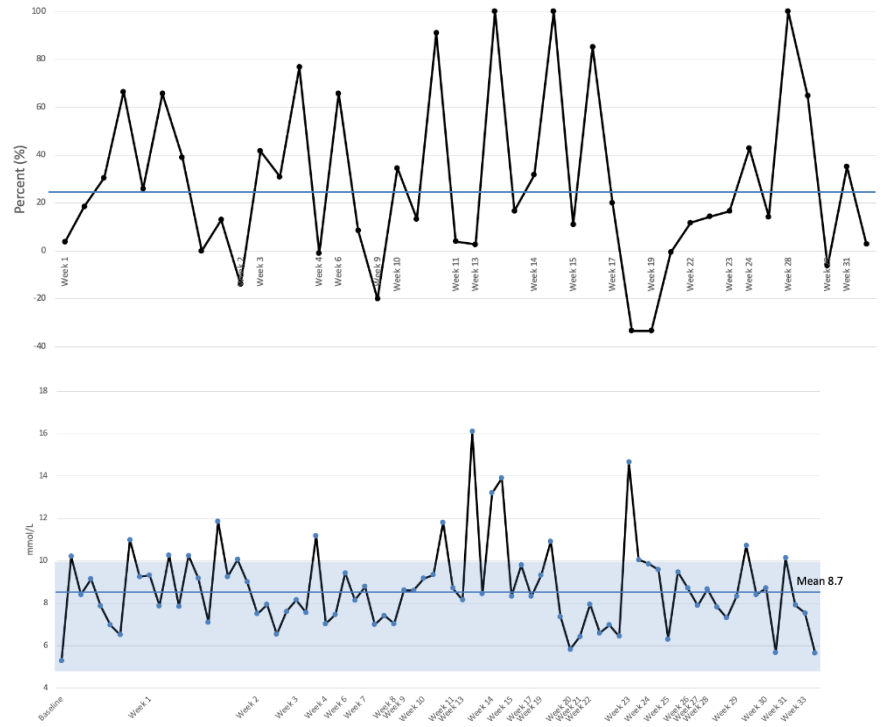


Figure 1: Glucose Time in Range (TIR) Run Chart. Precent improvement pre- and post- intervention with subspeciality endocrine management. Average improvement of 28.4%. Five patients had worse TIR with endo involvement likely due to hypoglycemia, decline in clinical status and other patient-specific factors

Figure 2: Average glucose. Average glucose over course of total hospital stay with ideal range of 5-10 mmol/L highlighted. A total of 80.8% of patients had an average glucose that was considered "in range" for the length of their hospital stay.

LESSONS LEARNED

- Successful implementation takes the coordination and buy-in from multiple teams/stakeholders
- Simplified processes and interventions that do not significantly increase work flow are better received
- A longer duration for collection of baseline data needed as current baseline data was not representative of typical patient profile
- Time to consult and percent of consults likely better markers of process and outcomes than glycemic parameters as glycemic control has too many variables in hospital.

Acknowledgements

- Dr. David Thompson, Director VGH DEC
- Dr. Jonathan Misskey, Vascular Surgery
- Kecia Provo, Patient Care Coordinator VGH DEC
- Divisions of Endocrinology & Vascular Surgery

Glossary of acronyms

DM: Diabetes mellitus
LOS: Length of stay
NSQIP: National Surgery Quality Improvement Program
TIR: Time in range

For questions or comments, contact Jordanna Kapeluto at: jordanna.kapeluto@vch.ca

Minimizing Same Day Surgical Cancellations at UBC Hospital

Dr. Beau Klaibert
Department of Anesthesiology and Perioperative Care, Vancouver Acute

CONTEXT & PROBLEM

In early 2021, there were signs that preventable same-day cancellations were increasing at UBC Hospital. Same-day surgical cancellations are a problem because of:

- Lost surgical time
- Patient disease progression, dissatisfaction and financial impact
- Resource waste
- Opportunity loss
- Financial waste (est. ~$5000 USD/case*)

From ORMIS Database Jan 1 – Dec 6, 2021

153 All-cause cancellations, all surgical specialties

Excluded:
- 84 Non-preventable cancellations
- 2 Cancellations from minor causes

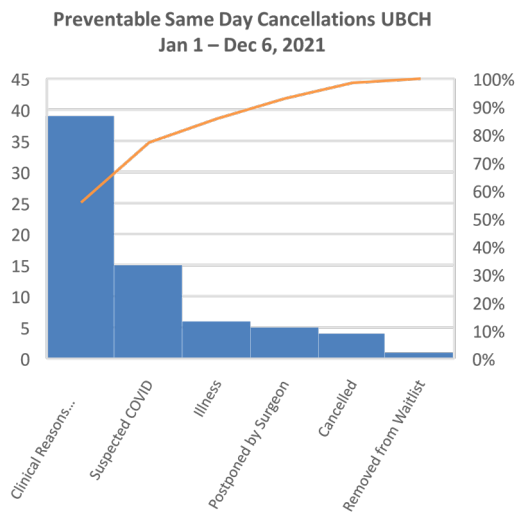
67 (43%) Preventable cancellations

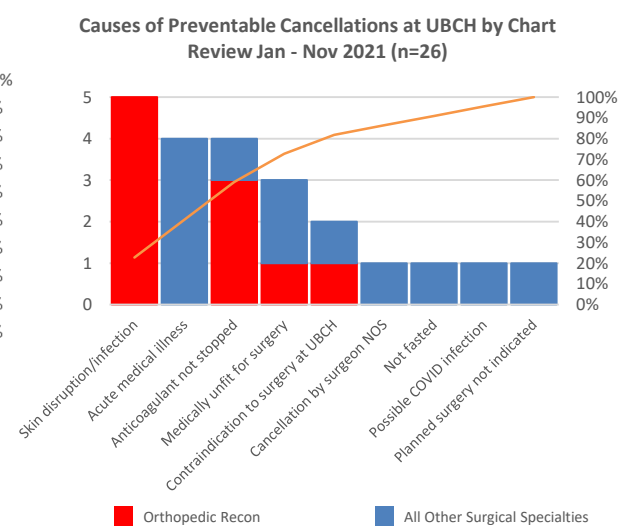
AIM STATEMENT

To decrease preventable same day cancellations by 20% by June 2022

ANALYSIS OF PREVENTABLE CANCELLATIONS

- Review of ORMIS Database showed a large number of cases cancelled for uncharacterised "Clinical Reasons/Findings".
- Manual chart review further characterised the cancelation causes, many of which were in Ortho Recon patients.



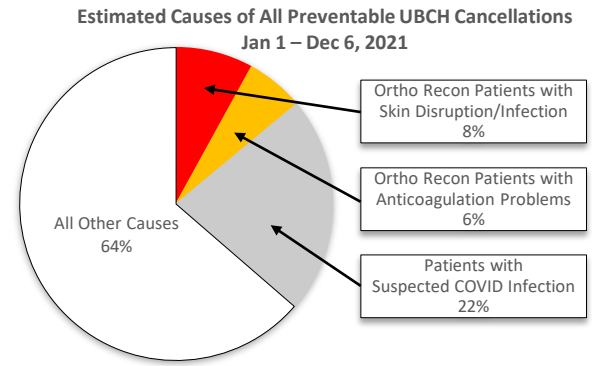


*Pohlman GD, Staulcup SJ, Masterson RM, Vemulakonda VM. Contributing factors for cancellations of outpatient pediatric urology procedures: single centre experience. J Urol 2012; 188(4 Suppl): 1634-8.
Al Talalwah N, McIltrot KH. Cancellation of surgeries: integrative review. J Perianesth Nurs 2019; 34: 86-96.

CHANGE TARGETS

Extrapolating from manual chart review data, three change targets were identified:

1. Skin disruption or infection in Ortho Recon patients.
2. Anticoagulation cessation issues in Ortho Recon patients.
3. All surgical patients with suspected or confirmed COVID infection. This was a potential future target as a MoH process for pre-operative screening was already in place.



CHANGE INTERVENTION

- Initial change plan to only target Ortho Recon patients with skin disruption or infection.
- Plan to call Ortho Recon patients to query about skin disruption or infection at 72 hrs pre-op. This would be an add-on questions during the MoH mandated 72hr COVID screening call.
- Consensus with PAC and Ortho Recon surgeons to implement plan in March 2022.

MEASURES OF IMPROVEMENT

Outcome Measure	Sources
% Preventable same-day cancellations	ORMIS data
Secondary Measures	
% Cancellation from skin disruption/infection and anticoagulation issues	ORMIS data and selective chart review
Balancing Measures	**Sources**
Time impact on nurse screening	Screening nurse survey
Process Measures	**Sources**
Number of referrals sent to Ortho Recon clinic per month	Manually collected list
% Patients being contacted successfully at 72hrs	Manual intermittent review

LESSONS LEARNED

- Funding for the MoH mandated 72hr pre-operative COVID call ended earlier than expected, meaning our project would be delayed while a new plan was devised or alternative sources of funding for preoperative screening found. A few different options are currently under investigation.
- Takeaway Lessons:
  - Plan with sustainability in mind.
  - Start smaller and grow larger.
  - Even small changes in large organisations are complex and take time.

Acknowledgements

Thanks to my PLQI support team: Sandra Chow, Dr. Andrew Shih, Emma Pienaar; and to my other supportive partners: Candace Tegart, Andrea Bisaillon, Johanne Turcotte, Warren Cundy, Dr. Donald Garbuz.
I would also like to acknowledge funding from SSC which made this project possible.

Glossary of acronyms

PLQI: Physician-led Quality Improvement; **SSC:** Specialist Services Committee; **VGH:** Vancouver General Hospital; **UBCH:** University of British Columbia Hospital; **PAC:** Preadmission Clinic; **ORMIS:** Operating Room Management Information System

For questions or For comments, contact Beau Klaibert at: beau.klaibert@vch.ca

Decreasing Emergency Department adverse events & recurrent visits: an Interdisciplinary Learning Review

Jatina Lai, Allison Chiu, Sherry Moon, Andrea Yeung-Meadows, Caroline Martini

CONTEXT

- We studied Emergency Department Bounceback patients (patients who have recurrent visits to ED within 1 week) at Lions Gate Hospital, North Vancouver between March 2020-March 2021
- Emergency physician lead (JL), Nursing leads (AYM, CM), Patient Safety and Quality lead (SM) and Physician Led Quality Improvement program advisor (AC) were involved in this Quality Improvement project

PROBLEM

- Studies show that ED bounceback patients are at a higher risk of adverse events. There is also evidence that some recurrent visits to the ED are unnecessary. This project aims to use the Interdisciplinary Learning Review (ILR) methodology to discover opportunities for improvement (OFIs) in ED bounceback patients. The goals are to decrease patient adverse events and decrease unnecessary visits.
- ILR methodology is hypothesized to be a collaborative, unbiased method by which OFIs can be discovered and used to generate action plans to improve patient care, and improve patient and staff safety.

AIM STATEMENT

- ILR methodology is an unbiased, collaborative way to discover OFIs in ED bounceback patients
- Using an unbiased methodology and multidisciplinary approach
- We aim to decrease adverse events in ED bounceback patients by 25%
- We aim to decrease unnecessary ED bouncebacks by 25%

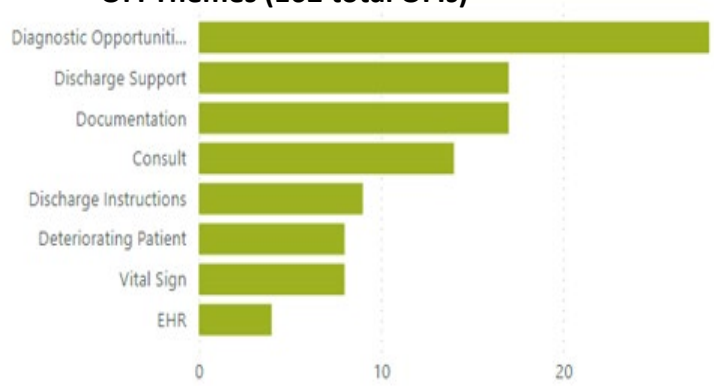
INTERVENTION OR STRATEGY FOR CHANGE

- 80 ED bounceback patient charts were reviewed and 10 chosen by JL based on inclusion criteria and appropriateness
- 10 patient journeys were thoroughly reviewed using ILR method by JL, AYM, CM with support from VCH Patient Safety & Quality team
- 2 large group ILR sessions (approx 40 attendees each) with hospital senior leadership, nursing managers, physicians, allied health members, IT support, Patient Quality and Safety leads in attendance.
- Each case was thoroughly reviewed using ILR process. This included a comprehensive presentation of the case, a collaborative discussion of different areas for improvement of each case, and final selection of specific OFIs reached by group consensus.
- A second sub-committee analyzed OFIs for Risk Assessment, and a third sub-committee analyzed OFIs for Prioritization of Action

MEASURES OF IMPROVEMENT

- The ILR process itself was hypothesized to be an unbiased, multidisciplinary approach to finding systemic issues that may contribute to recurrent visits to the ED. We hypothesized that participation in the ILR process would engage stakeholders and drive the change needed. We hypothesized that OFIs would be a useful guide towards actions and solutions.
- We performed evaluations from ILR attendees regarding the process. Qualitative data was collected.
- Overall, the ILR process was found to be unbiased, helpful and practice changing.
- The ILR process involved many steps. It involved many stakeholders and it took 8 months to be completed.

OFI Themes (162 total OFIs)



Feedback of ILR process

83% of respondents state there was no perceived bias

100% of respondents state that learning objectives were met

100% of respondents state that discussion was adequate and useful

Qualitative data was gathered to answer: "I am motivated to change my practice in the following ways"
Reponses were noted during analysis of OFIs

EFFECTS OF CHANGE

- Based on our qualitative data:
  - ILR process was unbiased
  - ILR process was effective at finding solutions to our problem
- OFIs analyzed and 5 "buckets" of OFIs were identified:

Discharge support: supporting at risk patients upon discharge from ED	**Documentation/vital signs:** standardization of ED documentation as well as rechecking vital signs before discharge	**Consults/diagnostics : i**mproving process and timing of consulting specialists and use of diagnostics in the ED	**Discharge instructions:** improving communication and discharge instructions to ED patients	**Deteriorating patient:** improving early recognition and treatment of deteriorating patients in ED

LESSONS LEARNED

- Interdisciplinary Learning Review is an effective tool to engage stakeholders to make changes in clinical medicine.
- ILR requires time, training and many steps. It can be applied to different populations of patients and can be used to find areas of improvement in different clinical settings.
- ILR process leads to action that will improve the outcomes of healthcare delivery as well as safety for staff and patients.

SUSTAINABILITY

- This project received traction and uptake by hospital senior leadership. The ILR process led to useful OFIs identified. The project's OFIs have led to 5 Quality Improvement initiatives that each have a dedicated team lead.
- Each initiative is accountable to hospital leadership through regular meetings and operational support will be continued to the completion of the 5 QI initiatives projects.

Acknowledgements
This project is kindly funded by VCH, SSC
Acknowledgments: Corrie Irwin, Sean Staniforth, Sean Parr,Nicky Huang, Susan Sinnott PLQI educators and Cohort 5 participants

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Improving vaccination for invasive pneumococcal disease at Heatley Integrated Care Team

Nicolas Lenskyj

CONTEXT

- Downtown Eastside Vancouver
- Complex patients: severe substance use disorders, homeless/underhoused, medically complex
- Interdisciplinary team in a VCH Community Health clinic
- Doctors, nurse practitioners, nurses, outreach workers, peer workers
- Mixed walk-in/family practice model.
- Low MUSIQ score (little protected time for QI, no dedicated QI staff, QI not embedded in usual practice)

PROBLEM

- Most patients at Heatley ICT are at increased risk for invasive pneumococcal disease (pneumonia with sepsis, meningitis)
- Vaccination can decrease risk by ~60%
- Few patients have been appropriately vaccinated (~20%) and clinic-wide monthly vaccination rates are low (~1.5 vaccinations/month)
- Several causes were suggested by staff: confusing guidelines for vaccinations, insufficient time , patient agenda (prioritising urgent needs), difficulty seeing if vaccination supply was available

AIM STATEMENT

- To increase vaccination (Pneumovax) rate
- As measured by shelf-count (ie change in stock of Pneumovax , by weekly visual check of vaccination fridge)
- By 20% over 6 months
- Without increase in staff workload, or decrease in staff or patient satisfaction

INTERVENTION OR STRATEGY FOR CHANGE

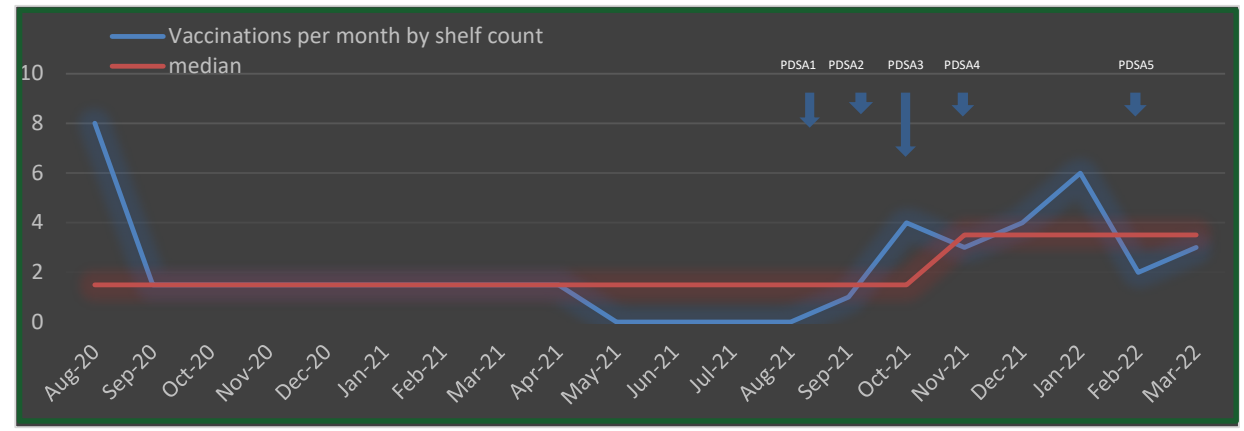
- PDSA 1: increase awareness of vaccination benefit/eligibility by conversations with RN/MD/NP/outreach worker
- PDSA 2: increase awareness of QI approach, by conversations with individual RN/MD/NPs, monthly updates in NP/MD meetings, and LPN/RN involvement in weekly shelf count
- PDSA 3: improve ease of access to vaccination stock (de-clutter and organise vaccination fridge)
- PDSA 4: increase vaccination staffing (add-on to pharmacist temporarily attached to clinic for COVID vaccinations)
- PDSA 5: improve MD/NP ease of decision-making re vaccination eligibility (vaccination flow chart visual aid)

MEASURES OF IMPROVEMENT

- Outcome measure: Pneumovax doses given per month ("shelf count" – visual check of doses in vaccination fridge)
- Process measures: Not attempted; staff engagement was low – surveys I thought would be experienced as burdensome
- Balancing measures: staff workload, staff sentiment, patient sentiment – measurement not attempted, due to low staff buy-in

Glossary of acronyms

EMR: Electronic Medical Record; ICT: Integrated Care Team; LPN; Licensed Practical Nurse; MD: Medical Doctor; MUSIQ: Model for Understanding Success in Quality; NP: Nurse Practitioner; RN: Registered Nurse; SSC: Specialist Services Committee



EFFECTS OF CHANGE

- Median monthly vaccination rate from 1.5 to 3.5
- The problem remains (that most patients are not appropriately vaccinated)
- A small number of patients of order 1% of clinic patient population have improved quality of care
- There may be unmeasured other positive benefits (increasing general attention to preventive care measures)
- No feedback received of any negative effects (to patient or staff satisfaction)

LESSONS LEARNED

- Small improvements in preventive care possible even in a low MUSIQ setting, with low buy-in, and clinic/staff/patients oriented to urgent concerns
- Transferrable ideas: low-tech measures (here, a visual check of shelf stock) can give reliable data with minimal investment of time or expertise (ie compared to EMR-reliant measures)
- Patient implications: though the change in monthly vaccinations is high (from 1.5 to 3.5/month) , the absolute numbers of vaccinations are very low compared to the patient population. Further work is necessary to build upon improvement.

SUSTAINABILITY

- Vaccination (and preventive care in general) are never urgent concerns, and this clinic and this patient population are oriented toward urgent care
- A dedicated vaccinator appears to have made the most significant improvement – unknown if this resources will be available again
- QI awareness has improved; QI is now a routine small part of monthly MD/NP meeings, and other staff have been introduced to the basics on a few occasions
- A panel management approach would likely help improve attention to preventive care, and a roll-out of EMR-based tools for this is planned

Acknowledgements

Funding from SSC; Enrique, Fernandez, Dr Cole Stanley (PLQI staff); Dr Jade Koide (PLQI alumnus); RNs Jessica Craig, Liz Horner; Dr Steve Yau, Dr Dan Pare, Dr Mike Norbury

For questions or For comments, contact Dr Nicolas Lenskyj at nicolas.lenskyj@ubc.ca

Prevention of Postoperative Atrial Fibrillation following Cardiac Surgery in Vancouver General Hospital

Dr. Sean McLean, Dr. Sinead Egan, Dr. C Collins Smyth, Dr. Shruti Chitnis, Dr. Jamie Head, Gurdip Bhatti, Allison Chiu

PROBLEM

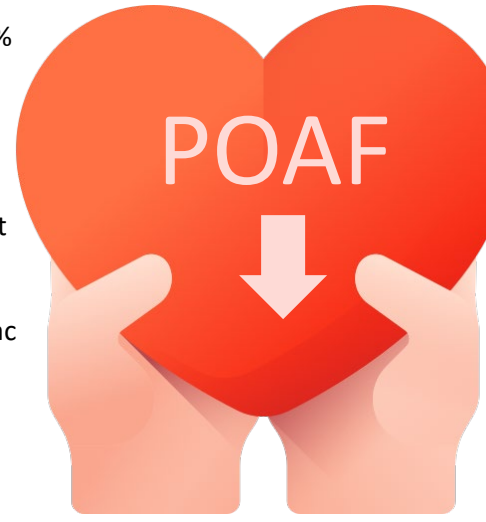
- Post-operative atrial fibrillation (POAF) incidence after cardiac surgery is very high (20-50%)
- POAF increases morbidity and mortality:
  - Hospital Length of Stay (1-2 days longer)
  - Permanent AF (8x more likely)
  - Long term mortality (2x worse)
- POAF prophylaxis is well studied but underused

AIM STATEMENT

- To decrease the incidence of POAF at Vancouver General Hospital, Cardiac Surgery Patients from 35% to 15% by May 2021
- To increase adherence to recommended POAF preventative measures by 50% by May 2021

STRATEGY FOR CHANGE

- Engaged colleagues from cardiac surgery, anesthesia, nursing, and pharmacy
- Developed a Pre-printed Order for POAF prophylaxis to bring POAF to forefront of post-operative care and provide guidance to order amiodarone or beta blockers
- Created a data collection and monitoring plan to audit the results across Cardiac Services Intensive Care Unit (CSICU) and cardiac surgery ward
- Created posters for ongoing education and awareness (see below)



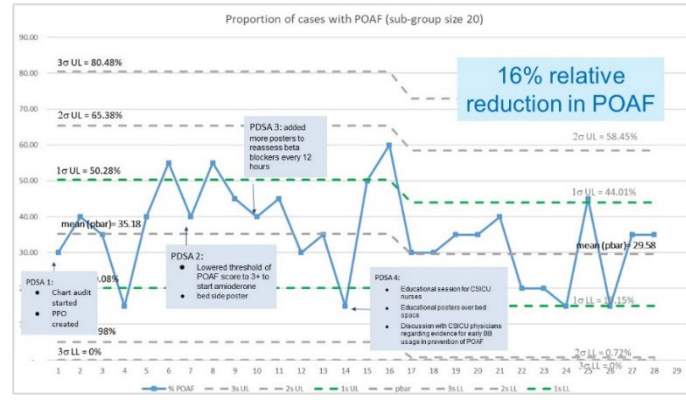
MEASUREMENT OF IMPROVEMENT

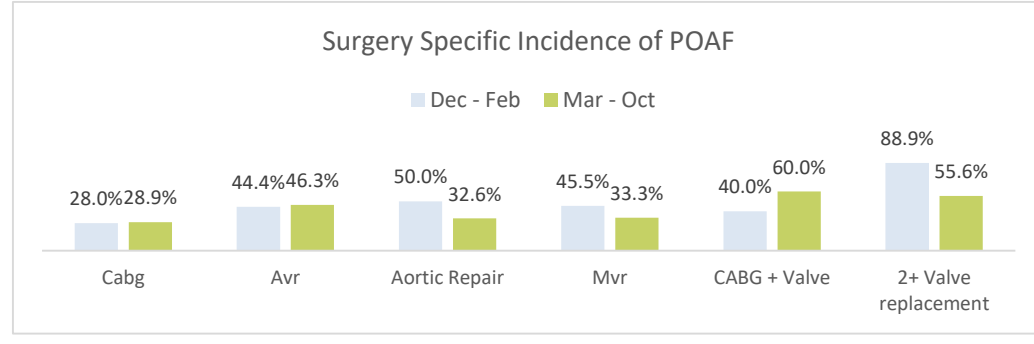
Data was collected using a data collection sheet that followed the patient from the ICU onto the cardiac surgery ward. Data was entered into RedCap. Measures include:

1. Incidence of POAF in the CSICU for all cardiac surgery patients
2. Use of prophylactic amiodarone
3. Incidence of early beta blocker start at post-operative day 1 (POD1)

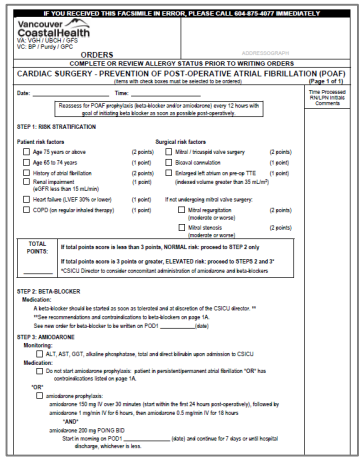
EFFECTS OF CHANGE

- Mean Incidence of POAF in all cardiac surgery patients decreased from 35.2% to 29.6% (16% relative reduction)
- Percentage of amiodarone prescribed when indicated increased from 12.5% (Dec 2020 – Feb 2021) to 41.4% Mar – Oct 2021)
- Unfortunately the proportion of cases that had their beta blockers restarted on post-op day 1 did not change over the audit period

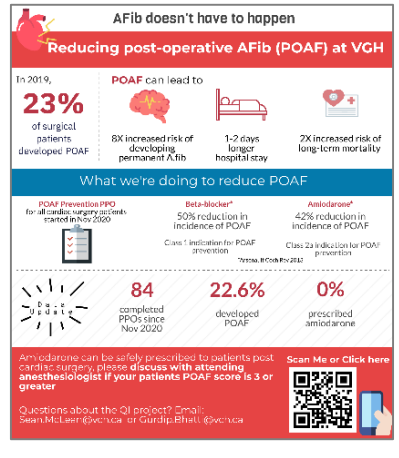


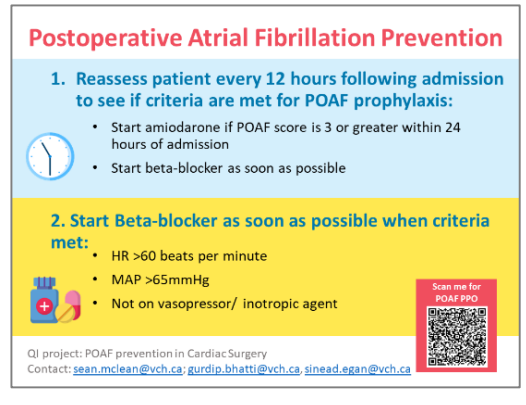


Pre-printed order with risk scoring



POAF Infographic posted in CSICU





NEXT STEPS & SUSTAINABILITY

- Ongoing audit of POAF incidence and prophylaxis use
- Established connections across CSICU and cardiac surgery ward for future QI initiatives
- Working to implement POAF into standard cardiac surgery post-op orders in Cerner

Acknowledgements

VGH Cardiac Surgeons, Eric Chu , Dr. T. Chong, Dr. Darren Mullane, Patty Choy (NP), Dr. Jason Andrade, Mary Nieforth, Cardiac Services BC data support, Dr. Kelly Mayson

For questions or comments, contact Dr. Sean McLean at: sean.mclean@vch.ca

VGH Orthopaedic Trauma Opioid Stewardship Program

Jeffrey Potter, Darren Roffey, Camille St Cyr, Hing Yi Wong, Kelly Lefaivre

VGH ORTHOPAEDIC TRAUMA

- Level 1 Trauma Centre
- 6 Orthopaedic Surgeons
- ~1500 patients/year
- Combination of surgical daycare and inpatient
- High reliance on opioids for post-op pain management
- NSAIDS relatively under-utilized
- Risk of delayed/non-union of fractures

OPIOIDS AND POST-OP PAIN IN ORTHOPAEDIC TRAUMA

- POPBC DATA ON 2018 PRESCRING PRACTICES AT VGH:
  - 45 Different prescribers
  - 18 opioid derivatives prescribed
  - 13% of opioid-naïve patients discharged on Rx of ≥ 90 Morphine Milligram Equivalent daily
  - 25% of opioid-naïve patients received additional opioid prescription after 3 months

AIM STATEMENT

- **To reduce the morphine equivalent prescription rate during the first 28 days post-operatively by 30%.**
- **Based on similar results from other post-op populations**

STRATEGY FOR CHANGE

- Standardize prescribing practices
  - Multi-disciplinary process
    - Pharmacy
    - Transitional Pain Clinic Physicians
  - Opioid-sparse protocol
  - Improved use of multi-modal analgesia
- Multi-disciplinary pain management
  - Identification of at-risk individuals
  - Early referral to Complex Pain and Addictions Service or Transitional Pain Clinic

MEASURES OF IMPROVEMENT

- MME prescribed per patient
  - Awaiting approval for access to Health Data Platform BC
  - Plan to collect Pharmanet data
  - Compare MME prescription to 2018 values
    - Average 28-day MME per patient in opioid naïve
    - Frequency of ≥ 90 Morphine Milligram Equivalent daily discharge Rx
- Referral Pattern to Transitional Pain Clinic
  - Referral frequency by Orthopaedic Trauma Staff
- Balancing Measures
  - Post-op ED bounce backs
  - Frequency of alternate prescribers (GP, ED)
  - TPC wait 1 times

Patient Label

℞ Orthopaedic Trauma Post-Op Same Day Surgery

❑ Acetaminophen 650 mg by mouth every 4 hours as needed.
- Not to exceed 4 g total per day
- Over-the-counter purchase

NSAID/COX 2 inhibitor:

❑ Ibuprofen 200 mg
- 200 mg to 400 mg every 4 hours as needed
- Over-the-counter purchase
- Do not take beyond 14 days

❑ Celecoxib 100 mg
- PO BID as needed
- Mitte = 20 tablets
- Do not take beyond 14 days

❑ NSAID/COX-2 contraindicated – Avoid taking post-op

Opioid/Opioid agonist:

❑ Hydromorphone 1 mg
Mitte = _____ (15-24)
Duplicate required
- 1 mg Q4H as needed for breakthrough pain
- May increase to 2 mg Q4H if 1 mg not effective
- Wean as able

❑ Tramadol 50 mg
Mitte = _____ (15-24)
- 50 mg Q4H as needed for breakthrough pain
- May increase to 100 mg Q4H if 50 mg not effective
- Wean as able
- Not to exceed 400 mg total per day

Please call VGH Fracture Clinic at 604-875-4694 as soon as possible to book follow-up 10-14 days from surgery with (*circle one)*

Dr. O'Brien Dr. Broekhuyse Dr. Guy Dr. Lefaivre Dr. Potter

Name (print) _____ CPSID _____

Signed _____ Date _____

EFFECTS OF CHANGE

- Anticipate decreased average MME prescribed post-op
- Anticipate decreased duration of opioid use post-op
- Anticipate narrowed spectrum of prescribing
- Anticipate increased referrals rate to TPC & CPAS

LESSONS LEARNED

- Identify enthusiastic team members that share your vision
- Take advantage of the expertise of team members
- Beware projects that rely on outpatient prescriptions for primary outcomes or aims
  - Suggest PLQI team develops process to allow expedited Health Data Platform access

SUSTAINABILITY

- Ease of use: Increased efficiency has led to good uptake and likelihood for ongoing
- Forced function: To be incorporated into Cerner with CST at VGH
- Established referral patterns: Ongoing interaction with CPAS and TPC

Instructions for Patients
- If you have had a regional block:
  - Continue taking regular acetaminophen while the block wears off.
  - Add additional pain medication as needed as soon as your block begins to wear off.
- Prescribed medications can be taken simultaneously.
- Always take the acetaminophen and anti-inflammatory regularly *before* taking an opioid. This is for baseline pain control. Don't wait for your pain to become very bad.
- Many people do well with only these medications.
- Opioids should be taken for pain not controlled by the other prescribed pain medications.
- Aim to discontinue opioids within 2-4 days of surgery.
- Opioids should be discontinued as soon as no longer required for pain control.
- Use of NSAIDS/Cox-2 inhibitors beyond 3 weeks after fracture fixation may delay bone healing.
- RETURN any unused opioid medication to the pharmacy for disposal. DO NOT store it at home "just in case".

Other ways to help control pain after surgery:
- Ice: Use cold packs for 20 minutes at a time, several times a day. Do not apply ice directly on the skin.
- Elevation: Raise the injured area to a level above the heart.

Additional sources of information for post-op pain control:
- https://orthoinfo.aaos.org/en/recovery/managing-pain-with-medications/
- https://orthoinfo.aaos.org/en/treatment/alternative-methods-to-help-manage-pain-after-orthopaedic-surgery/

Acknowledgements:
Dr. Michael Negraeff, Dr. Pouya Azar, Dr. Ashley Smith, Dr. Pierre Guy, Dr. Peter O'Brien, Dr. Henry Broekhuyse, Caleigh Sullivan Ashe, Dr. Stephen Van Gaal, Enrique Fernandez Ruiz, Emma Pienaar, Nilu Partovi, Rosanne Thalakada, Nicola Horwood

Glossary of acronyms
PLQI: Physician-led Quality Improvement; SSC: Specialist Services Committee; VGH: Vancouver General Hospital;

For questions or for comments, contact Jeffrey Potter at: Jeffrey.Potter@vch.ca

Goals of Care Documentation on Emergency Department Temporary Admission Orders at Richmond Hospital

Dr. James Simmonds

CONTEXT

- Richmond Emergency Department (ED) has approximately 50000 visits/year
- Project involved the Richmond Emergency Physician Association (REPA), the unit clerks in the ED, Regional Palliative Approach to Care Education (RPACE)

PROBLEM

- Richmond Hospital, often has emergency physicians writing covering orders or "Temporary Admission Orders" for consultants overnight. These patients are seen in the morning by the Most Responsible Physician (MRP). Occasionally these patients unexpectedly deteriorate overnight and the emergency physician responding may not know patient or if goals of care (GOC) were established
- There has been a variety of practices for documenting GOC: including on the ED paper chart, dictated, or temporary order set
- Patient care and provider satisfaction suffers as a result of this process

What is Regional Palliative Approach to Care Education (RPACE)?

RPACE is an interdisciplinary team that supports VCH communities and programs in engaging in an early palliative approach to care. Services provided include:

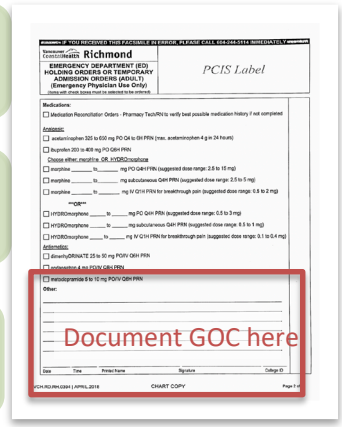
- Education for all staff disciplines around defining a palliative approach, identifying patients who would benefit, and having goals of care conversations.
- Coaching and mentorship with goals of care conversations
- Support with implementing a palliative approach to care within your work setting

AIM STATEMENT

- Improve documentation of GOC on ED temporary admissions and standardize where this occurred. And have over 80% of admissions documented on temporary admission order set by July 1, 2022
- Secondary outcome was to assess emergency physicians comfort levels with these discussions and work towards improving this

INTERVENTION OR STRATEGY FOR CHANGE

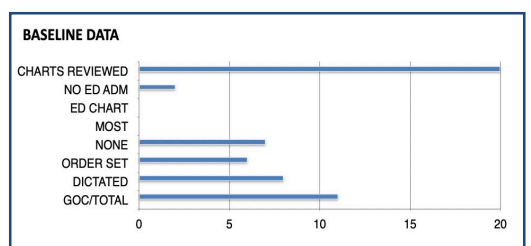
Improve provider comfort level with Goals Of Care conversations	• Survey to generate ideas to improve comfort levels amongst providers • Collaborated with VCH multidisciplinary team RPACE; offered ED focused GOC teaching session • Teaching session with active participation of applying framework to cases relevant to ED
Standardize location of documentation	• Informed by initial survey results to open questions • Propose to have GOC documented in a single location on the temporary admission orders
Implement physical prompts at work stations to promote change	• Reminders in high traffic areas • Point of care reminders at workstations and emails outlining change



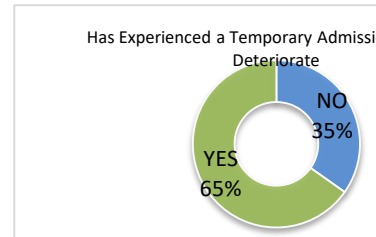
MEASURES OF IMPROVEMENT

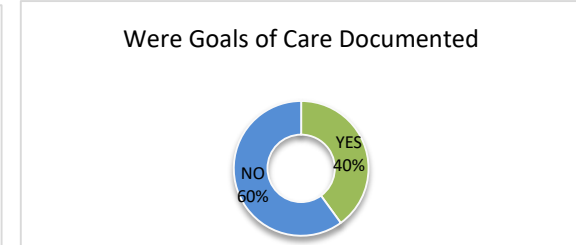
- Surveys of comfort level among REPA members and qualitative data on process and GOC comfort level
- Baseline quantitative data on current GOC documentation on temporary admissions. Charts tracked over a two week period **60% of charts had some form of GOC documentation**
- Pre and post survey after RPACE teaching session
- Run chart of effect of implementing standardization of GOC on temporary admission orders (ongoing data collection at this time)

Initial Chart Review

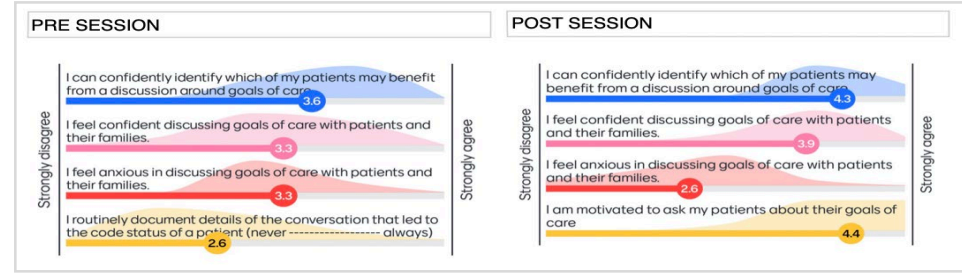


Richmond Emergency Physicians Survey Results





RPACE Session Evaluation



EFFECTS OF CHANGE

- Overall goal of standardizing documentation is being implemented and effect of change is not yet known
- GOC session lead to improvement in comfort level and decreased anxiety with these conversations
- Interdisciplinary Review Committee recently reviewed a patient's journey and the positive effect of project and RPACE teaching session was mentioned during the review by a provider, positively influencing the patient's journey

LESSONS LEARNED

- Even seemingly small changes can have a large impact, however even small changes take significant time and work.
- Goals of care discussions are complex and can be stressful. Teaching sessions such as the RPACE session allow a safe environment for physicians and other providers to practice cases, apply frameworks and patient tested language

SUSTAINABILITY

- Work station reminders for GOC documentation at work desks will help remind physicians to include this on order set
- Eventual CERNER implementation will bring a "forcing function" that will ensure this step is completed. This project hopes providers are more comfortable with these conversations prior to this systems change, and the overall benefit being to the patients and families

Acknowledgements

Amy Chang and Allison Chiu PLQI Program Advisors, Cole Stanley PLQI Physician Coach, RPACE (Regional Palliative Approach to Care Education), Richmond Emergency Department Unit Clerks, Richmond Emergency Physicians Association

For questions or comments, email: james.simmonds@vch.ca

Reducing SSSIs after Cesarean sections at Sechelt Hospital

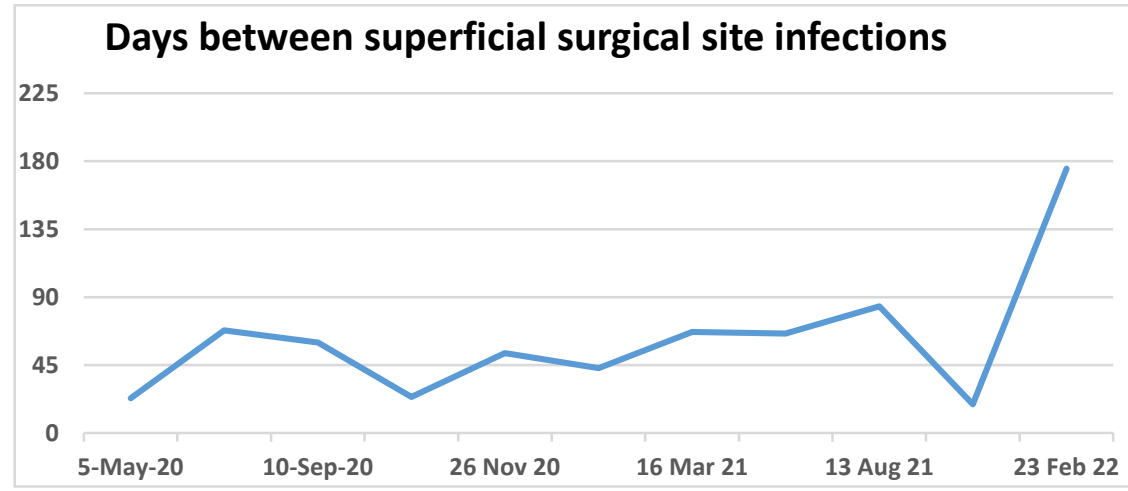
Rayna Sivakova, Jen Gjerdalen, Tim Vigneux, Cheryl Parrell, Danielle Bastien, Andrea Hull

CONTEXT

- Sechelt Hospital - rural hospital with 150-180 births a year, approx. 30% cesarean section rate
- Perceived increase in SSSIs (superficial surgical site infections) after cesarean sections in 2020 - collaborative effort to decrease the number between the primary care OB group, the maternity RNs, IPAC and patients

PROBLEM

- Chart reviews of the cesarian section in 2020 initiated - 58 c/s and 6 infections.
- Potential issues - no tracking of SSSIs data routinely so the magnitude of the problem was unknown



AIM STATEMENT

- To decrease superficial surgical site infection (SSSI) rates by 30% over the 10 month period of the project exploring different approaches (surgical site preparation, preop abx, incision care at the hospital and at home) at Sechelt Hospital.
- The intended result was decreasing the number of SSSIs without increasing the workload for RNs and the patient's length of stay

INTERVENTION OR STRATEGY FOR CHANGE

- Process mapping to identify opportunities for improvement - two main areas - incision care at the hospital and home
- Specific order set for incision care on the maternity floor and discharge checklist for home incision care

MEASURES OF IMPROVEMENT

- T chart used for rare events - short period of the intervention and small numbers in general so further data collection would be necessary
- Showing increased time between infections though

EFFECTS OF CHANGE

- The RNs were satisfied that there was clear guidance on incision care
- We don't know if this change will totally resolve the problem but it will at least stream line the care
- Less infections = less complications and less antibiotics use at a vulnerable time for mom and baby
- No unanticipated or negative effects so far

LESSONS LEARNED

- The project helped building up our team, creating a collaborative environment
- Less complications are always a desirable outcome for both patients and systems of care
- QI brings like minded people together to help create and sustain change regardless of how small the project might seem at the beginning

SUSTAINABILITY

- Incorporating the incision care orders in CST Cerner
- Incision care checklist becoming a part of the patient's discharge package

Acknowledgements
Funding from SSC, Amy Chang, Rochelle Szeto, Enrique Fernandez, PLQI Team

For questions or for comments, contact Rayna Sivakova at: rayna.sivakova2@vch.ca

Glossary of acronyms
PLQI: Physician-led Quality Improvement; SSC: Specialist Services Committee; VGH: Vancouver General Hospital;

Improving delivery of care in the ED for patients with Substance Use Disorders (SUD)

Project Lead: Dr. Ashley Smith, Project Partners: Drs. Jessica Hann and Anne Sutherland
Project Team: Allison Chiu, Vy Do and Dr. Cole Stanley

CONTEXT

Evidence has shown that the involvement of an in-patient addiction medicine team, like Vancouver General Hospital's Complex Pain and Addiction Service (CPAS), decrease 30 day readmissions rates and increase engagement with outpatient care. Substance use disorder (SUD) is the cause of 1/11 visits to the ED but only about half of the patients who may benefit from an addiction medicine consult present with primary substance use disorder as their chief concern In the last year (2021-2022) VGH ED has seen about 90,000 visits, many of these likely representing a patient who would benefit form a consult from the CPAS team.

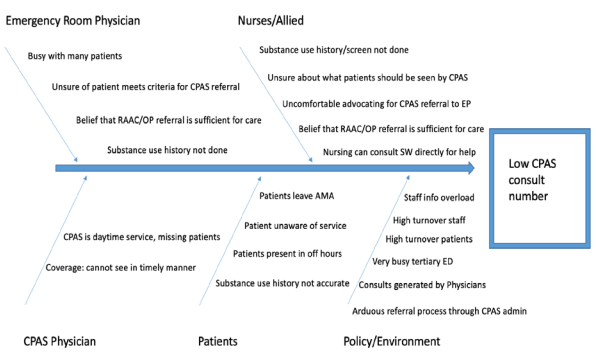
PROBLEM

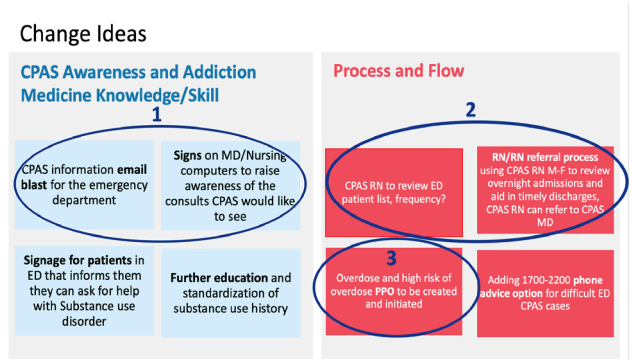
Our Team (CPAS) noted that there were CPAS appropriate patients being missed in the ED. Baseline data, taken six months prior to the project initiation, showed the median consult count was 44, and most ED referrals were generated by internal medicine (CTU) on patients who were admitted. We believe that better care could be delivered in the Emergency Department at VGH by increasing the access to addiction medicine specialist care through a CPAS referral.

AIM STATEMENT

After careful analysis of ED referral process for referring we hope to double the number of monthly CPAS consults by May 1, 2022

DRIVER DIAGRAM AND RESULTANT CHANGE IDEAS





STRATEGY FOR CHANGE

Much time was taken upfront to understand the culture and process in the ED as well as build relationships. One on one interviews as well as meeting with key stakeholders allowed for a deeper understanding of ED process and flow, the drivers for poor CPAS consult count as well as balancing measures.
Change ideas were developed and introduced sequentially:

Complex Pain and Addiction Service (CPAS)
7 days per week from 0900-1700

Switchboard to page the **"CPAS PHYSICIAN TAKING URGENT EMERGECY ROOM CONSULTS"**

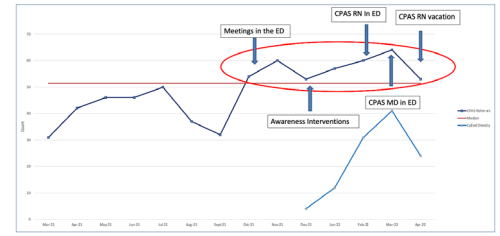
ED physician-to-physician CPAS consult include:
1. Opioid Use Disorder NOT currently on OAT (Opioid Agonist Therapy)
2. Patients enrolled in a community injectable OAT (iOAT) program
3. Post overdose or high risk of overdose
4. Opioid Withdrawal Management
5. Patient with history of complicated alcohol withdrawal
6. Substance use disorder with multiple AMA presentations
7. Patient request
8. Uncertainty re: patient management or best disposition

1. **Awareness intervention:** email blasts, face to face discussions with team on shift, signage on computers (seen to the right)
2. **Nursing workflow:** Case finding, triaging as well as nurse to nurse referrals
3. **Overdose PPO:** approved by CPAS and EP groups waiting for next steps and approval

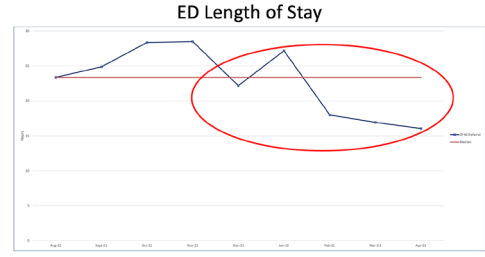
MEASURES OF IMPROVEMENT

- Significant improvement in the number of CPAS consults per month over the course of the project. The number of direct consults from Emergency Physicians (a new metric) has also been increasing.
- Unfortunately, many of the interventions were people focused and improvement from these types of interventions are fragile. This is evident in April 2022 when our consult rate decreased which correlated to the CPAS RN taking vacation.
- Balancing measure: 30 day Readmission rates stayed static during the implementation of the change ideas. Interestingly, there is a signal that there has been a decrease in ED LOS in this patient population with the interventions. We will be following this metric further in the upcoming months.

CPAS Referrals by Month



ED Length of Stay



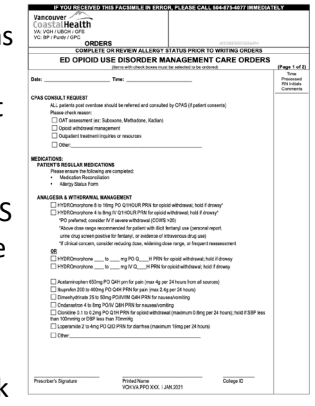
LESSONS LEARNED

1. When doing QI as an outsider in a department, much time is needed at the beginning to understand process and build relationships with stakeholders, these efforts are rewarded when it comes time to implement the change ideas
2. When communicating with the ED team, different disciplines use different communication modalities, it is essential to use a multipronged approach to capture most members of the intended audience
3. There may be teams that have a similar goal, work together and build synergy
4. People focused interventions are fragile in terms of sustainability, when improving care, it is important to look both at people and process focused interventions.

NEXT STEPS

Many of the next steps will focus on moving from people focus interventions to process focused interventions which increase sustainability:

- Introduction of the Preprinted order step that will automatize the consult to CPAS for overdoses that have necessitated an emergency department admission
- Work with Cerner CST on referral process for Emergency referrals **to** CPAS
- Other next steps involve knowledge translation and protocolization of the CPAS RN role in ED:
    - Report back to EDQI and other stakeholders
    - Document a structured work flow for the CPAS RN in ED
    - Share CPAS EN ED workflow with ED leaders and gain feedback
    - Implement the workflow in a sustainable way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MEDICATIONS
PATIENT'S REGULAR MEDICATIONS
ANALGESIA & WITHDRAWAL MANAGEMENT

Acknowledgements: Faculty Engagement, VMDAS EDQI , Dr. Jessica Moe and the suboxone research team

Glossary of acronyms: VGH: Vancouver General Hospital; ED: Emergency Department, PPO: pre-printed order

For questions or for comments, contact:, Ashley.smith@vch.ca

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Design Details

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Community-based

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RGB: 20, 16, 53

Vancouver Coastal Health

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