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
(Baseline data show current performance related to problem)

General Goal

Specific Aim
(Aim is measurable target in a timeframe)

What are the major causes of the problem? *

Cause #1

Intervention #1

Operational Steps #1

Cause #2

Intervention #2

Operational Steps #2

Cause #3

Intervention #3

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

**Problem**
Women with congenital heart disease often do not receive proper counseling about cardiovascular risks of pregnancy. (Baseline: CARPREG score is documented for only 3% of patients)

**General Goal**
Improve communication of pregnancy risk.

**Specific Aim(s)**
Score documented for ≥ 80% over next 4 months

What are the major causes of the problem?

- Pediatric cardiologists less aware of need
- Calculation of risk is difficult to remember
- Physician’s views differ in content of preconception counseling & in expected documentation

What are interventions (countermeasures) that address major causes?

- Education about need and CARPREG scoring
- Worksheet to simplify calculation
- Develop standard process for identifying patients, scoring, and recording scores

What are operational plans to implement the interventions?

Team lead develops and presents educational program and worksheets

Physicians, program assistants, and medical assistants jointly develop “standard work”
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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<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) Go see Monitor outcomes, get data</td>
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<td></td>
<td>What is the actual current performance?</td>
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<td></td>
<td>How do you know this is a problem?</td>
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<td>Why is this problem a priority?</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 Patient outcomes or satisfaction Performance guidelines Observed behaviors</td>
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<td>• Can you develop a SMART goal? (Specific, Measurable, Attainable, Relevant, Time-bound)</td>
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<td>Understand Primary Causes</td>
<td>Why is the problem occurring?</td>
<td>Go see</td>
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<tr>
<td></td>
<td>Why are those factors occurring?</td>
<td>Map current workflow (current value stream)</td>
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<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></td>
<td>• What do you actually know?</td>
<td>Root cause analysis, e.g.:</td>
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<td>• How can you find out more?</td>
<td>• Ask “why” this occurs (5 times)</td>
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<td>• “Motive, means, and opportunity” analysis</td>
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<tr>
<td>Consider and select Countermeasures</td>
<td>What ideas do you have to address the causes?</td>
<td>Standardize work (roles, tools, processes)</td>
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<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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<td>Develop Operational Plans</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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<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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Figure 3. Similar Content Formatted into a More Detailed A3 (two page) Proposal

**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

**Clear Problem Statement**

**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*