Improvement Sustainability

Dave Orr, MBA, LSSMBB, CPHQ
Reasons Why Improvements Fail

- Not Digging to the Root Cause of the Problem
- Not Involving the Right People
- Not Building a Problem-Solving Culture
  - Don’t Say “Don’t bring me a problem, bring me a solution”
- Ineffective Sustainment Strategy

Ineffective Sustainment Strategies

- Policy Creation
- Inspection
- Process Complication
- Working Harder
- Training
Policies

versus
Processes versus
Training and Education

• Based upon clearly defined work
• Training should be based on procedures and control plans
• The team should develop and test procedures and control plans as dictated by the remedies and solutions
Training Effectiveness

1) Information in our memories will decay.
2) The brain builds on existing knowledge— that’s why practice can make perfect.
3) Sleep affects memory. So working long shifts and variable hours affects the effectiveness of training.

Source: https://www.getbridge.com/blog/10-stats-about-learning-retention-youll-want-to-forget/#:~:text=After%20one%20hour%2C%20people%20retain%20the%20information%20in%20their%20training.
Effective Sustainment Strategies

• Design for Ease of Use
• Mistake Proofing AKA Poke Yoke
• Standardization
• Process Management
  - Control Plans
  - Control Charts
Design for Ease of Use

• Design processes for:
  - Simplicity
    • “The best design is the simplest one that works.”
    • Simplicity means less opportunity for errors.
      • Minimal number of steps
      • Clearly defined work to avoid misinterpretation
  - Value Added Work
    • Eliminate Waste
  - Standardization
  - Mistake Proofing

• Is process “new employee-proof”?
• Is the right way very clear?
Mistake Proofing

• Design your process so that it will detect error immediately.
• Design so it is impossible to make errors.
• Provide people with the best possible opportunity of getting it right first time.
Poke-Yoke Example in Healthcare

• Utility connections in patient rooms.
• Color designations for outlets or tank storage
• Best Practice Alerts
• Imbedded EMR algorithms
• Wrist band (in combination with proper patient identification)
Standardization 101

• Standardize the Critical elements
• Allow freedom to innovate beyond critical elements
OUTCOME METRICS VS PROCESS METRICS

- **Outcomes Metrics**
  - Resides higher in the organization
  - Often delayed in measurement

- **Process Metrics**
  - Resides closer to frontline and is close to real-time
  - If we do this well, outcome is good

If we do this well, outcome is good.
DRIVE METRICS vs WATCH METRICS

**What matters most**
- ~3 metrics
- Actively driving improvement

**Responsible for**
- Doing pretty well

**Action needed if performance changes significantly**
Understanding Variation

Manager holds a Recognition Event
Manager regrets giving award and starts managing by the “shiny object” approach and puts a team together to analyze the problem.
Understanding Variation – Example

No more nice manager!
Manager concludes, “Tough management style gets results!”
Understanding Variation – Example

Did the Process Ever Really Change?
Types of Variation

Common Cause Variation - The result of random variability inherent in the process being measured
- Noise
- Random variation
- In control
- Predictable
- Stable

Special Cause Variation - The abnormal occurrence that interrupts the stability and symmetry of the distribution
- Signal
- Not random
- Out of control
- Not predictable
- Unstable
Reacting on Variation

<table>
<thead>
<tr>
<th>Type of Variation</th>
<th>Special Cause Strategy</th>
<th>Common Cause Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste time</td>
<td>Increase variation</td>
<td>Gain a better understanding of the system</td>
</tr>
<tr>
<td>Gain useful information</td>
<td>Reduce variation</td>
<td>Reduce variation</td>
</tr>
<tr>
<td>Loss of productivity may increase variation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special Cause Strategy**
“Message is in a single point or combination of points.”
Look for what was different between individual points
Standardize the process to eliminate special cause events

**Common Cause Strategy**
“Message is in all the points.”
Study all the data
Make basic changes to the process
Fix the System not the People

• Resist being held accountable for fluctuations in data unrelated to Special Causes
• Common Cause reflects the natural signature of the process. If this is not acceptable, then systemic changes must be made.
• Workers labor within the system and have little influence over it
• Management owns the system and therefore is responsible for systemic changes
• Workers can frequently influence Special Cause, but rarely impact Common Cause
• The process defines the control limits not the specification limits.
Control Charts

• The Control Chart provides the following:
  • What the process has been doing
  • What the process is doing
  • What the process is likely to do
• Statistical Control
  • All special causes of variation have been eliminated
  • Absence of points beyond the control limits
  • Absence of non-random patterns or trends within the control limits.
Control Chart Interpretation

Rule 1 – One point beyond the 3σ control limit

Rule 2 – Eight or more points on one side of the centerline without crossing

Source: https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001
Control Chart Interpretation

Rule 3 – Four out of five points in zone B or beyond

![Control Chart Illustration](https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001)

Rule 4 – Six points or more in a row steadily increasing or decreasing

![Control Chart Illustration](https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001)

Source: https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001
Control Chart Interpretation

Rule 5 – Two out of three points in zone A

Rule 6 – 14 points in a row alternating up and down

Source: https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001
Control Chart Interpretation

Rule 7 – Any noticeable/predictable pattern, cycle, or trend

Source: https://www.pharmaceuticalonline.com/doc/rules-for-properly-interpreting-control-charts-0001
What is Standard Work?

- Consists of a simple written or visual description of the best way to perform a particular process or task.
- Describes the only acceptable way to perform the process or task.
- Is expected to be continuously improved.
- Includes the amount of time needed for each task.
- Reduces variation and improves consistency.
- Is needed in all work areas.
- May initially be met with resistance by employees.
Benefits of Standard Work

- Patients/Customers receive better value
- Patients/Customers can rely on levels of quality, cost and service
- Costs go down as we eliminate waste in all processes
- Processes are safer

- Processes remain in control
- Sets foundation for continuous improvement
- Help maintain Six Sigma levels of quality
Control Plan Basics

- What has been done to prevent the error
- What has been done to detect it
- What has been done to make the process immune to errors
- How will you know when an error occurs
- What actions take place when you get an error signal
- May be based upon a Failure Modes and Effects Analysis (FMEA)
## Control Plan Example

<table>
<thead>
<tr>
<th>Attribute to be Checked</th>
<th>Controls in Place</th>
<th>How Often</th>
<th>Reaction Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance with SEP-1 Audits</td>
<td>Random SEP-1 Audits</td>
<td># per week</td>
<td>Peer Review of Failures</td>
</tr>
<tr>
<td>Order Set Use</td>
<td>Control Chart by Month</td>
<td></td>
<td>OPPE Process</td>
</tr>
<tr>
<td>Administration of Antibiotics within 1 hour</td>
<td>Pharmacy distribution reports</td>
<td>Weekly, Monthly, Daily</td>
<td>Apparent Cause Analysis and resolution</td>
</tr>
</tbody>
</table>
How does High Reliability Look and Feel?

Healthcare workers are relentless about their behaviors that create a culture of safety and excellence.

The system is resilient and able to adjust to overcome any challenge.

Processes reduce variability of patient outcomes and reduce headaches for our caregivers.

Patients feel the same care across any location: frictionless, lifetime care with world-class outcomes.
# How: Create a Resilient System

## Situational Awareness
- Tiered Huddles: Leadership methods and behaviors

## Visual Management
- Every Unit/Clinic aligned with OKRs

## Preoccupation with Failure
- Vigilance to precursor, near-miss events

## Deference to Expertise
- Problem-Solving (SOLVE Program)

## Resilient System Design
- Patient and Caregiver lens to all decisions
Is Healthcare Reliable?

Unexplained deaths have continued to rise through May and June.

- **US deaths per week**
  - Reported deaths
  - Expected deaths

Cumulative difference between reported deaths and expected deaths

- Unexplained deaths
- COVID-19 deaths

Source: Centers for Disease Control and Prevention

Life expectancy at birth (years)

- Total Population
- Latino
- White
- Black

Trends in life expectancy at birth by race and ethnicity: 1980-2020. Note that the data for the Black and White populations prior to 2006 include Latinos; data for these groups from 2006 onward are for the non-Latino Black and non-Latino White populations. The projections for 2020 are based on the IHME current projection scenario (October 9, 2020 update).
Cleveland Clinic

Every life deserves world class care.