What is Root Cause Analysis (RCA)?

- An approach to understanding why something happened or how a situation developed
- A body of qualitative and quantitative tools and techniques, not a single methodology
- Applied in a range of settings including accident investigation, risk analysis, business process improvement, change management, and quality control
- Used extensively in manufacturing and private sector
Common Applications of RCA

- **Sales**: Why did we lose that sale?
- **Manufacturing**: Why did we have down time?
- **Safety**: Why did we have that injury?
- **Operations**: Why did we have that delay?
- **Healthcare**: Why did that medication error occur?
- **Projects**: Why did the project take too long?
- **Environmental**: Why did the tailing pond collapse?
- **Performance Audit**: Why is the legislation not being complied with? Why is the organization not meeting its mandate?
Various Tools and Techniques Applied in the Private Sector

- SIPOC mapping (Suppliers, Inputs, Processes, Outputs, Customers)
- FMEA (Failure Mode and Effects Analysis)
- Kipling’s questioning technique (What, Why, When, Where, How, Who)
- The “Five Whys” questioning technique
- Cause mapping
- Fish bone (Ishikawa) diagrams
- Flowcharting
- Pareto charts.
RCA and Public Sector Auditing

- RCA is not required by Canadian auditing standards
- Some argue it is the responsibility of entity management
- Some argue it is the responsibility of Public Accounts Committees
- So why bother?
Common Performance Audit Findings

- Rules and policies not complied with
- Results not achieved
- Risks not managed
- Strategies not followed
- Actions not coordinated
- Roles not clear
- Decisions not supported
- Oversight not in place
The Burning Question: Why?

- Why are entities not in compliance?
- Why are intended results not achieved?
- Why are risks not managed?
- Why are strategies not followed?
- Why isn’t oversight occurring?
- Why…? Why…? Why…?

Analyzing the underlying causes of observed audit deficiencies helps to delve down below the surface, beyond the symptom, to answer these Why questions.
The Value-Added Proposition

- Root cause analysis can **significantly** increase the impact of public sector performance audits by...
  - Informing recommendations that address the cause of deficiencies, thereby leading to lasting solutions
  - Providing insight and explanation for audit findings
“The formulation of the problem is often more essential than its solution.”

Albert Einstein
Integrating Root Cause Analysis into Legislative Performance Auditing

A Discussion Paper
The CCAF Discussion Paper

- Designed to assist legislative performance auditors to integrate root cause analysis into the audit engagement. The Discussion Paper addresses...

- *How it can be carried out*
  - Questioning technique
  - Tools to visualize or document the analyses
  - Categories of root causes tailored to a public service environment

- *When it can be carried out*
  - “Additional activities” that can be integrated into the typical performance audit process.
CCAF Process Suggestions

CURRENT PRACTICE

TOPIC SELECTION

PROPOSED ADDITIONAL ACTIVITIES

ACQUIRING KOB
ASSESSING SIGNIFICANCE
ASSESSING RISK

PREPARATION OF
AUDIT PLAN
AND PROGRAMS

EVIDENCE
COLLECTION

RESULTS
ANALYSIS

EARLY
DRAFTING

CONSIDERATION
OF
RECOMMENDATIONS

IDENTIFY POTENTIAL FINDINGS
CONSIDER POSSIBLE ROOT CAUSES
REFLECT IN AUDIT PLAN / AUDIT PROGRAM

MID-POINT REVIEW OF:
- PROGRESS AGAINST PLAN
- EMERGING FINDINGS
- POSSIBLE ROOT CAUSES
- EVIDENCE ON HAND

PREPARE FIRST PASS
FISH-BONE DIAGRAM FOR
ROOT CAUSES

IDENTIFY RECOMMENDATIONS
SUPPORTED WITH FINAL FBD
Basic Questioning Technique: The “Five Whys”

- Used and made popular by Toyota
- Ask the question “Why” Five times (+ or -) to get to the root cause
- Advantages: simple, intuitive, adaptable, can be combined with other techniques, such as Fishbone Diagram
- Disadvantages: Relies on professional judgment therefore results may not be repeatable, tendency to identify one root cause, does not provide structure or categorization of causes
An Example of the Five Why Technique

**Significant Finding:** The fleet of vehicles did not meet the availability target.

**Why?** The vehicles were often not available due to mechanical problems.
  
  **Why?** Not enough technicians on site to do all the necessary maintenance and repairs
   
  **Why?** Too few technicians have completed the training program in recent years.
   
  **Why?** Not enough instructors to provide the required training.
   
  **Why?** Many instructors retired the same year and there was no succession plan or recruitment strategy.

**Recommendation (aimed at symptom):** The entity should ensure that the fleet of vehicles meets availability targets.

**Recommendation (aimed at cause):** The entity should establish a succession plan and recruitment strategy for instructors and technicians to support maintenance activities.
Visual Tool: Fish Bone Diagram

- Popularized by Toyota
- The Fish Bone technique is a diagram-based approach for thinking through all of the possible causes of a problem
- Commonly used for product design, defect prevention, and problem-solving
Generic Fish Bone Diagram and Traditional “Main Categories”
Proposed New Main Categories and Indicators of Root Causes

- Governance Related
  - Authority
  - Process and Planning
  - Oversight and Performance Reporting

- Operations Related
  - People
  - Assets
  - Delivery
Using the Main Categories

- The list is indicative, not exhaustive – add, subtract or adjust
- Not all categories or sub-categories will be applicable for each audit
- Findings and causes can be “exchangeable” - what is considered a root cause in one audit may be a significant finding in another audit
- The categories are inter-related and not mutually exclusive
Caution!

- In a public sector environment, there is a potential that the causes of significant audit findings may be traced back to the merits of policy or the adequacy of resources.
Steps for Using the Fish Bone Technique

- Start with a blank paper or whiteboard and be prepared to draw a Fish Bone diagram.
- Describe the significant audit finding.
- Determine the possible main category(s) involved.
- Identify possible root causes under each main category (Consider the “possible indicators of cause”)
- Analyze your diagram and exercise professional judgment to determine the most likely root causes.
- Investigate these further, if needed, to confirm the actual root causes and obtain sufficient appropriate evidence (if reported).
## Template for Documenting

<table>
<thead>
<tr>
<th>Significant finding</th>
<th>Answer to the Five Ways</th>
<th>Main Root Cause</th>
<th>Secondary Root Cause</th>
<th>Recommendation</th>
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PROPOSED
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IDENTIFY POTENTIAL FINDINGS

CONSIDER POSSIBLE ROOT CAUSES

REFLECT IN AUDIT PLAN / AUDIT PROGRAM

Identification of Potential Findings

Mid-Point Review of:
◊ Progress Against Plan
◊ Emerging Findings
◊ Possible Root Causes
◊ Evidence on Hand

Prepare First Pass Fish-Bone Diagram for Root Causes

Identify Recommendations Supported with Final FBD

CCAF-FCVI (Inc)