Analytic Cause Tree

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Description: The Analytic Cause Tree (ACT)[3] combines a tree diagram, cause and effect approach, and a corrective action matrix all into one tool. We use quality improvement (QI) tools to help analyze problem processes, find the root causes, and develop potential solutions to be tested. Sometimes it takes multiple tools to do this and we need to flip from one tool to the next to see the total analysis of root cause and the corrective action to be taken.

The purpose of ACT is to help peel back the layers of a problem, reveal all of the possible causes, identify the root causes, develop corrective actions aligned to the root causes, and put the QI team's thoughts, rationale, and conclusions all on one page. Another benefit in using this tool is the root cause column can easily show patterns of causes that can lead to a common thread solution (i.e., corrective action). These patterns may also show that more layers remain to be peeled back, requiring more of the 'why' columns until a true root cause is identified.

It is a QI tool that helps illustrate a problem you want to address, list possible reasons why there is a problem, and list possible solutions for resolving the problem all in one document.

When to Use: Use this tool when "ACTion" is needed for a QI Team to find out what happened, why it happened, and how to prevent it from happening again. It is best used when a QI team needs to see the whole process–cause and effect analysis plus suggested corrective actions to be taken–in one document. This holistic approach from cause to corrective action shows the complete system of problem analysis as well as how the causes connect to the corrective actions to be taken. It is also an excellent communication tool, showing the entire problem solving and corrective action system approach to those who may be impacted by the improved process.

Construction Steps:

1. Use a sheet of flip chart paper to layout the diagram shown in Figure 1.
2. Define the problem statement in the box to the left.

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[3] Developed and piloted by Dan Ward.

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Why?   Why?   Why?   Corrective Actions
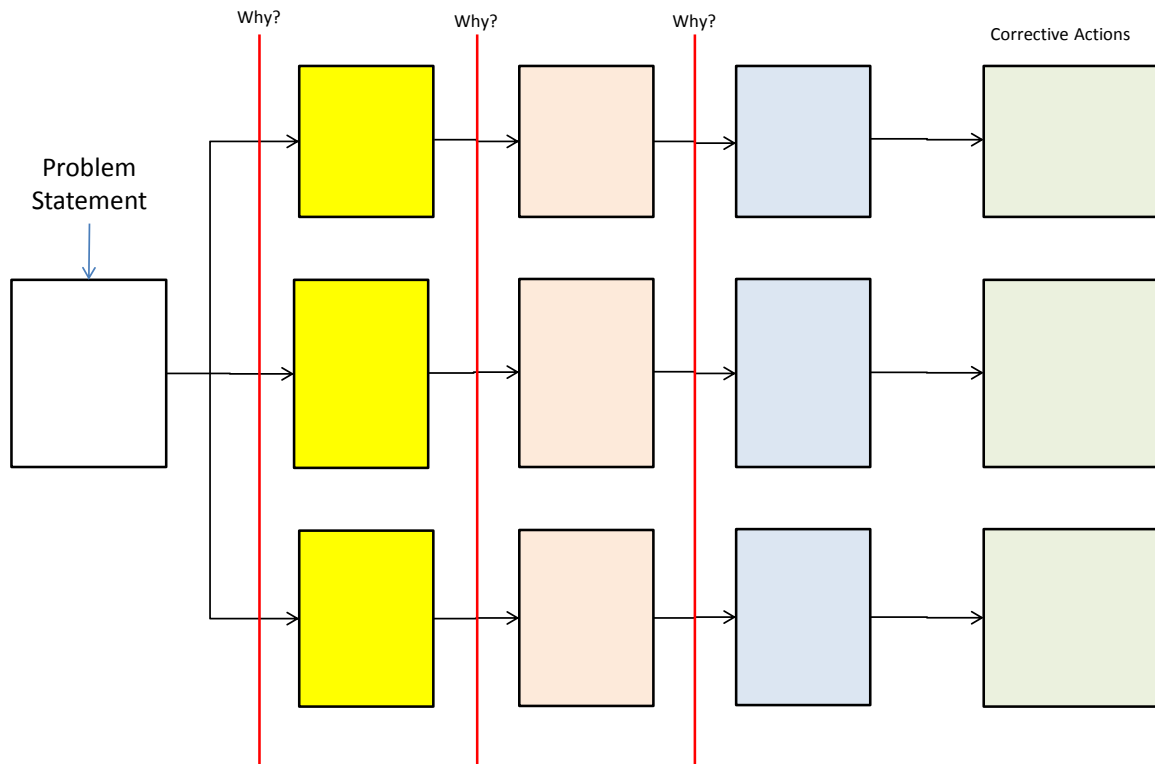
Problem
Statement

Tree Diagram of Possible Root Causes and Corrective Actions

Figure 1

3. Develop the higher level and sub-level causes for the problem statement in the next set of three boxes
4. In the final set of boxes begin developing potential corrective actions to be prioritized.
    a. Write each potential solution on a Post-It® Note
    b. Place each potential solution in the appropriate box next its related cause
5. Once corrective actions have been placed in the appropriate boxes, it becomes easier for the improvement team to see where to focus their efforts. Now the team can prioritize the solutions, decide which solutions to try, and determine whether they can achieve the improvement goal. Referencing the corrective action column, QI teams can select an intervention to test. If the desired outcome is not as expected, then the remaining corrective actions are readily available on the tool as alternative strategies. This reduces the need to remember or rifle through documents in an effort to recall the other corrective actions the QI team identified. Actions can be tested until the desired outcome is reached.

Example: Figure 2 shows an example in which using the tool helped Women, Infant, and Children Program Coordinators fulfill a requirement to identify root problems and report corrective actions after having fallen below a prescribed benchmark measure.