

# Root Cause Analysis

## Tools for Root Cause Analysis



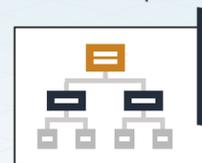
### DEFINE THE PROBLEM

- Assemble the team
- Interview individuals who have insight into the problem
- Review the data
- Develop problem definition



### MAP CURRENT PROCESS

- Interview individuals doing the work
- Review lab documents
- Create and/or expand flowcharts



### DEVELOP SOLUTION

Consider solution types:

- **Stronger**—Make physical changes to environment or redesign process
- **Intermediate**—Provide information at point of need
- **Weaker**—Provide training, warnings, and additional checks

Interview key players and stakeholders about feasibility of various options



### IMPLEMENT SOLUTION

- Identify possible sources of resistance
- Develop a “change management” approach
- Develop a plan and schedule for implementation
- Implement

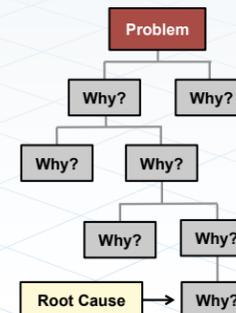


### FIND ROOT CAUSE

Choose the most appropriate tool, such as:

- **Flowcharting**—Treat each step as a possible cause, and break into smaller steps
- **Five Whys/Fault Tree**—Identify possible causes at each level of the system
- **Cause-and-Effect Diagram/ Fishbone Diagram**—Brainstorm a list of possible causes

Select the most likely cause(s) based on the possibilities and the evidence



### ASSESS EFFECTIVENESS

Choose an assessment approach such as:

- Monitor an established metric
- Perform a focused internal audit
- Set up a simulation/experiment

Example: Announce a condition, and see if people do the right thing—(aka, “Fire Drill” method).

Make necessary changes



TOOL	DESCRIPTION
<p><b>Brainstorming</b></p>	Brainstorming is a joint undertaking by a group to generate a number of creative and practical ideas from different perspectives.
<p><b>Fishbone Diagram / Cause-and-Effect Diagram</b></p>	A fishbone diagram is a tool to show different possible causes that may be contributing to an outcome or event. It prompts the users to think of many areas of possible causes, beyond the obvious.
<p><b>Five Whys / Fault Tree</b></p>	Five Whys/Fault Tree is a set of tools that share a common characteristic: They each take an event or problem, and continually look for more basic reasons or causes by asking why.
<p><b>Interviewing</b></p>	An interview is a way of eliciting specific information surrounding an event or a process from frontline staff.
<p><b>Process Mapping</b></p>	Process mapping is an exercise to identify all the steps and decisions in a process in the form of a diagram.
<p><b>Six Thinking Hats</b></p>	<p>Six Thinking Hats is a tool created by Edward de Bono to encourage creative and unconventional thinking about a topic. It encourages teams to look at a problem from different perspectives. It also pushes individuals out of their typical mode of thinking. The six hats correspond to the following different thinking modes:</p> <ul style="list-style-type: none"> <li>• <b>White</b>—Factual, as in “black and white” information</li> <li>• <b>Red</b>—Emotional, gut feelings</li> <li>• <b>Black</b>—Negative, pessimistic</li> <li>• <b>Yellow</b>—Sunny, optimistic</li> <li>• <b>Green</b>—Creative, fertile</li> <li>• <b>Blue</b>—Big picture, higher perspective (view from the sky, from above)</li> </ul>

Interested in learning more about root cause analysis? The CAP's QMED™ online course on root cause analysis will introduce you to real-world methodology and tools you will need to complete a thorough root cause analysis leading to more efficient results. Earn six CE credits with the completion of this course.

For more information, visit [cap.org](http://cap.org) and search QMED™.

