

SOP Template: Root Cause Analysis and Problem-Solving Routines

This SOP details the **root cause analysis and problem-solving routines**, focusing on systematic identification of underlying issues, effective troubleshooting methodologies, data collection and analysis techniques, implementation of corrective actions, and continuous improvement practices. The objective is to enhance organizational problem-solving capabilities, prevent recurrence of issues, and promote efficient resolution of operational challenges.

1. Purpose

To establish standardized routines for identifying root causes and solving problems in a systematic, data-driven, and sustainable manner.

2. Scope

This procedure applies to all departments and personnel involved in operational problem-solving, incident resolution, and continuous improvement initiatives within the organization.

3. Responsibilities

- **Process Owners:** Initiate and direct root cause analysis.
- **Root Cause Analysis (RCA) Team:** Conduct investigations and document findings.
- **Supervisors/Managers:** Ensure corrective actions are implemented and monitored.
- **All Employees:** Report problems, participate in problem-solving efforts, and adhere to corrective measures.

4. Procedure

1. **Problem Identification**
 - Detect and clearly define the issue (who, what, when, where, how).
 - Document the problem's context and impact.
2. **Data Collection**
 - Gather factual data (logs, records, firsthand accounts, process data).
 - Use checklists and forms for consistency.
3. **Root Cause Analysis**
 - Apply RCA techniques such as:
 - 5 Whys
 - Fishbone (Ishikawa) Diagram
 - Failure Mode and Effects Analysis (FMEA)
 - Brainstorming sessions
 - Identify causal factors and underlying root causes, not just symptoms.
4. **Development of Corrective Actions**
 - Propose actions addressing root causes and preventing recurrence.
 - Evaluate feasibility, impact, and resources required.
5. **Implementation**
 - Assign responsibilities and deadlines.
 - Communicate corrective actions to relevant stakeholders.
 - Document implementation steps and progress.
6. **Effectiveness Verification**
 - Monitor results after actions are taken.
 - Use metrics/KPIs to confirm issue elimination and performance improvement.
7. **Documentation and Closure**
 - Maintain records of the entire RCA process, findings, and verified outcomes.
 - Close the case when effectiveness is confirmed.
8. **Continuous Improvement**
 - Periodically review RCA outcomes and procedures for opportunities to enhance methods and prevent future issues.

5. Tools and Techniques

Tool/Technique	Description
5 Whys	Iterative questioning to drill down to the root cause.
Fishbone Diagram	Visual root cause mapping of contributing factors (people, process, materials, equipment, environment, management).
Pareto Analysis	Identifies the most significant issues or causes using the 80/20 principle.
FMEA	Evaluates potential failure modes and their impact on operations.
Statistical Analysis	Uses data trends and variations to support fact-based decisions.

6. Records and Documentation

- RCA Investigation Report Forms
- Data collection logs and supporting evidence
- Corrective action plans and tracking sheets
- Meeting notes related to analysis and action items

7. Review and Update

This SOP should be reviewed annually or after any significant incident, update in methodology, or at management's discretion.