

Practice Points

Volume 3

July 2017 - April 2018



The Right intervention, for the Right patient
at the Right time.



Helping clinicians and patients engage in
conversations about unnecessary tests,
treatments and procedures.



Who We Are

Quality of Care NL/Choosing Wisely NL (QCNL/CWNL) is a collaborative effort between the leading health care entities in Newfoundland and Labrador: we work to ensure the right treatments get to the right patients 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.

QCNL/CWNL uses evidence-based health care research to encourage discussion between patients and health care professionals across multiple disciplines to determine the best course of treatment by promoting recommendations and guidelines, offering tools and resources, and implementing solutions.

Our Partners

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



Eastern Health



Western Health



Central Health



Labrador-Grenfell Health



Our Priorities

Our work is driven by the strategic direction of our partners, as well as by the people of Newfoundland and Labrador, through a public, patient-centered priority setting process. The research agenda for QCNL/CWNL is focused on:

Mental Health Addictions

Community Support & Services

Primary Health Care

Health Care Management

Seniors Care/Long-Term Care

Sustainable Health Care/ Effective Use of Resources

Preventive Care

For more information on Quality of Care NL or Choosing Wisely NL, please visit, qualityofcarenl.ca

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The results identified in this volume were provided by researchers in the Faculty of Medicine and the School of Pharmacy, Memorial University. Quality of Care NL/Choosing Wisely NL would like to thank all research teams and our partners for their contributions.

Drop the Pre-Op: Reducing Pre-operative Tests in Healthy Patients having Low Risk Surgery

Choosing Wisely Canada Recommendation

For pre-operative patients undergoing low-risk non-cardiac surgery, **don't order:**

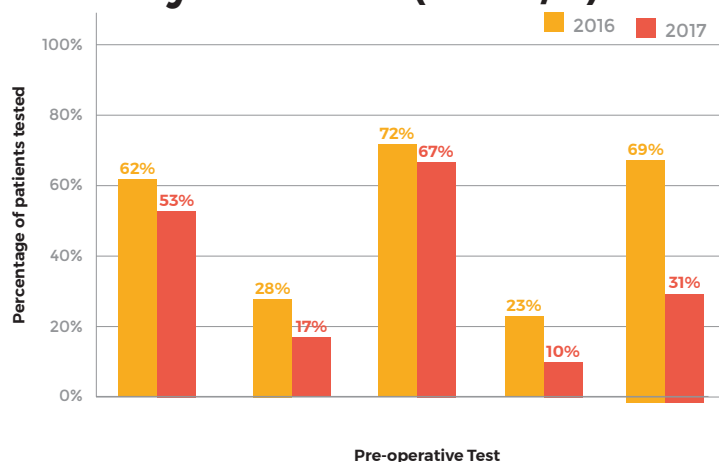
- pre-transfusion testing (type and screen) for all patients
- baseline laboratory studies (complete blood count, coagulation testing, or serum biochemistry) for asymptomatic patients
- baseline/resting ECG for asymptomatic patients
- baseline chest X-ray in asymptomatic patients (except as part of surgical or oncological evaluation)

Results

Testing in Low to Low-Moderate Risk Surgery (SCMH + HSC)

	Patients	Creatinine \$8	INR \$12	Hemoglobin \$11	Chest X-ray \$68	ECG \$50
2016	3997	4235	1573	4756	1135	2787
2017	4039	4027	1223	4621	607	1711
Reduction		208	350	135	528	1076
Cost Avoidance		\$1,664	\$4,200	\$1,485	\$35,904	\$53,800
Total Cost Avoidance in 2017 = \$97,053						
Potential Additional Cost Avoidance/Year = \$106,568						

Testing in Low or Low – Moderate Risk Surgery in Healthy Patients (ASA1/2)



Methods

1. In EH, local consensus on low to low-moderate risk surgeries was established and baseline data was analyzed for pre-operative testing in 2016 (HSC and St. Clare's).
2. A medical directive including the guidelines listed above was circulated by EH in January 2017.
3. Procedures performed on patients with a physiological status indicated by an ASA score of 1 or 2 (no physiologic or psychiatric disturbance and mild to moderate systemic disturbance) were analyzed.
4. The analysis included: minimally and minimally-to-moderately invasive procedures.

Conclusions

1. Approximately \$100,000 in cost avoidance in 2017 in St. John's hospitals.
2. Potential for another \$100,000/year in cost avoidance.
3. Over 500 healthy patients/year were not exposed to unnecessary radiation from chest x-rays.

Antibiotic Use for Urinary Tract Infection in Nursing Homes

Choosing Wisely Canada Recommendation

Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.

Methods

1. Baseline data for 2016 was obtained from the Infection Prevention & Control Program (Eastern Health).
2. Consensus criteria have been developed for the diagnosis of symptomatic UTI. Antibiotic use was determined to be inappropriate if residents did not meet the criteria for a UTI. The criteria are:

1 AND 2 must be met:

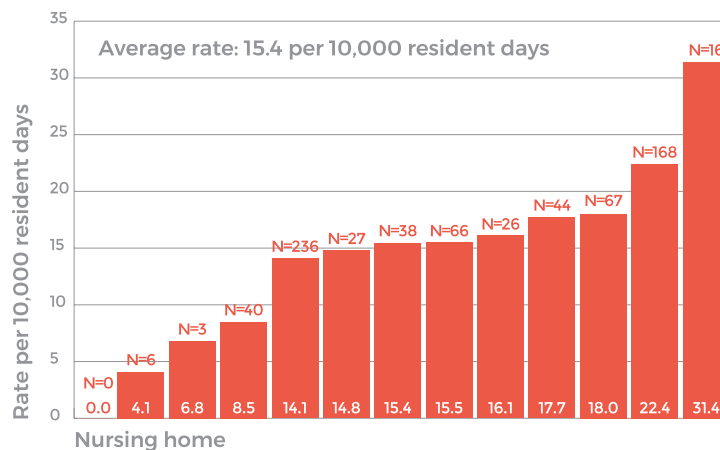
1. One of A, B, C or D
 - A. Fever*, rigors, or new-onset hypertension, with no alternate site of infection
 - B. Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytes
 - C. New-onset suprapubic pain or costovertebral angle pain or tenderness
 - D. Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostrate

AND

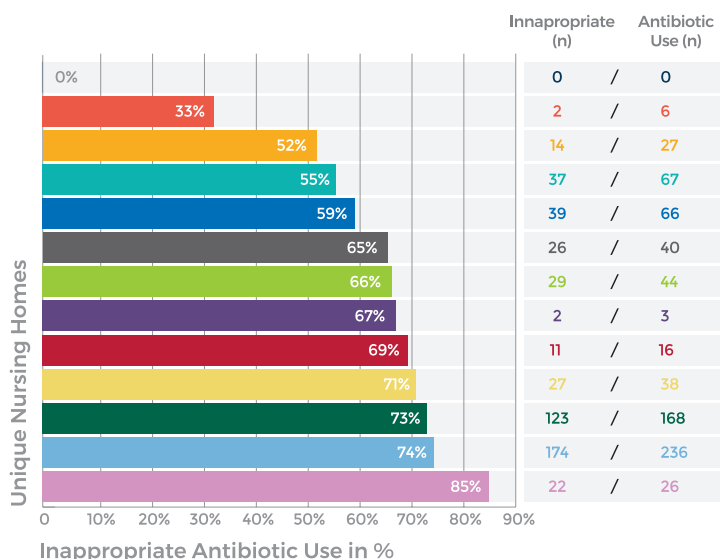
2. Urinary catheter specimen with at least 10⁵ cfu/mL of any organism (s)

3. Data was available for 13 of 15 Nursing Homes.

Antibiotic Use for UTI by Nursing Home



Percentage of Antibiotic Use Considered Inappropriate by Nursing Home



Conclusions

1. The average rate of antibiotic use for UTI was 15.4 per 10,000 resident days and varied by Nursing Home.
2. Overall, 69% of antibiotics prescribed were inappropriate and varied by Nursing Home.
3. In view of the risk of development of antibiotic resistant bacteria in Nursing Homes, targeted interventions are required to reduce the rate of inappropriate antibiotic prescribing.

Access to Colonoscopy

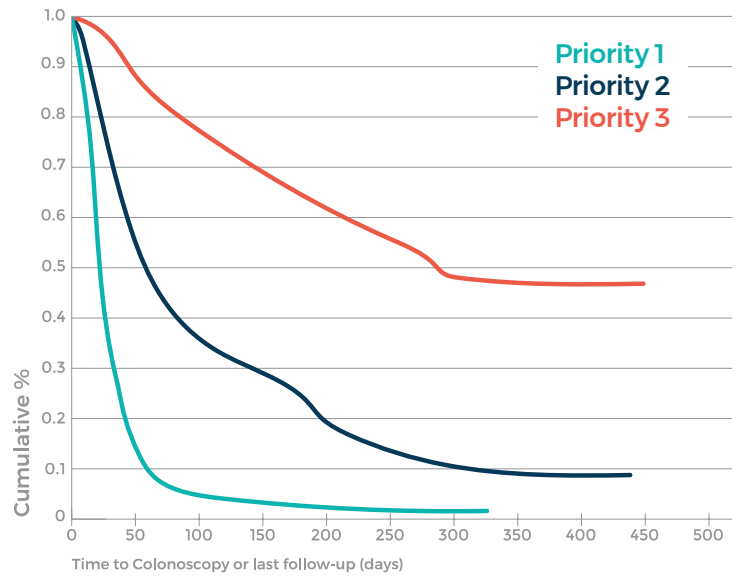
Practice Points

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

Wait Time Benchmarks for Colonoscopy

Urgency	Description	Acceptable Time Frame
Priority 1 Urgent	Conditions for which the procedure facilitates diagnosis and/or directs health management, and must be done quickly to prevent adverse patient outcomes.	0-14 Days
Priority 2 Non Urgent	Conditions for which the diagnostic procedure supports patient health care planning and appointment scheduling does not usually adversely affect patient outcomes.	0-60 Days
Priority 3 Baseline Screening	Asymptomatic patients for whom the procedure is required based on average risk.	0-182 Days
Priority 4 Surveillance	Patients for whom the surveillance procedure is requested for a specific future time.	Variable

Wait Time Evaluation Based on Priority Score



Median Time to Colonoscopy

- Priority 1: 17 days
- Priority 2: 57 days
- Priority 3: 286 days

Percentage of Patients Meeting Benchmarks

- Priority 1 (0-14 days): 44%
- Priority 2 (0-60 days): 52%
- Priority 3 (0-180 days): 36%

Colonoscopy Data Summary 2016 for Eastern Health

	Status			
	Attended	Booked	Pending	Total
Priority 1	1,644	4	6	1,654 (12%)
Priority 2	4,006	509	356	4,871 (36%)
Priority 3	561	176	526	1,263 (9%)
Priority 4	585	564	4,533	5,682 (43%)
Total	6,976 (51%)	1,253 (9%)	5,421 (40%)	13,470

Potential factors affecting patient wait times:

- Limited endoscopy time for some physicians with long wait lists
- Internal booking process, data entry and waitlist policies/management
- Inappropriate prioritization and adherence to published guidelines
- Limited infrastructure to meet demand

Conclusions

1. Access to colonoscopy was not optimal. Reasons for this varied from hospital to hospital.
2. Report cards by hospital and doctor provide baseline evidence to facilitate change and improve wait times.

Inappropriate Antipsychotic Use in Nursing Homes

Choosing Wisely Canada Recommendation

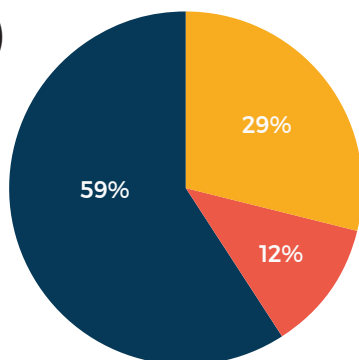
Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia

Methods

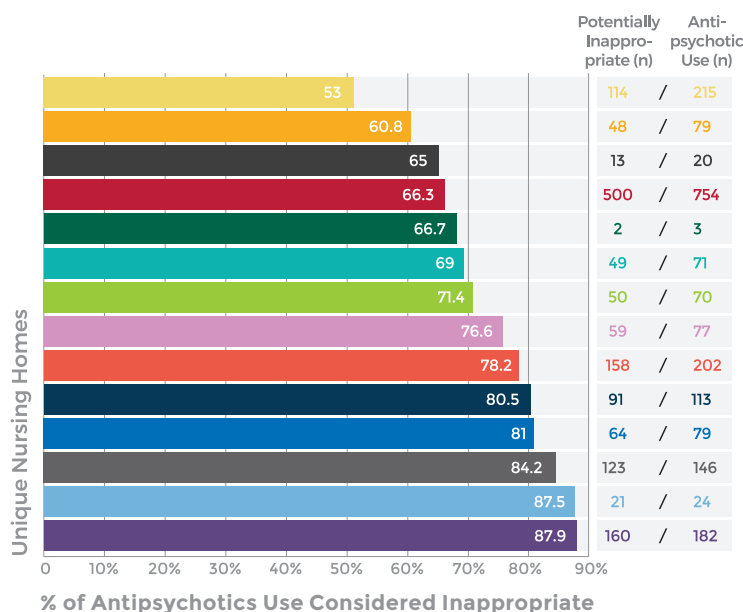
1. Baseline data for 2016 was obtained from the RAI-MDS 2.0 for 14 Nursing Homes in Eastern Health.
2. Inappropriateness was defined as the percentage of residents on antipsychotics without a diagnosis of psychosis (i.e. residents without a diagnosis of schizophrenia, Huntington's chorea, delusions, hallucinations and end of life residents).

Antipsychotic Use (% of residents)

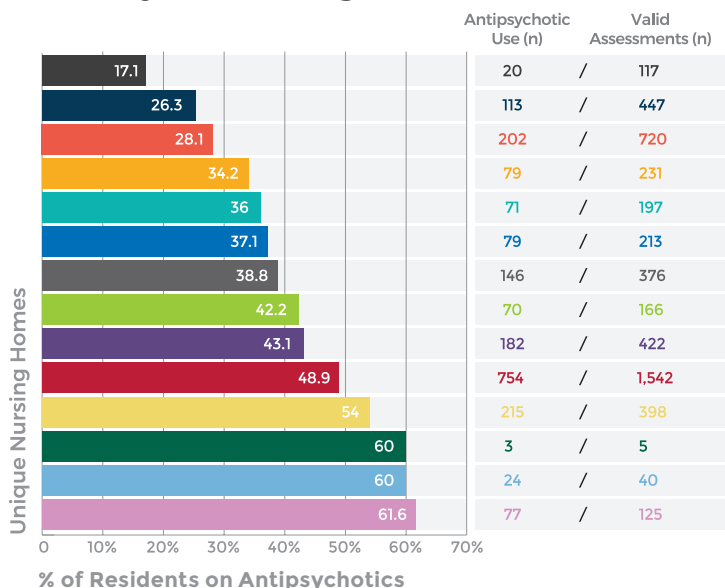
Yes, potentially inappropriate
 Yes, appropriate
 No antipsychotic use



Potentially Inappropriate Antipsychotic Use by Nursing Home



Use by Nursing Home



Conclusions

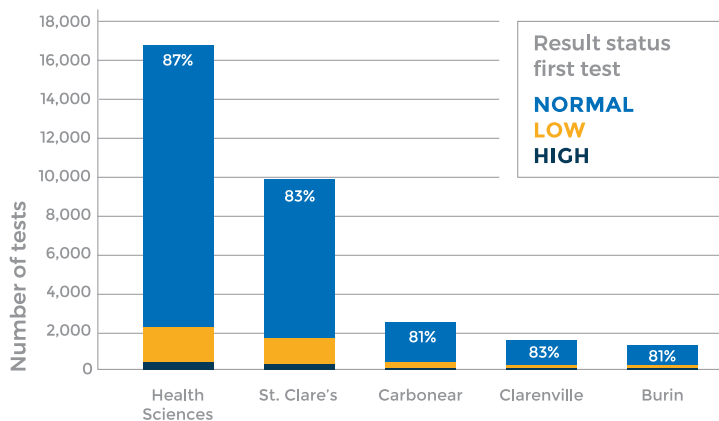
1. Rates of antipsychotic use and inappropriateness vary by Nursing Home.
2. Potentially Inappropriate antipsychotic use in Nursing Homes is high (**71% of those prescribed antipsychotics**).
3. Targeted interventions are needed to reduce the potentially inappropriate antipsychotic usage in Nursing Homes.

Overuse of Renal Function Tests in Medical-Surgical Units of Eastern Health

Practice Points

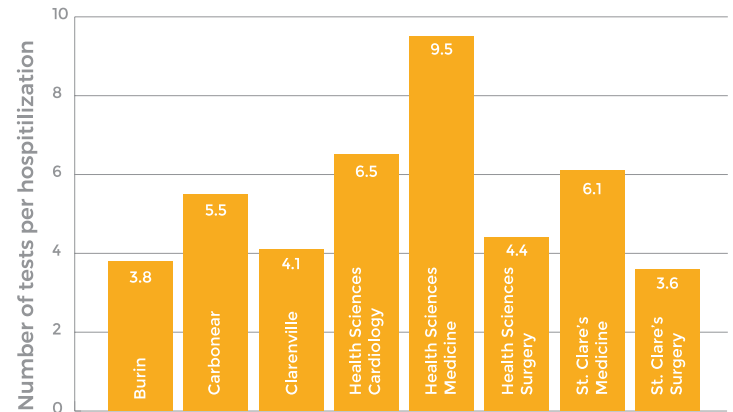
1. Renal function testing comprises five tests often ordered as a bundle.
2. Serum creatinine is a good measure of glomerular filtration rate.
3. Blood urea is helpful in evaluating renal function in patients at risk of acute kidney injury.
4. Serum sodium concentration provides information on the amount of water in the body relative to the total body sodium.
5. Serum potassium concentration is a measure of extracellular potassium concentration.
6. Serum bicarbonate is a measure of acid-base function.
7. Often a bundle is ordered when only one test is of clinical interest.
8. Data was analyzed on use of serum sodium testing in the medical-surgical units of Eastern Health from 1 Sept 2014 to 31 Aug 2016.

Number of Initial Tests by Hospital



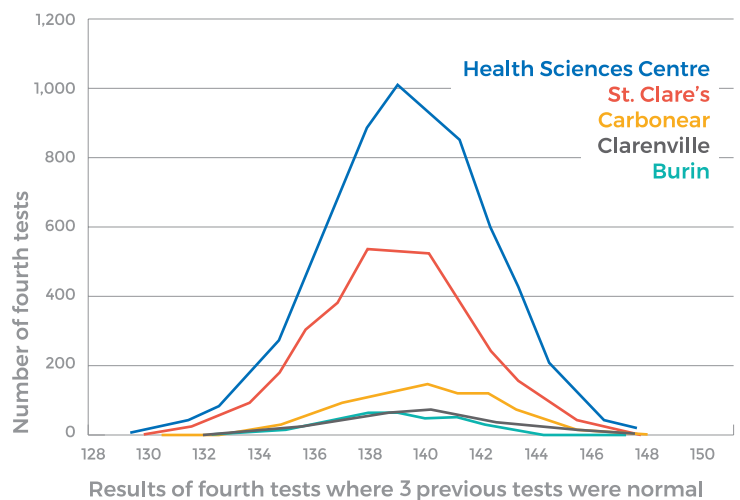
85% of first serum sodium tests are normal

Average Number of Tests per Hospitalization



Repeat tests of serum sodium is high

95% of 4th Serum Sodium Tests were Normal where 3 Previous Tests were Normal!



Conclusions

1. Excessive renal function testing occurs in the medical-surgical units of Eastern Health, particularly at the Health Sciences Centre medicine unit.
2. Even when serum sodium has repeatedly been reported as normal, it is frequently re-ordered.
3. Do not order renal function tests as a bundle, but as individual tests for a specific clinical indication.

Stroke Care in St John's: Impact of a New Stroke Unit at Health Sciences Centre

Practice Points

1. Optimal stroke care includes early presentation to the ER, use of CT to differentiate ischemic from hemorrhagic stroke, use of thrombolytics on diagnosis of ischemic stroke, admission to a stroke unit, and discharge of survivors of ischemic stroke on anti-thrombotics.
2. There are two stroke units in St. John's: St Clare's Mercy Hospital (SC) has a unit and the Health Sciences Centre (HSC) has a new unit that was opened on 1 Jan 2016.
3. Interventions and outcomes were compared by hospital for patients admitted Jan 2016 - May 2017 to patients admitted Feb 2012 - Dec 2015.
4. **The case mix was different for the two hospitals in 2016 - 2017:**

	% Ischemic Stroke	% Hemorrhagic	% TIA
HSC (N=453)	52	22	17
St. Clare's (N= 261)	48	7	29

Ischemic Stroke Interventions

	2012 - 2015		2012 - 2015	
	St. Clare's	HSC	St. Clare's	HSC
CT/MRI % on presentation	89	85	95	93
Thrombolysis on presentation	7	9	10	10
Anti-thrombotics on discharge	82	76	83	84

Outcomes of Ischemic Stroke

	2012 - 2015		2012 - 2015	
	St. Clare's	HSC	St. Clare's	HSC
Mortality %	11	13	10	10
Home without Supports %	36	44	13	18
Home Support %	11	5	30	36
Continuing Care %	37	31	41	29
Mean stay days	17	19	14	13

Outcomes of Hemorrhagic Stroke

	2012 - 2015		2012 - 2015	
	St. Clare's	HSC	St. Clare's	HSC
Mortality %	32	28	35	18
Home without Supports %	24	30	0	25
Home Support %	9	6	24	27
Continuing Care %	29	25	29	25
Mean stay days	23	21	11	18

Conclusions

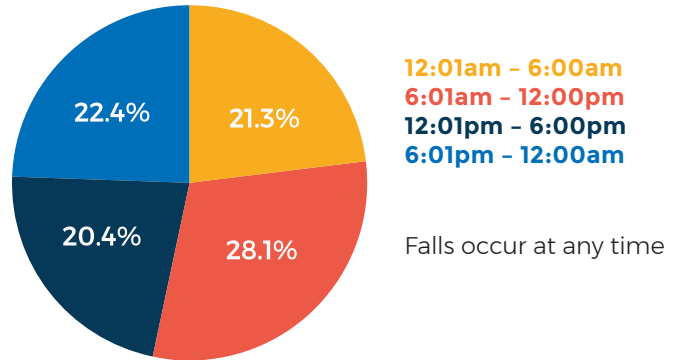
1. Use of thrombolysis for ischemic stroke is poor in both hospitals. This process of care needs improvement.
2. A decrease in hospital length of stay and an increase in the use of home supports for ischemic stroke or continuing care for hemorrhagic stroke was evident in both hospitals.

Falls in Personal Care Homes within Eastern Health

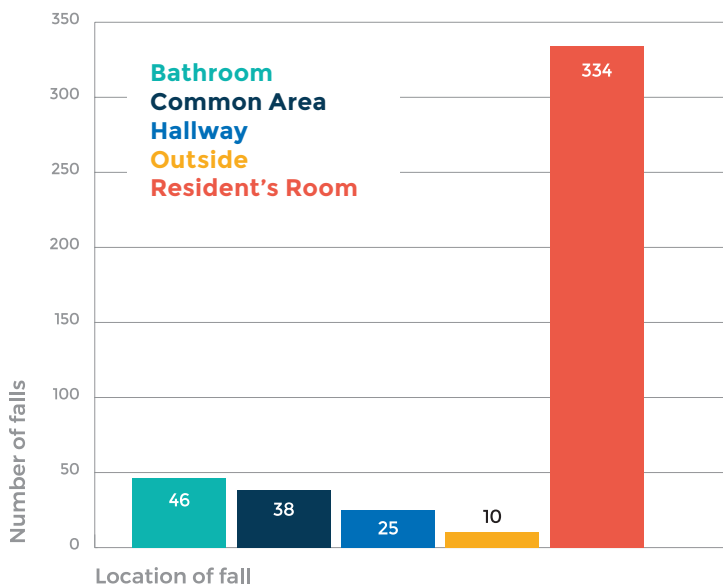
Practice Points

1. Falls cost the Canadian economy \$2.8 billion per year.
2. One in three seniors falls 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 home care services.
5. 37 Personal Care Homes (PCH) in Eastern Health reported 456 falls from 1 Jan 2016 to 31 Mar 2016: five falls every day in PCHs within Eastern Health.
6. 61% of those who fell in Eastern Health, were female.

Percentage of Falls by Time of Day

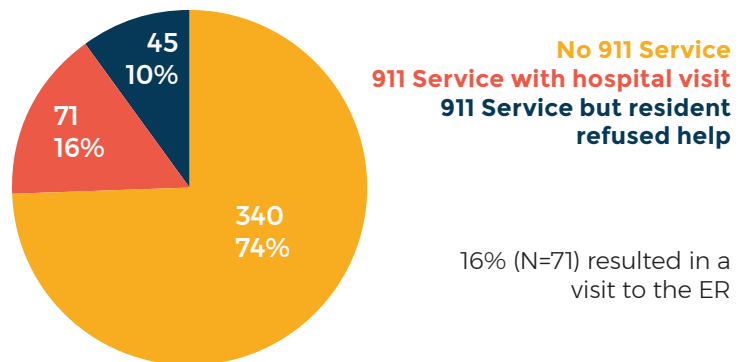


Number of Falls by Location



The vast majority of falls occur in the resident's room

Number of Falls Using 911 Service



Conclusions

1. This baseline data demonstrates that falls occur frequently in Personal Care Homes, usually in the resident's room and at any time of the day.
2. A Falls Prevention Program in Eastern Health was implemented in July 2017. The initiative was developed to assess and further educate individuals and staff at all PCHs on the risks associated with falls.

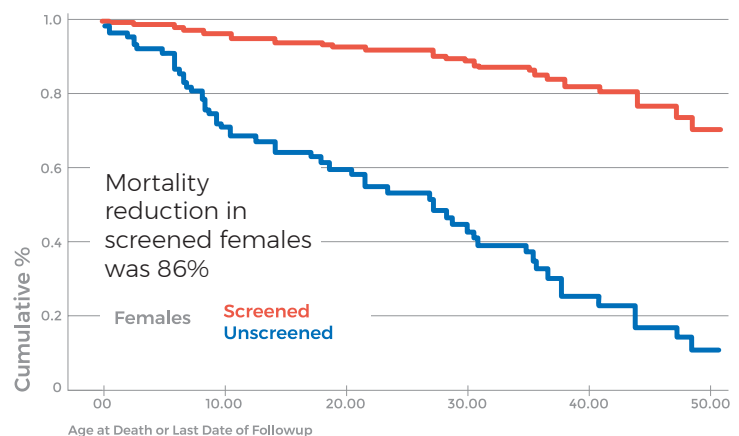
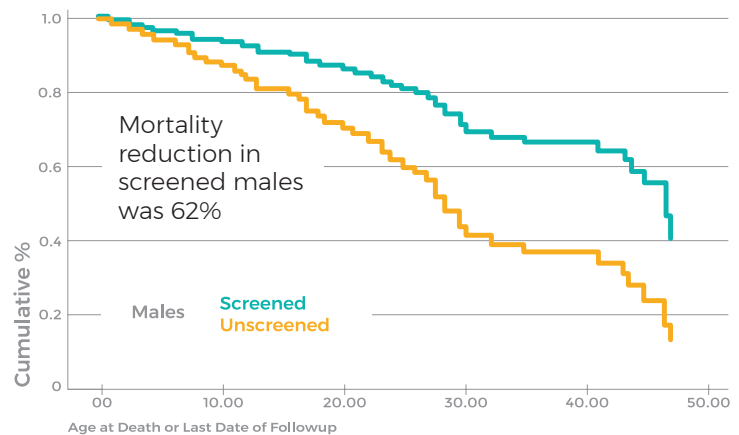
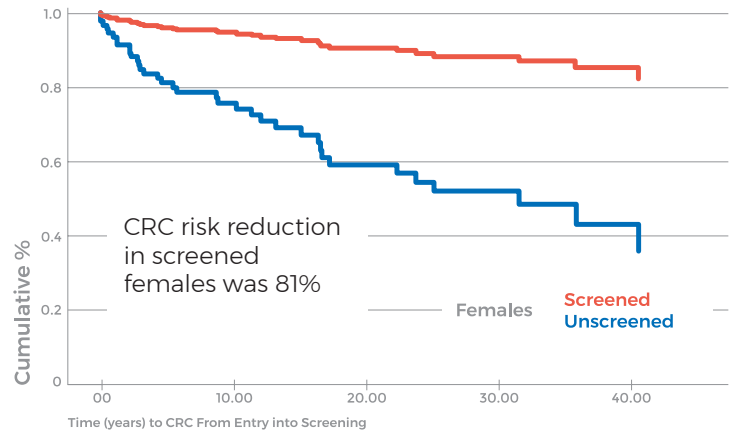
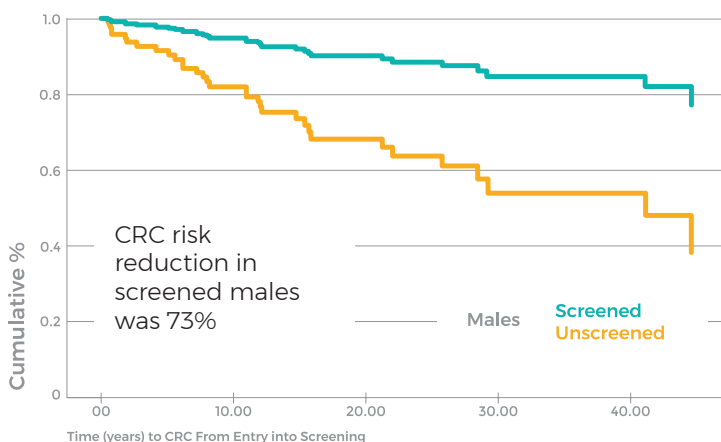
The Impact of Screening Colonoscopy in Families at High Risk of Colorectal Cancer

Practice Points

1. Hereditary non-polyposis colorectal cancer is an autosomal dominant condition caused by Lynch Syndrome or by Familial Colorectal Cancer Type X (FCCTX). It is the cause of about 6% of incident CRC in NL.
2. Lynch Syndrome is caused by germline mutations in the mismatch repair genes. We have reported in Clinical Genetics (2013) that screening colonoscopy done at 1-2 year intervals significantly reduced the incidence of CRC by 71% in male and female mutation carriers.
3. In FCCTX the risk of CRC is also very high but it is not caused by known mutations. Consequently all family members at risk of CRC require screening with colonoscopy.

We have examined the impact of screening every 1-2 years in 20 families with FCCTX comparing outcomes in 79 males and 83 females to those in matched controls who were not screened.

Sex	Median age on entry to screening	Median follow-up years	%CRC	Median Survival Years after start of screening
Males	44.8	12.4	12	32.3
Females	44.5	11.2	7	>35



Conclusions

1. Screening colonoscopy done at 1-2 intervals in family members with FCCTX reduced the risk of CRC by 73% in males and by 81% in females.
2. Members of families at high risk of CRC should enter colonoscopy screening programs 10 years before the youngest age of onset of CRC in the family.

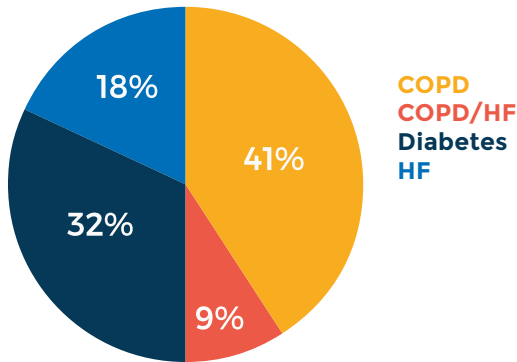
Remote Monitoring in Patients with Chronic Disease

Methods

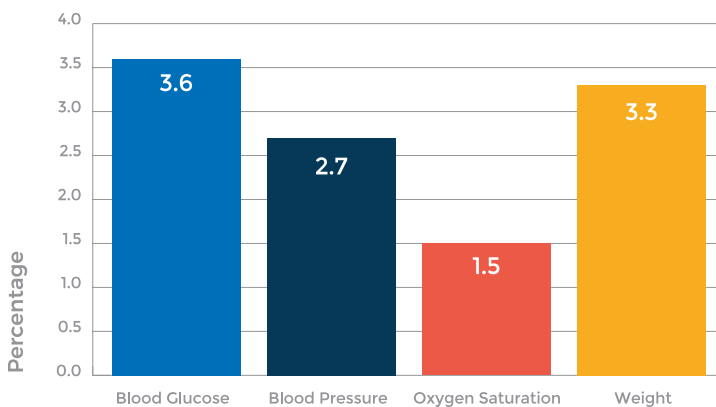
1. Electronic monitoring of patients with chronic disease started in Eastern Health in 2016.
2. The feasibility period was problem filled for enrollment, equipment functioning, and threshold setting for intervention by Registered Nurse (RN).
3. In addition to monitoring of blood pressure, oxygen saturation and weight, glucose monitoring was added.
4. Program evaluation was undertaken for a six month period, 1 Sept 2017 – 19 Feb 2018.

244 patients were enrolled, 171 (70%) were referred to the program rather than identified by electronic perusal of ER database.

Chronic Conditions Monitored

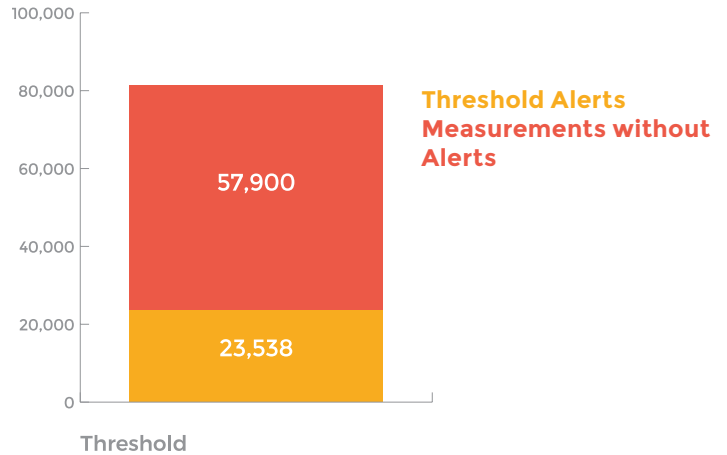


Failed Readings



Failed readings were infrequent.

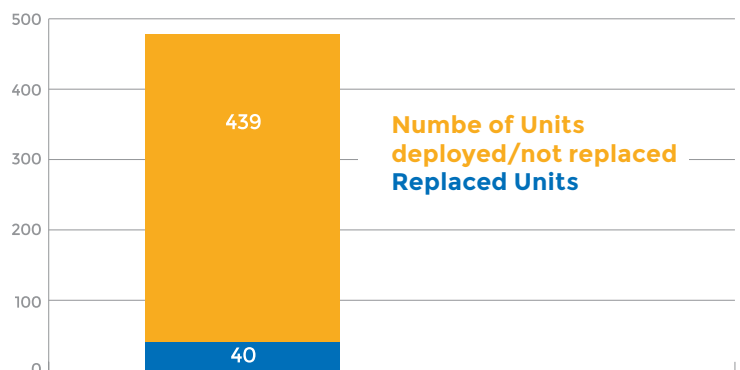
Frequency of Threshold Alerts



Threshold alerts were very frequent: 29% of measurements.

Perceptions of quality of life, health, self-management, symptom monitoring, knowledge, confidence, activity limitations significantly improved during the program but deteriorated following discharge.

Electronic Unit Longevity



40 of 479 (8%) of electronic units were replaced.

Conclusions

1. Compared to the feasibility period, electronic units were more reliable, failed readings were less frequent, but threshold alerts continued at a high rate.
2. Perceptions of quality of life significantly improved during the program, which lasted 4-6 months, and deteriorated following discharge from the program.
3. Impact on hospitalization and ER visits will be studied.

Peripheral Artery Disease Testing

Practice Points

1. Approximately 12% of adults in Newfoundland and Labrador have Peripheral Artery Disease (PAD).
2. Usually, patients with PAD DO NOT need a test or revascularization procedure.
3. There are simple and safe ways to improve PAD symptoms through home management.
4. Choosing Wisely Canada guideline: **do not** suggest a test that will not change the patient's clinical course.
5. Do peripheral vascular testing in those who could potentially benefit from a revascularization procedure.

When to test?



Good Indicators

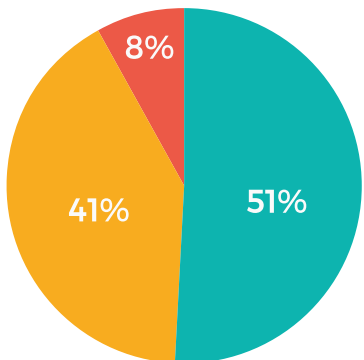
- Rest pain (pain in feet, especially when legs are elevated in bed)
- Tissue loss (ulcers/sores on the feet that will not heal or a toe that is blue or black and may hurt)
- Severe claudication (leg pain while walking severe enough to limit lifestyle or work)



Bad Indicators

- Mild claudication (leg pain with exercise that stops when at rest)
- Leg cramps
- Raynaud's Phenomenon
- Digital cyanosis
- Absent peripheral pulses
- Family history with no symptoms

PAD Test Results

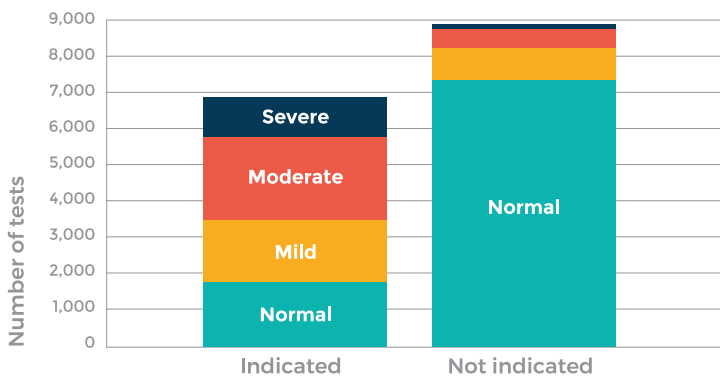


Normal Test Result
Early signs of PAD
May need a procedure

Around 2,000 PAD tests are conducted each year at St. Clare's Vascular Lab

Over 90% of the people tested do not need a revascularization procedure

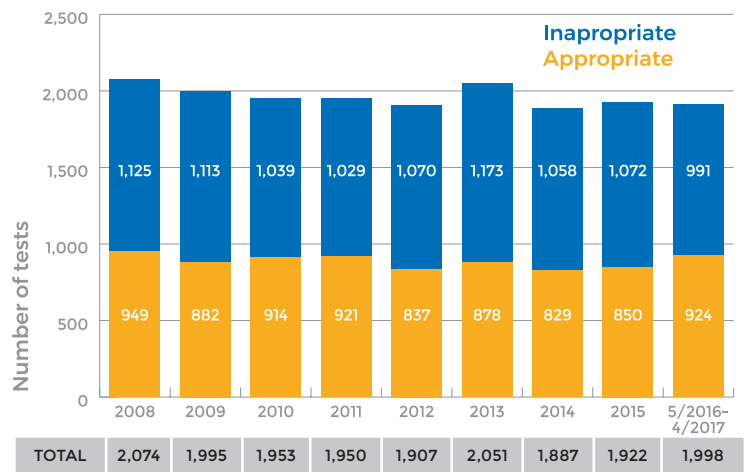
Arterial Disease



Proportion of tests analyzed by indication and by presence of PVD: (excluding testing in patients with a previous limb revascularization procedure)

How can we improve

Our objective is to test patients with symptoms of vascular disease that may need revascularization quickly, and not test patients unless they have symptoms indicative of disease requiring surgical intervention. Sometimes testing may be helpful in making a diagnosis of PAD in patients with symptoms consistent with ischemia, even though a procedure is not contemplated.



Conclusions

1. 1.8% of tests that were not indicated had severe PAD.
2. The volume of PAD tests that were indicated and were not indicated did not change from 2017 to 2018.
3. Unnecessary tests will increase wait times for patients who need tests

The Impact of Comprehensive Geriatric Assessment at St. Clare's Hospital

Practice Points

1. Comprehensive geriatric assessment is a holistic approach to managing problems of the frail elderly.
2. This program was initiated on Floor 7W at St. Clare's hospital 1 Jan 2017. Outcomes were compared to wards 7E and 4W who did not have access to this program.

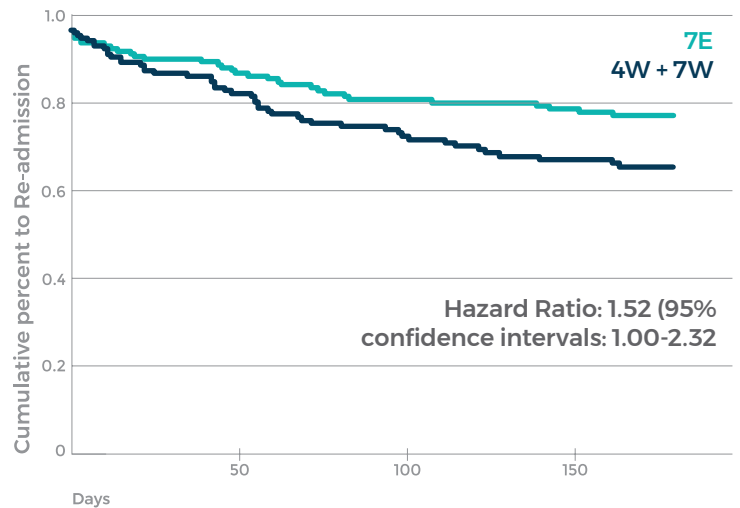
Patient Characteristics and Outcomes by Ward

	7W	7E	4W
Number	212	149	201
% >80 years	46	45	46
% female	55	54	57
% frailty score > 6	38	27	37
% mortality	9	4.7	9
% discharged to home or continuing care	75	85	76
Outcomes			
% readmitted after discharge	25	34	33
% attended ER after discharge	56	72	61

Conclusions

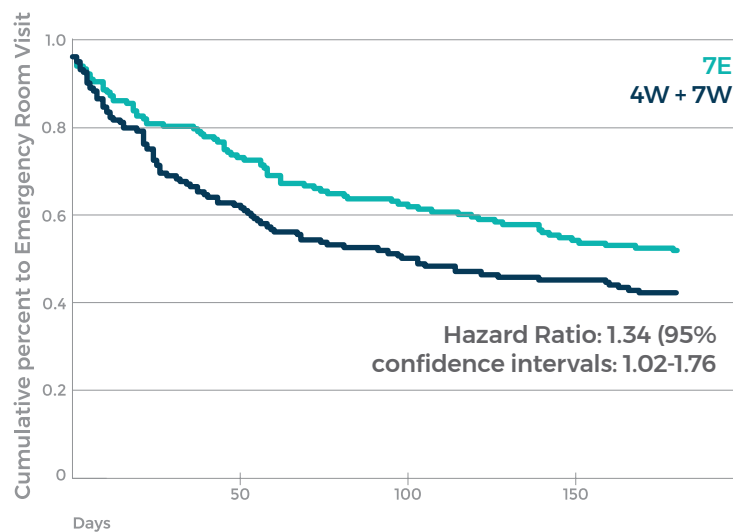
1. Frail elderly patients admitted to 7E had a better prognosis than those admitted to 7W and 4W.
2. Both re-admission and attendance at ER following discharge occurred less frequently in those who received comprehensive geriatric assessment than those who did not.

Re-admission for 7E v 4W + 7W



52% increased risk of re-admission for patients not receiving comprehensive geriatric assessment.

First Emergency Event for 7E v 4W + 7W



34% increased risk of visit to emergency room after discharge for those not receiving comprehensive geriatric assessment.

Use of Non-invasive Cardiac Testing in Patients with Stable Angina who had Cardiac Catheterization

Practice Points

1. Revascularization in patients with critical coronary artery disease (CAD) and stable angina offers quality of life benefits, but does not provide mortality benefit.
2. Non-invasive coronary artery (CA) testing is helpful in identifying patients at high risk of having critical disease.
3. The rate of diagnosis of critical disease in patients undergoing cardiac catheterization should be >80%.

Methods

In the APPROACH database all patients from 1 Jan 2015 -15 Nov 2017 who had cardiac catheterization for stable angina were defined by whether or not they had non-invasive testing, exercise stress testing, or other advanced non-invasive tests (exercise/persantine myoview, thallium perfusion imaging, CT Coronary Angiography, or stress echo).

Critical CAD was defined as at least one > 50% stenosis.

No Stress Test or Advanced Non-invasive Testing Undertaken by Region

	# Stable angina	# no test	% no test
Province	3773	989	26
Eastern	2309	613	27
Central	932	206	22
Western	381	105	28
Northern	201	65	32

26% of patients with stable angina underwent cardiac catheterization without prior stress or advanced non-invasive cardiac testing

Percentage of Critical CAD by Non-invasive Testing in NL

	# who had test(s)	% who had test(s)	% critical CAD
Exercise Stress	2065	55	67
Advanced Non-invasive	719	19	74
Exercise Stress or Advanced Tests	2784	74	69
Both Exercise Stress and Advanced Tests	141	4	71
No Test	3773	26	72

In NL, the diagnostic precision of non-invasive testing is disappointing, and will be investigated.

Conclusions

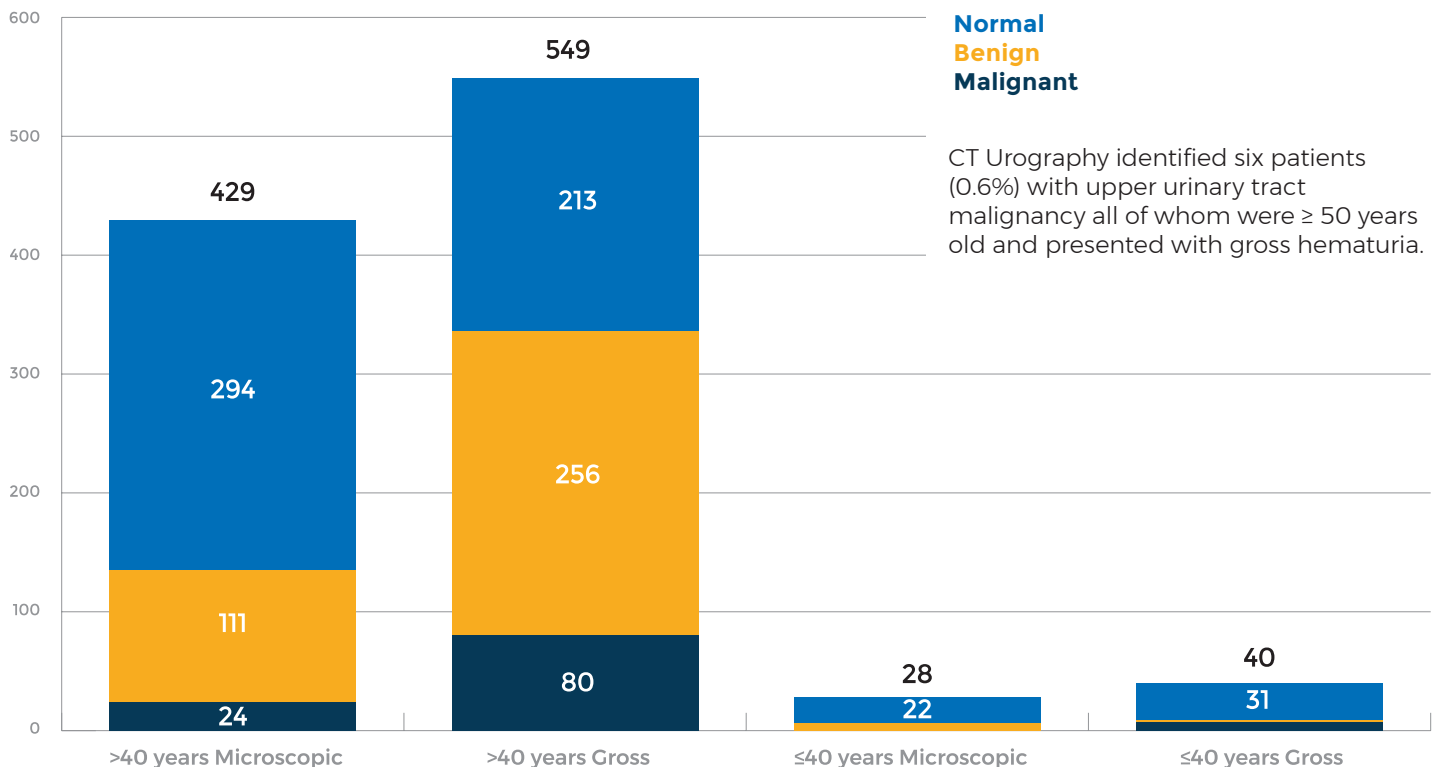
1. In stable angina the rate of diagnosis of critical CAD was not optimal.
2. Under use of non-invasive CA testing was observed.
3. Use of advanced non-invasive testing should provide improved diagnostic precision for critical CAD over exercise stress testing alone, and should result in fewer unnecessary cardiac catheterizations. However, the diagnostic precision observed in NL was poor.
4. Patients at high risk for critical CAD determined by a non-invasive test could be referred for cardiac catheterization provided revascularization is considered to be an option.

Investigation of Hematuria with CT Urography

Practice Points

1. Canadian Association of Radiology recommendation: CT urography in patients >40 years with persistent gross or microscopic hematuria, ultrasound in ≤40 years with microscopic hematuria.
2. At Eastern Health from Jan 2015 – May 2017, 1046 CT urographs were performed for hematuria, 44% for microscopic, and 56% for gross hematuria.
3. Only 68 (7%) were performed in patients ≤40 years, of whom 28 (2.7%) presented with asymptomatic hematuria.

Diagnostic Yield by Indication



Conclusions

1. Of all the patients who had CT Urography during a 29 month period, only 2.7% failed to adhere to the CAR recommendation.
2. As macro hematuria in those ≤40 led to the identification of only one case suspicious for malignancy, ultrasound is also an option to CT urography.
3. If the clinical picture points to a likely urinary tract source in those >40, consideration should be given to ordering cystoscopy as first test.

Treating Opioid Use Disorders

Choosing Wisely Canada Recommendations

Central to the Opioids Wisely campaign is a set of 15 specialty-specific recommendations for when the use of opioids should not be first line therapy. These recommendations cover 12 different clinical specialties. View the Opioids Wisely Toolkit and recommendations at www.qualityofcarenl.ca/resources/

Practice Points

1. Over 2,816 Canadians died from Opioid poisoning in 2016.
2. NL has seen an increase of 73% in opioid-related hospitalizations from 2007 to 2015.
3. Suboxone (buprenorphine-naloxone) is the preferred treatment for newly diagnosed individuals with opioid use disorders receiving Opioid Assisted Therapy (OAT).
4. Suboxone has a much better safety profile than Methadone.

Hospitalizations Involving Opioid Poisoning in NL and Number of Apparent Opioid-Related Deaths

	2016	2017
Number of apparent opioid related deaths	18	33
Number of hospitalizations involving opioid poisoning	57	84

Source: Compiled by the Health Analytics and Evaluation Services Department, NLCHI using data from the Health Data Management (HDM) System 2016-2017 and the Office of Chief Medical Examiner for the province of Newfoundland and Labrador 2016-2017

Conclusions

1. Suboxone can and should be used by Primary Care Practitioners in the treatment of their patients with Opioid Use Disorder.
2. Opioid use disorder is a serious and frequent health issue for our patients.
3. Safe and effective treatment is available.
4. Requirements to prescribe Suboxone for clinicians, along with educational resources and supports are available at www.qualityofcarenl.ca/resources/

Clients Receiving Opioid Dependency Treatment from June 2017 – April 2018

Regional Health Authority	Total*	Methadone	Suboxone
Newfoundland and Labrador	2,409	2,017	482
Eastern Health	1,722	1,541	228
Central Health	367	268	119
Western Health	285	189	122
Labrador-Grenfell Health	29	14	12
Unknown	6	5	1

2,409 clients received opioid dependency treatment in NL, the majority of whom are prescribed Methadone

Health Care Providers who Prescribed Opioid Dependency Treatment at Least Once from June 2017 – April 2018

Regional Health Authority	Total*	Methadone	Suboxone
Newfoundland and Labrador	68	39	46
Eastern Health	36	22	23
Central Health	13	7	12
Western Health	10	6	5
Labrador-Grenfell Health	9	4	6

There are a small number of providers prescribing opioid dependency treatment

Pharmacies who have Dispensed Methadone and/or Suboxone from June 2017 – April 2018

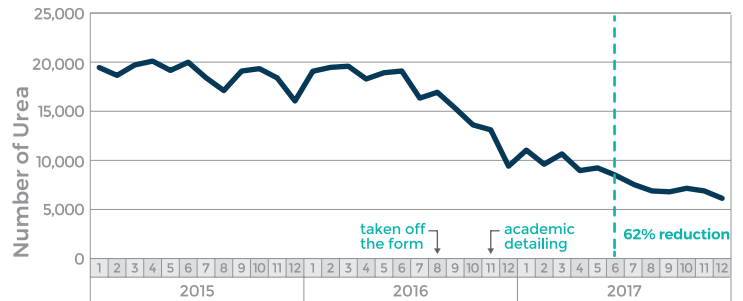
Regional Health Authority	Total*	Methadone	Suboxone
Newfoundland and Labrador	78	70	54
Eastern Health	38	35	25
Central Health	16	16	18
Western Health	13	12	6
Labrador-Grenfell Health	8	6	4
Unknown	1	0	1

Reduction in Biochemical Tests in General Practice

Practice Points

1. The ordering of blood urea, LDH, creatine kinase, AST, uric acid, and ferritin may sometimes be unnecessary.
2. In August 2016, Eastern Health provided a new requisition form which omitted blood urea, LDH, and AST.
3. In 2017, Quality of Care NL visited family doctors and discussed the need for ordering blood urea, LDH, creatine kinase, and ferritin.
4. Monthly use of these six tests from Jan 2015 – Dec 2017 by family doctors at Eastern Health is presented.

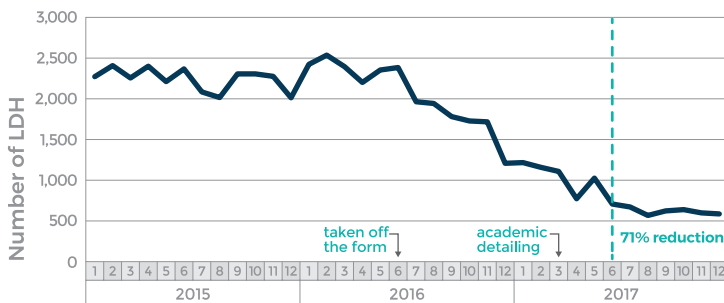
Monthly Volume of Blood Urea Over Three Years



Blood Urea is not a necessary test to measure kidney function in stable patients.

Estimated cost avoidance in Eastern Health: \$267,220 if 62% reduction is maintained.

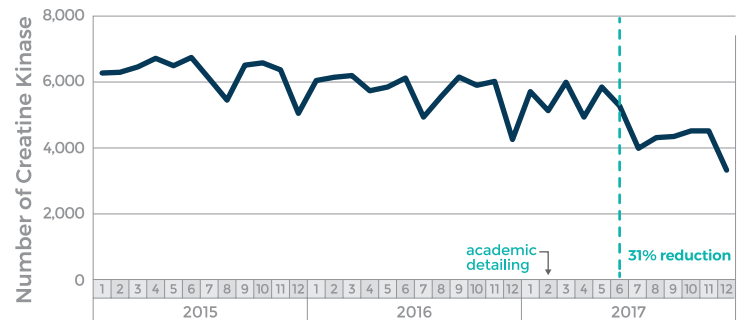
Monthly Volume of LDH Over Three Years



There is little need for LDH testing in general practice, as its use is generally indicated only in growth disorders and hemolytic anemia.

Estimated annual cost avoidance in Eastern Health: \$37,136 if 71% reduction is maintained.

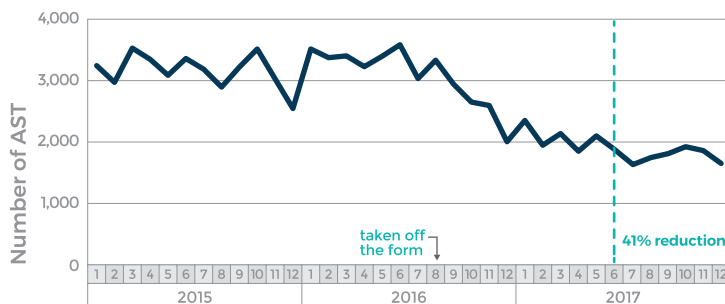
Monthly Volume of Creatine Kinase Over Three Years



Creatine kinase is a useful test in patients with high index of suspicion for muscle disease. It is no longer needed for monitoring asymptomatic patients on statins.

Estimated cost avoidance in Eastern Health: \$44,284 if 31% reduction is maintained.

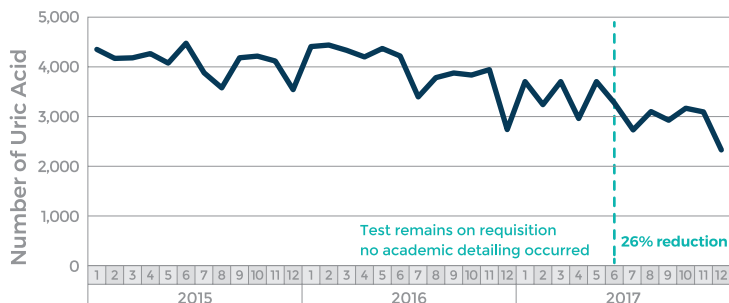
Monthly Volume of AST Over Three Years



Bilirubin and ALT are reasonable tests to evaluate liver function, and AST is usually unnecessary.

Estimated cost avoidance in Eastern Health: \$31,028 if 41% reduction is maintained.

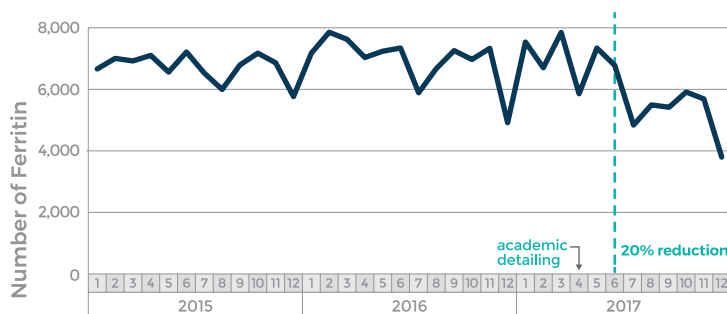
Monthly Volume of Uric Acid Over Three Years



Measurement of uric acid may be helpful in the management of gout.

Estimated cost avoidance in Eastern Health: \$24,716 if 26% reduction is maintained.

Monthly Volume of Ferritin Over Three Years



Serum ferritin is a useful iron status test particularly in the diagnosis of iron deficiency.

It is likely not useful in patients with normal hemoglobin and normal MCV/MCH, except maybe in symptomatic menstruating females where oral iron may be prescribed.

Estimated cost avoidance in Eastern Health: \$159,280 if 20% reduction is maintained.

Conclusions

1. Deletion of tests from the requisition form, as well as academic detailing appear to be associated with reduction in unnecessary use of biochemical tests.
2. Reduction in use of uric acid, which was not removed from the requisition and was not academically detailed, suggests reduction in overall testing.
3. Annual cost avoidance of these six tests at Eastern Health was \$563,644.

Screening for New Primary Cancer in Patients with Metastatic Cancer

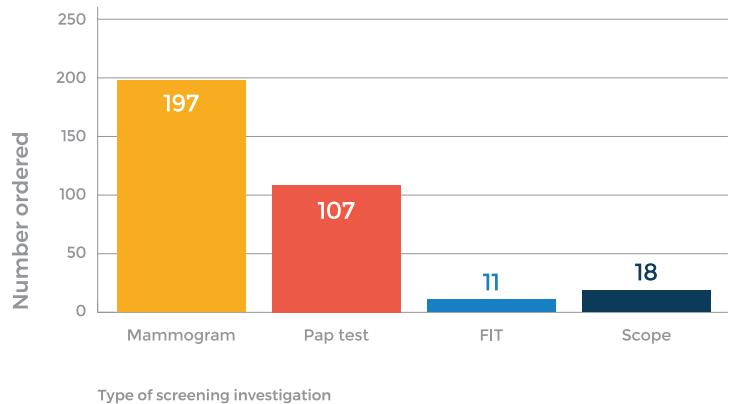
Choosing Wisely Canada Recommendation

Avoid routine screening for a new primary malignancy in patients with metastatic disease.

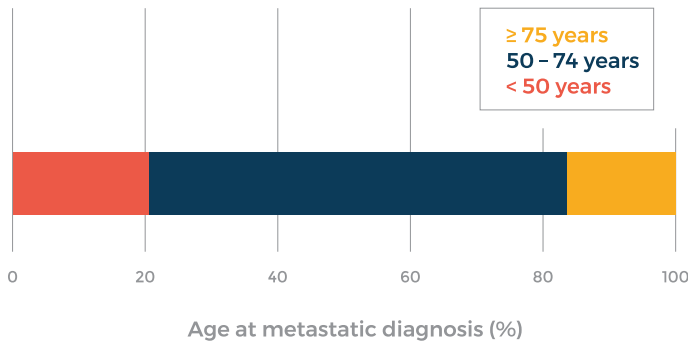
Methods

- 305 patients with metastatic breast cancer seen at the Bliss Murphy Cancer Centre from 1 Jan 2014 to 31 Dec 2016 were investigated to determine whether they had mammography, Cervical Papanicolaou test, screening sigmoidoscopy, colonoscopy, or fecal immunochemical test (FIT).
- Median survival of patients was 42 months from first diagnosis.
- Five year survival: 36%.

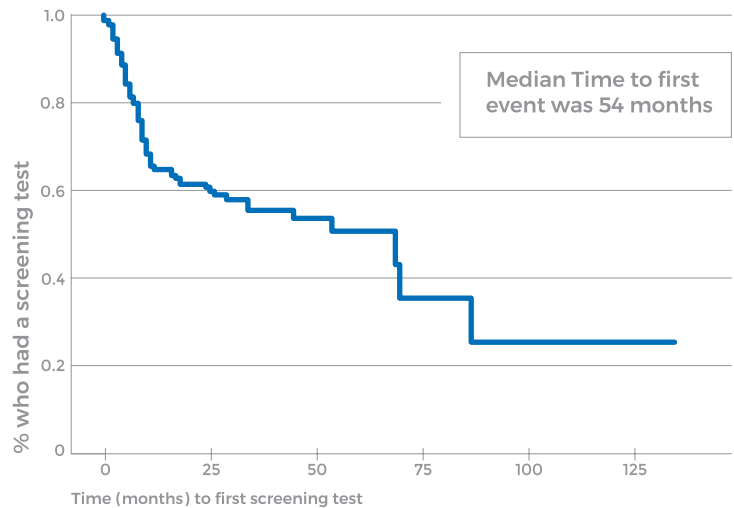
Number of Screening Investigations Ordered



Percentage of Patients by Age at Diagnosis of Metastatic Disease

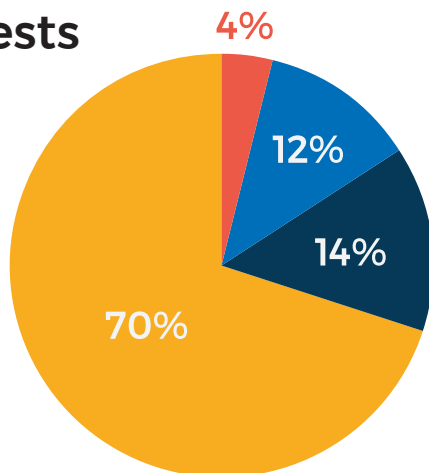


Time to First Screening Test



Screening Tests by Ordering Physician

PCP
Oncologist
Other Specialist
Unknown



Conclusions

- A large number of unnecessary screening tests for a new primary cancer are undertaken in patients with metastatic breast cancer, who have a poor five year survival, and are unlikely to benefit from the test.
- Screening for a new primary cancer should not be undertaken in patients with metastatic disease

Allergy Testing in Newfoundland and Labrador

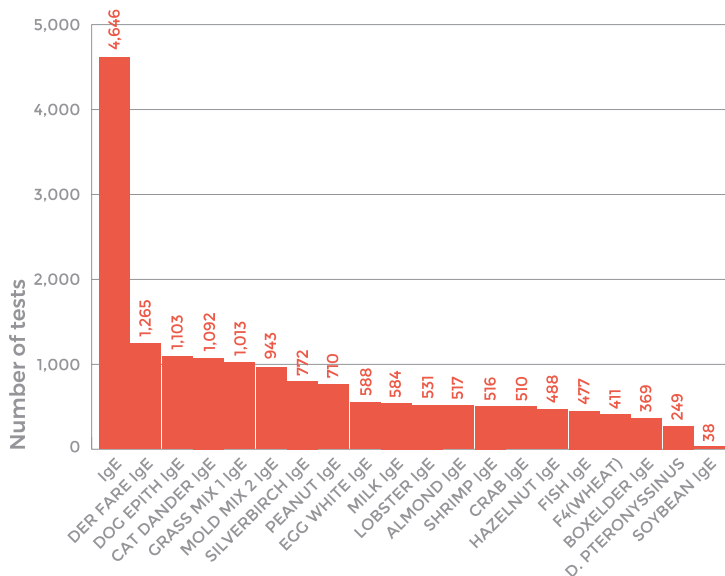
Choosing Wisely Canada Recommendation

Do not perform screening panels (IgE tests) for allergy without previous consideration of pertinent medical history.

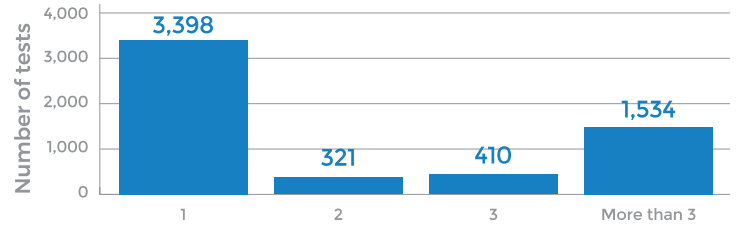
Practice Points

1. Most allergic reactions are immediate hypersensitivity reactions caused by IgE antibodies.
2. Common triggers include environmental allergens (pollens, pets, dust), food, venom and medications. Symptoms occur within minutes to two hours of exposure.
3. Symptoms of food allergy include cutaneous (e.g. hives), respiratory (e.g. wheeze), gastrointestinal (e.g. vomiting) and cardiovascular (e.g. hypotension). Allergy testing for foods may be associated with high rates of false positives, up to 50%.
4. Allergy testing includes skin prick testing and serum specific IgE to the given allergen. Skin prick testing is more sensitive than specific IgE testing. Specific IgE testing for environmental allergens is not necessary.
5. Allergy testing should only be ordered if the history is suggestive of an allergic reaction and only to allergens suspected on history.
6. Ordering more than three IgE tests at a time may be unnecessary.

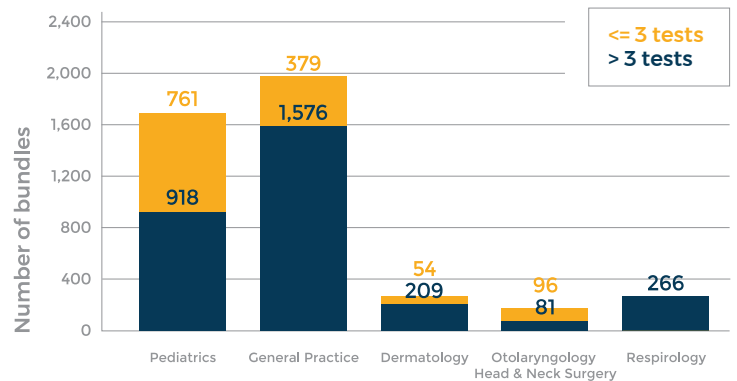
Number of orders for each test



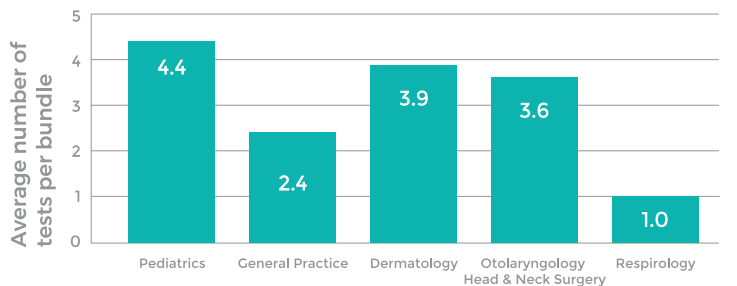
Number of Bundles by the Number of Tests per Bundle



Number of Bundles by Number of Tests per Bundle by Practicing Specialty



Average Number of Tests per Bundle by Practicing Speciality



Conclusions

1. Only order allergy testing if the history is suggestive of an allergic reaction and only to allergens suspected on history.
2. Ordering of more than three IgE tests per bundle, which may not be indicated, occurs most frequently in pediatrics.

The Diagnosis of Spondyloarthritis using HLA-B27

Choosing Wisely Canada Recommendation

Don't order an HLA-B27 unless Spondyloarthritis (SpA) is suspected based on specific signs or symptoms.

Practice Points

1. Ankylosing Spondylitis (SpA) is a progressive inflammatory rheumatologic disease, which can be ameliorated by medical interventions.
2. In patients with ≥ 3 months of back pain and age of onset < 45 years SpA is a potential diagnosis.
3. This diagnosis may be made by finding: sacroiliitis on MRI or HLA- B27 with at least two features of SpA.
4. An inexpensive HLA-B27 test has been developed locally (tagSNP).
5. HLA-B27 test utilization over 33 months at Eastern Health is presented.

ASAS Classification Criteria for Axial Spondyloarthritis (spA)

In patients with > 3 months back pain and age at onset < 45 years.

Sacroiliitis on imaging* plus ≥ 1 SpA feature

OR

HLA-B27 plus ≥ 2 SpA features

SpA features:

- inflammatory back pain
- arthritis
- enthesitis (heel)
- uveitis
- dactylitis
- psoriasis
- Crohn's/colitis
- good response to NSAIDs
- family history for SpA
- HLA-B27
- elevated CRP

* Sacroiliitis on imaging
 • active (acute) inflammation on MRI highly suggestive of sacroiliitis associated with SpA
 • definite radiographic sacroiliitis according to the modified New York criteria

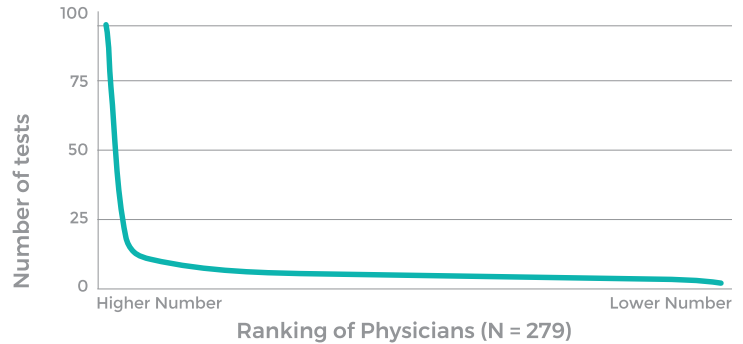
n=649 patients with back pain

Overall
 Sensitivity; 82.9%, Specificity; 84.4%

Imaging Arm Alone
 Sensitivity; 66.2%, Specificity; 97.3%

Clinical Arm Alone
 Sensitivity; 56.6%, Specificity; 83.3%

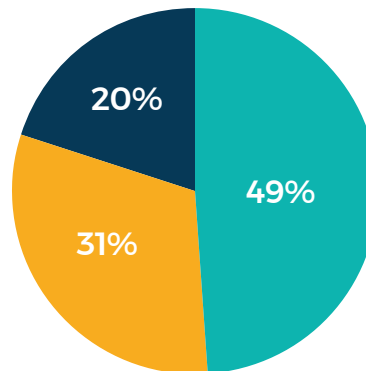
Use of HLA-B27 by Doctor



Over 33 months, from Jan 1 2015-Oct 1 2017, 1108 tests were ordered by 280 doctors.

This indicates that the majority of the tests were ordered by only a small number of doctors.

Proportion of Tests by Age



0 to 44 years old
 45 to 59 years old
 60 years old and over

51% of tests were ordered in patients ≥ 45 years. However it is unknown the age of onset of symptoms.

HLA-B27 should be ordered in patients with ≥ 3 months of back pain and age of onset of symptoms < 45 years when SpA is suspected.

Conclusions

1. Order HLA-B27 (tagSNP) if SpA is suspected based on the presence of low back pain for ≥ 3 months with onset < 45 years, and specific signs or symptoms consistent with SpA.

Utilization of Proton-Pump Inhibitors in the Elderly

Choosing Wisely Canada Recommendation

Don't maintain long-term Proton-Pump Inhibitors (PPI) therapy for gastrointestinal symptoms without an attempt to stop/reduce PPI at least once per year in most patients.

Practice Points

1. Long-term PPI use predisposes to gastric cancer, enteric infection, fractures, pneumonia, acute interstitial nephritis, hypomagnesemia, vitamin B12 deficiency.
2. Patients with Barrett's esophagus, severe esophagitis, gastro intestinal bleeding or requiring Prednisone/ NSAIDs use are exempt from this guideline.
3. For mild-moderate gastroesophageal reflux PPIs necessary for 4-6 weeks.
4. For peptic ulcer disease PPIs may be necessary for up to 12 weeks.

Methodology

- The NLPDP database was used to observe each patient's PPI therapy for a period of one year starting with the first PPI prescription in the 2014-15 fiscal year.
- The following PPI medications were considered: rabeprazole, omeprazole, pantoprazole, dexlansoprazole, lansoprazole, esomeprazole
- The following patient groups were excluded:
 - Patients on prednisone (steroid)
 - Patients on NSAIDs for $\geq 75\%$ of the time during the observation period: ketorolac, mefenamic acid, ibuprofen, ketoprofen, diclofenac, naproxen, meloxicam, indomethacin, celecoxib

Elderly Patients on PPIs NLPDP

Total number of 65+ years patients between 2014/04/01 and 2015/03/31:
n = 49,080 MDs = 1,157

Patients with a PPI prescription:
n = 19,895 MDs = 835

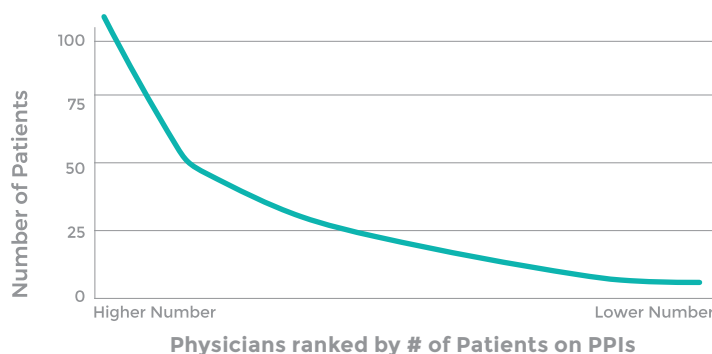
Patients with a PPI prescription and 1+ year of follow up:
n = 16,781 MDs = 818

Patients with a PPI prescription and 1+ year of PPI therapy follow up:
n = 14,488 MDs = 799

Excluding patients on Prednisone/NSAIDs for 75% of the time or more:
n = 13,632 MDs = 706

30% of people ≥ 65 years on PPIs for at least 1 year.

Number of Patients on PPI Therapy for >1 Year in 2014-2015 FY by Doctor



Conclusions

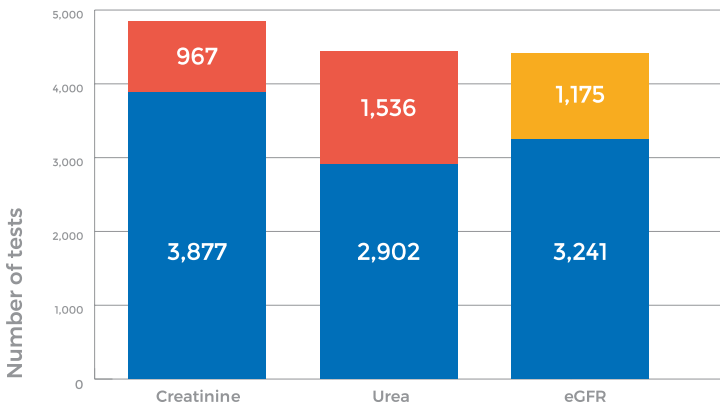
1. Long-term PPI use (> one year) varied by doctor and was observed in 30% of people ≥ 65 years enrolled in NLPDP.
2. Potential exists to reduce the long-term use of PPIs.
3. Cessation of PPIs may be associated with return of symptoms, which will require thoughtful management.

Blood Urea Testing by Nurse Practitioners in Newfoundland and Labrador

Practice Points

1. Blood urea provides a measure of kidney function, but it is not needed to evaluate stable kidney function.
2. Serum creatinine and estimated GFR (eGFR) is sufficient to evaluate stable kidney function: if you order a serum creatinine for this purpose, a blood urea is not necessary.
3. In acute kidney injury blood urea may be useful to assess the cause. Urea that is disproportionately high compared to the rise in creatinine may be seen in conditions where there is volume depletion, hypercatabolism or bleeding into the upper GI tract.

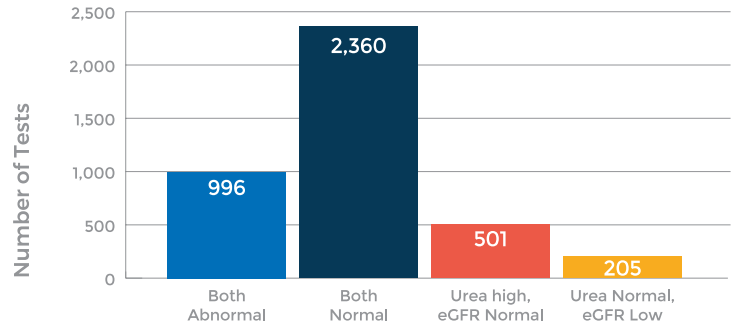
Creatinine, eGFR and Urea Test Results, 1 April 2015 – 31 March 2016



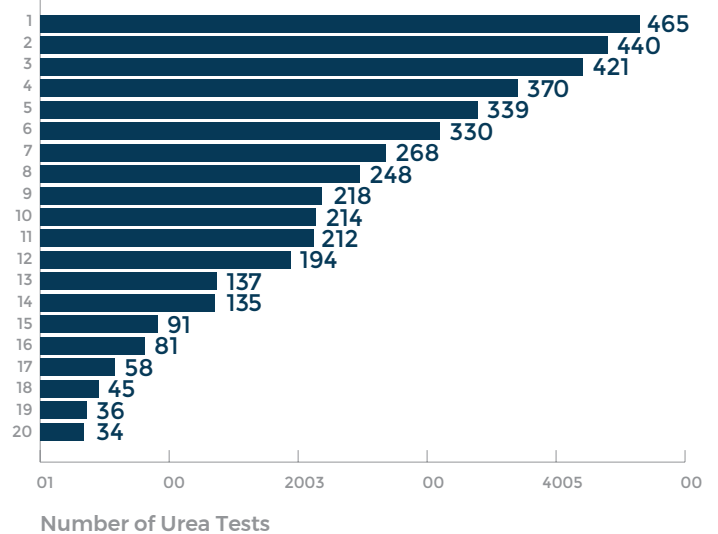
Abnormals	Percentage	Normal Low High
B Urea > 7	34.6%	
Sr. Creatinine High	19.9%	
eGFR <60 ml/min	26.6%	

eGFR vs Urea

11 Apr 2015 – 31 Mar 2016



Top 20 Nursing Practitioners by Volume of Blood Urea Test



Conclusions

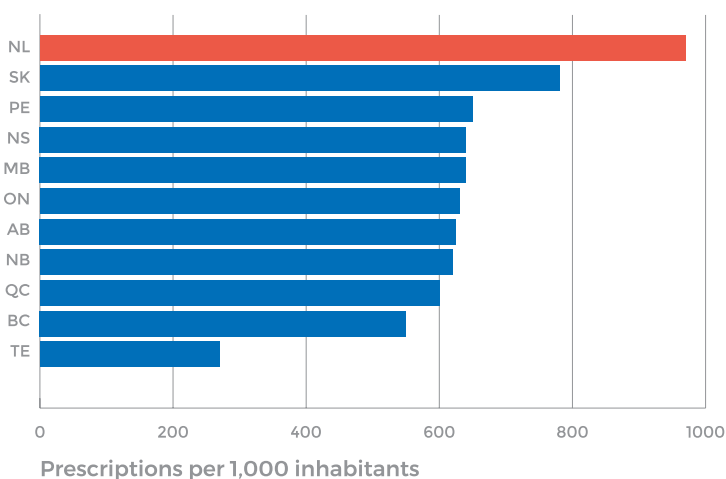
1. Blood urea testing is usually redundant when kidney function is being assessed in stable out-patients.
2. As both community and hospital based Nurse Practitioners are included in these analyses, appropriateness of ordering is dependant upon whether patients are clinically stable or not.

Antibiotic Utilization for Nurse Practitioners in Newfoundland and Labrador

Choosing Wisely Canada Recommendations

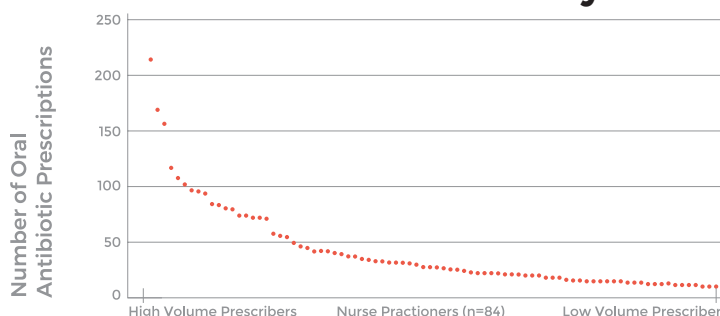
1. **Don't** use antibiotics for upper respiratory infections that are likely viral in origin, such as influenza-like illness, or self-limiting, such as sinus infections of less than seven days of duration.
2. **Don't** collect urine specimens for culture from adults who lack symptoms localizing to the urinary tract or fever unless they are pregnant or undergoing genitourinary instrumentation where mucosal bleeding is expected.
3. **Don't** prescribe antibiotics for asymptomatic bacteriuria (ASB) in non-pregnant patients.
4. **Don't** prescribe antibiotics in adults with bronchitis/asthma and children with bronchiolitis.
5. **Don't** use antibiotics in adults and children with uncomplicated sore throats.
6. **Don't** use antibiotics in adults and children with uncomplicated otitis media.

Overuse in Newfoundland and Labrador

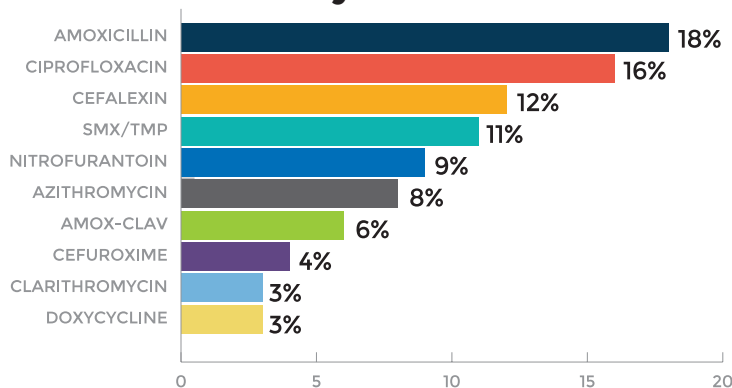


In 2016 NL clinicians prescribed 955 prescriptions of antibiotics per 1000 people - 19% more prescriptions than the second highest province. It is critical that we reduce unnecessary antibiotic prescribing.

Oral Antibiotic Prescription Rates Per 1,000 Prescriptions by Nurse Practitioner for Patients ≥ 65yrs



Most Frequently Prescribed Oral Antibiotics by Nurse Practitioner for Patients ≥ 65yrs



Preventing Antibiotics Use

1. Write a post-dated prescription with clear instructions for the pharmacist not to fill until the specified date.
2. Leave a prescription at the receptionist's desk to be picked up if symptoms persist.
3. Ask the patient to re-contact the office if symptoms persist for a specific time frame.

Conclusions

1. Some Nurse Practitioners have a high rate of antibiotic prescription that is likely inappropriate.
2. Community and hospital based Nurse Practitioners are included, so appropriateness of ordering is dependent on whether patient is an outpatient or not.

Use of Lumbar CT Scanning

Practice Points

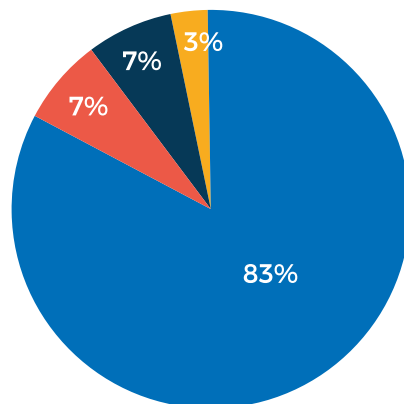
1. Newfoundland and Labrador order twice as many CTs per 100,000 people as Ontario.
2. Our rate of 218.9 CTs per 1000 people is 50% higher than the Canadian rate.
3. Many CTs are ordered for low back pain. Choosing Wisely Canada has recommended that imaging not be ordered for low back pain unless red flags are present (such as severe or progressive neurological deficits, suspicion of osteomyelitis, cancer, or fracture).
4. In 2016 the number of lumbar CT scans ordered in Eastern Health was 4,436.

Questions & Methods

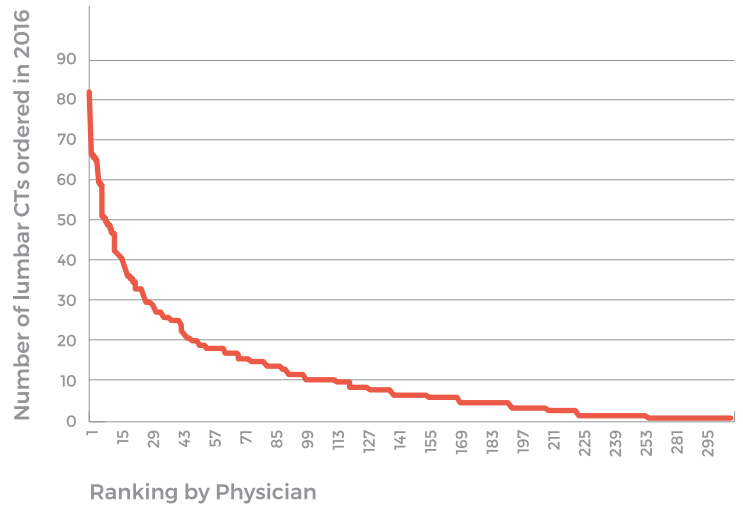
1. Who is ordering lumbar CTs?
2. Is there variation by individual physician?
3. What are the reasons for ordering?
4. Specialty and number of CTs by Physician was extracted for all lumbar spine CTs in 2016.
5. A retrospective review of 823 CT referral forms from GPs was conducted and the reason of referral extracted and categorised.

Who Ordered Lumbar Spine CTs in 2016

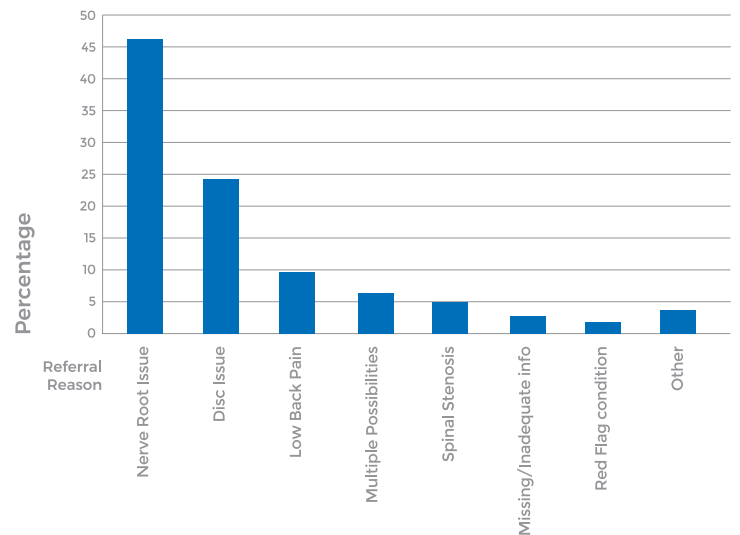
GPs
Specialists
Unknown
Emergency



CT Ordering Volume by Physician



Lumbar Spine CTs by Referral Reason



Conclusions

1. Less than 3% of the sample of 823 lumbar spine CTs were ordered because of a red flag.
2. Many referrals are missing important patient history and previous treatment information.
3. The harm associated with radiation needs to be balanced against the likely benefits from CT imaging.

Use of Computed Tomography (CT) Scans of the Head in NL

Choosing Wisely Canada Recommendations

Do not order CT head scans:

1. In adults and children who have suffered minor head injuries (unless positive for validated head injury clinical decision rules).
2. In adults with simple syncope in the absence of high-risk predictors.
3. In patients who have headache, meet diagnostic criteria for migraine, have a normal clinical examination and have no “red flags” for secondary headache disorder.
4. In patients with uncomplicated headache unless red flags are present.

Practice Points

1. The benefits of CT scanning to diagnose a clinically important condition must be weighed against the dose of radiation and the risk of cancer.

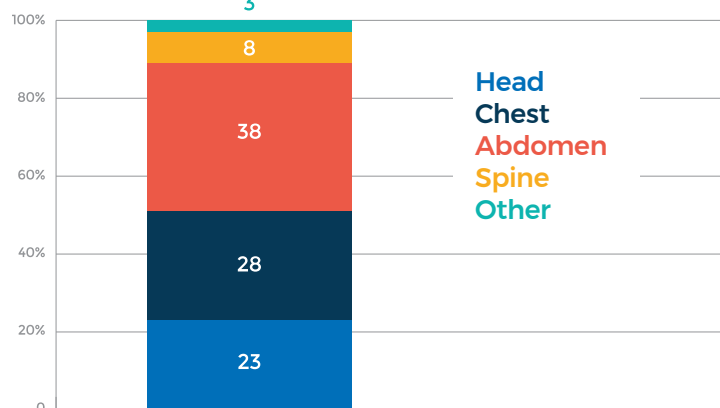
Number of Reported CT Scans	
2008	2017
63,624	86,971

In NL, the use of CT scanning has increased 37% in the past decade. The rate of head CT scans has increased by 8.6% in the past decade.

Head CT population rate/1,000 people by Health Region	
Region	Rate
Eastern	40.8
Central	39
Western	41
Labrador Grenfell	36

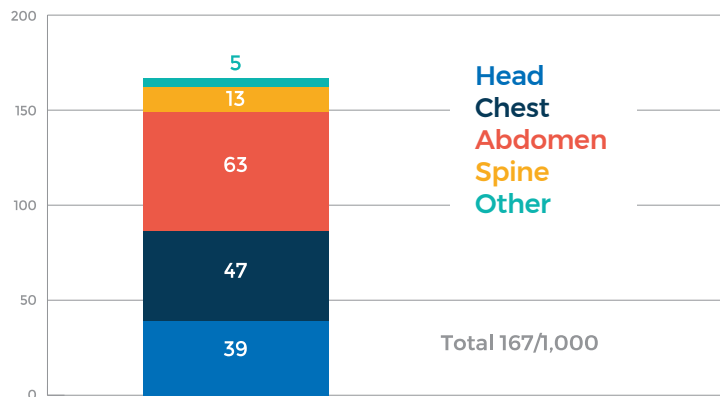
The population rate/1,000 people for head CT in 2017 was similar across all four health regions.

Percentage of CT Scans in 2017 by body part



23% of CT scans are head scans (Total Scans n=86,971)

CT Scans per 1,000 people in 2017 by body part



Population rate/1,000 people for head CT scans=39

30% of ER patients in Ontario and Alberta with low-risk minor head trauma received a CT head scan. Extrapolation of this data to NL suggests that in NL each year there are 1500 unnecessary CT scans for minor head trauma.

Conclusions

1. Over 20,000 CT head scans are undertaken annually in NL.
2. Adherence to Choosing Wisely Canada guidelines for minor head trauma, simple syncope, and uncomplicated headaches should reduce the use of unnecessary CT scans and consequent risk of cancer.

Carotid Artery Testing for Stroke Prevention

Practice Points

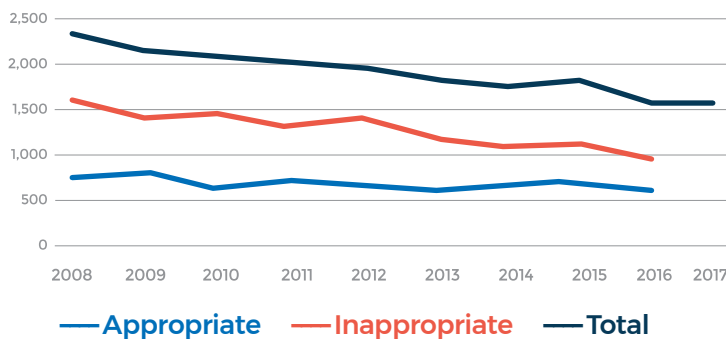
1. 19% of strokes in NL are secondary to warning symptoms of a TIA (Transient Ischemic Attack), the highest rate in Canada.
2. These secondary strokes are preventable in patients with carotid artery territory TIA because early carotid revascularization is efficacious in symptomatic patients with critical carotid stenosis.
3. Consequently, carotid territory TIA is a medical emergency and these patients need either carotid artery ultrasound or CT angiogram within 24 hours.

Carotid Artery Testing at St. Clare's (2007-15) n=17 600



60% of carotid artery tests ordered are not indicated.

Volume of Carotid Artery Testing 2008-2017 at St. Clare's by Appropriateness



During the past decade

1. The number of tests ordered for likely inappropriate reasons has steadily decreased by 39%.
2. The number of necessary tests has decreased by 19%.
3. The proportion of necessary tests has increased from 33% to 39%.

Wait Times

Wait time for a Priority 1 (recent TIA) test has decreased from 9 to 2.2 days, with the optimal being < 1 day.

Solution: The vascular lab will introduce an e-ordering form using the HealthE NL Electronic Health Record. This will comprise a decision tool to determine priority and automatic scheduling for Priority 1 patients.

When to test?



Good Indicators

Unilateral weakness of face/arm/leg

Speech disturbance (aphasia and/or dysathria)

Monocular visual loss (Amaurosis Fugax), or loss of one visual field (Homonymous Hemianopia)



Bad Indicators

Syncope

Headache

Tinnitus

Carotid bruit

Pain

Generalized weakness

Conclusions

1. It is a concern that the number of necessary carotid artery tests has decreased by 19%. The wait time for high priority patients has decreased but it is still not optimal.
2. The number of inappropriate tests has decreased by 39%.
3. The objective of e-ordering is to increase the volume of and improve the wait time for necessary tests in high priority patients with carotid territory symptoms.

Issues Related to Self-Management of Diabetic Feet

Highlights from Phase 1 of a Mixed Methods Study

The purpose of this three-phase mixed methods study is to determine if a self-management strategy that utilizes a low-cost hardware store thermometer is effective in preventing diabetic foot ulcers. In Phase 1, factors impacting self-management were examined through engagement with patients, support persons, and healthcare providers. Twenty-four interviews were completed with: 11 patients (4 rural); nine health care providers (wound care consultants, diabetes educators, family physician, dermatologist, podiatrists); and four support persons.

**Before intervention (QUAL)
semi-structured interviews (PHASE 1)**

**Intervention
(QUANT) (PHASE 2) currently recruiting**

**After Intervention (QUAL)
semi-structured interviews (PHASE 3)**

Interpretation

The overarching theme from the interviews was that self-management of diabetes and specifically foot health is complex. The impact of the disease clearly makes it challenging for a person with diabetes to care for his or her feet. Participants identified that there were personal challenges for patients and system barriers related to self-management. On a positive note, they also identified resources available for self-management.

System Barriers

- Access to services
- Assessment by healthcare provider
- Cost
- Disconnect between healthcare providers
- Insurance coverage
- Lack of detail about feet in educational material
- Limited education about diabetes
- Workload of healthcare provider
- Timing of teaching

Personal Challenges

- Age and Mobility
- Lack of knowledge
- Overwhelmed with information
- Communication with healthcare provider
- Dealing with diabetes
- Denial and Fear
- Finances
- Foot conditions
- Support person
- Lack of self-management
- Lifestyle choices
- Travel for services

Resources

- Assessment by a healthcare provider
- Communication between healthcare providers
- Communication with healthcare provider
- Consistent healthcare provider
- Education
- Ability to self-manage
- Support person
- Exercise
- Medication
- Footwear

Patient engagement provided insights into foot self-management and ensured that this research is relevant to patients' concerns. Obtaining the perspectives of key stakeholders aided in informing the intervention and will be important in interpreting the results of the randomized trial, which is evaluating the effectiveness of the intervention. This trial (Phase 2) is currently in progress.

Breast Cancer Care

Using digital stories to explore the experiences of breast cancer patients

Breast cancer care and treatment options

Breast cancer is the most frequently diagnosed cancer in Canadian women. While a combination of age, income, and travel time can influence variations in treatment options, little is known about determinants influencing patient choices regarding breast cancer treatment at Eastern Health.

Research Focus: Patient engagement & patient oriented research

Using digital stories as a form of patient engagement, the research focused on understanding the breast cancer care experience at Eastern Health. The following objectives guided the three-phase study:

1. Identify determinants influencing patient treatment choices
2. Analyze the benefits and impediments of delivery, format and timing of information about treatment options
3. Assess the pedagogical impact of digital stories amongst knowledge users

Digital storytelling combines oral storytelling with technology. In this collaborative process, people combine photos, music, and voice to create a 5-minute video about a personal experience.

Phase 1: Digital Stories

18 women who were breast cancer patients at EH created digital stories about their experiences and choices.

Stories were analyzed for main themes that informed the survey for Phase 2 (P2).

Phase 2: Screenings

118 Knowledge Users at Eastern Health viewed the digital stories and completed the survey. Analysis from both Phase 1 and 2 will guide the focus group outcomes.

Phase 3: Focus Groups

A subset of knowledge users from P2 will participate in focus groups to identify opportunities for developing optimal decision aiding solutions for breast cancer patients at EH.

Knowledge Translation

A research-based theatre production is being created based on the digital stories and will be performed in 2018/2019.

Community screenings, a website, and report will be completed in 2018/2019.

Conclusions

1. An expanded understanding of whole person care in cancer care treatment is needed.
2. Consideration should be given to psychosocial effects during transitions of care.
3. Emotional distress of the cancer course may be minimized through information delivery, format and timing.

Risk of High-Level Exercise in Inherited Arrhythmogenic Right Ventricular Dysplasia

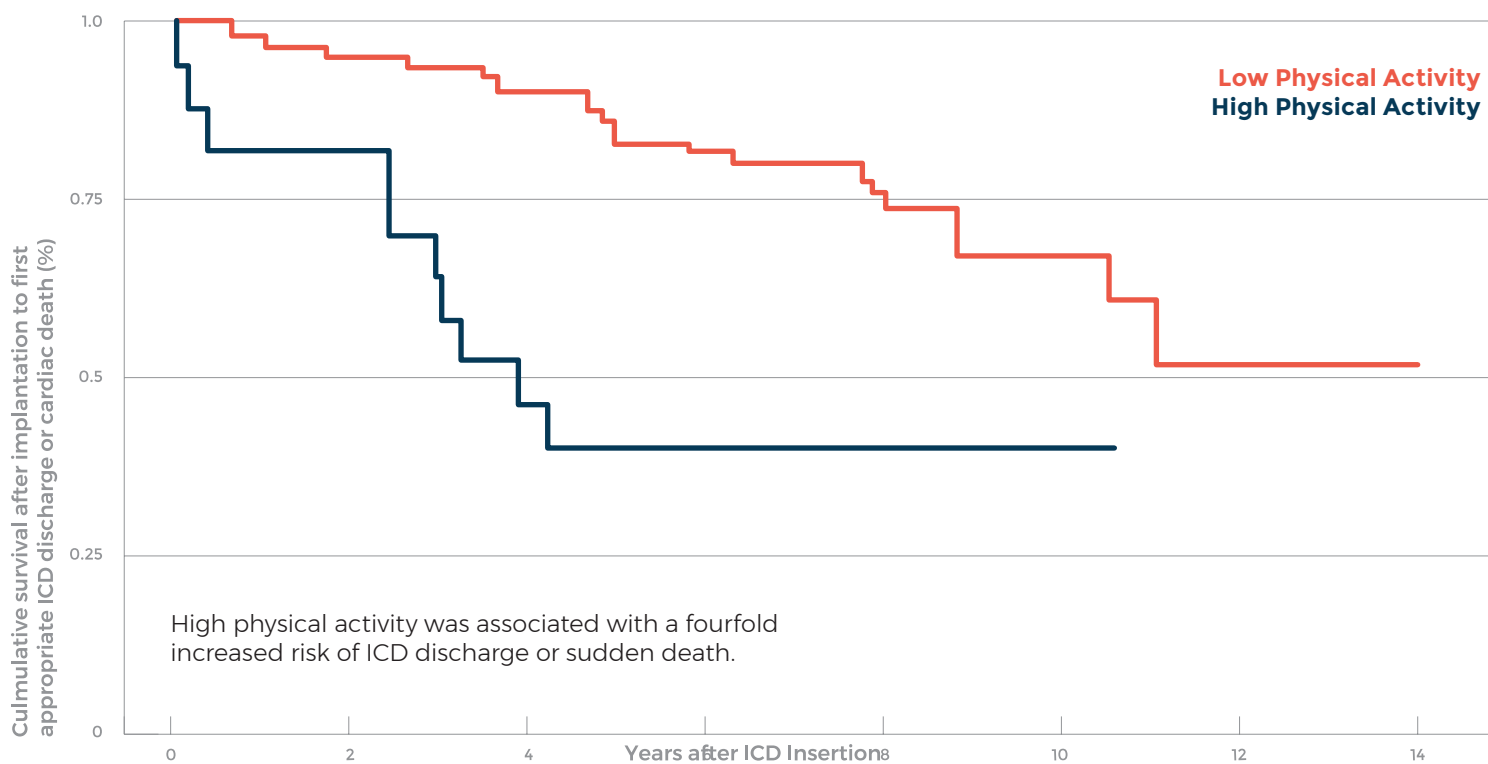
Practice Points

1. In some inherited forms of Arrhythmogenic Right Ventricular Dysplasia (ARVD), high-level exercise has been associated with bad outcomes.
2. In a large NL pedigree with Arrhythmogenic Right Ventricular Dysplasia (ARVD), a mutation in TMEM43 has been identified as a cause of sudden cardiac death.

Methods

1. Eighty individuals with TMEM43 mutation received an implantable cardioverter defibrillator (ICD) for primary prevention of sudden death. They completed a physical activity questionnaire.
2. Time to first appropriate ICD discharge or sudden death was recorded. Appropriate discharge for ventricular arrhythmia is the equivalent of aborted death.

Time to Aborted or Actual Death Following ICD Implantation in THEM43 Carriers by Degree of Physical Activity



Conclusions

1. High-level physical activity should not be undertaken by cardiac carriers of mutations that manifest as sudden cardiac death in young to middle-aged people.
2. High physical activity was associated with a fourfold increased risk of ICD discharge (aborted death) or sudden death.

High Performance Compute Capacity: CHIA Infrastructure

In 2015, the Centre for Health Informatics and Analytics (CHIA) opened its doors to support the programs within the Translational and Personalized Medicine Initiative. Since then, the services and support that CHIA offers have been used across Memorial University for research in Science, Math and Computer Science, among others.

CHIA is a high-performance computing infrastructure that provides a secure environment in which big data can be stored and analyzed. This system includes 2320 Intel Xeon CPU cores, 200 IBM Power 8CPU cores, 8 Terabytes of RAM, and 6 Petabytes of usable disk based storage. All systems are connected together on a single 50 Gigabit high speed network fabric allowing fast data transfer rates.

Through our partnership with the IBM Academic Initiative, CHIA is able to provide researchers access to IBM software packages used for research at no cost. Researchers can thus focus on their research, instead of the complexities associated with custom software packages for each project.

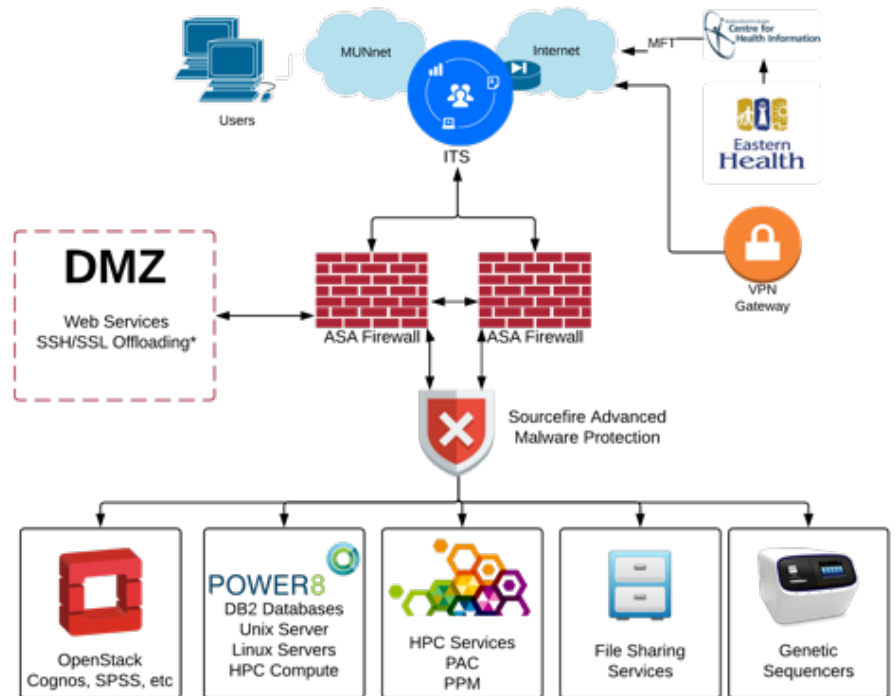
CHIA is the platform which Quality of Care NL/Choosing Wisely NL, NL Support and Translational Genomics use to store and analyze data. Quality of Care NL/Choosing Wisely NL, use Open Stack to provide a virtual research environment. These virtual systems include programs such as Cognos and SPSS to produce the information and personalized data that is communicated to physicians in the Quality of Care NL/Choosing Wisely NL campaigns.

The OpenStack systems allow for more efficient utilization of server hardware, allowing multiple users to access resources on a single server while keeping data secure.

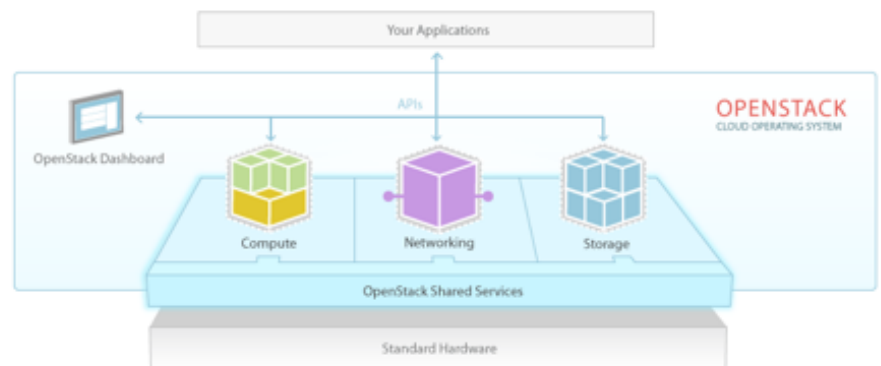
By providing separate virtual network environments we ensure that data in each research project can only be accessed by authorized users.

In addition, CHIA supports the management, analytics and transfer of big data generated by Next Generation Sequencing performed in the Translational Genomics Lab (TGL). The TGL provides access to world class sequencing through the Illumina Nova Seq platform, providing more sequencing resources per capita than any other province.

CHIA's data analysis capability extends beyond healthcare: In the future, CHIA will work more closely with the private sector to enable multiple sectors to take advantage of the power of big data.



OpenStack: The Open Source Cloud Operating System



Quality of Care NL Implementation Team

- Provincial CODE STROKE

Problem

Thrombolysis, or tPA, is a Canadian Best Practice in the treatment of patients with acute ischemic stroke. Provincial access to thrombolysis is significantly below national benchmark of 21-28% of all ischemic strokes. Inadequate access to tPA contributes to increased disability for individuals, and long term dependency on the health care system.

Percentage of ischemic strokes who received thrombolysis, by region

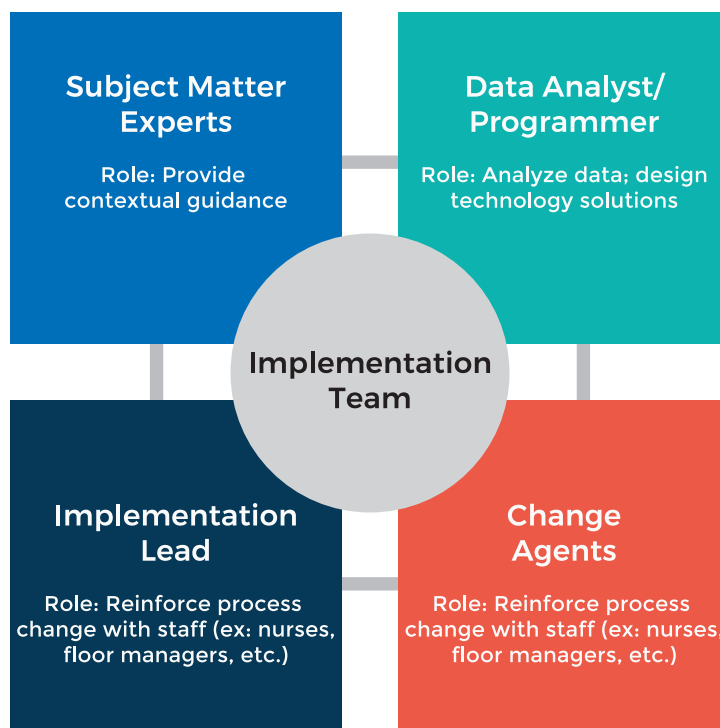
RHA of Service	Fiscal Year			
	2013/14	2014/15	2015/16	2016/17
Province	6.1%	6.5%	8.2%	8.9%
Eastern Health	8.7%	8.3%	8.2%	10.1%
Central Health	3.6%	3.7%	10.7%	7.7%
Western Health	1.6%	5.0%	6.0%	7.0%
Labrador-Grenfell Health	2.9%	2.8%	6.5%	5.0%

Barriers to tPA Access

1. No standard provincial protocol, variability in practice, and mismatch of task to skilled provider.
2. Lack of consensus regarding roles and responsibilities among hyperacute stroke care stakeholders.
3. Limitations in documentation and subsequent ability to access hyperacute care data for evaluation.
4. Multi-stakeholder involvement contributes to role ambiguity and delayed decision-making.

Solution

Deploy Quality of Care NL Implementation Team facilitate process changes required for CODE STROKE.



June 2018

CODE STROKE has been implemented at all RHAs according to the standard provincial protocol. The QCNL Implementation Team, in partnership with the Heart and Stroke Foundation, and the Provincial Stroke Steering Committee is working with stakeholders on evaluation of CODE STROKE, access to tPA and conversion of hyperacute documentation to electronic format.

Quality of Care NL/Choosing Wisely NL Academic Detailing

To engage further with family physicians on guidelines, recommendations and best practices, QCNL/CWNL launched an Academic Detailing program to encourage conversation between peer physicians.

Methodology

1. In Spring 2017, QCNL/CWNL delivered Academic Detailing to every clinic in the Eastern Health Region, based on the contents of Practice Points Volume 1.
2. In Fall 2017, QCNL/CWNL expanded the program. QCNL recruited Family Doctors as Clinical Leaders to assist in delivering Academic Detailing sessions throughout the Eastern region and CME credits were offered to family physicians that attended in-clinic Academic Detailing sessions. Detailing was based on Practice Points Volume 2.
3. Throughout Fall 2017 and Winter 2018, 12 Clinical Leaders held 26 accredited Academic Detailing sessions in-clinic for 97 family physicians. Those in attendance were provided hard copies of Practice Points Volume 2, as well as any available personal ordering data from QCNL/CWNL projects. For family physicians that could not attend an in-clinic session, a hard copy of their personal ordering data was delivered personally to the clinic by a Clinical Leader.

Program Expansion

In Fall 2018, Academic Detailing will expand to engage all clinicians in all regions of the province. Clinical Leaders will be recruited to assist in delivering in-clinic sessions and web meeting technology will be used to enable discussion. Detailing will be based on the contents of Practice Points Volume 3.

BECOME A CLINICAL LEADER!

Are you a Clinician? Do you have an interest in making sure the right treatment gets to the right patient at the right time? Join our team of Clinical Leaders!

For more information, visit qualityofcarenl.ca or email, pparfrey@qualityofcarenl.ca

You work hard.

Give yourself some credits.

Quality of Care NL/Choosing Wisely NL is pleased to offer Continuing Medical Education credits for the completion of the following online, accredited modules:

Iron Testing
Antibiotics
Vascular Testing
Allergy Testing

Each module will take 30 minutes to complete and provide 0.5 assessment credits. Register online at:
www.med.mun.ca/qualityofcarenl

To learn more, or for help with registration, please contact the Faculty of Medicine Office of Professional Development:
(709) 864-3358 OR pdmed@mun.ca

Questions? Email pparfrey@qualityofcarenl.ca
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