

Practice Points

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Volume 5



The right treatment, for the right patient,
at the right time.



Our partnership with Choosing Wisely Canada builds upon established national guidelines and recommendations that cross all disciplines to support the reduction of low-value health care, particularly where harms outweigh benefits.

Who We Are

Quality of Care NL is an applied health systems research and evaluation program aimed at improving the quality of care delivered in Newfoundland and Labrador (NL). We work to ensure the right treatment gets to the right patient at the right time.

Our partnership with Choosing Wisely Canada builds upon established national guidelines and recommendations that cross all disciplines to support the reduction of low-value health care, particularly where harms outweigh benefits. This work is carried out by Quality of Care NL on behalf of Choosing Wisely NL.

Our Approach

Our research and evaluation projects are centred on health care system priorities and are directed by many partners within the system. Project ideas are generated by health care providers, managers, policy decision makers, and patients all with questions on how the system can be improved to deliver better quality care.

Quality of Care NL works with project teams to define methodologies, analyze data, provide clinical interpretation, and engage patients to ensure project outcomes are meaningful. We work with and engage all stakeholders to encourage the implementation of evidence-based research and evaluation outcomes through interventions that make it easier to determine the best course of treatment.

Do you have an idea for delivering improved quality of care? Let us help.

For more information on our projects and what we can do to move your idea forward, please contact Dr. Patrick Parfrey, Clinical Lead, Quality of Care NL at pparfrey@qualityofcarenl.ca.

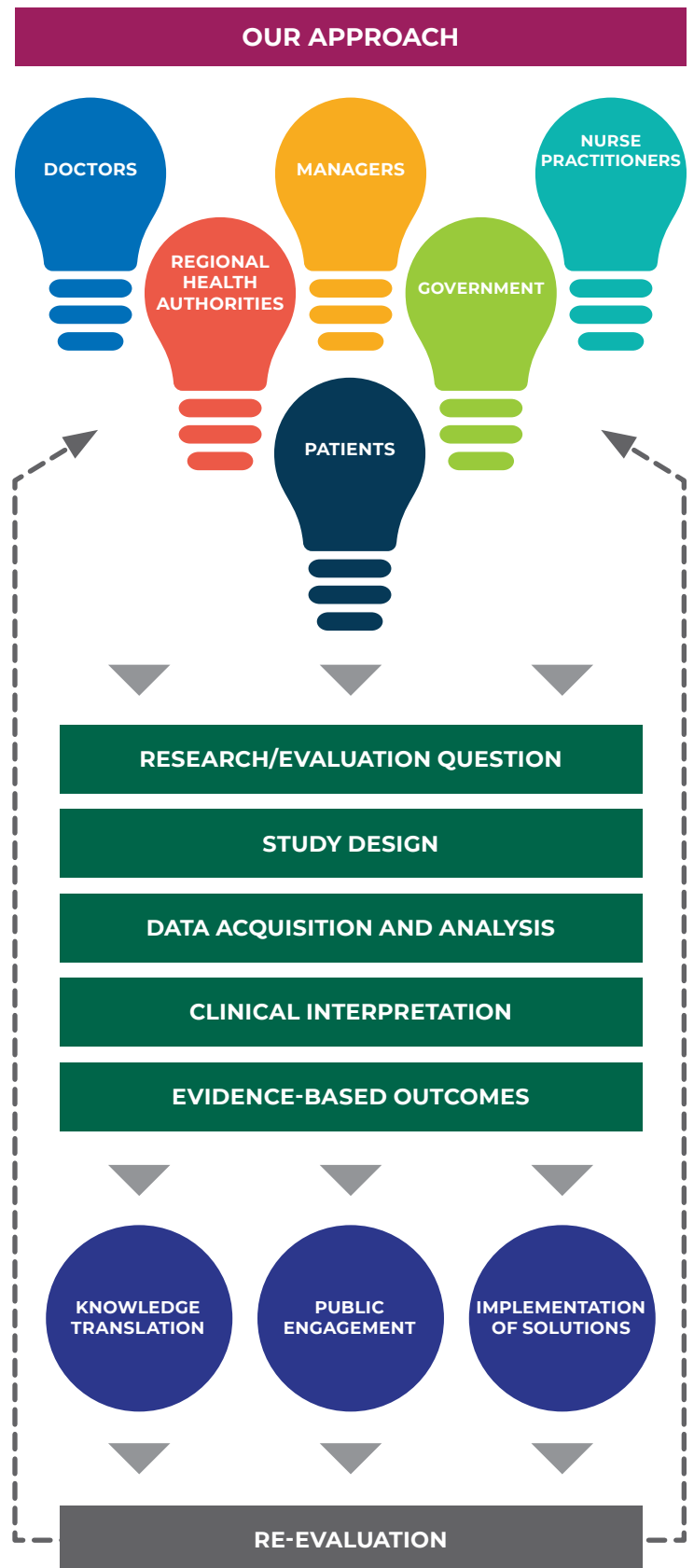


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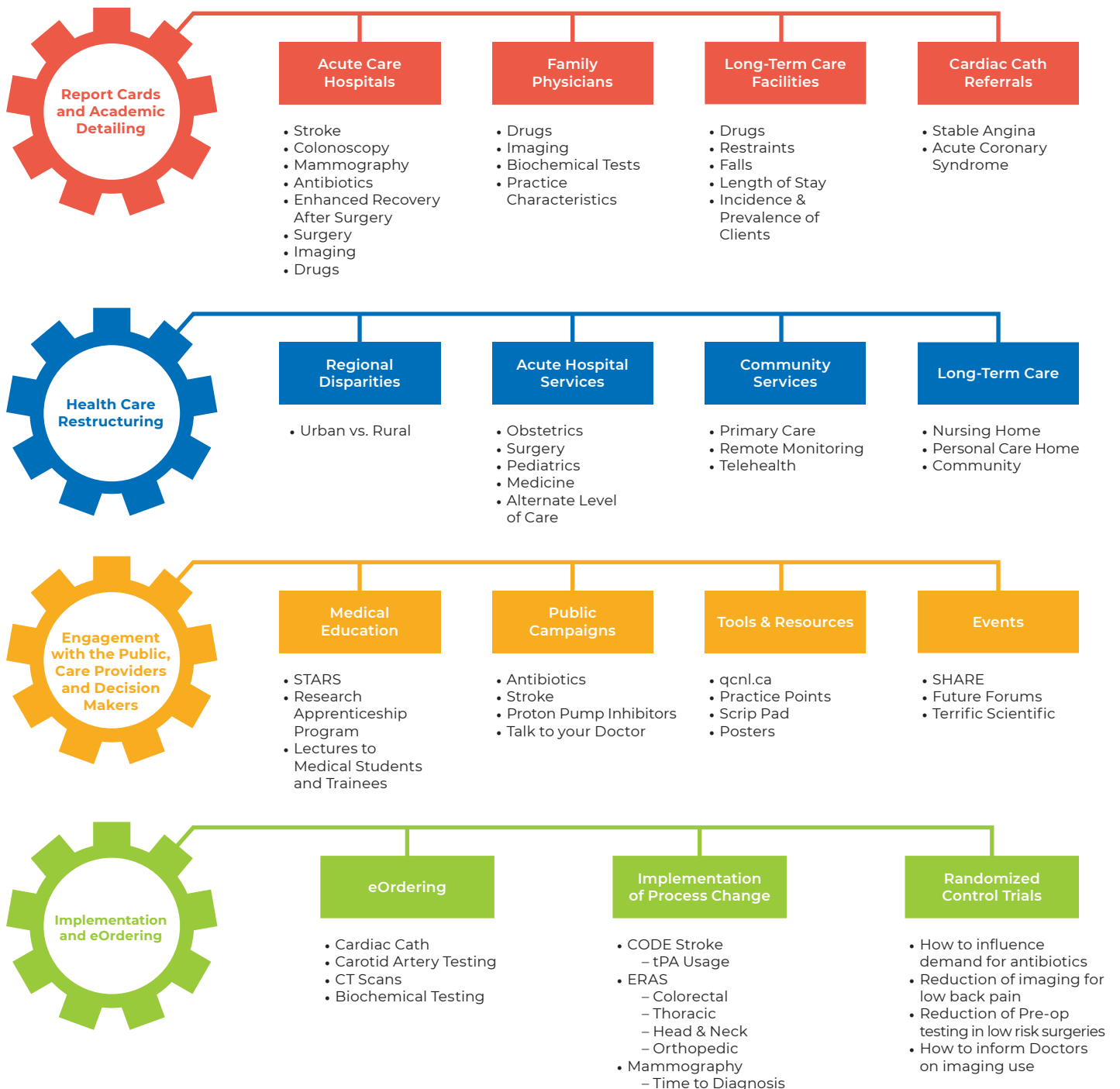
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Our Change Strategies and Projects

These change strategies and projects reflect the strategic direction of our partners and the priorities of the people of NL, as set through a patient-oriented priority-setting process.



The Case for Restructuring the Health System in NL

Objective

To examine the value and the current structure of the NL health system.

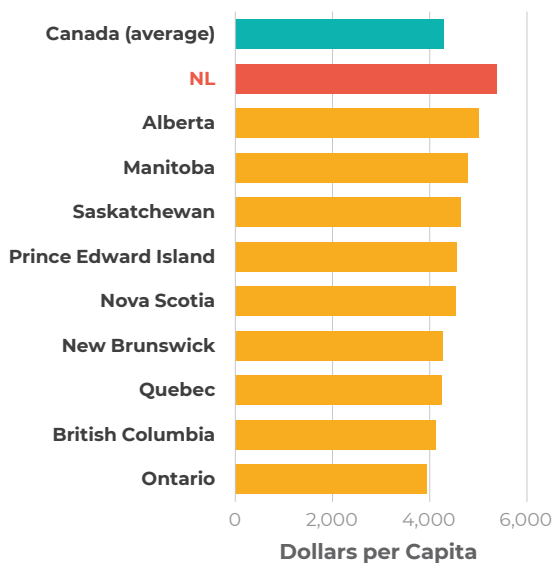
Methods

1. Provincial government health expenditure data for 2017 was obtained from Canadian Institute for Health Information (CIHI), health care outcome data was obtained from the C. D. Howe Institute/Commonwealth Fund, and population data and bed numbers were obtained from the Government of NL.
2. Regions were defined based on probable catchment areas for St. John's, the rest of the island, and Labrador hospitals. St. John's was defined as economic zones 18–20, the Island was defined as zones 5–17, and Labrador was defined as zones 1–4.

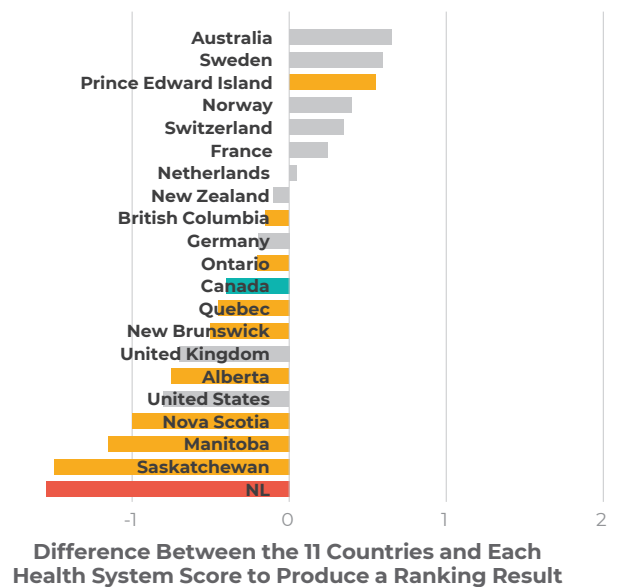
Results

- I. The NL health system provides poor value for the money spent with high per capita spending on health and low ranking for health outcomes.

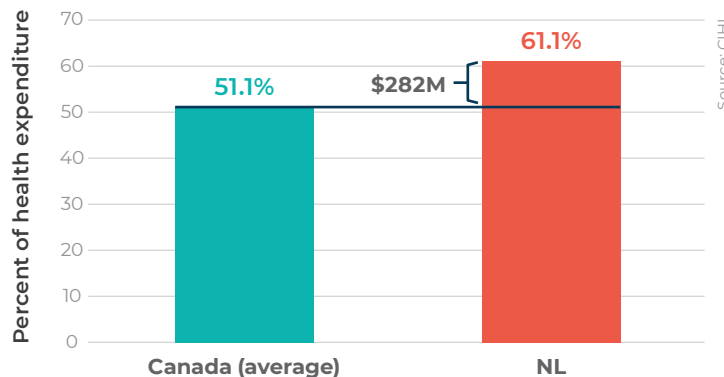
Provincial Government Health Expenditure, 2017



Health Care Outcomes

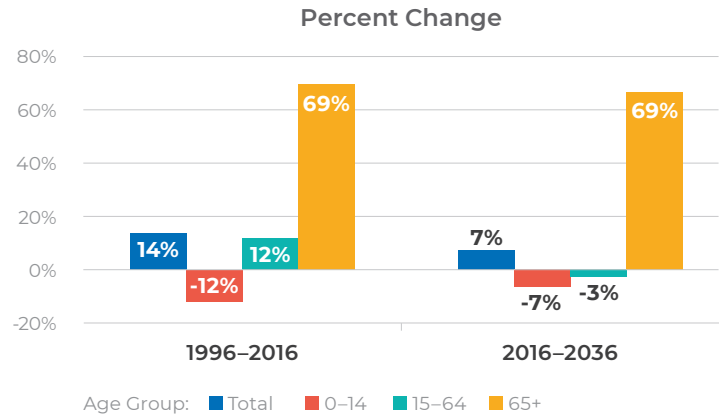
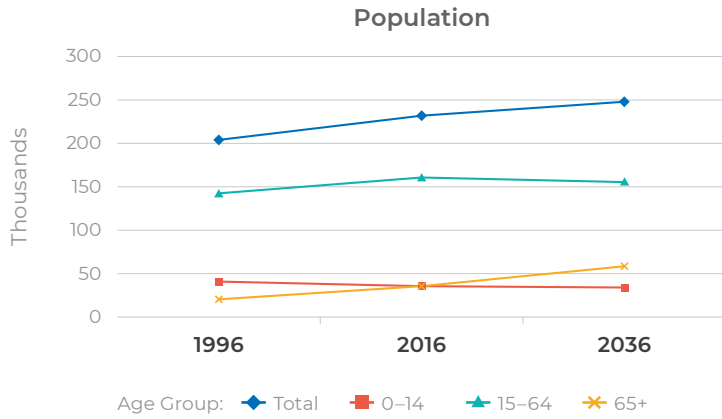


- II. Provincial spending on institutional health care is significantly higher compared to Canada.

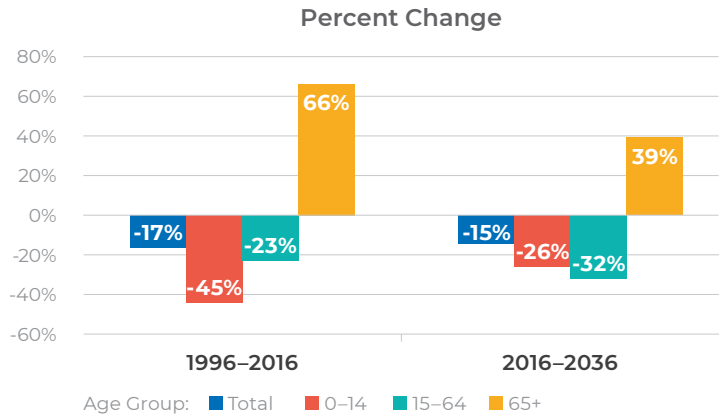
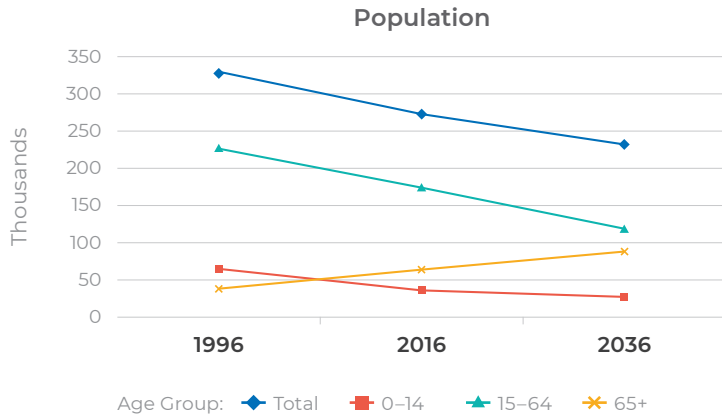


III. Demographic change has been, and will be, substantial.

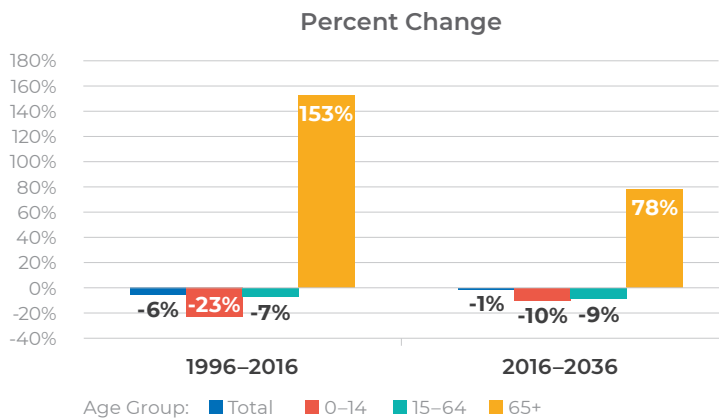
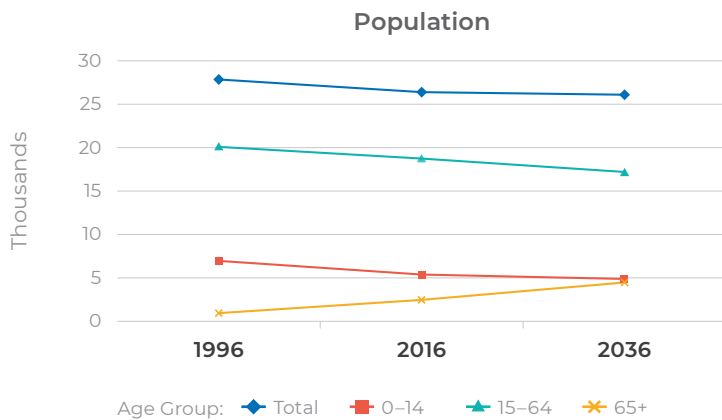
St. John's



Island (Excluding St. John's)

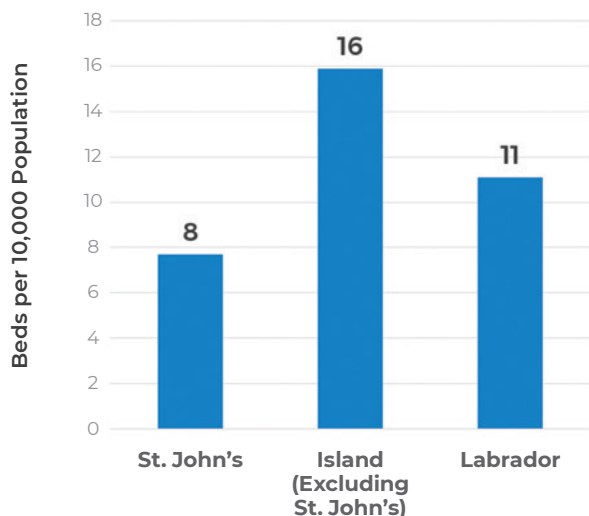


Labrador



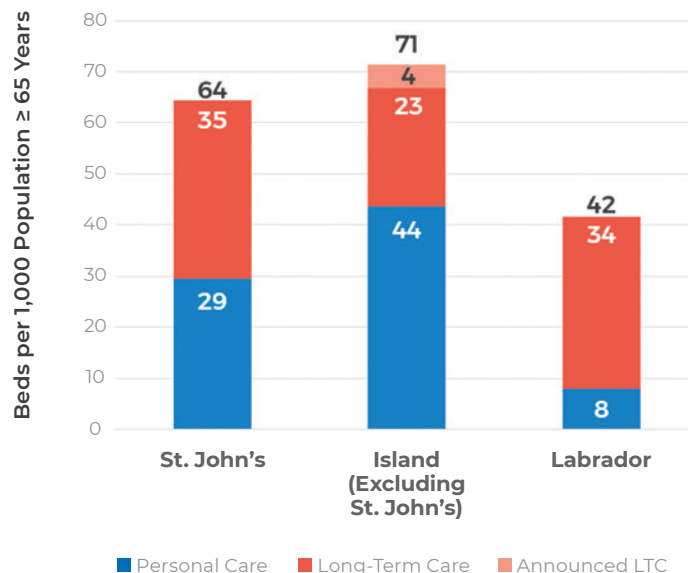
IV. The structure of the institutional health system outside St. John's is not optimal.

Disparity in Rate of Acute Medical Beds by Region



* Bed rates include 85% of medicine/surgery beds.

Disparity in Rate of Long-Term Care Beds by Region

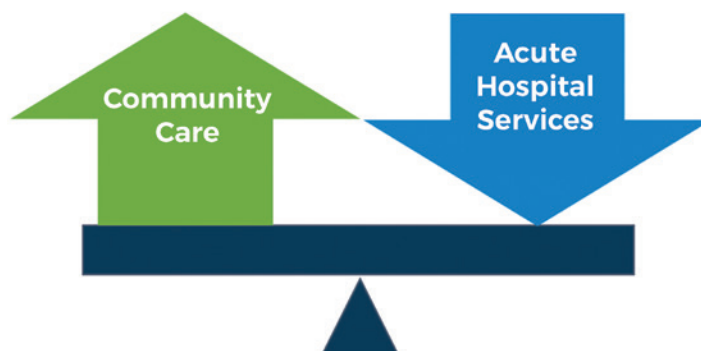


Conclusions

- NL spends more per capita on health care than any other province, but achieves the worst health outcomes.
- Additional health care expenditure is driven by above average spending on institutional care.
- Demographic change in NL is increasing the need for health care services for seniors and decreasing the need for health care services for children.
- The structure of the institutional health system outside St. John's is not optimal, as there is an excess of acute medical beds and a deficit of long-term care beds.

A Proposal to Improve Quality of Care

Balance improved access to primary care collaborative centres, emergency rooms to stabilize and transfer, long-term care, and public health in local communities with acute care located in specialized centres.



Utilization of Medicine Beds in NL: Alternate Level of Care and Long-Term Care Availability

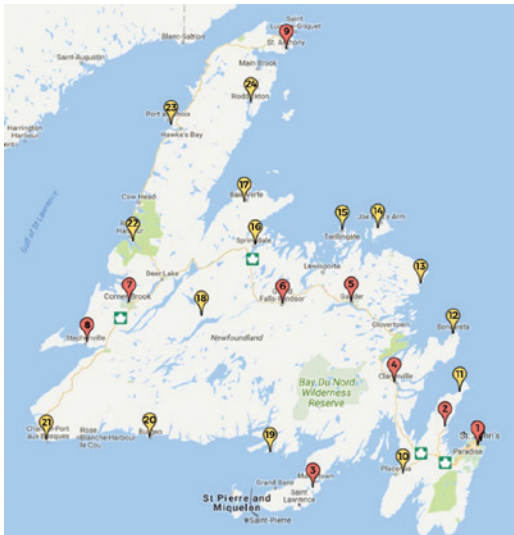
Objective

To determine the utilization of medicine beds, including the rates of use for alternate level of care (ALC) patients, and its relation to regional availability of long-term care beds.

Methods

1. Data on medicine beds and occupancy were obtained from the Government of NL. ALC data were obtained from the NL Centre for Health Information.
2. The Eastern Health (EH) region was divided into two regions based on probable catchment areas for urban versus rural hospitals. The St. John's region was defined as the portion of EH including economic zones 18–20, while the Tri-Pen region was defined as the portion of EH including economic zones 15–17.
3. The Waterford and Janeway Hospitals were excluded from the analysis.

Current Medicine Beds



Provincial Beds:

527 medicine beds + 132 medicine/surgery beds

* With available data, occupancy of medicine/surgery beds exclusively by medical patients could not be calculated.

Newfoundland Hospitals

1. **St. John's (Health Sciences Centre)**
Beds: 92; Occupancy: 98%; ALC: 7%
St. John's (St. Clare's)
Beds: 76; Occupancy: 93%; ALC: 17%
2. **Carbonear**
Beds: 48; Occupancy: 90%; ALC: 11%
3. **Burin**
Beds: 22 Med/Surg; Occupancy: 84%*; ALC: 13%
4. **Clareville**
Beds: 28 Med/Surg; Occupancy: 83%*; ALC: 18%
5. **Gander**
Beds: 27; Occupancy: 110%; ALC: 24%
6. **Grand Falls-Windsor**
Beds: 54; Occupancy: 99%; ALC: 29%
7. **Corner Brook**
Beds: 91; Occupancy: 95%; ALC: 35%
8. **Stephenville**
Beds: 25+16 Med/Surg; Occupancy: 104%*; ALC: 30%
9. **St. Anthony**
Beds: 32 Med/Surg; Occupancy: 62%*; ALC: 26%

Labrador Hospitals

- Happy Valley-Goose Bay**
Beds: 20 Med/Surg; Occupancy: 110%*; ALC: 14%
- Labrador City**
Beds: 14 Med/Surg; Occupancy: 86%*; ALC: 4%

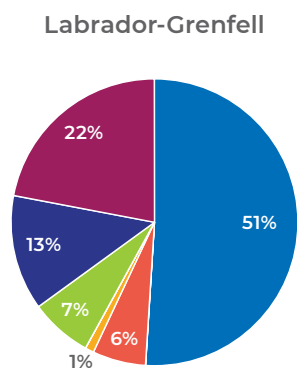
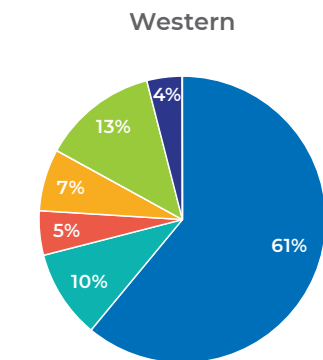
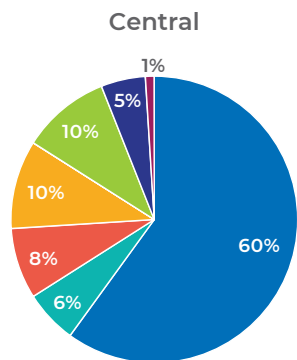
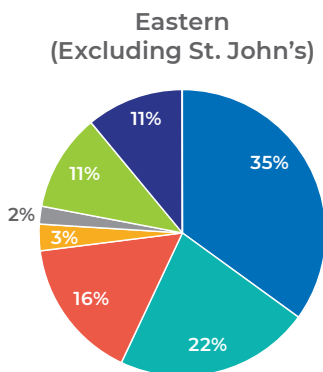
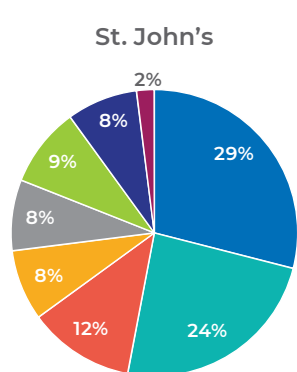
Health Centres

Overall

Occupancy: 71%; ALC: 26%

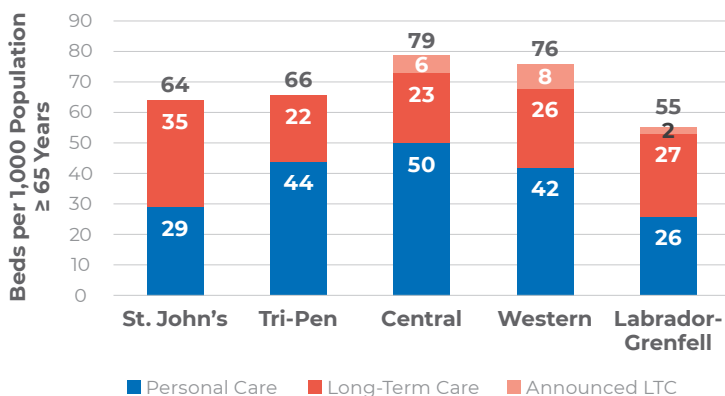
10. **Placentia**
Beds: 10; Occupancy: 39%; ALC: 22%
11. **Old Perlican**
Beds: 4; Occupancy: 41%; ALC: 25%
12. **Bonavista**
Beds: 10; Occupancy: 84%; ALC: 22%
13. **New-Wes-Valley**
Beds: 12; Occupancy: 74%; ALC: 16%
14. **Fogo**
Beds: 5; Occupancy: 75%; ALC: 24%
15. **Twillingate**
Beds: 12; Occupancy: 88%; ALC: 24%
16. **Springdale**
Beds: 9; Occupancy: 70%; ALC: 20%
17. **Baie Verte**
Beds: 7; Occupancy: 65%; ALC: 43%
18. **Buchans**
Beds: 3; Occupancy: 47%; ALC: 0%
19. **Harbour Breton**
Beds: 5; Occupancy: 82%; ALC: 22%
20. **Burgeo**
Beds: 3; Occupancy: 65%; ALC: 28%
21. **Port Aux Basques**
Beds: 14; Occupancy: 84%; ALC: 28%
22. **Norris Point**
Beds: 8; Occupancy: 82%; ALC: 49%
23. **Port Saunders**
Beds: 7; Occupancy: 54%; ALC: 29%
24. **Roddickton**
Beds: 1; Occupancy: 38%; ALC: 0%

Proportion of Total ALC Length of Stay by Discharge Need

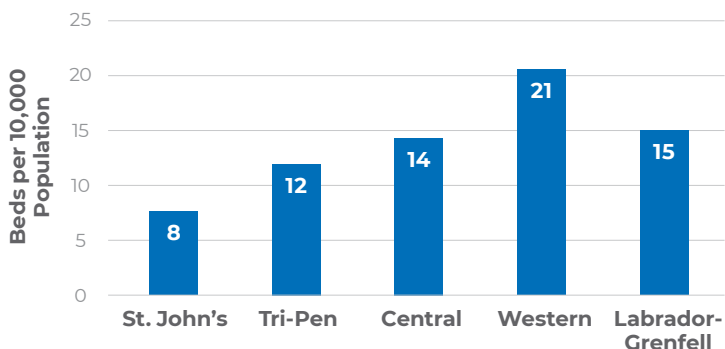


- The biggest cause of ALC length of stay in acute care hospitals is waiting for a long-term care bed.

Regional Rates of Long-Term and Personal Care Beds



Regional Rates of Medicine Beds



Conclusions

- Occupancy rates of medicine beds in hospitals exceeds optimal levels, while medicine beds in health centres are underutilized.
- Despite having significantly more medicine beds per capita than the St. John's region, over-occupancy of medicine beds in Central and Western Health is driven by high ALC levels.
- The majority of ALC days in hospital in Central and Western Health are for patients waiting for a long-term care bed.
- The structure of the institutional health sector outside St. John's is opposite to that in St. John's, with an excess of personal care and a deficit of long-term care beds, and an excess of acute hospital beds.
- Restructuring of the institutional health sector outside St. John's is necessary.

Hospital Utilization and Costs in NL

Objective

To determine the utilization of large versus small hospitals in NL and the efficiency associated with each type of facility.

Method

1. Health expenditure data and health facility data for 2017–2018 were obtained from the Canadian Institute for Health Information (CIHI).

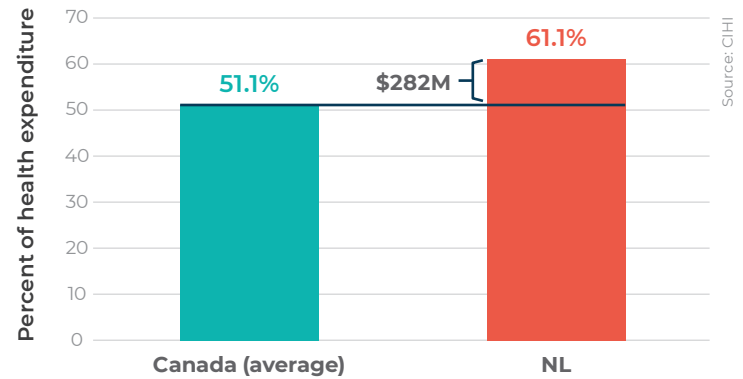
Results

■ Eastern Health ■ Western Health
■ Central Health ■ Labrador-Grenfell Health

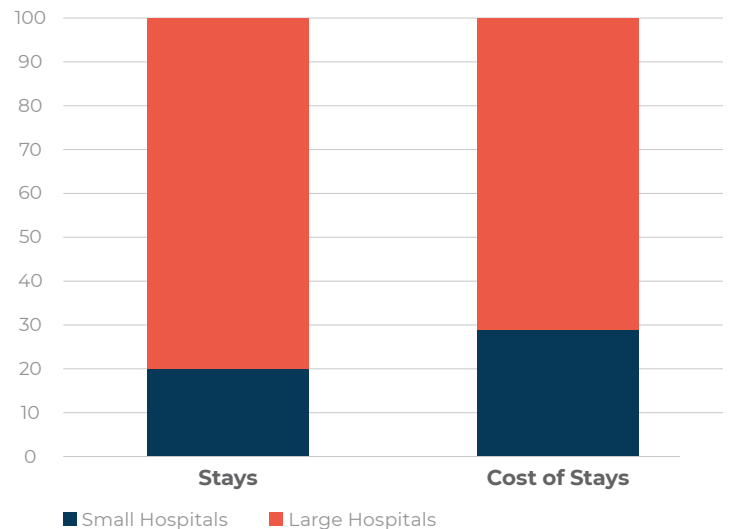
Large Hospitals	Stays	Beds	Occupancy	Cost/Stay
St. Clare's	6,926	192	76%	\$5,371
Health Sciences Centre	19,566	328	90%	\$5,482
James Payton Memorial	2,851	85	97%	\$7,405
Central NL Regional	3,937	97	83%	\$6,119
Western Memorial	6,547	186	91%	\$5,678
Small Hospitals	Stays	Beds	Occupancy	Cost/Stay
Burin	1,301	35	58%	\$11,513
Dr. G.B. Cross Memorial	1,751	41	65%	\$9,394
Carbonear General	2,757	72	84%	\$7,471
Sir Thomas Roddick	1,092	44	97%	\$5,396
Charles S. Curtis Memorial	1,238	42	76%	\$10,914
Labrador Health Centre	1,666	24	94%	\$9,493
Labrador West	903	15	90%	\$8,947
Acute Care Health Centres*	Stays	Beds	Occupancy	Cost/Stay
Eastern Health	477	20	63%	\$9,126
Central Health	824	40	77%	\$8,790
Western Health	577	22	97%	\$6,123

* Excludes six health centres for which cost per stay data is unavailable.

Provincial Government Spending on Institutional Health Care, 2017–2018



Cost of Acute Care in Small Versus Large Hospitals



- 20% of stays are at small hospitals but they comprise 30% of costs.

Conclusions

1. Assuming an optimal occupancy of 85%, most large hospitals are operating over capacity, while many small hospitals are operating under capacity.
2. Small hospitals account for only 20% of hospital stays in 2017–2018 but almost 30% of the total cost of stays.

Choosing Diagnostic Tests Wisely

Objective

To choose testing strategies wisely so as to efficiently reach a diagnosis, in a manner that compassionately benefits the patient, and avoids unnecessary costs.

Practice Points

Table 1. Questions To Ask When Considering Testing

1)	Will the results change what I am going to do?	If not, do not test!
2)	Am I confident that my diagnosis is very likely or that alternate diagnoses are unlikely?	If yes to both, do not test!
3)	Do the risks of the test outweigh the benefits?	If yes, do not test!

An example of 1 is doing a CT scan of the lumbar region in a patient with low back pain/sciatica for less than 3 months who you will not refer to a specialist.

An example of 2 is ordering an ANA test in a patient who you believe has osteoarthritis of the knee.

An example of 3 is ordering CT scans, with the attendant risk of cancer from radiation, in patients who do not have red flags for serious disease.

- **Sensitive Tests** are good at ruling out conditions (Table 2). If the test is negative, one can be reassured that a particular diagnosis is not present. However, sensitive tests may have a high False Positive rate, suggesting disease is present when it is not.
- **Specific Tests** are good at ruling in conditions (Table 2). If the test is positive, one can be reassured that a particular diagnosis is present. Specific tests may have a high False Negative rate, suggesting disease is absent when it is actually present.
- **Positive Predictive Value** provides the probability a patient with a positive test actually has the disease.
- **Negative Predictive Value** provides the probability a patient with a negative test does not have the disease.

Table 2. Assessment of Diagnostic Tests

	Disease Present			
		Yes	No	Total
New Test	Positive	True Positive a	b False Positive	a + b
	Negative	c False Negative	d True Negative	c + d
Total		a + c	b + d	

Sensitivity: $a/(a+c)$
Specificity: $d/(b+d)$

Positive predictive value: $a/(a+b)$
Negative predictive value: $d/(c+d)$

- Often there is a trade-off between sensitivity and specificity.
- Some tests are not specifically associated with a given diagnosis and may need to be interpreted in context.
- Tests may be done in groups at the same time or sequentially.

Conclusions

1. Over testing can lead to false positive results which can lead to additional testing and or concern on the part of the patient.
2. Good screening tests should be sensitive with a reasonably low false positive rate.

The Case for a Quality of Care Council in Newfoundland and Labrador

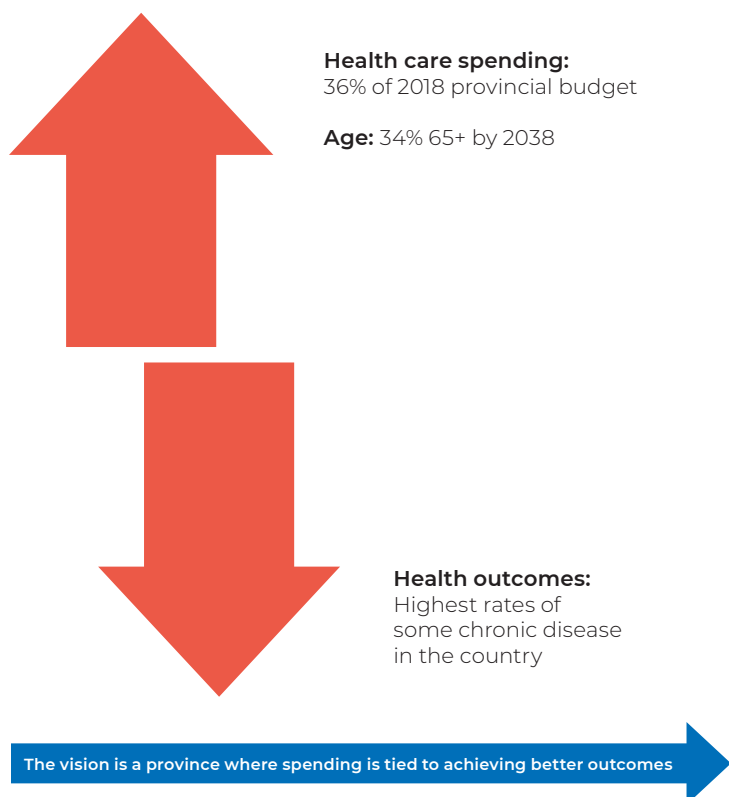
Objective

To understand the value of a Quality of Care Council in Newfoundland and Labrador for better use of health care resources.

Current Health System in NL

- Health care spending is high while health outcomes remain poor compared to the rest of Canada.
- Demographic change in the province is substantial.
- The structure of the health system is not optimal.
- There is inappropriate and unnecessary use of drugs, laboratory medicine and diagnostic imaging, and deficits in getting the right treatment to the right patient at the right time.

Provincial Context



Barriers to Quality Care in NL

Quality of Care NL has identified a number of barriers to quality care and issues influencing inappropriate use of health care resources:

1. Fragmentation of health care sector.
2. Shift in recent years from acute care to chronic disease prevention and management, and addressing requirements of an aging population.
3. Difficulty in implementing change.
4. Patient demand and difficulty in meeting demand.
5. No single entity responsible for quality of care.

Solution

Optimize current resources to provide the best care and improve health outcomes by:

Making evidence-based decisions about how to best use resources

Engaging with the public and the health care system

Ensuring an entity is responsible for health quality and safety in the province

Provincial Health Quality Councils

- Independent, third-party, government funded entities with legislated mandates to improve health quality.
- Governed by a Board of Directors that reports to Minister of Health.
- Include a view of quality that is system-wide and patient-centred, with elements of efficiency, safety, accessibility, and effectiveness.

Table 1. Comparison of Provincial Health Councils

Province	Year Created	Legislation	Operating Budget	Patient Engagement	Develops Tools & Guidelines	Patient/Client Surveys
BC	2008	✗	\$7.0M	✓	✓	✗
AB	2002	✓	\$6.7M	✓	✓	✓
SK	2002	✓	\$5.5M	✓	✓	✓
ON	2005	✓	\$40.5M	✓	✓	✗
NB	2008	✓	\$2M	✓	✗	✓

Value and Strength of Health Quality Councils, According to Their CEOs:

1. Accountability infrastructure in place for quality of care in the province.
2. Independent entity to bring health care stakeholders together on quality agenda:
 - a. Objective
 - b. Legislation gives credibility and force to mandates
 - c. Builds trust and likability among stakeholders
3. Accelerators/influencers of change to help other organizations meet goals faster:
 - a. Get information into the hands of those that need it
 - b. Monitor and report on improvements
4. Apply a consistent approach to measurement and surveying.
5. Increases patient/public involvement.

What Would a Quality of Care Council Look Like in NL?



Personal Report Card Provided to Physicians Referring Patients With Stable Angina for Cardiac Catheterization

Choosing Wisely Canada Recommendation

Don't order or refer for percutaneous coronary intervention in patients with stable Coronary Artery Disease (CAD) who do not have high-risk features, are asymptomatic, or have not been on optimal medical therapy.

Practice Points

1. Typical angina is present when the following three criteria are present:
 - a. Retrosternal discomfort
 - b. Provoked by exercise or stress
 - c. Relieved by rest or NTG
2. The presence of one of the three criteria implies non-anginal chest pain with low probability of critical CAD; two criteria imply atypical angina with intermediate probability of critical CAD.
3. Exercise stress testing adds little to the probability of diagnosing critical disease in those without known CAD.
4. Advanced non-invasive testing (Myoview testing or coronary CT) to identify patients at high ischemic risk improves the probability of diagnosing critical CAD with catheterization.
5. The percentage of males referred for stable angina from 2014–2017 diagnosed with critical CAD was 60% and of females, 32%. Consequently, advanced non-invasive testing, particularly in women with stable angina, is advised.

In Patients WITH Established CAD	
Exercise Stress Test (EST) can be used to assess exercise tolerance and risk stratify	
Functional imaging more helpful to assess for Ischemia (Persantine or Exercise Myoview) – invasive coronary angiography (ICA) referral if high risk features	
High Risk	Large area of ischemia (particularly if anterior) <ul style="list-style-type: none"> • Multiple moderate defects • LV dysfunction with exertion (or transient ischemic dilation) • Severe LV dysfunction (if not already pre-existing)
Low Risk	Can treat with antianginals. Refer for ICA if significant symptoms despite medical therapy
No mortality benefit of ICA vs medical therapy in stable angina – referral for ICA should be <u>symptom driven or high risk features present.</u>	

In Patients WITHOUT Established CAD	
EST particularly poor at establishing significant disease in women (Our data and prior published data)	
If EST as first line test – do not refer directly for Cardiac Cath unless High Risk	
High Risk	Duke Score less than -11
	Ventricular arrhythmias (VT or VF) – ectopy with exercise – use further non-invasive tests
	Diagnostic ECG abnormality at <3min
	Prolonged ST depression >5 min into recovery
	Hypotensive BP response to exercise
	ST elevation
Do NOT Perform EST	Abnormal baseline ECG – no significant diagnostic value
	Asymptomatic – no testing indicated

Methods

1. All patients in the APPROACH database who had cardiac catheterization (CC) for stable angina from 2007–2017 were analyzed. Critical CAD was defined as ≥ 1 vessel with stenosis ≥ 70% or left main artery ≥ 50%.
2. To improve the appropriateness of referral, in summer 2019, each referring physician was sent by email and by registered mail a personal report card and detailing concerning patient work-up.

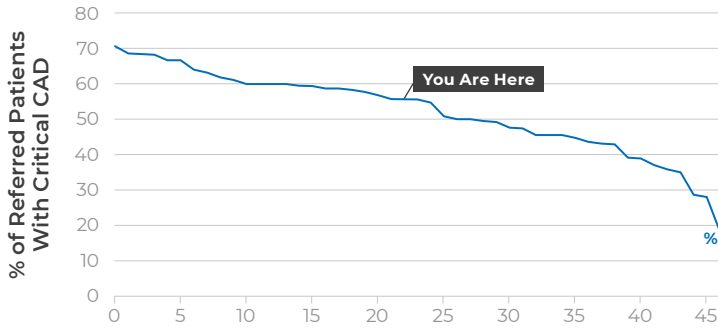
The content of the report card compared to 46 peers is presented using data from one consenting physician.

Results (Sample Personal Report)

Percentage With Critical CAD in All Referred Patients

Number of Patients Who Had CATH	Number With Critical CAD	% With Critical CAD	Tertile
174	97	55.7	Mid

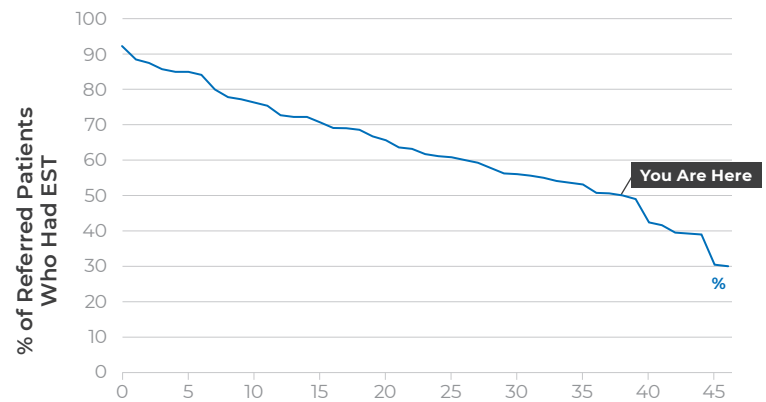
Percent of Referred Patients With Critical CAD Ranked by Physician



Percentage of All Patients Who Had Exercise Stress Test (EST)

Number of Patients Who Had EST	% With EST	Tertile
88	50.6	Low

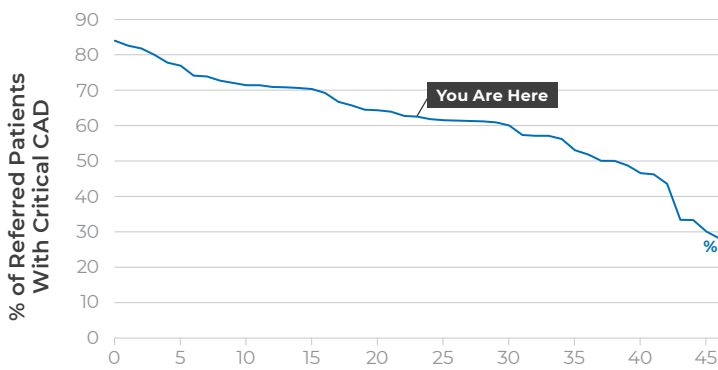
% of Referred Patients Who Had Exercise Stress Test Referred by Physician



Percentage with Critical CAD in All Referred Males

Number of Male Patients Who Had CATH	Number With Critical CAD	% With Critical CAD	Tertile
118	74	62.7	Mid

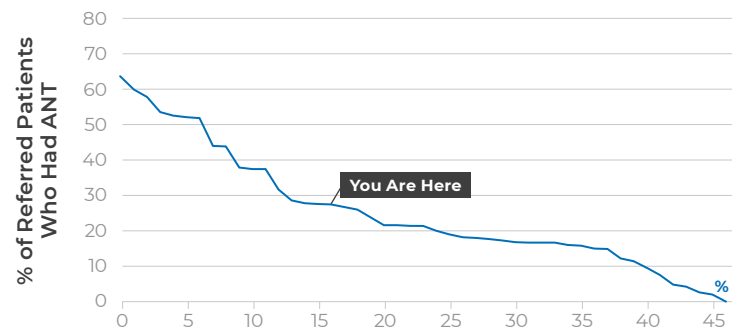
Percent of Referred Male Patients With Critical CAD Ranked by Physician



Percentage of All Patients Who Had Advanced Non-Invasive Test (Coronary CT or Myoview) (ANT)

Number of Patients Who Had ANT	% With ANT	Tertile
48	27.6	Mid

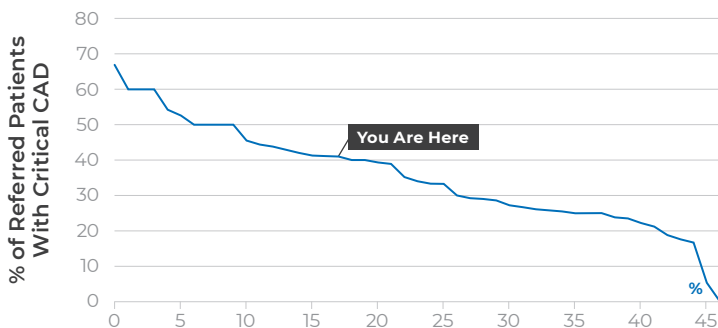
% of Referred Patients Who Had at Least One ANT Referred by Physician



Percentage with Critical CAD in All Referred Females

Number of Female Patients Who Had CATH	Number With Critical CAD	% With Critical CAD	Tertile
56	23	41.1	Mid

Percent of Referred Female Patients With Critical CAD Ranked by Physician



Conclusion

1. Invasive coronary angiography should only be undertaken in patients with stable angina with high risk features on history or on advanced non-invasive testing, provided coronary revascularization is considered an option.

Evaluation of eOrdering for Cardiac Catheterization (MyCCath)

Objective

To obtain baseline data for evaluation prior to implementing eOrdering for cardiac catheterization (CC).

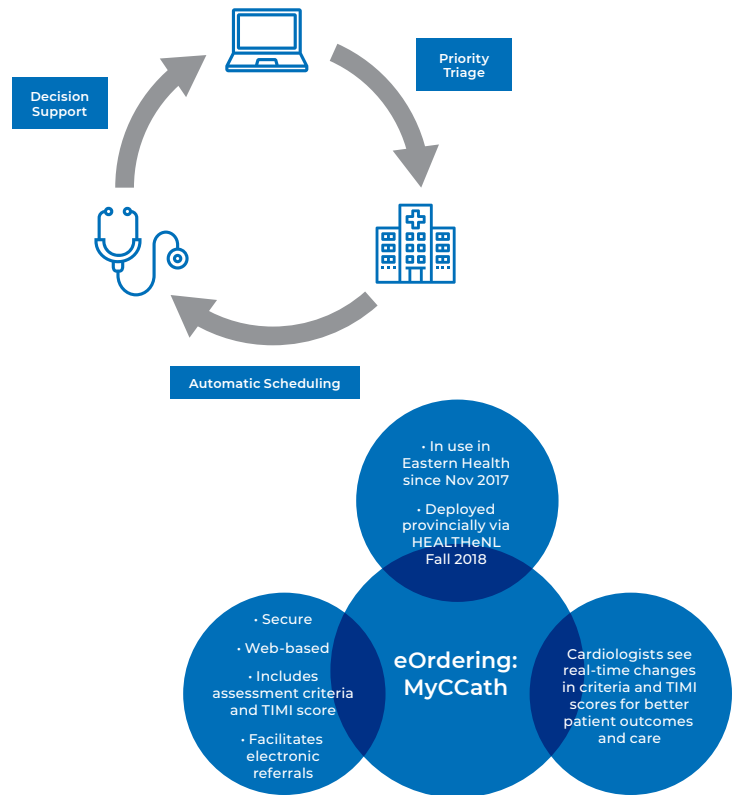
Practice Points

1. Electronic test ordering with embedded decision support may enhance clinical efficiency and effectiveness.
2. Most test referrals are paper-based and as such may be slow, illegible, or missing information.
3. Priority for CC requires accurate clinical information.
4. To address these issues, NLCHI, Quality of Care NL, and Eastern Health are collaborating in an eOrdering solution for diagnostic image ordering in two clinical areas: vascular laboratory referrals and CC referrals.

Current Practice

1. Following an acute coronary event a risk score is calculated called the Thrombolysis in Myocardial Infarction (TIMI) score.
2. The TIMI score is used to predict adverse outcomes in patients with unstable angina and non-ST-elevation myocardial infarction. It estimates percentage risk at 14 days of cardiac event (mortality, new or recurrent myocardial infarction, or severe recurrent ischemia requiring urgent revascularization).
3. If the TIMI score changes, patients must return to the CC lab for assessment and appropriate treatment.
4. Real-time change in TIMI score and other patient criteria was monitored by telephone and/or paper/ fax which lead to issues with illegible or missing information and delays in treatment.

Figure 1.
Basic Components of our eOrdering Solutions



Methods

1. Partial evaluation of MyCCath included: uptake, satisfaction and perceived efficiency. Wait times, health outcomes, and cost savings will be evaluated.
2. Data were obtained from APPROACH on patients having CC procedures, by region, from 2014–2017 to determine rates of CC by indication and the percentage diagnosed with critical coronary artery disease (CAD) by indication.
3. A focus group was held with the change management team to capture learnings, successes, challenges, and improvement opportunities.
4. A user survey was emailed to gain insight on training and communication, opinions on efficiency, and satisfaction.
5. Interviews were conducted with staff in the lab to obtain their perceptions of the tool, the benefits, and any challenges they might have experienced.

Results

- The volume of referrals via MyCCath increased since its initial launch, from 60 referrals in December 2017 compared to 234 referrals in December 2019.
- As of 15 Feb 2019, all referrals must be made via MyCCath.
- Baseline data show regional differences in rates of CC by indication per 1,000 adults and the percentage diagnosed with CAD.

Table 1. Percent of Patients With Stable Angina Who Had Critical CAD by Region

Region	Average Standardized Rate / Year (2014–2017)	% Critical CAD
Eastern	2.35	50.2
Central	2.89	50.0
Western	1.52	58.8
Labrador-Grenfell	1.76	51.3

Table 2. Percent of Patients With STEMI Who Had Critical CAD by Region

Region	Average Standardized Rate / Year (2014–2017)	% Critical CAD
Eastern	0.86	78.0
Central	0.84	71.0
Western	0.69	77.0
Labrador-Grenfell	0.77	70.3

Table 3. Percent of Patients With NSTEMI Who Had Critical CAD by Region

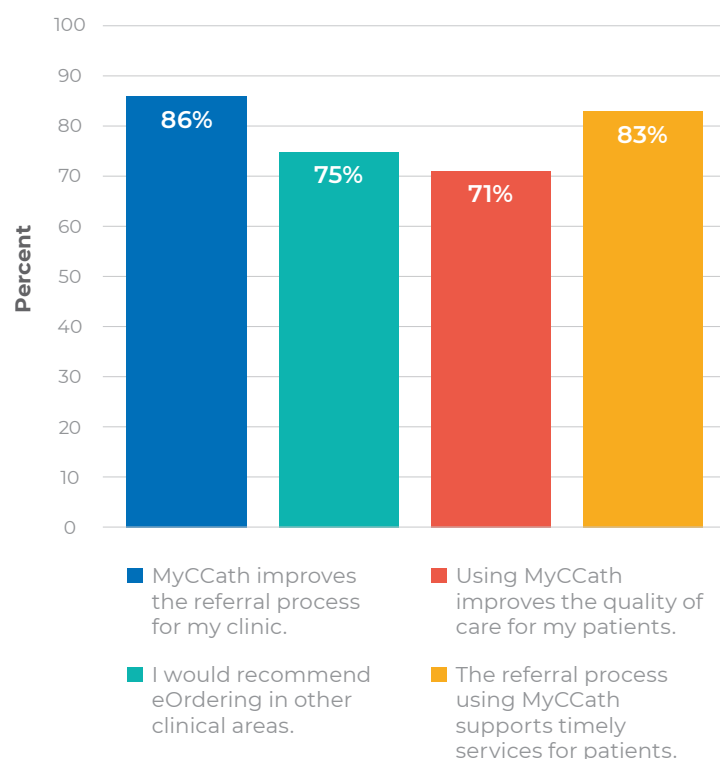
Region	Average Standardized Rate / Year (2014–2017)	% Critical CAD
Eastern	2.11	68.9
Central	2.33	67.8
Western	1.34	73.5
Labrador-Grenfell	2.05	62.9

Table 4. Percent of Patients With Unstable Angina Who Had Critical CAD by Region

Region	Average Standardized Rate / Year (2014–2017)	% Critical CAD
Eastern	0.87	55.7
Central	1.01	58.7
Western	0.69	64.7
Labrador-Grenfell	0.94	36.3

- Western Health had the lowest rate of CC but had the highest rate of diagnosis of critical CAD by indication.
- MyCCath was seen as a great improvement over faxed referrals.

Figure 2. User Survey Item Agreement



- Areas for improvement include:
 - a. integrating with Meditech to enable users to pull in relevant information
 - b. expanding user role to include nurses
 - c. allowing access outside hospital setting

Conclusions

1. MyCCath has been positively received by users.
2. Key findings include: the importance of stakeholder communication and early engagement, the value of simplicity and consistency, and an understanding of organizational barriers.

Appropriateness of Classification of Priority and of Surveillance Interval for Colonoscopy in Eastern Health

Guideline

Access to colonoscopy should be guided by priority and optimal times have been defined by the Canadian Association of Gastroenterology.

- P1: Priority 1 (Urgent):** 0–14 days
- P2: Priority 2 (Non Urgent):** 0–60 days
- P3: Priority 3 (Baseline Screening):** 0–182 days
- P4: Priority 4 (Surveillance):** Variable

Practice Points

1. Surveillance interval (Priority 4) is dependent on prior colonoscopy results, histology from excised tissue and risk of subsequent cancer.
2. In 2017, Eastern Health hired a waitlist manager to address the issues related to access to colonoscopy.

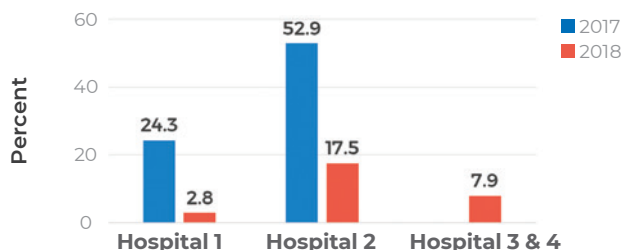
Methods

1. Waitlist management was ongoing in the Peninsulas' hospitals during 2017 and continued in the city hospitals in 2018.
2. During the utilization review, priority rankings were assessed and reclassified and Priority 4 surveillance intervals were reviewed and modified.
3. Appropriateness of priority rankings and Priority 4 surveillance intervals were compared for 2017 and 2018.

Appropriateness of Priority Rankings (2018)

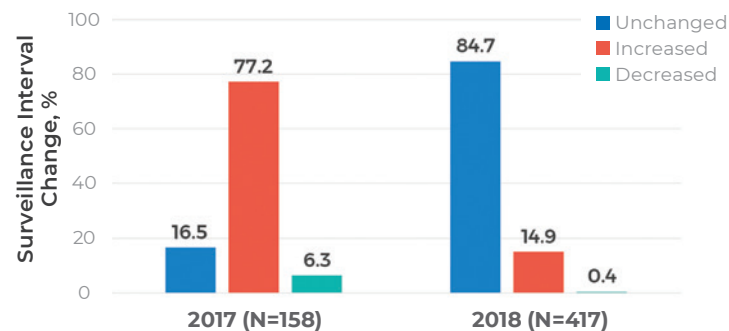
Actual Classification	Reclassification after Utilization Review			
	Priority	P1–P3	P4	Total
	P1–P3	6,317	718	7,035
	P4	37	9,254	9,291
Total	6,354	9,972	16,326	

Percentage of Priority 1–3s Reclassified as P4s by Hospital and by Year

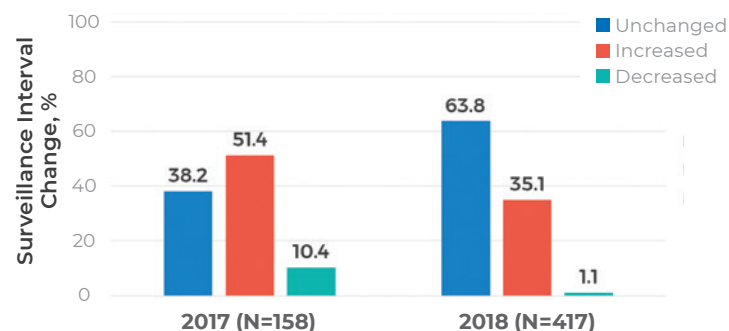


Surveillance Interval Change in Appropriately Classified P4s by Year Following Utilization Review

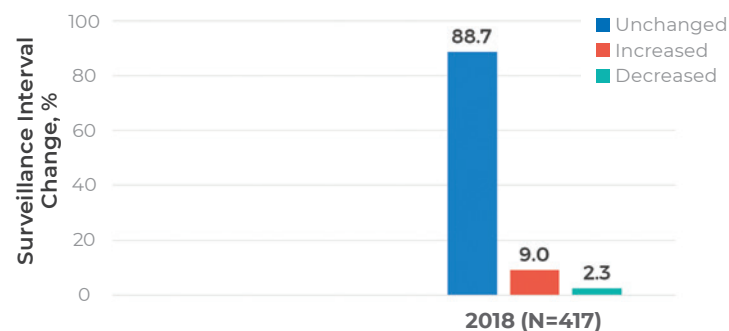
Hospital 1



Hospital 2



Hospital 3 & 4



Conclusions

1. In two hospitals, misclassification of priority was high and this was associated with surveillance intervals that were shorter than appropriate. Following utilization review, classification substantially improved as did surveillance interval.
2. In the two city hospitals, the size of the misclassification problem was small and surveillance intervals were appropriate.

Access to Colonoscopy in NL — 2019 Update

Guideline

Access to colonoscopy should be guided by priority and optimal times have been defined by the Canadian Association of Gastroenterology.

- Priority 1 (Urgent): 0–14 days
- Priority 2 (Non Urgent): 0–60 days
- Priority 3 (Baseline Screening): 0–182 days
- Priority 4 (Surveillance): Variable

Practice Points

- Monitoring wait times and defining targets for care can aide in improving access to health care.
- Between 2016 and 2017, utilization review in the Peninsulas' hospitals of Eastern Health (EH) led to significant improvement in access to colonoscopy. However, access was not optimal in every region of EH.

Methods

- Data were obtained from Community Wide Scheduler for five hospitals in EH: Burin, Carbonear, GB Cross, Health Sciences Centre (HSC) and St. Clare's Mercy (SCM), and from two hospitals in Western Health (WH): Western Memorial (WM) and Sir Thomas Roddick (STR).
- Referral rates and access to colonoscopy were compared for EH and WH.

Results

Summary of Colonoscopy Referral Rates

	Referral Rate per 1,000 Persons (≥20 yrs)			
	Eastern		Western	
	2016	2017	2016	2017
Priority 1	6.4	5.6	6.2	4.8
Priority 2	18.9	18.7	26.4	30.5
Priority 3	4.9	4.3	2.1	1.2
Total	30.2	30.6	34.7	36.5

Comparison of 2016 & 2017 Data by Region

Region	Median Time to Colonoscopy (Days)					
	Priority 1		Priority 2		Priority 3	
	2016	2017	2016	2017	2016	2017
Tri-Peninsulas ¹	14	9	135	78	N/A	119
St. John's ²	22	20	41	40	211	132
Eastern	17	13	57	51	286	126
Western	12	13	49	63	153	207

Region	Percentage of Patients Meeting Benchmarks					
	Priority 1		Priority 2		Priority 3	
	2016	2017	2016	2017	2016	2017
Tri-Peninsulas ¹	52	68	32	40	25	64
St. John's ²	36	41	63	63	47	60
Eastern	44	56	52	55	36	62
Western	66	55	57	49	68	39

¹Burin, Carbonear & GB Cross

²HSC & SCM

Conclusions

- Population rates for Priority 1–3 colonoscopy are higher in WH compared to EH.
- Definition of priority is likely different.
- Access to colonoscopy was not optimal in both regions.
- Access has deteriorated in WH in 2017 compared to 2016, and improved in EH.

Improvement in Time From Abnormal Screening Mammogram to Final Diagnostic Test in NL — One Year Update

Canadian Partnership Against Cancer Guideline

The target times for abnormal mammogram to final diagnostic tests should be:

- a. <7 weeks in those who had a breast biopsy,
- b. <5 weeks in those who did not have a biopsy.

Practice Points

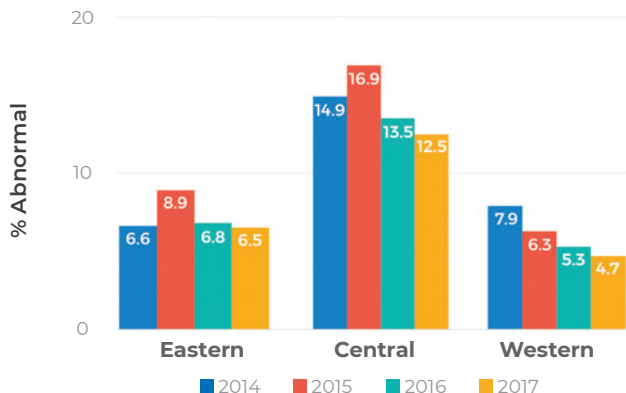
1. In Canada, 10% of screening mammograms are abnormal.
2. In NL, the time from abnormal mammogram to final test was achieved within 7 weeks in 47% of those who had a biopsy, and within 5 weeks in 65% of those who did not have a biopsy (2014–2016).

Methods (PI: J. Templeton)

1. Data were obtained from the breast screening database, diagnostic imaging, pathology reports, laboratory, and ARIA tumor registry 2014–2018, and were analysed by region.
2. In Eastern Health (EH), process changes were made to improve efficiency.

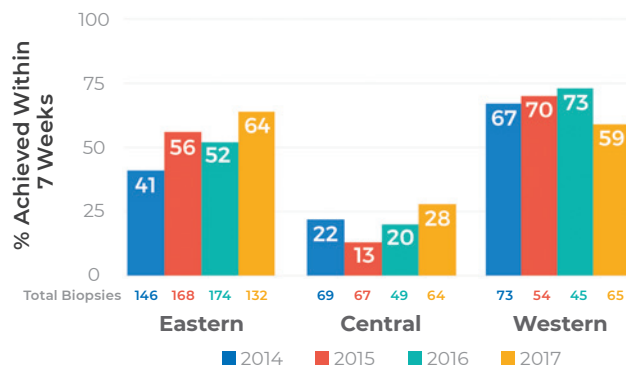
Results

**Total Mammograms 2014–2017
By Percentage Abnormal in Each Region**



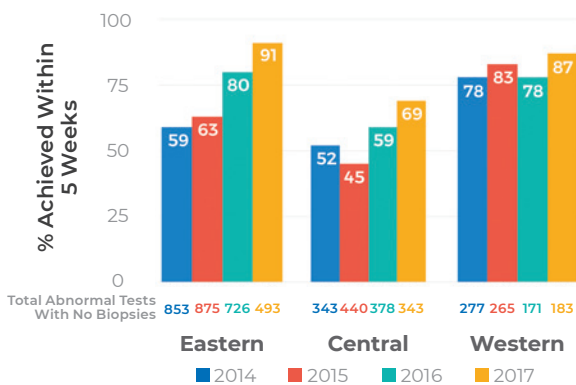
- The provincial rate of abnormal mammograms is 8.2%. Central Health (CH) consistently has the highest rate.
- 1.2% of total mammograms result in a breast biopsy, of which 1/3 are malignant.

Time to Final Diagnostic Test in Those Who Had Breast Biopsy: Percentage Achieved Within 7 Weeks by Region



- In patients who had a breast biopsy, CH had the lowest percentage of patients who had a final diagnostic test within 7 weeks; Western Health (WH) had the highest.
- Efficiency significantly improved over time in EH.

Time to Final Diagnostic Test in Those Who Had Abnormal Mammograms Without Biopsy: Percentage Achieved Within 5 Weeks by Region



- In patients who had abnormal mammogram and no breast biopsy, CH had the lowest percentage of patients who had final diagnostic test within 5 weeks; WH had the highest.
- Efficiency significantly improved over time in EH.

Conclusions

1. Time to final diagnostic test was best in WH.
2. Significant improvement in efficiency over time occurred in EH associated with improvements in process.
3. CH has the highest rate of abnormal mammograms and poor times to final diagnostic test.
4. Process improvement is necessary.

Low Thrombolysis Rates for Ischemic Stroke Persisted in Eastern Health in 2018

Canadian Stroke Best Practice Recommendation

Administer intravenous thrombolytics (tPA) for ischemic stroke within 4.5 hours of stroke onset.

Practice Points

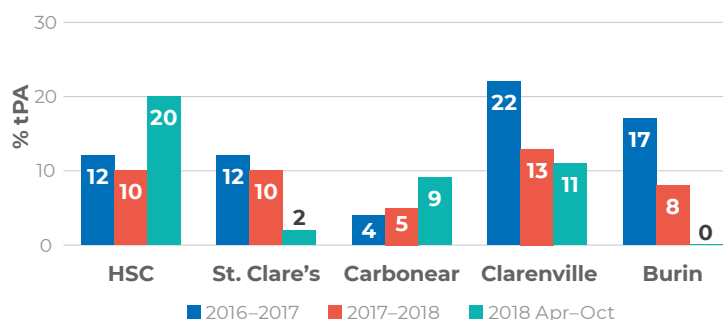
1. In NL, thrombolysis rates are poor. In 2017–2018, administration rates were <10% in all regions except Labrador-Grenfell where they were 19%. Target rates should be >25%.
2. In Eastern Health (EH), rates were ≤10% in St. Clare’s, Burin, and Carbonear hospitals.
3. Knowledge translation on best practice was undertaken from 2016 onwards.

Methods

1. Data were obtained from the Provincial Stroke Measuring and Monitoring Working Group (Project 340) collected by EH.
2. Rate of thrombolysis was the number of tPA administrations divided by the number of ischemic strokes in a given time.
3. In 2018–2019, verified data were available from 1 Apr – 30 Oct (6 months).

Data

Rate of tPA per 100 Strokes by Year and by Hospital in EH



- Compared to 2016–2017, there was a significant increase in tPA rates in 2018 (April to October) at the Health Sciences Centre (HSC) (from 12% to 20%), but a significant decrease in rates in St Clare’s, Clarenville, and Burin.

Conclusions

1. Knowledge translation did not lead to an overall improvement in thrombolysis rates at EH hospitals.
2. Implementation of process changes using CODE STROKE, a standardised evidence-based, hyperacute stroke management protocol, with electronic monitoring of times to events in the process, is necessary.

Number of tPA Administrations and of Ischemic Strokes (IS) in EH Hospitals by Year

Year	HSC		St. Clare’s		Carbonear		Clarenville		Burin		Total	
	N tPA	N IS	N tPA	N IS	N tPA	N IS	N tPA	N IS	N tPA	N IS	N tPA	N IS
2016–2017	22	184	12	98	3	71	8	36	5	29	50	418
2017–2018	20	193	10	90	3	62	3	23	2	24	38	392
2018 (Apr–Oct)	24	112	2	44	4	45	2	19	0	7	32	227

Need For Cinacalcet in Dialysis Patients With Severe Unremitting Hyperparathyroidism in Whom a Parathyroidectomy is Contraindicated

Objective

To determine the number of hemodialysis patients in Eastern Health with severe unremitting hyperparathyroidism (hyperPTH) in whom a parathyroidectomy (PTX) is contraindicated, who should be treated with the calcimimetic cinacalcet.

Practice Points

1. Severe unremitting hyperPTH is associated with bone fractures, cardiovascular events and systemic symptoms including pruritus and pain, often severe.
2. PTX is the treatment of choice, but may be contraindicated because of co-morbidity or patient concerns or inoperable parathyroid tissue.
3. Cinacalcet is an effective treatment of hyperPTH and its associated morbidity but is not funded by the NL Prescription Drug Program (NLPDP).

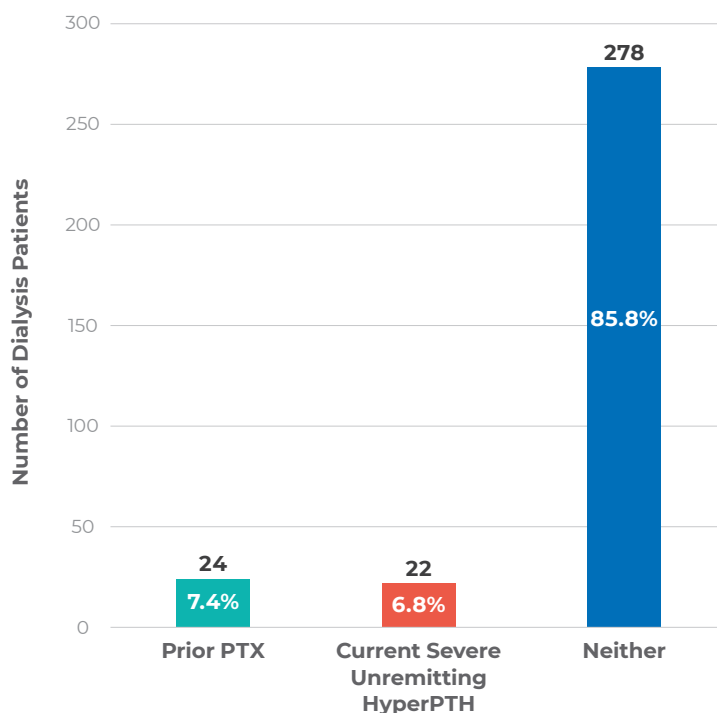
Methods (PI: S. Martin)

1. HyperPTH requiring PTX was defined as plasma PTH > 1000 pg/ml for > 6 months, with serum calcium > 2.6 mmol/l or plasma PTH > 1500 pg/ml for > 6 months.
2. Data were collected by the pharmacist from Meditech. PTX required but contraindicated was determined by consensus of nephrology physicians.

Results

- Of 22 patients with severe hyperPTH, 15 should have a PTX and in nine of these patients, it is contraindicated.

Prevalence of Prior PTX and Current Severe Unremitting Hyperparathyroidism in Dialysis Patients in Eastern Health



Conclusion

1. Three percent of prevalent maintenance dialysis patients have severe unremitting hyperPTH who should be treated with cinacalcet because a PTX is contraindicated.

Birth Rate by Hospital and Time From Home to Obstetrics Unit in NL

Objective

To use computer modelling to determine the travel time from home to obstetrics unit in the province.

Methods (PI: Dr. A. Simms)

1. Obstetrics data including hospitalizations and patient community of origin for 2007–2008 to 2017–2018 were obtained from the NL Centre for Health Information.
2. Data were analyzed using a computer model developed by the Harris Centre.

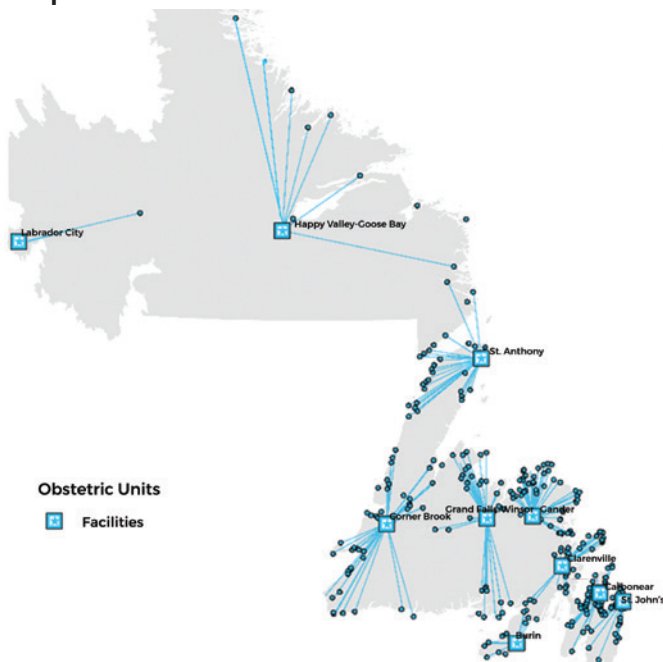
Results

Facility	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Health Sciences Centre	2,405	2,466	2,440	2,392	2,483	2,483	2,536	2,471	2,466	2,276
Carbonear General	231	200	216	118	134	159	184	182	177	160
Burin Peninsula	140	145	150	130	125	121	117	110	123	88
Dr. G.B. Cross Memorial	159	165	161	150	138	149	166	179	152	185
James Paton Memorial	312	330	296	291	252	276	231	230	221	109*
Central NL Regional	398	348	355	298	290	314	332	336	351	405*
Western Memorial	617	617	630	590	564	583	574	527	526	510
Charles S. Curtis Memorial	88	84	73	65	67	59	58	55	65	55
Labrador Health Centre	229	215	213	196	233	222	201	215	204	177
Labrador West	78	88	98	79	79	97	94	82	96	87

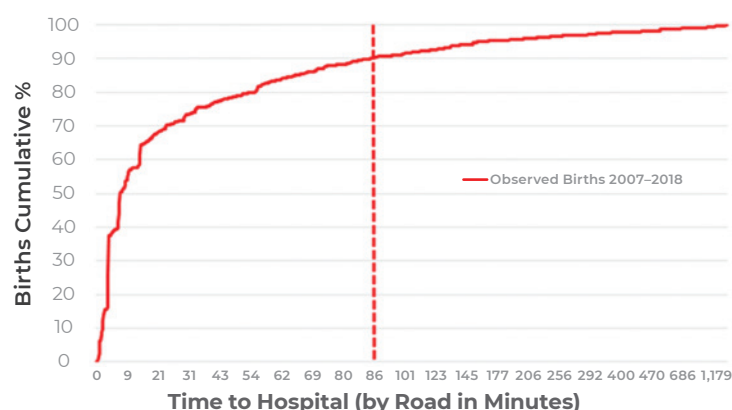
- There has been a 13% reduction in birth rate within the province, with particular reductions in Burin and St. Anthony.

*Obstetrics services were not provided at James Paton Memorial and were diverted to the Central NL Regional Health Centre for part of 2017.

Distance From Home to Obstetrics Unit by Hospital



Observed Births (2017–2018)



- 90% of mothers were within 1.5 hours of an obstetrics unit and 85% of mothers within 1 hour.

Conclusions

1. Small annual volumes of births occur in several hospitals.
2. Currently, 90% of births occur within 90 minutes travel distance from home.

Pre-Operative Testing Prior to Low Risk Surgery in NL

Choosing Wisely Canada Recommendation

Don't perform standard baseline laboratory studies, electrocardiogram or chest X-ray for asymptomatic pre-operative patients undergoing low risk, non-cardiac surgery.

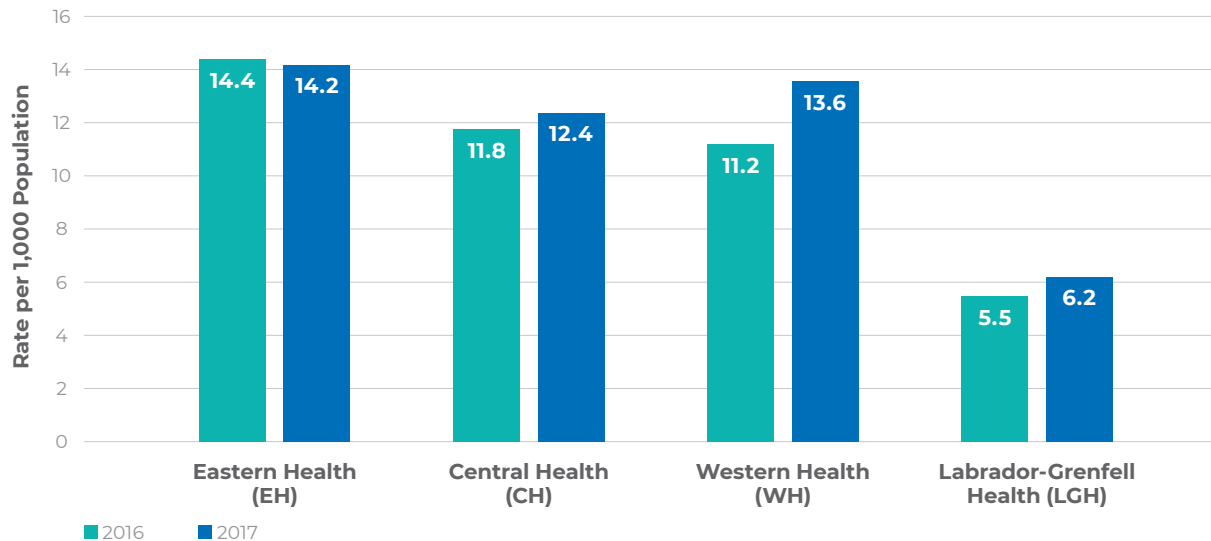
Methods

1. In 2016, Choosing Wisely NL identified pre-op testing for low risk surgeries as an area of low-value care and adopted the “Drop the Pre-op” campaign.
2. In January 2017, a medical directive was rolled out in two Eastern Health (EH) hospitals, St. Clare’s and the Health Sciences Centre.
3. The rate of chest X-rays and ECGs for healthy patients (ASA 1–2) undergoing low risk surgery reduced by more than half (23% to 10% and 69% to 31%, respectively) in 2017 compared to 2016. The rates of blood tests—Serum Creatinine, INR and Hemoglobin—saw smaller reductions (15%, 40% and 7%, respectively).
4. Data was collected for all four Regional Health Authorities from 1 Jan 2016 – 31 Mar 2018. ECG data was not available for the entire province. All patients undergoing low risk surgery were included in the province-wide data (not limited to ASA 1s and 2s).

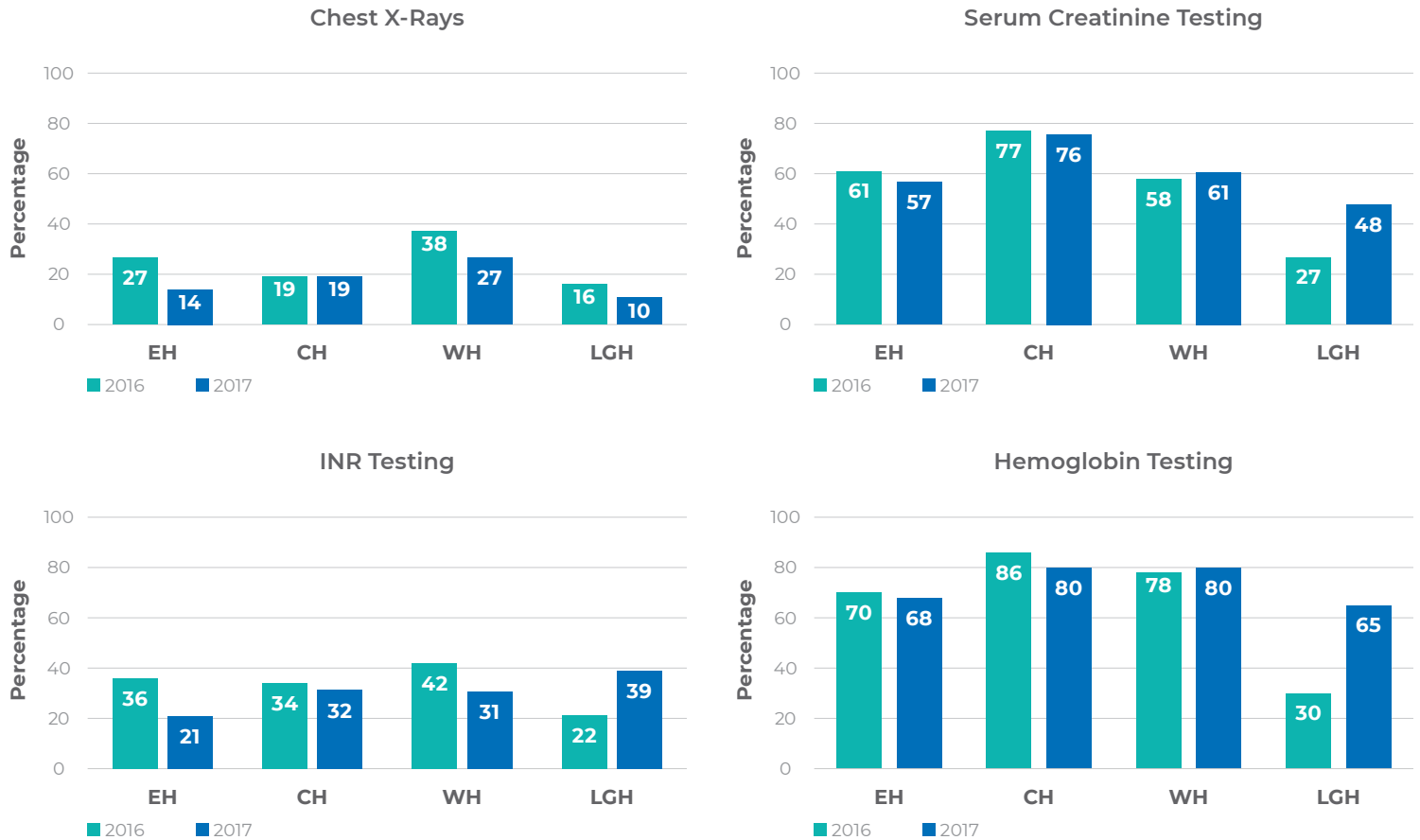
Regional Health Authority	2016	2017	2018 1 st Quarter	Total
Eastern Health	4,613 (68%)	4,538 (65%)	1,306 (70%)	10,455 (67%)
Central Health	1,116 (16%)	1,152 (17%)	258 (14%)	2,524 (16%)
Western Health	883 (13%)	1,062 (15%)	244 (13%)	2,187 (14%)
Labrador-Grenfell Health	205 (3%)	231 (3%)	72 (4%)	506 (3%)
Total	6,814	6,980	1,877	15,669

Results

Rate of Low Risk Procedures per 1,000 Population by Regional Health Authority (RHA)



Percentage of Procedures That Had at Least One Test Analyzed by RHA



Conclusions

1. Implementing a medical directive in two EH hospitals resulted in significant reductions in pre-operative testing for low risk surgical procedures, although rates of biochemical and hemoglobin testing continued to be high.
2. In 2017 in Central, Western and Labrador-Grenfell Health, the rate of biochemical and hemoglobin testing continued at a high rate for low risk surgery compared to 2016.
3. The implementation of these guidelines requires a multi-faceted approach and a barriers assessment study is currently underway. The aim of this interview-based study is to inform a province-wide intervention over the next 2–4 years.

Enhanced Recovery After Surgery (ERAS) for Thoracic, Head and Neck, and Orthopedic Procedures

Guideline

ERAS guidelines exist for pre-op, intra-op, and post-op management of patients undergoing major surgery.

Practice Points

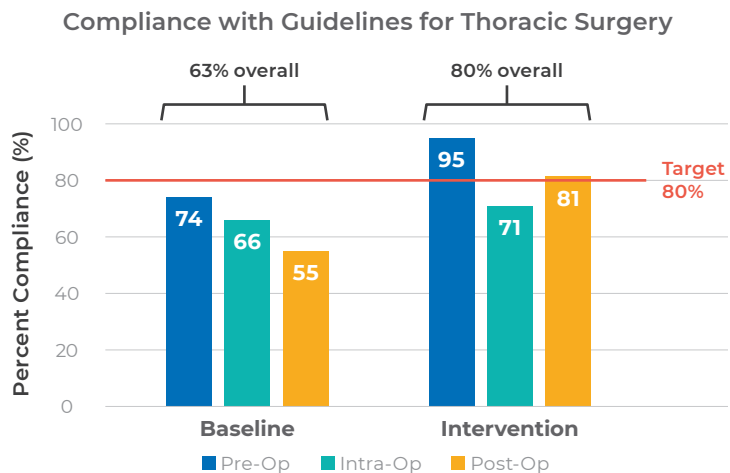
1. Compliance with guidelines is variable. ERAS program encourages more strict adherence to guidelines.
2. Introduction of ERAS program for colorectal cancer surgery at St. Clare’s Hospital was associated with improved adherence to guidelines and decreased length of stay. However, length of stay (LOS) returned to prior levels on removal of ERAS manager from the ward.

Methods

1. 19 ERAS guidelines for thoracic surgery were implemented at St. Clare’s in October 2016. The first 13 months after the start of this intervention was compared with surgeries that took place before implementation of ERAS (Apr 2014 – Mar 2015).
2. 14 ERAS guidelines for head and neck surgery were implemented at St. Clare’s in January 2018. The first nine months of this intervention was compared with surgeries that took place before implementation of ERAS (May 2016 – Mar 2017).
3. 16 ERAS guidelines for orthopedic surgery were implemented at the Health Sciences Centre in September 2018. The first three months after the start of this intervention was compared with surgeries that took place before implementation of ERAS (Jan 2018 – May 2018).

Results

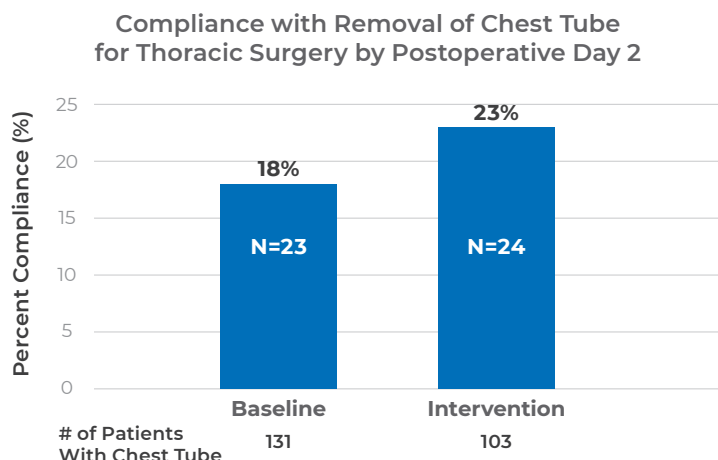
A. Thoracic Surgery



- Pre-op, intra-op, and post-op guideline compliance increased significantly during the intervention phase.

Patient Outcomes for Thoracic Surgery

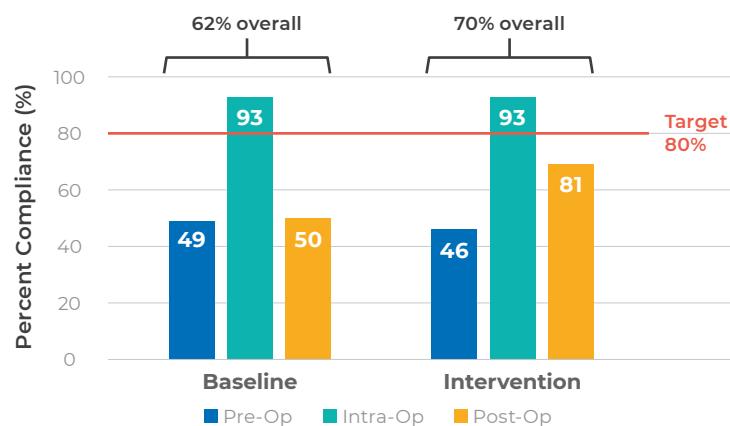
	Baseline	ERAS	P
N	117	105	---
Median LOS (Days)	6.9	6.2	NS
Complication Rate	34%	35%	NS
30-Day Readmission Rate	1.7%	3.8%	NS
30-Day Mortality Rate	1.7%	0%	NS



- Compliance with early removal of chest tube was 23% during the intervention phase.

B. Head and Neck Surgery

Compliance with Guidelines for Head and Neck Surgery



- Pre-op guideline and post-op guideline compliance in pre- and post-introduction of ERAS were not optimal.

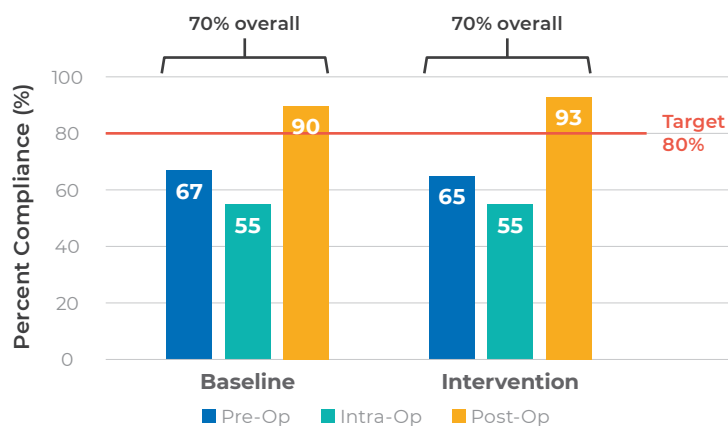
Patient Outcomes for Head and Neck Surgery

	Baseline	ERAS	P
N	10	7	---
Median LOS (Days)	12.5	16	NS
Complication Rate	40%	57.1%	NS
30-Day Readmission Rate	0%	0%	NS
30-Day Mortality Rate	0%	0%	NS

- The small number of surgeries precludes any comment on the impact of the program.

C. Orthopedic Surgery

Compliance with Guidelines for Orthopedic Surgery



- Post-op compliance exceeded the target rate, however, pre-op and intra-op compliance was not optimal, and did not improve following introduction of the ERAS program.

Patient Outcomes for Orthopedic Surgery

	Baseline	ERAS	P
N	100	86	---
Median LOS (Days)	3	3	NS

- Introduction of ERAS had no impact on LOS.

Conclusions

- Introduction of ERAS to thoracic surgery improved compliance with guidelines, although this was not associated with improvement in patient outcomes.

Compliance with guideline for chest tube removal on post-op day 2 after thoracic surgery was 23%.

- Although head and neck surgery numbers are small, LOS and complication rates are high. Consequently, compliance with ERAS may have a clinical impact.
- Compliance with pre-op and intra-op guidelines for orthopedic surgery was not optimal and did not improve with implementation of the ERAS program.

In-Hospital Use of Antibiotics in St. John's

Choosing Wisely Canada Recommendation

Don't start or prolong broad-spectrum antibiotic treatment unless clinically indicated.

Practice Points

1. Broad-spectrum antibiotics are effective in treating bacterial infections, particularly life-threatening infections such as sepsis or febrile neutropenia.
2. Carbapenems and Piperacillin/Tazobactam are often prescribed when a narrow-spectrum antibiotic could be equally as effective.
3. Broad-spectrum antibiotics should be reassessed as soon as the causative pathogen is known or suspected, and targeted antibiotic therapy initiated if possible.

Methods (PI: Dr. P. Daley)

1. Pyxis is an automatic dispensing unit for medications in St. John's hospitals. A database created to monitor dispensing patterns in two St. John's hospitals (Health Sciences Centre and St. Clare's Mercy Hospital) has been analyzed for the first six months of 2019.
2. A decision support app called Spectrum, which includes antibiotic treatment recommendations, local antibiotic resistance patterns, and antibiotic drug information, was available February 2019 – July 2019.

It was accessed 20,016 times by 1,648 unique users in NL (physicians, pharmacists, residents, nurse practitioners, nurses, and students). The app is free and available for download.

3. Defined Daily Dose (DDD) per 1,000 patient days is a standard rate of drug utilization defined by the World Health Organization.

Results

Figure 1: Quantity of Total Dispersed Antibiotics

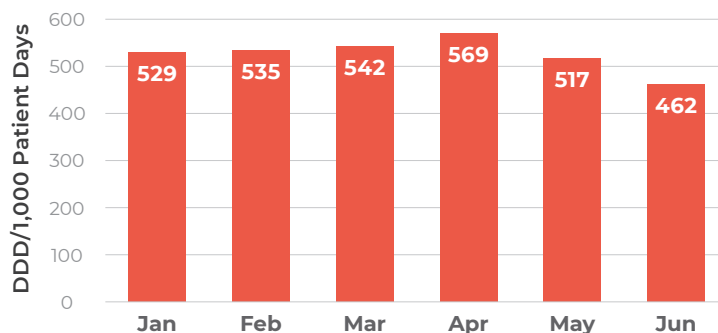


Figure 2: Quantity of Dispersed Carbapenems

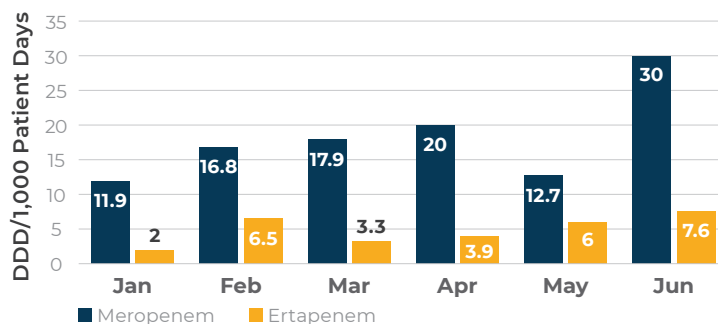
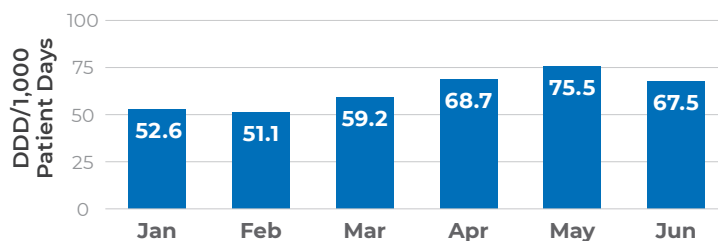


Figure 3: Quantity of Dispersed Piperacillin / Tazobactam



Y-axis quantities are different for the 3 figures.

Analysis excludes Vancomycin (data not available from February to May 2019).

Conclusions

1. Although the use of antibiotics in Health Sciences Centre and St. Clare's Hospital decreased by 12.6% between January and June 2019, the use rate of Carbapenems and Piperacillin/Tazobactam increased by 58.0%
2. Interventions to improve the in-patient use of broad-spectrum antibiotics are necessary.

Point Prevalence of Antibiotic Use at the Health Sciences Centre

Objective

To compare in-hospital use of antibiotics at the Health Sciences Centre (HSC) compared to Canadian hospitals.

Practice Points

Antimicrobial stewardship (AMS) is the quality improvement initiative which provides the appropriate antibiotic treatment to the appropriate patient for the appropriate duration.

Inappropriate antibiotic treatment is defined as:

1. Unnecessary antibiotic prescription for infections which do not require antibiotics, such as viral infections.
2. Unnecessarily broad-spectrum or duplicate antibiotic prescription for conditions which require narrow-spectrum antibiotics, such as when laboratory results provide specific bacterial susceptibility.
3. Unnecessarily long durations of antibiotic prescription for infections which could be cured with shorter durations.

The consequences of unnecessary antibiotics include:

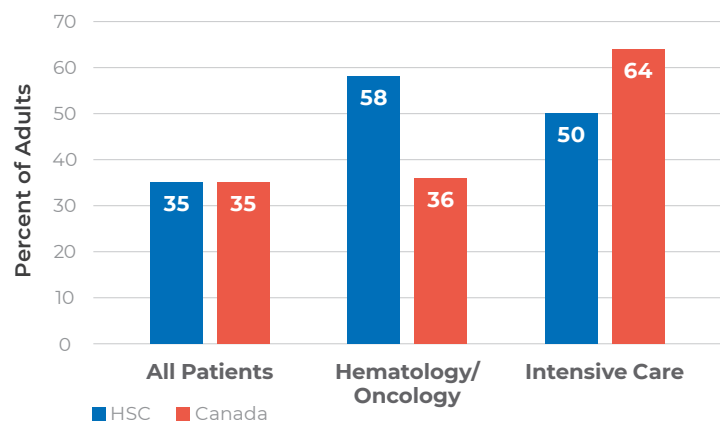
1. Selection of bacteria towards expression of antibiotic resistance genes, worsening treatment outcomes.
2. Destruction of healthy bacterial flora, causing Clostridium difficile diarrhea.
3. Wasted drug cost and prolonged hospital admission.
4. Patient expectation of the same treatment in future illnesses.

The methods of AMS include measurement of antimicrobial use rate, measurement of appropriateness of antimicrobial use, promotion of appropriate laboratory testing, and education and regulation of physicians towards appropriate use.

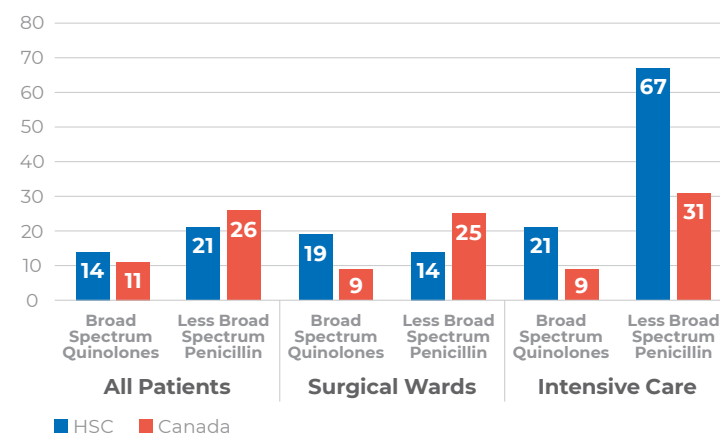
Methods: Global Point Prevalence Study (PI: Dr. P. Daley)

HSC participated in a study of 359 hospitals in 49 countries, which anonymously reviewed all adult inpatients receiving an antibiotic during a single day. The data were analyzed at the study center in Belgium.

Percentage of Adult Inpatients Receiving an Antibiotic During a Single Day



Type of Antibiotic Received by Adult Inpatients During a Single Day



- Among beta-lactam antibiotics, HSC prescribed more broad-spectrum beta-lactamase combination drugs (85.2%) compared to Canadian hospitals (72.0%).
- At the HSC, 84% of use was empiric (specific diagnosis not made) compared to 70% in Canadian hospitals.
- All 16 patients prescribed operative prophylaxis (antibiotics given during surgery to prevent infections) at HSC were given greater than one dose, when guidelines suggest a single dose is more appropriate.

Conclusion

1. There are clinically significant differences in the way antibiotics are used at HSC compared to other Canadian hospitals.

The Impact of Bariatric Surgery on Direct Health Care Costs in the Short Term

Guideline

Canadian Clinical Practice Guidelines recommend bariatric surgery for the treatment of severe obesity (BMI>35kg/m²) as it results in significant and sustained weight loss, improves health status and health-related quality of life and reduces the risk of premature mortality.

Objective

To determine the impact of laparoscopic sleeve gastrectomy (LSG) on direct health care costs over a multi-year period.

Practice Points

- NL has the highest rate of adults living with obesity (33%) in Canada, with 8% of those living with severe obesity (BMI>35 kg/m²).
- The Health Sciences Centre performs about 100 bariatric surgeries per year, specifically laparoscopic sleeve gastrectomy (LSG).

Methods (PI: Dr. L. Twells)

- A data linkage study was performed using clinical data from the NL Bariatric Surgery Cohort Study (n=201) and health care use data from the NL Centre for Health Information.
- Health care use data that included hospital admissions, surgical day care and physician consultations (family doctor, specialists) were examined three years before surgery and three years after surgery.

Results

- At surgery, 82% were female with a mean age of 45 years and BMI of 45kg/m². 43% had diabetes, 48% hypertension and 48% dyslipidemia.
- At 24 months, the percentage of excess weight loss (%EWL) was 53% and the percentage of absolute weight loss (%AWL) was 27%. Of the 43% of patients diagnosed with diabetes pre-surgery, at 24 months almost half (44%) were in complete remission, with an additional 13% showing improvement.

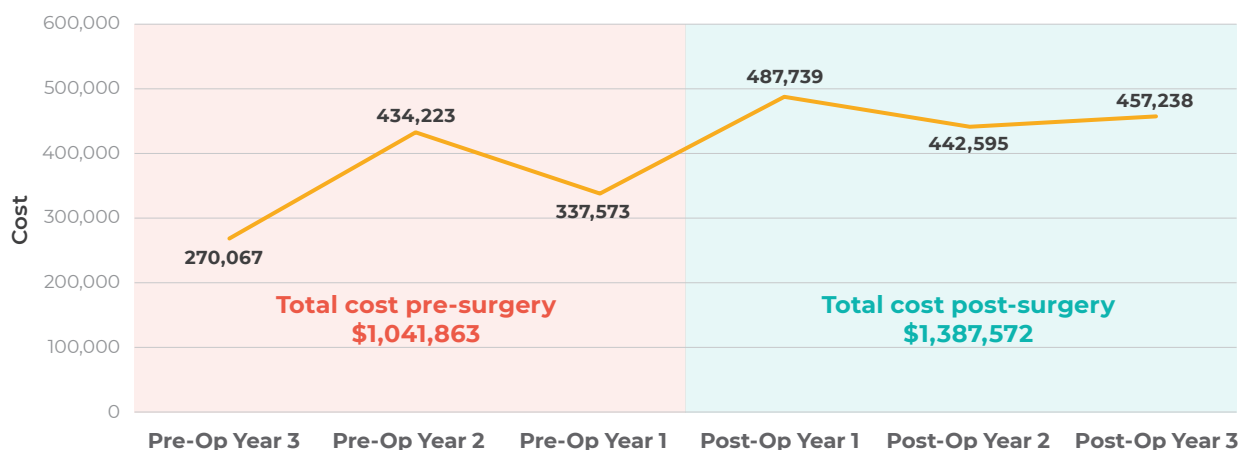
Reasons for Hospital Admissions and Surgical Day Care Visits Pre- and Post-Surgery

Hospitalizations	Total Visits	75 (N=49)	111 (N=66)	P-Value
Reasons		Pre-Op Visits (%)	Post-Op Visits (%)	
Disease and Disorders of the Circulatory System		11 (14.7)	9 (8.1)	NS
Disease and Disorders of the Musculoskeletal System and Connective Tissue		10 (13.3)	10 (9)	NS
Disease and Disorders of the Female Reproductive System		10 (13.3)	5 (4.5)	0.03
Disease and Disorders of the Hepatobiliary System and Pancreas		8 (10.7)	3 (2.7)	0.02
Disease and Disorders of the Endocrine System, Nutrition and Metabolism		6 (8)	6 (5.4)	NS

Surgical Day Care Visits	Total Visits	112 (N=67)	158 (N=87)	P-Value
Reasons		Pre-Op Visits (%)	Post-Op Visits (%)	
Disease and Disorders of the Digestive System		28 (25)	24 (15.2)	0.04
Disease and Disorders of the Skin, Subcutaneous Tissue and Breast		20 (17.9)	16 (10.1)	0.07
Disease and Disorders of the Female Reproductive System		15 (13.4)	30 (19)	NS
Disease and Disorders of the Nervous System		9 (8)	0 (0)	0.0003
Disease and Disorders of the Circulatory System		6 (5.4)	4 (2.5)	NS

- Post-surgery, reasons for admissions to hospital decreased for diseases of the female reproductive system, and hepatobiliary system and pancreas.
- Post-surgery, surgical day care visits decreased for disorders of the digestive and nervous system and increased for diseases of the blood and lymphatic system.

Total Health Care Costs Pre- and Post- Surgery



- Total health care costs increased by 33%, in the three years post-surgery driven by surgical day care costs.

Top 5 Reasons for Physician Visits Pre-Surgery Compared to Post-Surgery

GP Visits	Total Visits	5,937 (N=192)	4,702 (N=189)	P-Value
Reasons	Pre-Op Visits (%)	Post-Op Visits (%)		
Essential Hypertension	502 (8.6)	331 (7)		0.003
Diabetes Mellitus	488 (8.3)	193 (4.1)		0.000
Symptoms Involving Nervous and Musculoskeletal Systems	332 (5.7)	298 (6.3)		NS
Depressive Disorder Not Elsewhere Classified	185 (3.2)	234 (5.0)		0.000
Obesity	144 (2.5)	61 (1.3)		0.000

- Median number of visits to a family physician decreased significantly post-surgery.
- The percentage of family physician visits were reduced for hypertension and diabetes but increased for depressive disorder.

Conclusions

1. In the short term, LSG did not reduce direct health care costs.
2. Compared to pre-surgery, reasons for health care use (hospital and physician) post-surgery changed and are reflective of changes in patients' health status.
3. Post-surgery, due to weight loss, patients are able to access hospital/outpatient services such as joint replacement, hernia repair, gall bladder removal and fertility treatment.
4. Post-surgery reasons for visits to a family physician reflect remission or improvement in diabetes and hypertension, but also reflect increases in visits for mental health issues.

Long-Term Care Facility Report Card in NL

Objective

To provide long-term care facilities (LTCFs) in the province with a compilation of information and data. The hope is that this information will support informed decision making and policy development by comparing each facility's data to the province overall.

Practice Points

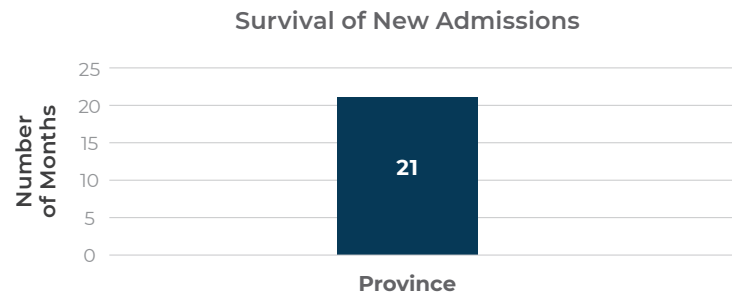
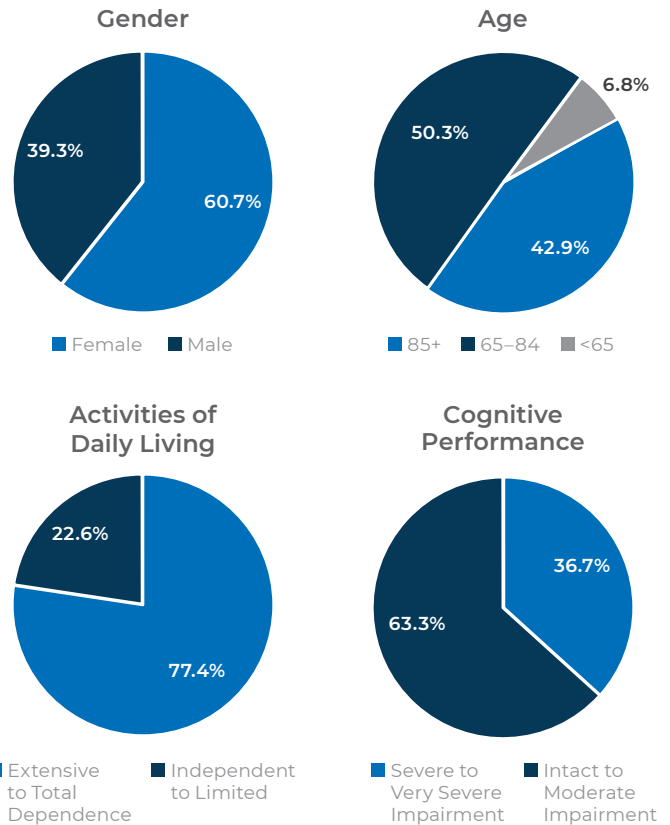
1. In 2017, the proportion of NL population aged 65 years and older was 20%. By 2036, this proportion is expected to increase to 30%.
2. Future planning is necessary to ensure the development of a sustainable LTC sector that provides appropriate care to residents.

Data

- The Resident Assessment Instrument – Minimum Data Set (RAI-MDS 2.0 ©) for 35 LTCFs.
- Eastern, Central and Western Health Infection Prevention and Control (IPAC) programs for 29 LTCFs.
- LTCFs were provided information on the demographics and clinical characteristics of new admissions and prevalent residents; data on facility fall rates and risk factors for falls; prescriptions for and potentially inappropriate use of antipsychotics, and antibiotics for urinary tract infections (UTIs); as well as survival of new admissions.

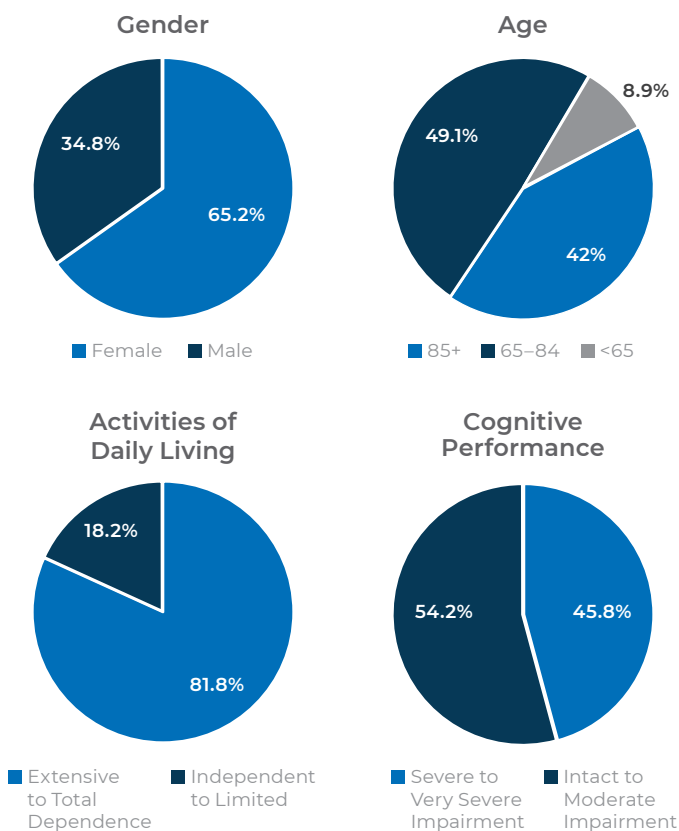
RAI-MDS 2.0 © interRAI Corporation, Washington, DC, 1995, 1997, 1999. Modified with permission for Canadian use under license to the Canadian Institute for Health Information. Canadianized items and their description © Canadian Institute for Health Information, 2017.

A. Demographic and Clinical Characteristics– New Admissions in the Province (N=1,045) 1 Apr 2016 to 31 Mar 2017

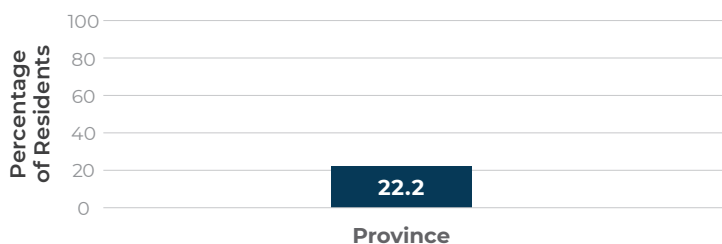


B. Demographic and Clinical Characteristics—Prevalent Residents

1 Jan 2017 to 31 Mar 2017

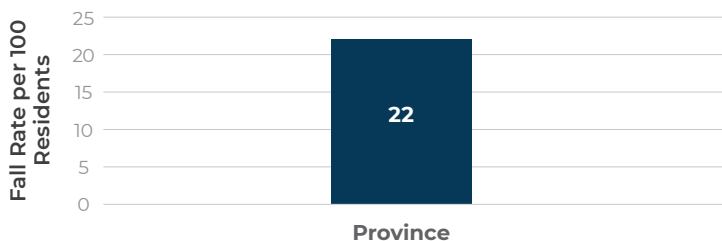


Residents in LTC Greater Than 5 Years



C. Fall Rate

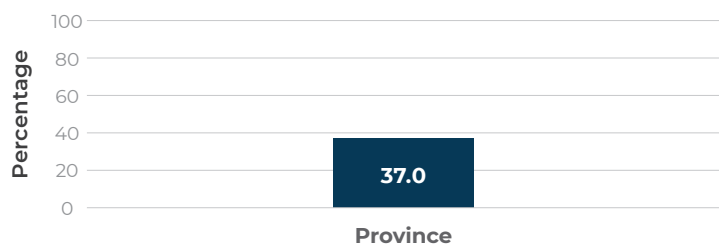
1 Apr 2016 to 31 Mar 2017



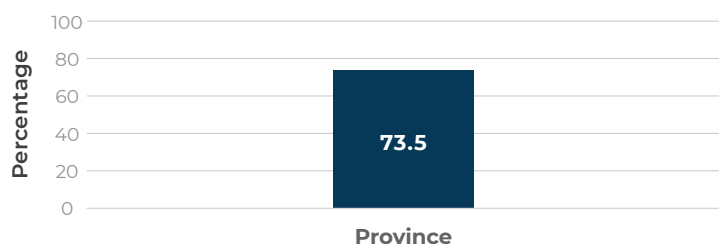
D. Antipsychotics in LTC

1 Jan 2016 to 31 Dec 2017

Residents in LTC on Antipsychotics



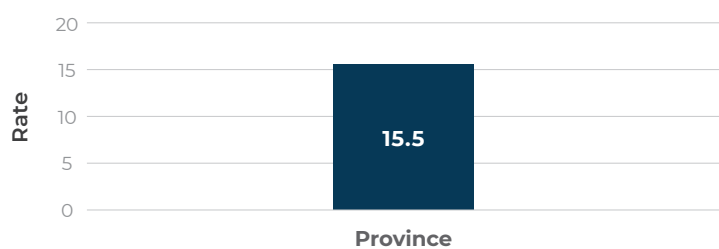
Percentage of Prescriptions That Were Inappropriate



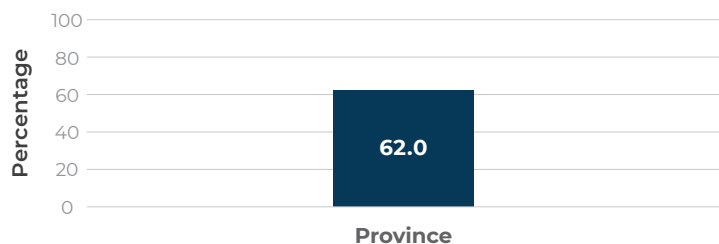
E. Antibiotics for Urinary Tract Infections in LTC

1 Jan 2016 to 31 Dec 2016

Rate of Prescriptions per 10,000 Resident Days



Percentage of Prescriptions That Were Inappropriate



Conclusion

1. A second version of this Long-Term Care Facility Report Card is anticipated, incorporating feedback received from key stakeholder groups, and more up-to-date data. It will include data on use of benzodiazepines and of restraints.

Reduction of Antipsychotic Use in Long-Term Care Facilities in NL

Choosing Wisely Canada Recommendation

Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia.

Practice Points

1. Health Canada has issued a black box warning for antipsychotic prescriptions in seniors, indicating that their use is strongly contraindicated and poses a significant risk to seniors, including premature death.
2. Antipsychotic drugs should only be used when symptoms are severe, disabling and/or threatening patient or caregiver safety and when environmental and non-pharmacologic techniques have been implemented.
3. Attempts at drug withdrawal/reduction should be made regularly to avoid and reduce serious side effects.

Methods

1. Data were obtained from the Resident Assessment Instrument-Minimum Data Set (RAI-MDS) 2.0.©
2. Thirty-five long-term care facilities (LTCFs) from the four regional health authorities (RHAs) were included:

Eastern Health (EH)–14 LTCFs;
Central Health (CH)–11 LTCFs;
Western Health (WH)–6 LTCFs; and
Labrador-Grenfell Health (LGH)–4 LTCFs.

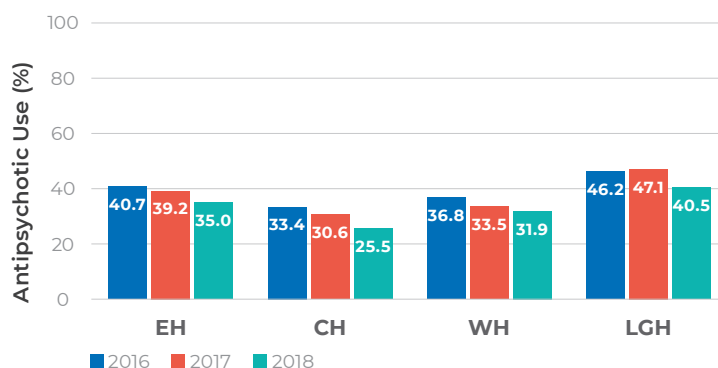
3. Overall percentage of residents using antipsychotic drugs, as well as the percentage of residents receiving antipsychotics that were potentially inappropriate, were calculated provincially and regionally.

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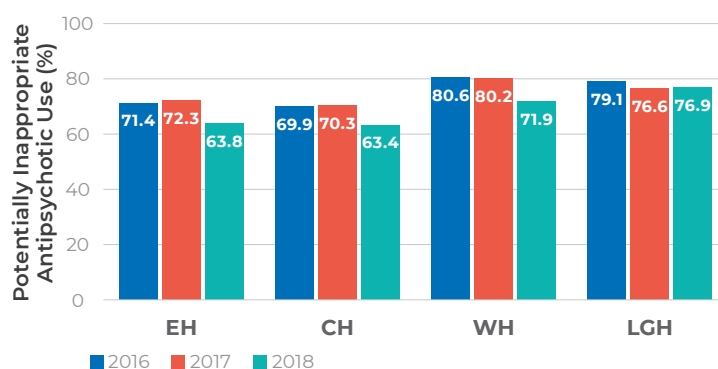
Results

	2016	2017	2018
Valid Assessments	8,718	9,190	9,352
Antipsychotic Use; N (%)	3,377 (39)	3,398 (37)	3,076 (33)
Potentially Inappropriate Antipsychotic Use; N (%)	2,467 (73)	2,498 (74)	2,030 (66)

Antipsychotic Use by RHA



Potentially Inappropriate Antipsychotic Use by RHA



Conclusions

1. In 2018, antipsychotic use in the residents of 35 LTCFs was 33%, a 15% reduction from 2016.
2. The use of potentially inappropriate antipsychotic use was 66%, a 10% reduction from 2016.
3. The lowest use of antipsychotics was in CH (26%) and the highest was in Labrador-Grenfell Health (41%).

Incidence and Impact of Falls in Personal Care Homes in Eastern Health

Objective

To determine the rate and impact of falls in Personal Care Homes (PCHs).

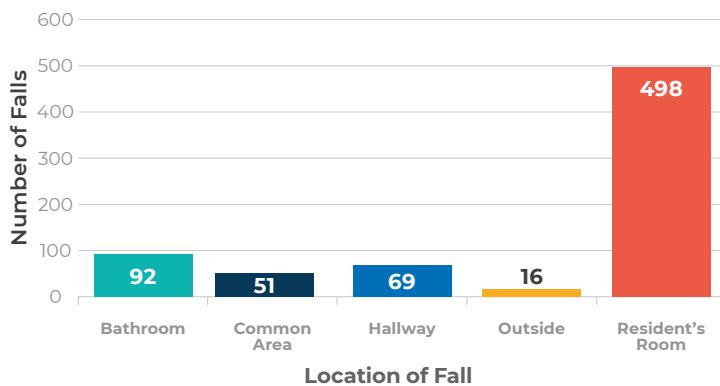
Practice Points

1. Falls cost the Canadian Economy \$2.8 billion per year.
2. One in three seniors fall each year, and 25% of falls result in injury.
3. Falls cause more than 90% of hip fractures among people age 65 and over, and 20% die within a year of their fracture.
4. Falls among seniors account for 84% of injury-related hospitalization, and are associated with 40% of long-term care facility admissions, with a 10% increase in homecare services.
5. 41 PCHs in Eastern Health (EH) reported 731 falls from 1 Jan 2018 to 31 Mar 2018; 8 falls every day in PCHs within EH.

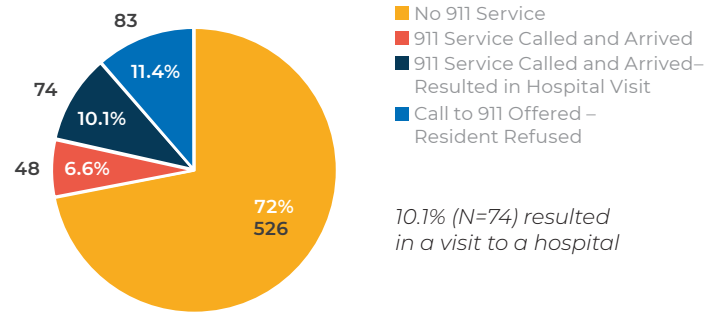
Data

- From 35 PCHs via EH

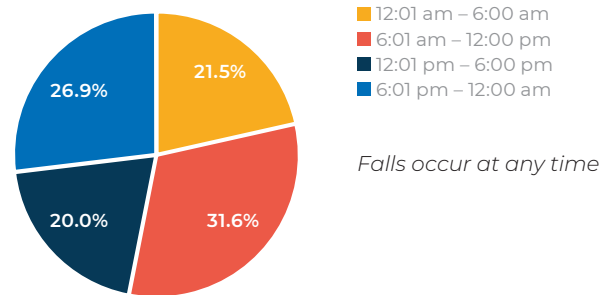
Number of Falls by Location



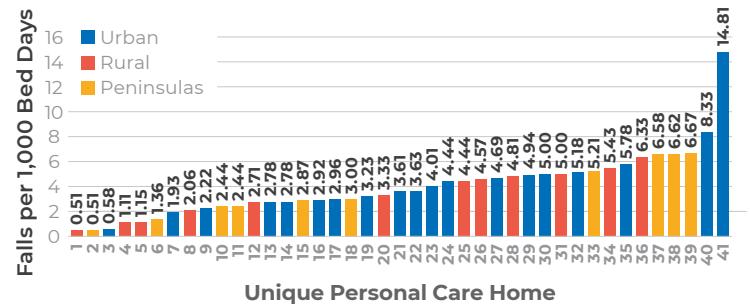
Number of Falls Using 911 Service



Percentage of Falls by Time of Day



Number of Falls per 1,000 Bed Days*



*Based on the number of beds for full occupancy (as determined by the home owner)

Conclusions

1. Falls occur frequently in PCHs, usually in the resident's room, at any time of day, and the rate varies by PCH.
2. 10% of falls resulted in a visit to the hospital.

Evaluation of a Falls Prevention Program in Personal Care Homes in Eastern Health

Objective

To evaluate the impact of a Falls Prevention Program aimed at all staff in Personal Care Homes (PCHs) in Eastern Health (EH).

Practice Points

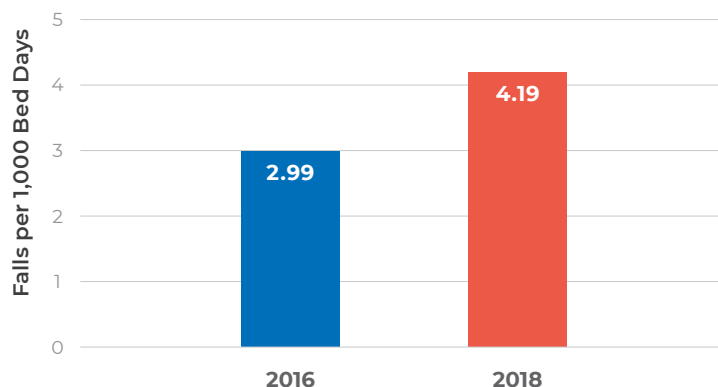
1. Falls cause more than 90% of hip fractures in the elderly, and 20% die within a year of their fracture.
2. Falls are associated with 40% of long-term care admissions, and a 10% increase in homecare services.
3. A Falls Prevention Program for PCHs was implemented in EH from July-September 2017.
4. The Falls Prevention Program outlined the risk factors and implications of falls; encouraged the use of a fall prevention screening tool and, as appropriate, individualized assessments to provide more personalized falls prevention interventions for residents; outlined what to do when a fall occurs; and provided general, overarching fall prevention strategies.

Data

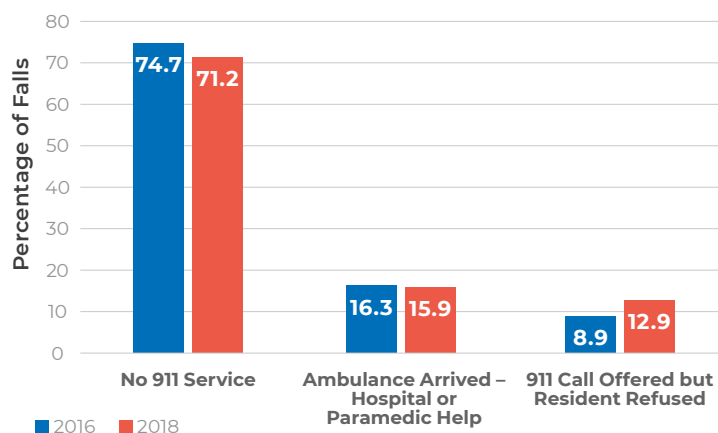
- Data from 35 PCHs comparing pre- and post-intervention rates of falls.
- Baseline data was collected via PCH incident reports from 1 Jan 2016 to 31 Mar 2016.
- Post-intervention data was collected via incident reports from 1 Jan 2018 to 31 Mar 2018.

Results

Number of Falls per 1,000 Bed Days



911 Service Utilization



Conclusions

1. Overall, there was an increase in falls reported by PCHs in the post-intervention year. This outcome could be explained through heightened knowledge of falls and appropriate documentation post-intervention.
2. There is little evidence in the literature to support the use of staff training alone as a falls prevention intervention. It is recommended that PCHs implement falls prevention programs that include multiple interventions and are tailored to the individual residents.
3. Barriers to successful implementation of a falls prevention program may include a lack of staffing resources and staff turnover, lack of time, feelings of helplessness and communication issues.

Incidence and Characteristics of Incident Clients Assessed for Long-Term Care Services in NL

Objective

To determine the annual incidence by region and clinical characteristics of clients being assessed for long-term care services.

Practice Point

- The RAI-HC is an assessment system that informs and guides comprehensive care and service planning in community based settings, and facilitates referrals when appropriate.

Data

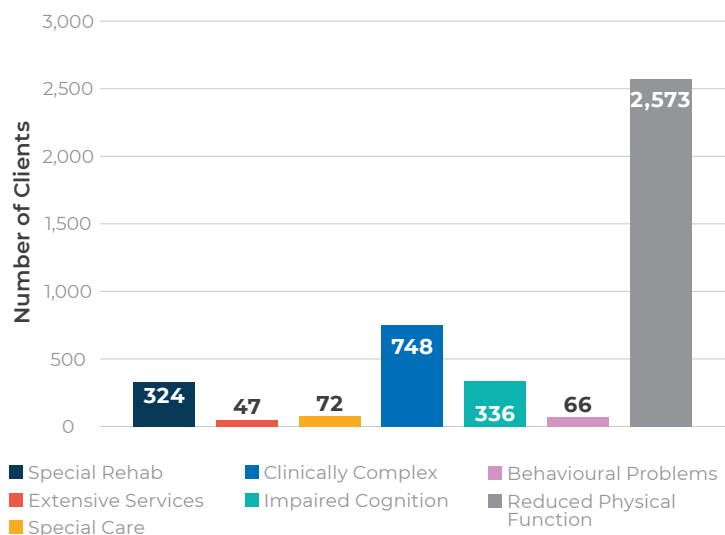
- The initial RAI-HC assessments completed on 4,166 individuals from 1 April 2016 – 31 Mar 2017.

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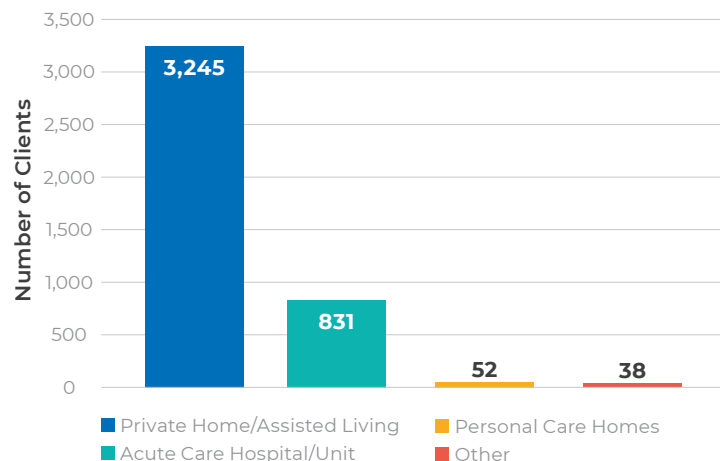
Results

- The annual incidence rate per 1,000 people aged 65 and older was 39.8 and varied by region. 61.5% of those assessed were female; 37.2% scored high or very high on the Method for Assigning Priority Levels (MAPLe) score; 19.9% were assessed in an acute care hospital or unit; and 61.8% had reduced physical functioning.

Resource Utilization Group (RUG-III)



Location of Assessment



Patient Characteristics by Region	Eastern N=2,374	Central N=997	Western N=768	Labrador-Grenfell N=117
Demographics				
N/1,000 people ≥ 65 years	40.8	43.7	36.8	22.1
% Female	62.3	62.4	57.2	62.4
Clinical Characteristics				
% intact/mild to moderate cognitive impairment	91.8	91.1	93.8	80.3
% independent/some limitation in activities of daily living	73.1	73.7	80.2	62.4
% no to low health instability on changes in health, end-stage disease and signs and symptoms scale	85.9	84.6	81.1	79.5
Method for Assigning Priority Levels				
% low need	11.6	17.3	17.6	12.8
% mild need	8.3	8.0	8.4	2.6
% moderate need	42.5	39.2	39.2	27.4
% high need	25.0	23.5	23.9	40.2
% very high need	12.6	12.0	10.9	17.1

Conclusions

- The incidence rate of clients assessed by the RAI-HC varied by region, with the highest rate in Central Health.
- The vast majority of clients presented with reduced physical function, and were assessed in their homes.
- The number of incident clients with high to very high need (N=1550) exceeds the number of people actually admitted to long-term care facilities (N=1,045).

Report Card for Family Doctors in Eastern Health Who Predominantly Practice in Their Clinic

Objective

To provide family doctors in the province with a compilation of information and data about their own individual practice in comparison to their peers.

Data

- Newfoundland and Labrador Provincial Drug Program (NLPDP) (patients ≥ 65 years).
- MCP Fee-for-Service Physician Claims.
- Provincial Discharge Abstract Database for lab and imaging (only Eastern Health data).
- All Family Physicians were provided a report card.
- This report is populated by the median results.

Snapshot of your Practice

1 Jan 2017 to 31 Dec 2017 – Fee-For-Service Doctors

Number of Billings Annually	Percent of Billings for Female Patients	Percent of Billings for Patients >65
5,450	58%	30%

Orders of Potentially Unnecessary Biochemical Tests

1 Jul 2017 to 31 Dec 2017 – Eastern Health Doctors

Test	Number of Tests Ordered
Blood Urea	35
LDH	3
Creatine Kinase	19
AST	14
Ferritin	50
Uric Acid	12

Antibiotic Prescriptions in NLPDP

1 Apr 2017 to 31 Mar 2018 – Provincial Data

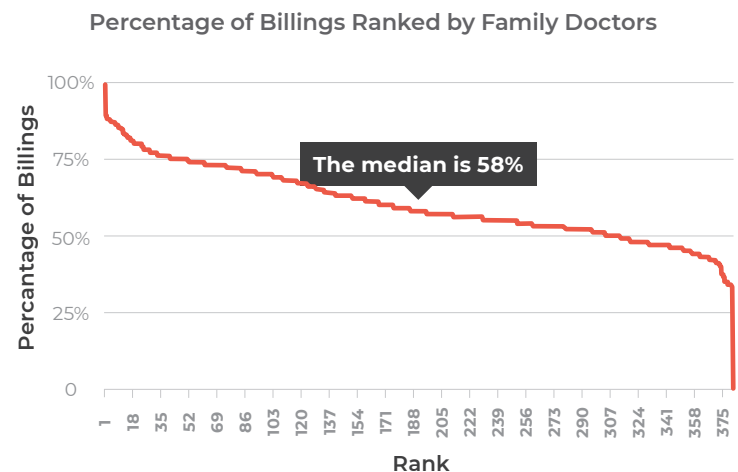
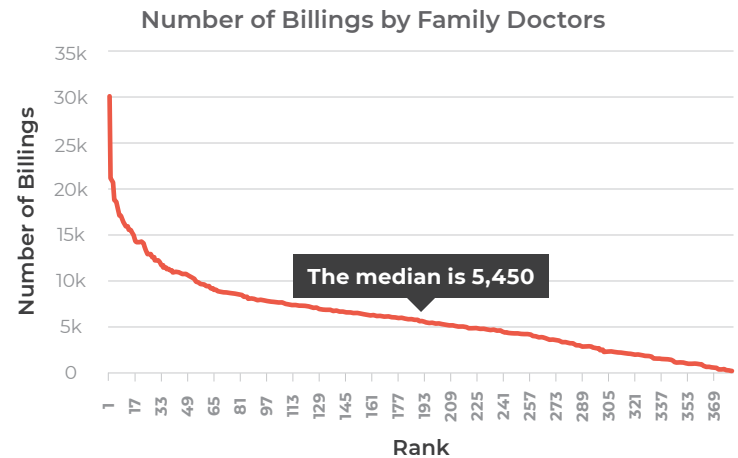
Number of Prescriptions	Number of NLPDP Active Patients	Rate Per 100 NLPDP Active Patients
57	154	42

Orders for Imaging

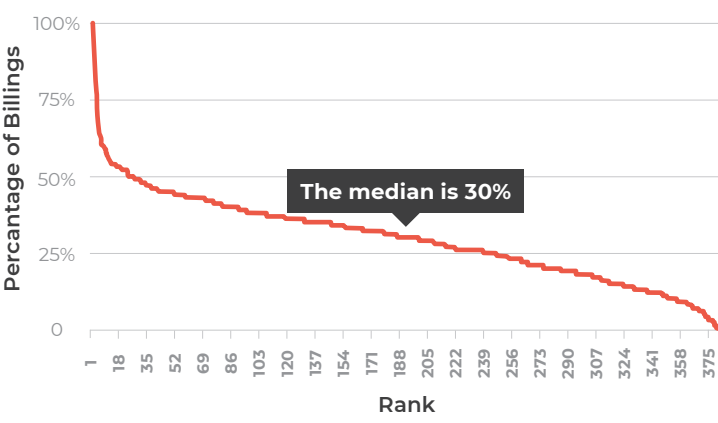
1 Jan 2016 to 31 Dec 2017 – Eastern Health Doctors

Imaging Type	Number of Imaging Tests Ordered in the Two Years
All Diagnostic Imagings	1,275
CT Imaging	151
Ultrasound Imaging	266
X-Ray Imaging	876

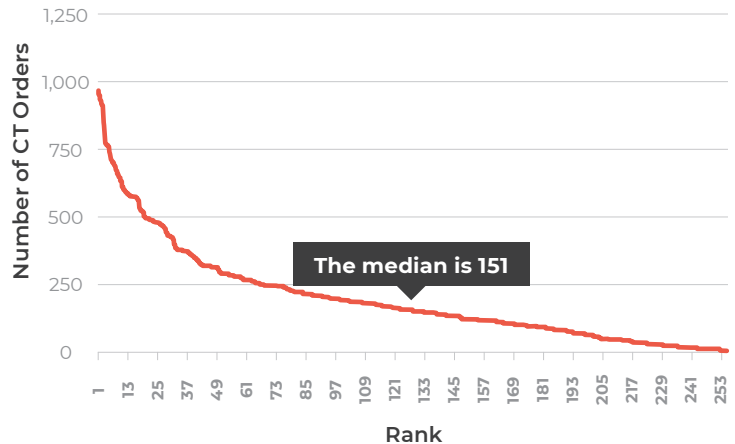
Comparison to Your Peers



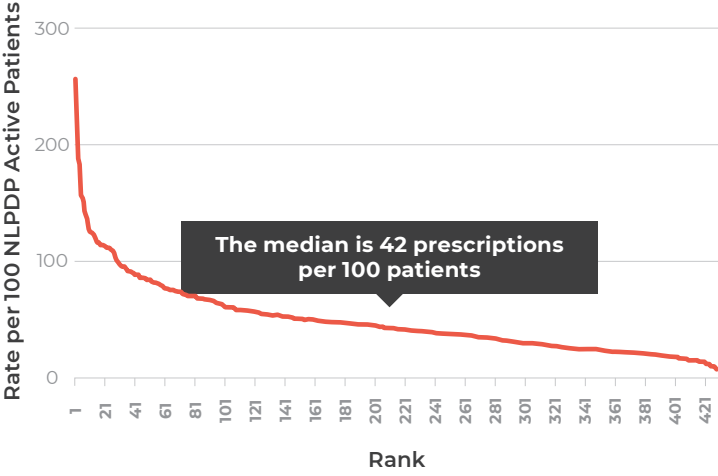
Percentage of Billings for Patients Over 65 Years by Family Doctors



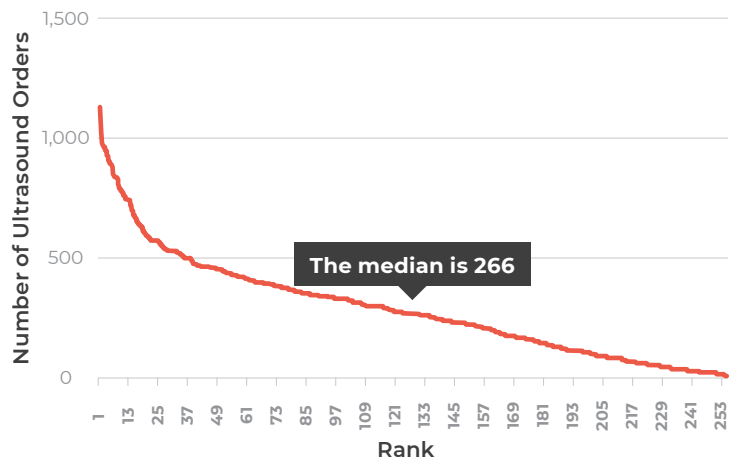
Number of CT Orders by Family Doctor



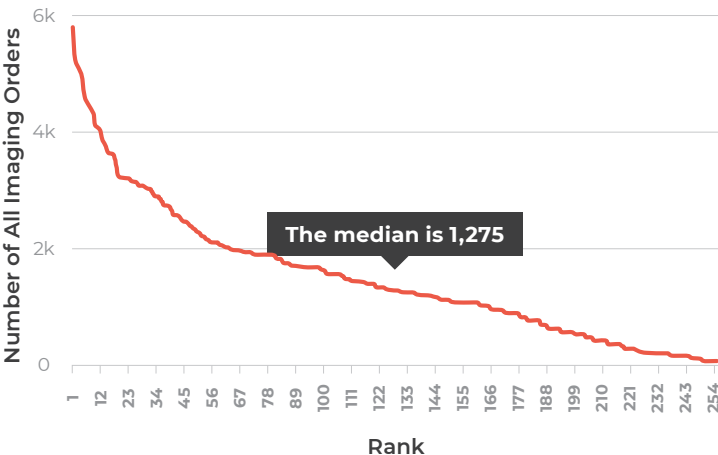
Rate of Antibiotic Prescriptions per 100 NLPDP Active Patients by Family Doctors



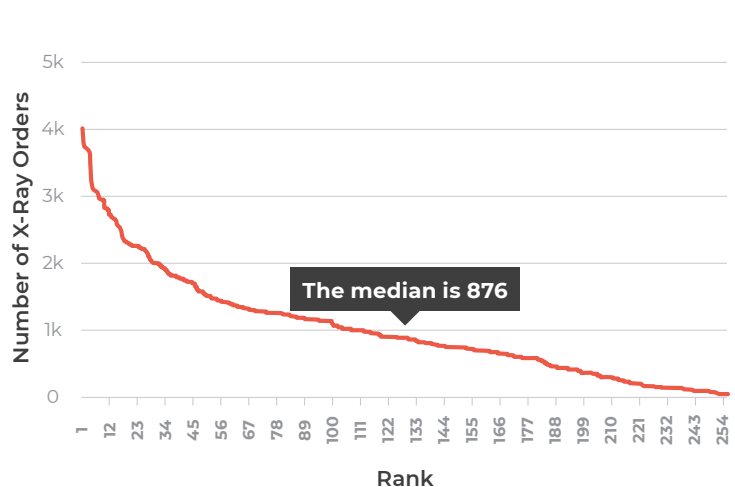
Number of Ultrasound Orders by Family Doctor



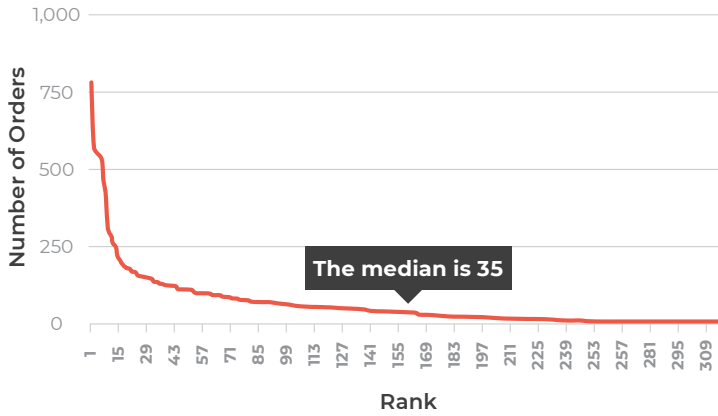
Number of All Types of Diagnostic Imaging Orders by Family Doctors



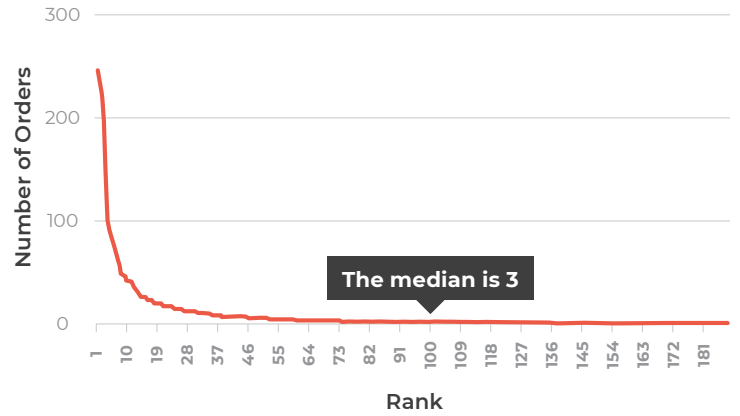
Number of X-Ray Orders by Family Doctors



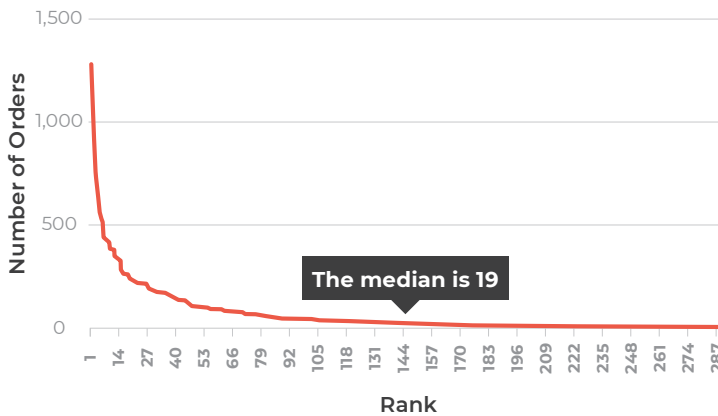
Number of Blood Urea Orders by Family Doctors



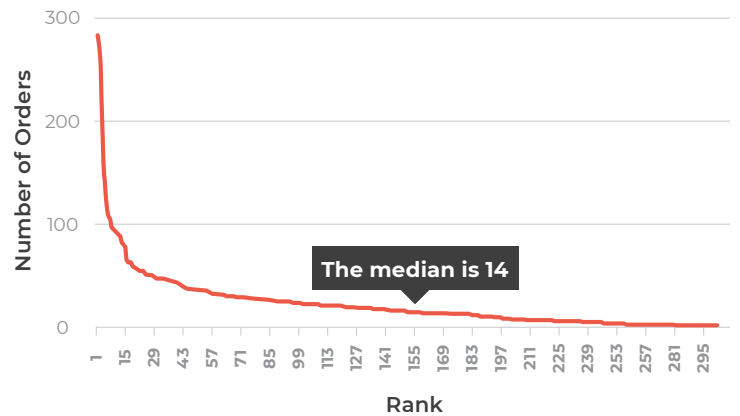
Number of LDH Orders by Family Doctors



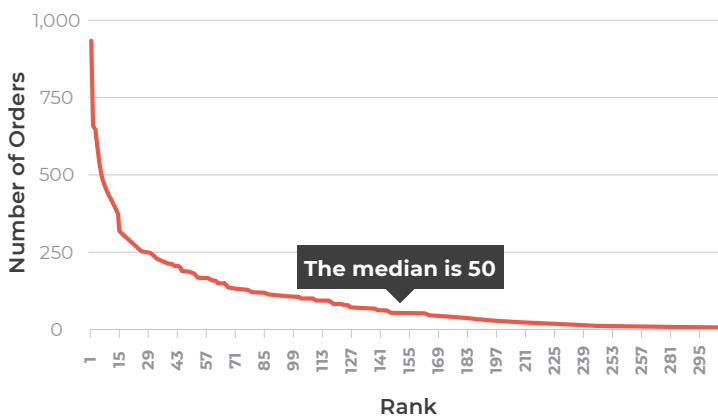
Number of Creatine Kinase Orders by Family Doctors



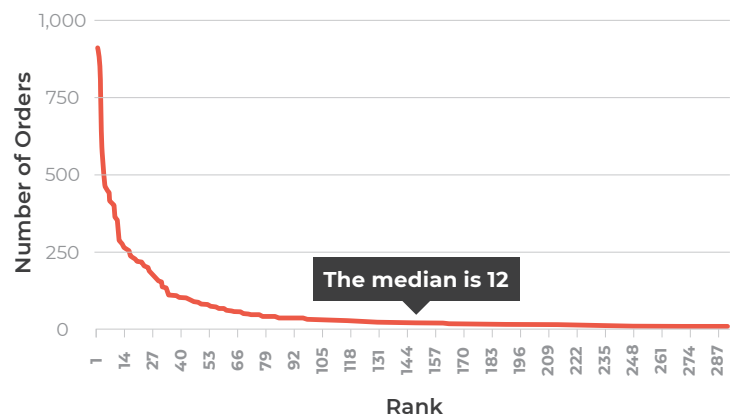
Number of AST Orders by Family Doctors



Number of Ferritin Orders by Family Doctors



Number of Uric Acid Orders by Family Doctors



Conclusion

1. A second version of this Family Doctor Report is anticipated, incorporating the most up-to-date data available, and including other tests such as Thyroid function and ANA.

Potentially Unnecessary Biochemical Testing by Family Physicians in NL

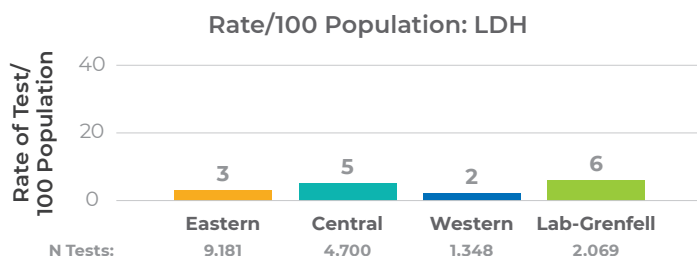
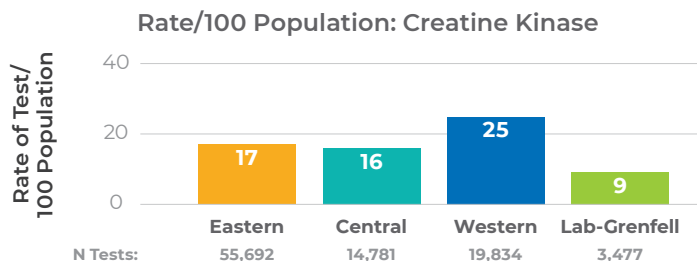
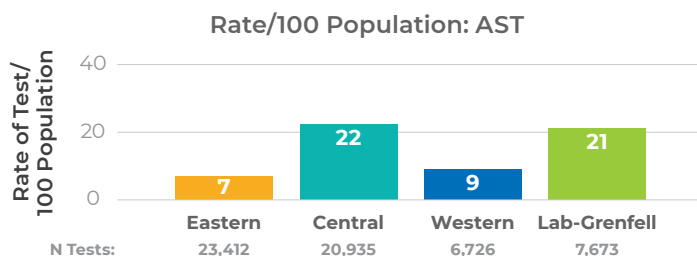
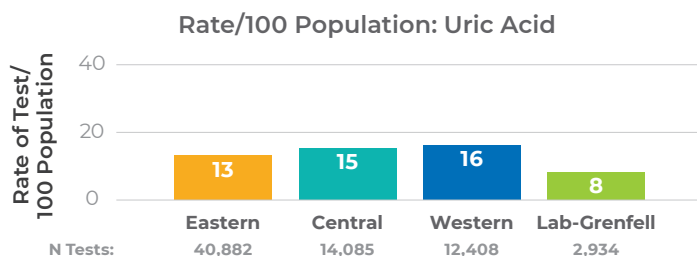
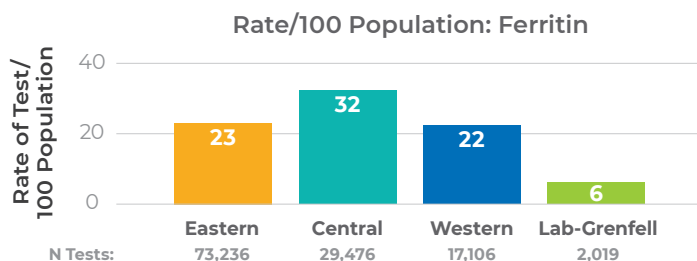
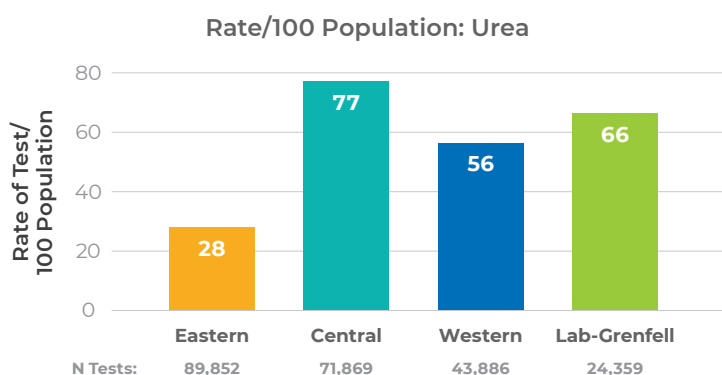
Practice Points

1. Blood urea is not a necessary test to measure kidney function in stable patients if serum creatinine and eGFR are measured.
2. Serum ferritin is likely not indicated as screening test for iron status in patients with normal hemoglobin and MCV/MCH, except maybe in females of reproductive age where oral iron may be prescribed.
3. Creatine Kinase is no longer recommended for monitoring asymptomatic patients on statins.
4. Bilirubin and ALT are reasonable tests to evaluate liver function and AST is usually unnecessary.
5. Other than on occasions in the management of gout and cell breakdown disorders, uric acid is not usually clinically helpful.
6. LDH is generally indicated only in growth disorders and hemolytic anemia.
7. The volume of testing for these six tests reduced in Eastern Health following the provision of a new requisition form in 2016 and academic detailing in 2017.

Methods

1. Tests ordered by family physicians in the four Regional Health Authorities (RHAs) for the fiscal year 2017–2018 were obtained from NL Centre for Health Information.
2. The rate of testing was calculated as volume per 100 people in each region.

Results



Conclusions

1. Across the province there is potential for the reduction of potentially unnecessary biochemical testing.
2. A requisition form omitting blood urea, creatine kinase, AST, uric acid, and LDH may be helpful.
3. Reflex testing for ferritin in patients with anemia or microcytosis may be helpful.

The Use of Anti-Nuclear Antibody (ANA) and Anti-Double Stranded DNA (Anti-ds DNA) Tests in NL

Choosing Wisely Canada Recommendation

Don't order ANA as a screening test in patients without specific signs or symptoms of systemic lupus erythematosus (SLE) or another connective tissue disease.

Practice Points

1. The incidence of SLE is 10-250/million in North America, with females representing 90% of patients; 85% will have disease activity before 55 years.
2. ANA is not indicated unless a connective tissue disease is a significant possibility.
3. ANA > 1:80 is required to consider the presence of SLE.
4. ANA is not indicated as a screening test to evaluate fatigue, back pain, or other musculoskeletal pain without other clinical indicators.
5. ANA is not indicated to confirm a diagnosis of rheumatoid arthritis or osteoarthritis.
6. ANA testing need only be ordered once.
7. Anti-ds DNA test is used to monitor disease activity in patients diagnosed with SLE.
8. ANA costs \$24/test, with an estimated provincial annual cost of \$291,000.

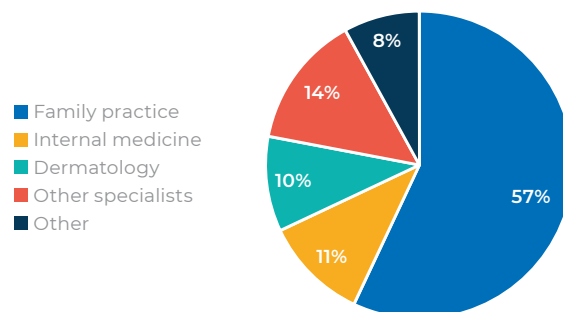
Methods (PI: Dr. L. Jones)

1. ANA and anti-ds DNA tests ordered in NL from 1 Apr 2016 – 31 Mar 2018 (2 years) and undertaken at the Health Sciences Centre laboratory, were analysed by doctor, ordering speciality, age, and sex.

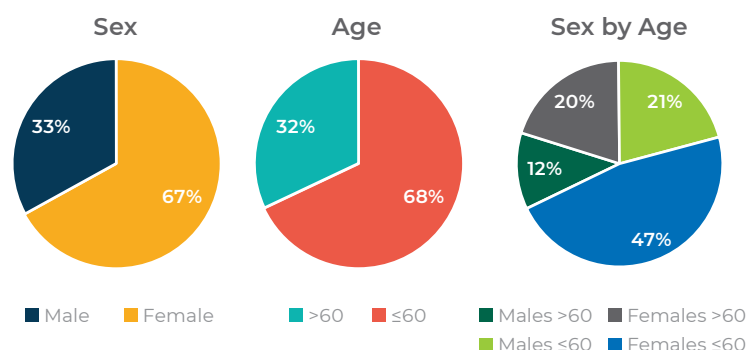
Results

- 24,428 ANA and 7,909 anti-ds DNA tests were performed. The rates of testing are 23,448 ANA tests annually/million population and 7,461 anti-ds DNA/million.
- 7% of ANA were repeat tests.

ANA Test Ordering by Specialty (N=24,428)



ANA by Sex and Age >60 Years



- 33% of ANA tests were in male patients and 32% were in people >60 years.
- 53% of tests were in low risk groups: males and people >60 years.
- 48% of anti-ds DNA were in low risk groups.

Conclusions

1. The number of ANA and anti-ds DNA tests ordered relative to the incidence of connective tissue diseases is very high.
2. The majority of tests were ordered in low risk groups (males and people >60 years).
3. Repeat unnecessary ANA tests accounted for 1,687 tests over two years.
4. Testing should be only undertaken in patients with signs or symptoms of SLE or other connective tissue diseases.

High Volume of Thyroid Testing in NL

Choosing Wisely Canada Recommendation

Don't use Free T4 or T3 to screen for hypothyroidism or to monitor and adjust levothyroxine (T4) dose in patients with known primary hypothyroidism, unless the patient has suspected or known pituitary or hypothalamic disease.

Practice Points

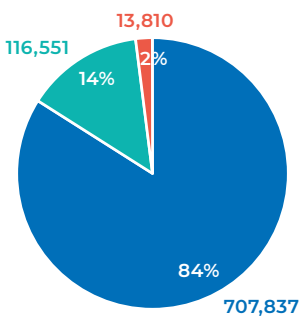
1. In most people, a normal Thyroid Stimulating Hormone (TSH) indicates either a normal endogenous thyroid function or an adequate T4 replacement dose.
2. TSH only becomes unreliable in patients with known or suspected pituitary or hypothalamic disease when TSH cannot respond physiologically to altered T4 or T3.
3. In stable patients, TSH needs to be monitored no more often than every six months.
4. Costs per test are: TSH: \$10, T4: \$12, and T3: \$9.

Methods

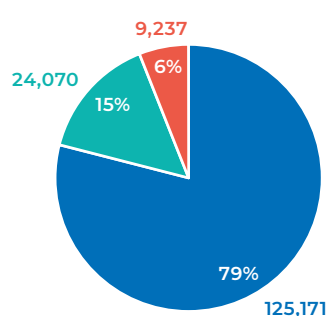
1. All TSH, T4, and T3 tests undertaken in NL from 1 Apr 2014 – 31 Mar 2019 (5 years) were analysed by year, age, sex, and clinician who ordered the test.

Results

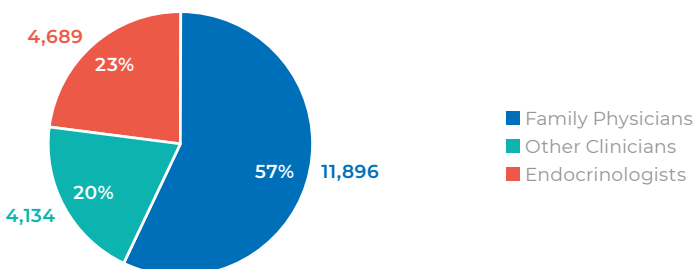
Number of TSH Tests by Specialty



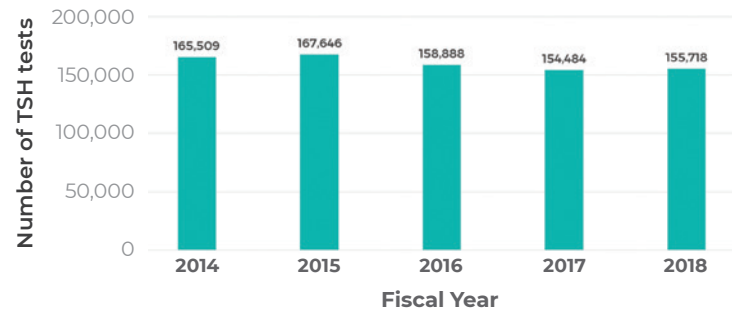
Number of T4 Tests by Specialty



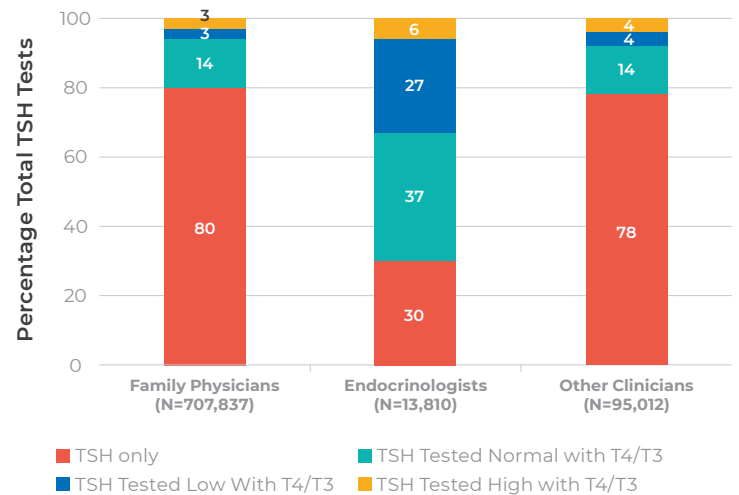
Number of T3 Tests by Specialty



Number of TSH Tests per Fiscal Year



Percentage of TSH Tests Paired With T4/T3 by Result



- In 2018 7,464 (6.6%) of all patients who had TSH tests performed (N=113,702) had five or more tests.

Conclusions

1. T4 and T3 ordering is frequently coupled with TSH testing. This is usually unnecessary as reflex testing for T4 within laboratories is undertaken in patients with an abnormal TSH.
2. In patients with known or suspected pituitary or hypothalamic disease the order for T4 or T3 should contain this information.
3. The number of patients receiving five or more TSH tests per year is high.

Excessive Angiography Screening for Intracranial Aneurysm in NL

Choosing Wisely Canada Recommendation

Don't do imaging for uncomplicated headache unless red flags are present.

Practice Points

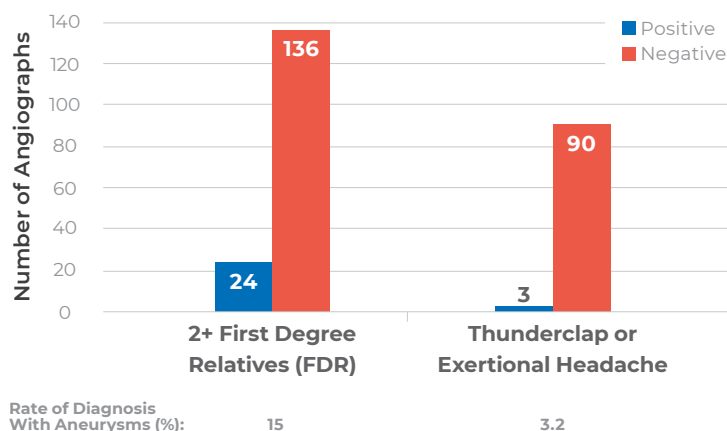
1. The prevalence of intracranial aneurysm is estimated to be 2–6%. They are typically asymptomatic but can rupture causing subarachnoid hemorrhage. Risk of rupture of detected aneurysm is approximately 1%.
2. Screening for aneurysms is indicated in families with two or more members with aneurysms.

Method (PIs: V. Linehan, C. Woodworth, P. Bartlett)

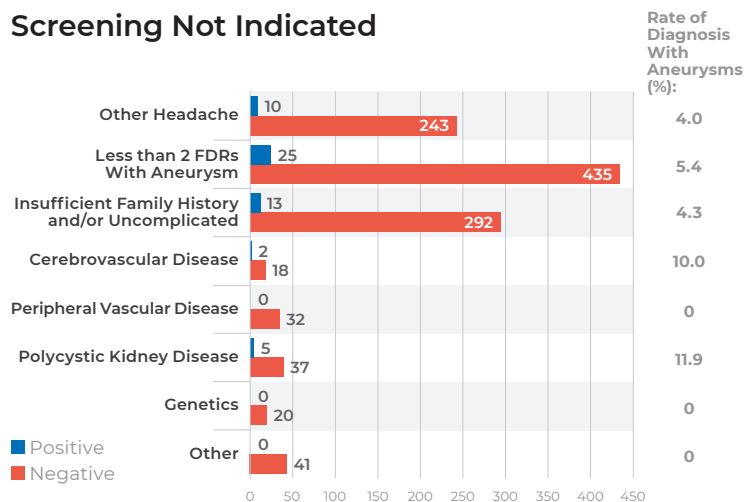
1. Audit of all 4,092 CT/MR head angiography studies performed in NL between March 2013 to December 2017 to screen for aneurysms.

Results

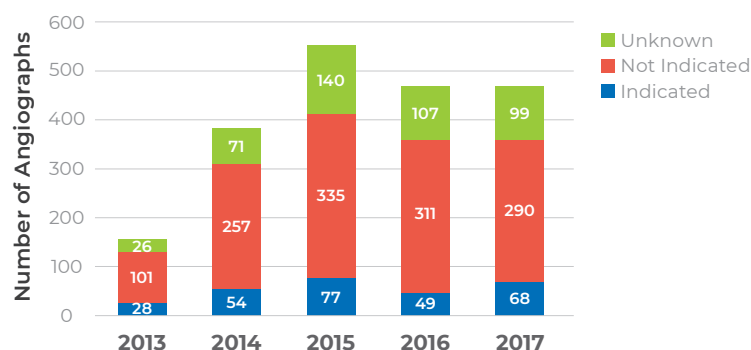
Screening Indicated



Screening Not Indicated



Volume of Screening Angiography by Indication and Time



- In 2017, 437 CT and 20 angiographies were performed.

	Eastern Health	Central Health	Western Health	Lab/Grenfell
N Performed	1,308	220	253	129
N with Aneurysms	76	13	14	4
Percent with Aneurysms	5.5	5.6	5.2	3.1

Conclusions

1. From 2013 to 2017 the number of screening angiographies for aneurysms has increased by 294%. 82% were not indicated.
2. A family history of 2+ first degree relatives with aneurysms is a strong indication for screening angiography.
3. In patients in whom angiography was not indicated the rate of aneurysm was 4.7%, similar to the prevalence in the general population.

Lumbar Spine CT Referral Rates by Family Physicians in Eastern Health

Choosing Wisely Canada Recommendation

Don't routinely image patients with low back pain regardless of the duration of symptoms unless:

- a. There are clinical reasons to suspect serious underlying pathology (ie. red flags), or
- b. Imaging is necessary for the planning and/or execution of a particular evidence-based therapeutic intervention on a specific spinal condition.

Practice Points

1. The risk of cancer associated with radiation, particularly in younger people, needs to be balanced with the likelihood of benefit from CT imaging.
2. NL orders more CTs/1,000 people than any other province/territory, more than twice as many as Alberta, and 50% more than the overall Canadian rate (CADTH, March 2016).
3. In Eastern Health (EH), less than 3% of lumbar spine (LS) CTs were ordered because of a red flag.
4. 80% of CTs were ordered by a small proportion of family physicians.

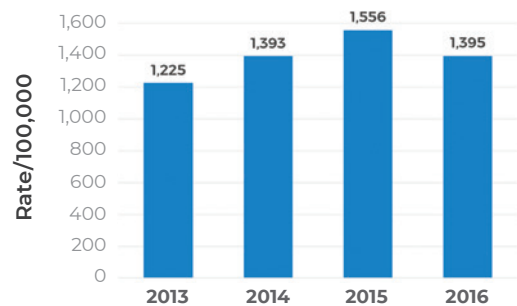
Methods (PI: Dr. A. Hall)

1. Records from 2013 to 2016 were accessed and the following variables were collected: number of Lumbar Spine (LS) CTs with or without contrast, age, sex, ordering physician specialty, and imaging service date.
2. To compare rates of LS CT ordering in EH, age-sex standardized rates were calculated and compared to other jurisdictions in Canada and other countries.

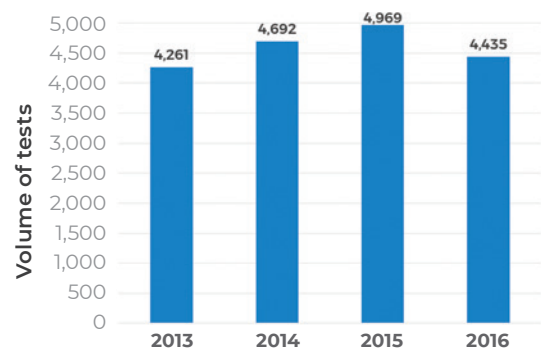
Results

- A total of 18,358 LS CTs were performed in EH between 2013 and 2016.
- 83% of CTs were ordered by family physicians.

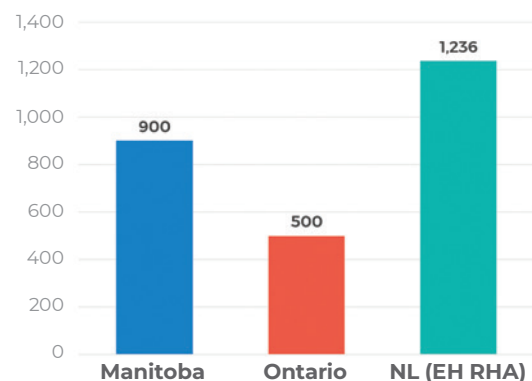
Age-Sex Standardised Rate of Adult CT Referrals per 100,000 People for LS from Family Physicians in EH from 2013–2016



Volume of CTs Ordered in EH from 2013–2016



Age-Sex Standardised Rates of all CTs Ordered (by any Health Professional) per 100,000 People by Province (2001–2011, *NL Data 2013–2016 only)



Conclusions

1. There is a high rate of LS CTs ordered in EH compared to other countries or larger Canadian provinces.
2. In view of the low rate of red flags for CT and the risk of cancer from CT radiation, fewer LS CTs should be ordered.

Carotid Artery Testing for Stroke Prevention in NL

Guideline

Canadian Stroke Best Practice Recommendations states that carotid artery territory TIA is a medical emergency and patients need either carotid artery ultrasound or CT angiogram within 24 hours.

Objectives

To determine whether the reduction in carotid artery testing at St. Clare’s Hospital was associated with an increase in other diagnostic modalities, and whether the rate of appropriate ordering of carotid artery testing had improved following academic detailing.

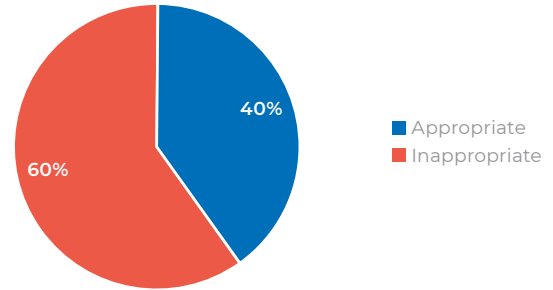
Practice Points

1. 19% of strokes in NL are secondary to warning symptoms of Transient Ischemic Attack (TIA), the highest rate in Canada.
2. Secondary strokes are preventable in patients with carotid artery territory TIA because early carotid revascularization is efficacious in symptomatic patients with critical carotid stenosis.
3. Consequently, carotid artery territory TIA is a medical emergency and these patients need either carotid artery ultrasound or CT angiogram within 24 hours.
4. Carotid artery testing is appropriate when there are rapid onset symptoms arising from the carotid artery territory including:
 - Unilateral weakness of face/arm/leg
 - Speech disturbance (aphasia and/or dysarthria)
 - Monocular visual loss (Amaurosis Fugax), or loss of one visual field (Homonymous Hemianopia)

Data

- St. Clare’s Vascular Laboratory provided data on carotid ultrasound, and NLCHI provided data on volume of carotid ultrasounds undertaken in other hospitals and of CT/MRI carotid tests.

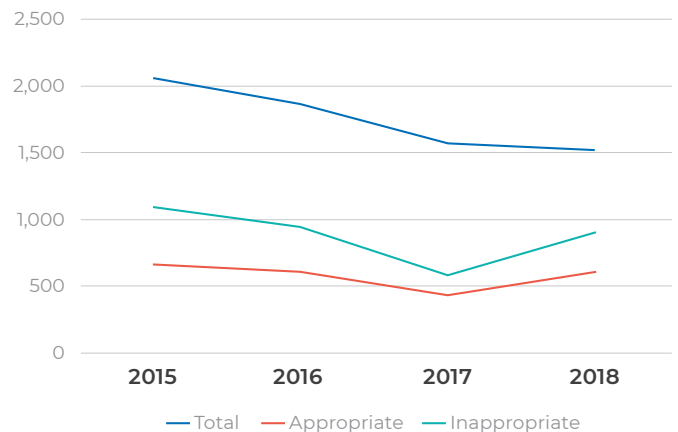
Carotid Artery Testing at St. Clare’s (2007–2015) N=17,600



- 40% of carotid artery tests ordered were indicated.
- More recent data (2015–2018) shows the proportion of appropriate carotid artery tests to overall number of tests performed at the Vascular Lab has not changed.

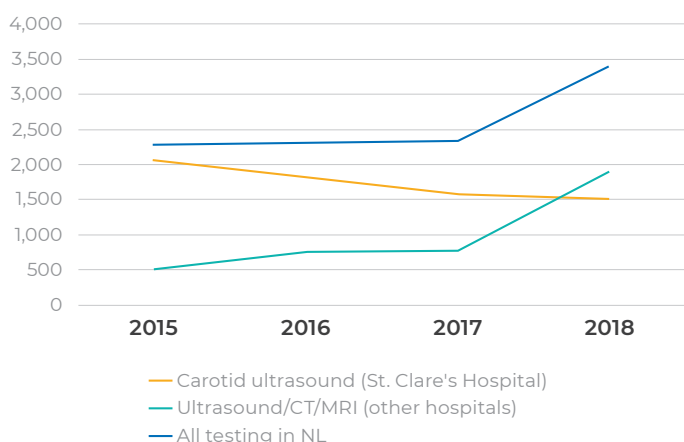
Carotid Artery Test Appropriateness

Volume of Carotid Artery Testing at St. Clare’s 2015–2018



40% of carotid tests were indicated.

Volume of Carotid Artery Testing in NL 2015–2018



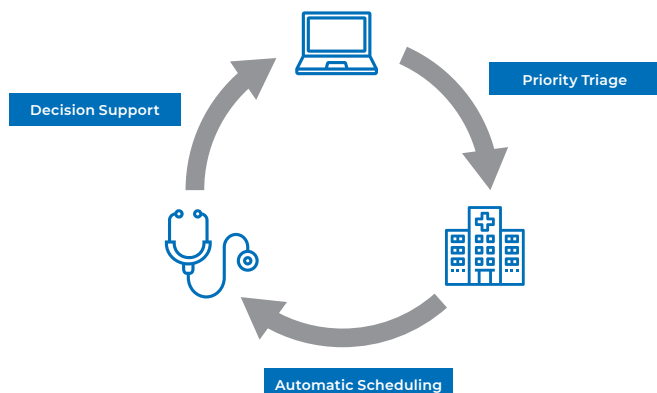
- The volume of carotid artery testing at the Vascular Lab has decreased.
- At the same time, the volume of carotid artery tests (e.g., carotid ultrasound, CT angiograms, MRI) at other health care facilities across the province has increased.

Wait Times

At the Vascular Lab, wait time for a Priority 1 (recent TIA) test decreased from 9 to 2.2 days in 2017. However, the optimal wait time is within 1 day.

Solution: An eOrdering form launched within HEALTHeNL, the provincial Electronic Health Record. It will include a decision tool to determine priority and automatic scheduling.

Basic Components of the eOrdering Solutions



When to Test?

✓ Good Indicators	✗ Bad Indicators
Unilateral weakness of face/arm/leg	Syncope
Speech disturbance (aphasia and/or dysarthria)	Headache
Mononuclear visual loss (Amaurosis Fugax), or loss of one visual field (Homonymous Hemianopia)	Tinnitus
	Carotid bruit
	Pain
	Generalized weakness

Conclusions

1. 40% of carotid artery testing in the Vascular Lab was indicated.
2. Carotid artery testing across the province has increased.
3. The wait time for high priority patients at the Vascular Lab has decreased but is still not optimal.
4. The objective of eOrdering is to increase the volume of necessary tests and improve wait time in high priority patients with carotid artery territory symptoms.

Reducing the Use of Acid Blockers and Motility Agents for the Treatment of Gastroesophageal Reflux (GER) in Healthy Infants: A Survey

Choosing Wisely Recommendation

Do not routinely use acid blockers or motility agents for the treatment of gastroesophageal reflux in infants.

Practice Points

1. Gastroesophageal reflux (GER) is common and benign in otherwise healthy infants, who are gaining weight appropriately.
2. GER is self-limiting and gets better with time.
3. Anti reflux medications are associated with increased risk of pneumonia, gastroenteritis, and the development of allergies.
4. Between 2014–2016, 150 prescriptions were recorded by the NLPDP for ranitidine and omeprazole in infants. We estimate over 300 prescriptions for these agents are dispensed annually for healthy infants in the province.

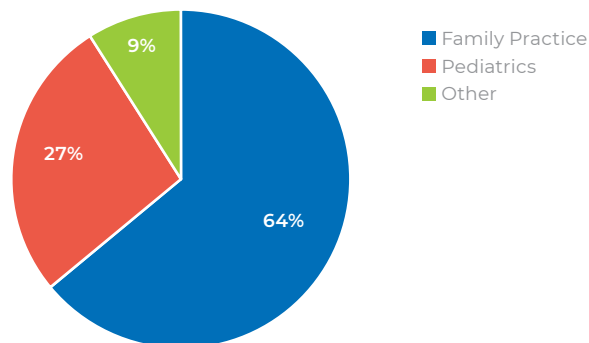
Methods (PIs: Drs. T. Dyer, L. Newhook and P. Sathya)

1. A survey about current knowledge and use of medications for GER in infancy was sent to physicians across Newfoundland and Labrador (Family Physicians, Pediatricians, Pediatric Surgeons, ENT Surgeons). 107 respondents answered at least one question.

Results

- 24% of respondents were unfamiliar with adverse effects of anti reflux medications in infants.
- 63% reported pressure from parents to prescribe medication for healthy infants with GER.
- Factors influencing decision to prescribe medications for infants with GER included parental anxiety (27% of respondents) and repeat visits to clinic (28% of respondents).

Respondant Specialty



Conclusions

1. GER in infants is a concern for parents.
2. Parent education and reassurance is recommended rather than prescribing medications.
3. Educational materials developed by Pediatric specialists at the Janeway and Memorial University are available for health care professionals in NL to aid in parent education.

Endometrial Cancer Associated With Lynch Syndrome Has a More Adverse Phenotype Than Sporadic Endometrial Cancer

Objective

To determine whether endometrial cancer that occurred in Lynch Syndrome caused by MSH2 mismatch repair gene mutations had a different phenotype (histology and clinical expression) compared to sporadic endometrial cancer.

Practice Points

1. Female carriers of an autosomal dominant mismatch repair mutation are at high risk of developing endometrial cancer.
2. In a group of female MSH2 mutation carriers, gynecologic screening did not result in earlier gynecologic cancer detection and, despite screening, two young women died from ovarian cancer suggesting hysterectomy with bilateral salpingo-oophorectomy be considered in female carriers who have completed child bearing (Stuckless S et al, Clin genetic, 2013).

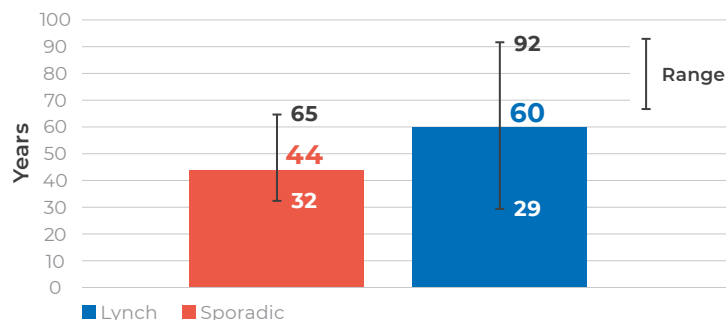
Methods (PI: Dr. A. Nichols)

1. Clinical data was abstracted from the medical charts of 46 women with a known MSH2 mutation and compared to similar data recorded for sporadic endometrial cancer in the NL Cancer Care Registry diagnosed from 2000 to 2010.

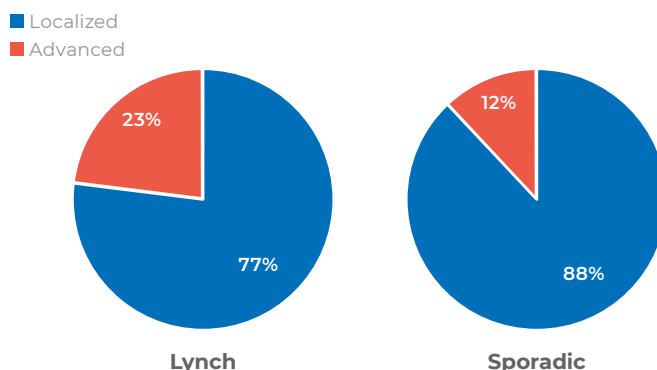
Results

- Endometrial cancer in female MSH2 mutation carriers was diagnosed at a significantly younger age than in sporadic endometrial cancer, at a significantly more advanced stage of disease, with a significantly higher prevalence of papillary serous and clear all type carcinomas, with a significantly higher grade of cancer.

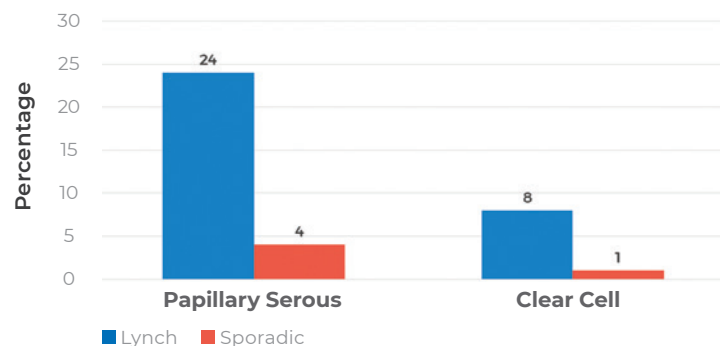
Median Age at Diagnosis with Range



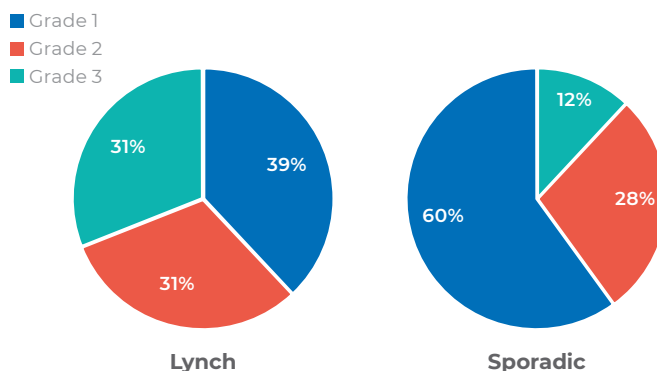
Localized (Stage I and II) versus Advanced (Stage III and IV)



Cell Type Carcinomas



Carcinoma Grade



Conclusion

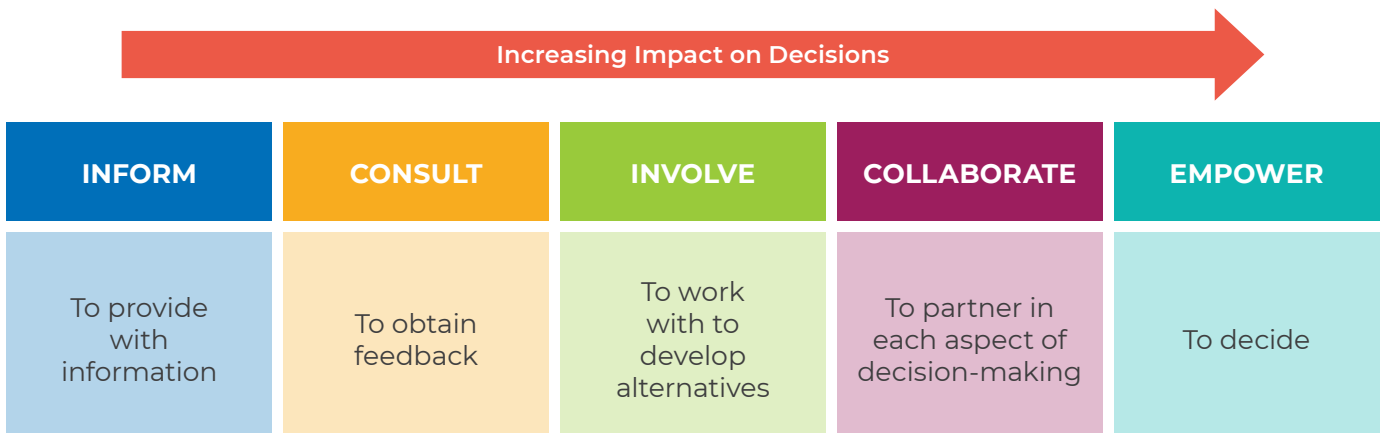
1. The phenotype of endometrial cancer in female Lynch Syndrome MSH2 mutation carriers is more adverse than that of sporadic endometrial cancer with earlier age of diagnosis, significantly more advanced stage and grade of cancer.

Patient Engagement

The best way to ensure your work will directly impact patients is by having patients at the table! People with lived experiences offer a perspective that can greatly impact the course and outcomes of any research or evaluation project. Quality of Care NL and NL SUPPORT encourage project teams and researchers to engage patients in all project phases.



Patients can be engaged at various levels.



Adapted from International Association of Public Participation (IAP2)

NL SUPPORT Patient Advisory Council (PAC):



NL SUPPORT facilitates a Patient Advisory Council (PAC)

- The PAC is a group of 21 individuals from across the province with a wide variety of backgrounds (health care, students, government, business, education).
- The purpose of the PAC is to provide advice and guidance on patient-oriented research priorities, as well as to engage in research projects.
- The group, which meets four times per year, contributed over 300 hours in 2018–2019 providing project feedback, advising on public engagement strategies, and helping to set the strategic direction of patient oriented research. In addition, patients also assist with knowledge translation, write plain language summaries for funding applications; advise on priority setting (for individual projects, funding priorities, and training needs for patients and researchers), and promote patient engagement nationally through networking.

In the past year, NL SUPPORT engaged patient partners in over 20 projects, such as:

- Public Awareness Campaigns (Antibiotics, Stroke, Proton-Pump Inhibitors)
- Advising on ways to increase access to primary care within rural communities
- Advising on resource development for patients of the Total Joint Assessment Clinic

“Their [patient] input is as valuable as the rest of ours in terms of their expertise, so we don’t sit around the table feeling like ‘I’m the expert, you’re somebody else.’ We all bring an expertise to the table.”

(LT – researcher)

“I’ve got kids. I want to make a better world for my kids. Anything I can do to make a better world for them, my grandkids, twenty generations down the road. But, maybe it would make a better world for me, too.”

(SG – patient partner)



GET INVOLVED!

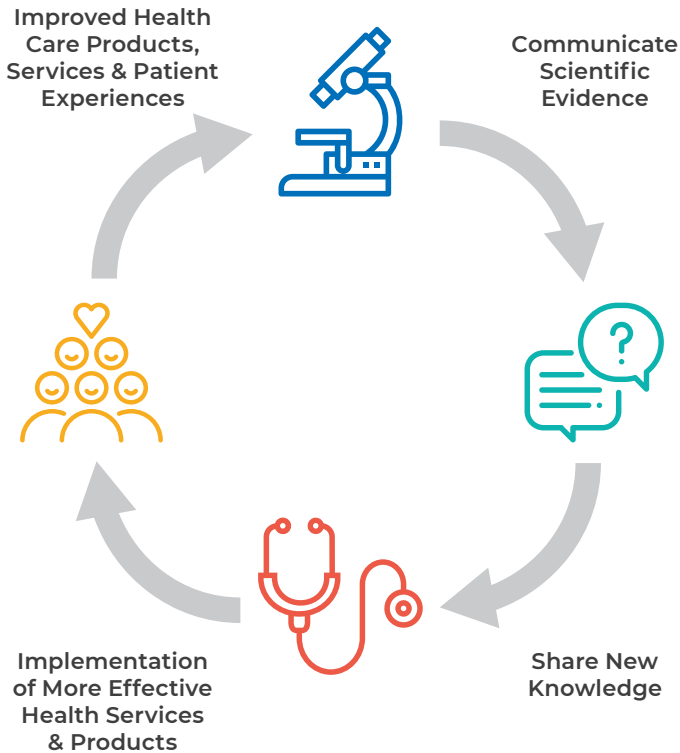
For more information on how to get involved as a patient partner, email us at info@qualityofcarenl.ca

Knowledge Translation: Moving Evidence Into Practice

Did you know?

- On average, it takes 17 years to move evidence into practice.
- The key to reducing this gap is **knowledge translation (KT)**.

KT is the process of communicating scientific evidence with the purpose of sharing new knowledge in order to lead to improved health care services, products, and patient experiences.



KT is most effective when planning starts early! Plan ahead for:

- Who needs to know about the findings.
- Why and how the information will be shared.
- Costs associated with KT projects (e.g. graphic design, printing).
- Evaluating the effectiveness of the KT strategies.

How We Can Help

We are committed to providing KT support to help reduce the gap between what is known and what is done, and ultimately to contribute to improvements in the delivery of health care by:

- Helping develop integrated KT strategies.
- Connecting teams to appropriate knowledge user groups.
- Providing idea development and design support.
- Consulting on KT-related questions.



FIND OUT MORE!

For more information on knowledge translation and what we can do to help you develop your plan, please email us at

info@qualityofcarenl.ca

Examples of Our KT Projects

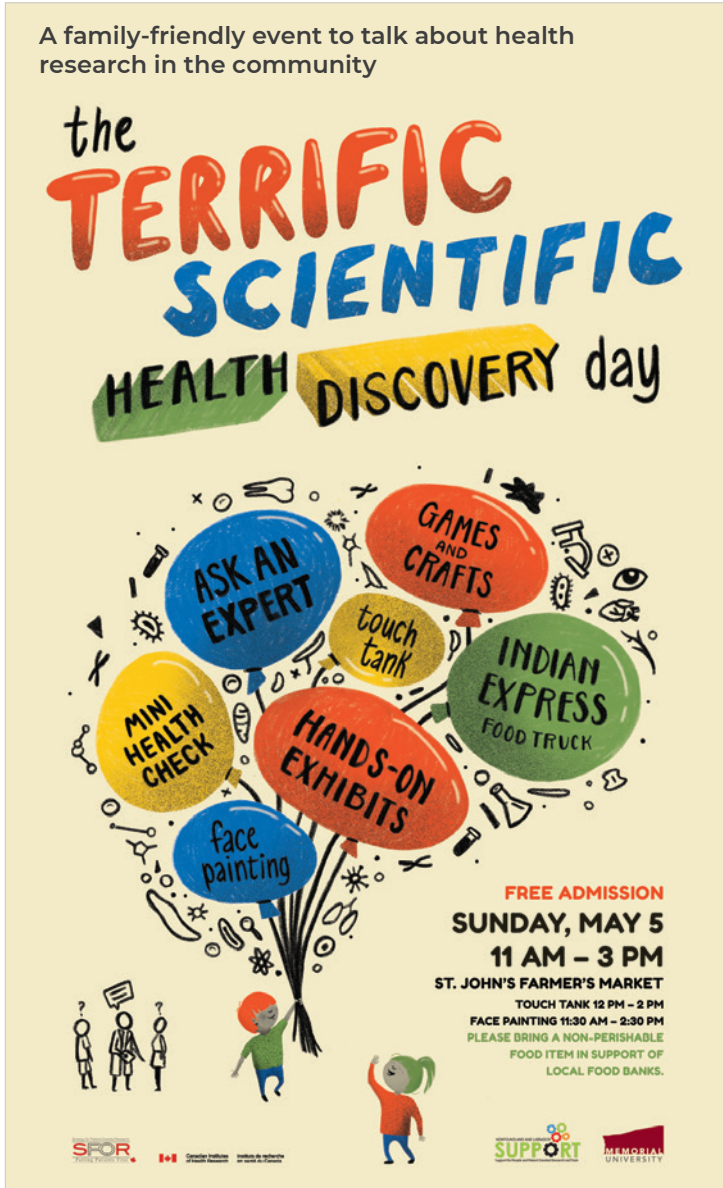
One-page patient info sheet



Science, Health and Research Education Summit, a free event aimed at health care stakeholders



A family-friendly event to talk about health research in the community



Public awareness campaign (social media, print, etc.)



Email campaigns to clinicians that contain research findings, as well as their personal ordering data and comparison to peers



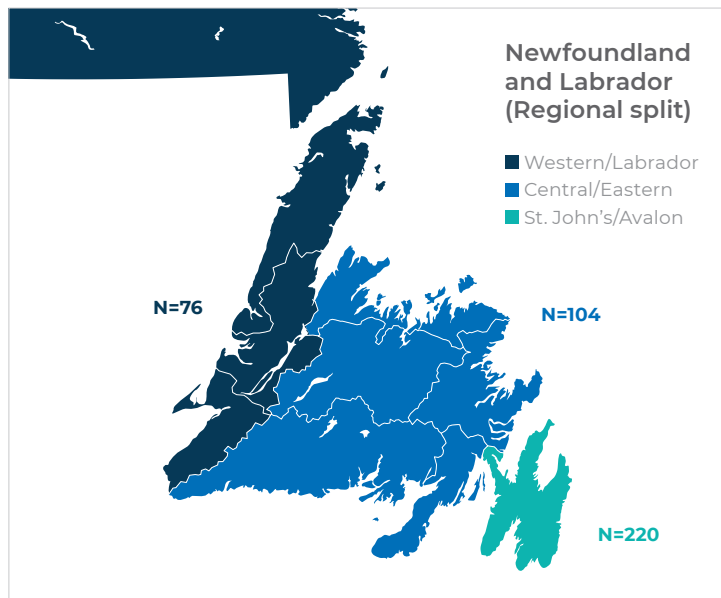
Survey of Public Awareness and Engagement With Quality of Care NL and Choosing Wisely NL

Survey Methods

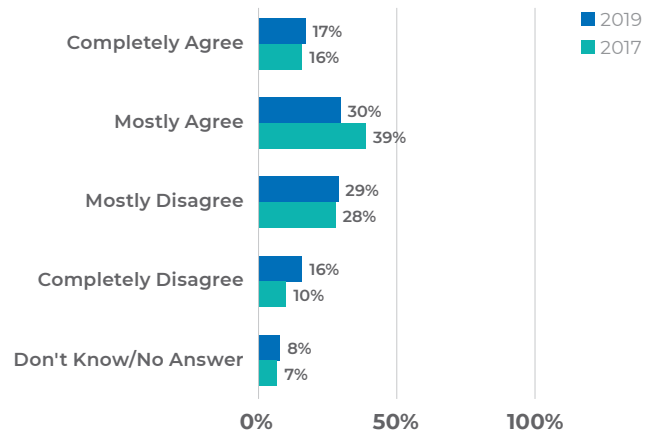
- Probability telephone survey from selected households in NL from 8 May – 25 May, 2019.
- Comparison of a sample of 400 adults aged 18+ years from NL in May 2019, and 401 adults in May 2017.

Results

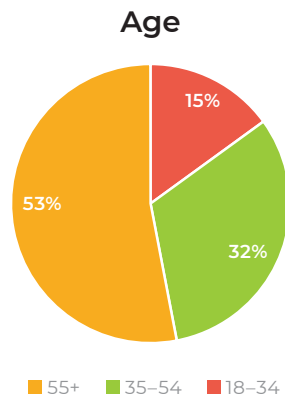
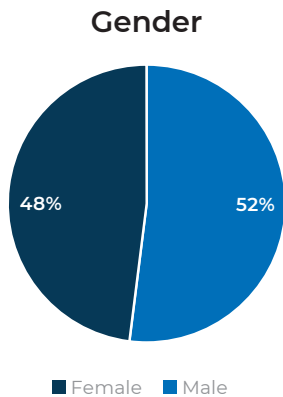
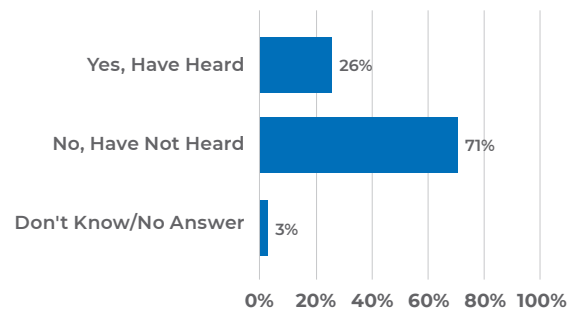
Region



Rate your level of agreement with the following statement: **there are a lot of unnecessary tests, treatments, and procedures that are not helpful to patients in our provincial health system.**

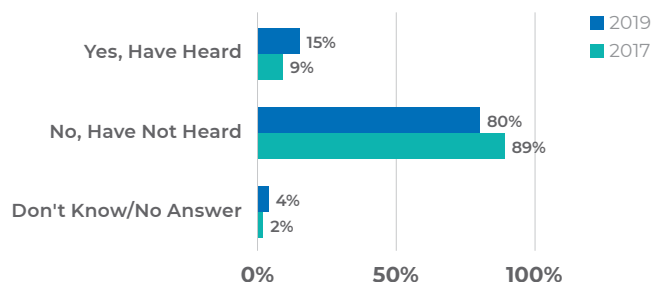


Prior to today, have you seen or heard anything about Quality of Care NL?



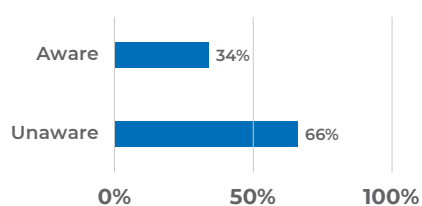
	NL	St. John's/Avalon	Central/Eastern	Western/Labrador
Yes, Have Heard	26%	23%	31%	27%

Prior to today, have you seen or heard anything about Choosing Wisely NL?



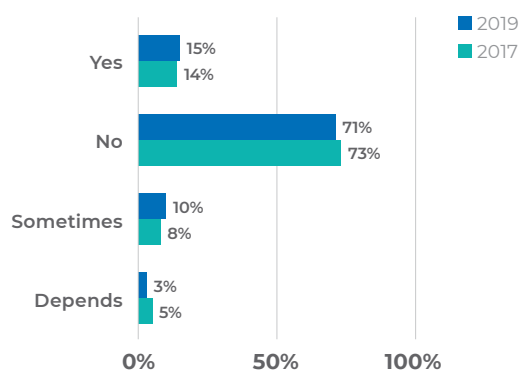
	NL	St. John's/ Avalon	Central/ Eastern	Western/ Labrador
2019	15%	16%	17%	10%
2017	9%	12%	5%	6%

Prior to today, have you seen or heard anything about Quality of Care NL or Choosing Wisely NL?

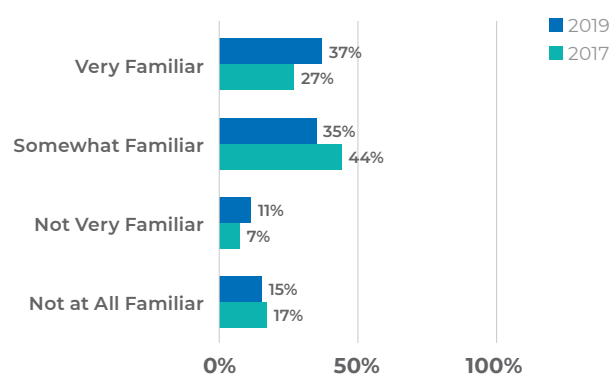


	NL	St. John's/ Avalon	Central/ Eastern	Western/ Labrador
2019	34%	32%	41%	31%

In your personal opinion, do you think antibiotics are required to treat a cold or flu?



How familiar are you with FAST, a way to remember and identify the common symptoms of a stroke?



Conclusions

- NL residents are divided regarding whether there are a lot of unnecessary tests, treatments, and procedures that are not helpful to patients in the provincial health system: 47% agree and 45% disagree.
- A third (34%) of residents have heard of either Quality of Care NL or Choosing Wisely NL. The proportion of those who had heard of Choosing Wisely NL increased from 9% in 2017 to 15% in 2019.
- A large majority (71%) of residents do not think antibiotics are required to treat a cold or flu.
 - Seven in ten (72%) residents are familiar with FAST.
 - There has been little change from 2017.

Public Engagement



Quality of Care NL, in partnership with Choosing Wisely NL, works to engage and empower patients and the public to play a meaningful role in their own health care.

Our public campaigns share information on health care topics that can help patients guide the care they receive.

Check out our patient and public resources at www.qualityofcarenl.ca to learn more about everyone's role in ensuring the right treatment, gets to the right patient, at the right time.

Examples of Our Public Engagement Projects

Four animations released for the 2017 Antibiotics Awareness Campaign. Promoted through:

- YouTube advertising – 38,747 impressions
- Social Media – 20,489 people reached

Video released for the 2018 Antibiotics Awareness Campaign featuring local media personality. Promoted through:

- Social Media – 6,891 people reached

Video released for 2019 Stroke Campaign. Promoted through:

- YouTube advertising – 57,015 impressions
- Rogers media buy – 126,000 views
- Social media – 53,741 people reached

Promoting open, two-way conversations between patients and health care providers.

View all our resources at www.qualityofcarenl.ca



Quality of Care NL

Our Partners

Our innovative approach enables us to work closely with all our partners, including:



Quality of Care NL

Visit our brand new website
featuring an extensive resource library!

www.qualityofcarenl.ca



Follow us on social media

