Improving Quality in Ambulatory Care Through Lean Thinking

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Objectives

- Provide a framework for understanding Lean Six Sigma thinking as it applies to health care
- Review sample techniques and tools that can help drive sound improvement strategies

Lean Six Sigma Thinking

- Pursue perfection in maximizing value for your “customer” while minimizing the cost required to deliver that value
  - Think broadly about cost... money, time, morale, etc.
- What is value to the customer?
- How do you create that value?
- Does value flow continuously across all of the customer’s experience (value stream)?
  - Does each step in your process add value?

Lean vs Six Sigma

- Highly related and complimentary (overlapping)
  - Lean: Reduce waste and pursue perfect flow
    - 8 Wastes: DOWNTIME
    - Pull: Customer signals what and when
    - Single Piece Flow: complete one unit at a time (vs batches)
  - Six Sigma: Reduce errors and variability
    - 6σ = 99.997% accuracy, 3.4 Defects Per Million Opportunities
WASTE: D.O.W.N.T.I.M.E.

• Defects: Errors and related rework
  – E.g. Pharmacy calls for prescription corrections
• Overproduction: Doing more than is needed
  – E.g. Med reconciliation done by both MA and MD
• Waiting: No flow of value taking place
  – E.g. Poor access to care in a clinic; poor patient flow
• Not utilizing talent: Not developing your people
  – E.g. Not listening to and empowering staff

• Transporting: Unnecessary movement of material
  – E.g. Remote storage of frequently used supplies
• Inventory: More materials on hand than needed
  – E.g. Ordering more vaccine than needed
• Motion: Unnecessary movement of people
  – E.g. Walking from BP cuff to otoscope across the room
• Excess processing: Doing work that adds no value
  – E.g. Recurrent meetings where no decisions are made or actions taken

Customers

• In healthcare, customers are often, but not always, patients
  – The customer can be thought of as the end user of the output of a process
    • E.g. A physician may be the “customer” for the process of a medical assistant collecting vital signs
  – How can we increase the value that the process provides for the customer?
    • E.g. Ensuring that highly accurate vital signs are reliably delivered to the physician as quickly as possible every time

Value in Health Care

• A common definition for patient-centered value in health care:

  \[
  \text{Value} = \frac{\text{Quality} + \text{Patient Experience}}{\text{Cost}}
  \]
Scientific Problem Solving
- Analogous to clinical problem solving (DMAIC)
  - Define the problem
    - Patient’s poorly controlled type II diabetes has resulted in a complication (microalbuminuria)
  - Measure the current state
    - Urinary Microalbumin of 60 mg/day, Hemoglobin A1c of 8.9%
    - BMI: 28, high-carbohydrate diet, no exercise
    - Medications: Metformin 1000 mg twice daily, forgets to take about 3 times per week
  - Analyze the situation (seek the root causes)
    - Patient incompletely educated regarding disease management and important lifestyle factors
    - Medication regimen is insufficient

Scientific Problem Solving
- Analogous to clinical problem solving (DMAIC)
  - Improve
    - Enroll in diabetes education classes
    - Add a second diabetic medication and an ACE inhibitor
  - Control
    - Follow leading process measures
      - E.g. Adherence to medication regimen, daily carbohydrate intake, weekly exercise sessions
    - Continuously improve process until attain desired future state (target outcomes)
      - Goal: Achieve A1c of <7% within the next 6 months. Achieve BMI <25 within the next 18 months.

DMAIC
- Define:
  - What should be happening?
  - What is happening?
  - The gap between the answers to those questions represents the problem (what is the nature of that problem?)
- Measure:
  - How big? How much? How often?
- Analyze:

DMAIC
- Improve:
  - What can we do to address the root cause(s)?
  - Did it work?
  - PDSA / PDCA (equivalent)
    - Plan → Do → Study → Act
  - Control:
    - Is the process stable (reliably executed so that intended high quality result is delivered every time)?
    - Who is accountable for ensuring stability?
    - How do they know? What data proves this?
    - What happens when the process breakdown?
DMAIC: Improving Asthma Care

- Significantly increase patient adherence and management of chronic conditions
- Decrease time for asthma assessment and management by 4 minutes

More Than a Toolkit

- Lean Six Sigma thinking at its best is embraced as a management system, not just a problem solving toolkit
  - Aligns goals, processes and people around key strategic priorities and core values
  - Demonstrates respect for every individual in the organization
  - Enables purposeful and continuous improvement by every individual, every day

Align Goals, Processes, and People

- Purpose: What value are we trying to deliver to our customers?
- Does everyone in the organization understand how their work relates to our purpose?
- Do we have proof that all of our processes reliably and efficiently deliver value for our customers?
- Are we aiming for perfection and continuous learning or have we become comfortable with the status quo? (Are we too busy mopping the floor to turn off the faucet?)
- Are we listening to our people and empowering them to drive positive change?
- How do we measure success in a goal, process, or person? Do we share that data with our people?

Alignment

However beautiful the strategy, you should occasionally look at the results.

- Winston Churchill
Alignment

• Target Result: Become the highest-rated primary care practice for diabetes management in the city
• Strategy: Achieve A1c levels of less than 8% for all diabetic patients by year-end 2019
• Tactic: Clinic pharmacist to provide education and outreach to all patients with A1c >8%
• Process Measure 1: Percentage of patients on insulin with A1c >9% receiving weekly calls from pharmacist
• Process Measure 2: Percentage of patients with A1c between 8% and 8.9% receiving monthly calls from pharmacist
• Team: Pharmacist, MD, RN

Tool: X-Matrix

<table>
<thead>
<tr>
<th>STRATEGIES</th>
<th>PROCESSES</th>
<th>TARGET RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist provides education and outreach for all target patients by YE 2019</td>
<td>Accountability</td>
<td></td>
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<tr>
<td></td>
<td>Team members</td>
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Tool: Affinity Diagramming

• Engaging way to find direction and order in multiple perspectives
  - Pose a question to the group
  - Provide an interval of time in which each member of the group writes down singular ideas related to the question, each on one Post-It note
  - Place all of the Post-It notes on a surface (white board/paper)
  - Provide more time for the entire group to work silently at grouping the post-it notes into related categories (it is ok for a Post-It to be moved more than once)
  - Describe what ties the Post-It notes together conceptually

Engagement

• The national epidemic of health care provider burnout can not be ignored in this work!
• Engagement is the opposite end of the burnout spectrum and the key to success
• Leaders must listen intently and with humility, demonstrating genuine curiosity and respect when managing change – remember that those doing the work understand it best!
• High intrinsic motivation: Purpose, Autonomy, Mastery
• Operational improvement, when done right, holds tremendous potential to drive engagement and enhance provider satisfaction (remove non-value added work, shift value-added work not requiring clinical expertise to a more cost efficient operator)
What makes a good day as a PCP?

Voice of Customer

Tools: Visual Management & Huddles