Definitions

- LEAN focus on elimination of waste and defect.
- Six Sigma is the elimination of variation in process, 3 parts per million.
Taiichi Ohno - Toyota Production System Founder

“All we are doing is looking at the timeline from the moment a customer gives us an order to the point when we collect the cash. And we are reducing that timeline by removing the non-value-added wastes.”

Source: Mark Graban, Lean hospitals, 2009
## Eight Types of Waste in Healthcare

<table>
<thead>
<tr>
<th>Eight Wastes</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over production</td>
<td>Making too much; producing too early;</td>
<td>Too many copies; Patient repeats registration information more than once</td>
</tr>
<tr>
<td>Wait time</td>
<td>When time is not used effectively</td>
<td>Patient is idle while equipment is found</td>
</tr>
<tr>
<td>Transportation</td>
<td>Unnecessary movement of materials or patients</td>
<td>Moving EKG equipment from building to building</td>
</tr>
<tr>
<td>Processing</td>
<td>Rework; doing the same process multiple times</td>
<td>Repeated blood draws for the same tests</td>
</tr>
<tr>
<td>Inventory</td>
<td>Having more stock than needed at hand</td>
<td>Excessive medications on hand; over abundance of clinical supplies</td>
</tr>
<tr>
<td>Movement</td>
<td>Travel of staff or physicians</td>
<td>Walking to storage location on another unit</td>
</tr>
<tr>
<td>Defects</td>
<td>Work that contains errors</td>
<td>Incorrect documentation; medication errors</td>
</tr>
<tr>
<td>Knowledge/Talent</td>
<td>Barriers to the flow of knowledge, ideas and creativity</td>
<td>An employee sees a problem &amp; potential solutions, but has no opportunity to influence the situation</td>
</tr>
</tbody>
</table>
Lean Thinking - Five Principles

1. Specify value from the standpoint of the end customer.
2. Identify all steps in the value stream, eliminating every step that does not create value.
3. Make the value-added steps occur in a tightly integrated sequence so work flows smoothly.
4. Let customers pull value.
5. Pursue perfection through continuous improvement.

What is Lean?

Lean is about eliminating waste in all forms throughout the organization to create value for the customer. To do this employees need to become problem solvers and continually ask the question WHY. (Lean Pathways, 2011)

- Lean Thinking
- Lean Tools
- Scientific method

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www.leansystems.org
Lean Thinking System

- Need
  - Exceptional Experience Every time
- Value-stream Mapping
- Strategy deployment
- Visual management and the 5S system
- Standardized Work
- Error Proofing
- Problem-Solving
- Lead product development
- Team member involvement
- Supplier partnerships
- Demand Leveling
- Just-in-time delivery

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Stages of Lean Adoption in an Organization

1. Stabilize: Standard work, visual management, 5S
2. Establish flow - Make one, move one
3. Create Pull - Don’t move one until the downstream customer wants it.
4. Seek perfection - Continuous improvement, every day

Each stage is a prerequisite to the next stage!

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
## What is 5S?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sort</strong></td>
<td>Eliminate unnecessary items. Keep others based on frequency of use</td>
</tr>
</tbody>
</table>
| **Store** | Items used more frequently are placed closer to the work.  
Hourly - within arms reach  
Every shift - short walk  
Monthly - department storage  
Annual - Hospital storage |
| **Shine** | Keep the work place clean, daily |
| **Standardize** | Ensure things are always kept in the same place. |
| **Sustain** | A system of on-going support of the first four. |

Salem Hospital
Example
5S - Facilities Work Shop
5S Case Study: Hospital Engineering Department

Problem:

• Each staff had own tools
• Area lacked systems to organize, stock tools and equipment
• No method to control inventory or assure equipment was ready for use
Step one: Sort

- A group of Engineering staff met for 2-4 hours every two weeks to sort through what was needed/not needed, useable/unusable in the area.
Step Two: Simplify - a place for everything

- Tools were organized and assigned to a specific “address”
Step Three: Sweep

- Visual method to ensure system of organization is maintained
Steps Four and Five: Standardize and Self Discipline

- Documentation of agreements all employees who use the space will follow to sustain the improvements
Ground rules for 5S

• The people who work in the area “do” the 5S
• Communicate the timing of the “sorting” and “simplifying” so all staff can have input
• Any item no longer needed in the area is disposed of in a respectful manner
• Recycle whenever possible
Visual Management

• Goal - make problems visible.
• So, they can be fixed immediately.
• This is a mindset more than a specific tool or technology.
• Examples
  - Inbox
  - Dashboard
  - Bed Board

• Benefit: Focus and alignment
PDCA at Lean Organizations

Business Planning
Activity Planning
Kaizen
Daily Work
Standard Work
Problem-Solving
A3 Strategies
Strategy Deployment

Activities

Tools

Elements of Standard Work

Definition: The current one best way to assure the proper outcome at the highest quality.

1. Task
2. Sequence
3. Time
4. Expected outcome

• “Without standards there can be no improvement.” - Taiichi Ohno
Problem Solving: The Scientific Method

- Grasp the Situation
- Plan
- Adjust
- Check
- Do

GTS
Mile wide and inch deep
Then
Inch wide and mile deep

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009

Salem Health
Problem Solving: Four Step Mental Model

1. What is the problem? (Deviation from standard)
2. What is preventing us from meeting our target? Causal analysis - fishbone diagram
3. What are the causes in order of importance? (Pareto chart)
4. What actions will address the most important causes?

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Operating EBIDA Fishbone

Net Revenue: $10.2 million

Volume $21 million

Surgery Scheduling & authorization
Clinical Documentation
Payer Contracts
Avoidable Readmission
Cardiology
Joint replacement
Other
Overhead reduction
Structure and Services
Productivity
Price Negotiation
Product utilization
Standardization

Variation in care: $5.4 million
Supply Chain: $6 million
Labor: $6.8 million

GAP

The heart of healing

Salem Health
# A3 Thinking

<table>
<thead>
<tr>
<th>Strategy A3 Theme</th>
<th>---</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What strategic objectives do we need to achieve this year?</td>
<td>• What’s our action plan to achieve these objectives (who, what, when, where, and how)?</td>
</tr>
<tr>
<td>• How did we do last year?</td>
<td>---</td>
</tr>
<tr>
<td>• What is our history?</td>
<td>• Are there any unresolved issues?</td>
</tr>
<tr>
<td>• What did we do last year?</td>
<td>• Do you need any help with anything?</td>
</tr>
<tr>
<td>• What worked and didn’t work?</td>
<td>• Anything bothering you?</td>
</tr>
<tr>
<td>• What have we learned?</td>
<td>---</td>
</tr>
<tr>
<td>• What do we need to do to achieve this year’s strategic objectives?</td>
<td>---</td>
</tr>
<tr>
<td>• How will these actions benefit us?</td>
<td>---</td>
</tr>
</tbody>
</table>

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
## Finance A3 Example - Reflect on prior Activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Rating</th>
<th>Key results/ issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>New coding role in surgery</td>
<td>Yellow</td>
<td>Captured about 50% of goal.</td>
</tr>
<tr>
<td>Predicting volume and reacting to market shifts</td>
<td>Red</td>
<td>8 month market decline. Delay in identification of the problem.</td>
</tr>
<tr>
<td>Daily productivity tools implemented</td>
<td>Yellow</td>
<td>Tools developed. Countermeasure are inconsistent</td>
</tr>
<tr>
<td>Supply Chain Savings</td>
<td>Green</td>
<td>Project $2.4m annual savings achieved.</td>
</tr>
</tbody>
</table>
Finance A3 Example - Rational for This Year

- Hypothesis - Scientific Method
- If we: “do these specific things”, the gap in operating EBIDA performance will be closed.
Components of Strategy Deployment

- Objective: Create focus, alignment, rapid response
- True North
- Plan-Do-Check-Adjust
- Management Process - Micro, Annual, Macro
- Catchball
- Deployment Leader Concept
- A3 Thinking - “If you can’t tell your story on one page, you probably don’t understand it.”

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Strategy Deployment Process

1. Define True North - Expresses business needs that must be achieved, and creates a magnetic pull.
2. Develop the plan
3. Deploy the plan
4. Monitor the plan
5. Solve problems
6. Improve the system

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Salem Health: True North

Exceptional Experience Everytime!

<table>
<thead>
<tr>
<th>Metric</th>
<th>Current Score</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity Adjusted Mortality</td>
<td>0.65</td>
<td>0.60</td>
</tr>
<tr>
<td>Operating EBIDA</td>
<td>10.1%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Inpatient Satisfaction</td>
<td>86.8</td>
<td>87.3</td>
</tr>
<tr>
<td>Outpatient Satisfaction</td>
<td>92.7</td>
<td>93.0</td>
</tr>
<tr>
<td>ED Satisfaction</td>
<td>86.5</td>
<td>84.3</td>
</tr>
<tr>
<td>HCAHPS Top Box Score</td>
<td>71%</td>
<td>77%</td>
</tr>
<tr>
<td>Q 12 Grand Mean</td>
<td>4.01</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Strategy Deployment Cycles

• Strategy Deployment comprises three PDCA cycles
  - Micro: weekly to monthly cadence
  - Annual
  - Macro: Three to five years
• Micro and annual are reactive (to existing data)
• Macro is proactive there is less data available
• Initial focus is micro and annual, proactive PDCA is more difficult

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Deploy the plan: Tree Diagram of Strategies

**Measures:** Mortality, Operating EBIDA, Loyalty/Satisfaction, EE Engagement

- **Quality**
  - Evidence based medicine
  - Harms
  - Readmissions

- **Cost**
  - Expense per Adj. Discharge
  - Compensation ratio
  - Supply cost per Adj. Discharge

- **Delivery**
  - Patient Satisfaction
  - Throughput measure

- **EE Engagement**
  - Q1 - I know what is expected...
  - Work injury
Deployment Leaders

- Assigned to each focus area
- Ensure cross functional alignment by:
  - Leading the planning and execution process
  - Writing the strategic planning A3 and developing consensus
  - Tracking progress and making hot spots visible
  - Building required management systems

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Four Step Mental Model (A3 development)

• What is the gap? What are we trying to improve?
• What is preventing us from meeting our target? (A fishbone diagram can be used to show causes)
• What are the causes in order of importance? (Pareto chart)
• What actions will address the most important causes?

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Catchball

- Move up and down the planning and execution tree.
- Deploy based on analysis of the current condition at each level.
- Translate metrics level by level.
- Deployment leaders at every level must go to the Gemba to fully grasp the situation.
  - What prevents us from achieving “True North”?
  - Where does quality, growth, cost, satisfaction and engagement fit in?
  - How can we best contribute to Salem Health?

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
**Catchball**

- Frank, fact-based discussion between and within management levels.
  - Separate reality from fiction
  - Enemy is “happy talk”

- **Purpose**
  - Alignment of management vision with workplace activity
  - Focus on areas of greatest need (key strategies)

- Requires new leadership model and mutual trust
  - Trust leaders to pick focus area and goal
  - Trust team members knowledge and ability

Source: Lean Pathways Inc., Getting the right things done.
Salem Health Department Tree

Exceptional Experience Every time (E³)

Quality – Deployment Lead

Delivery – Deployment Lead

Cost – Deployment Lead

EE Engagement – Deployment Lead

Department Director
Targets:
• Eliminate waste
• Improve productivity
• Increase throughput
• Engage employees

Group A
Waste

Group B
Productivity

Group C
Throughput

Group D
Engagement

Baby A3 Action Plan

Baby A3 Action Plan

Baby A3 Action Plan

Baby A3 Action Plan

Mother A3’s

Dept. A3
Check Process - Micro PDCA

- Dashboards are the main communication tool.
  - Red/Yellow/Green assessment
  - Details in a comment box
- Exception management: What are the hot spots? What is being done about them?
- Visual tools are essential for team checking.
- Team board is a window on both routine and improvement work
  - Oriented around True North
  - Review production results daily, strategic results weekly

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Effective Dashboard

- Grasp the situation: Hot spots are visible at a glance
- Include both process and end-of-pipe measures
- Show a target line
- Status box - Red, Yellow, Green
- Use a text box to explain what is happening

Source: Lean Pathways Inc., Getting the right things done.
The Adjust Phase

Results

Meets plan/standard?

Yes
• Standardize
• Improve

No
• Adjust hypothesis
• Solve problems

Source: Pascal Dennis, “Getting the Right Things Done”, Lean Enterprises Institute, Oct 2009
Any questions?

THANK YOU.