While there are many different models for conducting root cause analysis, the Five Why Process is a simple RCA tool that has been used for many years. Made popular in the 1970s by the Toyota Production System, the process involves defining a problem and asking "why" five times, more or less, until the root cause is found. By repeatedly asking the question "why" to each answer, layers of symptoms can be peeled away until the source of the problem (root cause) is identified. Corrective actions are then implemented to prevent the problem from reoccurring.

The Five Why Process is a proven tool that will improve operational effectiveness, safety, and work product quality while reducing costs and simplifying jobs by eliminating system failures.

The Five Whys:

The 5 Whys strategy is an easy and often-effective tool for uncovering the root cause of a problem. Because it is so basic in nature, it can be adapted quickly and applied to most any problem. Bear in mind, however, that if it doesn't prompt an intuitive answer, other problem-solving techniques may need to be applied.

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Five Why Flow Chart
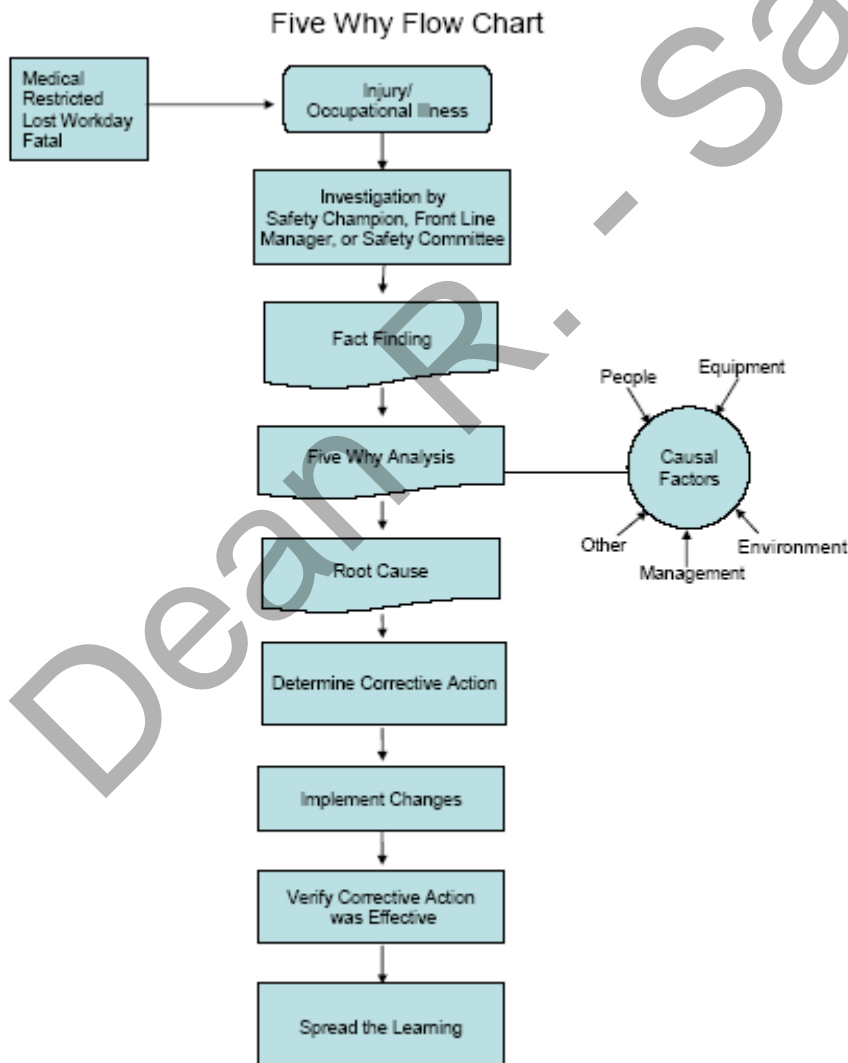
This "Five Whys" process guide includes a user-friendly form to help guide you through the process. The form and step instructions are located at the end of this section, and detailed information regarding each step is defined below.

Defining the Problem (Problem Statement)

A problem is the difference between an expected result and what actually happened. Correcting it begins with clearly defining the actual problem. While this may seem simple, many repetitive nonconformances result because the wrong problem was solved, only the outcome was fixed, or only one problem was corrected when there were two or more problems.

The process starts with writing a specific description of the problem. An example of a good problem statement is, "A warehouse associate cut his finger with a box cutter while opening a box." When writing problem statements, you should avoid these Common Mistakes:

- Defining the problem and the solution at the same time.
- Defining a symptom as the problem.
- Defining the problem without data to support
- Being vague or ambiguous
- Combining multiple problems into one.

Asking questions similar to the following will help you address the actual problem and not just the symptom identified as the event.

- What is the scope of the problem?
- How many problems is it?
- What is affected by the problem?
- What is the impact on the company?
- How often does the problem occur?

An example of a poorly written problem statement would be "We are experiencing exceptionally high Worker's Compensation losses because it's a time of unusually high business activity" because it mentions a potential cause and addresses a symptom.

The Problem with Problem Statements:

If we do not define the problem correctly, we will never be able to solve the problem permanently. You need to ensure that we are working on the problem, not just a symptom of the problem.

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In summary, ensure your problem definition states what is wrong vs. why it's wrong, defines the gap between the expected and actual states, and is reviewed regularly as new information/data becomes available.

Asking Why

Once the problem statement is determined, use the five whys to determine the root cause. Ask "why?" in response to the problem statement, and continue asking "why" five times or until the root cause is found, no matter how many "whys" it takes. Continue asking one "why" at a time successively, and do not skip a "why" answer. Although the process is called Five Whys, the question may need to be asked fewer or more times before finding the root cause.

Here is an example of a simple Five Why analysis: Problem Statement: "The facility maintenance group has experienced four back injuries in the last three months while lifting equipment, which is more than the last several years."

Q. Why are back injuries on the rise?
A. Employees are lifting pumps and motors greater than 100 pounds manually.

Q. Why are people lifting the pumps and motors manually?
A. Because the crane has broken repeatedly and is out of service.

Q. Why is the crane broken and out of service?
A. Because it has not been maintained properly.

Q. Why has it not been maintained properly?
A. Because the preventive maintenance (PM) program has not been followed in the last year.

Q. Why has the PM program not been followed?
A. The only person trained to do the preventative maintenance left the company.

If a why question cannot be answered, observe the workplace, review documents, or collect data until the question can be answered.

It is important to avoid using the "who?" question, which can be interpreted as emphasizing or blaming the person. RCA is best accomplished in an open and honest atmosphere with a realization that most human error is caused by a management system—individuals rarely, if ever, take action knowing they will be injured.

FIVE WHYS ANALYSIS FORM

Name of Person Completing Form:	Date:
Department:	Incident Date:
Incident Identification:	

STEP 1: DEFINE THE PROBLEM (No assumptions, based on facts, no suggestions for improvement)

STEP 2: ASK WHY (Until root cause is found)

Why 1:   **Answer 1:**

Why 2:   **Answer 2:**

Why 3:   **Answer 3:**

Why 4:   **Answer 4:**

Why 5:   **Answer 5:**

STEP 3: CORRECTIVE ACTION	STEP 4: COMPLETE/EVALUATE/SPREAD
Root Cause:	**Corrective Action Implemented:** *(Date, time, who)*
Corrective Action(s): *(How to eliminate root cause.)*	**Results:** *(Did action work?)*
Person Responsible:	**Share lessons learned:** *(Where else is solution useful?)*

Note: Continue on separate page if 5-Whys are not enough to determine root cause. To follow more than one symptom through the process, use a separate page for each.

INSTRUCTIONS FOR COMPLETING FIVE WHY ANALYSIS FORM

Step 1 – Define the Problem
- State the problem or unwanted condition. Don't make assumptions.
- Make sure the problem statement is based on facts, not beliefs.
- Make sure the problem statement does not contain suggestions for improvement.
- Include What, When, Where, Impact

Step 2 – Ask Why
- In the Why #1 box, ask, "Why did the problem occur?"
- Record the answer in the Answer 1 box.
- Why #2 is "Why did the action in the #1 happen?"
- Continue asking why until you find the root cause.
- The root cause is what started the chain of events leading to the problem.

Step 3 – Root Cause
- Record the root cause.
- Determine how the root cause can be prevented from ever happening again.
- Record:
  - Who is going to implement the changes?
  - What changes will be implemented?
  - When will the changes be implemented?

Step 4 – Complete, Verify, Spread
- Record what was changed, by whom, and when.
- Verify that the changes have eliminated the root cause.
- Identify areas where this solution could be reapplied to prevent failures.

APPENDIX C
Cause Analysis Model

Performance

Internal to performers

7 Skills/ Knowledge
- formal training
- on-the-job
- self-study

8 Inherent Ability
- intelligence
- emotional ability
- physical attributes
- education
- internal motivation

External to performers

Environmental

1 Org Systems/ Processes
- clear goals
- clear roles
- job design
- clear policies
- authority
- appropriate workload
- effective processes and systems

2 Incentives
- positive reinforcement
- interesting, meaningful work
- pay and benefits
- positive incentives

3 Coaching and Reinforcement
- coach
- encourage
- observe and feedback
- acknowledge

Resources

4 Cognitive Support
- job aids
- documentation

5 Tools
- computers
- software
- equipment

6 Physical Environment
- noise
- light
- temperature
- physical layout