A3: A framework for real-time problem solving

TRAVEL FREE CME

8/19/2020
Learning Objectives:

- Explain the A3 thinking as a problem solving methodology
- Summarize the purpose of an A3 template
- Differentiate between the left side and right side of an A3 template
- Explain the purpose of each section of the A3 template
- Describe some problem solving tools such as 5WHYs

Goal: Help you bring an awareness of Problem Solving Methodology and A3 thinking into your daily work
Why A3 problem solving?

- Have you ever implemented a solution to a problem and see the same problem come up over and over again?
- Have you ever avoided tackling a problem because it seems too big?
- What about coming up and implementing a solution to a large problem that is rejected and not adhered to by the people impacted by it?

A3 problem solving methodology provides you the framework and thinking you need to get comfortable with problem solving. A3 provides you the guideline to solve problems of any scale and at the same time build team engagement and sustainment for a successful change initiative.
A3 Thinking: Problem Solving Methodology
What is an A3?

- An A3 is a way to solve problems. Its name, in fact comes from the size of paper that it’s normally documented on.
- It is rooted in the scientific method: **Plan, Do, Study, Act (PDSA)**
- It is a visual and concise way to lay out an entire plan on one sheet of paper.
- It tells a story, laid out in a way that anyone can understand.
- What is important is **not the format**, but the **process and thinking** behind it, and the conversations it facilitates.
Problem Solving Methodology (PDSA cycle)

Getting Started
1. Problem Statement
2. Current State
3. Metrics

PLAN

Figuring It Out
4. Root Cause Analysis
5. Opportunities & Solutions
6. Tests of Change

DO

Implementing the Solution
7. Evaluate
8. Implement & Confirm
9. Sustain

STUDY / ACT
What does “Good” Problem Solving look like?

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Quiz using Poll tool

What does the term A3 indicate?
- The third iteration of this approach to problem solving
- The size of the paper used (Correct Answer)
- Alphonse’s three rules of problem solving

What are two elements of “good” problem solving?
- Learning and process define success (Correct Answer)
- Implement a solution without doing root cause analysis (Correct Answer)
- Hypothesis and testing drive change (Correct Answer)
A3 Thinking & Templates
### Problem Solving Methodology

**Process Owner and Team Members**

**Interventions and experiments (directly connected to root cause)**

<table>
<thead>
<tr>
<th>ROOF CAUSE</th>
<th>IDEA / INTERVENTION &amp; OWNER</th>
<th>HYPOTHESES &amp; QUANTIFIABLE IMPACT ON OUTCOME METRIC</th>
<th>DATES OF EXPERIMENT(S)</th>
<th>WHAT HAPPENED &amp; WHAT DID YOU LEARN</th>
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**Background / Current State (why did we choose to work on this?)**

**Process Metrics:**

**Target (from x to y by when):**

**Plan**

**Outcome Metric:**

**Goal (from x to y by when):**

**Prioritized Root Causes:**

1.
2.
3.
4.

**Sustainment (how will/have you sustain the change(s))?**
A3 Problem Solving Methodology

1. Problem Statement
2. Current State
3. Metrics
4. Root Cause Analysis
5. Opportunities & Solutions
6. Tests of Change
7. Evaluate
8. Implement & Confirm
9. Sustain

https://bridge.ohsu.edu/health/cpex/priorities/Documents/Tactical A3 Template.docx
TACTIC: Mortality O/E Reduction

Problem: CESP Goal #6: Rank in the Top 10 on the annual Visient AMC Quality and Accountability Scorecard. Since Mortality accounts for 25% of the overall score, it is imperative that OHSU perform in the top 25th percentile of Mortality rankings in order to achieve this goal. OHSU is focused on reducing the Mortality Observed/Expected ratio through implementation of targeted interventions to reduce the number of Observed mortalities in addition to improving how we capture anticipated deaths or Expected mortality.

In scope: Adult inpatient mortalities
Out of scope: Pediatric mortalities, outpatient mortalities

Background / Current State: For improving quality of care and reducing Observed mortalities, we know that there is an opportunity to identify earlier and consistently treat patients who develop non-Present on Admission (non-POA) Sepsis. There is also an opportunity to maximize utilization of the Hospice GIP program for service lines with high mortality rates.

For increasing the Expected mortality rate, and improving performance metrics in comparison to Visient peer AMCs, proper clinical documentation and coding is critical for accurately capturing patients risk of mortality in addition to improving revenue and other quality metrics (LOS, CMI, PSI).

Outcome Metric Goal (from July 2017 to June 2018 – FY18): Adult Mortality O/E ratio goal of .80

This goal was established based on the Visient Q&A Scorecard Top 10 rank overall with a specific goal of ranking in the top 25th percentile for Mortality, which was .80 in July 2017.

Interventions and experiments (directly connected to root cause)

<table>
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<tr>
<th>ROOT CAUSE</th>
<th>IDEA / INTERVENTION</th>
<th>HYPOTHESIS &amp; QUANTIFIABLE IMPACT ON OUTCOME METRIC</th>
<th>DATES OF EXPERIMENT(S)</th>
<th>WHAT HAPPENED &amp; WHAT DID YOU LEARN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High Observed Mortalities</td>
<td>Utilize Hospice GIP program for Neurosciences, ICU service lines; determine centralized ownership and expansion plan</td>
<td>There will be a noticeable reduction in Observed mortality for services lines utilizing Hospice GIP.</td>
<td>5/1/17 – 8/1/18</td>
<td>Overall observed mortalities have gone down. Hospice GIP utilization will vary by service line and patient population.</td>
</tr>
<tr>
<td>2. High Observed Mortalities</td>
<td>Engage workgroup to implement early identification and standardized care protocol of non-POA Sepsis patients; new Epic functionality and implementation of GE Tile for monitoring</td>
<td>There will be a statistically significant reduction in non-POA sepsis mortalities.</td>
<td>4/1/17 – 11/30/18</td>
<td></td>
</tr>
<tr>
<td>3. Improve Expected rate of mortality</td>
<td>JTE Coding Resource for 100% Mortality Coding Reviews</td>
<td>There will be a statistically significant increase in Expected mortality with maximization of billing codes.</td>
<td>1/1/18 – ongoing</td>
<td></td>
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</table>

Process Metrics:
1. Track monthly percent of mortalities with enrollment of patients into Hospice GIP program by hospice capable unit/service line.
2. Track monthly count of Observed non-POA sepsis mortalities by unit/service line.
3. Track average percent of Mortality Coder reviews with requests for coding changes, and percent increase in risk of mortality.

Milestones: Schedule

- Transition ownership of Hospice GIP program to Care Management
- Evaluate Hospice GIP program and determine plan for expansion
- Engage workgroup to develop and implement non-POA Sepsis response protocol
- Implementation of Mission Control GE Tile for Sepsis monitoring
- Quarterly monitoring of 100% coding review effectiveness

Problem:
- Here you should see a problem, not a solution.
- The customer (patients) should be clearly represented.
- The scope should be narrow enough to feel feasible.

Background (why we are working on this):
- How does this problem impact patients (customers)?
- How hard was it to define your scope for this effort?
- Is your team likely to be able to impact this problem?

Current:
- Here you understand how big the problem is, what has been tried, and why it matters.
- You may see baseline data.
- You should see a visual of the current state (before any improvement efforts)

Why did we choose this NOW?
- What have you done to understand the PROCESS of your current state?
- Has anyone observed the work?
- Who is on your improvement team who does this work?

Outcome:
- This section tells you what success looks like. It should be a measure of what matters to the customer.

Will we be able to measure this over time (run chart)?

Problem:
- These words should help you understand WHY the broken parts of our system are happening.
- Teams can’t always take on every root cause. Ideally they will be prioritized.

Were these root causes identified by observing the actual process?
- How confident are you that fixing these root causes will fix your problem?
**Future state visual/drawing:**

- Here you should see some version of a better system.
- Not all root causes need to be fixed, but some should.
- The scope should be narrow enough to feel feasible.

**At least 2 tests of Change:**

- This is a crucial section which should help you understand how each improvement effort (experiment) connects to the root causes, and then to the outcome.

**Process metric target (from X to Y by when):**

- A process metric measures whether or not we are DOING the things we think will improve our outcomes.
- Goal should be measurable.

**Sustainment:**

- How will we maintain success?
- If we have to rely on the memory and good will of people, we have to keep measuring our behavior.

**Project Title:**

**Interdisciplinary team members, titles:**

**A3 – The RIGHT side**
Case History

- Norm is a 46 year old male who is checking in for his clinic appointment this morning with Dr. Malone
- Carla (PAS) enters Epic to check Norm in for his appointment only to find that his appointment is actually in two days, not today
- Norm produces a confirmation letter from OHSU confirming his appointment for this morning
- Clinic supervisor Rebecca contacts Dr. Malone to request he see Norm, but Dr. Malone is unavailable today
- Dr. Boyd, another physician in the clinic, takes 20 minutes to respond to pages from Rebecca before confirming that he could see Norm this afternoon
- Norm appears frustrated. He has driven five hours today to see Dr. Malone, and does not want to reschedule or see Dr. Boyd instead

**Exercise:** What is the problem?
Poll (What is the problem?)

In a short sentence, tell me what is the problem?

A. Poor communication between Carla (PAS), Rebecca (supervisor) and Dr. Malone

B. Norm (patient) didn’t receive and/or read the second letter with an updated date and time of appointment with Dr. Malone

C. Norm (patient) is present for an appointment and Dr. Malone is not (Correct Answer)

D. The clinic do not have telemedicine option for their patients
Breaking Down the Problem

1. Break down the big vague problem into smaller, workable ones
   × Not focusing on Why or How yet

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
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<tbody>
<tr>
<td>• All roles?</td>
<td>• All appointment types?</td>
</tr>
<tr>
<td>• All patient types?</td>
<td>• All procedures?</td>
</tr>
<tr>
<td></td>
<td>• Only expensive items?</td>
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<table>
<thead>
<tr>
<th>When</th>
<th>Where</th>
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<tr>
<td>• All shifts?</td>
<td>• All locations/units?</td>
</tr>
<tr>
<td>• All days?</td>
<td>• Every room?</td>
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<tr>
<td>• Only the first time of the day?</td>
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<tr>
<td>• Only when certain events occur in order?</td>
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2. Use data to help determine areas of focus

   Is it specific?
   Based on what the customer values?
   Is it focused on the problem only....not solution(s)?
Problem: Jefferson Memorial stone was crumbling
5 Whys and the Jefferson Memorial

Problem: Jefferson Memorial stone was crumbling

1. **Why?** Too much cleaning
2. **Why?** Too much bird droppings
3. **Why?** Lots of birds because lots of spiders
4. **Why?** Lots of spiders because lots of midges
5. **Why?** Midges come out at dusk and were attracted to lights that turned on at that time
6. **Solution:** Turn lights on 1 hour after dusk, when there are 90% fewer midges
Tests of Change

Takeaways:

• Fail early. Fail fast and learn
• Consider impact on cost and safety
• Consider impact on problem
• Easy wins by tackling low hanging fruits

"I haven’t failed. I’ve just found 10,000 ways that won’t work."
Thomas Edison
Look at all the work you’ve done!

Experiments conducted
# A3 Problem Solving Methodology

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<td><strong>Evaluate</strong></td>
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Our Time Today

Learning Objectives

- Explained the **A3 thinking** as a problem solving methodology
  - An approach to problem solving rooted in the scientific method: **Plan, Do, Study, Act (PDSA)**

- Summarized the purpose of an A3 Template
  - Visual and concise way to lay out an entire plan on one sheet of paper
  - Tells a story, laid out in a way that anyone can understand.

- Differentiated between the **left** side and **right** side of an A3 template
  - Left side: Understand the problem
  - Right side: Will our plan address root cause? Have we gained agreement?

Goal: Help you bring an awareness of Problem Solving Methodology and A3 thinking into your daily work
The School of Medicine Office of Continuing Professional Development (CPD) can offer Maintenance of Certification Part IV Credit for qualifying quality improvement work.

This offer is open to all board certified physicians and physician assistants through the ABMS Multi-Specialty Portfolio Program™ (MSPP).

If you have existing QI work or QI work in development, check out the Maintenance of Certification portion of the CPD website for more detail. [https://www.ohsu.edu/school-of-medicine/cpd/moc-part-iv-ohsu](https://www.ohsu.edu/school-of-medicine/cpd/moc-part-iv-ohsu)
Interested in more OPEX?

- Find introductory information and tools on the OPEX O2 site [https://o2.ohsu.edu/opex/](https://o2.ohsu.edu/opex/)
- Visit the OPEX Bridge site [https://bridge.ohsu.edu/health/opex/SitePages/Home.aspx](https://bridge.ohsu.edu/health/opex/SitePages/Home.aspx)
- Shook, John (2008), *Managing to learn: using the A3 management process to solve problems, gain agreement, mentor and lead*, Cambridge, MA: Lean Enterprise Institute.

- Ask your manager how you can get involved
- Attend Area Readiness Huddles and Improvement Rounds
- Tour unit/clinic visual boards
Thank you!