Moving Towards Lean Thinking - Is Standardized Care a Good Thing?

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CRISIS IN THE LAB!

• Due to a local flu epidemic we have 15 techs out
• Need everyone to pitch in on the pig bench
• Urgently need everyone to draw a pig immediately!
What is “Standardized Care”?

Diagnostic and treatment process a clinician should follow for a certain type of patient, illness, or clinical circumstance (NEJM 2004)

- Templates
- Checklists
- Care pathways
- Algorithms
- Bundles
Premise

Standardized care is a good thing, and …

Application of Lean thinking can support standardization in healthcare
What is Lean?

A way of *thinking* and *acting* for an entire organization

Providing more value for the customer and eliminating waste

Lean principles reduce **waste**, improve **flow** and increase focus on the **customer**.
What is Value?

Defined from the customer’s perspective

What does the customer truly need?
What would they be willing to pay for?

Customers are both internal & external
What is Waste?

Anything that impedes flow or does not add value to the finished product

Source: LEI website
Forms of Waste

- Travel
- Inventory
- Motion
- Waiting
- Overprocessing
- Overproduction
- Defects
- Underutilization
Categories help us identify waste – and eliminate it!
Why Lean in Healthcare?

- Simple
- Established
- Everyone can (must!) participate
- Emphasis on value and the customer
- Address root causes of problems
- Data-driven, rigorous, scientific (PDCA)
- Promotes innovation through standardization and improvement
Premise

Standardized care is a good thing, and ... Application of Lean thinking can support standardization in healthcare
How is value defined in healthcare?

Value = \frac{Quality}{Cost}

Safe
Equitable
Patient-centered
Timely
Efficient
Effective

IOM 2001
How is value defined in Lean?

What does the customer truly need?
What would they be willing to pay for?

Many customers in healthcare! Need to consider all …
Lisa’s Value

I need to provide value to my internal customer in order to provide value to the patient.
Must provide value to these customers first, so I can provide value to the patient!
Premise

Standardized care is a good thing, and ... 

Application of Lean thinking supports standardized care in healthcare, providing value to the caregiver, and to the patient.
Does standardized care provides value to patients?

Value = \frac{Quality}{Cost}

Templates, Checklists, Care pathways, Algorithms, Bundles
CRISIS IN THE LAB!

- First batch of pigs …

- We’ve created a protocol to help you. Please take one and follow the protocol to draw a standard pig
CRISIS IN THE LAB!

- Did the protocol help? Pigs better or worse?
- How did it feel?
- Do we have any protocols like this?
- Pigs aren’t good enough. What should I do if I wanted to improve on the pigs?
- *How do I consistently ensure I get the high quality pig at the lowest cost?*
Does standardized care provides value to patients?

Templates
Checklists
Care pathways
Algorithms
Bundles

Value = \frac{\text{Quality}}{\text{Cost}}
What are bundles?

- Institute for Healthcare Improvement, 2001
- Structured way of improving care processes and patient outcomes
- Small, straightforward set of evidence-based practices (3-5) proven to improve patient outcomes when performed collectively & reliably
- Each step critical, supported by Level 1 data
- Each step time-driven, owned, and yes/no measured

Resar et al. IHI 2012
<table>
<thead>
<tr>
<th>IHI Ventilator bundle</th>
<th>IHI Central Line bundle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elevation of the head of the bed to between 30 - 45 degrees</td>
<td>1. Hand hygiene</td>
</tr>
<tr>
<td>2. Daily “sedation vacations” and assessment of readiness to extubate</td>
<td>2. Maximal barrier precautions</td>
</tr>
<tr>
<td>3. Peptic ulcer disease prophylaxis</td>
<td>3. Chlorhexidine skin antisepsis</td>
</tr>
<tr>
<td>4. Deep venous thrombosis prophylaxis</td>
<td>4. Optimal catheter site selection, with avoidance of using the femoral vein for central venous access in adult patients</td>
</tr>
<tr>
<td>5. Daily oral care with chlorhexidine (added in 2010)</td>
<td>5. Daily review of line necessity, with prompt removal of unnecessary lines</td>
</tr>
</tbody>
</table>

Resar et al. IHI 2012
Checklists

• Can also be helpful and important for ensuring safe, reliable care

• Checklist may include many elements
  - May be combination of must-do and other good elements

• Ex., CAP Cancer Checklists

• Ensure consistent completeness
Checklists

- Ignorance vs ineptitude
- The problem of extreme complexity
- End of the master builder
- Checklist can be long
  - May be combination of must-do and good elements
- CAP Cancer protocols
Impact of Bundles

- **Ventilator bundle**
  - High bundle compliance (95%) reduced ventilator-acquired pneumonia rates 44.5%

- **Central-line bundle**
  - 35 hospitals ≥ 6 mos no CLABSI in ≥1 ICU

- **Severe sepsis bundle**
  - Decreased hospital mortality and length-of-stay

Resar et al. IHI 2012
Examples lead to enthusiasm on standardization


- “Standardization of Practice to Improve Outcomes.” ACOG. Obstet Gynec 2012.
Does standardized care provides value to patients?

Yes!

Value = \frac{Quality}{Cost}
Premise

Standardized care is a good thing, and ... 

Application of Lean thinking provides value ... 

To the caregiver, and to the patient
Does standardization provide value to these customers?
Reaction to Standardization in Healthcare?

- “Standard work is an unwelcome term in healthcare. Physicians and nurses think of standardization as arbitrary rules – like policies complied in dusty old manuals that hinder care.” (Touissant FHSM 2013)

Reactions to Standardized Care

- “Cookbook medicine”
- Lost “art”
- Managed care
- Rationed care
Physician Culture
Doctors on Standardization

• Training
  - Rewarded for comprehensive, innovative (vs for value/cost/quality)
  - July spike in utilization
• Individual performance emphasized in selection, training and practice
  - Private practice
  - Conspires against teamwork, consistency
• Standards based on rigorous research
Doctors’ Fears of Standardization

- I won’t be able to do what my patient needs
  - (Not all patients the same)
- It will make my job harder
- I’ll have to spend more time checking the standard → less helping patients
- I’ll be penalized for not following the standard
- I’ll be less important / More replaceable
- I won’t be able to innovate
- I don’t trust the standard (not data-driven)
Economic, Political & Cultural Headwinds

• 3rd-party payor system
  - Impression of infinite supply
  - No check on demand

• Managed care debacle → demonization of standards

• Politicized healthcare reform attempts
  - Campaigns of Fear - “Death panels”

Could not demonstrate a clear benefit for the patient
Economic, Political & Cultural Headwinds

- Standards may oppose patient wishes and expectations
  - Prescriptions, workup, referrals
  - Desire to please patients, grow your practice
- Evolving economics of utilization
  - From volume to value

Misaligned incentives
Reactions to Standardized Care

- “Cookbook medicine”
- Lost “art”
- Managed care
- Rationed care

- Best-practices
- Error-free
- High-reliability
- Affordable care

How to shift to the right?
Where has standard work been successful?
1913 Ford Assembly Line
Which “burger” do you want when you go to the doctor?

Which do you want for your loved ones?
CRISIS IN THE LAB!

- First batch of pigs …
- We’ve created a template to help you. Please take one and follow the protocol to draw a standard pig
How is Standardization viewed in Lean?

• “But in a Lean environment, standard work is embraced as fundamental to improvement.” (Touissant FHSM 2013)
Key principles & core practices

- Problem Solving
- Visual Management
- Standardization
- 5S
- Value Stream Thinking

Teach every caregiver to apply
Standardization - Definition

- All work shall be highly specified as to content, sequence, timing, and outcome
- Creating work processes that are done the same way each time, and produce the same outcome utilizing visual documentation of the work process

Spear and Bowen HBR 1999
Lack of Standard Work

- Leads to higher variability, lower productivity, higher costs
- Hinders improvement – because obscures link between the result and how the work is done
- $Y = f(x)$
  - Result = $f(\text{work process})$

Spear and Bowen HBR 1999
“Where there is no standard, there can be no kaizen” – Taiichi Ohno
Dr. Deming emphasized small tests of change → Improvement
Why Standard Work?

Continuous Improvement

Time

Quality

Standard

APCD

Standard
Is standard work a good countermeasure for the problems in healthcare?
When to apply standardization?

Standardized work might be a good countermeasure if your problem is:

1. Variation is too high
2. Reject rate is too high
3. Productivity is too low
4. Cycle time is too long

Do we have these problems in health care?
Defining the healthcare problem

The U.S. health care delivery system does not provide consistent, high-quality medical care to all people. Americans should be able to count on receiving care that meets their needs and is based on the best scientific knowledge—yet there is strong evidence that this frequently is not the case. Health care harms patients too frequently and routinely fails to deliver its potential benefits. Indeed, between the health care that we now have and the health care that we could have lies not just a gap, but a chasm.
When to apply standardization?

Standardized work might be a good countermeasure if your problem is:

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Is standardization the solution?
Not a magic bullet

- Bundle/checklist not comprehensive
- Bundle itself does not improve care
  - Teams’ strategies to redesign work, communicate better, and work more effectively toward achieving patient goals
- Compliance (all-or-none measure) 10-20% in some ICUs at start
- Teamwork and communication essential

Resar et al. IHI 2012
Guidelines for Standardizing Work

- Only standardize repetitive tasks/processes.
- Make standards flexible and tailorable.
- Only standardize tasks/processes after optimization.
- Never standardize tasks involving high levels of customization.
- Once you have a standard, it becomes the new foundation for further improvement. Continue to improve.
When do bundles not work?

• Not followed (5 steps each 90% compliant yields only 59% compliance)
• Not sufficient data to define steps
• Hard to implement across teams/locations
• No clear impact on outcome, cost, pt experience

No perceived value
When does defined standard work fail?

• Does not reliably give a successful result
• Not updated with the most current way to complete the work
• No value perceived (does not make it easier to be successful more often)
Standardize And Commonize

• Search for opportunities to standardize wherever an activity is repeated frequently
• Explore all levels of standardization:
  - Guidelines
  - Templates and Checklists
  - Standard Work Methods
  - Organizational Rules
  - Evaluate the current best methods to achieve a consensus for each standard method
• Consider reuse opportunities, including distribution lists, data warehouses, frequently asked questions, etc.

Do not allow standardization to compromise the adaptability and flexibility of your process!
Questioning mind ... and voice

- How do you do this work?
- How do you know you are doing this work correctly?
- How do you know that the outcome is free of defects?
- What do you do if you have a problem?
Revised Premise

Standardized care can provide value to patients and caregivers, and …

Application of Lean thinking can support effective application of standardization to improve healthcare
Cleveland Clinic

Every life deserves world class care.