PHYSICIAN QUALITY IMPROVEMENT COHORT 5

PROJECT SUMMARIES

Overview

The Physician Quality Improvement (PQI) program is a collaboration between Island Health and the Specialist Services Committee of Doctors of BC. PQI offers a range of training and education options that all work to build medical staff capacity to participate in and lead quality improvement.

The PQI Program is led by the PQI Joint Steering Committee, which consists of four major stakeholder groups: clinically active physicians, patient partners, Island Health representatives and Specialist Services Committee representatives. This committee is responsible for setting and supervising the strategic direction of the PQI Program.

PQI Cohort training is a one-year program in which QI skills are developed through learning action projects. The application process is competitive and guided by the Island Health PQI Steering Committee. Medical staff accepted to the program work closely with the PQI team, which consists of two Physician Advisors, a Manager and five support staff.

Cohort 5 began the program in October 2020. In November 2021, 18 medical staff graduated from Island Health PQI Cohort 5. This is a summary of their achievements.

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Project Summary

Name & Specialty	Location	Project Aim
Dr. Philip Baker and **Dr. Ryan Gallagher** Family Practice	Duncan	To reduce the average length of stay starting in a 4-bed hospital room on 3 West at Cowichan District Hospital by 0.5 days by June 2021 through improved team communication
Dr. John Boldon Emergency Medicine	Nanaimo	To meet the Heart and Stroke Foundation best practice guidelines for door to needle time (median 30 minutes) and door in door out time (median 60 minutes) for patients presenting to Nanaimo Regional Hospital Emergency with acute ischemic stroke with large vessel occlusion by September 2021
Dr. Valerie Ehasoo Family Practice	Victoria	To improve access to care at the Victoria Youth Clinic for high-risk youth aged 12–24 by identifying follow-up visits routinely booked with a physician that could instead be seen by a clinical team member (nurse, counsellor or outreach worker) and use a team-based shared care approach to increase the availability of physician appointments spots by 10% by August 2021
Dr. Kyle Fisher Anesthesia/Pain Medicine	Victoria	To create an electronic health history form and Patient Reported Outcome Measurements (PROMs) for all new outpatient referrals and future follow-ups to the Royal Jubilee Hospital Chronic Pain Clinic and Nanaimo Regional General Hospital Chronic Pain Clinic by April 1, 2021
Dr. Deni Hawley Family Practice	Comox	To increase the number of Westward Medical patients offered virtual collaborative care visits with a team of healthcare providers by 50% by July 1, 2021, by using a patient survey and automated invite process
Dr. Janka Hegedus Neurology / Neuroscience	Victoria	To complete the CT head of at least 75% of eligible stroke patients at Victoria General Hospital within 10 minutes of arrival to the emergency room between the hours of 8am and 8pm on working days
Dr. Shana Johnston Family Practice/Maternity	Victoria	To improve the mental health of 10 postpartum people on the South Island, demonstrated by showing a decrease of least 3 points in the Edinburgh Postpartum Depression Scale (EPDS) scores by the end of August 2021
Dr. Maria Kang Pediatrics	Victoria	To ensure 100% of patients referred to a pediatrician at Grow Health for a developmental or behavioural assessment, ages 0-5 years, will have received a pre-survey link, the Roadmap, post-survey link after assessment within 6 months.

Name & Specialty	Location	Project Aim
Dr. Colin Landells Orthopaedics	Victoria	To improve staff and clinician awareness of quality projects by 80% at RebalanceMD by September 2021
Dr. Laura MacKinnon Addictions Medicine	Duncan	To reduce the amount of time between a patients' date of admission to the Cowichan District Hospital and the date of the consult by the Addiction Medicine Consult Service by 30%, by August 31, 2021
Dr. Randal Mason Addictions Medicine	Victoria	To improve the process by which we collect health equity data for Indigenous patients presenting for care within the Western Communities Primary Care Network region by measuring engagement efforts, which is reflected by 50 Indigenous people providing feedback on the assessment tool by July 1, 2021
Dr. Stacey McDonald Family Practice	Duncan	To reduce avoidable/unnecessary transfers from Sunridge and Cerwydden Long Term Care sites to the Cowichan District Hospital Emergency Department by 25% by June 30, 2021
Dr. Emily Steeves and **Dr. Pramod Swamy** Family Practice	Ladysmith	To reduce number of patients presenting to urgent care for prescription renewals by 50% at Ladysmith Urgent Care by June 2021
Dr. Katrina Stockley Pediatrics	Victoria	To decrease the Neonatal Intensive Care Unit length of stay by 20% at Victoria General Hospital for babies greater than 36 weeks gestational age exposed to opioids in utero by September 2021
Dr. Alastair Teale Infectious Disease	Nanaimo	To review cases of inpatient gram-negative bacteremia at Nanaimo Regional General Hospital with the antibiotic stewardship team and aim for a greater than 90% acceptance of recommendations, 25% decrease in length of parenteral therapy and a 10% decrease in average length of stay for these patients over the 3-month period of the intervention in comparison
Dr. Elizabeth Wiley Family Practice	Victoria	To increase access to urgent care with the Westshore Urgent and Primary Care Centre's clinical team by increasing the total number of patients served each month by 5% by June 2021 through integration of MyHealth Patient Portal secure messaging into clinical care delivery

Getting on the Same Page
Using an Asynchronous Communication Tool to Improve Discharge at Cowichan District Hospital

Physician Leads: Dr. Philip Baker & Dr. Ryan Gallagher

Location: Cowichan District Hospital (CDH)

Specialty: Family Medicine

Background:

In our hospital, we noted that missed communication opportunities appeared to lead to delays in discharge. Our multidisciplinary team identified that the following were primary barriers to this occurring:

- Timing of providers being available to discuss discharge
- Multiple locations for documentation
- Differences in professional languages and priorities

Problem:

When we are not able to communicate effectively as a team about discharge throughout a patient's stay, there are unnecessary delays in discharge. This hinders a patient's return to health and wellness (BC Health Quality Matrix); keeping them from their home, posing potential risks (e.g. deconditioning[1]/nosocomial infections[2]), and negatively impacting our health resources (e.g. costs[3] and availability of services for other patients[4]).

Aim of Project:

To reduce the average length of stay starting in a 4-bed hospital room on 3 West at Cowichan District Hospital by 0.5 days by June 2021 through improved team communication.

Change Idea:

To create a single point of documentation that all providers could use and reference to communicate barriers and progress to discharge.

- We felt the largest impact would be in medium stay patients: those who don't just have purely medical illness but also have barriers which if addressed would will allow them to leave hospital
- We engaged a multidisciplinary clinical team to discuss barriers/solutions/evolve the Discharge Communication Tool
- Our project began in single 4 bed room and later expanded to three 4 bed rooms
- We used a combination of length of stay (LOS) data, surveys of team members, and in-person feedback to help us improve our tool

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[1] Hospital stay >10 days leads to 10 years of muscle aging for people who are most at risk. Kortebein P, Ferrando A, Lombeida J, Wolfe R, Evans W (2007). Effect of 10 days of bedrest on skeletal muscle in healthy older adults. *JAMA* 297: 1769-74.

[2] 2% Infection risk increase with each additional night in hospital. The Discharge Strategy Handbook: Creating Capacity by Eliminating End-of-Stay Delays - The Advisory Board (2013)

[3] Average Daily Cost at CDH: $800.42/day ($5683 average cost per stay/7.1 average days per stay) as per CIHI Website for 2018/2019

[4] Reduction of Average LOS by 1 day effectively gains 17-33 beds in a (100-200 bed hospital such as ours), The Discharge Strategy Handbook: Creating Capacity by Eliminating End-of-Stay Delays - The Advisory Board (2013)

PDSA Cycle:

Plan	Do	Study	Act
Literature review to evaluate previous discharge communication strategies	Meet to discuss tool ideas	Feedback and team surveys around tool ideas	Create first draft of tool
Create pre-tool implementation survey for team members	Distribution of survey	Review survey answers and identify staff-identified areas of concern	Adjust tool to ensure that all areas of communication are captured
Discuss with team to identify suitable trial room for initiation	Roll out tool in Room 308 at CDH	Seek out and incorporate team feedback	Expand project to include more rooms; add additional team members and make tool adjustments
Discuss and review incoming surveys and feedback	Expand to 302/303	Feedback from clinical team/early data regarding LOS	Focus on engagement of all members of clinical team
Plan for provider management strategies	Engagement with the team on floor/meeting	Look for increased/better use of form	Creation of educational materials to optimize utilization

Challenges:

- The characteristics and composition of patients in any particular room varies more by patient factors than by discharge likelihood/condition. As we studied a small number of rooms the effect on our data may have been more pronounced than if we had been able to study a larger group
- Turnover of our local leadership teams, leadership structures, and many staff changed during our project. This added many factors beyond the change we were making in the system which may have obscured our results
- COVID placed a time pressure on all team members, impacted the hospital, and resulted in a lack of static system to study

Data Analysis:

- We had 3 main data sources: **1)** Length of Stay (LOS) Data **2)** Anonymous surveys from team members **3)** Individual review of completed Discharge Communication Tools
- For LOS data we used data through Island Health which we reviewed with the PQI Data Analyst
- For Surveys and Discharge Communication Tools we collated results and reviewed themes for helping drive change ideas and discussion in our team meetings
- Primary endpoint was LOS, which we compared to mean LOS. In an ideal setting, we would have liked to compare Estimated Length of Stay (ELOS) to LOS but the delay in this data being available made it impractical for informing change in our project
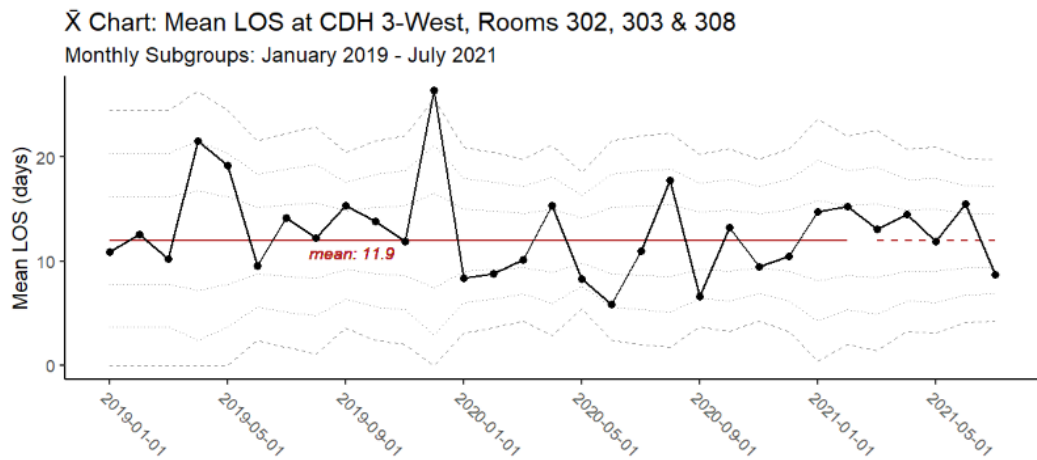
Figure 1: Mean Length of Stay In Rooms Over Time

X̄ Chart: Mean LOS at CDH 3-West, Rooms 302, 303 & 308
Monthly Subgroups: January 2019 - July 2021

mean: 11.9

Figure 2: Users of the Discharge Communications Tool

Communication Tool Users (N = 89)

- Physiotherapy — 26
- Physician — 25
- Other — 10
- Nursing — 10
- Liason — 6
- Social Worker — 5
- Occupational Therapy — 5
- Pharmacy — 2
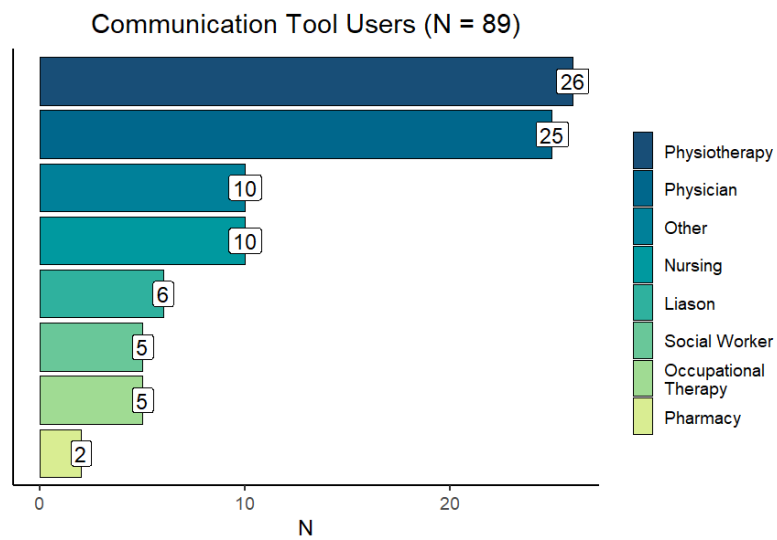
Figure 3: Pre/Post Survey Question 3 - "I felt informed about any barriers to discharge"

Survey Q3: 'I felt informed about any barriers to discharge'

pre-intervention: 4, 6, 6, 8, 6
post-intervention: 3, 2, 4, 3

Responses:
- Strongly agree
- Agree
- Moderately agree
- Slightly agree
- Not at all
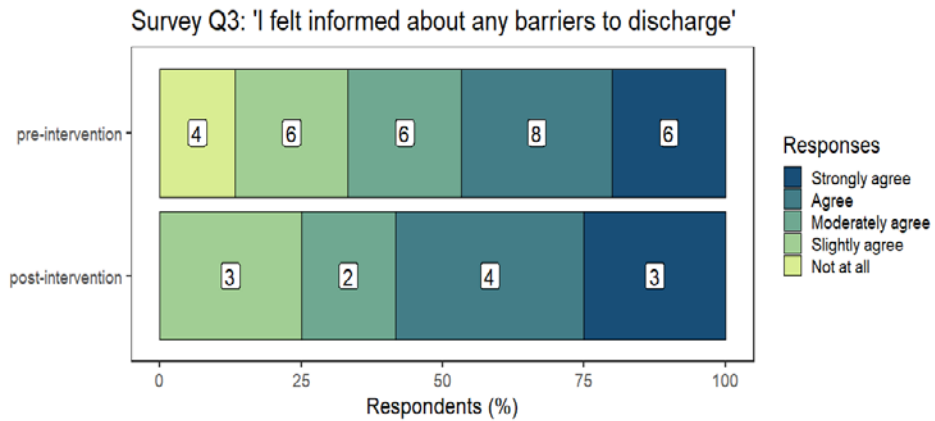
Figure 4: Number and type of communications on Discharge Communications Tool

Number & Type of Communications
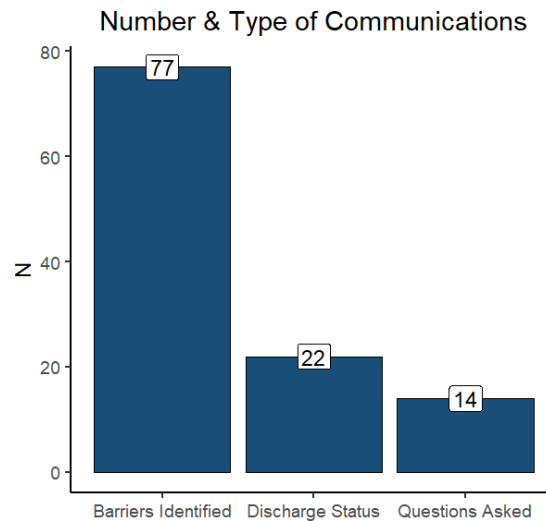
Conclusions:

We were not able to demonstrate the value of implementing a Discharge Communication Tool to improve asynchronous communication. We had strong agreement amongst our interdisciplinary team about the importance of improving communication. We encountered several challenges studying quality in a system whose stability was affected by changes with COVID, leadership turnover, and staff turnover.

We also noted that members of the care team are frequently being asked to document progress/barriers to discharge in many different locations. While there was potential value in having a single location to communicate discharge barriers, the increased workload on team members already working above capacity, likely affected the value of the tool. We hope that new technology like electronic documentation will be able to leverage the ability to collate team members discharge efforts into a common location where team members can asynchronously collaborate to achieve efficient, effective, patient centered and professionally satisfying discharges.

Next Steps:

- Looking towards the evolution of paper records to IHealth, we began discussions early in order to understand what would be possible in a fully electronic environment so that learnings could be applied when we transition to a PowerChart-based records system
- Ongoing discussions regarding barriers of discharge during out project helped initiate conversations about how existing tools might be used more effectively (e.g. structured team report boards/televisions)
- Ongoing support for discussions surrounding communication and inter-professional collaboration on discharge planning
- Sharing what we have learned with our local teams to help support further initiatives on discharge communication

From The Ground Up
A Grass Roots Approach to Improving Acute Stroke Care at Nanaimo Regional General Hospital

Physician Lead: Dr. John Boldon
Location: Nanaimo Regional General Hospital
Specialty: Emergency Medicine

Background:
The Nanaimo Regional General Hospital (NRGH) Emergency Department (ED) cares for a large portion of patients presenting with acute stroke to Vancouver Island hospitals. In a 12-month period, 225 patients who met BC Ambulance FAST criteria were transported to NRGH ED.

Of particular interest is the subset of stroke patients suffering from ischemic strokes from large vessel occlusions. These devastating events are now potentially reversible with endovascular therapy (EVT). For select patients, EVT has a number needed to treat of 2.6 to reach a functional outcome with no appreciable harm. This is particularly exciting given that EVT has a much longer intervention window of <24 hours. Administration of EVT is only available at Victoria General Hospital (VGH). Efficient systems for rapid administration of thrombolysis (TPA) and early transport to EVT sites are crucial steps to achieve good patient outcomes. Since the start of VIHA program, 40 patients from NRGH received EVT in Victoria. However, patients presenting to NRGH are not seeing the same benefit from EVT as patients in Victoria with only 30% having functional outcome compared to 52% of Victoria origin patients (defined as Modified Rankin Score 0-2).

Problem:
EVT is a dramatic shift in practice in the care of acute stroke patient compared to previous treatment options. However, community providers may have little knowledge on the indications and benefits of this new therapy. In addition, providers caring for stroke patients at NRGH face many barriers to providing standard of care. These barriers include delayed time to transport, restricted access to imaging, and delayed access to neurology consultation. As a result, the time to initiation of critical interventions such as TPA and EVT is also delayed. Canada best practice target for door to needle time for TPA is median 30 minutes and door in door out times for EVT of < 60 minutes. Currently, NRGH is not meeting these target times for EVT patients with median door to needle time of 54 minutes and door in door out time of 118 minutes for EVT candidate patients. This delay to care is leading to worse outcomes for NRGH patients with acute stroke.

Aim of Project:

We aim to meet the Heart and Stroke Foundation best practice guidelines for door to needle time (median 30 minutes) and door in door out time (median 60 minutes) for patients presenting to Nanaimo Regional Hospital Emergency with acute ischemic stroke with large vessel occlusion by September 2021.

Change Idea:

1. New bedside stroke flow sheet for RN and ED physicians
2. Interactive 3 hours of case based stroke education delivered to RNs in NRGH. Plan to recur yearly in June (Canada Stroke Month). Brain pins handed out to RNs who completed training to identify RN stroke leaders. Over 10 hours education delivered to 40 RNs
3. Stroke QI board placed in ED hallway to publish stroke QI data

PDSA Cycle:

1. Acute stroke flow sheet for ED physicians and nursing staff
2. Education program for ED nursing staff for the recognition and treatment of acute stroke and establishing RN stroke leaders in ED
3. Publishing and tracking of acute stroke quality data at NRGH ED

Data Analysis:

Pre and post intervention period, the median door to needle time was 54 and 50 minutes respectively (N=14). However, TPA data was difficult to track and often incomplete in the patient chart. When in-hospital Neurology consultation was available, median door to needle time post intervention was 41 minutes (N=4). Median door to CT EVT time was 24 minutes (N=161). There was no statistically significant improvement in time to stat stroke CT imaging. (See Figure below). There was no appreciable difference in door in door out time. Data was incomplete and often unavailable in the documented chart.

Overall, subjective feedback from emergency physicians and nurses was overwhelmingly positive on acute education sessions and flow sheets. Despite multiple PDSA cycles to increase exit survey response rate, only 4 responses were received.

P Chart: Percent of Encounters with a Time to CT ≤ 25 Minutes for a Stat CTA EVT Stroke Protocol MI Order at NRGH by 1-Month Intervals
January 1, 2019 - July 31, 2021
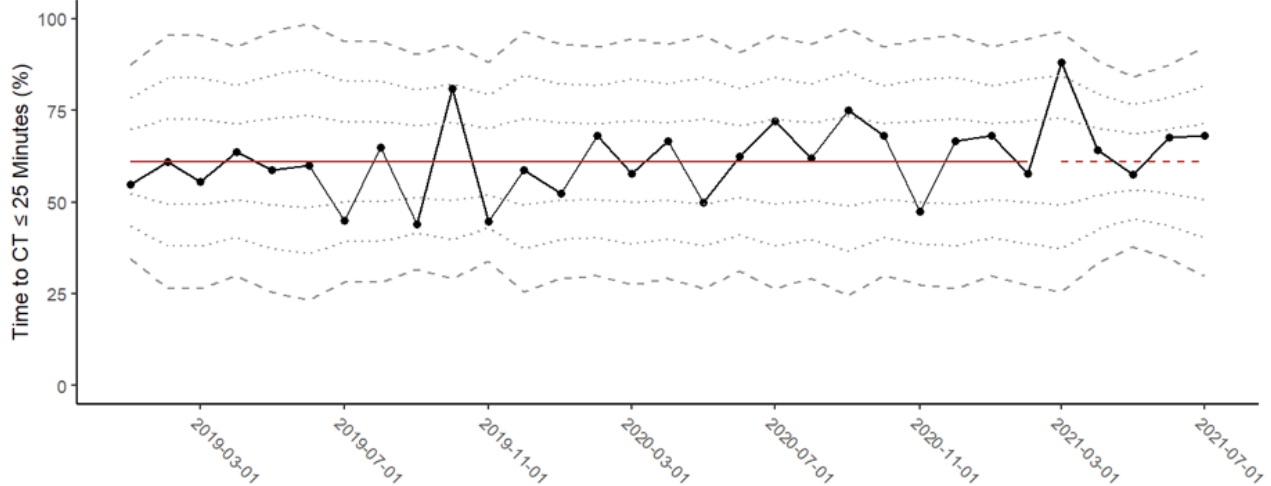
Conclusions:

There continues to be a need to improve the care of acute stroke patients at NRGH. Quality improvement initiatives are hampered by strains on the acute care system during the pandemic, incomplete data and high emergency department staff turnover and burnout. Despite this, we believe improvements in time to thrombolysis can be achieved through our acute stroke flowsheet and education program over time. In addition, emergency nurse engagement in education and in quality of care for stroke patients remains strong. Subjective feedback on this QI project was overwhelmingly positive. With increased NRGH neurology coverage, transition to electronic EMR and improving data monitoring there are many opportunities to continue quality improvement efforts at NRGH in the future.

Proposed Next Steps:

- Yearly ED Nurse Acute Stroke Education Program and NIHSS certification
- Active monitoring and publishing of acute stroke quality metrics
- In site multidisciplinary simulation of acute stroke patients at NRGH ED

Improving Patient Access through Team Based Care

Physician Lead: Dr. Valerie Ehasoo

Location: Victoria Youth Clinic
Specialty: Family Physician

Background:

The Victoria Youth Clinic (VYC) provides integrated and comprehensive primary health care services, with an emphasis on mental health and addiction care, for youth aged 12 to 24 years. VYC's vision and mission are to improve the physical and mental well-being of youth and provide services and care in a youth friendly, non-judgmental and safe environment.

Statistics from 2019-2020 showed from July-December 2020 a significant increase in the number of youth already attached to the clinic that were unable to access appointments.

Problem:

Staff and physicians at the VYC noticed high-risk[5] youth were being lost to follow-up due to difficulty accessing appointments. As a result, appointments were being pre-booked into the same day access spots, resulting in less available spots for youth to book appointments or for new patient intakes. We are also seeing escalating mental health and substance use (MHSU) concerns in our community.

Aim of Project:

We will improve access to care at the Victoria Youth Clinic for high-risk youth aged 12–24 by identifying follow-up visits routinely booked with a physician that could instead be seen by a clinical team member (nurse, counsellor or outreach worker) and use a team-based shared care approach to increase the availability of physician appointments spots by 10% by August 2021.

Patient Voice:

- *"Need more consistency with making appointments"*
- *"They're all really easy to access. Like in one building… like it's all connected... all these services to help you!"*
- *"Everyone is on the same page... have that sort of connection... it seems to work out here."*
- *[Have you ever come to the Clinic and not been able to be seen?] "Multiple times… I ended up going to the hospital because I was suicidal and I was about to act on it, so I didn't have a choice. But I felt like if came here and had someone to talk to, and like safety plan, and had something to help me sleep or whatever, then I probably wouldn't have (A) acted on what I did, and (B) not ended up in the hospital."*

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[5] High-risk refers to youth with significant mental health or substance use concerns, recent emergency room visits or hospitalization, marginalized, homeless or street involved youth, or those with involvement with the legal system.
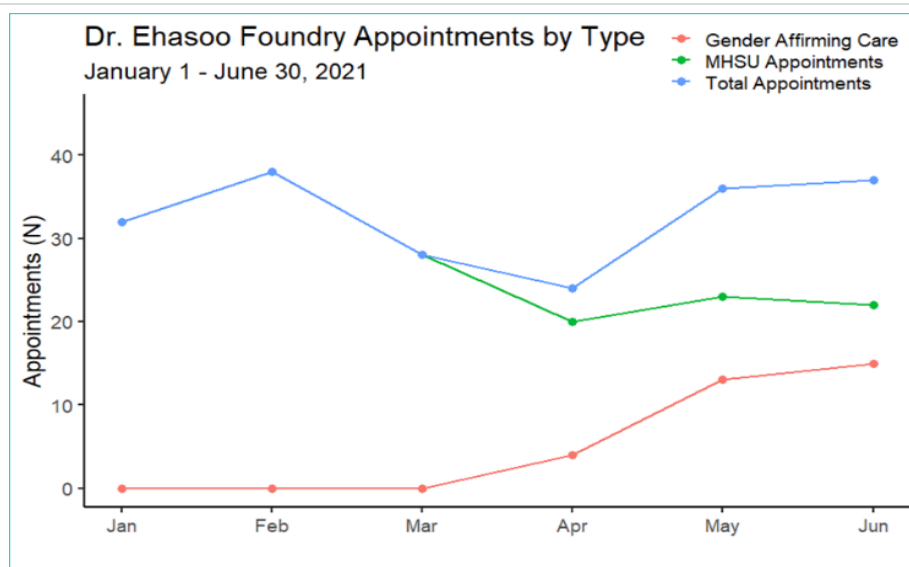
Change Idea:
- Medical Office Assistant collecting and testing urine samples; urine drug screens, pregnancy testing, Sexually Transmitted Infection testing, Urinary Tract Infection testing
- Creating, testing and adapting patient flow sheets for physicians, nurses, and counsellors including visit flow sheets for intake of new Mental Health Patients, follow-up visits, and Opiate Agonist Therapy (OAT) initiation and maintenance
- Increasing physician availability by redirecting youth to other clinical team member when appropriate for initial assessment
- Booking follow up appointments with a Registered Nurse (RN) or counsellor instead of physician when fits criteria identified on patient flow sheet
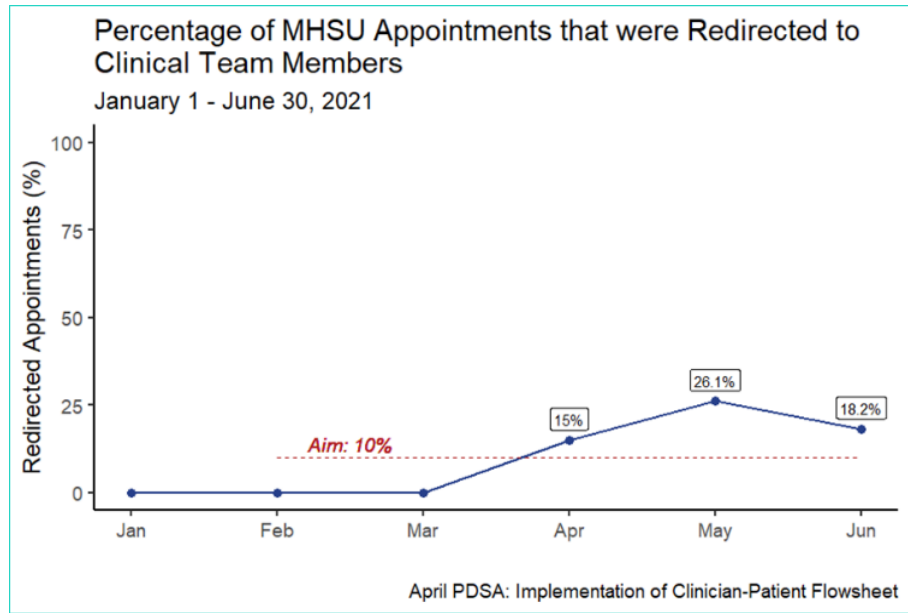
PDSA Cycle:
- Created, tested and adapted intake flow sheets
- Booking follow-up appointments for Dr. Ehasoo's patients with other team members when appropriate
- Next PDSA – spread to all physicians at clinic
- Future PDSA – expand to include Gender Affirming Care (GAC)

Data Analysis:
- January – March 2021 patient visits were reviewed to see how many MHSU youth could potentially have been redirected to clinical team member
- April – June 2021 MHSU patient visits were tracked to determine how many follow-ups were booked with clinical team members, and charts reviewed to determine how many visits could have been booked with team member but weren't
- January – March 2021, 67.9 – 78.1% of patients required physician intervention
- April – June 2021, 95 – 95.9% of patient visits met criteria for a physician intervention
- Overall 15 – 26.1% of appointment spaces were made available for same day access or new patient intakes using team based model of care

Dr. Ehasoo Foundry Appointments by Type
January 1 - June 30, 2021

Percentage of MHSU Appointments that Required Physician Assessment

January 1 - June 30, 2021

Jan 78.1% · Feb 76.3% · Mar 67.9% · Apr 95% · May 95.7% · Jun 95.5%

April PDSA: Implementation of Clinician-Patient Flowsheet

Percentage of MHSU Appointments that were Redirected to Clinical Team Members

January 1 - June 30, 2021

Aim: 10%

Apr 15% · May 26.1% · Jun 18.2%

April PDSA: Implementation of Clinician-Patient Flowsheet

Conclusions:

In the months of April, May and June, we were able to successfully book appropriate patients for follow-up with clinical team members and open up more than 10% of patient appointments each month to allow for better access for our currently attached patient panel, as well as increase our potential to accept new patient intakes. We were able to exceed our aim by making 15-26.1% more physician spots available per month from April to June 2021. Some patient visits were not redirected due to patient preference as well as concerns regarding high level of patient acuity/risk. Our goal will be to spread this model to all physician members of the team as well as to continue to expand this model to our other patient groups. We will need to continue to monitor the capacity of other team members. The next target group will be Gender Affirming Care patients.

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SSC SPECIALIST SERVICES COMMITTEE

Next Steps:

- Youth Clinic team meeting to review results
- Plan to spread to full physician group
- I was working with both nurses and two counsellors. To look into spread to other members of the counselling team or whether specific counsellors will fill this role. We are currently hiring a new nurse
- Need to formalize the booking system with the nurse/counsellor – to date I have directly messaged each time. Do we need to set aside specific spots or times for these follow-ups? So far have been able to fit into usual scheduling pattern with one physician referring
- Continue to review for balancing measures; nurse and counsellor access
- Develop flow sheets for Gender Affirming Care and plan next PDSA with GAC clients

Patient Reported Outcome Measurements (PROMs) at the RJH Chronic Pain Clinic

Physician Lead: Dr. Kyle Fisher

Location: Royal Jubilee Hospital (RJH) Chronic Pain Clinic

Specialty: Anesthesia and Pain Medicine

Background:

- No validated questionnaires exist in our current health history form to quantify factors such as depression, anxiety, sleep, function, and overall quality of life. These are needed to assess a patient's progress, and determine what is important to them and what is being most impacted by their pain, in order to prioritize what resources and supports they need to be connected with
- History forms are not complete or partially finished at initial assessment in the RJH Chronic Pain Clinic (35-40% completion rate) as most are mailed a few days before appointment or are time consuming to complete on paper while in the waiting room
- No Patient Reported Outcome Measurements (PROMs) are completed at follow-ups to quantify patient's current health
- Electronic documentation could assist in triaging patients or explore alternate pathways for patients to be seen in clinic

Problem:

- The current patient health history forms are on paper, do not contain qualitative metrics, and outcomes are not tracked by providers who offer interventions
- Without quality intake metrics and PROMs, patient progress is difficult to determine
- Triage is completed by a single referral form and contains limited patient information, and patients that are more urgent are waiting longer than expected

Aim of Project:

An electronic health history form and PROMs will be created for all new outpatient referrals and future follow-ups to the Royal Jubilee Hospital (RJH) Chronic Pain Clinic and Nanaimo Regional General Hospital (NRGH) Chronic Pain Clinic by April 1, 2021. It will quantify factors such as depression, anxiety, sleep, function, and overall quality of life, in order to determine patient progress and match patients' needs to the appropriate resources.

Patient and physician satisfaction, ease of completion, and percentage of completion will be assessed to determine the success of both history form and metrics in capturing a patient's wellbeing.

Patient Voice:

- *"How many trees are cut down to make this form?"*
- *"How will you know if I feel better?"*

Change Idea:

- Creation of an electronic history form through REDCap, with online access for completion prior to visit
- Streamline and update questions to be more inclusive
- Project team and patient partners decided on the PROMIS-3A, PROMIS-29, and McGill Pain Questionnaire short form as PROMs
- These PROMs will detect baseline levels of depression, sleep, anxiety, and function and importantly pain
- PROMs to be completed at 3 months, 6 months, or after intervention (MD or other clinic provider)

PDSA Cycle:

Small Test of Change

- 20 semi-urgent patients on waitlist assigned new PROMs and health history form
- Further PDSA with 120 patients on routine waitlist assigned PROMs and history form
- Satisfaction survey at end of intake form, 70 patients completed

Data Analysis:

- Data collected on 570 patients (and counting)
- Baseline PROMs for chronic pain collected and future reassessment not yet fully integrated into clinical practice
- Data collected on ease of completion of PROMs and new intake form, completeness of patient assessment, and satisfaction since participation at pain clinic

Figure 1: Patient responses to Satisfaction survey at end of intake form (n = 70).

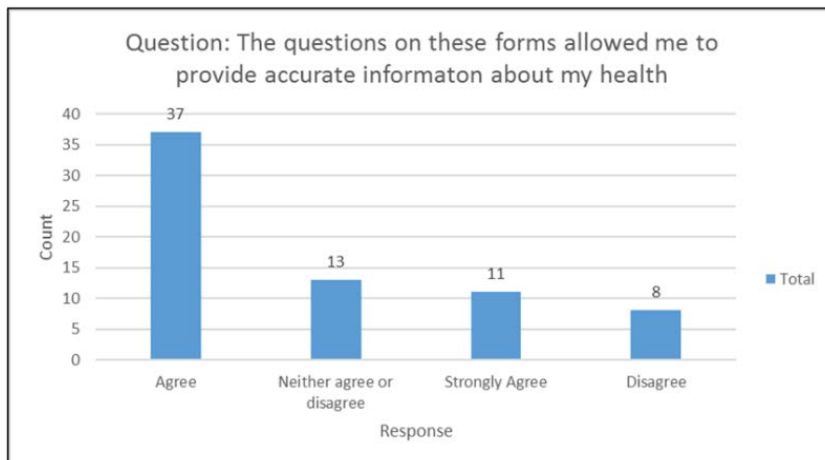**"The questions on these forms allowed me to provide accurate information about my health"**

Question: The questions on these forms allowed me to provide accurate informaton about my health

Figure 2: Patient responses to Satisfaction survey at end of intake form (n = 70).

"Completing the new patient forms were easy"

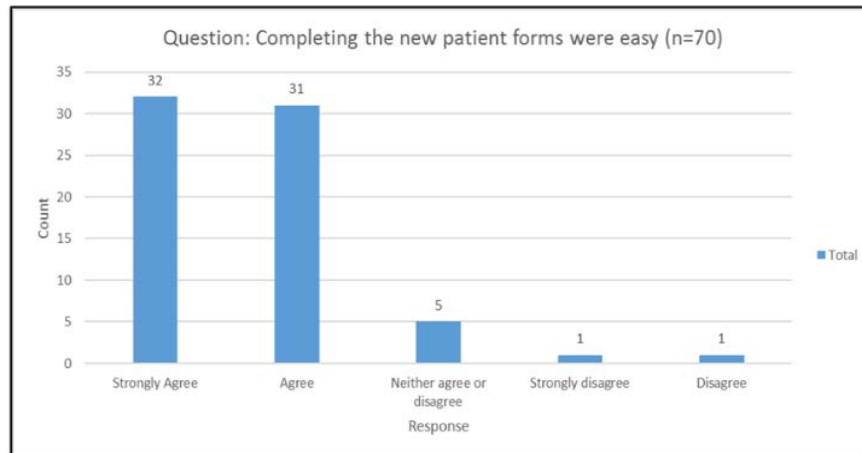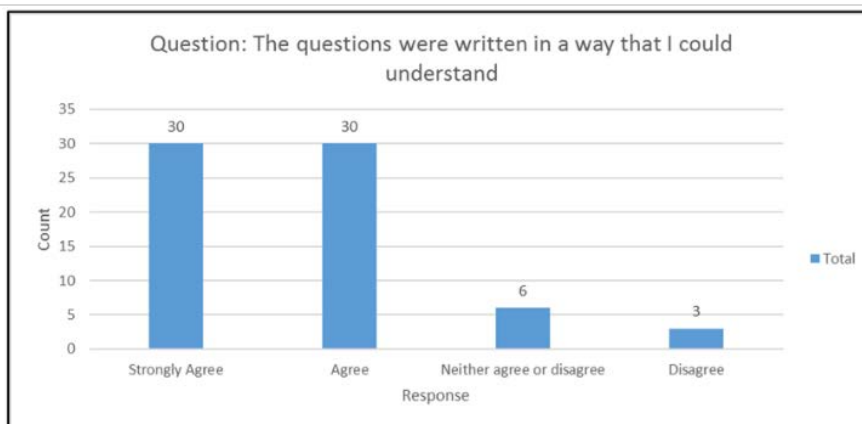Question: Completing the new patient forms were easy (n=70)

Figure 3: Patient responses to Satisfaction survey at end of intake form (n = 70).

"The questions were written in a way that I could understand"

Question: The questions were written in a way that I could understand

Conclusions:

- Our electronic health history form and validated PROMs are easy to complete, and fully capture a patient's health history
- PROMs can quantify outcomes in the chronic pain clinic
- Scalability: The project can easily be implemented to other pain clinics across the province, and is more cost effective than other alternatives currently used

Planned Next Steps:

- Data collection to track average baseline chronic pain function and assess changes as they progress along in the chronic pain programs
- PHSA: work with provincial bodies to make this PROMs and intake questionnaire available to other BC Chronic Pain Clinics free of charge
- Work to implement a new triaging process that uses the electronic intake form and PROMs to improve timely access to the pain clinic to patients urgently in need of help

Care without Borders: Improving Patient-Centered Rural Access to Care through Virtual Collaboration

Lead: Dr. Deni Hawley

Location: Comox Valley

Specialty: Family Medicine

Background:

Patients report feeling that their care is often fragmented and they feel their care team is too often not communicating effectively, or that they are not kept at the center of those communications.

Problem:

Westward Medical Clinic patients often complain to their family physicians about how they perceive fragmented care when they must attend many different healthcare appointments, often requiring significant travel, in order to receive care. They wish that their care providers would communicate more collaboratively with them and each other to create a more patient-centered approach.

Aim of Project:

Using a patient survey and automated invite process, I will increase the number of Westward Medical patients offered virtual collaborative care visits with a team of healthcare providers by 50% by July 1, 2021.

Patient Voice:

- *"Having my [family] doctor join me for my appointment with my specialist helped me to make sure that I didn't forget to bring anything up that was important to me."*
- *"I appreciated my doctors talking with me all at the same time to make a plan for my healthcare."*

Change Idea:

1. Start with interested patients then pitch to specialists
2. Do not restrict patient population to only complex care patients, offer to all appropriate patients (appropriateness determined by ability to use email/internet and to conduct a virtual Collaborative Care Visit (CCV)).
3. Engaging patients with survey improves response rate and likelihood of conducting CCV
4. Zoom seems to be a generally acceptable way of conducting CCV
5. Feedback obtained by surveys is best done right after the CCV (lower response rate from specialists was likely related to the time delay in conducting the CCV and completing the PDSA cycle to create a post-CCV survey).
6. Support is needed for scheduling CCVs between Primary Care Provider (PCP) and specialist schedules
7. Specialists and PCPs are remunerated for CCVs

Data Analysis:

Total participants: 50 patient surveys provided, and 40 patients responded (80% response rate). Of 40 patients, 33 patients (82.5%) indicated interest in participating in a CCV, and 7 expressed no interest (17.5%). Of those that expressed interest, 21 patients indicated they were very interested.

Interest in Participating in a Collaborative Care Visit (CCV)	Level of comfort using Zoom		
	Very comfortable with Zoom	Somewhat comfortable with Zoom	Not at all comfortable or have never used Zoom
Very interested (16 patients)	76%	14%	10%
Somewhat interested (12 patients)	17%	50%	17%

Of those 40 patients who reported interest in conducting a CCV, 8 of them went on to have a CCV with their primary care provider and specialist, in a 3-way virtual collaborative care visit. A survey was submitted to these 8 patients; 7 of 8 patients responded (88%), and 100% of these patients were satisfied with both the CCV and using Zoom to conduct it. 4 of 8 specialists (50%) responded to the post-CCV survey and 100% reported satisfaction with CCV and Zoom, and also included qualitative feedback for improvement.

Through a PDSA cycle In May, the methodology of engaging with participants using an informal process of asking patients during or after their visit if felt to be appropriate for a CCV, was changed to a method of sending out surveys to every patient that I saw during a period of time (50 surveys were sent in total). The number of CCVs conducted per month increased from an average of 1 per month to 4 per month, thereby increasing the number of CCV visits by >50%.

Frequency of Collaborative Care Visits (CCVs) per month (2020/21)
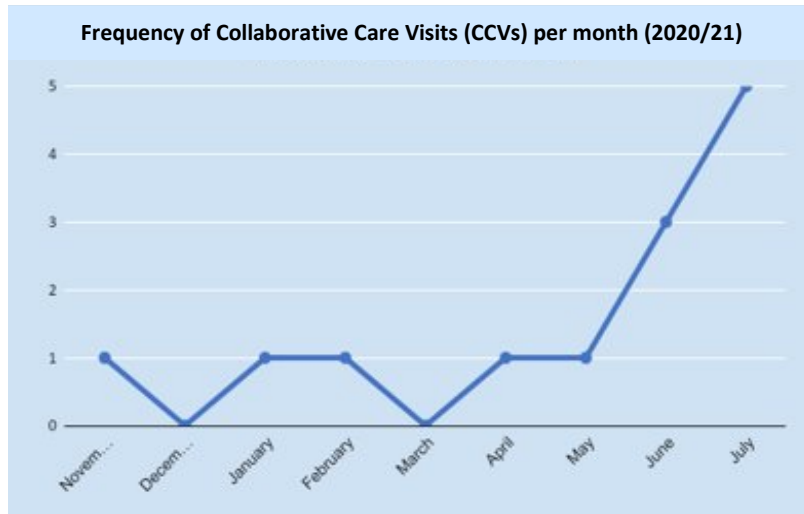
Conclusions:

Encounters involving the patient, their primary care provider, and their healthcare teams in virtual care collaboration is of interest to most patients asked via questionnaire, and all patients who were approached specifically for their suitability for such a visit (complex medical problems and complex healthcare teams, limited ability to travel to specialist appointments, and access to virtual care technology). Of those patients who participated in CCVs, 100% of them felt that it was helpful and they would like to do it again if needed.

The response rates for specialist follow-up after conducting a visit was 50%, but the feedback was mostly positive and indicated that they would like to try this again. The largest barriers appear to be the logistics of arranging these CCVs, which is the focus of the next steps in this project, in conjunction with RCCBC initiatives for virtual care coordination in rural communities. Virtual care collaboration could be an effective way to facilitate multi-disciplinary and team-based care while keeping the patient and their home community at the center of the communication.

Proposed Next Steps:

- Leverage virtual care resources to further explore the utility of virtual care in collaborating with patients and their healthcare team members to facilitate patient-centered care
- Use virtual care collaboration as a launch point for distributed team-based care initiatives and to reduce unnecessary patient travel for routine specialist follow-up appointments
- Examine ways to streamline logistics of scheduling CCVs using guided PDSA cycles at Westward and other clinics interested in participation
- Identify specialist and primary care champions to engage in PDSA and change ideas on a larger scale to see if this idea could be further spread to a wider community

Improving Door to Needle Time for Stroke Care at the Victoria General Hospital
Focus on Door to CT Times

Physician Lead: Dr. Janka Hegedus

Location: Victoria General Hospital

Specialty: Vascular Neurology

Background:

The national standard for stroke care in Canada stipulates that patients should be receiving thrombolysis with the "clot buster" tissue plasminogen activator (TPA) within 30 minutes of arriving in the hospital[6]. Currently, our patients are receiving TPA within a range of 45 to 50 minutes, which is a significant delay because the brain loses 1.9 million neurons every minute that a stroke goes untreated[7]. It has been shown that every delay of 15 minutes reduces the chance of a stroke patient being able to walk independently after a stroke and increases the chances that they will die from their stroke[8]. Other centres have an adopted a team approach to reduce door to needle times successfully in Canada and abroad[9].

Problem:

TPA cannot be initiated without getting a computed tomography (CT) scan of the head. Canadian Best Practice Stroke Guidelines suggest that the CT head be attained within 10 minutes of arrival. At present time, at Victoria General Hospital (VGH), we are not within the timeline for CT head acquisitions.

Aim of Project:

The stroke team at Victoria General Hospital (VGH) aims to complete the CT head of at least 75% of eligible stroke patients within 10 minutes of arrival to the emergency room between the hours of 8am and 8pm on working days.

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[6] Boulanger et al. Canadian Stroke Best Practice Recommendations for Acute Stroke Management: *Prehospital, Emergency Department, and Acute Inpatient Stroke Care, 6th Edition, Update 2018.* International Journal of Stroke 2018, Vol. 13(9) 949–984

[7] Saver, J.L. Time is Brain, Quantified. *Stroke.* 2006; 37:263-266.)

[8] Man et al. Association Between Thrombolytic Door-to-Needle Time and 1-Year Mortality and Readmission in Patients With Acute Ischemic Stroke

[9] Kamal et al. Thrombolysis: Improving door-to-needle times for ischemic stroke treatment – A narrative review International Journal of Stroke 2018, Vol. 13(3) 268–276

Patient Voice:

We aim to use the patient voice in the next step of our project. When we began talking to the different groups that come together to provide stroke care (Emergency Department, CT technicians, radiologists and our stroke neurologists and nurses), we realized that each group had a very different understanding of our targets. Therefore, for the first step in our Quality Improvement journey we elected to spend our time creating a more cohesive model for stroke care amongst the involved health professionals. We felt that this was very important prior to approaching patients.

Change Idea:

We will improve the door to CT times by increasing the education to the CT technicians and spreading information about why it is important to accelerate the timing of the CT acquisition.

PDSA Cycle:

July 1- 14, 2021. For our first PDSA cycle, we sat down and had a conversation with the manager of diagnostic imaging and with the head CT technician. We discussed the importance of door to needle times, in terms of improving stroke outcomes. We explained our goal of getting 75% of CT's within 10 minutes of arrival at the emergency department. We then tracked the outcomes, in terms of CT acquisition times.

July 14- August 1, 2021. For our second PDSA cycle, we made a poster outlining the importance of quick CT scans of stroke patients. We put this up in a prominent area where the CT technicians sit.

Data Analysis:

We analyzed the time it took to get a CT scan from time of triage (i.e. The first point of contact with a medical professional in the hospital) and the time that the CT scan was done. As per the scope of our project, we looked at patients who arrived in the VGH emergency department between the hours of 8 am and 8 pm on working days. The reason we chose these parameters is because a stroke nurse is in house during these times to facilitate the CT scans. Therefore, we eliminated one variable of change (i.e. Inconsistent stroke nurse availability) from our calculations.

This project identified how different each departments' approach to stroke care is, and that key members of the team were unaware of the current national targets for stroke care. For example, when we met with the radiology technician leads they were unaware that we were trying to achieve a standard of less than 10 minutes for door to CT times. We shared that we valued speed over symmetry for the scans, which was quite surprising. This was a very important learning point, and underlined the importance of communicating and educating all members of the team. Otherwise, they could not understand why we were trying to "rush them" during the CT scans.

Figure 1: Run chart of the percent of encounters who had a CT scan within 10 minutes of presentation to VGH Emergency Department
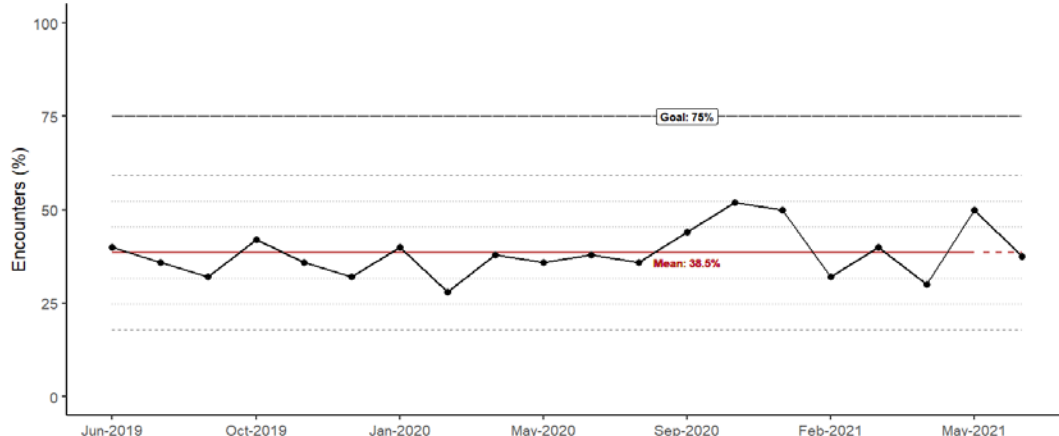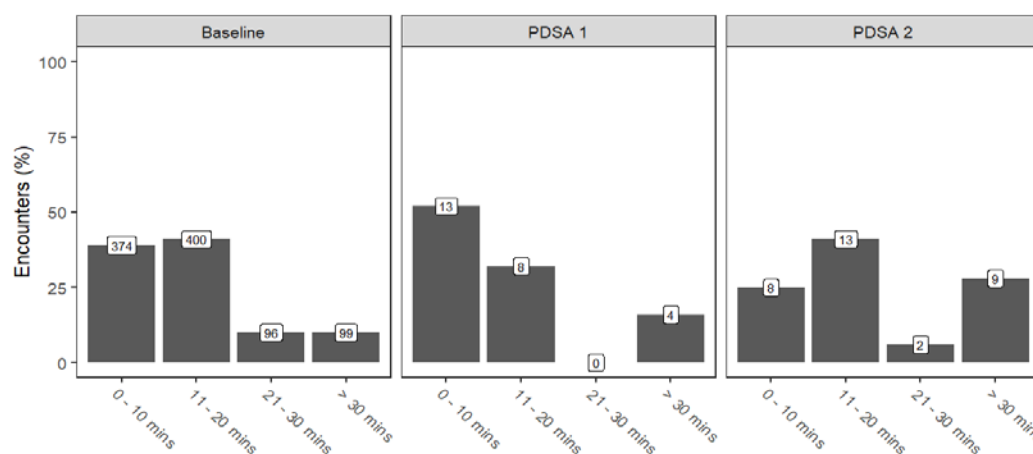

Figure 2: Breakdown of proportion of CT scans that were done within 10 minutes, 20 minutes, and 30 minutes and greater.

Conclusions:

We were unable to reach our target of 75% of patients receiving their CT scans within 10 minutes during working hours. We suspect that this was due to several factors, including not running our PDSA cycle for an adequate period of time and the fact that the emergency department became very busy over the summer of 2021, and this lead to delays in many aspects of stroke care.

Next Steps:

1. Record a podcast about the importance of door to needle times, and door to CT times. Disseminate amongst the CT technicians
2. Disseminate posters and podcast to other Island Health sites
3. Consult with a Patient Partner to move ahead with improving our door to CT scan times in a way that is inclusive and in line with a patient-centered approach.

Peer Facilitated Group Support for Postpartum Depression and Anxiety

Physician Lead: Dr. Shana Johnston

Location: Victoria

Specialty: Family Practice and Maternity

Background:

We are only just beginning to understand the full impact of untreated postpartum depression and anxiety. The rate of postpartum depression and anxiety is often quoted as between 10-25% of postpartum people, but many believe the rate is actually much higher than this. Studies are showing those rates rising further with the increased stress and isolation of the pandemic and the decrease in available supports. The impact of untreated parental mental health distress is so significant it is hard to truly measure; it can affect attachment and bonding, leading to mental health and behavioural challenges in their children, relationship breakdown, and economic impact from time off work and increased use of health care services.

Pacific Post Partum Support Society (PPPSS) in Vancouver is a grassroots organization, offering peer facilitated group support for people experiencing postpartum mental health distress, since 1971. Their programs help thousands of families each year and help provide cost effective support for postpartum people struggling with their mental health through safe, confidential, peer facilitated support.

Problem:

Although the Pacific Post Partum Support Society program in Vancouver has been a successful model, Victoria has been unable to offer peer facilitated group support to their postpartum people. Public health offered a few facilitated support groups prior to the pandemic, which had 3-6 months waitlists, but this support was not able to continue after the onset of the pandemic. Furthermore, peer facilitated support is offered by a peer – a person with the lived experience of postpartum distress, which can remove some of the power dynamic that people may feel in accessing care from a nurse, doctor, counsellor or psychiatrist. Peer facilitated support is also very cost effective compared to similar support being offered through a formal health professional role.

Aim of Project:

To improve the mental health of 10 postpartum people on the South Island, demonstrated by showing a decrease of least 3 points in the Edinburgh Postpartum Depression Scale (EPDS) scores by the end of August 2021.

Patient Voice:

- *"I enjoyed meeting and talking with others in similar situations and who had similar thoughts. It made me very much feel like I wasn't alone in my thinking."*
- *"Being around other moms and having the opportunity to share our stories and come together. The resources we share with each other as well as non judgmental open ears."*
- *"Being validated, being seen. The ritual of the weekly space."*
- *"Keep this going! I know so many other moms who would benefit from this program and need it now!"*
- *"Just hoping you can find more funding so more people can receive this support. Thank you!"*
- *"This is one of the best groups I've been in. Everyone is very supportive. Heather and Clare are great facilitators."*
- *"THANK YOU for giving me and my babe a chance."*

Change Idea:

Partner with Pacific Post Partum Support Society (PPPSS) to offer a program similar to the one they provide so I could study the impact on mental health using QI methodology. A local "peer" (person with lived experience of postpartum mental health distress) was identified and paired with a peer mentor from PPPSS to co-facilitate a group for our area. We used a virtual format with weekly 2-hour meetings for 12 weeks, and then an additional 8-week extension was offered based on feedback from the group.

PDSA Cycle:

Use participants ratings for support and isolation to study effect of the support we were providing on their experience of feeling supported versus isolated. Adapt weekly sessions, surveys, supports available; study their effect again and adapt/abandon/adopt as needed.

Support provided: 1) intake phone call with PPPSS 2) follow up phone call(s) as needed 3) weekly group meetings for 2 hours x 12 weeks 4) 8-week extension at participants request. Measured with surveys at intake then at weeks 1, 4, 8, 12 and 20.

Data Analysis:

- Participants felt increasingly supported with decreased feelings of isolation, which continually improved over the duration of their involvement in the program
- Average Edinburgh Postpartum Depression Scale – out of 30 score, decreased by 4.7 points by 12 weeks and by 8.5 at the end of the 8-week extension (graph 2)
- Participants' average rating of how much their mood improved was 89%. They attributed 87% of this improvement to the program, giving an average improved mood from the program of 77%
- Program rated overall at 9.9/10 by participants
- Virtual platform rating: 9/10; Facilitators rating: Peer 9.4/10, Peer Mentor 10/10

Figure 1: Participants perception of level of support and isolation before contact with Pacific Post Partum Support Society then at regular intervals throughout program (n=10)
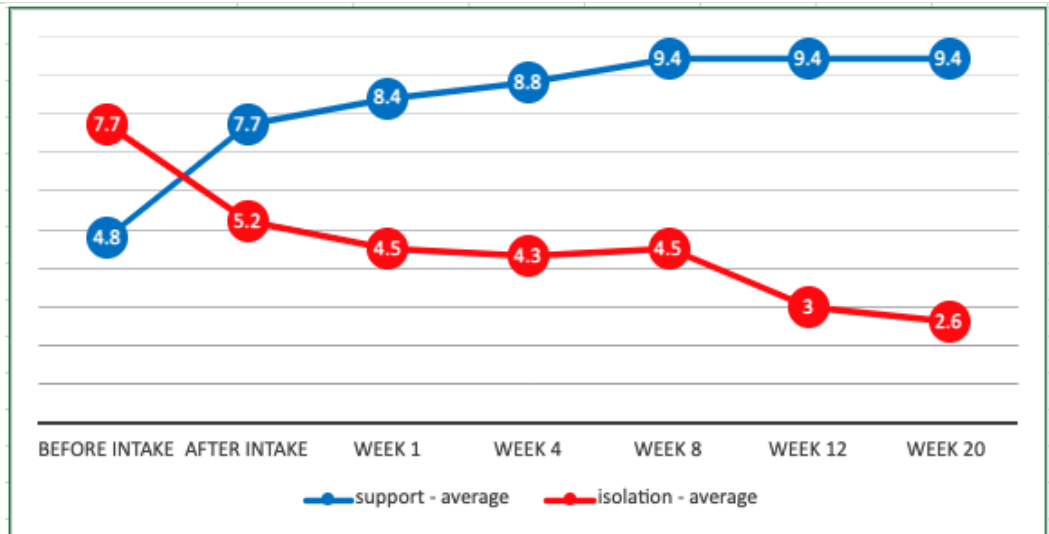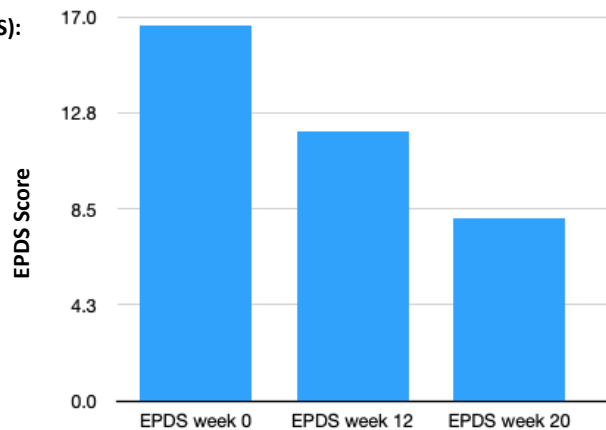

Figure 2: Participants Edinburgh Postpartum Depression Scale score (EPDS): Pre and Post Intervention (n=10)

Conclusions:

1. Peer facilitated group support led to substantial improvements in measures of support and isolation and continued to improve over time
2. The mental health of the participants improved as a result of being involved in the program, with an average improved EPDS of 8.5 over the time in the program and participants average improvement in their mood attributable to the program was 77%
3. Facilitators and program both rated highly by participants
4. Virtual platform well received

Next Steps:

Use remaining South Island Facility Engagement Initiative (SIFEI) funding, as well as Health System Redesign (HSR) funding, to engage with stakeholders and operational leadership to explore how to develop this program locally, embed it within our existing community resources and create referral pathways.

Pediatric Roadmap Project

Physician Lead: Dr. Maria Kang

Location: Victoria, BC

Specialty: Pediatrics

Background:

Early intervention has an established wealth of data that supports a broad reaching number of areas of benefit[10], from individual academic achievement, mental health, to healthcare cost-savings. From reducing the number of appointments that a parent needs to attend, thus taking time away from work, to streamlining the pathway into early intervention supports and beyond, will reduce replicated work.

Problem:

Currently, pre-school aged children in Victoria wait 6-18 months to be assessed by a pediatrician for developmental and/or behavioural concerns. During this wait, access to both private and public supports are inhibited by lack of knowledge of the services, waitlists for services, financial barriers and other barriers that prevent parents and families from receiving appropriate support. Following this wait for a developmental or behavioural assessment, there is yet a variable wait to receive supports and services. Within the critical stage of 0-4 years, early intervention for both a child and their caregivers can effect significant change prior to entering into the school system. A Developmental and Behavioural Roadmap can be used to help guide families to resources and supports in a local geographic area, providing an opportunity for earlier invention.

Aim of Project:

100% of patients referred to a pediatrician at Grow Health for a developmental or behavioural assessment, ages 0-5 years, will have received a pre-survey link, the Developmental and Behavioural Roadmap, post-survey link after assessment within 6 months.

100% of referring physicians at Grow Health distribute and communicate about the Roadmap with the family at the time of referral for developmental or behavioural consults to any community pediatrician by June 2021.

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[10] Early Childhood Development in Canada: Current State of Knowledge and Future Directions A Discussion Paper for the Public Health Agency of Canada
https://edi-offordcentre.s3.amazonaws.com/uploads/2019/10/Early-Childhood-Development-in-Canada_EN_20190918.pdf
WAITING LISTS AND WAITING TIMES FOR EARLY INTERVENTION THERAPIES, INFANT DEVELOPMENT PROGRAMS AND SUPPORTED CHILD DEVELOPMENT PROGRAMS IN BRITISH COLUMBIA
https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0067693
Ending the Wait Overcoming systemic delays in the provision of support for neuro-diverse children and youth
https://inclusionbc.org/wp-content/uploads/2019/06/EndingTheWait-BriefStandingCommitteeChildrenAndYouth.pdf
Measuring in support of early childhood development
https://www.cps.ca/en/documents/position/early-childhood-development

Patient Voice:

One-on-one interviews were held with parents who have already been through the process of having their preschool aged child with Autism, as well as parents who remain on the waitlist for assessment to see a pediatrician and/or to be seen through Vancouver Island Children's Assessment Network (VICAN). Common themes were challenges with the unknown waitlist, difficulty understanding the process in general, frustrations with understanding public versus private options for support.

Change Idea:

Initially, a virtual group visit was contemplated as a method of providing more personalized information. Feedback from Project Team and Patient Partners determined that an initial "One Pager" would be sufficient and more efficient in providing information to patient and families. Initial interactive website was created but found to be challenging to navigate and it created a private website outside of health authority. Preliminary information was consolidated and put into QR code embedded within Roadmap for easier access of online information.

PDSA Cycle:

Several PDSA cycles included multiple iterations of the pre-survey and Roadmap being created and sent to each member of the Project Team and Patient Partners. Changes were then made to the pre-survey and Roadmap and they were sent to a preliminary group of patients on the waitlist over a 6-month period. In total, 12 families were identified as meeting criteria over a 6-month period (June – December 2021).

Data Analysis:

100% of patients meeting criteria were sent electronic pre-survey link. Of the 12 patients identified, 3 filled out pre-survey within 3-month period (June-August, 2021). Primary question: "I feel confident about where to go or who to contact about my child's behavioural or developmental problem" showed 66% strongly disagreed and 33% neither agreed nor disagreed. Following pre-survey distribution, Roadmap was electronically distributed. Post-survey link distributed 1 week after Roadmap distribution. No respondents as of yet.

Conclusions:

This project requires more time for participants to complete post-survey. It is assumed that the One Pager Roadmap would provide preliminary information to increase patient and family's confidence in community supports available. The initial aim of this project was to provide a feedback loop for patients and families to reach out to available resources in the community.

Next Steps:

- Initial aim for second part of project: 100% of referring physicians at Grow Health distribute and communicate about the Roadmap with the family at the time of referral for developmental or behavioural consults to any community pediatrician by June 2021
- Provide One Pager Roadmap to referring physicians and Nurse Practitioners through Pathways (both in private and public forum)
- Follow up project to include Roadmap for local mental health supports

Development of a Coordinated Quality Structure at RebalanceMD with Analysis of Current Quality Needs and Opportunities

Physician Lead: Dr. Colin D. Landells

Location: RebalanceMD, Victoria, BC

Specialty: Orthopaedic Surgery

Background:

RebalanceMD is a comprehensive, multi-disciplinary, patient-centered musculoskeletal care clinic situated at Uptown in Victoria, BC. The clinic includes teams of Orthopaedic Surgeons, Physiatrists, Sports Medicine Physicians, Anaesthesiologists, Internists, a Plastic Surgeon, Physiotherapists, and other adjunct health professions, as well as a large support staff.
The mission of the clinic is to provide committed quality comprehensive musculoskeletal care for our community.

Problem:

It is widely recognized that a quality governance structure is a critical part of sustaining meaningful care quality improvements (QI) in clinics (see references attached). While RebalanceMD pursues numerous QI projects, it does not yet have a coordinated structure that links these projects, ensures consistent high quality patient input, and ensures optimal opportunity to achieve spread.

Aim of Project:

To improve staff and clinician awareness of quality projects by 80% at RebalanceMD by September 2021.

Patient Voice:

> "I was made to feel comfortable, and this is really important to me"

Engagement of a patient voice is the critical next step in the evolution of quality improvement coordination at RebalanceMD.

Change Idea:

Improve the understanding of basic quality improvement engagement and methodology with all team members at RebalanceMD.
Develop a survey to administer to all staff and physicians at RebalanceMD using a variety of question types. From this data, the required next steps to further enhance quality improvement engagement can be developed.

PDSA Cycle:

- Review all ongoing QI work at RebalanceMD
- Interview physicians, staff, and administrators about their knowledge and understanding of QI work
- Develop several iterations of a survey for all physicians and staff at RebalanceMD. These included open-ended and closed-ended questions, Likert scale questions and agreement scales

Data Analysis:

Review of survey results to evaluate the level of understanding of quality improvement initiatives and engagement in quality projects that was administered to all staff and physicians (115) at RebalanceMD.

An overall response rate of 61.7% (71/115) was achieved.

89% (16/18) of the Orthopaedic surgeons, 79% (19/24) of allied health professionals, and 84% (16/19) of MOAs responded to the survey.

Even though there are now 10 ongoing QI projects at RebalanceMD, 62% reported that they had never been involved in any QI projects. The large majority of those who had never been involved with QI work were Allied Health professionals and MOAs. 25% of responding Orthopaedic Surgeons reported that they had never been involved with a QI project.

There was strong agreement within all groups that QI projects enhance the quadruple aim objectives of healthcare.

Many respondents in all groups expressed interest in enhancing their own knowledge about QI methodology. Comments received indicate the most important barriers to QI work are excessive workload and communication gaps.

Figure 1: Prior experience with Quality Improvement
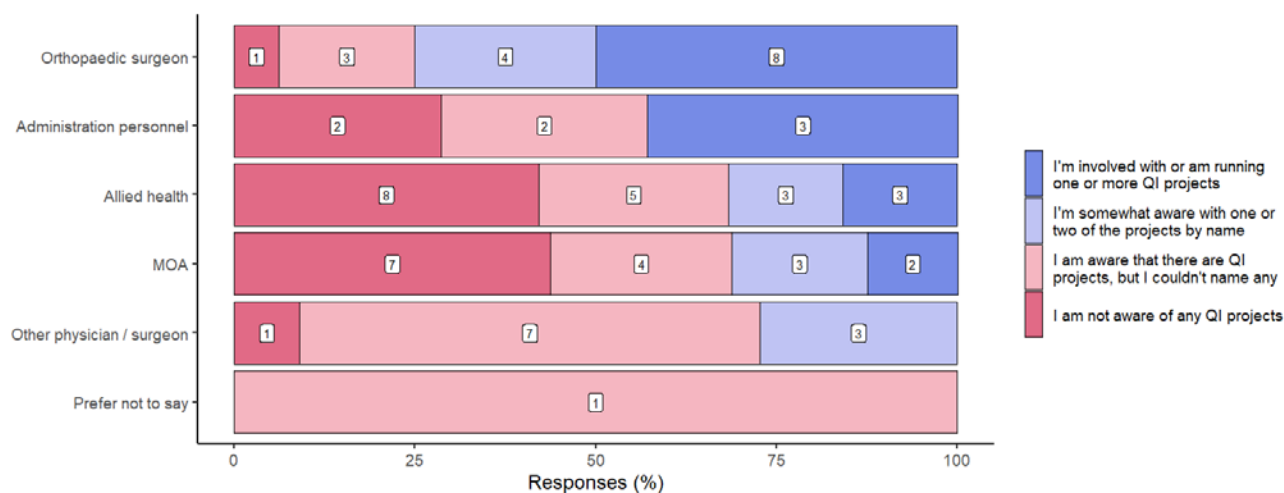
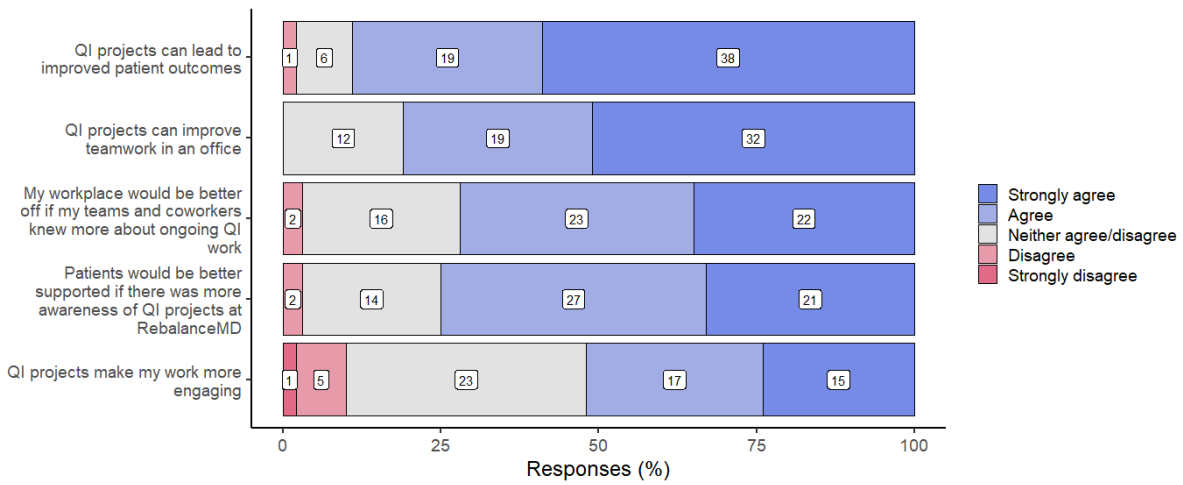**Figure 2: Recognition of the importance of Quality Improvement work.**

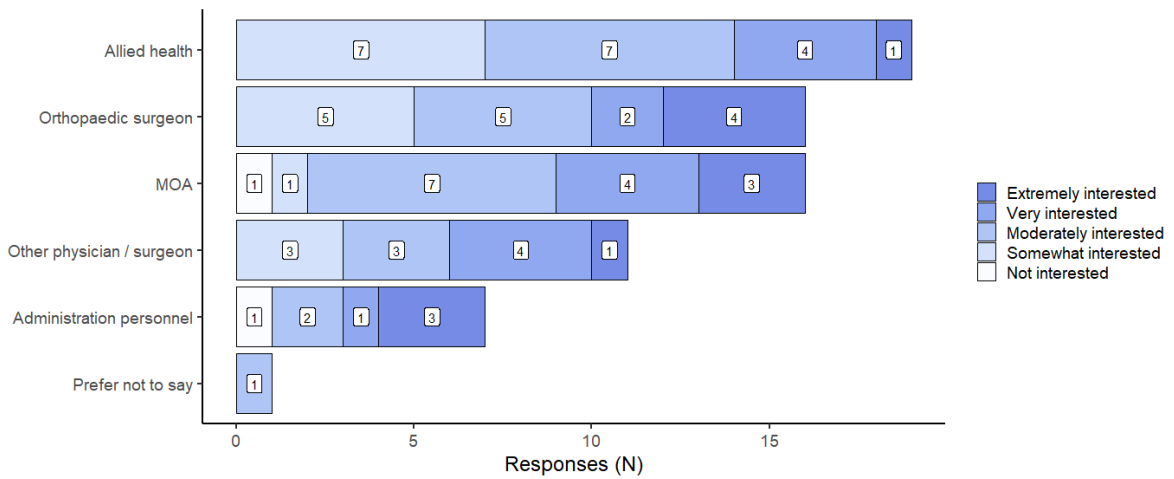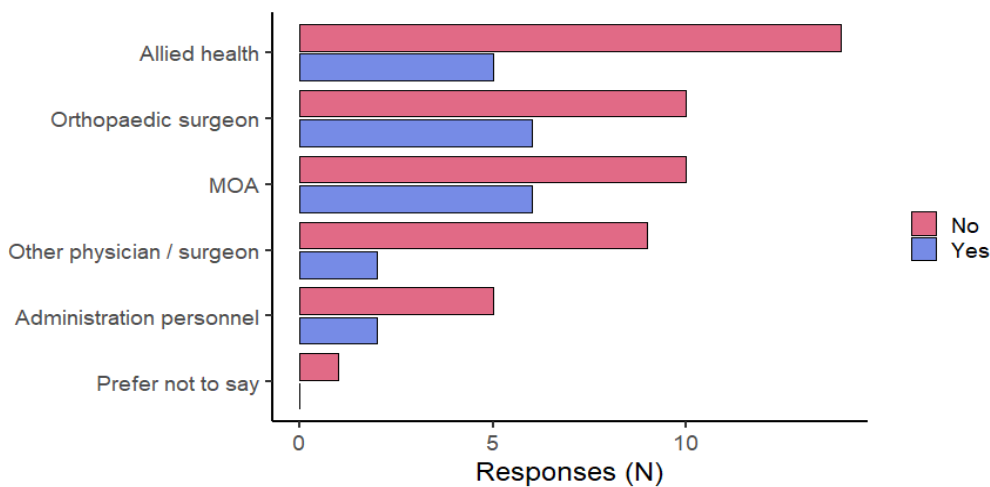**Figure 3: Interest in learning about QI methodology**

Figure 4: Question - Do you believe there are barriers to doing QI work at RebalanceMD?

Conclusions:

Despite active engagement in multiple QI projects by a few stakeholders at RebalanceMD, there remain opportunities to further improve engagement and an understanding of QI methodology with many staff and physicians.

Most staff understand the benefits of quality improvement work to achieve the quadruple aims of healthcare to improve patient experiences and outcomes, as well as to enhance efficiencies of care, and to make their work more engaging.

Barriers identified to carrying out QI work at RebalanceMD include existing workloads leaving no extra time to take on new projects, and communication gaps about ongoing QI initiatives.

Next Steps:

- Pursue opportunities to enhance QI methodology level 1 training for all who are interested
- Develop a process to disseminate information, share ideas, and invite further engagement with existing and future QI projects
- Develop a quality committee structure to encourage, nurture, and oversee all quality initiatives at RebalanceMD
- Engage a patient voice as a full participant in quality oversight and enhancement at RebalanceMD

References used [11]

[11]Law & Governance 17(1) February 2015
Continuous Quality Improvement: A Shared Governance Model That Maximizes Agent-Specific Knowledge
Vanessa Burkoski and Jennifer Yoon
Management Lessons from Mayo Clinic: Inside one of the world's most admired service organizations. Leonard L. Barry, Kent D. Seltman: 2008: ISBN:978-0-07-159073-0: p 118-120, 228-234, 260-261
The Cleveland Clinic Way: Lessons in excellence from one of the world's leading healthcare organizations. : Toby Cosgrove, MD, President & CEO of Cleveland Clinic: 2014: ISBN 978-0-07-182724-9: p.9-14, 18-19, 65-70, 73-74, 111-112.
Accelerating Health Care Transformation with Lean Innovation: The Virginia Mason Experience.   Paul Plsek: 2014: ISBN: 13: 978-1-4822-0383-7: Foreword by Don Berwick MD
Service Fanatics: How to build superior patient experience the Cleveland Clinic Way: James Merlino MD, Chief Experience Officer of Cleveland Clinic: 2015: ISBN 978-0-07-183325-7: p 37-39
Cleveland Clinic Improvement Model 19-ccc-improvement-model-sheet.ashx (clevelandclinic.org)

Early Inpatient Links to Substance Use Care
Improving Addiction Medicine Consult Service (AMCS) Referral Process at Cowichan District Hospital

Physician Lead: Dr. Laura MacKinnon

Location: Cowichan Valley

Specialty: Addictions Medicine, Primary Care Physician (PCP)

Background:

Inpatient substance use medicine consult services reduces costs for healthcare systems, increases the uptake of pharmacotherapy treatment for substance use disorders, and may decrease the frequency of Emergency Department (ED) presentations and readmissions to the hospital. Literature highlights that patient-centered treatment for substance use disorders leads to positive outcomes. While there is no published literature on optimal time of consult request to AMCS, anecdotal evidence from addiction medicine physicians on Vancouver Island indicates that when AMCS has more time to engage with patients, there are improved outcomes.

Problem:

Many patients at the Cowichan District Hospital (CDH) are referred to the Addiction Medicine Consult Service (AMCS) near the end of their admission. For example, the average time between hospital admission and consult by AMCS from July 2020-December 2020 was 6.5 days (8 consults) on the surgical ward (3E). This delay can prevent clinicians from providing optimal pharmacological and psychosocial supports by limiting engagement time. In the end, this brings potential harms to patients by failing to optimally manage their Substance Use Disorder, which can lead to significant morbidity and mortality downstream.

Aim of Project:

The aim of this project is to reduce the amount of time between a patients' date of admission to the Cowichan District Hospital and the date of the consult by the Addiction Medicine Consult Service by 30%, by August 31, 2021.

Change Idea:

Initial: Create a simplified form for the referral process to be used by physicians or allied health to make referrals.

In the end: Disseminating information on AMCS (scope, staffing model, referral contact information, backup resources) coupled with clinical education, as it became apparent that not all physicians were aware of the service and appreciated advice on initial management of acute substance use presentations.

PDSA Cycle:

April 27, 2021: AMCS information and clinical education disseminated to Emergency Room Physicians (ERPs)

April 28, 2021: Cowichan Division of Family Practice presentation

May 27 & June 24, 2021: cancelled Medical Staff Association meeting at Cowichan Distract Hospital, unable to present to specialists

July 1, 2021: AMCS information and clinical education disseminated to ERPs (n=~30) and Primary Care Practitioner (PCPs) who practice acute medicine at CDH (n=96), eliciting feedback (no responses)

Data Analysis:

Outcome measure:

- Number of days from CDH admission to AMCS consult
  - More data points are required to identify if there is decrease in length of time from CDH admission to AMCS consult after the interventions (Figure 1)

Process Measure:

- Percentage of AMCS consults that are requested using the new electronic referral form
  - Zero consults were requested using the new electronic referral form
- Unit specific data: the number of days from CDH admission to AMCS consult for patients referred from the ED
  - Limited evidence suggests that targeted distribution of information to ERPs resulted in an increased percentage of referrals from the ED, however, there is not enough data to draw definitive conclusions about its overall impact on reducing the length of time from admission to consult (Figure 2)

Balancing measure:

- Feedback from physicians on AMCS referral process
  - A simple electronic feedback form was sent to ~120 CDH physicians (ERPs + PCPs) but there were no responses
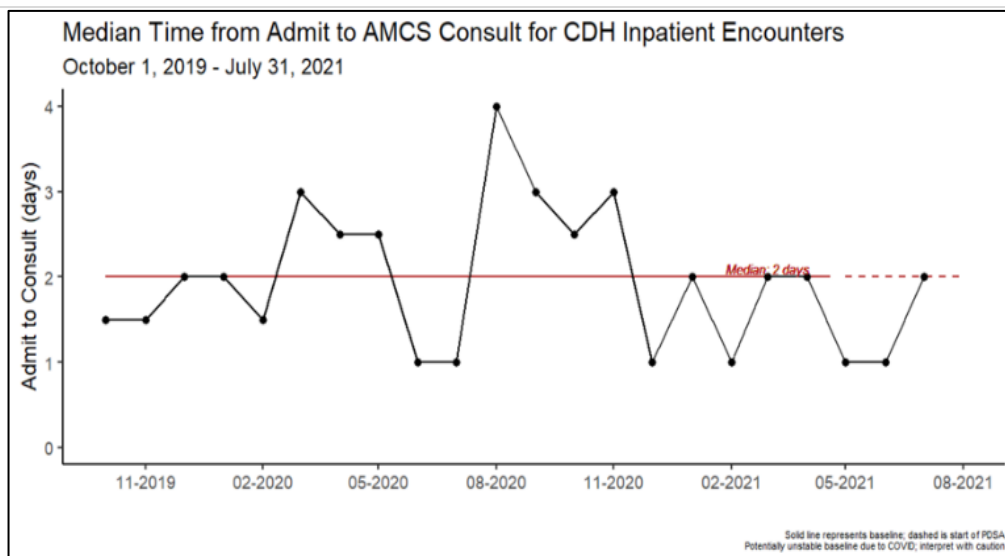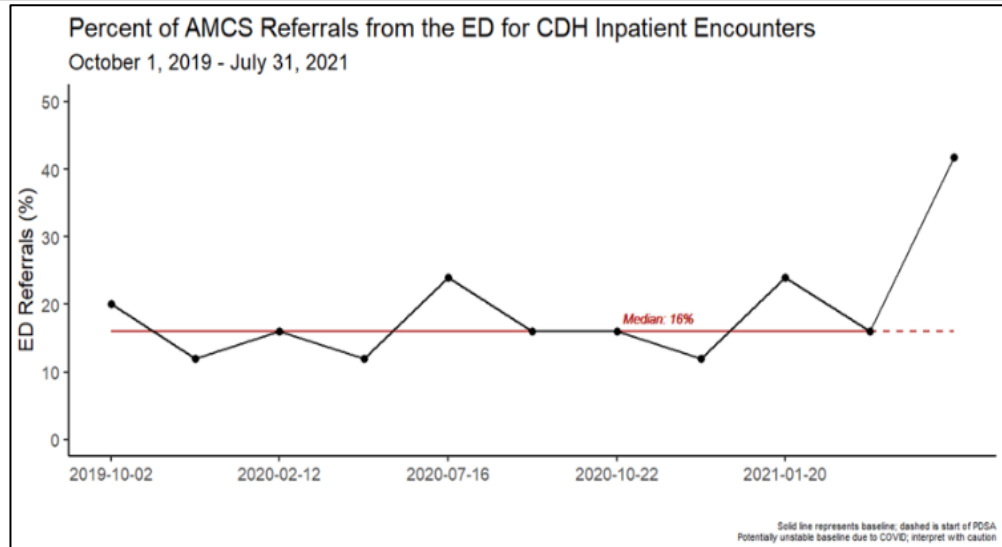
Figure 1

Median Time from Admit to AMCS Consult for CDH Inpatient Encounters
October 1, 2019 - July 31, 2021

Solid line represents baseline; dashed is start of PDSA
Potentially unstable baseline due to COVID; interpret with caution

Figure 2

Percent of AMCS Referrals from the ED for CDH Inpatient Encounters
October 1, 2019 - July 31, 2021

Solid line represents baseline; dashed is start of PDSA
Potentially unstable baseline due to COVID; interpret with caution

Conclusions:

- Despite challenges, preliminary data suggests that CDH physician engagement regarding AMCS may improve early inpatient linkage to substance use care, however, more data is needed
- There is limited evidence demonstrating that targeted distribution of information to ERPs may have led to an increase in percentage of referrals to AMCS from the ED, however, more data is needed
- The pandemic impacted our ability to initiate and sustain change, as well as elicit feedback from clinicians, given the healthcare systems' maxed out capacity during these unprecedented times and the associated change fatigue experienced by healthcare workers
- The foundation has been laid for ongoing work to ensure quick and quality substance use care continues to meet the evolving needs of admitted patients at CDH

Next Steps:

- Continue to raise CDH physician awareness of AMCS services coupled with clinical education on initial management of acute substance use presentations
- Explore options to expand on-call AMCS to community physicians for rapid out-patient management advice
- Funding has been secured for 6.5hrs every 3 months until March 2022 for AMCS physicians to continue with efforts to improve the AMCS referral process, disseminating clinical information to local physicians, and adapting AMCS care to meet the unique needs for admitted and outpatient patients in the Cowichan Valley

Assessment of Health Equity in Care Delivery to Indigenous People Presenting for Care within the Western Communities Primary Care Network Region

Physician Lead: Dr. Randal Mason

Location: Westshore, Victoria

Specialty: Family Physician/Addiction Specialist

Background:

The Western Communities Primary Care Network (WCPCN) is a clinical network of local primary care service providers located in the western communities of the greater Victoria area (Esquimalt to Port Renfrew). The WCPCN is enabled by a partnership between Island Health, the South Island Division of Family Practice, along with local First Nations of Esquimalt, Songhees, Scia'new, T'Sou-Ke and Pacheedaht.

While there is an acknowledgement of the importance of health equity in primary care, and that Indigenous people experience significant inequities in care, there are no standard measures in place to assess health equity for Indigenous people seeking care within the WCPCN region.

Assessments of health equity focus on health outcome disparities as indicators of inequity. Equip Health Care group developed the Equity-oriented Health Care Scale (EHoCS) survey tool to measure health equity from the patient's perspective. They have also developed the Rate Your Organization (RYO) survey tool for self-assessment within organizations and accompanying toolkits to improve approaches addressing inequities in healthcare settings.

Problem:

- Health equity measures focus on disparities on health outcomes between populations, not equity of care delivery
- Indigenous people experience significant disparities in health outcomes compared to non-Indigenous people. In Plain Sight report highlights inequities in care delivery for Indigenous patients in BC
- No standard tools or systems in place within primary care to assess health equity
- Addressing equity is resource intensive. Return on investment tends to focus on intangibles and requires long-term evaluation

Aim of Project:

To improve the process by which we collect health equity data for Indigenous patients presenting for care within the WCPCN region by measuring engagement efforts, which is reflected by 50 Indigenous people providing feedback on the assessment tool by July 1, 2021.

Patient Voice:

Indigenous engagement was the voice in the project. We were able to leverage existing relationships within the Primary Care Network and begin development of new relationships in order to achieve this. The Indigenous health leaders engaged provided feedback on approaches to collaboratively develop the equity assessment tool.

Change Ideas:

- Introduce the idea of the Equity survey tool to the Primary Care Network
- Present the concept of quality improvement to the social workers working on Indigenous engagement efforts to assist in design of services at the West Shore Community Center
- Introduced the concept to a variety of Indigenous stakeholders and ensure that the assessment had been developed collaboratively
- Align with similar work, which is currently underway and conducted by other groups in BC
- Present EQUIP Health Assessment and collaborative development with Senior Evaluation Analyst

Findings:

- Broad support for equity assessment tool from Indigenous stakeholders in the western communities
- Challenges with community engagement during the period of the PQI program
- Essential to focus on equity assessment data stewardship and how survey findings will be used to improve health equity for Indigenous people in the western communities
- EHoCS survey from EQUIP Health Care group is an appropriate baseline document that can be refined to reflect the challenges and barriers faced by Indigenous people in the western communities

Conclusions:

There is broad support from Indigenous leadership in First Nations communities and urban Indigenous voices to assess health equity. Moving forward, talking circles/focus groups with local First Nations of the western communities and urban Indigenous groups could be an effective method to gather feedback on the equity assessment tool's development. In order to support this work, resource requirements would need to be assessed and explored. We strive for participants to be well informed, empowered and compensated for their contributions.

Proposed Next Steps:

Continuing the development and implementation of an Indigenous health equity assessment tool aligns with recommendations contained in the In Plain Sight Report (recommendation 9) and Truth and Reconciliation Commission's Calls to Action (call 19).

Finding Breaks in the Chain
Reducing Avoidable Transfers from two Long Term Care Sites to Cowichan District Hospital Emergency

Physician Lead: Dr. Stacey Leigh McDonald, CCFP, FCFP

Location: Duncan Long Term Care (LTC) sites – Cerwydden Care and Sunridge Place

Specialty: Family Practice with an interest in LTC and Quality Improvement

Background:

Choosing Wisely Canada has identified that transfers from Long Term Care (LTC) to an Emergency Department (ED) for treatment of decline in a resident's condition is an action to question. It can result in long waits in an ED, in unfamiliar and elder–unfriendly environments (noisy, bustling, strapped to a gurney) and these stressors can lead to delirium, polypharmacy and hospital-acquired infections. COVID-19 posed a new risk for LTC residents and transferring residents to hospital put them and their facility at risk of bringing COVID-19 back to facility. The pandemic has shed a light on LTC nationally and internationally and encouraged me to take a look at the numbers of transfers occurring before and during the pandemic from two LTC sites in Duncan, and whether they are potentially avoidable/inappropriate for the resident.

Problem:

Patients at Cerwydden and Sunridge LTC sites can be transferred to Cowichan District Hospital (CDH) ED for assessment and treatment for changes in condition even when it is against their Advanced Care Plan (Medical Orders for Scope of Treatment - MOST) goals. Often there has not been a physician in–person visit for some time prior to the acute incident event and Most Responsible Physicians (MRPs) may not necessarily assess a resident when called for an acute event but instruct the nurse to send to CDH for further evaluation and management. CDH ED physicians have identified that often these patients could have been managed at their LTC site or that the resident's condition is not appropriate for aggressive intervention and the most recent MOST status does not reflect their underlying significant frailty.

Aim of Project:

To reduce avoidable/unnecessary transfers from Sunridge and Cerwydden Long Term Care sites to the Cowichan District Hospital Emergency Department by 25% by June 30, 2021.

Patient's Family's Voice:

"I assumed [the] physician was going in to see Dad but he wasn't...That is why I wanted him to go to hospital – to get some answers".

Nursing Staff:

"We get frustrated when we a call a doctor and get told to fax them, usually we have already faxed or need the MRP quickly then don't get called back for a couple of hours or the next day"

Change Idea:

- Develop a flowchart of the steps that occur when a resident in LTC has an acute event requiring a physician's expertise
- Use small tests of change at different steps along the chain of communication that would improve outcomes/care of the LTC resident and their families and avoid unnecessary transfers to the local emergency department
- Identify where/what kind of support nurses require in these circumstances and educate MRPs/on-call doctors as to the scope of practice realistic in a LTC setting and the need for on-site physician assessment of LTC residents for these acute changes in clinic status

PDSA Cycles:

1. Emails/discussions/surveys and re-surveys with nursing staff on why they cannot reach MRPs; determine issues/efficacy of reaching MRPs/on-call physician with current phone, on-call/physician away lists/clinic MOA protocols for forwarding LTC urgent calls
2. Discussing with MRPs/office managers about nursing survey responses re: clinic MOA response, current MRP cell numbers and private clinic lines hard to get through at lunch or without listening to a 5 minute COVID-19 preamble
3. Division meetings to request Long Term Care Improvement (LTCI) working group establishment and project manager, CME TORCH model
4. Chart audits of residents sent to CDH ED
5. Discussions, emails with ED leads re: LTC transfers and where they feel gaps are and address them via digital/paper form in binder in ED; familiarize them with LTC pink band protocol already in place, and LTC sites in Duncan
6. Attending Division meetings to encourage use of facility EMR – point click care and offer support for its use
7. Review of contingency lists with Directors of Care and coordinators LTC sites (Zoom meetings/emails)
8. Recruitment of 2 new medical coordinators and establishment of LTCI working group for Cowichan Division of Family Practice
9. Pulling information from PDSA cycles into a flow diagram as to the process that occurs when an acute medical incident for a resident occurs in LTC and then identifying current gaps in communication or process

Data Analysis:

Transfers from LTC (Cerwydden and Sunridge) to CDH ED from January 2018 to June 30, 2021.

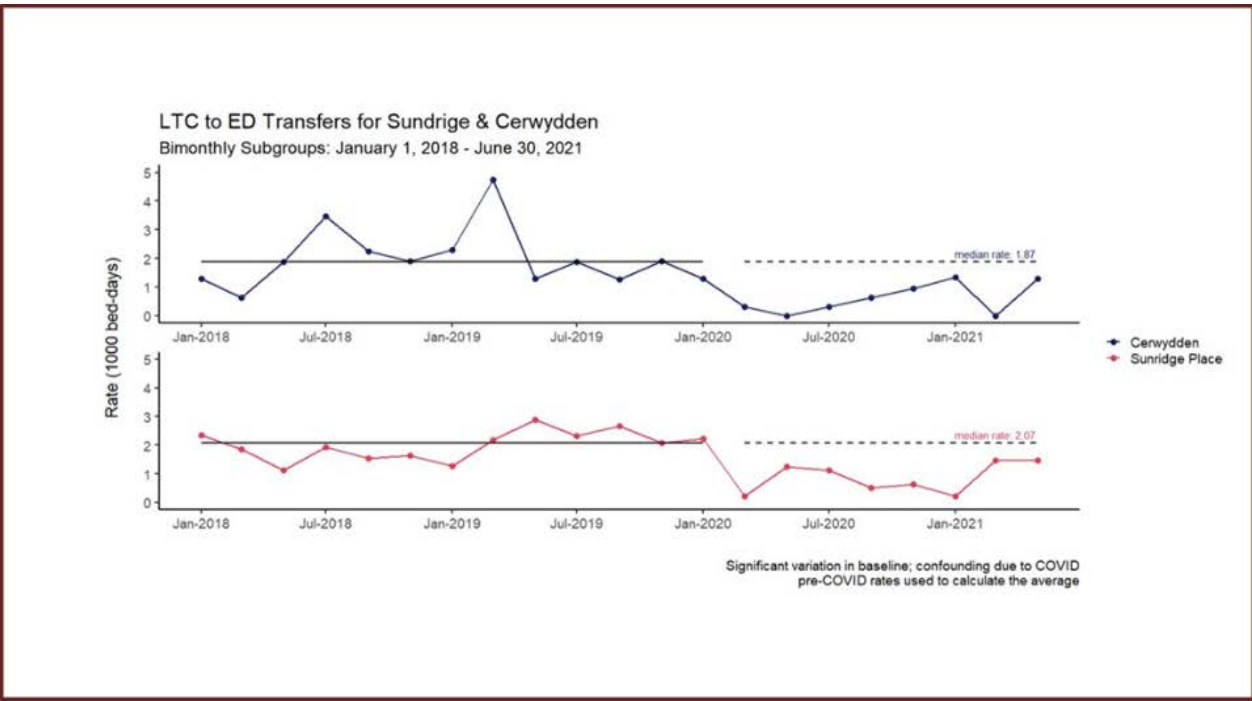The data shows a decrease in transfers and an increase in the days between transfers; this may be confounded by COVID-19.

Cerwydden (56 beds)

Year	Transfers
2017	17
2018	36
2019	42
2020	11
2021	8

Sunridge (160 beds)

Year	Transfers
2017	100
2018	101
2019	130
2020	57
2021	30

LTC to ED Transfers for Sundrige & Cerwydden
Bimonthly Subgroups: January 1, 2018 - June 30, 2021

Conclusions:

The project improved nursing staff engagement in QI at the two LTC sites. It also engaged family members in the process and helped them voice their experience and bring meaning to the importance of the project. Working on identifying the steps involved for nursing staff, families and MRPs/on-call physicians when an acute medical incident requiring rapid attention occurs enabled the development of a flow chart. On the algorithm, one can look at each individual step and clarify whether there is a "break in the chain of care" for a site and work towards making small changes to bring about improvement.

Working on this QI project during the COVID-19 pandemic has been difficult but the positive aspect has been that there has been a spotlight put on LTC, its vulnerable residents and its importance in the broader community. This has enabled the engagement of two new medical coordinators with a passion for geriatric care and the development of a LTCI working group with a temporary Project Manager for LTC in Cowichan. CDH ED physicians are also more aware of the local LTC sites, protocols such as the Pink Band Project and the aim of this project, which I feel, helps them know that their concerns are being addressed.

Next Steps:

Work with medical coordinators, nursing staff, LTC site leads, MRPs and the Division of Family Practice in Cowichan to work towards supporting staff and MRPs in managing acute incidents in LTC sites on site where possible. The data collected during the project and the identifications of 'breaks in the chain" of communication, response and scope will help guide further Quality Improvement projects.

Right Care, Right Place, Right Time for Ladysmith

Physician Leads: Dr. Pramod Swamy & Dr. Emily Steeves

Location: Ladysmith

Specialty: Family Medicine

Background:

Ladysmith Urgent Care is the only facility for unscheduled and afterhours care in the community. In addition, it is the only access point to care for unattached patients in the area.

Problem:

High volumes of patients seek care at this site with high frequency, low acuity conditions, and occasional high acuity conditions. Providers have voiced concerns that patients arriving for very low acuity concerns and chronic conditions, such as prescription refills, are having long wait times, then increasing wait times and waiting room congestion, as well as not getting the full benefit of a primary encounter such as longitudinal follow-up, preventative care, and comprehensive care.

Historical data has shown that 44.8% of the area population has had at least 1 emergency visit compared to the Island Health average of 24.7%. With a growing population and limited access to primary care, it is important to explore ways to provide optimal patient care and efficient use of urgent care resources, and facilitate patient attachment to longitudinal primary care providers.

Aim of Project:

Reduction of patients presenting to urgent care for prescription renewals by 50% at Ladysmith Urgent Care by June 2021.

Generate a waitlist of at least 100 unattached patients for new Ladysmith primary care providers (PCP) with capacity. Facilitate patient attachment to Nurse Practitioner (NP) starting at Hillside Medical Centre.

Patient Voice: Quotes from patients utilizing urgent care

- *"My doctor is retiring."*
- *"My doctor was cutting back his work hours so he fired half his patients."*
- *"It takes 3 weeks to see my doctor!"*
- *"The Walk In Clinic was all booked up at 9 am"*
- *"I have a bladder infection and called my doctor's office for an appointment and they can get me in for a phone call in 6 weeks."*

Change Idea:

Our initial change idea was to use telehealth for patients presenting to urgent care for prescription renewals. We planned to implement this in March 2021, and we did not see enough patients during this time to test our change ideas. We attribute the reduction in patients presenting to urgent care for prescription renewals to a number of reasons. Our overall numbers were down in urgent care at that time (due to patient reluctance as a result of a local increase in COVID cases). In addition, people have had a year of COVID to learn alternate methods of prescription renewal, such as, pharmacy renewal, family doctor phone appointments, and virtual telehealth medicine (Telus Health MyCare, previously Babylon).

Our next change idea was to use urgent care to facilitate patient attachment to a new nurse practitioner panel. Our new NP has taken on 75 unattached patients from the area in the last 2 months, from urgent care referrals and the local primary care network referrals.

PDSA Cycle:

Cycle 1 – Problem – No process for virtual care of patients in Ladysmith Urgent Care. New process would allow medication refills to be done virtually during quiet times in urgent care.

Solution - Developed a process for registering patients that are not seen physically in urgent care. Clerk modified registration process to allow for patient phone calls.

Cycle 2 – Problem - Minimal medication refills seen over many months post COVID. When medication refills started to rise found the majority were unattached patients with no PCP.

Solution – Pivoted project to attach unattached patients to new Primary Care Network (PCN) NP starting May 2021 at Hillside Clinic in Ladysmith. Focused on patients utilizing the Urgent Care for medication refills. Developed new patient intake package and process with Hillside staff for NP to handout when attaching patients.

Data Analysis:

Figure 1:
Selected all emergency encounters from registration data with:
- **Visit location 'LCHC'**
- **ER discharge date on or after January 1, 2019 and before or on July 31, 2021**
- **N = 32,497**

LCHC Urgent Care Encounters
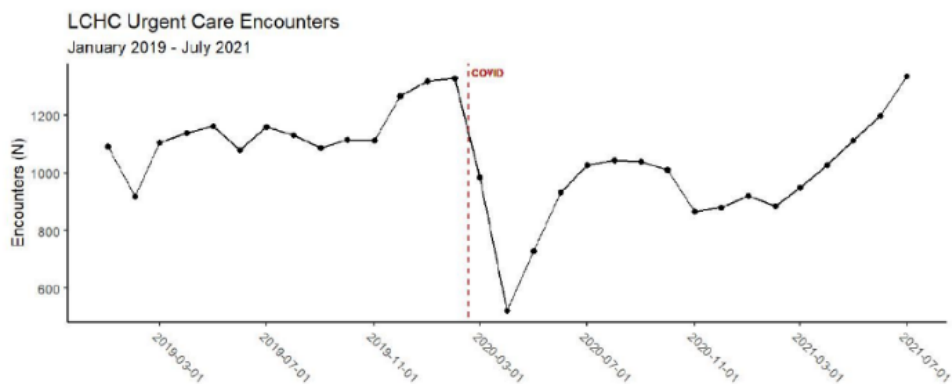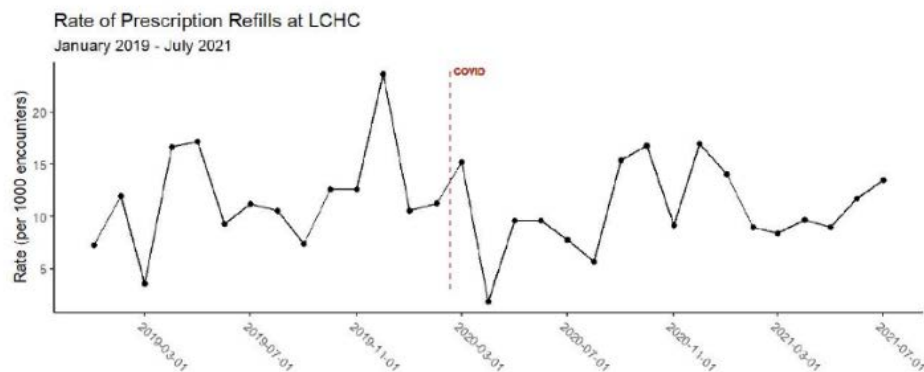January 2019 - July 2021

Figure 2:

Encounters flagged as a prescription refill encounter if the field [ED_Reason_for_Visit] had either one of the following verb-noun combinations, or only contains the acronym Rx:
- **prescription and renew**
- **prescription and refill**
- **medication and renew**
- **medication and refill**

Rate of Prescription Refills at LCHC
January 2019 - July 2021

Conclusions:

We believe that having new primary care providers and increasing rates of attachment will improve appropriate utilization in the urgent care setting. Current unattached patient numbers exceed the capacity of available new providers. Overall Ladysmith has not seen any new provider capacity in the past 20 years but the community has more than doubled in size.

Medication refills for attached patients decreased during our project. We hypothesize that 3 things were primarily responsible:
1. Pharmacists were allowed to do medication refills
2. GPs started being compensated for fax refills
3. GPs were compensated for virtual visits for medication refills

Next Step:

Our clinic's new patient intake process has improved as a result of this project, and we will plan to convert the intake forms to a digital platform in the near future using Pomelo (patient portal integration with MedAccess EMR) with the help of Practice Support Program (PSP).

Improving the Care of Opioid Exposed Newborns at Victoria General Hospital

Physician Lead: Dr. Katrina Stockley

Location: Victoria General Hospital

Specialty: Pediatrics

Background:

The public health opioid crisis has been raging in BC since April 2016. Within the population of people who use opioids, pregnant individuals and their newborns are a particularly stigmatized group and experience many barriers to receiving high quality, evidence-based healthcare.

Best practices for caring for newborns exposed to opioids in utero have evolved over recent years; current provincial standards support 'rooming-in' (baby stays with their parent in hospital unless there is a medical reason for separation). The "Eat Sleep Console" care model, a new method of assessing and managing newborns with opioid withdrawal symptoms, has been shown in previous quality improvement studies to reduce the need for newborn morphine therapy, reduce newborn length of stay in hospital and reduce healthcare costs.

Problem:

Despite being the largest perinatal care centre in our health authority, Victoria General Hospital (VGH) has not implemented the provincial standard of care for treating newborns exposed to opioids in utero (rooming in and the Eat Sleep Console approach). Recent data from VGH shows that over the 9 months prior to this project, 62% of newborns with opioid exposure were admitted to the NICU at VGH and separated from their parents. In these cases, admission to the NICU is generally due to them needing morphine therapy. While it is not medically necessary to admit a baby requiring morphine to the NICU if there are no other medical comorbidities, it has been a historical practice at our institution. Unfortunately, this interrupts parent-newborn bonding, decreases breastfeeding rates and can be traumatic for parents, who often have experienced previous trauma and stigmatization. In addition, it is associated with increased newborn withdrawal symptoms and a resultant increased need for morphine therapy, resulting in longer hospital stays for newborns and increasing the overall cost to the healthcare system.

Aim of Project:

To decrease the Neonatal Intensive Care Unit (NICU) length of stay by 20% at Victoria General Hospital for babies greater than 36 weeks gestational age exposed to opioids in utero by September 2021.

Patient Voice:

Our patient voice is a parent with lived experience who has previously had a newborn admitted to the NICU for the treatment of neonatal opioid withdrawal symptoms. They participated in working group meetings, as well as reviewed parent documentation (e.g. parent handouts about the new Eat Sleep Console care model), providing an invaluable patient-centered perspective to ground this work. During the course of my PQI project, changes in their family circumstances (birth of second child, move to Ontario) resulted in them being less available to participate in the latter part of this project.

Change Idea:

- Implement the Eat Sleep Console care model at VGH, which focuses on: rooming in, non-pharmacologic care interventions, empowering parents
- Increase staff in the NICU by utilizing HCAs to assist NICU RNs in providing non-pharmacologic care interventions to newborns with opioid withdrawal symptoms (potentially reducing the need for neonatal morphine treatment and as a result, decreasing newborn length of stay)
- In progress: trial keeping the parent-baby dyad on the postpartum unit even if the newborn requires morphine therapy (thus avoiding dyad separation and admission to the NICU).

PDSA Cycle:

A number of PDSA cycles were carried out during the course of this project. The first 3 centered around our in person education sessions for RN's on the Eat Sleep Console (ESC) model:

PDSA 1: 2 weeks of in person ESC 'table talks' education sessions with RNs, collecting survey feedback from participants. Participants found sessions extremely useful, however NICU RNs unable to attend due to their workload. Adaptation for PDSA cycle 2 was to provide coverage for break relief for NICU RNs to increase their participation.

PDSA 2: Continue education sessions with RNs providing break relief for NICU RNs. Still difficult to increase NICU RN participation due to staffing & acuity in NICU (only 1-2 more NICU RNs attended). Adaptation for PDSA 3: Create online education video for NICU RNs as an alternative to in person education sessions.

PDSA 3: Continue education sessions, with online video education as an alternative for NICU RNs. This significantly increased NICU RN participation (23 RNs viewed the video over this time period).

The second two PDSA cycles centered around increasing staffing support in the NICU by using health care aides (HCAs) to support the NICU RN staff in providing non-pharmacologic care interventions to newborns with opioid exposure.

PDSA 4: Creation of HCA guideline document, process for calling in HCAs for a shift. Survey feedback from NICU RNs, HCAs and parents re: whether this was helpful and what should be changed. Adaptation for PDSA 5: Feedback indicated that it would be quite helpful if HCAs could feed 'stable' babies at RN discretion, so documentation and guidance was updated accordingly.

PDSA 5: Continuation of HCA support in NICU, with HCAs able to feed stable babies, per discretion of NICU RN. Informal feedback has been that this has been helpful & perinatal management has taken steps to formalize hiring of HCAs in the NICU to continue to provide this support.

Our final PDSA cycle (which is currently in progress) is to do a small pilot with one stable parent-baby dyad, whereby the baby stays on the postpartum unit even if the baby ends up requiring morphine treatment. If the baby requires morphine, a NICU RN will be assigned to care for the baby, while the postpartum RN will continue to care for the parent, and also will receive mentorship and education from the NICU RN on caring for babies with opioid exposure. We have created RN workflow and documentation to support this pilot. Our hope is that if the pilot is successful, we can adapt and expand to other dyads, ultimately allowing newborns requiring morphine to stay on the postpartum unit with their parents and eventually transitioning their care to the postpartum RN.

Data Analysis:

- Primary outcome measures:
  - The % of newborns with opioid exposure in utero that are cared for using the Eat Sleep Console (ESC) care model from March 15 2021 onwards
  - Admission to NICU (yes or no) & length of NICU stay (days)
  - Morphine treatment needed? (yes or no) & duration of morphine treatment (days)
- Post-ESC implementation, eight newborns > 36 weeks were born at VGH with a history of opioid exposure in utero. Of these, chart reviews indicate that 7 out of 8 were cared for using the ESC care model (87.5%). Of these, there was one case where the ESC care model wasn't used consistently in all care settings (postpartum unit, NICU), thus in a total of six cases (75%) the ESC care model was used consistently.

	# Admitted to NICU	% Admitted to NICU	% Requiring Morphine
Before Intervention	13	68%	54%
After Intervention	17	77%	76%

- Increased admissions to NICU and morphine treatment after our interventions (PRN morphine & ESC implementation), likely reflects a significant change in our population demographics (an increased number of parents that were not stabilized on opioid agonist therapy prior to delivery that had ongoing illicit substance use, which is known to be a significant independent risk factor for newborn morphine treatment).
- Median NICU length of stay did not decrease after implementation of the ESC care model, however only 8 newborns have been born since ESC implementation and the majority of these newborns (6/8=75%) were born to parents that were not stabilized on opioid agonist therapy prior to delivery and had ongoing illicit opioid use.
- Small numbers to date, work is ongoing.

Figure 1: Run chart showing NICU length of stay in morphine treated neonates (January 2017-August 2021)
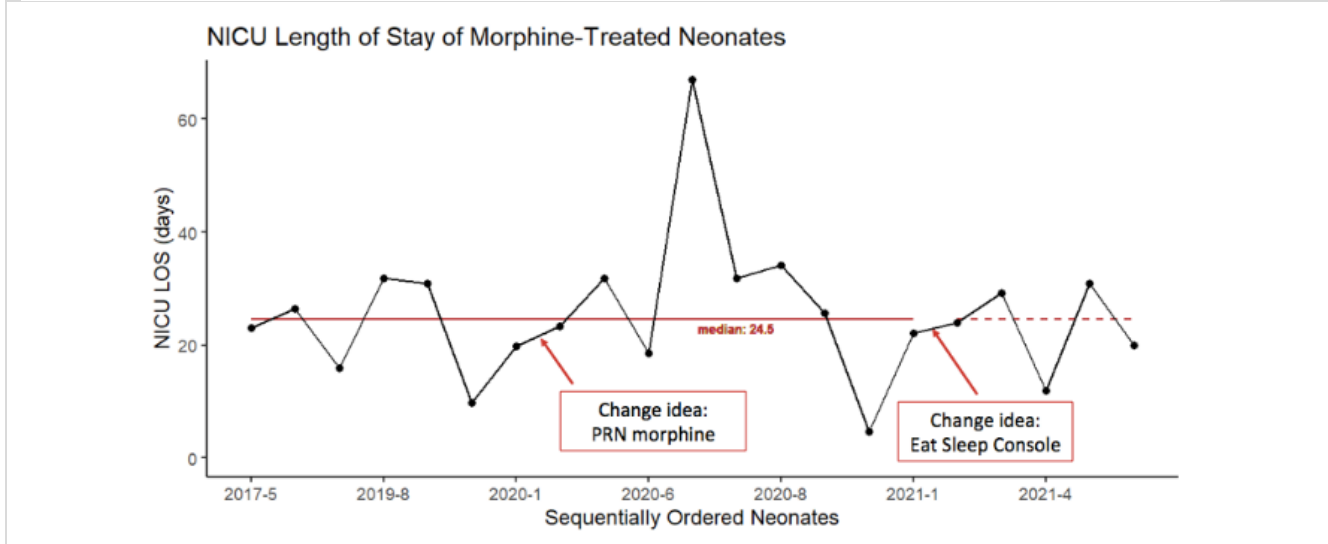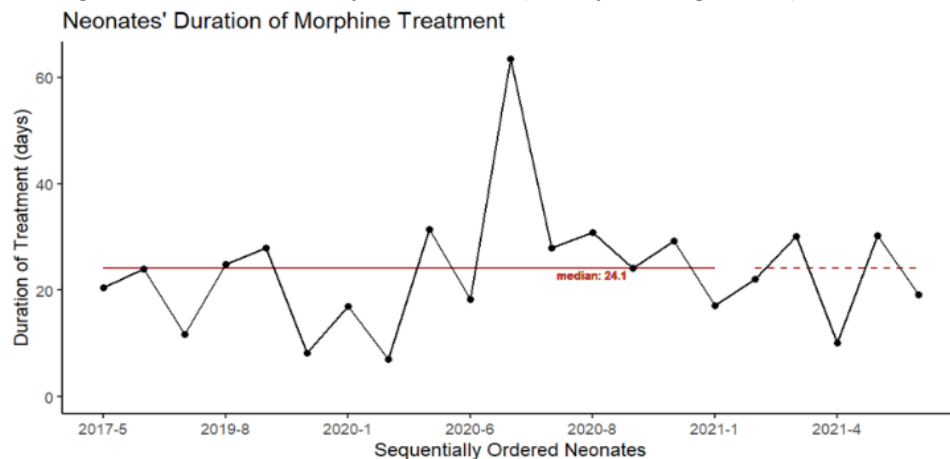
Figure 2: Run chart showing neonates duration of morphine treatment (January 2017-August 2021)

Conclusions:

- Effective implementation of 'best practices' is a complex process, particularly when it involves changing an established 'culture' of clinical care
- The fact that we have not yet seen a significant reduction in NICU length of stay for newborns with opioid exposure in utero (our original aim) could have been impacted by a significant change to our patient population during the course of this project. Prior to our interventions, the majority of newborns were born to parents stabilized on opioid agonist therapy with no ongoing illicit opioid use but during the project time period the population shifted towards primarily un-stabilized parents with ongoing illicit opioid use during our project (an independent risk factor for newborn morphine therapy, which currently mandates NICU admission at our institution)
- The Eat Sleep Console care model has been widely accepted by health care providers (RNs, midwives, GPs, paediatricians) and clinical leadership. We are in the process of soliciting feedback 6 months post-ESC implementation to determine any ongoing education needs and/or challenges with this care model
- During the course of the project, we have established a committed and engaged working group of individuals (RNs, physicians, management) that will continue working towards improving the care of this vulnerable population after this project ends

Next Steps:

- Ongoing meetings with our ESC working group to continue to improve care for pregnant individuals & their newborns with opioid exposure in utero
- Pilot project evaluating the feasibility of keeping newborns with their parents on the postpartum unit, even if morphine therapy is required (initially involving a NICU RN caring for the newborn on the postpartum unit if morphine is required, eventually transitioning towards postpartum RNs assuming this role)
- Ongoing collaboration with maternity care providers & perinatal addictions medicine physicians in supporting the stabilization of pregnant individuals prior to delivery (e.g. pediatric antenatal consultations, antenatal care plans)
- Exploration of how we might better solicit feedback and perspectives from patients & their families

Improving Antibiotic Usage in Gram-Negative Bacteremia
How Can We Optimize Treatment?

Physician Lead: Alastair Teale

Location: Nanaimo Regional General Hospital (NRGH)

Specialty: Infectious Diseases

Background:

Gram-negative bacteremia (GNB) is associated with high rates of morbidity and mortality. Because of traditional prescribing practices, patients are often over treated with broad spectrum parenteral antimicrobial therapy, leading to increased antibiotic costs, increased adverse events and increased length of stay (LOS). Appropriately designed studies have now shown narrow spectrum, oral options are as efficacious as parenteral options for stepdown and are associated with decreased cost and improved patient outcomes with less adverse events and length of stay.

Problem:

GNB is often treated with broad-spectrum parenteral therapy where narrow spectrum, oral therapy has been shown to be as efficacious, with easier administration and less adverse effects.

Aim of Project:

The antibiotic stewardship team will review cases of inpatient gram-negative bacteremia at Nanaimo Regional General Hospital (NRGH)and will aim for a greater than 90% acceptance of recommendations, 25% decrease in length of parenteral therapy and a 10% decrease in average length of stay for these patients over the 3-month period of the intervention in comparison

Pharmacist Voice:

"This intervention did not change my workload or process, as it was a similar recommendation note I'd leave previously, but the visibility and stated ID physician support increased physician acceptance drastically."

Change Idea:

Cases of inpatient GNB at NRGH were reviewed and feedback regarding antibiotic treatment and suggestions for ongoing stepdown therapy were given via an electronic form left on the patient's electronic chart.

PDSA Cycle:

- An electronic form was created for prescriber feedback
- 3 months of inpatient cases of gram-negative bacteremia were reviewed prospectively with recommendations provided for stepdown/ongoing antibiotic therapy
- Data was collected from each stewardship review

Data Analysis:

Data collected included (3 month pre and post intervention):

- Initial antibiotic therapy
- Acceptance of suggestions/guideline concordance (Graph 1)
- Oral vs IV treatment duration (Graph 2)
- Total antibiotic course duration (Graph 3)
- Duration of hospital stay

Retrospective review,	N = 36
Prospective audits,	N = 21
Total reviewed,	N = 57

Figure 1: Results from review of fifty-seven cases: A. Suspected source of infection, B. Total positive blood cultures-identified organisms, C. Empiric antibiotic at blood culture sensitivity

A. Suspected Source of Infection (N=57)

- Genitourinary
- Gastrointestinal
- Respiratory
- Other

B. Total Positive Blood Cultures - Identified Organism (N=57)

- Escherichia sp.
- Klebsiella sp.
- Serratia sp.
- Other sp.
- Anaerobic sp.
- Polymicrobial

C. Empiric Antibiotic at Blood Culture Positivity (N=57)

- Ceftriaxone
- Piperacillin-Tazobactam
- Carbepenem
- Ciprofloxacin
- None

Data collected from December 2020 –February 2021

Figure 2: Step down to effective oral therapy in patients at day 3 following stewardship advice (N=57)

Step down to oral antibiotic therapy: Pre vs Post Intervention (December 2020- May 2021)

% patients stepped down to oral therapy

Values shown: 28.60% (December), 100% (March), 87.5% (May)

Pre-intervention | Post-intervention

December | January | February | March | April | May
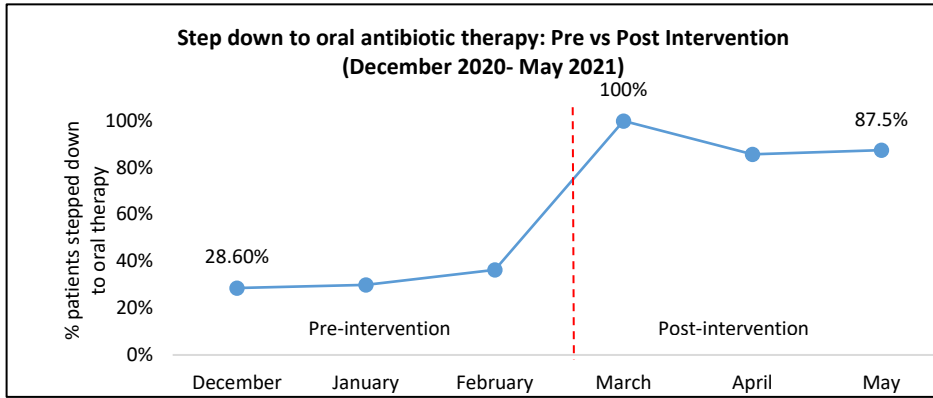
Figure 3: Average length of intravenous (IV) antibiotic therapy (N=57)

Average number of days of IV antibiotic therapy: Pre vs Post Intervention (December 2020- May 2021)

Average # of days on IV therapy

Values shown: 8.6 (December), 3.2 (March), 4.5 (May)

Pre-intervention | Post-intervention

December | January | February | March | April | May
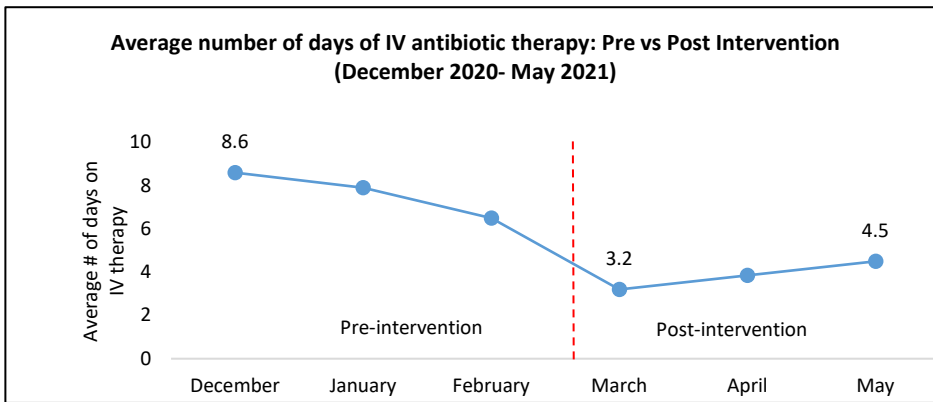
Figure 4: Average total days of antibiotic treatment (N=57)

Average total days of combined antibiotic treatment: Pre vs Post Intervention (December 2020-May 2021)

Average total days of combined therapy

Values shown: 12.9 (December), 11.0 (March), 11.9 (May)

Pre-intervention | Post-intervention

December | January | February | March | April | May

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Conclusions:

This prospective audit and feedback project of inpatient gram-negative bacteremia at NRGH demonstrated the effectiveness of an electronic feedback form for antimicrobial stewardship, a high level of prescriber responsiveness to antimicrobial stewardship and a decrease in parenteral antimicrobial therapy used for treatment of GNB. This intervention could be used as a template for interventions targeting other specific infectious syndromes and broad-spectrum antibiotic use across other Island Health sites in the future.

Next Steps:

The data from this project will be shared amongst the infectious disease specialists, medical microbiologists and antimicrobial stewardship pharmacists, and may be used as a template for future interventions as the current Island Health Antimicrobial Stewardship program is undergoing a redesign and is going to be remodelled from the ground up. This small project could be a pilot project for future projects designed to run at multiple Island Health sites island wide.

MyHealth Patient Portal Messaging: Improving Patient Access & Experience at Westshore Urgent Primary Care Centre

Physician Lead: Dr. Elizabeth Wiley

Location: Westshore Urgent Primary Care Centre (WUPCC)
Specialty: Family Medicine

Background:

Since opening in November in 2018, Westshore Urgent Primary Care Centre (WUPCC) has faced overwhelming demand for access to urgent and primary care services in the Western communities (Esquimalt, Colwood, Langford, Metchosin, and Sooke). Open 12 hours/day, 365 days/year, WUPCC experiences overwhelming demand for services resulting in daily "capping" due to capacity constraints meaning that many patients are turned away. Lack of timely access to care risks poor outcome and contributes to poor patient and provider experiences. Since opening in November 2018, WUPCC has received several Patient Care Quality Office (PCQO) patient complaints and negative Google reviews citing long wait times and lack of access to care.

Problem:

More than 50,000 patients in the Western Communities of Victoria do not have a primary care provider (PCP), and many patients with a PCP have difficulties accessing care in a timely manner. As a result, demand for services at Westshore UPCC consistently exceeds capacity. Lack of access results in inappropriate Emergency Department (ED) utilization, poorer patient outcomes and negative patient and provider experiences.

Aim of Project:

The WUPCC clinical team will increase access to urgent care by increasing the total number of patients served each month by 5% by June 2021 through integration of MyHealth Patient Portal secure messaging into clinical care delivery.

Patient Voice:

A patient experience survey was developed and administered to patients who received MyHealth Patient Portal messages between December 2020-April 2021. Data from this survey are summarized below.

Selected patient comments from this survey included:

- *"My doctor recently retired and this is the first time in 30 years that I have been without one. So I am learning how to access and navigate the medical system on my own and MyHealth will be a helpful tool"*
- *"I feel the one on one contact with the health care provider eliminates the chance for errors or misunderstandings. The ability to ask questions and get direct answers from the comfort of home without having to make a trip to an office / clinic is great."*
- *"Not very good with phone calls, especially talking to docs, so it's great to be able to choose my words and timing. Wonderful tool"*
- *"I feel that this process is secure, accurate and will eliminate trips to my other health care providers as I can access the information from my home."*

A plan for ongoing patient feedback was developed following the patient experience survey with a hyperlink to be incorporated in each patient portal message. A patient advisory group was also planned with the MyHealth Patient Portal team.

Change Idea:

One potential opportunity for improving efficiency, access and patient experience in the UPCC context is through use of patient portal secure messaging. Having recognized this potential, Island Health offers MyHealth, a patient portal platform through IHealth/Cerner that seeks to offer patients 24/7 access to their health information including results, appointment information and booking capability and documentation.[12]

MyHealth also offers patient secure messaging, which allows patients and providers to send/receive messages. This functionality offers an opportunity to advance our quality goals at WUPCC consistent with Island Health's Current Work Plan Priorities ("Patient Portal Expansion").[13]

Existing evidence from other jurisdictions suggest that patient portals can:
- Increase access and efficiency[14]
- Improve patient-provider communication and the patient experience[15]
- Improve provider/team experiences[16]
- Support chronic disease and medication management[17][18]

In the context of the Westshore Urgent Primary Care Centre, secure messaging using patient portals can be used to:
- Communicate test results and interpretation
- Support patient education and adherence through dissemination of educational materials
- Empower patients and support chronic disease management and monitoring
- Provide patients with lab requisitions, work notes, completed forms, etc.
- Allow patients an opportunity to more efficiently ask follow up questions
- Enable more efficient use of patient and provider time by enabling asynchronous communication
- Free up more time for patients who require real time communication
- Minimize contact during the COVID-19 pandemic

Thus, implementation of the secure messaging component of the MyHealth patient portal will advance both organizational goals and seeks to improve the patient access and experience.

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PDSA Cycle:

Initial PDSA cycles focused on project lead, Dr. Elizabeth Wiley, and Dr. Cal Shapiro integrating secure patient messaging into clinical service delivery in Dec 2020.

Subsequent PDSA cycles were planned to expand secure messaging to additional physicians as well as other team members (RNs, MOAs, MHSU consultant and social worker) in April/May 2021. However, further expansion has been put on hold due to competing priorities.

Data Analysis & Findings

Patient Portal Message Data

Data was collected from IHealth/Cerner including:

- Number of secure messages sent/received between December 2020-July 2021
- Number of patients engaged in secure messaging between December 2020-July 2021
- Demographic characteristics of patients engaged in secure messaging (Figure 1)
- Type of messages sent/received

Figure 1: Age & sex distribution of users utilizing Westshore UPCC Patient Portal between December 2020 and July 2021
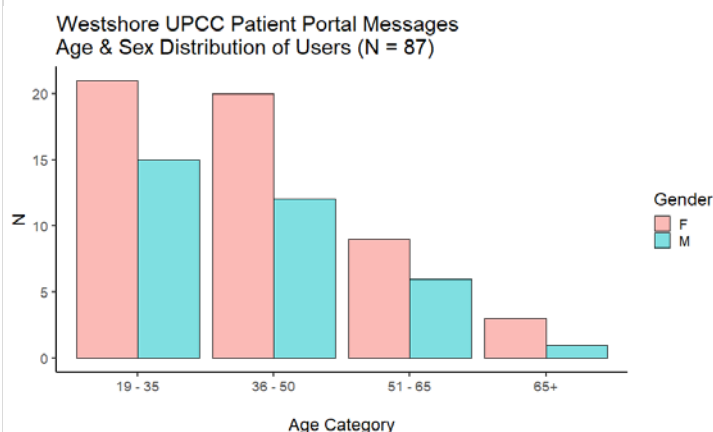
Examples of clinical scenarios in which secure messaging can provide more efficient access to patients and avoid unnecessary phone, virtual and face-to-face WUPCC visits:[19]

- A 50-year-old female presents with sub-conjunctival hemorrhage and is found to have repeat blood pressures of 160-170/100-110 with no prior diagnosis of HTN but with prior elevated BPs. She is started on an anti-hypertensive and counseled to purchase a home BP monitor. The patient portal is used to: (1) Provide written instructions for the patient to titrate the BP medication based on his home readings – and to report these readings via message as she titrates the medications. (2) Education on lifestyle modifications (diet, exercise, etc.) to supplement initiation of an antihypertensive. (3) Lab requisition to have labs checked now and in the future as part of routine medication monitoring. (4) The ability of the patient to ask follow up questions about the diagnosis, medication, instructions, etc. The patient subsequently follows up to report BPs (now at goal) and an 8 lbs weight loss. Labs are reviewed via message and prescription refills are provided. Patient is instructed to continue to monitor her blood pressure and congratulated on her accomplishments
- A 21-year-old male is referred to COVID-19 high-risk assessment clinic for evaluation of URI symptoms. The patient is tested for COVID-19 and instructed to self-isolate. He requests a work note. A no-contact work note is provided to him via the Patient Portal as an attachment so he can download/print or forward to his employer electronically
- A 35-year-old male presents to WUPCC with epigastric pain. He is provided a lab requisition for H. pylori testing. His H. pylori testing is positive. He is contacted via the patient portal and informed of

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[19] Patient examples are provided to illustrate the breadth of clinical scenarios in which patient portal messaging can be used and do not represent actual patient cases.

the results. He is provided information about the diagnosis of H. pylori and his medication allergies and preferred pharmacy. He responds with his preferred pharmacy and with questions about the diagnosis. His questions are answered and prescription for H. pylori treatment are faxed to his pharmacy without requiring another 1-2 visits

- A 23-year-old male presents via telephone at WUPCC with concern for anxiety and depression. Prior to his visit, he completes a PHQ9 and GAD7 prior to the telephone visit in the patient portal, which enables to physician to more efficiently review the results (rather than administering the assessments) and complete the visit. The patient is started on an SSRI with follow up via the Patient Portal (in conjunction with the MHSU Consultant) as the patient titrates the medication

Patient Experience Data

On April 19 2021, patients who had visited the adult cystic fibrosis clinic or the Westshore Urgent Primary Care Centre (WUPCC) and who had used the MyHealth secure messaging were emailed an invitation to participate in an online survey about their experience. Of the 31 patients who completed the survey between April 19 and May 2, 2021, twelve respondents reported having visited the WUPCC. Seven respondents reported having used MyHealth secure messaging at some point. Survey responses on ease of using MyHealth secure messaging and leveraging it as communication tool reflected an overall positive patient experience, with most patients reporting feeling more confident in making health decisions and wanting to recommend MyHealth to their family and friends (Figure 2).

Figure 2: Patient experience & satisfaction survey responses on utilizing MyHealth secure messaging as a patient-provider communication tool
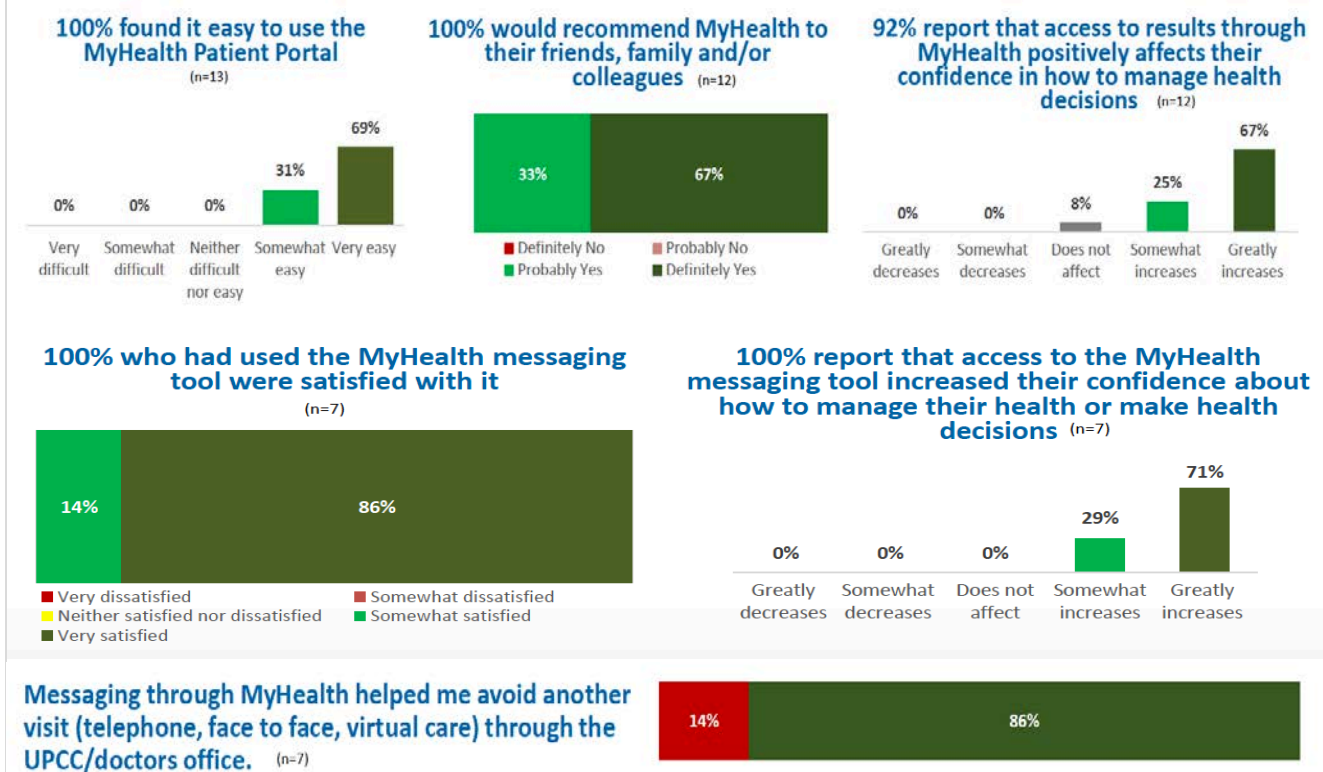
Conclusions:

Consistent with evidence from other jurisdictions, implementation of the MyHealth patient portal messaging at WUPCC resulted in:

- Increased patient access to follow up care including patient education, chronic disease management, prescription renewal, form completion and results review among others;
- Increased provider efficiency in providing follow up care including the use of standardized patient education materials and auto text; and
- Positive patient experience as reflected in patient experience survey data

Further expansion of MyHealth patient portal messaging at WUPCC, however, has been limited by competing priorities. Initially, expansion to include both additional physicians and non-physician team members was planned for April/May 2021. However, this expansion has been indefinitely postponed and the Patient Portal pilot ended on September 1, 2021.

Next Steps:

Consistent with Island Health's Strategic Framework Objectives, expanded implementation of MyHealth Patient Portal messaging holds the potential to improve efficiency, access and both patient and provider experience – as well as patient outcomes. MyHealth Patient Portal messaging holds the potential to not only help advance the quadruple aim in the urgent care setting, but also in the emergency department, longitudinal primary care and specialty care. Recommended next steps to promote sustainable integration of MyHealth Patient Portal messaging include:

- Formal recognition of the value of patient portal messaging including integration into productivity metrics and MSP/shadowing billing codes
- Development and implementation of evidence-based patient portal messaging training and workflows for all team members across Island Health
- Identify barriers to team-based implementation of MyHealth patient portal secure messaging
- Sustained commitment by Island Health leadership to support MyHealth patient portal adoption and integration
- Continued commitment by Island Health to register patients for MyHealth and cultivate a culture of MyHealth patient portal utilization
- Addressing barriers to minor registration in MyHealth

PQI Team Members 2020/21

Dr. Adele Harrison
PQI Health Authority Sponsor

Dr. John Galbraith
PQI Steering Committee Chair

Jennie Aitken
Manager PQI

Rosie Holmes
Coordinator PQI

Kamla Gage
Coordinator PQI

Julia Porter
Coordinator PQI

James Saunders
Data Analyst PQI

Bastian Weitzel
Program Associate PQI

Dr. Alan Buckley
Physician Mentor PQI

Dr. Dana Hubler
Physician Advisor PQI

Dr. Alex Hoechsmann
Physician Advisor PQI

Dr. Jason Wale
Physician Mentor PQI

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PQI PHYSICIAN QUALITY IMPROVEMENT
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SSC SPECIALIST SERVICES COMMITTEE

PQI Steering Committee 2020/21

Members Island Health	Dr. David Butcher, HAMAC Dr. Adele Harrison, Medical Director, Medical & Academic Affairs (HA Sponsor) Laura Nielsen, Executive Director, Medical & Academic Affairs Kristine Votova, Director, Medical & Academic Affairs James Watson, Corporate Director, Care Sustainability, Clinical Service Delivery & Finance	
Clinically Active Physicians	Dr. Hector Baillie, Internal Medicine Dr. Alison Croome Dr. John Galbraith (Chair) Dr. Alex Hoechsmann (PQI Physician Advisor)	Dr. Dana Hubler (PQI Physician Advisor) Dr. Jennifer Kask Dr. Colin Landells Dr. Jason Wale
Specialist Services Committee	Dr. Gordon Hoag, Physician Representative, SSC Aman Hundal, Initiative Lead, SSC Dr. Andrew Attwell, Physician Representative, SSC	
Patient Representatives	Joan Andersen, Patient Partner, Victoria Andrea Zoric, Patient Partner, Cowichan Valley Laura Bobbit, Patient Partner, Victoria	
Standing Observers (non-voting)	Adrian Leung, Director, Economics and Policy Analysis, SSC Jennie Aitken, Manager PQI, Island Health Bastian Weitzel, Program Assistant PQI, Island Health (recorder)	