Seniors Mobile Assess Restore Teams (SMART)
Living the Assess and Restore Vision
One LHIN's Journey

Hamilton Niagara Haldimand Brant (HNHB)
Local Health Integration Network (LHIN)
May 25, 2018

Patricia Ford, Nurse Practitioner, St. Joseph's Healthcare Hamilton
Kim Young, Advisor, Planning, HNHB LHIN
Learning Objectives

• The “So-What” Factor

• To discuss the relationship between the Rehabilitative Care Alliance (RCA), the Assess and Restore (A&R) initiatives and SMART.

• To describe the SMART outcomes related to the implementation of the A&R work in the HNHB LHIN.

• To describe the development, implementation and evaluation of an intervention project – “The SMART Team” at St Joseph’s Healthcare Hamilton.
The “So-What” Factor

- SMART improves the patient experience.
- Individuals benefit from receiving rehabilitative care in parallel with acute care.
- A mobile assess restore model improves function and reduces functional decline.
- The majority of individuals who receive SMART are able to return home.
- The majority of individuals who receive SMART do not require a bedded level of post-acute rehabilitative care.
- Individuals who receive SMART and require post-acute bedded rehabilitative care require a shorter length of stay (LOS).
- A subsequent systems impact is observed related to the number of days individuals are waiting for post-acute rehabilitative care beyond those enrolled in SMART.
- SMART eliminates transition points, associated referrals, assessments and wait times.
- There is a potential significant cost avoidance.
- For seniors who are high risk, SMART should be a standard of care provided in parallel with acute medical care (ED/Acute) at all hospital sites.
Assess and Restore Interventions

Assess and Restore (A&R) interventions are short-term rehabilitative and restorative care treatments. They are meant to help seniors and other people who have experienced a reversible loss of their functional ability and who risk losing their independence.

The Assess and Restore Guideline

The A&R Guideline defines the elements of an A&R approach to care.

The Guideline was developed by the Ministry of Health and Long-Term Care in collaboration with the Local Health Integration Networks (LHINs), Health Service Providers (HSPs) and clinical experts from across the province.

It outlines expectations and defines the roles and responsibilities of LHINs, HSPs, and care providers in delivering A&R interventions across five areas: screening, assessment, navigation and placement, care delivery and transitions home.

The Assess and Restore Guideline

The A&R Guideline is meant to:

- extend the functional independence of seniors who are frail and other people who live in the community for as long as possible;
- reduce the burden on caregivers by improving psychosocial and health outcomes for seniors who are frail and other people who live in the community; and
- help LHINs, HSPs and health care professionals adopt evidence-based clinical processes and interventions that are effective in improving the functional independence of community-dwelling seniors and other people.


Ministry of Health and Long-Term Care Investment

- $8 million in 2013/14.
- $10.7 million in community funding in each of 2014/15, 2015/16, 2016/17 in one-time funding to all LHINs for A&R projects.
- $10.7 million base funding approved in 2017/18.
The five elements of an A&R approach to care

<table>
<thead>
<tr>
<th>Screening</th>
<th>Assessment</th>
<th>Placement &amp; Navigation</th>
<th>Facility-Based A&amp;R Intervention</th>
<th>Transition Home</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>at-risk</td>
<td>high risk? (see Appx.)</td>
<td>Sub-Acute Complex Intervention</td>
<td></td>
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<tr>
<td>low-risk</td>
<td></td>
<td>restorative potential?</td>
<td>Geriatric Rehabilitative Intervention</td>
<td></td>
</tr>
<tr>
<td></td>
<td>at-risk</td>
<td>needs facility-level care?</td>
<td>Active Recuperative Intervention</td>
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The Assess & Restore Guideline, MOHLTC 2014

| Proactive risk screening to identify risk for loss of independence & need for early intervention | Improved access to and increased awareness of CGA and its benefits | Navigation informed by CGA, ensuring access to the right care, in the right place at the right time | Direct access to bedded rehab & best practice geriatric rehabilitative care | Enhanced community rehab services & supportive transition programs |

www.rehabcarealliance.ca
Seniors Mobile Assess Restore Teams (SMART)

- Mobile, rehabilitative care provided in six hospital sites for seniors who are frail who have experienced functional decline and are at risk for further functional decline.

- The SMART team develops and provides an intensive restorative program that targets individuals’ specific recovery needs with the goal of earlier discharge home.

- Individuals are identified and receive care in the emergency department (ED) and acute medical units.

- Individuals are screened within 24 hours of ED arrival with the Early Intervention Screener (EIS); individuals who screen positive, are screened for SMART.

- Individuals begin the SMART interventions within 48 hours in parallel with acute medical care.
Assess and Restore: Enhanced Service Delivery
HNHB LHIN: Seniors Mobile Assess Restore Teams (SMART)
Improves the Patient Experience through Quality Integration and Value

**Main Objective**

**Improves Quality of Care:**
- Increases Capacity
- Prevents Functional Decline
- Improves Outcomes
- Promotes discharge home
- Decreases need for post-acute rehabilitative care

**Integrates Services:**
- Eliminates transition points, associated referrals, and assessments and wait times.
- Improves flow to post-acute rehabilitative
- Rehabilitative care provided in parallel with acute care
- Providing the right support at the right time

**Adds Value:**
- Improves the Patient Experience
- Decreases post-acute rehabilitation care LOS
- Cost Avoidance
- Decreases need for bedded rehabilitative programs

**Individuals served:**
- Number of seniors who are frail served

**Number of individuals screened**

**Discharges:**
- AR
- Slow stream rehab
- Complex Care-Restorative
- Specialized geriatric rehab

**Length of Stay (LOS)**
- Total LOS in post-acute rehabilitative care bed for SMART patients.
- Total LOS in post-acute rehabilitative care for individuals with a similar CMIG

**Participant Outcomes:**
- Participant pre-post outcome measure:
  1. Barthel Activities of Daily Living Index

**Discharge destination**
- Home including Retirement
- LTCH
- Complex Care – Restorative
- Slow Stream
- AR
- Specialized geriatric rehab

**ALC Rate to Post-Acute Rehabilitative Care Services from Acute Care**
- A & R
- Complex Care-Restorative
- Slow Stream Rehab

**Patient Experience**
- Patient Story: Voice in the Community
- Participant Satisfaction

**Potential Cost Avoidance**
- LOS comparison-calculate cost avoidance
- Post-acute rehabilitation care LOS avoidance
- Decrease in ALC acute days for low tolerance long duration (LTLD)
SMART Improves The Patient Experience Through Quality, Integration and Value

<table>
<thead>
<tr>
<th>Key Findings</th>
<th>2017-18 Performance Data</th>
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<tbody>
<tr>
<td><strong>Improves Quality of Care</strong></td>
<td></td>
</tr>
<tr>
<td>• Increases capacity</td>
<td>• 3,539 individuals served</td>
</tr>
<tr>
<td>• Improves function, prevents decline</td>
<td>• 44% increase in function (Barthel)</td>
</tr>
<tr>
<td>• Promotes discharge home, decreases need for post-acute rehabilitative care</td>
<td>• 87% discharged home</td>
</tr>
<tr>
<td></td>
<td>• 7% require post-rehabilitative care</td>
</tr>
<tr>
<td><strong>Integrates Services</strong></td>
<td></td>
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<tr>
<td>• Eliminates transition points, associated referrals, assessments and wait times</td>
<td>• 47% Decrease in Alternate Level of Care (ALC)</td>
</tr>
<tr>
<td>• Early Identification</td>
<td></td>
</tr>
<tr>
<td>• Provides the right support at the right time</td>
<td></td>
</tr>
<tr>
<td><strong>Adds Value</strong></td>
<td></td>
</tr>
<tr>
<td>• Decreases LOS in bedded post-acute rehabilitative care</td>
<td>• SMART post-acute care LOS 23.17 days</td>
</tr>
<tr>
<td>• Cost avoidance</td>
<td>• Compared to similar CMG LOS 24.45 days</td>
</tr>
<tr>
<td></td>
<td>=Difference of 1.28 days in post-acute care.</td>
</tr>
<tr>
<td></td>
<td>• 4,322 day decrease in acute ALC LOS for individuals waiting for bedded post-acute rehabilitative care.</td>
</tr>
</tbody>
</table>

Source: Hospital SMART quarterly reports (6 sites) *HNHB LHIN level data. Access to care iPort
Cost Analysis Limitations

Limitations:

• Cost analysis methodology was developed in the first full fiscal year 2015-16.

• Utilizing comparison population groups such as CMGs has limitations as not all individuals with a similar CMG would have had restorative potential.

• Cost analysis data is based on site specific manual data reports which are subject to reporting error.

• LOS data will not be reflective of individuals discharged from post-acute rehabilitative care after the last data request April 2018.

• Each hospital site contributes in-kind resources that are not reflected in the cost analysis.
Cost Analysis

A cost analysis was completed to determine the potential number of bed days and the associated costs that were avoided due to SMART interventions. The SMART cost analysis indicates a potential cost avoidance for the system associated with the following:

- Decrease in post-acute rehabilitative care LOS when compared to individuals with a similar case mix group (CMG);

- The potential avoidance of a post-acute rehabilitative care admission and subsequent LOS;

- Decrease in acute ALC days to Low Tolerance Long Duration (LTLD).

- The total cost avoidance for the most likely scenario, of 1/3 of individuals avoiding post-acute rehabilitative care LOS is $14,067,429 minus the initial investment of $1,298,400 which equates to a total potential cost avoidance of $12,769,029.
Cost Avoidance Refinements for 2018-19: Total Potential Cost Avoided

- The cost avoidance analysis will be refined for 2018-19 based on NEW mandatory ministry and provincial RCA reporting metrics.

- The 6 SMART sites are working to better understand the baseline d/c rate home for individuals with a similar CMG.

- The HNHB LHIN will be utilizing the comparable CMG baseline d/c rate home compared to the discharge rate home for individuals post SMART to calculate a more refined cost analysis in 2018-19 reflecting the difference in d/c home rate.

- We expect an impact to the current cost analysis and we are committed to the sharing the most accurate cost avoidance analysis calculation based on the new data from the HNHB LHIN SMART sites.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Line</th>
<th>Value</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
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</thead>
<tbody>
<tr>
<td>Average LOS in post acute care bed for patients with a similar CMG</td>
<td>50</td>
<td>24.45</td>
<td>23,135,304.25</td>
<td>23,135,304.25</td>
<td>23,135,304.25</td>
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<tr>
<td>Average LOS in post acute rehabilitative care for SMART patients</td>
<td>47</td>
<td>23.17</td>
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<td>Average difference in LOS between SMART patients and patients with</td>
<td></td>
<td>1.28</td>
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<tr>
<td>similar CMG (see Note 1)</td>
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<tr>
<td>Average Cost per Day for patients Post Acute Patients</td>
<td></td>
<td>464.35</td>
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<tr>
<td>Average Cost Avoidance per SMART Patient that went to post acute</td>
<td></td>
<td>593.12</td>
<td></td>
<td></td>
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<tr>
<td>care beds</td>
<td></td>
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<tr>
<td>Total # of patients in post acute rehabilitative care for SMART</td>
<td>44</td>
<td>257.00</td>
<td>152,431.47</td>
<td>152,431.47</td>
<td>152,431.47</td>
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<tr>
<td>patients</td>
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<tr>
<td>Total Cost Avoidance for All SMART patients who went to post acute</td>
<td></td>
<td>152,431.47</td>
<td>152,431.47</td>
<td>152,431.47</td>
<td>152,431.47</td>
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<tr>
<td>rehabilitative care</td>
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</table>

**Scenario 1 (for comparison purposes - least likely scenario)**

- Assuming three quarters of SMART Patients would have went to Post Acute beds for average stay
  - Number of Post Acute Rehabilitative Bed Days Avoided: 49,823

**Scenario 2**

- Assuming half of SMART Patients would have went to Post Acute for the average stay
  - Number of Post Acute Rehabilitative Bed Days Avoided: 33,215

**Scenario 3**

- Assuming a third of SMART patients would have went to Post Acute for the average stay
  - Number of Post Acute Rehabilitative Bed Days Avoided: 22,144

**Difference between FY14/15 and FY16/17 (decrease in ALC days if positive, increase in ALC days if negative)**

- Line 55: 4,322.00

**Assuming ALC Days are in Acute beds (using LHIN Avg Acute Care per diem $840.50*)**

- Scenario 1: 3,632,641.00
- Scenario 2: 3,632,641.00
- Scenario 3: 3,632,641.00

**Cost Avoidance**

- Scenario 1: 26,920,376.71
- Scenario 2: 19,208,608.63
- Scenario 3: 14,067,429.91

**Less SMART Program cost investment**

- Scenario 1: 1,298,400
- Scenario 2: 1,298,400
- Scenario 3: 1,298,400

**Total Cost Avoidance**

- Scenario 1: 25,621,976.71
- Scenario 2: 17,910,208.63
- Scenario 3: 12,769,029.91
Acknowledgements

- SMART participants
- Ministry of Health and Long-Term Care
- Five Hospital Corporations; six Hospital Sites:
  1. Hamilton Health Sciences Corporation (HHSC); two hospital sites: Hamilton General Hospital (HGH) and Juravinski Hospital.
  2. Niagara Health System (NHS); St. Catharines Hospital site.
  3. Brant Community Healthcare System (BCHS); Brantford General Hospital site.
  4. Joseph Brant Hospital (JBH).
  5. St. Joseph’s Healthcare Hamilton (SJHH); Charlton hospital site.
- Provincial Rehabilitative Care Alliance (RCA)
- Pan-LHIN Assess and Restore Enhanced Service Delivery group
- HNHB LHIN SMART Team
“It’s amazing what you can accomplish if you do not care who gets the credit”

Harry S. Truman
Once upon a Time ....
WHO WE ARE?

- St. Joseph's Healthcare’s, Charlton Campus is a 600-plus bed acute care facility located in downtown Hamilton at [50 Charlton Avenue East](#).

- The Charlton Campus is home to the world-renowned Firestone Institute for Respiratory Health, the Centre for Minimal Access Surgery, Brain Body Institute and the highly regarded Father Sean O'Sullivan Research Centre with its satellite organization the Centre for the Evaluation of Medicine. Our busy Emergency Department and Women’s and Infants’ programs are located at this campus, along with our Surgical Centre.

- Research facilities are prevalent throughout the Charlton Campus location reflecting our drive to integrate basic and clinical research. Bringing research to the bedside also strengthens and underscores our partnerships with [McMaster University's Faculty of Health Sciences](#) and [Mohawk College](#).
Initially St. Joseph’s Healthcare Hamilton was awarded one time funding from the HNHB LHIN for a 3 month pilot program to develop a mobile assess & restore intervention model.

In late December 2013 to early January 2014, discussions and consultations were held with expert informants to determine model development, proposed staffing, work processes, outcome measures/ metrics and communication tools.
Definition of SMART:

The Seniors Mobile Assess Restore Team (SMART) model takes a proactive approach to prevent and reduce functional decline in hospitalized seniors.

The intent of the model is to provide seniors at risk of functional decline with timely access to restorative care provided through a mobile dedicated inter-professional team.

The SMART approach includes early identification, collaborative assessment and restorative interventions with the goal of maintaining or improving the senior’s functional independence and the patient’s experience.
Definition of Restorative Potential

Restorative Potential means that there is reason to believe (based on clinical assessment and expertise and evidence in the literature where available) that the patient's/client’s condition is likely to undergo functional improvement and benefit from rehabilitative care. The degree of restorative potential and benefit from the rehabilitative care should take into consideration the patient’s/client’s:

• Premorbid level of functioning
• Medical diagnosis/prognosis and co-morbidities (i.e., is there a maximum level of functioning that can be expected owing to the medical diagnosis/prognosis?)
• Ability to participate in and benefit from rehabilitative care within the context of the patient’s/client’s specific functional goals and direction of care needs.

Note: Determination of whether a patient/client has restorative potential includes consideration of all three of the above factors. Cognitive impairment, depression, delirium or discharge destination should not be used in isolation to influence a determination of restorative potential.

\[i\] Rehabilitative Care Alliance Definitions Framework

www.rehabcarealliance.ca
Mrs. D was admitted to hospital with a fall.

X-Rays showed a new compression fracture to T11 and progression of compression fractures to L1. She had severe back pain and left buttock pain which limited mobility and function.

She was from home with husband who was currently in hospital.

Never had CCAC services. Her home of 45 years was a back split with 7 steps and 1 rail to bedroom.

Prior to admission, she was ambulatory with no gait aid and independent with ADLs. Barthel Pre-admission was scored at 100, on Admission Barthel was - 85 and on Discharge - 95. The DeMMI score on Admission was 5/19 and on Discharge was 14/19. Required assist in and out of bed on admission and unable to do the stairs or ambulate more than 4 meters. She also had difficulty with all Lower Body ADLS.

On Discharge She was independently able to complete stairs, fully complete ADLs and ambulate 100 meters.

Mrs. D was discharged home after four days in hospital, to home with CCAC.

Monica Columbro OTA/PTA
Team formation and development: Dedicated full time 7 days/week inter-professional team consisting of: nurses, social workers, occupational therapists, physiotherapists, rehabilitation assistants, pharmacist

Tool development for Case Finding (screening tool)

Metrics identified

Workload Capacity: it was determined that in order to effectively provide increased therapy treatments, the caseload would be a maximum ten patients at any given time

Communication: intra and inter-teams (updating care plan daily, e-board, attending rounds when needed)

Documentation: Therapeutics staff members completed standardized documentation
**Seniors Mobile Assess Restore Teams (SMART) Priority Initiative Decision Tree**

**DRAFT Version, March 2015**

**STEP 1: EARLY IDENTIFICATION/SCREENING (within 24 hours)**

- Is the patient high risk?  
  **Note:** Risk determined through clinical judgement and/or if intervention screened (ES) Assessment Urgency Algorithm

**YES**

- Does the patient have restorative potential?
  **Note:** Restorative Potential means that there is reason to believe (based on clinical expertise and evidence in the literature where available) that the patient’s condition is likely to undergo functional improvement and benefit from rehabilitation care. The degree of restorative potential is determined by the rehabilitation team in consultation with the patient and/or patient representative.
  - Functional level of functioning
  - Medical diagnosis/prognosis and co-morbidities (i.e., is there a maximum level of functioning that can be expected even with medical diagnosis and treatment strategies?)
  - Ability to participate in and benefit from rehabilitation care within the context of the patient’s specific functional goals and areas of concern
  - Note: Determination of whether a patient has restorative potential includes consideration of all three of the above factors. Cognitive impairment, depression, delirium or discharge destination should not be used in isolation to determine restorative potential

**NO**

- Consult CAC urgently for assessment for alternate level of care

**STEP 2: ASSESSMENT**

To determine the need for SMART, arrange for completion of a comprehensive clinical assessment by a SMART healthcare provider(s) that considers the geriatric syndromes and baseline current functional status (including the Barthel Index).

- Early Intervention Screener (EIS) Assessment Urgency Algorithm

**YES**

- Consult with physician
  1. The physician orders SMART care to address the patient's current functional decline

**NO**

- Proceed to STEP 3: ELIGIBILITY (SMART implementation within 48 hours)

**STEP 3: ELIGIBILITY**

- Eligibility Criteria for SMART
  1. The patient has restorative potential
  2. The physician orders SMART care to address the patient's current functional decline
  3. The patient involves family/guarantor that are able to adequately care for the patient in the home, assisted living, or other community setting
  4. The patient is able to participate in SMART and benefit from the assessment and intervention
  5. The patient has a condition that allows for participation in the SMART program
  6. Adults age 65 and older
  7. Individuals from home, retirement home or another community setting

**YES**

- Determine if there is a need for ongoing rehabilitation care

**NO**

- Re-evaluate in 48 hours and re-assess SMART needs

**Rehabilitative Care Alliance Definitions Framework (2014)**
Seniors Mobile Assess and Restore Screening Tool (SMART)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
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<tbody>
<tr>
<td>≥ 65 years of age</td>
<td></td>
</tr>
<tr>
<td>From home or retirement home</td>
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</tr>
<tr>
<td>Acute change in level of function or high risk of decline in the areas of mobility and activities of daily living (ADLs) that requires OT and PT intervention</td>
<td></td>
</tr>
<tr>
<td>Activity as tolerated</td>
<td></td>
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<tr>
<td>Weight-bearing as tolerated</td>
<td></td>
</tr>
<tr>
<td>Does not require mechanical lift for transfers at baseline</td>
<td></td>
</tr>
<tr>
<td>Diagnosis other than CVA</td>
<td></td>
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<tr>
<td>Estimated stay is &gt; 4 days</td>
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</tbody>
</table>

Patient was receiving CCAC supports pre-admit: YES NO

Patient meets criteria for ARMT: YES NO

<table>
<thead>
<tr>
<th>ENROLLED</th>
<th>NOT ENROLLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>• If patient meets above criteria then the patient qualifies for SMART. If patient does not have CCAC pre-admission, patient can still be accepted onto SMART. Please contact physician to receive order for SMART.</td>
<td></td>
</tr>
<tr>
<td>• If patient does not qualify for SMART criteria no other action is needed. Patient will receive usual care.</td>
<td></td>
</tr>
<tr>
<td>• Please leave original screening tool in patient’s chart for collection.</td>
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</tbody>
</table>

Comments: ____________________________________________________________

Date: ________________________________

Screened by: ___________________________

Print name __________________________ Signature & Designation __________________________
OUTCOME MEASURE

- Clinical: Barthel
- Discharge Destination
- Patient experience

- Metrics: LOS, duration on service, CMGs, RIW
- Monthly/Quarterly report to the LHIN
SMART—Building Assess Restore Capacity 2013/2014

Capacity, Access, Standards
- Increases assess restore capacity
  - 464 individuals served
  - 10-36% reduction of ALC AR
  - 30-40% reduction in referrals to AR
- Promotes early identification and mobilization to prevent functional decline
- Increases care coordination, care coordinator follows individuals within hospital
- Enhances the ability of staff to care for frail seniors
- Aligns with SFH pillars and priorities

Lessons Learned
- For high risk seniors, the SMART should be a standard of care provided where the individual is in the hospital i.e. ED/Acute
- A mobile AR model has the potential to reduce functional decline
- Most effective when targeted to a specific unit i.e. ED or select medical units
- Early screening recommended at triage vs first assessment
- Collaborative team assessment avoids duplication
Seniors Mobile Assess Restore Team (SMART)

Key Model Features

- 7-Day A Week Access
- Mobile Team Model
- Dedicated Assess Restore Inter-Prof Team
- Early Screening in the ED
- Collaborative Assessment
- Care Coordination
- Discharge planning
- Links with primary care

Key Outcomes

Improve "The Patient Experience"
- through Quality, Integration & Value

Improve Quality of Care
- Prevent functional decline
- Improve functional independence
- Promote discharge home

Integrates Services
- Eliminates transition points, associated referrals, assessments & wait times.
- Decrease ALC days to rehabilitative services

Adds Value
- Decreases acute LOS
- Decrease the need for bedded rehabilitative services
- Cost avoidance
• Home = 60

• Change in Destination = 6

• Became Clinically unstable = 7

• Palliative = 3

• Died = 1

• Returned to usual care end of project = 8
• Total # patients > 65 years screened = 422
• Total AMRT enrollment = 84

• AMRT-Average Length of Stay = 5.7 days (R: 1-21)

• Referred for comprehensive geriatric assessment = 9.5%

• Weekend Discharges = 10/17.2%

• Monday Discharges = 9/ 15.5%
• Case finding: all patients over 65 years of age and who were admitted to General Internal Medicine through the Emergency Department/Medical Surgical Assessment Unit were screened by the ARMT nurse. Patients who were screened positive for the ARMT intervention were those at risk of functional loss, with the anticipated plan for them to discharge home.

• Daily frequent patient encounters, interventions, discharge planning meetings with families

• Daily ARMT huddles to review and evaluate progression towards goals

• Maintenance of patient roster and care plans completed collaboratively each day by all ARMT members

• Daily communication with primary health care team

• Patients (and families) accepted into ARMT provided with information about the service and its purpose

• Weekend availability of interprofessional team facilitated discharge planning, family meetings, and follow through of interventions and discharges
LESSONS LEARNED FROM INITIAL

- Rapid Team formation demands experienced, flexible, adaptable clinicians.
- Initial Emergency department contact provided upfront information, support, education, partnership and goal setting with patients’ and families.
- Weekend process allowed greater team face time with patients and families.
- Limited community resources available on weekend.
- Huddles invaluable for prioritizing and communication.
- Overlap Scheduling allowed crossover and carryover.
- Importance of communication with patient's primary team.
- Greater patient activity, ambulation and independence.
- Greater Monday discharges.
NEXT STEPS 2014-2017

EXPRESSION OF INTEREST

• Proposal Submitted & Approved for Provincial Assess and Restore LHIN Led Implementation working groups to examine.

• 5 awarded to organizations within the HNHB LHIN


IMPLEMENTATION

• LHIN Wide Consultations with the 5 organizations awarded funding: including Niagara Health Systems, Hamilton Health Sciences, Brant County, Joseph Brant Memorial Hospital and St. Joseph’s healthcare, Hamilton

• GIM Program Implementation: hiring, training, communicating with all stakeholders, PDSA CYCLE with 1 teaching medical team with goal to include all teaching teams.
<table>
<thead>
<tr>
<th>Number of Projects</th>
<th>One project; Seniors Mobile Assess Restore Teams (SMART)</th>
</tr>
</thead>
</table>
| Total Funding Amount | $1,298,400 Total HNHB LHIN funding  
$216,400 annually per SMART team.  
Each HSP utilized the funding to hire a minimum of 2.0 full time equivalent (FTEs) SMART team members supplemented by existing hospital staff to create a dedicated interdisciplinary SMART team. |
| Relevant System indicator(s) for all projects collectively | % of unplanned readmission to hospital within 30 days of discharge from hospital  
% of unplanned, less-urgent ED visit within the first 30 days of discharge from hospital  
% of primary care follow-up visit within 7 days of discharge from hospital  
% of LTC placements where home care client could have stayed home or somewhere else in the community  
Annual ALC rate by:  
• post-acute inpatient rehabilitative care services  
• discharge destination from acute care |
<table>
<thead>
<tr>
<th>DISCIPLINES</th>
<th>FTE COMPLEMENT FUNDED THROUGH A&amp;R</th>
<th>FTE COMPLEMENT FUNDED IN KIND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational therapy / OTA</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Physiotherapy and PTA</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td>Social worker</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Care Coordinator</td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td>0.2</td>
</tr>
<tr>
<td>Total # FTE</td>
<td>2.0</td>
<td>1.6</td>
</tr>
</tbody>
</table>
### Systems Issues That Limited Enrollment

#### Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted to non teaching GIM team</td>
<td>6.8%</td>
</tr>
<tr>
<td>Indirect admissions (Via ICU)</td>
<td>0.3%</td>
</tr>
<tr>
<td>Wait Listed</td>
<td>0.2%</td>
</tr>
<tr>
<td>No Team available</td>
<td>1.7%</td>
</tr>
<tr>
<td>Incomplete / Missing data</td>
<td>13.1%</td>
</tr>
</tbody>
</table>
# Rationale for Non Enrollment 2016-2017

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 65 yrs of age =</td>
<td>6.6%</td>
</tr>
<tr>
<td><strong>Predicted</strong> LOS &lt;4days</td>
<td>27.3%</td>
</tr>
<tr>
<td>At baseline functioning</td>
<td>21.4%</td>
</tr>
<tr>
<td>Patient refused</td>
<td>0.8%</td>
</tr>
<tr>
<td>From LTC</td>
<td>8.7%</td>
</tr>
</tbody>
</table>
**CLINICAL REASONS FOR NON ENROLLMENT 2016-2017**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too Ill to participate</td>
<td>7.3%</td>
</tr>
<tr>
<td>Palliative</td>
<td>1.9%</td>
</tr>
<tr>
<td>Died during assessment phase before enrollment</td>
<td>0.3%</td>
</tr>
<tr>
<td>Requires mechanical Lift for baseline FX</td>
<td>2.9%</td>
</tr>
<tr>
<td>CVA Diagnosed (CVA TEAM)</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
## INTENSITY OF TREATMENT 2016-2017

<table>
<thead>
<tr>
<th>Team Member</th>
<th>Number of attendances</th>
<th>Time spent (hours) in direct patient contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing</td>
<td></td>
<td>472 hours</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>641</td>
<td>575</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>411</td>
<td>354</td>
</tr>
<tr>
<td>Social Work</td>
<td>345</td>
<td>334</td>
</tr>
<tr>
<td>Pharmacy</td>
<td></td>
<td>168</td>
</tr>
</tbody>
</table>
## DEMOGRAPHICS OF SMART PATIENTS 2016-2017

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td>81</td>
<td>86.3</td>
<td>83.5</td>
<td>84</td>
</tr>
<tr>
<td>Gender</td>
<td>Males 45</td>
<td>females</td>
<td>Males=84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Females 39</td>
<td>61% females</td>
<td>Females 114</td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardio – Resp ( pneumonia, CHF, COPD)</td>
<td>52.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Falls / syncope</td>
<td>16.7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delirium / Dementia</td>
<td>11.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonspecific weakness</td>
<td>8.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infections</td>
<td>5.9%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destinations</td>
<td>2015-2016</td>
<td>2016-2017</td>
<td>2017-2018</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Home</td>
<td>134</td>
<td>149</td>
<td>130 (84%)</td>
<td></td>
</tr>
<tr>
<td>Rehabilitation In–patient</td>
<td>0</td>
<td>7</td>
<td>10 (6%)</td>
<td></td>
</tr>
<tr>
<td>Complex Care</td>
<td>0</td>
<td>1</td>
<td>2 (1%)</td>
<td></td>
</tr>
<tr>
<td>A&amp;R programs</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Convalescence</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Long term care</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
## PERCENTAGE OF IMPROVEMENT ON BARTHAL FROM ADMISSION TO DISCHARGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Baseline</th>
<th>Admission</th>
<th>Discharge</th>
<th>% Change from Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>74.8 (R=20-105)</td>
<td>39.4 (R= 5-80)</td>
<td>64.6 (R=0-100)</td>
<td>65%</td>
</tr>
<tr>
<td>2017-2018 *</td>
<td>79</td>
<td>33</td>
<td>56.9</td>
<td>53%</td>
</tr>
<tr>
<td></td>
<td>2015-2016</td>
<td>2016-2017</td>
<td>2017-2018</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td><strong>Number screened</strong></td>
<td>4028</td>
<td>5752</td>
<td>4968</td>
<td></td>
</tr>
<tr>
<td><strong>Number enrolled</strong></td>
<td>183</td>
<td>223</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td><strong>Number Patients removed from SMART</strong></td>
<td>23</td>
<td>56</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td><strong>Total Number of Hospital days</strong></td>
<td>1403</td>
<td>2267</td>
<td>2228</td>
<td></td>
</tr>
<tr>
<td><strong>Total Discharged Home</strong></td>
<td>134 (81%)</td>
<td>149 (91%)</td>
<td>130 (84%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total number of ALC days</strong></td>
<td>461</td>
<td>683</td>
<td>819</td>
<td></td>
</tr>
<tr>
<td><strong>ALC Rate</strong></td>
<td>Not required</td>
<td>18.1%</td>
<td>26.9%</td>
<td></td>
</tr>
</tbody>
</table>
## PROFILE OF OUR SMART PATIENTS COMPARED WITH USUAL PATIENTS

<table>
<thead>
<tr>
<th></th>
<th>2015-2016</th>
<th>2016-2017</th>
<th>2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean LOS – Smart patients</td>
<td>8</td>
<td>9.7</td>
<td>14.5</td>
</tr>
<tr>
<td>Mean LOS For patients with CMGs</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Total number of days for Patients with similar CMGs</td>
<td>11635</td>
<td>13015</td>
<td>13015</td>
</tr>
<tr>
<td>Number of Discharges for patients with similar CMGs</td>
<td>1611</td>
<td>2074</td>
<td>2074</td>
</tr>
<tr>
<td>Total LOS in Post acute for SMART patients</td>
<td>34</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Total LOS post acute for patients with similar CMGs</td>
<td>23</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>CMG Category</td>
<td># of Cases</td>
<td>Total LOS Days</td>
<td>Average LOS Days</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>------------</td>
<td>----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Arrhythmia wo Cor Angio</td>
<td>4</td>
<td>16</td>
<td>4.0</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmon Dis</td>
<td>7</td>
<td>61</td>
<td>8.7</td>
</tr>
<tr>
<td>General Symptom/Sign</td>
<td>4</td>
<td>12</td>
<td>3.0</td>
</tr>
<tr>
<td>Heart Failure wo Cor Angio</td>
<td>10</td>
<td>86</td>
<td>8.6</td>
</tr>
<tr>
<td>Inflamm &amp; Reactive Arthrop</td>
<td>4</td>
<td>22</td>
<td>5.5</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>4</td>
<td>21</td>
<td>5.3</td>
</tr>
<tr>
<td>Viral/Unspecified Pneumonia</td>
<td>6</td>
<td>59</td>
<td>9.8</td>
</tr>
<tr>
<td><strong>Overall for CMG Comparison Group</strong></td>
<td>39</td>
<td>277</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>All ARMT Patients</strong></td>
<td><strong>84</strong></td>
<td><strong>708</strong></td>
<td><strong>8.4</strong></td>
</tr>
<tr>
<td>Arrhythmia wo Cor Angio</td>
<td>56</td>
<td>282</td>
<td>5.0</td>
</tr>
<tr>
<td>Chronic Obstructive Pulmon Dis</td>
<td>133</td>
<td>1398</td>
<td>10.5</td>
</tr>
<tr>
<td>General Symptom/Sign</td>
<td>55</td>
<td>362</td>
<td>6.6</td>
</tr>
<tr>
<td>Heart Failure wo Cor Angio</td>
<td>97</td>
<td>868</td>
<td>8.9</td>
</tr>
<tr>
<td>Inflamm &amp; Reactive Arthrop</td>
<td>14</td>
<td>54</td>
<td>3.9</td>
</tr>
<tr>
<td>Renal Failure</td>
<td>51</td>
<td>473</td>
<td>9.3</td>
</tr>
<tr>
<td>Viral/Unspecified Pneumonia</td>
<td>106</td>
<td>944</td>
<td>8.9</td>
</tr>
<tr>
<td><strong>Overall CMG Comparison Group</strong></td>
<td><strong>512</strong></td>
<td><strong>4381</strong></td>
<td><strong>8.6</strong></td>
</tr>
<tr>
<td><strong>All Patients</strong></td>
<td><strong>1365</strong></td>
<td><strong>15355</strong></td>
<td><strong>11.2</strong></td>
</tr>
</tbody>
</table>
LIMITATIONS

- Introduction Major system change – E- documentation: EPIC
- Steep learning curve
- New builds of clinical documentation tools, screening tools
- Learning curve to extract data from multiple sources.
- Over 400 request for statistical reporting in queue
- Coded data timing post discharge
CHALLENGES TO DATE:

- Less FTEs budgeted
- Staffing turnover
- Integrated into regular care
- Knowledge Transfer
- Concept uptake
- Logistics of enrolling patients on 5 teams on 4 units = 150 beds
- Providing Ongoing (continuous) education about program

Weekend therapy resulted but unable to provide Social work

New E-Documentation system that had to be built

We lacked the workforce to able to consider Social work


Thank you!

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• Patricia Ford, RN-EC, BA(N). MHSC. CGNc. NP, Geriatric Services. (pford@stjosham.on.ca)
Seniors Mobile Assess Restore Teams (SMART)  
Living the Assess and Restore Vision  
One LHIN's Journey  
Appendix
Cost Analysis Assumptions

• A comparable CMG LOS in post-acute rehabilitative care of 24.45 days was calculated\(^1\).
• The LOS in post-acute rehabilitative care for individuals post SMART was 23.17 days\(^2\).
• An average cost per day for post-acute rehabilitative care of $464.35 was applied\(^3\).
• The average acute care per diem rate of $840.50 was also applied\(^4\).
• Hospital sites report 1/3 to 3/4 of individuals who received SMART have avoided a bedded rehabilitative care LOS as a result of SMART therefore three scenarios of 1/3, 1/2 and 3/4 of individuals potentially avoiding a bedded rehabilitative care LOS are reflected in the cost analysis.

1. 6 SMART hospital site reports 2017-18. The comparable group based on CMG of individuals who receive SMART was refined for 2016-17 and 2017-18 utilizing the top 19 CMGs for all hospital sites utilizing the 2014-15 comparative year when SMART was not implemented in the HNHB LHIN.

2. 6 SMART hospital site reports 2017-18.

3. Average cost per day for post-acute calculated utilizing the average of the following: LHIN average Assess/Restore cost per day, the LHIN average of the Slow Stream Rehab cost per day, the 2016/17 Ontario Cost Distribution Methodology (OCDM) Chronic Inpatient Cost per Diem and the 2016/17 OCDM Rehab Inpatient Cost per Diem (Source: Ministry of Health and Long Term Care – Health Data Branch Web Portal).

4. Ministry of Health and Long-Term Care Health Data Branch Web Portal – Ontario Cost Distribution Methodology – All In One Summary FY2016-17.
Cost Analysis Assumptions

- The ALC to LTLD days from acute care is an indicator of overall flow rehabilitative care programs in the HNHB LHIN such as complex care-restorative, assess restore and slow stream rehabilitation.

- If individuals receive rehabilitative care in parallel with acute care, a greater number of individuals will be discharged directly home from acute care. There will be a subsequent impact on the number of days individuals will be waiting for post-acute rehabilitative care beyond those enrolled in SMART as indicated by the ALC to LTLD days.
Cost Analysis: Decrease in Average Post-Acute Rehabilitative Care LOS

- For the 8% of individuals who required post-acute bedded rehabilitative care following SMART, there was an average decrease in LOS of 1.28 days when compared to individuals with a similar CMG.

- The cost per diem for post-acute rehabilitative care of $464.35 was applied utilizing the cost per day methodology.

- The potential cost avoidance per person was calculated multiplying the average cost per day of $464.35 by the average decrease in LOS of 1.28 days in post-acute rehabilitative care resulting in a potential cost avoidance of $593.12 per person.

- This cost per person was multiplied by 257 individuals who required post-acute rehabilitative care following SMART.

- The potential cost avoidance of $152,431.47 was calculated related to the decrease in average post-acute rehabilitative care LOS.
Cost Analysis: Avoidance of Post-Acute Rehabilitative Care

- The most likely of the three scenarios includes the assumption that 1/3 of SMART participants may have avoided a LOS within bedded post-acute rehabilitative care for the average LOS of 24.45 days.

- If 1/3 of individuals discharged home from SMART (2717/3) would have required a bedded level of rehabilitative care for the average LOS (24.45 days) if they had not received SMART, the number of post-acute rehabilitative care bed days potentially avoided would be 22,144 days.

- The average LOS of 24.45 days was multiplied by the cost per day ($464.35) multiplied by 1/3 of individuals discharged home from SMART (2717/3).

- The potential cost avoidance of $10,282,357.44 was calculated related to the avoidance of post-acute rehabilitative care.
Cost Analysis:
Decrease in Acute ALC to LTLD Days

- All three scenarios also include a cost analysis associated with a noted decrease in ALC days to complex care (CC) LTLD.

- In the HNHB LHIN, rehabilitation low intensity and activation restoration programs are captured within the CC LTLD category (programs previously known as complex restorative, assess restore and slow stream rehabilitation).

- Due to the decrease in the number of ALC days for patients discharged to CC LTD noted, there was a potential cost avoidance calculated applying the decrease in 4,322 acute ALC days (4,931 ALC days for April 2017 - March 2018 SMART implementation time frame compared to 9,253 ALC days April 2014 - March 2015 pre-SMART) and the HNHB LHIN average acute care per diem rate of $840.50 (4,322 days X 840.50 per diem).

- The total potential avoidance related to the increase in acute ALC days to LTLD is $3,632,641.00
Cost Avoidance: Total Potential Cost Avoided

- The total cost avoidance for scenario three, the most likely scenario, is therefore $14,067,429.91 minus the initial investment of $1,298,400 which equates to a total potential cost avoidance of $12,769,029.91.

- There are two additional scenarios outlined below for demonstration purposes based on feedback from SMART health service providers that 1/3 to 3/4 of individuals have avoided a post-acute rehabilitative care LOS due to SMART.

- The potential cost avoidance related to the additional two scenarios increases considerably.

- Please refer to Scenario 1 (3/4 of individuals avoiding post-acute bedded rehabilitative care) and Scenario 2 (1/2 of individuals avoiding post-acute bedded rehabilitative care) within the chart on the next slide with potential cost avoidance amounts of $25,621,976.71 and $17,910,208.63 respectively.