INTEGRATED LEAN FORM + FUNCTION FOR PATIENT FIRST CARE
Form Follows Function

"Whether it be the sweeping eagle in his flight, or the open apple-blossom, the toiling work-horse, the blithe swan, the branching oak, the winding stream at its base, the drifting clouds, over all the coursing sun, form ever follows function, and this is the law…

It is the pervading law of all things organic and inorganic, of all things physical and metaphysical, of all things human and all things superhuman, of all true manifestations of the head, of the heart, of the soul, that the life is recognizable in its expression, that form ever follows function.”
Form Follows Function

The Avian Wing

Figure A: Feather Types
- Premax
- Secondary
- Marginal counts
- Primary counts
- Scapulars
- Secondary counts
- Tertials

Figure B: Wing Bones
- Terminal phalanges
- Tendon
- Digital phalanges
- Metacarpus
- Ulna
- Digiti
- Hamulus
What Function?
Benchmark “Best Practices”

Circular ward plan

Two semi-circular 30-bed wards are fitted on each floor of the drums, with short travel distances and good sight lines.
- Services flow
- Patients and staff flow
- Public flow
- Inpatient area
- Support services
- Public area
- Facilities management area
- Patient and staff circulation
- Nurses’ base with wide angle of view
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Listen to the Staff - Charrettes
Question

What if Clinical Staff don’t know all they are doing and how it is linked because they are too busy doing ‘their’ job?

What if Clinical Staff don’t know what the Patient experience is?

What if ‘Best Practice’ somewhere else will not be ‘Best Practice’ here?

What is the Function?
Health Minister Dustin Duncan (Aug. 30, 2012)

“We are committed to improving health care through Lean, and we are willing to be a leader in this area. Our goal is to continue to put patients first by improving access, quality, patient and staff safety, efficiency, and value for patients by using Lean as the foundation for the province’s quality improvement efforts.”
Lean Terms

Lean
Toyota Production System

3P
Production Preparation Process

RPIW
Rapid Process Improvement Workshop
Wait Time for Surgery (90th Percentile)

Regina Qu’Appelle, Month

- **Surgery, OR, Sterile Processing**
- **PACU**
- **Surgical Ward**

388 Days
November 2012

105 Days
July 2015

Patients waiting > 3 months

- 5703 in Sept 2012
- 464 in May 2015
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Support Improvement Plan
If Process Design and Building Design are integrated
Lean works the same for Construction

- Last Planner Schedule
- Six Week Look Ahead
- One Week Look Ahead
- Daily Huddles
- Constraint Log
- Percent Plan Complete
INTEGRATED LEAN FORM + FUNCTION FOR PATIENT FIRST CARE

Model - Capital Project 3P Process Map

BUILDING DESIGN

EVENT WEEK

NEW OPERATING PROCESS - CONTINUOUS IMPROVEMENT
- Prince Albert Parkland has the third-highest population of Saskatchewan residents
- More than 81,600 people live in Prince Albert Parkland
- Located in Central Saskatchewan
Prince Albert Parkland Health Region
PAPHR

- Strong Secondary Acute Care
- Significant Primary Care (fee for service / contract providers)
- Wide variety of Community Based Services
Who are our Patients

- Population health status has significant concerns
  - High smoking rate – more than 24 per cent
  - High obesity rate – more than 35 per cent considered overweight or obese
  - Unhealthy diets – fewer than 40 per cent eat recommended fruits and vegetables
  - High injury rates – more than 1 in 10 seek treatment for injuries each year
Victoria Hospital

- Opened in 1969
- Major renovation plan only partially completed in late 1990s
- Dramatic change in type and volume of services, including much larger catchment area for specialist services
Why 3P?

• Patient First Review
• Strategies to ensure this once in a lifetime opportunity meets the needs of patients, their families and providers
• 3P process
• Stakeholder consultation
  – Ministry of Health, Municipal Partners and others
Hearing the Voice of the Patient and Family Members

• Patients participate in all 3P events
• “I wondered what they were doing in 3P when I heard about it – you get involved and I see it is about the patient”
• “I participate in improvement events because I know I could have some impact on something important in healthcare”
Patient and Family Participation

• Invite patients who have used the service
Staff Engagement

- Staff involved in 3P events have a positive experience and use the improvement tools in their work
- Conversations about improving care
- Front Line Staff make changes to their work areas
- Improvement events to improve processes that were identified as issues during 3P
Physician Engagement

- Physician engagement critical
- Scheduling lead time is important
- Opportunity for conversations with staff about improving patient care
Connections Supported by 3P

• Engagement of staff, physicians and volunteers
• Senior leadership and Board members committed to consultation and participation
• Vehicle to strengthen communication to the wider community
• Strengthen relationships with funders
Design Criteria - Focus of the 3P

- Improved patient and family experience
- Quality and safety at the forefront
- Supportive work life
- More time for Patient Care
Multiple 3P Processes /Events

• Structured event – 30, 60, 90 days
• Data collection formalized and strengthened
• Wide engagement
• Right people in the room
Mission Critical Data Collection

• Require preplanning, leadership and connection to the providers
• Real time data
• Data collection is as important as the 3P event itself
• Understand their business and believe the data
• Data must be focused and resonate with the patients providers and leadership
Mission Critical

• 7 flows of medicine – measured patient and provider walking and made adjustments
• Check to make sure everything that happens in a work day has been accounted for
• Mock ups and modeling
• Importance of adjacencies
Outcomes for PAPHR

• Engagement of staff, physician and volunteers
• Patient and family centered planning
• Data drives realistic conversation
• Healthy respectful discussions – Changes the relationships among providers
• Team development – Patient focused
Challenges of the 3P Process

• Everything has limits – Size, Money, Time
• Physician participation is critical and is impacted by clinical demands
• Patient and family participation must be supported and acknowledged by dedicated staff
Prince Albert Victoria Hospital
INTEGRATED LEAN  FORM + FUNCTION FOR PATIENT FIRST CARE

Designed, Built and Tested by
PATIENTS, NURSES, DOCTORS AND STAFF
INTEGRATED LEAN FORM + FUNCTION FOR PATIENT FIRST CARE

- **Environment**
  - Patient Preference
    - Room size to accommodate equipment
    - Maintenance issue
    - Isolation
    - Palliative
    - Level of care
    - Conduct of patient
  - 1st Available Bed
  - Social condition
  - OR Surgical Initiative

- **Primary Drivers**
- **Secondary Drivers**

**The Opportunity**
INTEGRATED LEAN  FORM + FUNCTION FOR PATIENT FIRST CARE
<table>
<thead>
<tr>
<th>Employee/Area</th>
<th>Problems</th>
<th>Measures Taken</th>
<th>Results</th>
</tr>
</thead>
</table>

**Before Improvement**

- Nursing: Doing non-nursing duties
- Stocking clean linen
- Answering phones
- Empty linen cart
- Empty dirty laundry
- Supplying linen
- Shyrring dirty rooms
- stri:(dirty)
- Emptying dirty laundry
- Stripping dirty rooms
- Preparing formula

**After Improvement**

- Nursing: Performing new duties
- Sca: Performing new matry duties
- Emptying dirty laundry
- Stripping dirty rooms
- Preparing formula
- Supplying linen
- Answering phones
- Empty linen cart
- Empty dirty laundry
- Stocking clean linen

Remarks:

Note:

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INTEGRATED LEAN  
**FORM + FUNCTION FOR PATIENT FIRST CARE**
### OUTPATIENT PEDIATRIC

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number</th>
<th>Time</th>
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<tbody>
<tr>
<td>Doctor Visits</td>
<td>212+160</td>
<td>77 mins</td>
</tr>
<tr>
<td>NG Insertions</td>
<td>90</td>
<td>+30 mins</td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td>36</td>
<td>360 mins x 6 hrs</td>
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<tr>
<td>Blood Work</td>
<td>50</td>
<td>22 mins</td>
</tr>
<tr>
<td>Port Flush</td>
<td>24</td>
<td>+20 mins</td>
</tr>
<tr>
<td>Nursing Assessment</td>
<td>86</td>
<td>15 mins</td>
</tr>
<tr>
<td>ER - CTAS</td>
<td>3</td>
<td>2 mins</td>
</tr>
<tr>
<td>CTAS 4</td>
<td>15%</td>
<td>165 mins</td>
</tr>
<tr>
<td>CTAS 5</td>
<td>41%</td>
<td>1245 mins</td>
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### OUTPATIENT ADULTS

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<thead>
<tr>
<th>Reason</th>
<th>Number</th>
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<tbody>
<tr>
<td>TAP5</td>
<td>720</td>
<td>125 mins</td>
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<tr>
<td>IV Antibiotic</td>
<td>2000</td>
<td>40 mins</td>
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<tr>
<td>Direct Consult</td>
<td>1850</td>
<td>153 mins</td>
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<tr>
<td>Long Term Observation</td>
<td>1850</td>
<td>5 mins</td>
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<tr>
<td>Nursing Assessment</td>
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<td>1245 mins</td>
</tr>
</tbody>
</table>

### AMBULATORY PROCEDURES (Not Cast Clinic)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Time</th>
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<tbody>
<tr>
<td>SUTURAL PREP</td>
<td>120 mins</td>
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INTEGRATED LEAN
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MEDICAL/SURGICAL
UNIT #5/6
36 BEDS
INTEGRATED LEAN FORM + FUNCTION FOR PATIENT FIRST CARE
INTEGRATED LEAN  FORM + FUNCTION FOR PATIENT FIRST CARE
ICU Days to Discharge

Jan 1, 2015 to Mar 31, 2015

312 pts. total

<table>
<thead>
<tr>
<th># of Days</th>
<th>0</th>
<th>2</th>
<th>5-10</th>
<th>Greater Than 10</th>
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<tbody>
<tr>
<td>Patients</td>
<td>215</td>
<td>73</td>
<td>20</td>
<td>10</td>
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</tbody>
</table>

# of Discharges

Less Than 2

2 to 5

5-10

Greater Than 10
ICU Location discharge Jan 2015 - Mar 31 2015
312 pts.

# of Discharges:

Location

- Level 4 5 6
- Home
- RVH
- Expired
- MHL
- St Paul's
- Nurse Home
- OPD
- Police
- ANA
- Shellbrook
- LARange
- Hospital

186

100%
75%
50%
25%
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Health Minister Dustin Duncan (Mar. 2, 2015)

Lean has improved patient care in Saskatchewan while achieving more than $125 million in projected financial benefits.

“Lean is exceeding our expectations in terms of improving the quality and timeliness of services provided to patients - and we’ve only begun to tap its huge potential... the true benefit is how it’s making healthcare better on a daily basis for patients and their families.”
### Benchmarks for treatment and wait time in Saskatchewan

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Province Wide</th>
<th>Provincial Regions</th>
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<tbody>
<tr>
<td>Hip Replacement</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>Knee Replacement</td>
<td>61%</td>
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<tr>
<td>Hip Fracture Repair</td>
<td>72%</td>
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<tr>
<td>Cataract</td>
<td>62%</td>
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<tr>
<td>Bypass Surgery</td>
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<tr>
<td>Radiation Therapy</td>
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<tr>
<td>MRI Scan</td>
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<td>Bladder Cancer Surgery</td>
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<td></td>
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<tr>
<td>Breast Cancer Surgery</td>
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<tr>
<td>Colorectal Cancer Surgery</td>
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<tr>
<td>Lung Cancer Surgery</td>
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<td>Hip Replacement</td>
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<tr>
<td>Knee Replacement</td>
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better health
better teams
better care
better value

Pat Stuart – pstuart@paphr.sk.ca
VP Quality Management, PAPHR

Paul Blaser – paul@leanintegrated.ca
Mike Weishaar – mike@leanintegrated.ca
www.leanintegrated.ca  306-229-6442