



PHYSICIAN QUALITY IMPROVEMENT

Our Story

PQI PHYSICIAN
QUALITY
IMPROVEMENT
An SSC Initiative

SSC
SPECIALIST SERVICES
COMMITTEE


northern health
the northern way of caring



“ The extent to which resources and support from the Physician Quality Improvement Initiative have engaged physicians, both as leaders and as participants, in not only identifying quality issues, but also in being part of the problem solving and implementation of solutions, is remarkable. Cross functional, interprofessional teams are well established as the way to creative, innovative and sustainable change - having physicians as part of these teams is critical to success and the Physician Quality Improvement Initiative has made that possible”

PENNY ANGUISH
NORTHERN HEALTH, CHIEF OPERATING OFFICER NI



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“... every physician now has access to training in how to improve the quality of the care we provide. The Physician Quality Improvement initiative has ring-fenced funding for any of us to learn how and where to start.”

DR. SHYR CHUI



What do we mean by quality in healthcare? Quality is difficult to define by any modern metric and yet, like Bukowski’s free souls, we all know it when we see it. We understand and recognise what it feels like because it makes us feel good to provide it and it makes our patients feel very good to receive it.

Casting our minds back to the day we graduated from Medical School; as we started out bright-eyed along the journey which was to become our career; did any of us entertain the idea that one day we might settle for a life of practice described as merely okay? Resigned to doing our best, given the circumstances, and rationalizing away our highest responsibilities to our patients? We aspire to provide the highest quality care, but somehow it manages to elude us. At some point along our journeys, our notion of high quality healthcare became lost, somewhere between the dense impenetrable forests of “large complex organizations”, the impassable river of “the doctors vs. managers standoff”, the unscalable bluffs of “competing professional priorities”, and the perilous quick sands of “the way things have always been done around here”. At gatherings, we hear fantastic stories of legends and heroes from shimmering castles of quality, the Mayo Clinics and the Virginia Masons, whose amazing cultures seem so far-removed, almost other-worldly; and afterwards we quietly dream about how things could be in our own small corner of the world.

Well good news. It turns out that it’s never been easier to change this. Through generous funding provided by the Provincial Ministry of Health, the Specialist Services Committee and the Doctors of BC, every physician now has access to training in how to improve the quality of the care we provide. The Physician Quality Improvement initiative has ring-fenced funding for any of us to learn how and where to start. We can learn new skills on how to structure a quality improvement project, about fundamental

improvement techniques that actually work and the most useful tools at our disposal. We can learn how to choose the best metrics, how to build an effective improvement team and how to maximize our chances for success.

Don’t believe me? Well, in this book you’ll find proof that it’s possible. In the pages ahead, you’ll find some wonderful examples of quality improvement. And the best part is that their lead physicians are ordinary folk like you and me. Like us they saw gaps in the quality of care. The only difference being, they took a small step into action. With support from trained quality improvement coaches “at their elbow”, and with funding support for their time spent both learning and doing, they applied their newly-acquired skills, transformed their corners of practice and brought the magic of quality to their patients. Their projects and improvement journeys are detailed in the pages before you. I hope you enjoy reading about them. More importantly, I hope you will be inspired to follow their lead, to also take that first small step on your journey towards improving the quality of care wherever you work. So read on and if you see something you like or could adopt, if you think of something you might like to improve, get in touch with your local PQI coach. Start your own quest for quality improvement and in so doing, re-write your own hero story.

A handwritten signature in black ink, appearing to read 'Shyr Chui'.

Dr. Shyr Chui
Radiology UHNBC / Physician Quality Improvement Chair

MESSAGE FROM PQI ADVISOR · DR. M JAMIL AKHTAR

My journey at Physician Quality Improvement (PQI) at Northern Health began almost two years ago when I started my official role in PQI. Prior to this though, my interest in quality improvement dates many years back when a leadership course at Harvard University acted as a catalyst that sparked my quality improvement journey.

My experience there showed me the importance of quality improvement and I found great joy in being involved in an area where all stakeholders, in particular, patients, patient partners, physicians, and nursing staff worked together for a common goal. I found myself in a family of great minds working towards a common purpose aimed at optimizing health care.

The outcomes of patient care ultimately affect everyone involved in the healthcare system. It is for this reason that it is critical that we pay particular attention and advocate for our patients. We as Canadians expect leadership from Health Authorities at all levels across all jurisdictions to achieve cooperation on the development of solutions which place emphasis on access, quality improvement and safety of our patients.

“To attain quality is quite complex because perspectives are different and its parameters are multi-dimensional and interrelated.”

In this endeavour to attain such quality, I have thoroughly enjoyed my education in quality improvement and have

been fortunate enough to achieve certification from a Clinician Quality Academy. I believe this PQI education opens many doors and provides confidence to those involved in quality improvement. My journey has just begun but I hope that this provides a new lens for all stakeholders which is summarized best by the following quote:

“The System of Profound Knowledge provides a lens. It provides a new map of theory by which to understand and optimize that we work in, and thus to make a contribution to the whole country.”

W Edwards Demings



Dr. M Jamil Akhtar
Anesthesiology UHNBC/
Physician Mentor and Physician Advisor

“I found myself in a family of great minds working towards a common purpose aimed at optimizing health care.”

DR. M JAMIL AKHTAR



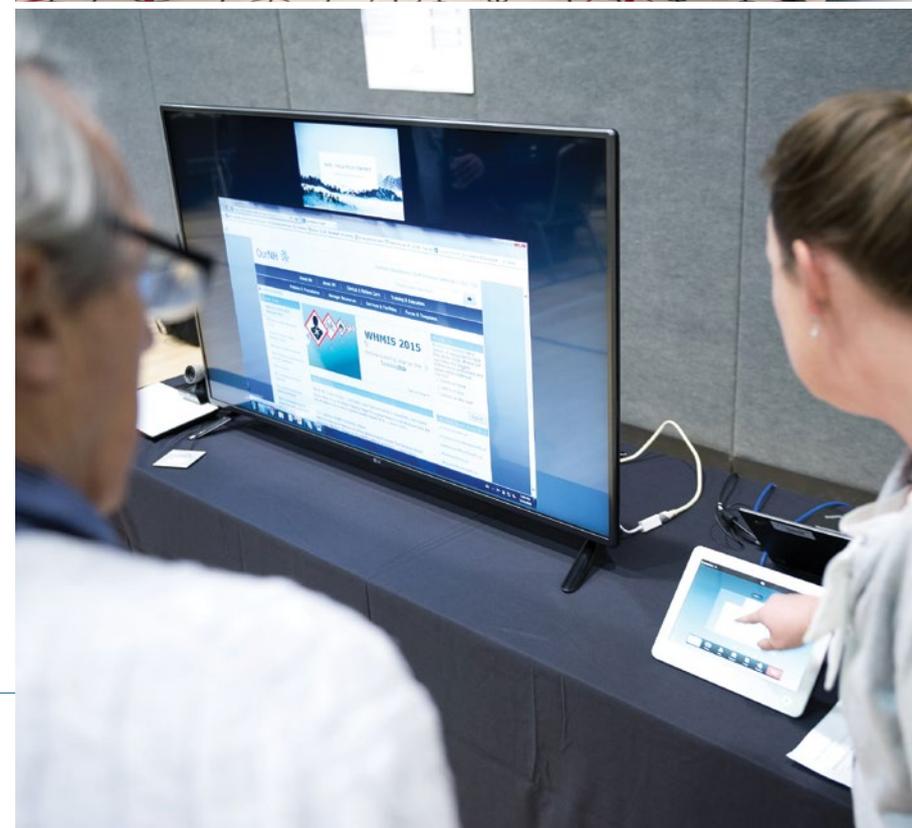
INTRODUCTION OF PHYSICIAN QUALITY IMPROVEMENT AT NORTHERN HEALTH

Northern Health recognizes that physician leadership and collaboration are essential in meeting our mission of providing exceptional health services for Northerners. Over the years, Northern Health has been working to advance a model of co-leadership between Northern Health and physicians throughout our organization and the initiatives we pursue.

In 2015, Northern Health was approached by our colleagues at the Specialist Services Committee with the concept of a Physician Quality Improvement program which would build physician capacity in quality improvement. At that time, Northern Health was beginning to build our model of co-leadership and working to understand how to best engage physicians in health systems change. We welcomed the opportunity and began a journey to work with our Specialist Services Committee colleagues, the local physicians, and patients to build a Physician Quality Improvement program that could fit our northern context.

Today, over 150 physicians have interfaced with the program in some way. Some physicians have led or co-led quality improvement projects, while completing advanced quality improvement training. These physicians have taken on formal and informal leadership roles within the system, working collaboratively with Northern Health to tackle systems change. We have also seen an increase in the number of physicians who participate in quality improvement projects and undertake introductory quality improvement training. This broad approach has helped approach our vision, of supporting the health authority and physicians to use the same language, methods, and tools to undertake quality improvement and the changes needed to improve patient care.

Dr. Ronald Chapman
VP Medicine , Northern Health





“It is not as much work as you think it’s going to be. You get compensated for your work, which is great. With the support of a PQI coach and the training they have and the training we have access to as part of this process. It’s actually not as onerous as you think and it is very satisfying when it results in a change and improvement.”

DR. MARIJO ODULIO

WHAT DO WE OFFER?

GOALS FOR THE PQI PROGRAM

- Create a culture of quality improvement
- Provide training and opportunities for quality improvement activities
- Enhance quality improvement capability
- Collaborate with the health authorities

NORTHERN HEALTH PQI OFFERS

INTRODUCTORY · LEVEL 1

Get exposed to the exciting world of quality improvement and develop an interest in learning more.

TOPICS INLCUDE

- What is quality improvement?
- Introduction to a project charter

INTRO TO QUALITY IMPROVEMENT

A 2.5 hour interactive, in-person workshop facilitated by your very own Northern PQI coaches.

IHI OPEN SCHOOL

Brief, informative online modules that can be completed at your own pace.

INTERMEDIATE · LEVEL 2

Obtain the skills to participate in a successful quality improvement project.

TOPICS INLCUDE

- Quality Improvement Charter
- Process Mapping
- Driver Diagrams
- Building a team
- Change Ideas
- Measurement Basics
- PDSA Cycles

FUNDAMENTALS OF PHYSICIAN QUALITY IMPROVEMENT

Bring your project idea and team to this multi-day interactive workshop. We'll support you to immediately apply your learning to your project and, with the continued support of your PQI coach, you'll leave with the confidence and skills you need to get started right away!

SKILL BUILDING WORKSHOPS

Quick-paced, skill specific training designed to address what you need to know, when you need to know it. Your coach will support you with training on a tool or skill and then help you apply your learning to your project.

“The regional governance structure for this Initiative ensures Northern applicability.”



CANDICE MANAHAN | REGIONAL DIRECTOR, PHYSICIAN QUALITY, ENGAGEMENT AND EDUCATION

VIRTUAL ACTION LEARNING SERIES (VALS)

Join a virtual cohort of teams from across Northern Health to simultaneously learn together and complete quality improvement projects with a shared priority.

NORTHERN HEALTH INTERMEDIATE QUALITY IMPROVEMENT

Northern Health's quality improvement training program. Join an interdisciplinary cohort to complete a combination of in-person and webinar training over 8 months.

IN ADDITION TO QUALITY IMPROVEMENT TRAINING, WE ALSO OFFER:

- Support to attend quality improvement conferences
- Physician peer mentorship
- Coaching, which includes:
 - Facilitating quality improvement training
 - Delivering skill building workshops
 - Identifying project specific training needs and supports



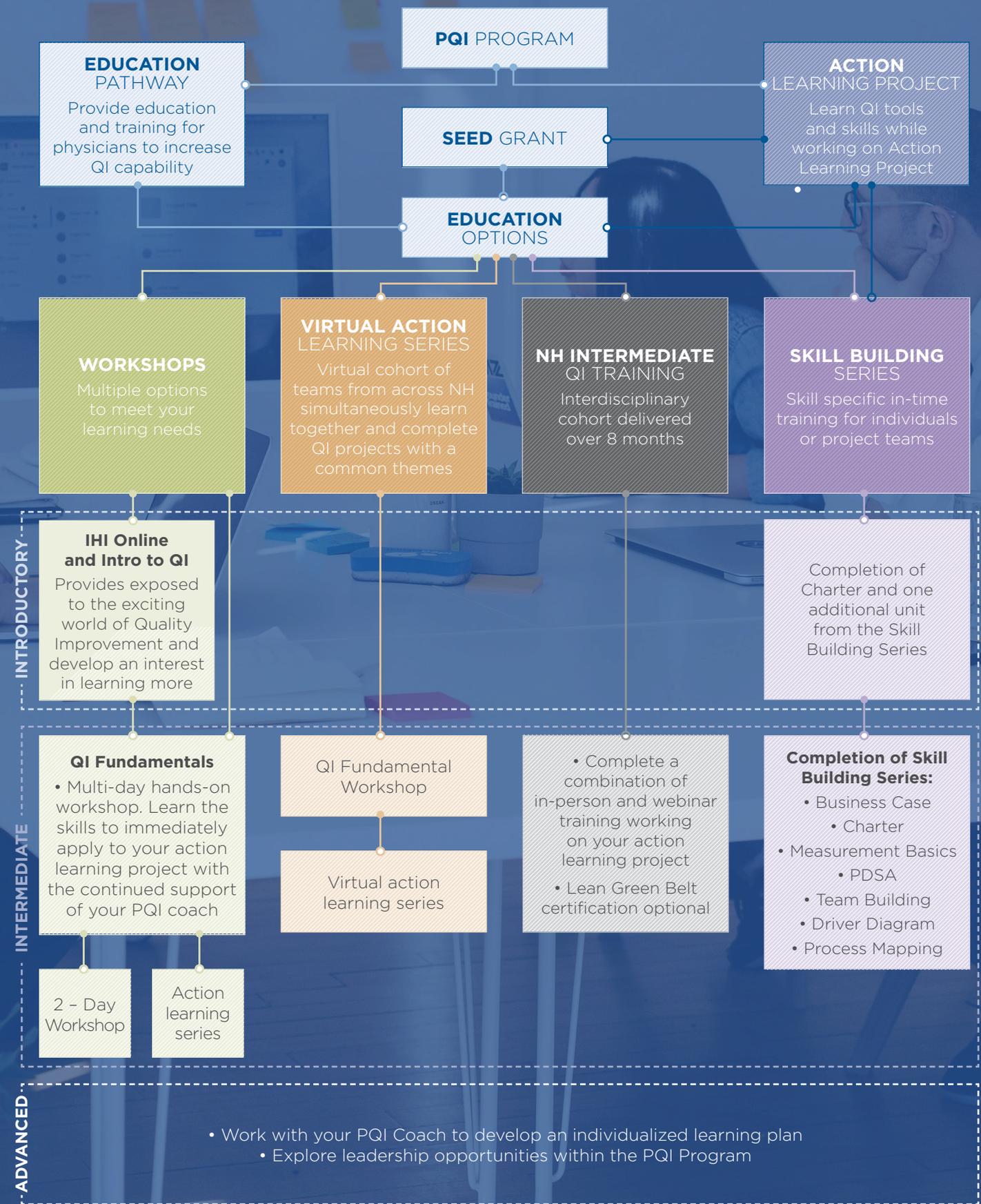


“PQI has enabled me to take protected time to increase my knowledge of system improvement, making me a far more effective catalyst for change. I feel grateful to be working as a team to both improve the care that is delivered to patients and enable physicians to recapture their joy in clinical practice.”



DR. DAVID COURTNEY | NE PHYSICIAN MENTOR

PQI PATHWAY EDUCATION PROGRAM



OUR STEERING COMMITTEE

Co - Chairs

Dr. Shyr Chui - Prince George
Radiologist
Physician Chair

Candice Manahan - Prince George
Regional Director, Physician Quality,
Engagement and Education
Northern Health Chair

Patient Partners

Sherilyn Powers - Fort St John

KD Taylor - Prince George

Practicing Local Physicians

Dr. M Jamil Akhtar - Prince George
Anesthesiologist
Physician Advisor and Mentor UHNBC

Dr. David Courtney - Hudson's Hope
Family Practice
Physician Mentor North East

Dr. Denise Jaworsky - Terrace
Internist

Dr. Anurag Singh - Prince George
Nephrologist

Dr. Christine Igbinosa - Fort St James
Family Practice
Rural GP Representative

Dr. Dawid Janse van Rensburg -
Terrace
Obstetrics/Gynecologist
Chief of Staff Representative

Dr. Amin Lakhan - Prince George
Internist
Medical Staff Association Representative

“In light of the fact NHA has the largest region in the province, the PQI team has done an exceptional job at providing PQI training throughout the region and including the voice of the whole region at the PQI Steering Committee.”

DR KATHY LEE | DOCTORS OF BC (SSC) REPRESENTATIVE



Northern Health

Angela DeSmit - Fort St John
North East Chief Operating Officer

Pam Mulroy - Prince George
Executive Lead, Primary Care

Vash Ebbadi - Prince George
Regional Director, Quality
& Innovation

Doctors of BC (Specialist Services Committee)

Dr. Kathy Lee - Vancouver
General Surgeon

Aman Hundal - Kelowna
Specialist Services Committee Liaison

Guests/Staff

Marna deSousa - Fraser Lake
Manager, Physician Quality Improvement

Lee Cameron - Terrace
Coach, Physician Quality Improvement

Andrea Goodine - Fort St John
Coach, Physician Quality Improvement

Deanna Danskin - Prince George
Coach, Physician Quality Improvement

Shelley Movold - Prince George
Coach, Physician Quality Improvement

Laura Parmar - Prince George
Regional Coach, Physician
Quality Improvement

Farzana Amin - Prince George
Data Analyst

Simon Zukowski - Prince George
Evaluator

Heather Walker - Quesnel
Coordinator, Physician
Quality Improvement

Janice Paterson - Prince George
Specialist Services Committee Leader

Holly Hovland - Terrace
Engagement Partner





CFHI Connected Medicine Collaborative: Physician Learning Experiences



Dr. Anurag Singh¹; Dr. John Pawlovich^{1,2}; Dr. Abu Hamour¹; Dr. Haidar Hadi¹; Janice Paterson^{1,4} and Tiegan Daniels^{1,3}

¹Northern Health; ²Carrier Sekani Family Services; ³Physician Quality Improvement; ⁴Specialist Services Committee



Background

Northern Health (NH) has a large proportion of rural, remote, Northern, and Indigenous populations, which increases the need for creative health care solutions for patients and health care providers alike. The Northern RACE line allows physicians to be connected by telephone to a specialist in urgent cases. However, NH still battles long referral lists and wait-times for specialist consultations in addition to high expenses related to patient travel.

In Northern BC, GPs have access to the Northern Rapid Access to Consultative Expertise line for non-urgent patient care questions, an advice line that allows the GP to get quick support from 12 different specialist types, including cardiology, nephrology, and infectious disease. Northern Partners in Care (NPIC) had originally developed the Northern RACE line. When NPIC closed it's doors in 2017, Northern Health's Chronic Disease Program agreed to continue the administration of this line while planning for a long-term solution continued.

At the same time, the Canadian Foundation for Healthcare Improvement (CFHI) was offering teams across the country to join a 15 month quality improvement collaborative focused on spreading evidence-informed strategies that enhance primary care access to specialist consult, July 2017 to September 2018. As physicians, we saw this as an opportunity to learn about what was working well with the current Northern RACE line, and be supported with quality improvement education to learn and connect with other teams seeking to improve similar services in their own health organizations.

We saw an opportunity to bring together a small team of specialists and GPs working in the Northern Health region to learn quality improvement methods, and apply them together with the support of this national collaborative and the Northern Health Physician Quality Improvement Program.



Details from our Project Team Charter

The project encompassed five main objectives.

1. Improve patient access to specialist care in the North
2. Improve timeliness of access to specialist care for providers and patients
3. Support collaboration and relationship building between specialists, PCPs and their patients
4. Create opportunities to highlight and support awareness about how to provide culturally safe care
5. Improve the care inequities in rural and remote communities, including First Nations

By September 2018, our team aimed to:

- Increase awareness about culturally sensitive care for patients, families, and care providers at the point of care.
- Increase awareness and use of the RACE line by 50% in order to seek feedback and make improvements to the existing system.
- Seek to understand how communities are currently accessing specialist services and explore opportunities for building new and/or improving relationships between SPs, PCPs and their patients/communities.

Why is this important?



Dr. Anurag Singh, Nephrologist

"Remote consults will prevent anxiety, travel and related costs to patients, burden on wait lists, and overall better patient and provider experience. Remote consults can also play a huge role to build relationships between providers which can improve patient experience and outcomes."



Dr. John Pawlovich, GP

"The patients we serve do not always have the means or the desire to travel to larger communities to receive care. The RACE line prevents patients from having to leave home and allows the Primary Care Provider to have their questions answered quickly."

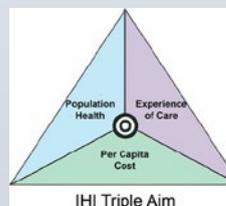


Dr. Abu Hamour, Infectious Disease Specialist



Dr. Haidar Hadi, Cardiologist

"As the vast geography is a major challenge in Northern BC, remote consult will undoubtedly help bridge the gap in access to care. The anticipated improvement in the quality of care, patient and provider experience alike, and the possible savings in healthcare costs would all fit well with the triple aim strategy."



Edwina Nearhood, Patient Advisor

"The RACE line would significantly improve the patient experience by allowing their Primary Care Provider to discuss the condition with a specialist without having to send the patient out of town."

Team Learning Activities

Key activities and education experienced:

| 4 Modules + 1 we added | Modalities Used |
|---|---|
| <ul style="list-style-type: none"> • Design and Readiness for implementation • Early Stage Testing and Implementation • Continued implementation and Early Evaluation • Planning for Sustainability and sharing results | <ul style="list-style-type: none"> • Webinars/live chats • Surveys • Coaching teleconferences • Worksheets and data reviews with team PDSA Virtual Team Planning/Studying Meetings using QI tools • Education Primers: Patient engagement and co-design; Highly Adoptable Improvement; PSDA Cycles |
| + <ul style="list-style-type: none"> • Indigenous Cultural Sensitivity Training Workshop | |

Collaborative Timeline:



Project Results

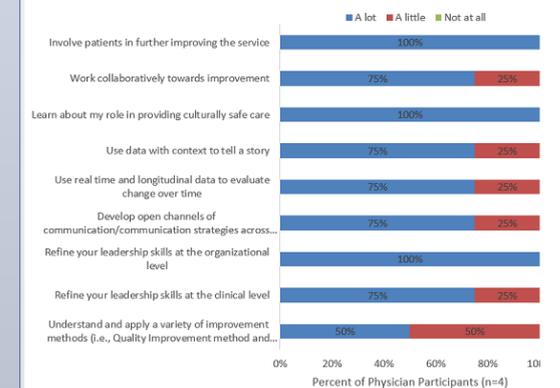
Since the beginning of focused project work in September 2017, the Northern RACE line has seen an average of 37.3 calls per month. An upwards trend in call volume was seen between December 2017 and April 2018.



Reflections

"We have learned a lot about patient and stakeholder engagement through this collaborative and through working with our patient partner on the team. Also, the measurement webinars and coaching have been helpful. We are also learning ways to successfully engage with physicians and leaders in our regions. We have a much better understanding about how the physicians in the north appreciate and advocate for their northern connections and consults and the importance of having a local and regional context for consults and communication." (Team Report, July 2018).

CFHI Post-Collaborative Physician Experience Survey
"To what extent has participating in this collaborative supported you to..."



What's Next?

For education and leadership:

As physicians, we plan to further our education with additional leadership and quality improvement courses, and use our leadership to support contemporary technology use and relationship collaboration between GPs and specialists.

For the Race North Team:

- Further relationship building with GPs in our region
- Technology improvements to enhance RACE line services
- Patient Journey Mapping with our Patient Partner
- Additional spread and sustainability planning
- Participate in provincial planning discussions

Acknowledgments and Contact Info:

Contact: Dr. Anurag Singh Email: Anuragsing@hotmail.com

This project owes a great deal of appreciation and thanks to the following people and groups that enabled this project to happen: Patient Voices Network, our Patient Partner, Edwina Nearhood; our Sponsors, Northern Health, the SSC funded Physician Quality Improvement initiative, and the CFHI Connected Medicine Collaborative.

We would like to also acknowledge the rest of the RACE North team: Reina Pharness, Edwina Nearhood, Frank Flood, Lee Cameron, Leanne Nahulak, Sheri Yeast, Jessica Place, Tiegan Daniels, and Janice Paterson.



Unit Name: UHNBC
Contact: Dr. Kirsten Miller
Date: February 15, 2018 - October 17, 2019



IMPROVING PEDIATRIC TYPE 1 DIABETES CLINIC EFFICIENCY

AIM STATEMENT

To improve the efficiency of Dr. Miller's type 1 diabetes clinic by limiting the time the physician spends per appointment to 30 minutes. To accomplish this while ensuring that all multidisciplinary team members maintain high quality patient/family encounters.

BACKGROUND

Diabetes mellitus is the most common endocrine disease and one of the most common chronic health conditions in childhood. Children with diabetes are seen by their diabetes care team approximately every three months. The complex physical, developmental and emotional needs of children with diabetes and their families, combined with the frequency of appointments, results in significant workload for the pediatricians in Prince George who provide diabetes care and for the Diabetes Centre staff (nurses and dietitian). The need to optimize efficiency in the delivery of care at Pediatric Diabetes Clinics was identified.

PROBLEM STATEMENT

There were a number of obvious inefficiencies that the pediatrician (Dr. Miller) and Diabetes Centre staff identified. These included: staff time spent downloading sensors and pumps, limited space in which to see patients in the clinic, suboptimal utilization of Diabetes Centre staff time during the clinics and inefficient methods of collecting patient information (questions which are asked at every appointment).

CHANGE IDEAS

The team came up with the following change ideas:

- To change the flow of the clinic by having patients/families see team members at different times (i.e. Meeting the dietitian, then the physician, then the physician and nurse together), thereby enabling more than one patient/family to be seen at a time.
- To use an additional room during the clinics.
- To create a questionnaire for patients/families to complete prior to being seen, thereby decreasing the number of questions asked by the physician/nurse at each appointment.
- To encourage patients/families to upload their sensors/pumps prior to their appointments.
- To implement a multidisciplinary form to document recommendations from each team member; as this will also be provided to patients/families at the end of the visit, it will serve the dual purpose of ensuring the various team members as well as the patients/families have clear documentation of Diabetes Clinic staff recommendations

| | |
|------------------|--------------|
| Patient/Family 1 | Light Blue |
| Patient/Family 2 | Medium Blue |
| Patient/Family 3 | Dark Blue |
| Patient/Family 4 | Orange |
| Patient/Family 5 | Light Orange |

ORIGINAL CLINIC FORMAT

- 4 patients seen in 3 hours
- All team members see the patient/family together for 45 minutes

| | DIETICIAN | NURSE | PHYSICIAN |
|-----------|-----------------|-------|-----------|
| 0900-0905 | Pt and Family 1 | | |
| 0900-0906 | | | |
| 0900-0907 | | | |
| 0900-0908 | | | |
| 0900-0909 | | | |
| 0900-0910 | | | |
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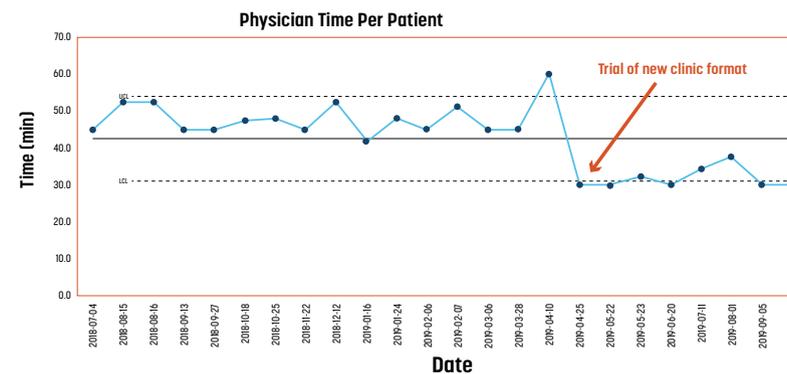
NEW CLINIC FORMAT

- 5 patients seen in 2 hours 45 minutes but total time for the patient remains the same.
- Dietitian can spend more than 15 minutes with the family if necessary due to overlap time.

| | DIETICIAN | NURSE | PHYSICIAN |
|-----------|-----------|-------|-----------|
| 0900-0905 | Pt & Fam | | |
| 0905-0910 | | | |
| 0910-0915 | | | |
| 0915-0920 | | Fam | Pt |
| 0920-0925 | Pt & Fam | | |
| 0925-0930 | | | |
| 0930-0935 | Pt & Fam | | |
| 0935-0940 | | | |
| 0940-0945 | | | |
| 0945-0950 | | Fam | Pt |
| 0950-0955 | Pt & Fam | | |
| 0955-1000 | | | |
| 1000-1005 | Pt & Fam | | |
| 1005-1010 | | | |
| 1010-1015 | | | |
| 1015-1020 | | Fam | Pt |
| 1020-1025 | Pt & Fam | | |
| 1025-1030 | | | |
| 1030-1035 | Pt & Fam | | |
| 1035-1040 | | | |
| 1040-1045 | | | |
| 1045-1050 | | Fam | Pt |
| 1050-1055 | Pt & Fam | | |
| 1055-1100 | | | |
| 1100-1105 | Pt & Fam | | |
| 1105-1110 | | | |
| 1110-1115 | | | |
| 1115-1120 | | Fam | Pt |
| 1120-1125 | Pt & Fam | | |
| 1125-1130 | | | |
| 1130-1135 | Pt & Fam | | |
| 1135-1140 | | | |
| 1140-1145 | | | |
| 1145-1150 | | | |
| 1150-1155 | | | |
| 1155-1200 | | | |

RESULTS

CLINIC RESULTS



PATIENT/FAMILY SATISFACTION

| Statement | Before Changes | After Clinic Changes | Change from pre to post |
|---|----------------|----------------------|-------------------------|
| I am asked for input in decisions about my care and treatment | 4.38 | 4.88 | 0.5 |
| Any concerns I have are addressed | 4.54 | 4.78 | 0.24 |
| I receive good care from the dietitian | 4.54 | 4.89 | 0.35 |
| The dietitian spends enough time with me | 4.54 | 4.89 | 0.35 |
| I am happy with the care I receive at the diabetes clinic | 4.62 | 4.78 | 0.16 |
| Things are explained to me in a way that I understand | 4.62 | 4.89 | 0.27 |
| Members of the clinic team are available for questions between appointments | 4.69 | 4.67 | -0.02 |
| The doctor spends enough time with me | 4.85 | 4.89 | 0.04 |
| The nurse spends enough time with me | 4.92 | 4.67 | -0.25 |
| I receive good care from the doctor | 5 | 4.78 | -0.22 |
| I receive good care from the nurse | 5 | 5 | 0 |

Patient/Family satisfaction with the clinic was good to start, therefore, the goal was to maintain this level of satisfaction with the clinic after the changes. This was achieved.

NEXT STEPS / SUSTAINING THE GAINS

- In their Diabetes Clinics, other Pediatricians have started using:
 - the medical questionnaire
 - the multidisciplinary recommendation sheet
- Team to connect with BC Children's Hospital Diabetes Clinic for strategies on getting patients/families to upload their sensors/pumps at home, prior to their clinic appointments

PATIENT/CUSTOMER

Children with type 1 diabetes (and their families) who see Dr. Miller for their care

TEAM MEMBERS

- Dr. K. Miller, Pediatrician
- T. Klassen, Registered Nurse
- K. Eby, Registered Nurse
- A. Pudlas, Registered Nurse
- L. LeFebvre, Registered Dietitian
- M. Levesque, Diabetes Program Manager
- S. Movold, PQI Coach

PRIMARY EMAIL CONTACT:

kirsten.miller@northernhealth.ca

SECONDARY EMAIL CONTACT:

shelley.movold@northernhealth.ca





INFECTIOUS DISEASES TELEMEDICINE SERVICES IN NORTHERN BRITISH COLUMBIA

AIM STATEMENT

To understand patient perceptions and uptake of the infectious diseases telemedicine service offered through the medical clinic of Dr. Abu Hamour in Prince George through the administration of a patient satisfaction survey and chart review.

► BACKGROUND

Telehealth allows the provision of a variety of healthcare services and improves access to services for people living in rural and remote areas (1). It is becoming an increasingly popular care tool with the number of clinical sessions doubling in BC from 2012 to 2014 (2). The majority of telehealth services offered in BC are clinical sessions and the most common sessions in Canada deal with mental health, neurology, oncology, pediatrics, and rehabilitation (2).

In 2013, the BC Centre for Disease Control Annual Surveillance Report on HIV identified that the highest rates of new HIV diagnoses were in the Vancouver Coast and Northern Health Authorities.

Aboriginal peoples are disproportionately represented in BC's HIV epidemic (3). Additionally, telehomecare and chronic disease management have been identified as telehealth service areas deserving attention, especially in First Nations communities (4).

The use of telemedicine in the management of patients diagnosed with chronic infectious diseases in Northern British Columbia can address geographical and financial barriers to accessing specialist care.



► CURRENT STATE

Providing specialist follow up care for patients with HIV and Hepatitis C using telemedicine may help to improve continuity of care and patient outcomes. As such, the telemedicine initiative established at the clinic of Dr. Abu Hamour was initiated in January 2013 to enhance the follow up care provided to those patients in Northern British Columbia living with HIV and Hepatitis C, a portion of who identify as Aboriginal peoples.

The number of patients using the telemedicine service has increased annually. In total, 210 patients residing in Northern British Columbia have accessed the service and the telemedicine terminal has been used for 601 appointments. The majority (61%) of patients are aged 50-69 years old with a confirmed diagnosis of Hepatitis C (54%), HIV (11%), or a dual diagnosis (7%).

► SOLUTION

As the use and breadth of telemedicine grows, it is important to establish open communication with patients to continually evaluate its successes and shortcomings. This project aims to do this in order to inform future care delivered by our clinic.

Patient Satisfaction Survey

50 patient satisfaction surveys were administered by medical staff working at the office of Dr. Hamour using a provided script. The accessibility of the telemedicine service, the telemedicine technology and functionality of telemedicine as a care tool were assessed.

Chart Review

Information was gathered retrospectively from patients who used the telemedicine service from January 1st, 2013 to July 21st, 2017. Diagnosis, communities of residence along with the travel distance to the nearest Northern Health telemedicine terminal and to specialist care was recorded. In addition, the usage of the telemedicine terminal in the office of Dr. Abu Hamour was analyzed. Specifically, use of the terminal and the number of administrative scheduling hours were reviewed.



► RESULTS

Patient Satisfaction Survey

Overall feedback was positive with 98% of respondents stating they would use the telemedicine service again and would recommend this service to a friend.

- 80% of respondents felt comfortable using the telemedicine terminal
- 98% were satisfied or very satisfied with the quality of the visual image and audio sound
- 98% of respondents could understand the medical advice given

Chart Review

When looking at the distance patients must travel for medical appointments, 34% of patients live 100-299km from Prince George while a further 44% live 300-599km from Prince George. When using the telemedicine service, 88% of patients can attend their specialist appointment within their home community.

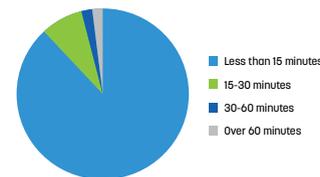


Figure 1: Time patients report spending commuting to nearest telemedicine terminal for medical appointment

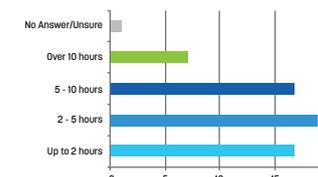


Figure 2: Time patients report spending commuting to Prince George for medical appointment

► NEXT STEPS / SUSTAINING THE GAINS

1) Continue to foster the current infectious diseases telemedicine service:

- Telehealth enhances care delivery to underserved populations and is also a cost effective means of delivering care (5).
- One third of respondents stated they preferred in person medical consultations to telemedicine appointments; however, 94% of respondents felt it was extremely important or important that a telemedicine consultation was an option for patients.

2) Develop solutions to address the greater administrative time needed to book a telemedicine versus an in person appointment.

3) Improve access to specialist healthcare in Northern BC through continued promotion and improvement of local telemedicine services by working with key stakeholders.

► PATIENT/CUSTOMER

Patients of Dr. Hamour that are living in remote places in Northern British Columbia and those using telemedicine services that Dr. Hamour provides.

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ACKNOWLEDGEMENTS:

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Consultant Infectious Diseases Physician
University Hospital of Northern British Columbia
Clinical Assistant Professor, University of British Columbia

Sophie Walton, BSc
Northern Medical Program
M.D. Candidate, Class of 2018
University of British Columbia

Location: Family Practice in Prince George
Contact: Dr. Denise McLeod
Date: December 2017- October 2018



KNOWLEDGE IS POWER: Strengthening COPD Patients with Support and Education

AIM STATEMENT

We aim to increase patient confidence in self-management thereby reducing Emergency Room/Walk In Clinic visits and hospital admission by providing incremental information.

BACKGROUND

- 0.4% of all people diagnosed with COPD have access to pulmonary rehab
- 14% of people with COPD in BC were admitted to the hospital for an average length of stay of 13.2 days
- 9% of those people were readmitted to hospital within 15 days of discharge
- COPD is the 4th leading cause of death in Canada

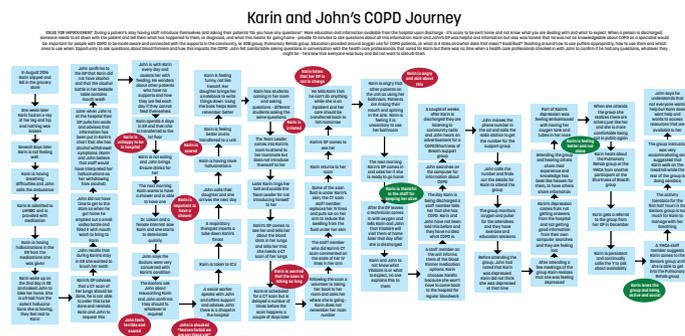
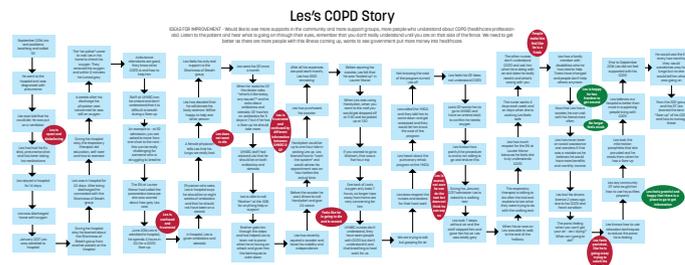
CURRENT STATE

UHNBC DATA:

- COPD is nearly always the #1 reason for readmission to UHNBC with 28 days of discharge from the hospital
- For COPD patients that visited the ED 19% of them returned to the ED within 1 week
- By 2 weeks 30% of the COPD patients were back to the ED
- And by 4 weeks 43% of the COPD patients had returned to the ED
- Of COPD patients that had been admitted to UHNBC 21% of them were readmitted within 4 weeks

PATIENT JOURNEY MAPS OF PATIENTS LIVING WITH COPD REVEALED:

- Patients felt there was a lack of education and support for COPD



DR. MCLEOD'S OFFICE:

- 67 patients living with COPD of 1747 total patients
- 35 of the COPD patients had a least 1 other chronic disease
- 88% (69/67) had their pneumococcal vaccine
- 85% (57/67) has their FEV1 done at some point (measure of COPD)
- 64% (43/67) were non smokers
- 67% (945/67) had an activity assessment done in the last year

SOLUTION

- December 2017** Planning and identifying goals and measures with the primary care team, practice support coach, physician QI coach
- January 2018** Identify patients to invite
- February 9, 2018** Planning of training session with Renee Pigeon, RT and the primary care team
- February 22, 2018** First Group Medical Visit at McLeod Medical Clinic
- March 2018** 11 Doctor's visit with GMV participants followed by home visit with the primary care team
- April 2018** Second Group Medical Visit
- May 2018** Third Group Medical Visit

RESULTS

| Measures | Prior to 1st GMV | Current Data (from 1st GMV to Oct 2018) |
|---|------------------|---|
| # of emergency visits | 17% | 0% |
| # of walk in clinic visits | 0% | 0% |
| COPD exacerbations | 33% | 17%* |
| # of current actions plans | 17% | 100% |
| # of current Pulmonary Function Tests (PFTs) | 17% | 100% |
| Patient confidence with their self management (from survey) | 30% | 50% |

*One patient had 3 exacerbations but they were all treated at home. No ER visits.

PATIENT FEEDBACK ON GROUP MEDICAL VISITS

Respondents **unanimously** identified interacting with other COPD patients (e.g. hearing their experiences and learning from them) as the **biggest benefit** of the session.

| | YES | NO |
|--|-----|----|
| Would you change anything about the GMV? | 1 | 4 |
| Can you understand and manage COPD better? | 4 | 1 |
| Would you come again? | 4 | 1 |

Additional feedback: "Slightly bigger room, with a larger group", "No. Still trying to understand what COPD is and what causes it", "Absolutely..." "Definitely..." "Yes, to support my husband", "Would not take up a valuable spot and have another patient with COPD partake"



PATIENT/CUSTOMER

Patients living with COPD that were part of Dr. McLeod's practice.

LESSONS LEARNED

- A community Respiratory Therapist would be a very big asset to the team both in the sessions and for one on one follow-up with patients.
- Team education prior to undertaking the teaching made things very smooth.
- Projects over the summer are difficult on the staff and patients. But, the primary care teams were familiar with the patients because of the GMVs and they did home visits during the wildfires in the summer to check on them.
- GMVs should be 2-3 months apart with a primary care team home visit and an individual doctor's appointment in between.
- We need to improve our teaching slides.

NEXT STEPS

- Present results at a Family Practice Rounds or Divisions of Family Practice meeting.
- Speak at the Practice Support Program COPD Module for the Divisions of Family Practice to promote the use of GMVs for COPD work.
- Begin a second group of GMVs for people living with COPD in my practice.
- Increase the group size of the GMVs

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TEAM MEMBERS : Dr. Denise McLeod, Johanna Tolsdorf (MOA), Dr. Sharla Olsen (Respirologist), Renee Pigeon (Respiratory Therapist), Roberta Miller (Primary Care Team Lead), Annick McIntosh (Primary Care RN), Karen Gill (Practice Improvement Coach), Shelley Movold (Facility Improvement Coach)

Making immediate post-placental IUDs accessible to women desiring long-acting reversible contraception after childbirth

Jones M¹, With S², Mitchell-Foster S³

1. University of British Columbia Department of Family Medicine, Postgraduate Program, Prince George Site
 2. BC Women's Hospital and Health Centre
 3. Faculty of Medicine, University of British Columbia

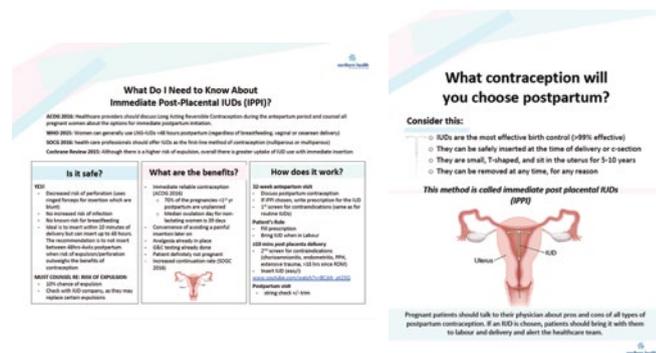
▶ INTRODUCTION

Immediate post-placental IUDs have been widely accepted as a safe and effective method of contraception or birth spacing, however, their uptake in Canada is low. This technique, whereby the intrauterine device is placed ideally within ten minutes of the delivery of the placenta after vaginal or caesarian delivery, could benefit any women, including those living in remote geographies or with difficulty accessing care. The SOGC, WHO2 and ACOG3 have all released statements of support, the primary risk being a <10% chance of expulsion. The overall goal of our work is to make IPPI an accessible option for any women desiring long-acting reversible contraception after childbirth. The primary objective of this project was to understand attitudes towards IPPI amongst staff working in labour and delivery, and to identify the barriers to implementing IPPI. Based on our initial work, a need for healthcare provider education was identified, and thus educational materials were created and a workshop was implemented and analysed.

▶ MATERIALS AND METHODS

Semi-structured interviews were conducted with healthcare providers who work in maternity at UHNBC. Data was collected from two Nurses, one Obstetrician, two Family Physicians, and two Midwives. One participant responded in a written format. Themes were extracted from the data and word-cloud analyses were created based on theme frequency. Two workshops were run, attendees were encouraged to complete a pre/post workshop feedback form. Feedback was obtained from eleven students, one obstetrician, and nine nurses, although GPs and midwives were also in attendance.

▶ RESOURCES CIRCULATED AT WORKSHOP



▶ WORKSHOP EQUIPMENT

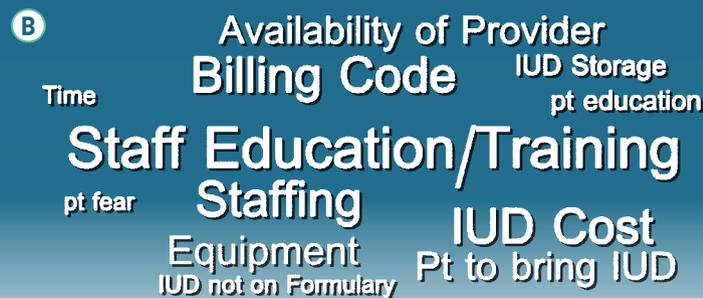


Figure 1. Word-cloud analysis of themes, based of frequency, from semi-structured interviews with staff who work in labour and delivery (A) addresses "who could benefit from IPPI", and (B) addresses "what are the barriers to implementing IPPI".

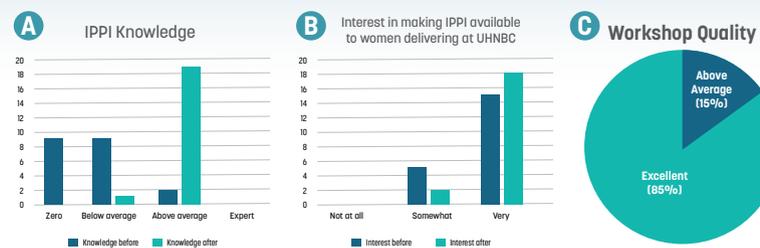


Figure 2. Summary of workshop feedback obtained by pre and post workshop questionnaire regarding knowledge (A), interest in the initiative (B) and quality of the workshop (C).

"Simple and straight forward, hands on was helpful for visual"
 - Workshop participant

▶ RESULTS

Our results suggest that all women have the potential to benefit from the opportunity to chose IPPI in their family planning journey, however there are barriers in place that must be mitigated.

Barriers to IPPI implementation included:

- Healthcare Provider Factors (staff education/training, billing code)
- Logistical Factors (IUD not on hospital formulary, IUD storage, equipment, time, availability of provider, patient needing to bring the IUD, staffing availability)
- Patient Factors (IUD cost, patient education, patient fear)

The workshops were effective in knowledge translation, the baseline interest is high, and the quality of the workshops was excellent.

▶ CONCLUSIONS

Immediate post-placental IUDs are a safe way of administering the first line product for contraception. Our work shows that there is interest amongst healthcare providers to provide Immediate Post Placental IUDs, and the skill is easily learned. Barriers to IPPI included healthcare provider, logistical, and potential patient factors. Already we have created a workshop and education materials that are acceptable to an audience of medical students, residents, family physicians, obstetricians, nursing staff, and midwives.

▶ FUTURE DIRECTIONS

- 1. Trouble shoot barriers:** Ideas for reducing barriers include advocating for a billing code, advocating for IUDs to be universally covered seeing as they are the first line for contraception, and the creation of a pre-printed order sets for patients admitted to the labour and delivery ward with the intent of having an IPPI. Lastly a check box on the prenatal record should be in place for the discussion of family planning at around 32 weeks of gestation, which gives the opportunity to discuss IPPI.
- 2. Understand the patient perspective:** We have now initiated a study to understand the patient perspective and acceptability for IPPI.
- 3. Continue education for the interdisciplinary team:** This workshop and materials can be distributed for workshops to be done at other centres and for a variety of audiences including residents and medical students.

▶ ACKNOWLEDGEMENTS

Special thank you to Shelley Movold, Quality Improvement Coach at UHNBC
 This work was funded by the Northern Health Physician Quality Improvement Seed Grant

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ABBREVIATIONS

IUD: Intrauterine Device
 IPPI: Immediate Post-Placental IUD



northern health
 the northern way of caring

Northern Haida Gwaii Hospital Emergency Department Organization Project (5S)

AIM

STATEMENT :

- to reduce duplicate and redundant stock, estimated 40% of current stock
- to increase efficiency of stocking by at least 30%
- to decrease frequency that staff need to look in more than one place for supplies by 50%
- to increase satisfaction of users of the space

► BACKGROUND

The Northern Haida Gwaii Hospital is a rural facility with combined residential, acute, and emergency areas. The emergency room sees clients of all ages and all variations of health concerns.

The Emergency Department has undergone numerous isolated improvements but remains disorganized and simultaneously over- and under-stocked, which increases risk to clients.

Dr. Caroline Walker identified this as a concern with the physician team, and other inter-professional team members agreed that it is a priority.

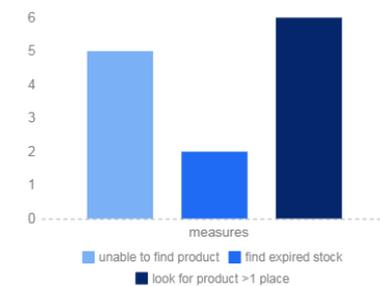
► CURRENT STATE

Nurses request stock from stores, who deliver product to the department. A different nurse then puts it away. This results in numerous locations of items, overstock, and incorrect product use.

Patients are affected when staff can't find emergency equipment quickly. The design of the department and overstocking has resulted in storage in patient rooms, who are then interrupted when items are needed from the room they are in.

Unfortunately, the problem does extend beyond the ED, however to address the entire building was beyond the scope of this project. This is a widespread problem since the move into this building 9-years ago after design and construction issues, followed by a rushed move.

Current State: One Week Picture



► RESULTS

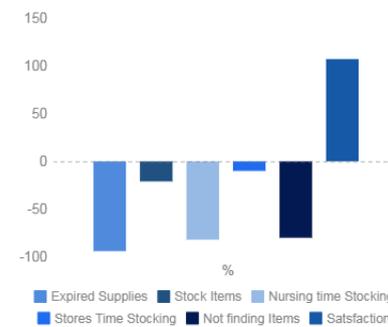
- 39 expired types of product removed during 5S
- 2 individual expired products found at audit 1 month post- 5S
- 89 Products discontinued from stock due to being inappropriate, redundant, or outdated
 - examples include: combitubes, tracheostomy trays, 3 varieties of wrist splint, soft collars

Average nursing time spent stocking in the ED decreased 82%

Average stores time spent stocking in the ED decreased 10%

Frequency of not finding necessary supplies reduced from average 5 times/week to 1/week

Staff satisfaction doubled from a mean of 4/10 to 8.3/10



► CHANGE IDEAS

Our goal is to improve accessibility of stock, reducing search attempts by half by Oct 31st; reduce wasted time in the supply chain system by half; and reduce overstock or redundancy by 75% by Nov 9th.

A Lean 5S approach was used to improve the space and develop a Kanban system. Changes were made through consultation with the users of the space and a coordinated approach that considered the entire department but tackled individual areas to manage the size of the project.

Critical success factors were the unanimous agreement that the current state was inefficient; Barriers are primarily to sustainability, given that this site continues to have high levels of turnover in both bedside and management levels.

The active team included representatives from nursing, physicians, stores, midwifery, and administration. Potentially impacted groups and off-site partners were lab and X-ray staff, infection control, wound care, trauma care, pediatrics, diagnostic imaging, and sterile supplies processing.



► PATIENT/CUSTOMER

- decreased risk of delayed care
- decreased risk of use of outdated supplies
- increased efficiency of department:
 - decreased time spent stocking by clinicians
 - decreased time spent stocking by stores staff
- decrease in redundant items on unit
- more professional and tidy appearance for staff and those seeking care



► NEXT STEPS / SUSTAINING THE GAINS

This project was done with existing space and supplies, with no budget for purchasing tools or equipment. A modern stocking system is the next step, such as Acart and mobile carts that can take supplies to the patient. Furthermore, sustainability will be challenging when other areas of the same building remain cluttered and do not use the same stocking system. A lean approach to ward stock, and ultimately, the stores department will increase consistency and support sustainability.

This project also identified many opportunities for continuous quality improvement that are smaller in scope and reasonable for a small team to tackle in a few days.

A solid sustainability plan is essential, as this is the major challenge faced given high turnover. The new state has been integrated into the orientation process. Tools have been made to maintain minimum and maximum supply levels, and existing checklists have all been modified to be consistent with the future state. An auditing system was put into place with staff, management, and the local QI Committee. Changes are anticipated, and an application-type system is in place so that they can be considered in a broader context by all who may be affected.

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northern health
the northern way of caring

Location: University of Northern British Columbia
Contact: Dr. Laura Brough
Date: May 1, 2019



RAPID ASSESSMENT ZONE (RAZ)

QUALITY IMPROVEMENT TRIAL
FEBRUARY 4TH - APRIL 30TH, 2019

BACKGROUND

The Rapid Assessment Zone (RAZ)

- Additional geographic space next to the acute care Emergency Department (ED)
- Currently operates 1300-2100, 7 days a week
- Designated ED physician and ED Nurse
- Assesses and cares for CTAS Level III patients (no telemetry or resuscitation capacity)

Canadian Triage Acuity Scale (CTAS)

| Level | Urgency | Guideline Time to see a Physician |
|----------|---------------|-----------------------------------|
| CTAS I | Resuscitation | NOW |
| CTAS II | Emergent | ~15 mins |
| CTAS III | Urgent | ~30 mins |
| CTAS IV | Semi-Urgent | ~1 hour |
| CTAS V | Non-Urgent | ~2 hours |

PROBLEM STATEMENT

UHNBC experiences capacity issues and the ED struggles with flow challenges. The importance of moving patients through the system in as efficient a manner as possible is tremendously important. It has been observed that the number of CTAS III (RAZ appropriate patients) has slowly been increasing over the years. In particular, the morning hours from 0900-1300 have a large number of patients that could be seen in RAZ, if it were open. By the time RAZ opens at 1300, there is a backlog of patients waiting to be seen. This leads to frustrated patients and a more difficult, stressful working environment for staff and physicians.

CHANGE IDEAS

- Increase RAZ hours by 4 hours per day, 7 days a week
- Trial held for 12 weeks (February 4th- April 30th, 2019)
- Open from 0900-2100 (instead of 1300-2100)

PATIENT/CUSTOMER

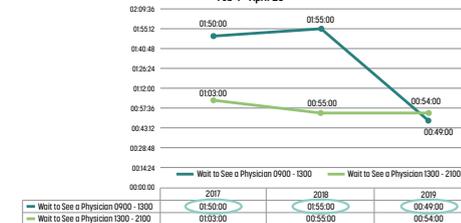
- Lower acuity CTAS III level patients



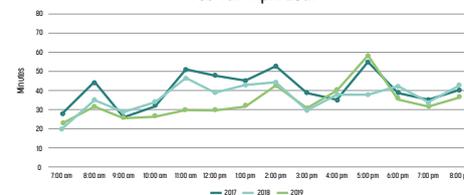
RESULTS

As a result of the trial, wait times to see a physician, for RAZ patients, decreased by over 1 hour from 0900-1300. Likewise, all other ED patients experienced a decrease in wait time to see a physician from 0900-1300 (grey line in graphs below). From 1300-2100, when there was no changes trialed, there was no significant difference in wait times.

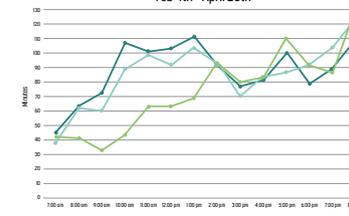
Median Wait Time to see a Physician for RAZ Patients Feb 4 - April 28



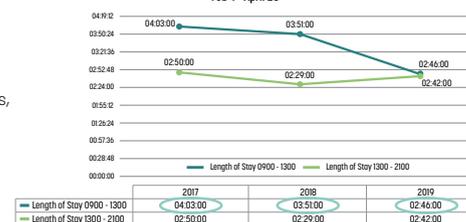
Median Wait Time of Non-RAZ CTAS I & 2 Emergency Patients at UHNBC Feb 4th - April 28th



Median Wait Time of Non-RAZ CTAS 3 Emergency Patients at UHNBC Feb 4th - April 28th



Median Length of Stay for RAZ Patients Feb 4 - April 28



In addition, the length of time spent in the ED was decreased for RAZ patients, therefore improving flow.

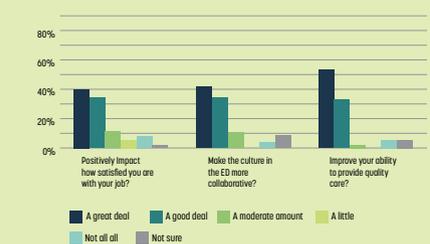
NEXT STEPS / SUSTAINING THE GAINS

- To work towards sustaining this trial as it was well received by physicians and staff. An APP funding request has been submitted to request a permanent increase in physician time for RAZ, as well as a business case to support Northern Health Nurse time.
- Continued work is underway in the ED to look for ways to deal with improving the flow of patients through the ED and help with UHNBC's overcapacity issues.

SURVEY OF PHYSICIANS AND STAFF IN THE ED:

Physicians and staff were very supportive of the pilot and when surveyed about their feelings towards the pilot, had many good things to say.

To what extent did the extended hours...



COMMENTS FROM PHYSICIANS AND STAFF:

- "earlier start has fundamentally changed the atmosphere in ER, less stress for ER Dr, less stress for triage knowing flow will improve, less dissatisfaction for patients re wait times"
- "most importantly it's helping the overall morale for the squad"
- "patients less grumpy which makes my job more pleasant"

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TEAM MEMBERS: Dr. Laura Brough, Dr. Devin Spooner, Dr. Patrick Rowe, Dr. Patrick Turner, Dr. Matt Janzen, Dr. Kathleen Cunniffe, Dr. Amy Johnson, Rita Sweeney, Belinda Maidment, Laura Wessman & All ED Nurses

Location: GR Baker Memorial Hospital
Contact: Dr. J. Fine
Date: November 7, 2018

REDUCING READMISSION RATES OF FRAIL ELDERLY PATIENTS AT G.R.BAKER HOSPITAL

AIM STATEMENT

- To reduce readmission rates of frail elderly patients in GR Baker Hospital by:
1. Using and scoring the Modified LACE Tool in the clinical setting reliably
 2. Developing an effective discharge planning process
 3. Effectively involving the IPT, family and caregivers in the discharge planning process

BACKGROUND

"Rehospitalizations among Medicare beneficiaries are prevalent and costly".
Ref: Jencks, Williams and Coleman. Rehospitalizations among Patients in the Medicare Fee-for-Service Program. New England Journal of Medicine, 2009; 360, 1418-28

"Hospitals need to identify potentially preventable readmissions (PPR's) in order to control readmission rates".
Ref: Goldfield, McCulloch et al. Identifying Potentially Preventable Admissions. Health Care Financing Review, Fall 2008; 30 (1): 75-91

CURRENT STATE

- Chronic overcapacity
- At any one time 70%-90% of inpatients are >65
- Increased mortality
- Increased morbidity - nosocomial infections, reduced mobility, increased falls, functional decline
- Reduced patient satisfaction

NEXT STEPS/SUSTAINING THE GAINS

- Develop Enhanced Discharge Planning processes when a person is identified as high risk for readmission:
- Develop meeting structure to discuss cases, develop a complex care plan, and identify shared documentation
 - Early involvement and collaboration with patient and caregivers
 - Patient will be 'flagged' in Cerner as high risk for re-admission
 - LACE scores will be added to the acute care huddle board
 - Explore if complex care plan can be shared through Cerner
 - Sharing of information: primary care provider, IPT, appropriate acute care services
- Early connection with the IPT:
- Document LACE score and complex care plan in CMOIS
 - Use LACE score to prioritise high risk patients and allocate resources
 - PCN to meet with the patient prior to discharge
 - PCN to see patient within one week of discharge to ensure all elements of the plan are working
- Early follow up with the primary care provider
- Identify roles and responsibilities within existing positions to ensure sustainability

SOLUTION

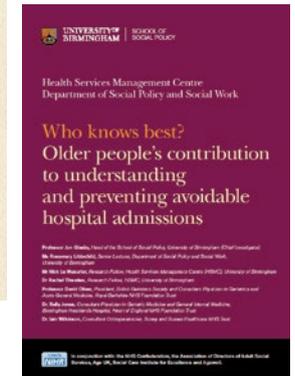
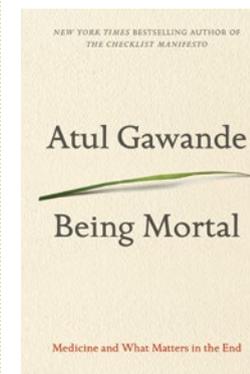
- Trial use of the LACE assessment tool to identify those patients who are at high risk for readmissions
 - Implement process to complete a LACE assessment on all patients >65ys who are admitted to acute care
 - Identify the structure and processes to provide high risk patients with an Enhanced Discharge
- Two process mapping sessions have been completed with a multidisciplinary team (acute care, community care, and the primary care home)

L = Length of stay A = Acuity C = Comorbidities E = Number of ER visits in past six months

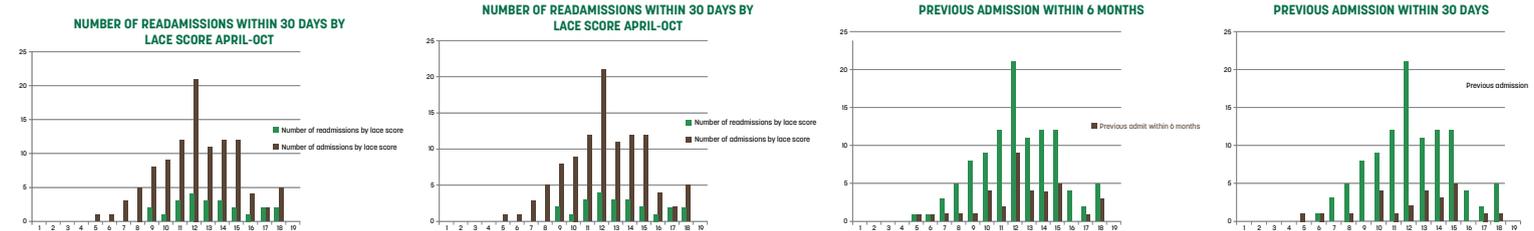
| Attribute | Value | Points | Prior Admit | Present Admit |
|---|---|--------|-------------|---------------|
| Length of Stay | Less 1 day | 0 | | |
| | 1 day | 1 | | |
| | 2 days | 2 | | |
| | 3 days | 3 | | |
| | 4-6 days | 4 | | |
| | 7-13 days | 5 | | |
| Acute admission | Inpatient | 3 | | |
| | Observation | 0 | | |
| Comorbidity (Comorbidity points are cumulative to maximum of 6 points) | No prior history | 0 | | |
| | DM no complications, Cardiovascular disease, Hx of MI, pVD, PUD | 1 | | |
| | Mild liver disease, DM with end organ damage, CHF, COPD, Cancer, Leukemia, lymphoma, any tumor, cancer, moderate to severe renal dz | 2 | | |
| | Dementia or connective tissue disease | 3 | | |
| | Moderate or severe liver disease or HIV infection | 4 | | |
| Emergency Room visits during previous 6 months | Metastatic cancer | 6 | | |
| | 0 visits | 0 | | |
| | 1 visits | 1 | | |
| | 2 visits | 2 | | |
| | 3 visits | 3 | | |
| 4 or more visits | 4 | | | |

Take the sum of the points and enter the total →

PATIENT/CUSTOMER



PATIENT/CUSTOMER



- To date 107 LACE scores have been completed on those 65 years of age and older, excluding those deemed ALCP.
- Of those, 79 have scored 11 or above, indicating a **high risk** for readmission within 30 days - **74% of admissions**
 - 33% had a previous admission within the previous six months.
 - 21% had been readmitted within 30 days.
 - 19% of previous admissions were admitted within 30 days.
 - 13 patients were readmitted within 72 hours. (Includes 2 repatriations)

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TEAM MEMBERS: Dr J. Fine, Riley Beckman RN BSN, Marna deSousa PQI QI Coach

QUALITY IMPROVEMENT STORY BOARD



REDUCING THE RISK: Crucial Conversations Regarding Patient Placement

Background:

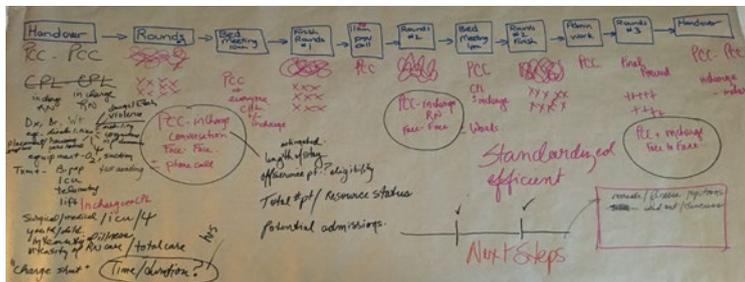
Patients admitted to the hospital through the emergency department are placed on wards according to nursing needs, medical acuity and resource requirements. Adverse events have occurred when there is a mismatch between requirements and resources. Transfer of patient information can be variable, incomplete or insufficient. Currently there is no standardized content.

Objective:

By Sept 2018, we will achieve a 90% compliance and satisfaction with a standardized communication tool used to transfer admitted patient information between ER Charge Nurse and Patient Care Coordinator.

Current State:

December 2017: a Process Map was created that reflected the daily journey of the PCC and a list of critical information that was required to optimally and safely assign a patient to a bed in the hospital was compiled. Attendance: PCC's and Charge RN



Original communication tool.

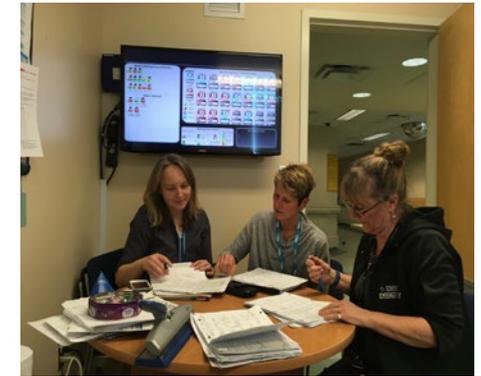
| INFO | INTELLIGENCE | TEST | MISC | IMPACT |
|--|--------------------------------|------|------|--------|
| 12 Depression / CHA / MUSE | ADHD / Depression / CHA / MUSE | TEST | MISC | IMPACT |
| MR. DEPRESSIONS - EQUIPMENT | ADHD / Depression / CHA / MUSE | TEST | MISC | IMPACT |
| MR. ACUTE RHEUMATOID ARTHRITIS (CHRONIC) | ADHD / Depression / CHA / MUSE | TEST | MISC | IMPACT |
| MR. AES / SOB - RHEUMATOID | ADHD / Depression / CHA / MUSE | TEST | MISC | IMPACT |
| MR. DEPRESSION | ADHD / Depression / CHA / MUSE | TEST | MISC | IMPACT |

Solution:

• Needed more space in the assessment section

• A place for an explanation of the infection control issue was added.
• Bariatric was moved from an issue to a requirement.
• Medications were added as a requirement because some medications are barriers to admittance on certain floors.

• The line was removed from infection control.
• High nursing needs was moved to an issue rather than a requirement.
• Medications was removed because staff found it confusing.



• High nursing needs was replaced with other.

• A line was put back for the description of the infection control issue
• Other was replaced with 1:1 need
• Infusion meds was added as a requirement. This was why the med was added previously but people were confused and thought they had to list all meds, so this time it was labeled "infusion med" for clarity.

Results:

Patient Care Coordinator (PCC) Results:

- 3/4 PCCs identified improvements in the accuracy of patient information and a decrease in the variability in the transfer of information.
 - "Having the patient's issues and requirements on the in charge sheet made a huge difference".
 - "Has reduced barriers to information flow"
 - "I use the charge sheets regularly. I photocopy the sheets at the beginning of the shift and use them throughout, updating as I go".

Charge Nurse Results:

- 6/6 Charge RNs identified improvements in the accuracy of patient information and a decrease in the variability in the transfer of information.
 - "It does seem to highlight the important information"
 - "I find it cues me to answer certain info that I may have forgotten to consider"

Next steps / Sustaining the Gains:

- The paper form still has issues to be worked out because staff are erasing information when patients change. Stickers were created to paste over top, to address this but it remains an issue to be resolved. An electronic version would be ideal and the team is working towards this next step.
- The staff have identified the need to consider an electronic format "Could the report be generated electronically so it can be generated in real time? Patients change rapidly in ER"
- There continues to be comments about "unnecessary" information on the form which presents an ongoing opportunity to re-evaluate the content of the tool.

Patient/Customer:

The direct customers of this project were the Patient Care Coordinators (PCCs) and the Charge Nurses in the Emergency Department. The information flow between these two roles was explored in an effort to improve the system of getting patients to the right bed in the hospital.

Primary email contact: laura.brough@northernhealth.ca

Team Members: Laura Brough, MD, Rita Sweeney, RN, Patient Care Coordinators, Charge Emergency Room Nurses & Shelley Movold, PQI



Routine Offering of HIV Testing for Acute Care Patients in Northwestern BC

PROJECT AIM

To increase HIV screening of patients 19 years of age and older in acute care (Medicine, Surgery, Intensive Care Unit) at Mills Memorial Hospital to >20% by December 31, 2018.

BACKGROUND

The BC HIV Testing Guidelines recommend that providers routinely offer an HIV test:

- Every 5 years, to individuals 18-70 years
- Annually, to individuals 18-70 years belonging to populations with a higher burden of HIV
- Whenever ordering bloodwork for a new or worsening medical condition

The lower mainland's STOP HIV work has shown that routine offering of HIV testing in the hospital environment is acceptable and effective (inpatient testing increased from 3.3% to 19.2%).

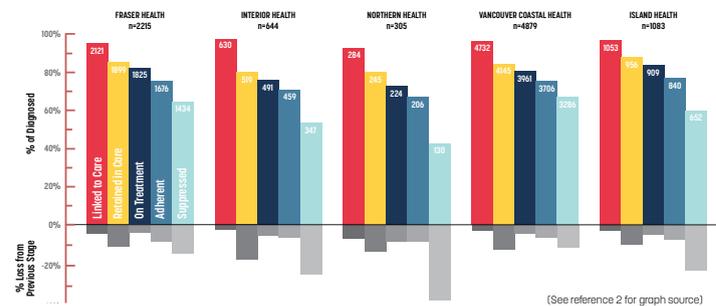
PROBLEM STATEMENT

In 2017, 4,711 people per 100,000 (4.7%) in Northern Health were tested for HIV¹

- Excludes point-of-care and prenatal testing
- Provincial average was 5,963/100,000 people (6.0%)

42.6% of people living with HIV in Northern Health's catchment area were virally suppressed²

- Below provincial viral suppression rate of 64%



CHANGE IDEAS

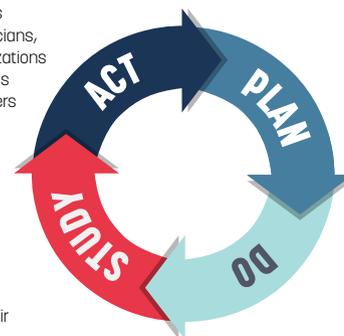
Routinely offer HIV testing to all adults admitted to acute care settings (Medical/Surgical Ward, Intensive Care Unit) at Mills Memorial Hospital in order to increase rates of testing in this population. Plan-Do-Study-Act cycles were utilized to develop and modify the intervention of offering routine HIV testing.

Steps in this quality improvement project:

1. Develop a local process of delegated follow-up
2. Formation of stakeholder advisory group
 - Advise on education needs
 - Ensure messaging is appropriate for community
 - Provide input on ways to increase testing

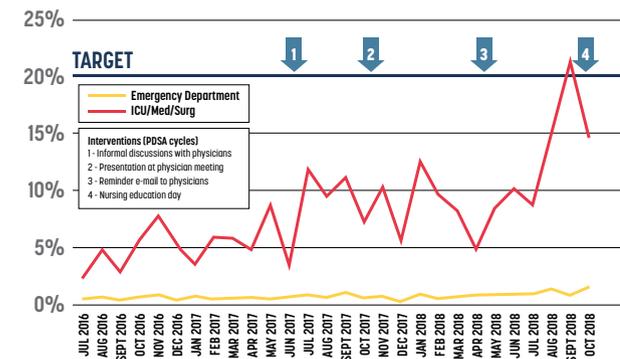
3. Build local HIV capacity and education
 - AIDS service organization visits
 - HIV training sessions for physicians, nurses and community organizations
 - Community education programs
 - Preceptorships for care providers
 - Physician newsletter article
 - HIV resource board for nurses

4. Implementation of routine offering of testing
5. Evaluation
 - Project data reviewed at 3, 6 and 12 months
 - Proportion of individuals who received an HIV test during their inpatient stay



RESULTS

RATES OF HIV TESTING AT MILLS MEMORIAL HOSPITAL



NEXT STEPS / SUSTAINING THE GAINS

- Continue Plan Do Study Act (PDSA) cycles to further increase HIV testing rates
- Community HIV education events and educational materials
- Developing client-initiated testing (clients requesting tests in addition to providers offering testing)
- Increased nursing and other health professional engagement

Developing strategies to increase testing in other settings

- Community settings
- Other hospitals in region

PATIENT/CUSTOMER

This project addresses the Northern Health strategic priority, "Healthy People in Healthy Communities" and involvement of patient and community stakeholders was essential. The stakeholder advisory group consisted of representation from:

- Patient partner
- Health Directors - multi-nation representation
- Community service providers
- Public Health nurses
- Community research associate
- Family physician
- Specialist physician

The stakeholder advisory group guided the project and helped to ensure that the project represented the interests and needs of community members.



TEAM MEMBERS

Holly (Gitsdi motx') Harris, Kyle McIver, **Ciro Panessa**, Lee Cameron, HIV Community Advisory Board

ACKNOWLEDGEMENTS:

Ashley Stoppler, Candice Manahan, Dee-Ann Stickel, Andrew Gray, Raina Fumerton, Mark Hull, ICMT Team, Terrace Public Health, Northern Health, Jasmine Pocha, STOP HIV/AIDS, BC Centre for Excellence in HIV/AIDS

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SECONDARY EMAIL CONTACT: physicianqi@northernhealth.ca

- REFERENCES: 1. STOP HIV report: BC Centre for Excellence in HIV/AIDS. <http://cfenet.ubc.ca>
2. Lourenco L, et al. High levels of heterogeneity in the HIV cascade of care across different population subgroups in British Columbia, Canada. PLoS One 9(12): e115277





SPREADING LAB-BASED SUCCESS at the Kitimat General Hospital

AIM STATEMENT

Improving patient flow by having 80% of 7:30 inpatient requisitions complete by 9:30am by having requisitions entered by 7:30am, collected by 8:30am, and results reported by 9:30am by June 2018.

BACKGROUND

The quality improvement project outlined within this report stems directly from a former QI process that was undertaken between April 2016 and May 2017 at Mills Memorial Hospital (MMH) in the Northwest (NW) health service delivery area of Northern Health. In early 2016, it was identified by NW Senior Leadership that up to date lab results required for discharge were often not available by the time physicians were conducting morning rounds thus delaying patient discharge. The goal of the MMH project was to assess the current state of AM blood work within that facility and identify potential facility-specific opportunities for improvement. As of early May 2017, the project had improved the average final reporting time from 0947hrs to 0831hrs at the MMH site. The improvements achieved at the MMH site initiated the NW Chief Operating Officer (COO) and the NW Medical Director to spread that projects learnings to three other NW facilities, with the goal to improve patient flow by supporting timely discharge of patients. The three NW facility sites identified for the spread were the Kitimat General Hospital (KGH), Bulkley Valley District Hospital (BVDH) in Smithers, and the Prince Rupert Regional Hospital (PRRH).

OBJECTIVE

Initial Northwest Regional Aim Statement:

To increase the amount of up to date lab results by 0800 hours available for physician rounding by 60% by March 30th, 2018.

Kitimat Aim Statement:

Have 80% of 7:30 inpatient requisitions complete by 9:30am by having requisitions entered by 7:30am, collected by 8:30am, and results reported by 9:30am by June 2018.

Prince Rupert Aim Statement:

To increase the amount of up to date lab results by 0800 hours available for physician rounding by 60% by March 30th, 2018.

CURRENT STATE

For each team, the current state the current state analysis consisted of the collection and analysis of baseline data and a process mapping kaizen event. At PRRH, the current average reporting time of results was 0924hrs for Complete Blood Counts (CBC) and 0919hrs for chemistry. Identified as a balancing measure, the current length of stay for acute patients within the facility was 4.64 days in 2017.

At KGH, for the collection period of late March to mid-April, 40% of all accessioned lab samples were meeting the reporting benchmark of having results published by 0930hrs. The team was over performing on their expected time of collection with an average current collection time of 0755hrs. However, the run chart indicates variability in the current collection time (Figure 1). The team was reporting results at a daily average of 0938hrs, just shy of their set target of 0930hrs. However, the run chart also indicates a high level of variability in final reporting time (Figure 1).

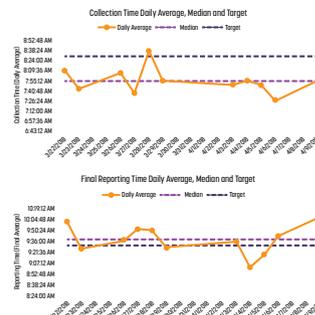


Figure 1. Baseline data for KGH lab.

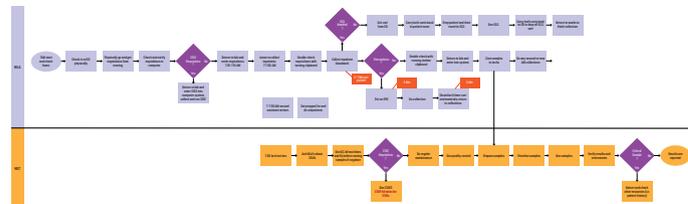


Figure 2. Current state map for KGH lab.

SOLUTION

After a current state process mapping exercise both the KGH Lab team and the PRRH team identified current pain points and opportunities for improvement (see Figure 3). Focus was put towards pain points & improvements that could be readily achieved and that were within the control of the teams.

To address these, an ideal future state map was developed by the PRRH lab improvement team. It was identified that initial improvement opportunities were clustered around areas of rework, duplication, and excess processing. Examples of the identified improvement opportunities at PRRH included:

- Inconsistent or incomplete requisitions
- Rework and duplication to address incomplete requisitions
- Unnecessary movement of requisitions and charts

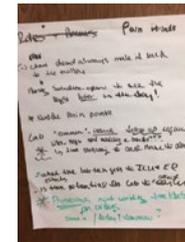


Figure 3. PRRH "Pain Points".

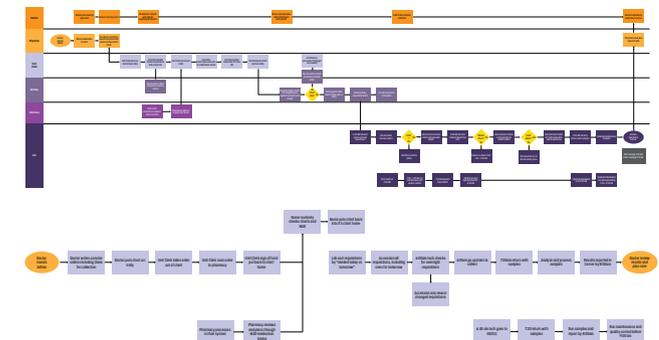


Figure 4. Current (top) and future (bottom) state maps for Prince Rupert Regional Hospital.

RESULTS

Each project team has completed a thorough baseline and current state analysis, engaging a dedicated site team and leadership support to undertake future improvements aimed at achieving the project aim statement. Currently, the teams are reviewing their identified opportunities for improvement and are preparing to undertake a process of prioritization.

One notable improvement opportunity identified by both teams was the current low utilization of physicians and staff accessing and using Powerchart, the internal electronic record system for retrieving and viewing laboratory results and queues. This was estimated to be a root cause of duplicate requisitions, unnecessary calls to the laboratory team for updates on requisition queue or result status, and physicians re-ordering active requests. Teams and physician partners are currently pursuing implementing additional Powerchart training.

NEXT STEPS/SUSTAINING THE GAINS

The KGH lab team is in the process of developing a form that the acute care nurses can use to ensure all Doctor Orders have been checked and all the lab orders have been filled out. This form was submitted to the NH Quality, Resource & Technology Department in October 2018 with an anticipated publish date of late January 2019. Following, a series of Kaizen events will occur with the acute care nurses and ideally include site physicians. It is planned that the KGH Clinical Nurse Educator & the Lab Manager will provide education on the recently completed form, commencing in February 2019. The improvement team has identified the need for physician engagement & input on this initiative in order to be successful. The KGH Practice Support Coach has recently been recruited to the improvement team.

The PRRH project is currently on hold due to leadership turnover and upcoming site Lab department Accreditation, scheduled to be complete by April 2019. The Improvement Team continues to see value in this project and once Accreditation with its accompanying time requirements are complete, the team plans to schedule a face to face meeting to revisit, revitalize and recommence the improvement initiative. Target date late April 2019 for initial meeting. Strong site leadership support exists. This site identified that lack of physician engagement was a challenge and is currently considering different ways that they can show the relevance and importance of this improvement work to the physicians.

PATIENT/CUSTOMER

Early reporting of AM laboratory results are an integral part of ensuring timely discharge of acute patients to allow for proper discharge or transition planning, improved patient flow, and reduced emergency department crowding.

During the development of their current state process map, the PRRH team identified a swim lane of the patients engagement and involvement in the process of AM blood work. The patients involvement can be seen in the top column of Figure 4.



TEAM MEMBERS (KGH) Mark Hawkins, Pamela Dawkins, Peter Gill. Process mapping kaizen participants also included Ashlee Baer, Wendy Baker, Mary John, Krina Patel, Alberto Pineda, and Sandra Whittington. (PRRH) Michelle Bartel, Alyssa Rimmer, Shannon Mann. Process mapping kaizen participants also included Adelaide Dipsascale, Sara Phillips, Angela Szabo, Holly McAlister, and Michelle Pele. (BVDH) Scott Martin, Robbie Dunbar, Sharon Dempsey, Dr. Vestvik, Dr. Blouw.

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northern health
the northern way of caring

Unit Name: St John Hospital Endoscopy Program
Contact: Marna deSousa
Date: October 2018

ST. JOHN HOSPITAL ENDOSCOPY CLINIC QUALITY IMPROVEMENT PROJECT

AIM STATEMENT

We aim to improve the clinical quality and the quality of the patient and provider experience of the St. John Hospital Endoscopy Service. By working on the process, we expect to:

- Improve program efficiency
- Improve access
- Improve patient satisfaction
- Improve provider skills
- Improve data analysis

▶ BACKGROUND

The Endoscopy service at St. John Hospital supports patients from Vanderhoof, Fraser Lake, Fort St. James and surrounding Indigenous communities. Two physicians perform diagnostic colonoscopies and gastroscopies and are continually looking to improve services and patient care within the facility. Based on an initial data review they have chosen to focus on process efficiency and outcome measurements to optimize service capacity, develop patient-centred processes and enhance their endoscopy skills.

▶ CURRENT STATE

The demand for endoscopy services is growing, particularly for screening colonoscopy. Currently the demand from our referral area outweighs our capacity which significantly affects patient access and adds to the burden for patients requiring the service. Our resource limited rural setting compounds the situation.

Rural patients have increased challenges with transportation and supports and this is particularly evident in our marginalized population.

The current hybrid paper and electronic environment makes tracking and using meaningful data problematic. The referral process between the endoscopists office and hospital requires significant manual work and strains our administrative capacity.

Virtual technologies are being employed, however, it is limited by patient access to reliable internet.

We have a part time Quality Improvement Coach whose essential facilitation and leadership is time limited.

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TEAM MEMBERS:
Dr. Sean Ebert, Dr. Alison Fine,
Mary Sommerville, Marna deSousa,
Jennifer Little, Heather Goretzky



▶ ACTIVITIES

Improve Program Efficiency

- Working group meets quarterly to review and create action plans for implementation of the Canadian Association of Gastroenterology Global Rating Scale (C-GRS) recommendations:
 - Currently 6 of the 12 identified action plans are complete and implemented or are in progress

Improve Data Analysis

- Developing processes to measure and review quality outcomes

Improve Access

- Implemented processes to measure and review wait times, access equity, and appropriateness
- Implemented a standard 'direct-to-procedure' process
- Implemented a Virtual Consultation Process to improve access to consultation
- Continuing use of Group Medical Appointments for consultation to increase capacity and efficiency

Improve Patient Satisfaction

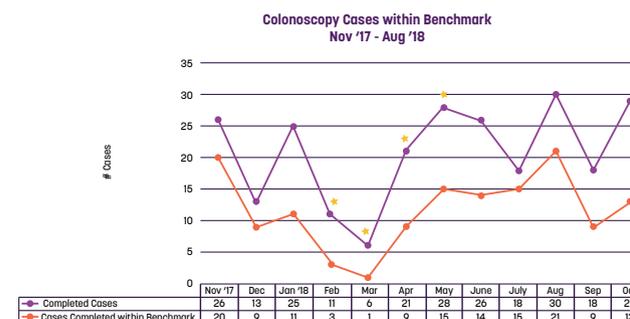
- Completed series of patient satisfaction and feedback surveys used to inform the development of virtual consultations
- Use Northern Health regional Patient Satisfaction Survey to inform ongoing program improvement
- Developing processes to monitor and improve patient safety, comfort, privacy and dignity

▶ RESULTS

Results from interviews regarding the Virtual Consultation Process, showed that 100% of patients who used it were satisfied with the process and time to appointment. Patient uptake of virtual consultations however remains low.

Results related to wait times for consultation to procedure shows that in all but two months from January to October 2018*, colonoscopy case wait times were above the benchmark target of 15%.

*Data presented here captures colonoscopies only. Baseline data only commenced in December 2017 and in February 10, 2018 the OR flooded and the OR was closed to April 16, 2018. The results from February-April reflect times when the OR was open. December 2017 data is considered the baseline for comparison.



▶ PATIENT/CUSTOMER

We have focused on endoscopy patients and in particular those needing urgent procedures.

Patient feedback was used to inform process development, through direct interviews.

Next steps will be to invite patient partners to participate in program development including processes regarding access and also more robust use of Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs).

This work will allow patients to access this care close to home in a timely manner.

▶ NEXT STEPS / SUSTAINING THE GAINS

Explore methods to increase capacity of the program to improve our wait times and meet the benchmark.

- Process mapping and use of LEAN Tools
- Explore risk management of performing endoscopies in OR versus endoscopy suite

Explore methods to increase access.

- Collaborate with regional, community and clinic partners with focus on marginalized populations
- Electronic bookings
- C-GRS completion

Data collection and analysis.

- Track quality indicators related to technical performance of the procedure and appropriateness
- Use of real time dashboard and trends of relevant indicators to monitor access, capacity and efficiency of endoscopy service

Provider skills development.

- DOPs assessment
- Establish formal mentorships

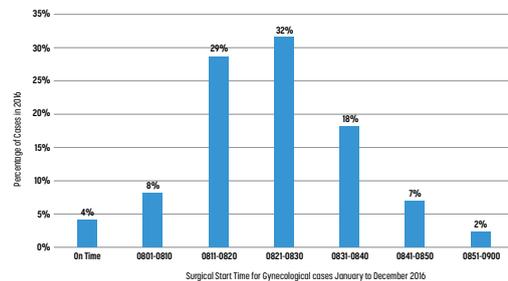
Unit Name: UHNBC Operating Room
Contact: Dr. Marijo Odulio, Jodi Temoin & Shelley Movold
Date: November 2018

SURGICAL START TIME FOR GYNECOLOGICAL CASES AT UHNBC

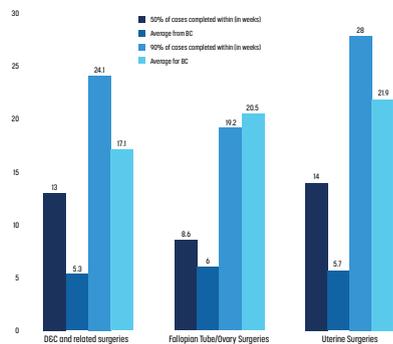
AIM STATEMENT

- Gynecology surgical slates do not start on time at 0800. This results in less surgeries being done per day and cases being cancelled when the room runs late. In the end, surgical waitlists get longer.
- By November 30, 2018, at least 50% of the Gynecology surgical slates at UHNBC will meet the goal of starting surgery at 0800. This will result in efficient use of OR time and allow more surgeries to be completed.

BACKGROUND



On average surgical start time was 0823 only 4% of cases started on time at 0800.



UHNBC wait time (in weeks) for 50% and 90% of the cases to have each of the surgeries is greater than the BC average for these surgery types.

CURRENT STATE

Data collected from Surginet (computerized software used in the OR at UHNBC)

- Patients in the operating room on average at 0747
- Takes 17 minutes on average to anesthetize the patient
- Takes 16 minutes to prep and position the patient on average
- Average surgical start time is 0823

Workplace Survey conducted at UHNB in November 2017 showed:

- 17% of respondents felt their knowledge and opinions were not valued by colleagues in the past week
- 45% of participants felt disrespected by a colleague at least once in the past week

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TEAM MEMBERS: Dr. MJ Odulio, Dr. J. Akhtar, Jodi Temoin, Kim Frost, Jana O'Neil, Shelley Movold



SOLUTION

To address workplace culture issues, a workshop was held called Building a High Functioning Team:

- The day allowed participants to talk openly with each other and discuss issue they faced everyday at work
- The team came together to envision what they thought a high functioning team in the OR would act like and created a team charter of expectations for their workplace



PDSA Cycles:

Change cycle #1: Have the surgeon in the OR at 0745 to:

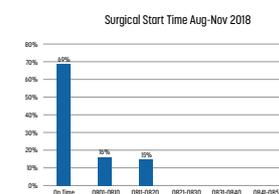
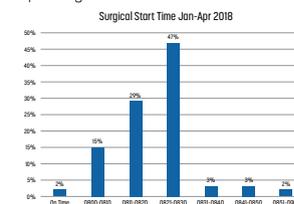
- Provide leadership to the room
- Improve communication between team members
- Assess whether the room was ready for the first operation in terms of equipment needs

Change cycle #2: Continue to have the surgeon in the room & have the IVs inserted before the patient enters the operating room.

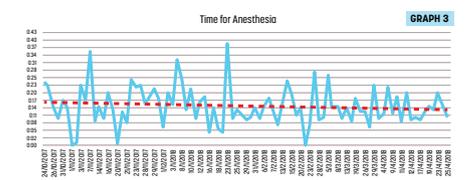
Change cycle #3: Continue with the surgeon in the room & have the patient in the room at 0730.

RESULTS

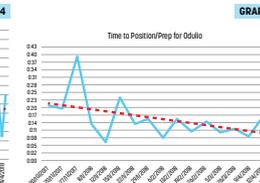
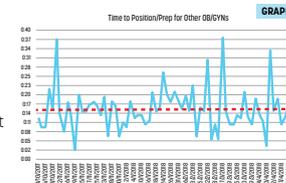
It became apparent through the course of the project that a surgical start time of 0800 is not realistic, if the patient is brought into the OR at 0745. To meet a 0800 surgical time the patient would have to be in the operating room at 0730. This became our final PDSA cycle.



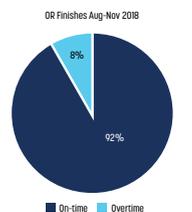
The Anesthetists for gynecological surgeries have generally been very punctual and the time between the patient entering the OR and the Anesthetist start has been on average 1 minute. The time to anesthetize the patient also remains quite consistent as can be seen in Graph 3. Thus it does not appear from the data to date that having an IV inserted prior to the patient entering the OR has made a significant impact on improving the anesthesia time.



The time savings appears to have come from the positioning and preparing the patient for surgery once they are asleep. The affect of this can really be seen when comparing the other Gynecologists' (Graph 4) to Dr. Odulio's (Graph 5) results. Dr. Odulio was consistently in the room at 0745 and didn't leave the room for other reasons between 0745 and the start of the surgery. The data suggests that this wasn't the case for the other Gynecologists. From this it can be concluded that there is significant improvement in efficiency in the positioning and preparation time if the surgeon is in the room and leading the team. The leadership encourages others to be on time and look for ways to be efficient as well.



As a result of starting on time, the OR finished on time and this related to cost savings in overtime expenses. Based on the results of the third PDSA cycle, it was extrapolated that \$95,000/year could be saved in overtime costs for the Gynecology Department alone with this method.



NEXT STEPS / SUSTAINING THE GAINS

- Communicate the results of the project to all physicians and staff. Celebrate the learnings in regards to communication, teamwork and work culture.
- Redo the workplace culture survey to see if the project has improved the workplace culture.
- Review the earlier stages of the process map for gynecological patients. There were other areas for improvement identified in the day care surgery preparation and patient holding areas that could be addressed.



UHNBC Emergency Department and the Lab Quality Improvement Project

AIM STATEMENT

To improve the variability in the time it takes for physicians to receive their lab work results by 30% by April 2019 in the UHNBC Emergency Department.

BACKGROUND

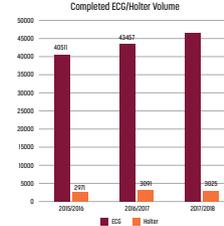
Physicians and others have raised concerns with the lab's response time to providing blood work results in the Emergency Department (ED) at UHNBC. Lab staff have not had significant increases to the number of full time equivalents in the department over a number of years despite large increases in the workload. This has led to an increasingly stressful work environment and stresses to other parts of the hospital system.

PROBLEM STATEMENT

There was too much variability in the amount of time it took to get lab results once the ED physicians ordered them. It could take anywhere between 36 minutes and 5 hours to get lab results. The median amounts of time for each step in the process, from the labs being ordered to the labs being verified and ready for the physicians, is seen in the table to the right.

| Doc orders Lab | Lab entered into the System | Lab Collected Sample | Sample Received in Laboratory | Sample on MPA | Sample Analyzed | Lab Verified |
|----------------------|-----------------------------|----------------------|-------------------------------|---------------|-----------------|--------------|
| | 9 min | | | | | |
| | | 9.5 min | | | | |
| | | | 6 min | | | |
| | | | | 39 min | | |
| | | | | | | 4 min |
| 1 hour 21 min | | | | | | |

In addition to the blood work that the lab assistants needed to collect, they were also responsible for performing the ECGs that were ordered. The volume of ECG orders at UHNBC has gone up by 6000/year in the last 3 years.



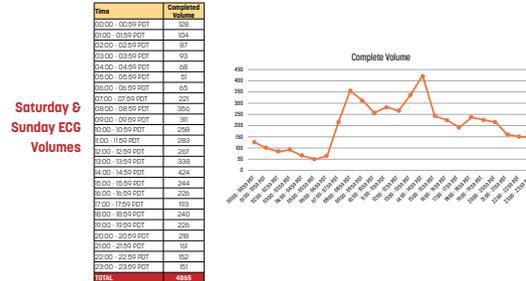
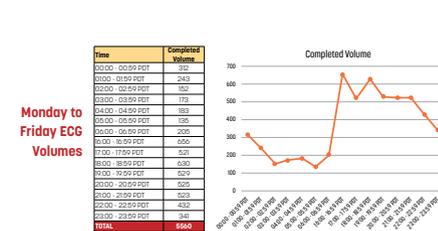
| | 2016 | 2017 | 2018 | Difference from 2016 - 2018 | % Change |
|--------------------|---------|---------|---------|-----------------------------|----------|
| Blood | 1087063 | 1095899 | 1148934 | 59871 | 5.5% |
| Body Fluid | 2390 | 2845 | 3169 | 779 | 32.6% |
| CSF | 757 | 663 | 905 | 148 | 19.6% |
| Urine | 4635 | 7202 | 8521 | 3886 | 83.8% |
| Whole Blood | 19577 | 21258 | 23021 | 3444 | 17.6% |

In the last 3 years, there was a significant increase in the workload for the UHNBC lab department, as can be seen in the table above.

CHANGE IDEAS

To trial having two extra lab assistants; one would help improve lab response time in the ED and the other would help with earlier sample collection throughout the hospital. The ED would be supported with an extra lab assistant during peak ECG times based on analysis of ECG ordering patterns:

- 1500-2300 Monday to Friday / 1300-2100 on Weekends



A morning lab assistant would support early discharges from the rest of the hospital and the ED.

- 0600-1000 (7 days a week)

Also noteworthy: having extra lab assistants ensures that lab technologists remain in the lab to expedite sample processing, rather than being called away to help with sample collections.

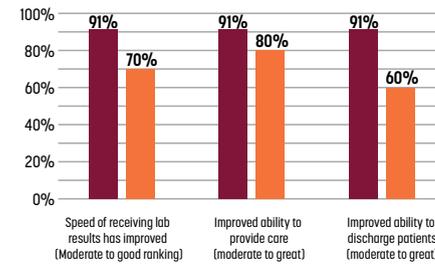
RESULTS

The variability in the amount of time it took to get lab work results improved to a range of 35 minutes to 3.5 hours. There was improvement seen in the percentage of cases done in a specified time period across the board.

| Percentage Cases | Baseline | Pilot |
|-------------------------|----------|-------|
| Less than 1 hour | 21% | 38% |
| Less than 1 hour 30 min | 68% | 75% |
| Great than 2 hours | 9% | 6% |
| Greater than 2.5 hours | 3% | 1% |

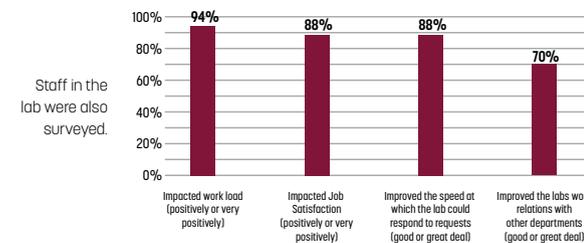
In addition to the ED, the entire hospital benefitted from the trial because morning lab work was available earlier to help physicians make decisions about discharge while doing their morning rounds. On the surgical floors complete lab work was available for review by 0809 (median time) which was an improvement from 0935 (median time) prior to the trial.

Pilot Feedback from the Emergency Department



Staff and physicians were surveyed and asked about the trial.

The Pilot's Impact on the Lab Staff



NEXT STEPS / SUSTAINING THE GAINS

The project was hugely successful with physicians and staff; a business case is being developed to sustain the changes.

NEXT STEPS....

1. Improving the percentage of ED labs available in under 1 hour
2. Ensuring lab results are available in the early morning to enable earlier discharges, improve hospital-wide patient flow and help with overcapacity issues
3. Continue to examine the optimal times of day to have extra lab assistant shifts

TEAM MEMBERS

Dr. Kathleen Cunniffe (ED Physician), Dr. Melissa Dymond (ED Physician), Roma Toor (Diagnostics Manager), Darcy Hamel (Manager High Intervention), Caroline Perrin (Specimen Logistics Charge Technician), Laura Elsenheimer (Chief Technologist Laboratory UHNBC), Shelley Movold (Physician Quality Improvement Coach)

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PHYSICIAN QUALITY IMPROVEMENT
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