Root Cause Analysis

Factsheet

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A brief history

- Developed by Sakichi Toyoda who later founded Toyota Motor Company
- RCA was first used during the development of Toyota's manufacturing processes in 1958
- Kaora Ishikawa (1915-1989) invented the fishbone diagram in the 1960's (sometimes referred to as the Ishikawa diagram)

What is a root cause

- The causal or contributing factors that, if corrected, would prevent recurrence of the identified problem
- The "factor" that caused a problem or defect should be permanently eliminated through process improvement
- The factor that sets in motion the cause and effect chain that creates a problem
- The "true" reason that contributed to the creation of a problem, defect or nonconformance

What is root cause analysis?

- Identifying a problem
- Containing and analysing the problem
- Defining the root cause
- Defining and implementing the actions required to eliminate the root cause
- Validating that the corrective action prevented recurrence of problem

Benefits

- You save time and money
- Problems are not repeated, therefor you reduce rework, retest, re-inspect, poor quality costs, etc...
- Problems are prevented in other areas
- Communication improves between groups and
- Process cycle times improve (no rework loops)
- Secure long term company performance and profits

Importance of the root cause

Not knowing the root cause can lead to costly band aids.

"For want of a nail the shoe was lost, for want of a shoe the horse was lost, for want of a horse the knight was lost, for want of a knight the battle was lost, for want of a battle the kingdom was lost. So a kingdom was lost—all for want of a nail."

Attributed to Benjamin Franklin

We cannot solve problems using the same kind of thinking we used when we created them.

Einstein

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When is RCA needed?

Excess inventory	Supplier defects
Computer/machine issues	Out of control process
Scrap problems	Human error
Audit finding	Medical errors
Missed deliveries	Safety issues
Workmanship defects	Overspending budget

Corrective actions

Immediate action
The action taken to quickly fix the impact of the problem, so the "customer" is not further impacted.

Permanent root cause corrective action
The action taken to eliminate the error on the affected process or product.

Preventive (Systemic) root cause corrective action
The action taken to prevent the error from recurring on any process or product.

What does good RCA look like?

- Internally consistent
- Thorough
- Credible

The Process (simplified)

Step 1	Identify the Problem - Very Important Clearly state the problem the team is to solve
Step 2	Identify team
Step 3	Immediate action
Step 4	Root cause - Cause & effect diagram - 5 Why's
Step 5	Corrective action plan
Step 6	Complete action plan
Step 7	Follow up plan
Step 8	Validate & celebrate

Definition

Root cause analysis is a tool to help health care organizations retrospectively study events where patient harm or undesired outcomes occurred in order to identify and address the root causes. By understanding the root cause of an event, we can improve patient safety by preventing future harm.

5 why's

- Ask "Why?" five times
- Stop when the corrective actions do not change
- Stop when the answers become less important
- Stop when the root cause condition is isolated

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