D2/E2: A Proven Approach for Improving Clinical Outcomes and Achieving a Culture of Safety. Key Components of a Lean Transformation

Targeting Value, Spreading Change

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Marta Karlov, MPH
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These presenters have nothing to disclose.

Session Objectives

• Examine the quality and safety results of healthcare organizations that have successfully adopted the lean operating system.
• Explore the guiding principles behind the Toyota Production System.
• Identify and describe the organizational principles and systems that drive ideal behaviors in a lean organization.
ThedaCare Center for Healthcare Value

- Founded in 2008 as a 501(c)3 not-for-profit education center
- Independent board includes Paul O’Neill; John Shook, CEO LEI; George Koenigsaecker, former President Jake Brake (Danaher); Maureen Bisognano, CEO IHI; Arnold Milstein, Stanford Professor; Steve Shortell, Dean, U.C. Berkeley
- Goals: Redesign care to improve value, develop payment systems that reward value, publicly report health outcomes

Transform the Industry

- Transparency of Cost, Quality, Risk and Consequences
- Care Delivery Redesign with Focus on Value to Patient
- Payment Models that Reward Value
Agenda

- Results
- Principles of Operational Excellence
- Key Elements of a Roadmap
- Q&A
- Reflections

Results
2014 Top 5 Quality Pioneer and MSSP ACOs

**Pioneer ACOs**
1. Bellin-ThedaCare Healthcare Partners (Green Bay, Wis.) — 94.24 percent overall quality score
2. Beacon Health (Brewer, Maine) — 92.27 percent
3. Atrius Health (Newton, Mass.) — 91.40 percent
4. Mount Auburn Cambridge Independent Practice Association (Brighton, Mass.) — 91.36 percent
5. OSF HealthCare System ACO (Peoria, Ill.) — 90.26 percent

**Medicare Shared Savings ACOs**
1. ProHEALTH Accountable Care Medical Group (Lake Success, N.Y.) — 95.41 percent
2. Mosaic Life Care (St. Joseph, Mo.) — 95.11 percent
3. Coastal Medical (Providence, R.I.) — 94.58 percent
4. Primary Partners (Clermont, Fla.) — 94.38 percent
5. UW Health ACO (Madison, Wis.) — 94.34 percent
“One of the features of the Japanese workers is that they use their brains as well as their hands. Our workers provide 1.5 million suggestions a year, and 95 percent of them are put to practical use. There is an almost tangible concern for improvement in the air at Toyota.”

- Eiji Toyoda

Source: Institute for Enterprise Excellence
Tools, Methods of the Toyota Production System

Guiding Principles at Toyota

Principles & Knowledge

Vision, Principles, and Behavior of the Toyota Organization

Source: Institute for Enterprise Excellence
Tool-Based Transformation...the “How”

1. Results
   Specific and targeted performance outcome

2. Principles
   Universal truth, law, governs consequence

3. Systems
   A group of highly integrated parts, organized to accomplish a goal/objective

4. Tools
   A tactical element, point of use solution

5. Culture
   The collective behavior of the enterprise in how we achieve results

Source: Institute for Enterprise Excellence
Paradigm Shifts

REFLECTION POINT

1. There is a relationship between principles, systems and tools.
2. We focus on both key results and the best behavior to achieve those results.
3. We actively leverage our systems to drive the best behavior.

Source: Institute for Enterprise Excellence

Principle-Based Transformation...the “Why”

REFLECTION POINT

Source: Institute for Enterprise Excellence
Principles of Operational Excellence

**ALIGN PRINCIPLES**

- **Create value for the patient**
  Focus all aspects of the organization on activities that consistently create measurably better outcomes at the lowest cost, highest quality and are valued by the patient, family, community.

- **Create constancy of purpose**
  Providing a simple unifying purpose, focusing and aligning all parts of the organization on achieving long-term goals.

- **Think systematically**
  Think about how and why components work together across the organization and the impact of your individual area/department on the whole.

Source: Institute for Enterprise Excellence
**IMPROVE PRINCIPLES**

**Focus on process**
Focus problem-solving efforts on improving processes, not on fixing people.

**Embrace scientific thinking**
Seek facts and continuously experiment to learn, improve, and achieve desired outcomes systematically. Every employee is a scientist and sometimes experiments don’t always work, but every experiment produces knowledge. Think “win-win.”

**Flow & pull value**
Challenge our existing processes to create flow of value that streamlines upstream and downstream connections – triggered by customer. Minimize batching.

**Understand & Manage Variation**
There will always be variation. What is the variation telling us? Our systems and processes produce two type of variation:
1.) random, common cause and 2.) assignable, special-cause. When we don’t know the difference our actions can lead to confusion, delay & waste.

**Assure quality at the source**
Stop, correct, and eliminate defects and problems before moving to the next step, process, department or customer. Do not depend on inspection to provide quality.

**Seek perfection**
Constantly seeking ways to improve our systems and processes and challenge the status quo.

**ENABLE PRINCIPLES**

**Lead with humility**
Seek input, listen to understand, be open to new ideas, and continually learn. Once we think we have all the answers…we will have failed.

**Respect every individual**
Foster the continuous development of skills & talents in people to create an environment where individuals are actively engaged in improvements. Provide a safe environment physically & emotionally. Knowledge-flow is one of the most significant competitive advantages.

**Learn Continuously**
Learning does not stop after graduation. Change is occurring at an exponential rate and we must continue to deepen our understanding and share our learning with others.

Source: Institute for Enterprise Excellence
**IMPROVE**...the process

- Break-through Thinking
  - Continuously monitor and translate observations, models, and philosophies into new services and new approaches.
  - Continuously challenge the process to identify areas of improvement.

- Monitor & Maintain Predictability
  - Continuously monitor the outputs of each system to ensure stability and a standard outcome.
  - Continuously adapt the tools by making incremental adjustments that all shifts agree with.

- Adapt & Adjust
  - Monitor and adjust tooling to ensure improvement and a standard outcome. Continuously monitor the process to identify areas of improvement.
  - Continuously adapt the tools by making incremental adjustments that all shifts agree with.

**ENABLE**...the people

- Motivate, Mentor, Inspire
  - Energize people to develop and overcome barriers to change. Daily be in the work area to listen to understand and celebrate success.

- Empower, Involve & Coach
  - Empower authority within parameters of area to improve and solve problems. Break-down silos by involving cross-functional teams to solve value stream issues. Coach problem solving daily.

- Adapt & Adjust
  - Break-down silos by involving cross-functional teams to solve value stream issues.
  - Coach problem solving daily.

**ALIGN**...the important

- Establish Direction
  - Establish a vision and strategy to achieve that vision and align the direction on a regular basis.

- Establish a structure to achieve the plan, organize and align the resources, monitor structure to ensure consistency and alignment to plan.

- Setting & Achieving goals
  - Identify meaningful goals that can be accomplished in their area that directly affect overall vision and strategy. Daily report on progress and needed support.

- Develop & Share
  - Be a self-developer. Find opportunities to grow and develop to better support the organization. Share with others what is working and what is not working.

**Support**
- Aid, Assist, Strengthen

**Management Systems**
- Align, Monitor, Maintain

**Work System**
- Work System

**Improvement Systems**
- Signal, Swarm, Solve, Share

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Source: Institute for Enterprise Excellence
Roadmap to Operational Excellence
Customer Value

Management System
- Integrated Human Development, Finance, and Information Flow Systems
- New Operations System (model cell experiments with subsequent comprehensive spread)
- Scientific Problem-Solving System

Leadership Behaviors

Purpose, Values, and Principles

CHEO’s 2015-16 KPIs

<table>
<thead>
<tr>
<th>Exceptional Patient Experience</th>
<th>Connected Care</th>
<th>Education, Innovation, Discovery</th>
<th>Responsible Stewards</th>
<th>One Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety First</td>
<td>Days Matter</td>
<td>Improvements Made</td>
<td>Time Found</td>
<td>Inspiring Workplace</td>
</tr>
<tr>
<td>Reducing and avoiding serious safety events for patients, staff and physicians.</td>
<td>Reducing wait lists and wait times because every day matters in the life of a child.</td>
<td>Big and small changes that help move our strategy forward.</td>
<td>Making the best use of each hour of our time.</td>
<td>Engaging our team to improve satisfaction.</td>
</tr>
<tr>
<td>Number of incidents of moderate or severe harm to patients and harm to employees / physicians divided by adjusted patient days.</td>
<td>The amount of time patients were saved from waiting for a service, compared to previous year.</td>
<td>Number of completed CHEOworks improvement tickets.</td>
<td>Number of worked hours saved due to improved productivity (worked hours per patient activity) compared to previous year.</td>
<td>Percent of staff and physicians that provide positive ratings to 6 questions most highly correlated to engagement.</td>
</tr>
</tbody>
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Principles drive systems that change behavior

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<tr>
<th>Principle</th>
<th>System</th>
<th>Behavior</th>
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<tbody>
<tr>
<td>Value for the Customer</td>
<td>15 minute lab turnaround</td>
<td>Team members calmly discuss all results with the patient and set follow up appointment and treatment vs. frantically trying to reach patient over the phone afterward.</td>
</tr>
<tr>
<td>Constancy of Purpose</td>
<td>Deploy True North Metrics</td>
<td>Frontline team understands and works on the right problems.</td>
</tr>
<tr>
<td>Think Systemically</td>
<td>Enterprise wide value stream mapping</td>
<td>Team members work across “silos” to improve the patient experience.</td>
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<tr>
<td>Lead with Humility</td>
<td>Leaders go to Gemba to ask questions and understand</td>
<td>Leaders act as students, coaches and mentors rather than command and control agents.</td>
</tr>
<tr>
<td>Respect Every Individual</td>
<td>Daily management system that supports frontline problem solving</td>
<td>Caregivers act proactively every day to avoid mistakes and patient flow problems.</td>
</tr>
<tr>
<td>Seek Perfection</td>
<td>Visually review and improve performance daily</td>
<td>Managers and caregivers work on today’s problems today.</td>
</tr>
<tr>
<td>Embrace Scientific Thinking</td>
<td>PDSA thinking</td>
<td>Team members do not wait for management’s ok to solve problems.</td>
</tr>
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<tr>
<td>Assure Quality at the Source</td>
<td>Standard work</td>
<td>Caregivers follow a common standard of care</td>
</tr>
<tr>
<td>Focus on Process</td>
<td>Leadership identify design flaws in care processes rather than blaming people</td>
<td>Leaders coach others on the team to see waste and remove it.</td>
</tr>
<tr>
<td>Flow and Pull Value</td>
<td>Patients can access care when they need it and want it without waiting</td>
<td>Team members look for obstacles that get in the way of patients access to care.</td>
</tr>
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</table>

The Model Cell

- The model cell must be focused on a business problem that is important to the organization.
- The model cell runs an inch wide and a mile deep. This means the scope of the project must be limited, usually to one unit or clinic, even though the ideas being tested are intended for the entire organization.
- Create an entirely new system based on standard work. The team will not be making tweaks or small adjustments to current processes. It will instead create new work processes and will use the scientific method to address any problems that arise.
- Tie the model cell work to True North. This means, of course, that True North must be established prior to starting the model cell.
- This work must involve senior leadership. If the work is not championed by a member of the executive leadership, you need to stop and reassess. The hand on the helm must be willing to change, as well.
Tier 0 Front Line Co-location:
Daily Huddle
Spread
Management by Process

Status of the Business:
- Information
- Continuous Improvement
- Metrics
- Escalation

• Goals
• Tactical Management
• Control
• Daily assessment
• 50-75% Standard Work

Executive Functions
- Strategic
- Innovative
- Weekly/Monthly Assessment
- 10-25% Standard Work

Strategy
Goals
Purpose
- Mentoring
- Teaching
- Barrier Removal
- Strategy
- True North

How does a lean leader behave?

Traditional Manager

- Technical specialists solving problems
- Using complex methods

Lean Manager

- Everyone solving problems
- Using simple methods

Source: Lean Enterprise Institute
How does a lean leader behave?

Traditional Manager
Managers do not like problems

Lean Manager
Managers make problems visible

People Development

- A commitment is made to every hire that they will not be laid off due to redesign of care processes
- HR uses standardized visual management boards.
- Every job opening and all candidates for positions are posted
- Each candidate’s skills assessment progress is tracked visually
- A redeployment pool is established to retrain and/or find a replacement job
- Each manager and executive has three people being developed to take their job
Finance

- Finance becomes a partner with operations
- Budgets are exchanged for forecasting
- Quarterly the driver metrics repopulate the forecast (not 7000 lines on an excel spread sheet)
- There is no gaming of the system
- The focus is on improvement not spending
- Financial expertise is maximized
- 20,000 hours saved

Information Flow (Clinical Business Intelligence)

- Up-to-date results for frontline clinicians to help them make better decisions and take action
- Information is available simply by clicking on an app, downloading the data, and sharing it.
- CBI and operations work together to determine the important data required and how to access it
- Leveraging legacy system software is critical not relying on new vendor relationships
100% of employees are problem solvers improving something every day!!!
Q&A
Reflections