Methods to Achieve Large Scale Change - Clinical Metrics and Spread to Scale

Alberta’s Strategic Clinical Networks

Presenters:
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Senior Program Officer & ACMO
Strategic Clinical Networks
Alberta Health Services

October 26th, 2015
Disclosures

• Dr. Blair O’Neill and Ms. Tracy Wasylak, do not have any disclosures or conflicts of interest.
Outline

• Background
• Challenge
• Teams
• Approach & Objectives
• Components
• Results
• Questions
Healthcare in Alberta: The Need for Balance

Patients

Quality
all dimensions

Providing care
improving the experience

Sustainability
value for money

Access
appropriate and equitable
What are Strategic Clinical Networks?

- Collaborative provincial clinical groups
  - Hosted by Alberta Health Services
- Focused on stages of life, diseases/conditions, areas of care in order to
  - Improve patient outcomes and satisfaction
  - Increase access and quality
  - Build a health care system that is sustainable

2012: Addictions & Mental Health, Bone & Joint, Cancer, Cardiovascular Health & Stroke, Diabetes, Obesity & Nutrition, Seniors Health
2013: Critical Care, Emergency, Surgery
2014: Respiratory Health
2015: Maternal Newborn Child & Youth
Future: Kidney Health, Primary Health Care, Population, Public & Aboriginal Health
Strategic Clinical Networks in Alberta

**Goal**
To achieve a sustainable health care system that creates the healthiest population and best health outcomes in Canada

**Target**
100% of Albertans are impacted positively by SCN priorities and plans – with evidence
Scope of SCNs

Beyond AHS to involve the whole healthcare system…

• Patients & families
• Physicians, nurses, allied health
• Researchers, institutions, foundations
• Primary care/PCNs
• Operational areas, administrators
• Government
• Not-for-profit and community groups
Strategic Clinical Networks

Provincial Model of Collaboration

• Put Patients at the Centre

• Support Primary Care

• Optimize all Resources

• Evidence-informed, Context Specific

• Share + Link Information to Improve

• Engage ALL levels of Health Care
SCNs Use a Common Quality Definition and measure one or more of six dimensions to improve
Over 7000 staff and clinicians involved across 5 Zones & Partner Organizations

SCN IMPACTS

Stroke Action Plan - 14 sites

Hip & Knee Plan - 12 sites

Insulin Pump Program - 11 centers

Vascular Risk Reduction

Fragility & Stability - 12 Sites

Appropriate Use of Antipsychotics

Empathy - All Schools in Red Deer

E-Referral Lung / Hip & Knee

Safe Surgery Checklist - 59 sites

Enhanced Recovery After Surgery - 6 Sites
SCNs Further Value-Adds to the System

- **Internal Experts and Consultants**
  - AACHT
  - CVH&S: Cardiac Surgery Wait Times
  - CVH&S: Expansion of Advanced Cardiac Services
  - Provincial Surgery Plan
  - MNCY: Value of Fetal Fibronectin
  - Province-wide Policies (Seniors, CC, ER, Surgery)

- **Innovation and Commercialization (with AIHS)**
  - Alberta SMEs and TEC Edmonton
  - MEDEC/SCN partnership discussions
  - RX&D/SCN partnership discussions
Partnership for Innovation & Research in the Health System

The Researcher

Users of Knowledge

On the same team creating value for money
Collaborative Learning

The most intensive front-line improvement work happens in Collaboratives. These 12-month programs are designed for organizations committed to achieving sustainable change within a specific topic area. Through shared learning, teams from a variety of organizations work with each other and faculty to rapidly test and implement changes that lead to lasting improvement.

(From Institute of Healthcare Improvement)
Learning Collaborative Teams

• Clinician-lead site teams
  – Physicians
  – Nurses
  – Allied health professionals
  – Administration
• Work collaboratively
  – over a period of time
  – on local improvements
  – toward system-wide outcomes.
Innovative Approach

Engaging learning sessions
+ Action periods of local improvement
+ Balanced score card
  – introduce new provincial practices at the local level
  – drive sustainable change owned by the frontline staff and site leadership
  – link improvements to teamwork, data and a balanced scorecard
There is a ‘formula’ that can help you set priorities

To Eliminating Waste
Focus first on Appropriateness, Safety and Efficiency
A step toward sustainability

eliminate waste and reinvest to improve

16 000 bed days

$12 000 000

Appropriateness
Health services are relevant to user needs and are based on accepted or evidence-based practice

Safety
Mitigate risks to avoid unintended or harmful results

Efficiency
Resources are optimally used in achieving desired outcomes

Accessibility
Health services are obtained in the most suitable setting in a reasonable time and distance

Acceptability
Health services are respectful and responsive to user needs, preferences and expectations

Effectiveness
Health services are provided based on scientific knowledge to achieve desired outcomes
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

From: Associates in Process Improvement
**Scorecards Help Define Targets and Achieve Goals**

Feedback Helps Everyone Improve

<table>
<thead>
<tr>
<th>QUALITY DIMENSIONS:</th>
<th>EFFICIENT</th>
<th>SAFE</th>
<th>APPROPRIATE</th>
<th>ACCESSIBLE</th>
<th>ACCEPTABLE</th>
<th>EFFECTIVE</th>
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<tbody>
<tr>
<td>SELECTED MEASURE:</td>
<td>(Length of Stay - LOS) (Note 1)</td>
<td>OR “Time Out” (Note 2)</td>
<td>% of Patients Mobilized Day 0 (Note 3)</td>
<td>Time to Surgery (T0 - T2) (Note 4)</td>
<td>Patient Satisfaction (H-CANPS' Pain Control Responses) (Note 5)</td>
<td>Date of Discharge/ Predicted date (Note 6)</td>
</tr>
<tr>
<td>TARGETED IDEAL (Level 10):</td>
<td>Full compliance to established standards; non-negotiable</td>
<td>Ideal target based on what can realistically be achieved in two years; negotiable</td>
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<td>PERFORMANCE LEVEL:</td>
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<td>10 (Targeted Ideal)</td>
<td>4.2 days or less</td>
<td>100% compliance</td>
<td>100%</td>
<td>400 days or less</td>
<td>90% or higher for “Always” Score</td>
<td>0%</td>
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<td>450 Days</td>
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<td>0.5%</td>
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<td>8</td>
<td>4.5</td>
<td>90%</td>
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<td>500 Days</td>
<td>86%</td>
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<td>7</td>
<td>4.7</td>
<td>85%</td>
<td>75%</td>
<td>550 Days</td>
<td>85%</td>
<td>2%</td>
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<td>6</td>
<td>4.9</td>
<td>80%</td>
<td>68%</td>
<td>600 Days</td>
<td>82%</td>
<td>4%</td>
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<td>5</td>
<td>5.1</td>
<td>70%</td>
<td>61%</td>
<td>675 Days</td>
<td>79%</td>
<td>6%</td>
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<td>4</td>
<td>5.3</td>
<td>65%</td>
<td>54%</td>
<td>775 Days</td>
<td>76%</td>
<td>8%</td>
</tr>
<tr>
<td>3 (“AS IS” at Start)</td>
<td>5.5</td>
<td>Current Compliance 60%</td>
<td>47%</td>
<td>896 Days</td>
<td>63.5% for “Always” Score (See Note 5)</td>
<td>10%</td>
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<td>5.7</td>
<td>55%</td>
<td>40%</td>
<td>1000 Days</td>
<td>60%</td>
<td>12%</td>
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<td>1</td>
<td>5.9</td>
<td>50%</td>
<td>30%</td>
<td>1200 Days</td>
<td>55%</td>
<td>15%</td>
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</tbody>
</table>

WEIGHTING (%): 20 15 20 10 15 20 = 100 (%)

OPTIMIZATION SCORE: (Level x Weight) 140 150 140 70 45 20

**TOTAL SCORE = 565**
Collaborative Process

Learning Workshop 1

Score Card

Baseline

Action Period 1

Plan
Collaborative Process: Action Period
Collaborative Process

Learning Workshop 2

Action Period 2

SCORE CARD

BASELINE
Collaborative Process

Learning Workshop 2
Collaborative Process

Sustained Continuous Improvement

Learning Workshop 3

APSD

www.albertahealthservices.ca
Balanced Scorecard

• STEP 1: Identify an improvement indicator under each quality dimension
### Scorecard: Quality Dimensions

**JOINT SCORECARD**

<table>
<thead>
<tr>
<th>QUALITY DIMENSIONS:</th>
<th>EFFICIENT</th>
<th>SAFE</th>
<th>APPROPRIATE</th>
<th>ACCESSIBLE</th>
<th>ACCEPTABLE</th>
<th>EFFECTIVE</th>
<th>TARGETED</th>
<th>IDEAL (Level 10):</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELECTED MEASURE:</td>
<td>(Length of Stay - LOS) (Note 1)</td>
<td>OR &quot;Time Out&quot; (Note 2)</td>
<td>% of Patients Mobilized Day 0 (Note 3)</td>
<td>Time to Surgery (0-7 days) (Note 4)</td>
<td>Patient Satisfaction (HCAHPS score) (Note 5)</td>
<td>Date of Discharge/ Predicted date (Note 6)</td>
<td>Full compliance to established standards; non-negotiable</td>
<td>Ideal target based on what can realistically be achieved in two years; negotiable</td>
</tr>
</tbody>
</table>

**PERFORMANCE LEVEL:**

<table>
<thead>
<tr>
<th>Level</th>
<th>10 (Targeted Ideal)</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3 (&quot;As 10&quot; at start)</th>
<th>2</th>
<th>1</th>
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<tbody>
<tr>
<td>Weighting (%)</td>
<td>20</td>
<td>15</td>
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</table>

**OPTIMIZATION SCORE:**

<table>
<thead>
<tr>
<th>Level</th>
<th>Weight</th>
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<tbody>
<tr>
<td>10</td>
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<td>70</td>
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<td>7</td>
<td>15</td>
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</tbody>
</table>

**TOTAL SCORE:**
Scorecard Overview

• STEP 1: Identify an improvement indicator under each quality dimension

• STEP 2: Determine the degree of importance of each improvement indicator
# Scorecard: Weighting

For Time Period: 01 Sep 2009 to 30 Nov 2009

<table>
<thead>
<tr>
<th>QUALITY DIMENSIONS:</th>
<th>EFFICIENT</th>
<th>SAFE</th>
<th>APPROPRIATE</th>
<th>ACCESSIBLE</th>
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<th>EFFECTIVE</th>
<th>TARGETED IDEAL (Level 10)</th>
<th>PERFORMANCE LEVEL:</th>
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<tbody>
<tr>
<td>SELECTED MEASURE:</td>
<td>(Length of Stay - LOS)</td>
<td>(Note 1)</td>
<td>CR &quot;Time Out&quot;</td>
<td>(Note 2)</td>
<td>% of Patients Mobilized Day 0</td>
<td>(Note 3)</td>
<td>Time to Surgery</td>
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<td>PERFORMANCE LEVEL:</td>
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<td>Full compliance to established standards; non-negotiable</td>
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</table>

**WEIGHTING (%)**: 20 15 20 10 15 20 = 100 (%)

| OPTIMIZATION SCORE: (Level x Weight) | 140 | 150 | 140 | 70 | 45 | 20 | TOTAL SCORE = 565 |

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Scorecard Overview

• STEP 1: Identify an improvement indicator under each quality dimension
• STEP 2: Determine the degree of importance of each improvement indicator
• STEP 3: Collect baseline data to populate “as-is” state
## Scorecard: Setting Targets

### QUALITY DIMENSION

<table>
<thead>
<tr>
<th>QUALITY DIMENSION</th>
<th>EFFICNT</th>
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<th>ACCEPTBLE</th>
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<tr>
<td>SELECTED MEASURE</td>
<td>Avg LOS</td>
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<td>TARGETED IDEAL</td>
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<td>Ideal target negotiable &amp; based on what is/can realistically be achieved in 2 years</td>
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<td>PERFORMANCE LEVEL</td>
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</table>

**Example only for WEIGHTING (%)**

<table>
<thead>
<tr>
<th>OPTIMIZATION SCORE: (Level x Weight)</th>
<th>20</th>
<th>15</th>
<th>15</th>
<th>15</th>
<th>10</th>
<th>= 100 Total</th>
</tr>
</thead>
</table>

**TOTAL SCORE =**
## JOINT Scorecard: “As-is” State

**For Time Period:** 01 Sep 2009 to 30 Nov 2009

<table>
<thead>
<tr>
<th>QUALITY DIMENSIONS:</th>
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</thead>
<tbody>
<tr>
<td>SELECTED MEASURE:</td>
<td>(Length of Stay - LOS) OR &quot;Time Out&quot;</td>
<td>% of Patients Mobilized Day 0</td>
<td>Time to Surgery (70-75)</td>
<td>Patient Satisfaction (4.5/5) or Higher (Note 5)</td>
<td>Date of Discharge/ Predicted Date (Note 4)</td>
<td></td>
</tr>
<tr>
<td>TARGETED IDEAL (Level 10):</td>
<td>Full compliance to established standards; non-negotiable</td>
<td>Ideal target based on what can realistically be achieved in two years; negotiable</td>
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<td>PERFORMANCE LEVEL:</td>
<td>10 (Targeted Ideal)</td>
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<td>4.2 days or less</td>
<td>100% compliance</td>
<td>100%</td>
<td>400 days or less</td>
<td>90% or higher</td>
<td>0%</td>
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<td>4</td>
<td>5.5</td>
<td>Current Compliance 60%</td>
<td>47%</td>
<td>896 Days</td>
<td>63.5% for &quot;Always&quot; Score (See Note 5)</td>
<td>10%</td>
</tr>
<tr>
<td>3 (&quot;AS IS&quot; at Start)</td>
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<tr>
<td>WEIGHTING (%)</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>OPTIMIZATION SCORE:</td>
<td>14 60</td>
<td>45</td>
<td>60</td>
<td>30</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>(Level x Weight)</td>
<td>= 100 (%)</td>
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</tbody>
</table>

Total Score = 300

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1 Length of Stay data was only available for the period 01 Aug 2009 - 31 Oct 2009.
Scorecard Overview

• STEP 1: Identify an improvement indicator under each quality dimension
• STEP 2: Determine the degree of importance of each improvement indicator
• STEP 3: Collect baseline data to populate “as-is” state
• STEP 4: Identify measurement tools and strategies (to determine to what extent indicator selected has improved, using a scale of 1-10)
Scorecard: Measurements

STEP 4: Identify measurement measures and strategies (to determine to what extent indicator selected has improved, using a scale of 1-10)

- Acceptability: Patient Satisfaction
  - Measure: HCAPS’ Pain Control Responses
- Accessibility: Time to Surgery
  - Measure: T0-T2
- Appropriateness: Patient Mobilized Day 0
  - Measure: % of Patients Mobilized Day 0
- Effectiveness: Date of Discharge versus Predicted Date of Discharge
  - Measure: Number of Days from Predicted Date of Discharge to Actual Date of Discharge
- Efficiency: Length of Stay
  - Measure: Time from Patient arrival at the hospital to Actual Time of Discharge
- Safety: OR “Time Out”
  - Measure: % of Surgeries preformed that completed an OR “Time Out”
Scorecard Overview

• STEP 1: Identify an improvement indicator under each quality dimension
• STEP 2: Determine the degree of importance of each improvement indicator
• STEP 3: Collect baseline data to populate “as-is” state
• STEP 4: Identify measurement tools and strategies (to determine to what extent indicator selected has improved, using a scale of 1-10)
• STEP 5: Develop strategies to meet each goal
## JOINT Scorecard

**QUALITY DIMENSIONS:**

<table>
<thead>
<tr>
<th>SELECTED MEASURE</th>
<th>EFFICIENT</th>
<th>SAFE</th>
<th>APPROPRIATE</th>
<th>ACCESSIBLE</th>
<th>ACCEPTABLE</th>
<th>EFFECTIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Length of Stay - LOS) (Note 1)</td>
<td>OR “Time Out” (Note 2)</td>
<td>% of Patients Mobilized Day 0 (Note 3)</td>
<td>Time to Surgery (T0-T2) (Note 4)</td>
<td>Patient Satisfaction (HCAHPS) Fair (Note 5)</td>
<td>Date of Discharge/Predicted date (Note 6)</td>
<td></td>
</tr>
</tbody>
</table>

**TARGETED IDEAL (Level 10):**

- Full compliance to established standards; non-negotiable
- Ideal target based on what can realistically be achieved in two years; negotiable

**PERFORMANCE LEVEL:**

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>4.2 days or less</th>
<th>100% compliance</th>
<th>100%</th>
<th>400 days or less</th>
<th>90% or higher for “In AY” Score</th>
<th>0%</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>(Targeted Ideal)</td>
<td>4.3</td>
<td>95%</td>
<td>90%</td>
<td>450 Days</td>
<td>0%</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>90%</td>
<td>82%</td>
<td>500 Days</td>
<td>80%</td>
<td>0.5%</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>85%</td>
<td>75%</td>
<td>550 Days</td>
<td>85%</td>
<td>1%</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td>80%</td>
<td>68%</td>
<td>600 Days</td>
<td>82%</td>
<td>2%</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>70%</td>
<td>61%</td>
<td>675 Days</td>
<td>79%</td>
<td>4%</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td>65%</td>
<td>54%</td>
<td>775 Days</td>
<td>76%</td>
<td>6%</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>Current Compliance 60%</td>
<td>47%</td>
<td>896 Days</td>
<td>63.5% for “In AY” Score (see Note 5)</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td>(&quot;AS IS&quot; at Start)</td>
<td>5.5</td>
<td>55%</td>
<td>40%</td>
<td>1000 Days</td>
<td>60%</td>
<td>12%</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>50%</td>
<td>30%</td>
<td>1200 Days</td>
<td>55%</td>
<td>15%</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>50%</td>
<td>15%</td>
<td>1200 Days</td>
<td>55%</td>
<td>15%</td>
</tr>
</tbody>
</table>

**WEIGHTING (%):**

| 20 | 15 | 20 | 10 | 15 | 20 | = 100% |

**OPTIMIZATION SCORE:**

| LEVEL x Weight | 1 | 160 | 1 | 135 | 140 | 90 | 45 | 20 | Total Score = 590 |

1 Length of Stay data was only available for the period 01 Aug 2009 – 31 Oct 2009

www.albertahealthservices.ca
Action Plan Overview
‘Four Fs’

Frontline engagement
Focus on quality
Feedback (measurement)
Finish

Exemplar system-wide clinical pathway and guidelines implementation projects

Engaging front line site teams
Measuring progress
Changing complex culture
Hip and Knee Arthroplasty

**Bone and Joint Health Strategic Clinical Network**

- **79% more surgeries performed**
- **3% increase in beds**
- Increased hospital capacity

**Wait Time Changes**

- Average time from decision to surgery:
  - 2010: 21.3
  - 2011: 22.0
  - 2012: 20.9
  - 2013: 19.3
  - 2014: 21.1
  - 2015: 22.3

**Improved Patient Education and Satisfaction**

- 97% in 2015 patients satisfied up from 86% in 2010

**Hip and Knee Program Improves Efficiencies and Quality of Care**

- Comparing 2009/10 to 2014/15:
  - 35,800 hospital bed days saved since 2010
  - $37.7 Million value
  - 11,700 bed days saved
  - 9,000 drill downs
  - 3.9 days in hospital
  - 4.2% readmission rate 2015 down from 4.3% 2010
  - Fewer transfusions:
    - 19.5% 2010
    - 6.3% 2015

**Notes:**
- All years are referring to fiscal year timeframes. For example, 2010 refers to fiscal year 2009/10.
- Contributing factors to success include detailed education for patients and their families, helping them get ready to leave the hospital sooner and reducing post-operative complications.

www.albertahealthservices.ca
Catch a Break Results

- 6433 patients have been screened through Catch a Break
  - 4830 (75%) patients have been identified as high risk for osteoporosis
  - 29% of those patients have never seen their doctor about their recent fracture (these patients are again contacted at 3 months & if necessary 6 months)
    - After the 3 month follow up call:
      - 75% of those patients contacted did go to see their family physician about their fracture
    - After the 6 month follow up call:
      - 56% of those patients contacted did go to see their family physician about their fracture

1 year data will be available soon; including BMD testing & Osteoporosis Medication use
Fracture Liaison Service Results

- ≈ 18% of patients are from out of region & are excluded from the FLS at this point in time
- 50% of those patients enrolled in the FLS were either started, restarted, continued or had medication changes. Earlier baseline data indicated only 8% patients were being discharged on osteoporosis medication
- 11% of patients are choosing not to take osteoporosis medication during their hospital visit. Early indications on 3 month follow up suggest some patients are re-considering their choice
- 27% of patients are being referred to other programs by FLS (i.e. falls, geriatrics, etc.)
Fracture Liaison Service Challenges

• **Medication challenges:**
  - Access to infusion options in the hospital/outpatient clinic or home need to be explored
  - Need to develop a common approach for patients with advanced renal disease. These are about 15-25% of patients. Evidence is not conclusive
  - Administration of bisphosphonates through Med Assist – a common practice in facilities or Home Care is a concern as bisphosphonates should be given on an empty stomach.

• **Future Program Development:**
  - Incorporating the FLS program into a larger ortho-geriatric program with a patient navigation component would be desirable.
Appropriate Use of Antipsychotics (AUA) in LTC

AUA Guideline & Web-based Toolkit

Trialed approach with 11 Early Adopter Sites
50% reduction in number of residents on meds over 9 months

170 LTC sites in Alberta
Series of 7 Collaboratives offered across province for over 100 sites with ‘higher’ antipsychotic use

Key processes: monthly medication reviews, staff education, family engagement; data submitted to Practice Leads

CIHI public reporting AUA QI
Phase 2: Early Adopter Sites (2013-14)

11 units: average antipsychotic
% Residents on Antipsychotics
& With a Monthly Medication Review

[Graph showing the percentage of residents on antipsychotics from June 2013 to March 2014.]
AUA Project resources were shared with all 170 LTC sites in Alberta in 2014/15. Antipsychotic use continues to decline.
Enhanced Recovery After Surgery

- Evidence-based clinical pathways
- Data driven quality improvement
- Local site implementation and change management

International network of leadership from ERAS® Society
Clinical Pathway for Surgery

Transforming care focused on better outcomes

Pre-Admission Clinic
Pre-Op Care
Surgery Anesthesia
Post-Anesthesia Care
Post-Op Care
Home
# ERAS Care Story (to Dec 31, 2014)

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Coeff&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Magnitude&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS Primary</td>
<td>0.80*</td>
<td>-2.0 days</td>
</tr>
<tr>
<td>Complications (primary)</td>
<td>0.65</td>
<td>-19.9%</td>
</tr>
<tr>
<td>Prevented readmissions</td>
<td>0.44*</td>
<td>-9.5%</td>
</tr>
<tr>
<td>LOS for those ERAS patients admitted</td>
<td>0.62</td>
<td>-4.5 days</td>
</tr>
</tbody>
</table>

Focused on magnitude and direction compared to pre-ERAS baseline

- Well enough to go home earlier from hospital (possibly due to less complications post op)
- Less risk of being readmitted to hospital within 30 days (possibly due to less complications post discharge)
- If readmitted, could be discharged earlier (complications experienced may be less severe)

* p < .05  
  a. Coefficients from adjusted multivariate models.  
  b. Calculated using the coefficients from adjusted multivariate models.

Source: IHE, April 2015
# ERAS Cost Impact (to Dec 31, 2014)

$2.1 to $4.6 million in net costs saved with 690 ERAS patients (PLC & GNH)
$3.1k to $6.6k with 3.5 bed days saved for each ERAS patient

<table>
<thead>
<tr>
<th>Site</th>
<th>Total Magnitude</th>
<th>Cost Impact ($ per inpatient day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low= $1,114 High= $2,106</td>
<td></td>
</tr>
<tr>
<td>LOS Primary (n=690)</td>
<td>-1,380 days (2.0 * 690)</td>
<td>$1,537,320 $2,906,280</td>
</tr>
<tr>
<td></td>
<td>-66 admissions (9.5%*690)</td>
<td>$868,548 $1,641,977</td>
</tr>
<tr>
<td></td>
<td>-780 days in hosp (66*12&lt;sup&gt;c&lt;/sup&gt;)</td>
<td></td>
</tr>
<tr>
<td>Prevented Readmissions (n=690)</td>
<td>-275 days (4.5*61)</td>
<td>$306,350 $579,150</td>
</tr>
<tr>
<td>LOS for those ERAS patients re-admitted (n=61)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Estimated Savings $2,712,218 $5,127,407

Total Cumulative Intervention Cost of ERAS (PLC and GNH ending Dec 31, 2014)<sup>d</sup> $546,492

Net Cost Savings $2,165,726 $4,580,915

Break even point – surgery # 174 82

Source: IHE, April 2015
Fostering Quality Innovation in Complex Surgical Systems

**ERAS Alberta**

Enhanced Recovery After Surgery (ERAS) is a group of 22 clinical practices that, when implemented as a patient-centered pathway, improve surgical outcomes. ERAS Alberta’s vision is to improve surgical care for all Albertans by supporting wide-spread adoption of these practices.

**BACKGROUND**

Alberta Health Services, through ERAS Alberta, supported by three Surgery Strategic Clinical Networks - SCNs, has demonstrated outstanding gains in quality improvement and cost reduction by implementing an evidence-based and internationally recognized pathway for surgical care. Through the Diabetes, Obesity and Nutrition (DON) SCN, AHS invested $850,000 in the Enhanced Recovery After Surgery (ERAS) Project for colorectal surgery demonstrating improved outcomes, and reduced complications and readmissions. This transformation of care has resulted in a lower cost per patient-day and a reduction of 215 bed days in 16 months or $3.2M-$4.4M in capitated productivity gain – the equivalent of opening 5 surgical beds.

In acute care, each hospital delivers practices in unique contexts creating large variation and complex processes. ERAS Alberta implemented complex practice changes through collaborative clinical and local teams, integrated research, detailed auditing, local access to cloud-based analytics, provincial quarterly balanced scorecard target presentations and SCN learning collaborations.

The mandate of ERAS Alberta is to transform surgical care across the province and create an integrated quality feedback system that informs provincial clinical practice and drives institutional surgical innovation and quality improvement.

**CHALLENGE**

To improve surgical outcomes for Albertans through applying ERAS pathways in the acute care setting and auditing to ensure sustainment. The challenge was to integrate the changes into the daily work environment of our clinical team and blend these changes into all levels of the health system (patient, provider, system) to achieve long-term success.

**APPROACH AND OBJECTIVES**

Clinical pathways were generated to ensure consistent application of ERAS best practices. This was achieved through empowering and measuring local facilitation and auditing, and through strong provincial leadership and coordination. Measurement includes compliance to ERAS practices and patient outcomes (diagnostic, length of stay and complications). The key in measuring if the clinical practice reaches patients consistently. The ERAS audit allows local teams to track their progress and success.

**TEAMS**

Each hospital has local teams of dedicated clinicians led by a surgeon, an anesthetologist, and an ERAS nurse coordinator. The Strategic Clinical Networks (SCNs) provide ERAS Alberta access to clinical and research insights and patients consultants from across the province. ERAS Alberta helps local teams change patient education, pre-operative care, surgical and anesthesia practices and care, as well as post-operative care including helping patients transition to home.

**COMPONENTS**

- Local teams: Surgeon and Anesthesiologist leads, an ERAS nurse coordinator, and multi-disciplinary team members
- Outcome-focused clinical practice improvements inform audit and system process redesign
- Detailed and comprehensive auditing and analytics. Audit data is highly valuable to implementation, sustainment and measurement of ongoing quality improvements. This involves collecting detailed quality and clinical data for each patient before, during and after surgery.
- Quarterly reporting of balanced scorecard targets through the SCNs learning collaborative environment. Balanced scorecard targets focus on local teams work on the Health Quality Council’s Six Dimensions of Quality.
- Sharing of quality practice and process innovations between sites and across the province

**RESULTS**

Largest per patient quantifiable quality improvement gain recorded in Alberta Health Services history.

Alberta Health Services and the Peter Lougheed Centre (PLC) and the Grey Nuns Community Hospital (GHNC)

**CLINICAL PATHWAY FOR SURGERY**

Pre-Admission Clinic Pre-Operative Care Surgery Anesthesia Post-Anesthesia Care Post-Operative Care Home

With special thanks to:

Jeanette Lawrence, BScN RN, MBA(Queen’s), MBA(Cornell)
Jeanette.Lawrence@albertahealthservices.ca

complications are high cost with health systems and have long lasting socio-economic impacts to patients and their families. A micro-costing exercise is currently being planned to better capture these savings. An independent economic analysis by the Institute for Health Economics is underway that will consider additional factors beyond the cost reduction related to length of stay and readmission rate reductions.

The SCNs through ERAS Alberta continue to advance practice improvements and re-design care delivery processes to sustain and enable continuous improvement in health delivery at the system level.
Stroke Action Plan

• Implemented stroke best practice in 14 rural centres
The Elements of Sustainability

1. Unit – ongoing individual and team actions to improve, patient and family engagement, staff education

2. Site & Organization
   - Actions to support individuals and teams
   - Monitoring indicators
   - Fostering culture to support quality care
   - Staff competencies
   - Successes celebrated

3. Zone – actions to support sites to sustain outcome, maintain awareness of changes—standing agenda items, monitoring and auditing, consulting teams; physician, nursing and allied health support

4. System
   - Broader system supports
   - Policy established
   - Standards and Guidelines
   - Ongoing monitoring strategy established
   - Embed in Pathways

Outcome to be maintained (improvements continue)
Questions?
Additional Resources & References

- [www.albertahealthservices.ca/scn.asp](http://www.albertahealthservices.ca/scn.asp)
  - AUA: [www.albertahealthservices.ca/auatoolkit.asp](http://www.albertahealthservices.ca/auatoolkit.asp)
  - Hip & Knee Arthroplasty: [www.albertahealthservices.ca/10780.asp](http://www.albertahealthservices.ca/10780.asp)
  - ERAS: [www.albertahealthservices.ca/10318.asp](http://www.albertahealthservices.ca/10318.asp)
- [www.ihi.org/engage/collaboratives/](http://www.ihi.org/engage/collaboratives/)
Acknowledgements

- Mollie Cole, Manager, Seniors Health SCN, Alberta Health Services
- Agnes Joyce, Manager, Cardiovascular Health & Stroke SCN, Alberta Health Services
- Sheila Kelly, Manager, Bone & Joint Health SCN, Alberta Health Services
- Stacy Kozak, Manager, Surgery SCN, Alberta Health Services
- Glenda Moore, Manager, Diabetes Obesity & Nutrition SCN, Alberta Health Services
- Alison Nelson, Senior Consultant, SCNs, Alberta Health Services
- Dennis Cleaver, Executive Director, Seniors Health SCN, Alberta Health Services
- Lynn Mansell, Senior Provincial Director, Bone & Joint Health and Seniors Health SCN, Alberta Health Services
- Louise Morrin, Executive Director, Cardiovascular Health & Stroke SCN, Alberta Health Services
- Petra O’Connell, Executive Director, Diabetes Obesity & Nutrition SCN, Alberta Health Services
- Jill Robert, Acting Senior Provincial Director, Surgery SCN, Alberta Health Services
- Shelley Vallaire, Senior Provincial Director, Cardiovascular Health & Stroke SCN, Alberta Health Services
- Michelle Salesse, Acting Executive Director, Surgery SCN, Alberta Health Services
- Mel Slomp, Executive Director, Bone & Joint Health SCN, Alberta Health Services