Better Patient Safety with Lean in Saskatchewan
John Black, Maura Davies, Heather Thiessen

Session C10: Dec. 8, 2015, 1:30-2:45 p.m.
Presenters have no conflicts to disclose

Session Objectives

1: Explore some of the latest evidence for how Lean implementation can deliver safer, higher-quality (and lower cost) care, just as it has helped Saskatchewan achieve a zero defect rate on 75 of 94 clinical processes.

2: Understand (directly from a patient) how Lean operations and processes positively impact patients, their families, and healthcare workers.

3: Identify key requirements of a successful, large-scale Lean implementation from the perspectives of a senior healthcare leader and the consultant who guided the journey.

4: Inspire you to assess how a Lean implementation could help your own organization provide much better patient care.
Transformation =

Courage to Lead +

Transformational System

Saskatchewan, Canada
Saskatchewan Healthcare System

- 251,900 square miles
- 12 Regional Health Authorities +1 provincially and federally funded health authority + 3 provincial agencies + Health Quality Council
- 16 CEOs
- 42,000 employees + 2000 physicians
- Serving 1.13 million people
- $5 billion budget
- 65 hospitals + 156 nursing homes, many clinics

Saskatoon Health Region

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5,600
495 deaths

Tommy Douglas-
Father of Medicare
The latest estimate is that 440,000 deaths are caused by preventable hospital mistakes each year. That’s more than 1,000 a day. According to the World Health Organization, data primarily from the European Union consistently show medical error rates of 5 to 12 percent.
The Bitter Bottom Line of Medical Errors

2008: Manitoba man dies of a treatable bladder infection after sitting in his wheelchair in a waiting room for 34 hours.

2013: Nova Scotia woman has an unnecessary mastectomy after a test result mix-up.

2014: Saskatchewan woman suffers 4 years with surgical tape puncturing her bladder until she demanded diagnostic imaging.

The Bitter Bottom Line of Medical Errors

- Retained surgical items
- Failure to follow standard protocols
- Wrong or unapproved drugs
- Machine calibration mix-ups
- Incorrect dosages
- Unscreened, contaminated blood
- Patient gag orders
Young Mother’s Video

30-50%
JBA Mission

To help our clients transform their healthcare systems so they can take pride in delivering to every patient compassionate, defect-free care with no waiting.
Courage to Lead

Gissing’s team meets Toyota in Japan, 1990

Boeing Commercial Airplane Company
$900 million

Carolyn Corvi Video
Boeing 737 Final Assembly

Before

Lead time cut in half

After

“Toyota revolutionized our expectations of production; Federal Express revolutionized our expectations of service.

The challenge is to revolutionize our expectations of healthcare: to design a continuous flow of work for clinicians and a seamless experience of care for patients.”

— Dr. Donald M. Berwick, President Emeritus, IHI

Sister Monica Heeran, PeaceHealth, First Healthcare CEO in Japan, 1996
Saskatchewan, Canada

“I think this approach will work better in healthcare than manufacturing.

People come to this sector because they care. All these non-value-added steps have interfered with them fulfilling their passion.”

Dan Florizone, former Deputy Minister of Health
VISION
Healthy People, Healthy Communities

MISSION
The Saskatchewan health care system works together with you to achieve your best possible care, experience and health.

VALUES
Respect
Engagement
Excellence
Transparency
Accountability

Better Care
Better Health
Better Teams
Better Value

Culture of Safety | Patient & Family Centred Care
Continuous Improvement | Think & Act as One System

3P Lean Design

Saskatoon Children’s Hospital

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Culture Change

Enlisting patients and their families in improving their care

“We do not see things as they are, we see things as we are.”

Anais Nin

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Culture Change

Patients with the courage to speak up and participate

Culture Change

Respect & Dignity  Collaboration  Information Sharing  Meaningful Participation

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Shigeo Shingo

"I cannot marvel at how thoroughly I had been under the spell of statistics. … I had forgotten to pursue the nature of quality control itself. The essential goal of Statistical Quality Control methods is to reduce defects, a passive goal that accepts some level of defects is inevitable.

In contrast, a zero QC system pursues the active objective of eliminating defects."
Mistake Proofing

Zero defects is possible

Zero defects is the only acceptable goal

Mistake Proofing

Mislabeled or unlabelled blood specimens in NICU:

Before: 0.19%
After: 0%

1. Moved requisitions to bedside.
2. Implemented SW to label at bedside.
3. Visual reminder as final check before sending specimen to lab.
Mistake Proofing Projects

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<td>7</td>
<td>4</td>
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<td>1</td>
<td>4</td>
<td>6</td>
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<tr>
<td><strong>Total Projects</strong></td>
<td><strong>41</strong></td>
<td><strong>36</strong></td>
<td><strong>16</strong></td>
<td><strong>39</strong></td>
<td><strong>132</strong></td>
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# of MP Projects that achieved <1% Defect Rate

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<tr>
<td>Did not have process</td>
<td>35/41 = 85%</td>
<td>34/36 = 94%</td>
<td>13/16 = 81%</td>
<td>7/39 =19% (32 are Pending)</td>
<td>100/132 = 76% achieved &lt;1% defect rate thus far</td>
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Mistake Proofing Results

Falls in Long Term Care

**Current State**

- No assessment at admission to determine risk level
- No visual controls in place to identify those at risk
- Staff is inconsistent with routine assessment and process is subjective based on staff education level with falls
- Process is 100% reactive and not proactive

**Improvements Implemented**

- Introduced best practice guidelines for assessment at admission
- Created visual controls for resident rooms to identify those at higher risk
- Developed a 3 question checklist to review before leaving any resident room

**Root Cause Analysis**

- No standard work upon admission to assess risk
- Best practice for routine assessment of fall risk was unknown by staff

**Target**

- Eliminate defects related to resident falls in long term care

**Results**

- Eliminated 100% of defects related to falls
- Educated 100% of staff on best practice tools

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Suann Laurent Video

89% reduction in surgical wait times
Surgical Wait Times Video

More Results

“Dedicated to all the people of this world who are now — or who will become — patients.”
The Journey to Healthcare Transformation

- Gain top management commitment.
- Set direction.
- Establish organization / infrastructure.
- Develop Global Production System leaders.
- Educate organization in key concepts.
- Make rapid improvements.
- Implement world-class management system.
- Establish visibility and accountability.

All are needed for sustained, continuous improvement

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Hoshin Kanri

Saskatoon KPO

Kaizen Resources

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## Lean Leader Certification

**Distribute Books** 4 weeks

**Certification Overview & Orientation (5 days)**

**Value Stream Mapping (3 days)**

**Lean Leader Training (3 days)**

**Module Deep Dive (2 days)**

**Module Marathon (1 day)**

**North American Tour (8 days)**

**Kaizen Basics (1 day)**

**Participant (5 days)**

**Prep RPIW**

**RPIW #1**

**Prep RPIW**

**RPIW #2**

**Prep RPIW**

**RPIW #3**

**2 weeks**

**2 weeks**

**2 weeks**

**2 weeks**

**Subteam Lead** (10 days@100%, 1 week@50%, 1 week@25%)

**Team Lead** (10 days@100%, 1 week@50%, 1 week@25%)

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**Time Commitment for Certification:**

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<th>Commitment for Certification:</th>
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<tr>
<td>4 weeks</td>
<td>50.5 Days</td>
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### 100 days

“I realize now, more than I did at the time, that it is less about the hours involved, and more about intense learning and commitment to a new way of thinking and working. I would do it again in a heartbeat.”

— Maura Davies, Saskatoon Health Region CEO

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Lean Vision and Strategy

Point Improvements

Point

(Eliminate waste at source - Just start somewhere)

Goal: Flow vs. Batch

Line Improvements

Line

Vertical development
(Link processes to create a cell)

Critical Transition from Point to Line

Goal: A Model Line

Spatial Improvements

Height

3rd Dimensional

(Link all elements from concept to customer)

Goal: Raise to Other Planes

Plane Improvements

Plane

(Link cells to produce a product)

Goal: Spread Across Plane

Point Improvements

Point

(Eliminate waste at source - Just start somewhere)

Goal: Flow vs. Batch

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(Link cells to produce a product)

Goal: Spread Across Plane

Global Enterprise Value Stream Network

1. Identify value stream
2. Make value flow
3. Pull value from supplier’s supplier to customer’s customer
4. Remove waste
5. Pursue perfection

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RPIWs

The World Class Management System

Management By Policy

Daily Management (DM)

Cross Functional Management (CFM)

Aligns across the organization toward full customer satisfaction

Time

Management by Policy

Cross Functional Management

Daily Management
Visibility and Accountability

JBA Lean Transformation System

Client Commitment
- Demonstrate commitment
- Sign contract

Client Setup
- Assess needs
- Develop plan, set up infrastructure

Training/Certification
- Lean leaders
- Internal specialists
- Employees

Conduct Events/Implement Improvements
- PQA
- VSM
- 5S
- RPIWs
- Supply chain & inventory reduction
- 3P Lean design

Transition to Internal Specialists
- Coaching & evaluations
- Phased approach

Final Audit
- Gemba tours
- Maturity model
- Recommendations

4-5 years for facility or system
Lessons Learned

- Change is hard
- Details matter
- We’re only beginning
- No turning back
The Zero Defects Challenge

Union Nurse Video
Questions?