

Root Cause Finder

Do not fix the symptom and call the problem solved.

DEFINE → CONTAIN → VERIFY → MAP → CHALLENGE → TEST → DECIDE → HANDOFF

Use this tool after a real condition has been observed and, where necessary, contained. Its job is to compare competing explanations, build an evidence chain, and identify a controllable cause before corrective action is assigned.

Operation

Investigation owner

Observed condition

Expected standard

How to Use This Tool

1. Define the problem in observable terms before discussing causes.
2. Contain any immediate safety, legal, quality, continuity, or customer risk. Do not confuse containment with permanent correction.
3. Work through the evidence questions. Mark Supported, Partial, Not Supported, Unknown, or N/A.
4. Build at least two candidate causes when the evidence reasonably permits more than one explanation.
5. Record evidence for and against each candidate. State what would test or disprove the explanation.
6. Stop drilling only when the cause is evidence-supported, controllable, and logically connected to the symptom.
7. Hand the cause into corrective action with an owner, due date, evidence requirement, and verification period.

Do not accept “human error” as the complete answer. If an individual did not follow the expected method, verify the method, training, workload, tools, supervision, incentives, and practical ability to comply before closing the investigation.

Investigation Setup

Operation / Unit: _____

Operation Type: _____

Investigation Owner: _____

Review Date: _____

Problem Definition

Observed condition: _____

Expected standard / normal condition: _____

Scope / where observed: _____

Consequence / why it matters: _____

Immediate Containment

What was done to control immediate risk? _____

What temporary workload, workaround, or new risk did containment create? _____

A. Define the Problem Before Explaining It

Ref	Control / Question	Status	Evidence / Note	Critical
A1	The problem is stated as an observable deviation from an expected standard, not as a conclusion such as 'poor management', 'carelessness', or 'bad attitude'.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
A2	The expected standard, target, or normal condition is clear enough that another person could recognize the same deviation.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
A3	The scope is defined: process, product, location, shift, equipment, team, customer group, or operating period affected.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
A4	The consequence is described separately from the suspected cause, including safety, quality, cost, labor, service, compliance, capacity, or continuity impact.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

B. Contain Immediate Risk Without Confusing Containment With Cause

Ref	Control / Question	Status	Evidence / Note	Critical
B1	Any immediate safety, legal, product-quality, continuity, or customer risk has been contained before root-cause analysis continues.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
B2	Temporary containment is labeled as temporary and is not presented as proof that the underlying cause has been removed.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
B3	The operation has documented what changed during containment so later evidence is not confused by the intervention.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
B4	Where containment creates a new workload, cost, workaround, or risk, that consequence is visible to management.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

C. Verify the Evidence

Ref	Control / Question	Status	Evidence / Note	Critical
C1	The condition is supported by direct observation, reliable records, repeatable measurement, or other evidence stronger than memory or opinion.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
C2	Where a KPI or financial measure is involved, management has confirmed that the measure is trustworthy enough to support causal conclusions.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
C3	The timing of the condition is known well enough to compare what changed before, during, and after it appeared.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
C4	Conflicting evidence, missing records, or uncertainty is recorded rather than hidden inside a confident explanation.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

D. Build the Cause Map

Ref	Control / Question	Status	Evidence / Note	Critical
D1	Management has considered process design, work method, and standard clarity rather than looking only at the person closest to the problem.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
D2	Management has considered training, competency, supervision, staffing, workload, and incentives when individual behavior appears relevant.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
D3	Equipment, tools, technology, maintenance condition, layout, utilities, and physical constraints have been considered where applicable.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
D4	Materials, ingredients, suppliers, specifications, incoming quality, and availability have been considered where applicable.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
D5	Scheduling, forecasting, production planning, demand variability, and capacity have been considered where applicable.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
D6	Management systems, priorities, follow-through, conflicting targets, and organizational structure have been considered.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
D7	Measurement, data definitions, reporting methods, and information delays have been considered as possible contributors.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

E. Challenge the First Explanation

Ref	Control / Question	Status	Evidence / Note	Critical
E1	At least two plausible explanations have been considered when the evidence reasonably allows more than one.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
E2	For each major hypothesis, management has recorded evidence that supports it and evidence that weakens or contradicts it.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
E3	The analysis identifies what evidence would disprove the leading explanation instead of looking only for confirmation.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
E4	Correlation is not treated as causation merely because two things changed at the same time.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
E5	The investigation distinguishes the trigger that exposed the problem from the underlying condition that allowed the problem to occur.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

F. Drill Down to a Controllable Cause

Ref	Control / Question	Status	Evidence / Note	Critical
F1	The analysis continues beyond symptoms until it reaches one or more causes that management can influence through a change in system, standard, resource, design, training, supervision, or behavior.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
F2	The cause statement explains why the condition occurred, not merely where it was discovered.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
F3	The analysis distinguishes root causes from contributing factors instead of forcing every problem into a single-cause story.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
F4	Repeated 'why' questioning is used only while it improves understanding; the analysis does not force exactly five whys when the evidence does not support them.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
F5	If 'human error' or 'failure to follow procedure' remains in the cause statement, management has verified the procedure, training, workload, tools, supervision, incentives, and practical ability to comply.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES

Section note / evidence summary: _____

G. Test the Cause Before Declaring Victory

Ref	Control / Question	Status	Evidence / Note	Critical
G1	Management can explain why correcting the proposed cause should reduce or remove the observed condition.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
G2	Where practical, the cause is tested through a pilot, controlled change, comparison, observation, or another method that can produce new evidence.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
G3	Other major changes occurring at the same time are identified so improvement is not automatically credited to the wrong intervention.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
G4	The expected verification measure and review period are defined before the corrective action is implemented.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES

Section note / evidence summary: _____

H. Decide, Handoff, and Verify

Ref	Control / Question	Status	Evidence / Note	Critical
H1	The final cause conclusion states the evidence level honestly: not established, probable, evidence-supported, or multiple/systemic.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
H2	Corrective action addresses the cause rather than only the symptom or temporary containment.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		YES
H3	An owner, due date, required evidence, and verification method are assigned before the investigation is considered complete.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		
H4	The operation knows what would trigger reopening the investigation if the condition returns.	☐ Supported ☐ Partial ☐ Not supported ☐ Unknown ☐ N/A		

Section note / evidence summary: _____

Candidate Cause Map

List competing explanations. Strong investigations look for evidence against the leading story as deliberately as they look for evidence supporting it.

Category	Candidate cause	Evidence for	Evidence against	Confidence	Test / next evidence

Cause Categories to Consider

Process / Method • Standards / SOPs • People / Competency • Staffing / Workload • Supervision / Management • Equipment / Technology • Facility / Layout / Utilities • Materials / Ingredients / Supplier • Forecasting / Planning / Capacity • Measurement / Data • Incentives / Targets / Culture • External / Environmental

Why Chain / Evidence Chain

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Use as many levels as improve understanding. Do not force exactly five whys.

Root Cause Decision & Handoff

Leading cause conclusion: _____

Contributing factors: _____

Evidence that most strongly supports this conclusion:

Evidence that would cause us to reopen or reject this conclusion:

Expected verification period: _____

Cause Classification

- ☐ Cause Not Yet Established — Evidence does not yet support a defensible causal conclusion. Continue investigation or improve measurement before committing to a permanent fix.
- ☐ Probable Root Cause — The leading explanation fits the evidence better than alternatives but has not yet been tested strongly enough to treat as confirmed.
- ☐ Evidence-Supported Root Cause — The cause is supported by a coherent evidence chain and a correction can be tied logically to the observed condition.
- ☐ Multiple / Systemic Causes — The condition is produced by several interacting causes or by a broader management system. Corrective action must address the system, not a single person or event.

Corrective Action Handoff

Corrective action	Owner	Due	Evidence required	Verification method

Close-the-Loop Questions

- ☐ Did the corrective action address the cause rather than only the symptom?
- ☐ Was the change checked under real operating conditions?
- ☐ Did the original condition reduce or disappear during the verification period?
- ☐ Did the correction create a new problem somewhere else?
- ☐ If the condition returns, what triggers reopening the investigation?