Leaning the Right Way: Applying Lean Principles to Pharmacy Processes

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Learning Objectives
By the end of this module, learners will:
• Understand the historical context and fundamental purpose of lean methodologies
• Gain a basic understanding of lean terminology and methodologies
• Be able to apply basic lean principles to reduce waste, minimize errors, and improve their work processes

Historical Perspective
Modern-day Lean is widely accepted as being derived from the Toyota Production System (TPS), developed by Kiichiro Toyoda and Taiichi Ohno beginning in the 1930s. Toyoda and Ohno had looked at Henry Ford’s production methods and determined that a few simple innovations around supply and production flow could vastly improve the automobile manufacturing process.

The thought process of Lean was more thoroughly described by James P. Womack, Daniel Roos and Daniel T. Jones in the definitive books “The Machine That Changed the World” (1990), and “Lean Thinking” (1996).
Historical Perspective cont.

Womack, Roos and Daniel's “Five Lean Principles”

1. Specify the values desired by the customer
2. Identify the value stream for each product providing that value and challenge all of the wasted steps currently necessary to provide it
3. Make the product flow continuously through the remaining value-added steps
4. Introduce “pull” between all steps where continuous flow is possible
5. Manage toward perfection so that the number of steps and the amount of time and information needed to serve the customer continuously falls

The Lean House

Lean = Remove as much Waste as Possible.

The short definition of Lean:
A process of continuously identifying, reducing and eliminating waste.

The short definition of Waste:
Anything other than the minimum amount of equipment, materials, space and staff time that are absolutely essential to add value to the product or service, based on the customer’s perspective.

"Medicare and Medicaid could save $250 billion a year by eliminating waste – that is, activities that don’t have any value." Dr. Donald M. Berwick, former CMS Administrator
The Longer Definition of Waste

- There are 8 specific categories of waste in Lean, creating the acronym DOWNTIME:
  - Defects (dosage errors, wrong medication, wrong amount, rework)
  - Over production (duplicate documentation, surplus output)
  - Waiting (wait for batch, med availability, question/response)
  - Non-Utilized Resources (new experience, lack of collaboration)
  - Transportation (circular travel, mis-delivery, equipment movement)
  - Inventory (seldom/non-used items, outdated items, unorganized)
  - Motion (circular walking, turning, bending, moving objects)
  - Excess Processing (illegible orders/notes, duplicate info gathered)

Lean Tools and Processes

Lean provides -

- Principles, concepts, & techniques used for elimination of waste

That -

- Result in processes that give customers
  - exactly what they need,
  - when they need it,
  - in the quantity they need,
  - in the right sequence for their use,
  - defect free, and
  - at lowest possible cost

“There is nothing so useless as doing efficiently that which should not be done at all.”

Peter F. Drucker

Focus on the Process

Typical Paradigm

“I don’t care how you get the job done, just do it.”

- Produces variation in outcomes
- If something goes wrong, ask “who did it?”
  - The person failed

Lean Paradigm

“Let’s agree to the best way to do the job, do it that way every time, and continuously seek to collaboratively improve the process.”

- Eliminates irrational variation
- Produces predictable outcomes
- If something goes wrong, ask “which part of the process failed?”
  - The process failed, not the person
Basic Lean Tools
Some powerful, but easy to use Lean Tools

1. Value Stream Process Mapping
2. 5S
3. Visual Management
4. Process Problem Solving (PPS)

Mapping the Value Stream

1. Map the Current State
2. Standardize and Establish Baseline Measures
3. Define and Map the Future State
4. Identify the Gaps and Define Process Improvements
5. Standardize, Train to New Standard and Implement
6. Measure and Continuously Improve

What is “Value”

Value Added Process Steps
• Any activity or operation performed that helps transform a product or service from its raw state into its finished form
• Completed right the first time
• Activity that adds value as customer perceives value
• Activity required to ensure that a product or service is delivered in conformance to specification

Non-Value Added Process Steps
• Any activity that doesn’t directly help to transform a product or service into its final form
• Activity not performed right
• Activity that does not add value as customer perceives value
• This includes:
  – Unnecessary process steps
  – Movement of inventory, paperwork, etc.
  – Re-work, corrections, etc.
  – Storage between operations, batching/inventory
  – Wait times, delay times, idle times
The Process Includes Movement

“Spaghetti” Mapping

Lean Tools: 5S

1. Sort
   a) Decide what is needed
   b) Decide what can be permanently removed
   c) Temporarily hold the “not sure” items somewhere else for further review and decision

2. Straighten
   a) Organize the items that stay
   b) Use appropriately sized bins / containers
   c) Begin applying Visual Management (color coding, legible labeling, FIFO / LIFO)

3. Shine
   a) Clean the environment
   i) Remove unnecessary shelves, cabinets, doors, etc
   ii) Identify safety issues

4. Standardize
   a) Have all key stakeholders agree to the first 3 S’s
   b) Create documentation explaining the new layout
   c) Communicate the new standards to everyone involved or impacted

5. Sustain
   a) Regularly scheduled maintenance of the new layout
   b) Routinely audit the area for adherence to new standards
   c) Hold regular collaborative discussions regarding improvement
5S – Sort, Straighten, Shine, Standardize, Sustain

- Sets the standard for workplace organization
- Removes clutter and unneeded items
- Encourages safety, cleanliness and orderliness

5S - Workspace

Before

After

5S – Lab Bench

Before

After
Visual Management

*Colors* and *graphics* are used to make it easy to tell normal from abnormal

- Easy to tell where items belong
- Easy to tell which items are missing or need to be replenished
- Easy to tell how well we are doing

**Lean Tools: 5S & Visual Management**

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<th>5S Color Code Standards</th>
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<td><strong>Before</strong></td>
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**Visual Management Before & After**

*Before*  
*After*
5S & Visual Management

Benefits: Improve workplace organization, minimize search time for medications, and ensure appropriate inventory levels and rotation are established/maintained.

Before  | During  | After  
---      | ---     | ---   

Lean Tools: Standardized Work

1. Regulates every process
   a) Determine the best way to do the work, based on best practices or collaborative analysis
   b) Standardize and document the agreed upon process
   c) Train all involved in the new process

2. Maintains Standards to be adhered to
   a) Process maps and Standardized Work Instructions document and inform

3. Serves as a foundation for Continuous Improvement
   a) Standardization minimizes process variations, making it easier to identify opportunities for improvement

4. Provides a starting point for Problem Solving
   a) Standardization eases the identification of specific points
Lean Tools: Process Problem Solving (PPS)

1. Recognize, Define and Analyze the Problem
   a. What should be happening?
   b. What is actually happening?
   c. What are the gaps?

1. Identify Immediate Actions (if necessary)
   a. Is a short-term solution necessary and appropriate?
   b. Develop, document, train and implement

2. Determine the Root Cause(s)
   a. Identify potential cause for each gap
   b. Evaluate and record result

3. Identify Solutions
   a. Collaboratively define potential solutions

4. Test and Implement
   a. Test potential solutions
   b. Agree on a specific solution

5. Standardize and Share
   a. Document the chosen solution
   b. Train to the new standard
   c. Measure results

Lean Tools: Standardized Work
Document the Process for all to follow
Lean Tools: Process Problem Solving (PPS)

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Questions?

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