Figure 1. Structured Problem Solving: Logic Diagram for a Proposed Improvement Cycle
(Planning Tool for QI Project Leaders)

What are the problem, the general goal, and the specific aim?

Problem
General Goal
Measures
Baseline data (Current performance related to problem and general goal)
Specific Aim (Aim is measurable target in a timeframe)

What are the major causes of the problem? *

Cause #1

What are interventions (countermeasures) that address major causes?

Intervention #1

Cause #2

Intervention #2

Cause #3

Intervention #3

Cause #4

What are operational plans to implement the interventions?

Operational Steps #1

Operational Steps #2

* Some approaches to identifying major causes:
  - Consider categories of causes, e.g., people, materials, equipment, method, environment.
  - Consider steps in workflow, e.g., SIPOC: suppliers, inputs, process, outputs, controls.
  - Within important categories and steps, to identify underlying/root causes “ask why” (5 times).

Some common causes and interventions that address them:
  - People are not aware, don’t understand: Education about evidence for and importance of the goal
  - People believe performance is OK: Feedback of data on actual performance and the problem
  - People forget or do not have time: Standard roles, processes, and reminders for reliability and efficiency
Figure 2. Example of Logic Diagram for a Proposed Improvement Cycle

What are the problem, the general goal, and the specific aim?

Problem
Providers not adequately monitoring patient’s use of prescribed controlled substances

General Goal
Improve monitoring to reduce safety and health risks.

Measures
% with controlled substance agreement (CSA)
% with Mich. Automated Prescription System (MAPS)
% with urine drug screen (UDS)

Baseline Data
CSA 43%, MAPS 39%, UDS 38%

Specific Aim(s)
UMHS 90th percentile: CSA 83%, MAPS 87%, UDS 71%

What are the major causes of the problem?

Providers unaware of monitoring expectations

Team member roles unclear for monitoring

“FYI” flag for controlled substance not noted in EMR, so prompts for monitoring do not occur

What are interventions (countermeasures) that address major causes?

Education about monitoring expectations

Develop standard roles and processes for monitoring

Train physicians on how to initiate in the medical record a “FYI” flag for prescribed controlled substance

What are operational plans to implement the interventions?

Project lead presents educational program to teams, then teams develop local procedures

Project lead develops training program for physicians that is delivered electronically and at clinic meetings
Table 1. Facilitating Structured Problem Solving: Steps, Questions, Tools

When someone identifies a likely quality or safety problem in his/her everyday work, use this illustrative guide to consider and ask questions to help the person think through how to understand and address the problem.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Illustrative Questions</th>
<th>Examples of Tools</th>
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</thead>
<tbody>
<tr>
<td>Identify Problem</td>
<td>Is this a problem? For whom? Why?</td>
<td>Define what “customer(s)” value (consider primary and secondary customers)</td>
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<td></td>
<td>What is the actual current performance?</td>
<td>Go see</td>
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<td></td>
<td>How do you know this is a problem?</td>
<td>Monitor outcomes, get data</td>
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<td>Why is this problem a priority?</td>
<td></td>
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<tr>
<td>Determine Goal</td>
<td>What do you really want to have happen?</td>
<td>Outcomes; make sure it’s measurable</td>
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<td>• Can you develop a SMART goal? (Specific, Measurable, Attainable, Relevant, Time-bound)</td>
<td>Patient outcomes or satisfaction</td>
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<td>Performance guidelines</td>
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<td></td>
<td></td>
<td>Observed behaviors</td>
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<tr>
<td>Understand Primary</td>
<td>Why is the problem occurring?</td>
<td>Go see</td>
</tr>
<tr>
<td>Causes</td>
<td>Why are those factors occurring?</td>
<td>Map current workflow (current value stream)</td>
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<tr>
<td></td>
<td>Why do you think these are the important causes?</td>
<td>Look for types of waste (e.g., processes, movement, waiting, products/actions)</td>
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<td>• What do you actually know?</td>
<td>Root cause analysis, e.g.:</td>
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<td></td>
<td>• How can you find out more?</td>
<td>• Ask “why” this occurs (5 times)</td>
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<td></td>
<td></td>
<td>• “Motive, means, and opportunity” analysis</td>
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<tr>
<td>Consider and select</td>
<td>What ideas do you have to address the causes?</td>
<td>Standardize work (roles, tools, processes)</td>
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<tr>
<td>Countermeasures</td>
<td>Who else would have ideas to address the causes?</td>
<td>Visual management:</td>
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<td>Who should be involved in selecting countermeasures?</td>
<td>• See status of processes</td>
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<td></td>
<td></td>
<td>• Organized places for things (5 S)</td>
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<td></td>
<td>Error proofing</td>
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<td></td>
<td>Map improved workflow (future value stream)</td>
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<tr>
<td>Develop Operational</td>
<td>Operationally what will need to be done?</td>
<td>Chart showing tasks, individual responsible, and timelines (e.g. Gant chart)</td>
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<tr>
<td>Plans</td>
<td>Who is going to do what?</td>
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<td>When is it going to be done?</td>
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<td>Who should agree on the operational plans?</td>
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</table>
**Title:** What we are talking

**Background**
Of all our problems, why are we talking about this one?  The “ugly story”…
Historical/organizational/business context…

**Current Situation**
Where do we stand? What is our current performance?
Trend chart, current state value stream map

**Goal**
What is the target condition or performance improvement you want now?
Measurable, by when?

**Analysis**
What are the root causes of the problem? (Fishbone, 5 Whys, Pareto)
What requirements, constraints and alternatives need to be considered?

**Recommendations**
What are your proposed countermeasures, strategies, alternatives? Do they link directly to the root cause?
Include options (some needing no resources)
Future State Value Stream Map?

**Plan**
What, Who, When? What activities will be required for implementation and who will be responsible for what and when?

**Follow-up**
How will we know if the actions have the impact needed? What remaining issues can be anticipated? When/how will we follow up?

Reviewed By: Date:

Modified from Verble, Shook, LaHote, Billi