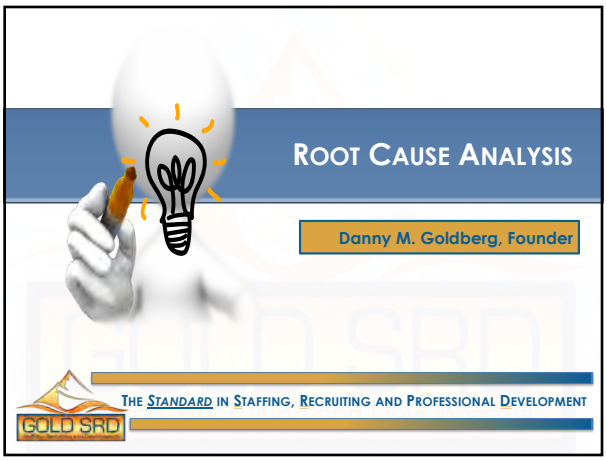
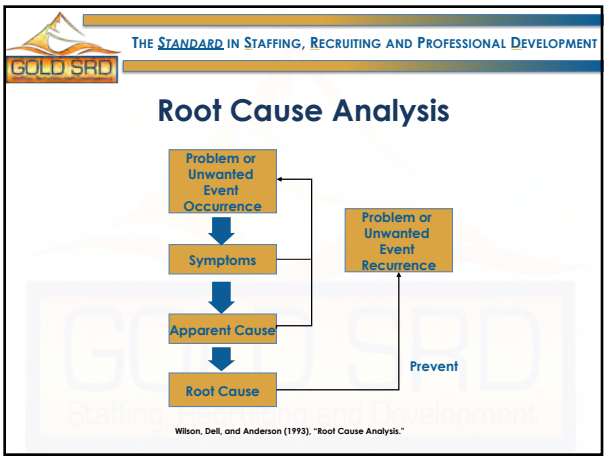
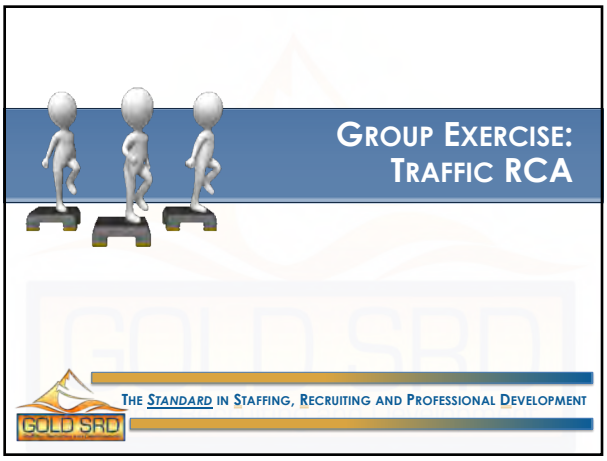






(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

Traffic RCA

- What is the root cause of traffic in all major cities?

RCA Defined

- Identification of **WHY** an issue occurred (vs. only identifying or reporting on the issue itself)
- Process of determining the causes that led to a nonconformance, event or undesirable condition and identifying corrective actions to prevent recurrence which (when solved) restores the status quo or establishes a desired effect

RCA Purpose

- Helps to identify what, how, and why something happened, thus preventing recurrence
- Underlying, reasonably identifiable, can be controlled by management and allow for the generation of recommendations
- Only when you are able to determine why an event or failure occurred will you be able to specify workable corrective measures

(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

Understanding Root Causes

- To fix a problem it must be **CLEARLY DEFINED**. In many cases, symptom is identified and not the underlying problem
- Questions to ask are:
  - What is the scope of the problem?
  - What else is affected by the problem?
  - How often does it occur?
  - What impact will this have on the larger population?

RCA Guidelines to Success

- Use a systematic approach
- Knowledge of the business process
- Treat it as part of fieldwork/reporting – a must have not a nice to have
- Remember, even a great RCA will never prevent a problem from happening…
- Consider the possibility of **MORE THAN ONE ROOT CAUSE**
- Stop talking…LISTEN
- Find the cost-benefit point
- Invariably, the root cause of a problem is **NOT THE INITIAL REACTION OR RESPONSE (USUALLY THE SYMPTOM)**
- It is **NOT JUST RESTATING THE FINDING**

RCA Tools and Methods

- **5 WHYS**
- 80/20 analysis (Pareto chart)
- Fishbone diagram (cause and effect chart)
- Brainstorming
- Auditor's 5 Cs
- Flowchart
- Tree Diagram

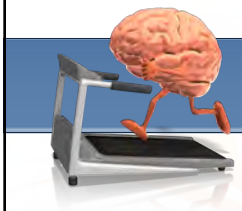
(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

How to Determine the Real Root Cause?

1. Define the problem
2. Collect and analyze facts and data
3. Develop **THEORIES** and **POSSIBLE CAUSES** - there may be multiple causes that are interrelated
4. Systematically reduce the possible theories and possible causes using the facts
5. Develop possible solutions
6. Define and implement an action plan
7. Monitor and assess results of the action plan
8. Repeat analysis if problem persists- if it persists, did we get to the real root cause?

Potential RCA Barriers

- Prior to performing RCA, internal auditors should anticipate the following potential barriers:
  - Management may be reluctant to support internal audit's role in RCA
  - Management may resist due to time and resource commitments
  - RCA may be difficult and subjective
  - RCA that leads to specific concrete observations and recommendations could be perceived to be placing the auditor in the role of Management



Group Exercise: Perception VS Reality

Count the # of F's in the Sentence on the Next Slide

THE STANDARD IN STAFFING, RECRUITING AND PROFESSIONAL DEVELOPMENT

Count the # of F's in the Below Sentence

FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINEDWITH THE EXPERIENCE OF YEARS.

THE STANDARD IN STAFFING, RECRUITING AND PROFESSIONAL DEVELOPMENT

Count the # of F's in the Below Sentence

FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINEDWITH THE EXPERIENCE OF YEARS.

CRITICAL THINKING PROCESS

THE STANDARD IN STAFFING, RECRUITING AND PROFESSIONAL DEVELOPMENT

Steps to Critical Thinking

1. Identify Existence of Assumptions
   - What is fact versus fiction?
   - What is assumed versus known?
2. Assessing their Accuracy and Validity of Assumptions
   - Do these assumptions make sense?
   - Do these assumptions fit reality as we understand and live it?
   - Under what conditions do these assumptions seem to hold true? Under what conditions do they seem false?
3. Consider all Alternatives/Varying Perspectives
4. Informed Action

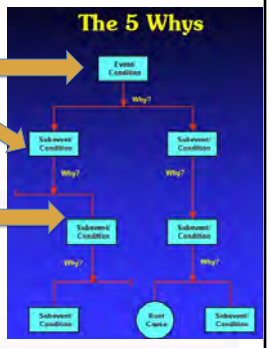
THE FIVE WHY'S

Copyright GoldCal LLC

Five Why's

1. As a group, write down the problem and describe it completely.
2. Ask **why** the problem occurs and write down the answer.
3. If the answer you just provided doesn't identify the root cause of the problem that you documented in step 1, ask why again and write that answer down.
4. Return to step 3 until the team is in agreement that the problem's root cause has been identified.

This process may take fewer or more than five whys.



Five Whys (5Y) - Prep

- Not a problem solving technique
- Outcome of 5Y analysis is **ONE OR SEVERAL ROOT CAUSES** that ultimately identify the reason why a problem was originated
- Other similar tools as the ones mentioned below that can be used simultaneously with the 5Y to enhance the thought process and analysis

THE STANDARD IN STAFFING, RECRUITING AND PROFESSIONAL DEVELOPMENT

5Y Preparation

- Must address **TWO DIFFERENT PROBLEMS** at the same time:
  1. Process that made the defective [**WHY DID THIS INITIALLY HAPPEN?**]
  2. Detection system that was not able to detect the defect before it became a problem; lack of detection of a defect is a problem of its own and must be treated independently than the product problem itself [**WHY NOT DETECTED?**]
- If you do not follow a regimented process, we tend to lose focus and grab at the first or second why (**USUALLY THE SYMPTOM**).
- It is said that a well defined problem is a half resolved problem; hence it is important to state the problem as clearly as possible
- Whenever possible, define the problem in terms of the requirements that are not being met

THE STANDARD IN STAFFING, RECRUITING AND PROFESSIONAL DEVELOPMENT

5Y – First Why

- Clear statement of the reason for the defect or failure to occur, understood even by people that is not familiar with the operation where the problem took place
- Often this 1st Why must be a short, concise sentence that plainly explains the reason
- Do not try to justify it, there will be time to do that later on in the following why's if it is pertinent to the thought process. It is Okay to write it down even if it seems too obvious for you. (It may not seem that obvious to other persons that will read the document)

(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

5Y – Transitional Causes

- More concise explanation to support the first statement
- Get into the technical arena, the explanation can branch out to several different root causes here
  - OK to follow each of them continuing with their own set of remaining five why's and so forth

5Y – Root Cause Finally!

- You may be missing the obvious by rushing into "logical" explanations
- Do not jump to conclusions yet, follow the regular thought process even though some underlying root causes may start surfacing already
  - Watch out for preconceived notions
  - Watch out for assumptions
- This fifth why is critical for a successful transition between the obvious and the not so obvious.
  - Visualize the process where the product went through (process mapping) and narrow down the most likely sources for the problem to occur
- Goal – find the systemic cause
- When you address a systemic cause, do it across the entire process and detect areas that may be under the same situation even if there are no reported issues yet

5Y - Conclusion

- **SELF-CHECK:** Try to organize the collected data in one sentence and define it in an understandable manner
  - If this cannot be done or the sentence is fragmented or meaningless chances are that there is gap between one or several whys.
- **PROBLEM DESCRIPTION OCCURRED DUE TO FIFTH WHY. THIS WAS CAUSED BY FOURTH WHY MAINLY BECAUSE OF THE THIRD & SECOND WHY AND THIS LED TO FIRST WHY**
- Do not forget that the sought outcome of a 5Y exercise is a **root cause of a the defined problem, not the resolution of the problem itself**
- Challenge the root cause(s) that resulted from the 5Y exercise to try to reproduce the defect. If you cannot there is a very big chance that you have not gotten to the bottom of it yet

(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

5Y – Simple Example

- Employee in the plant slipped and fell while performing their regular duties.
  1. *Why? – There was oil on the floor*
  2. *Why? – The machine in that cell was leaking oil*
  3. *Why? – A pressure fitting on the machine failed*
  4. *Why? – Inspection of hoses and fittings is not part of the preventive maintenance (PM) schedule*
  5. *Why? – PM system does not consider Equipment Manufacturer's recommendations to develop PM schedules*

5Y – Simple Example (cont)

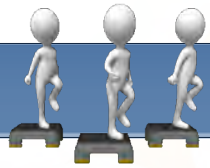
We Have Successfully Established

- What the Problem was
  - *Pressure fitting on the machine failed*
- How the problem occurred
  - *Inspection of hoses and fittings is not part of the preventive maintenance (PM) schedule*
- Why the system failed
  - *PM system does not consider Equipment Manufacturer's recommendations to develop PM schedules*

Why?

(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

Watch Out for Skewed Logic!?!?

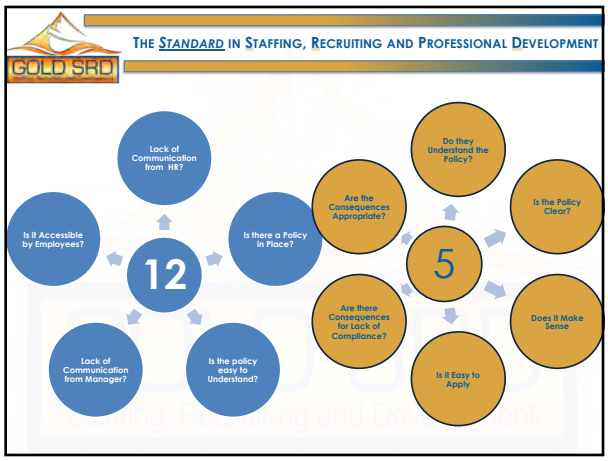


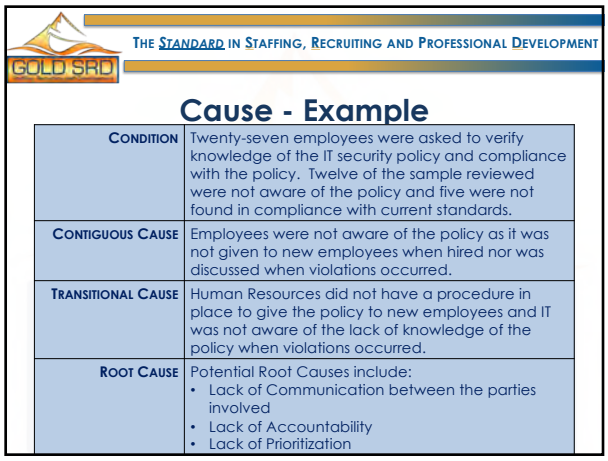
GROUP EXERCISE

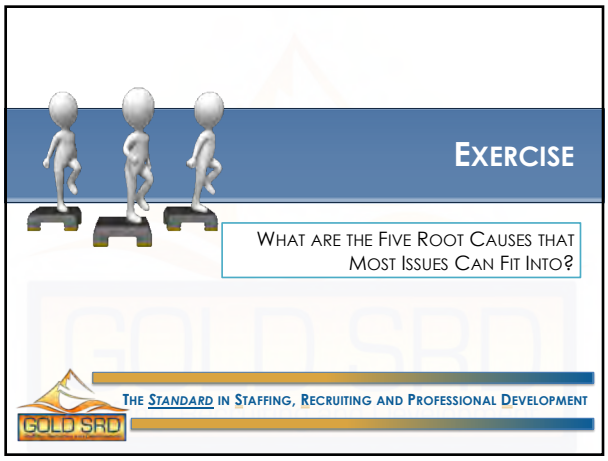
EXERCISE

- Write each of the three type of causes based on the following condition (hypothesize based on group discussion):
  - 27 employees were asked to verify knowledge of the IT security policy and compliance with the policy
  - Out of the sample of 27, 12 of the sample reviewed were not aware of the policy and five were found in non-compliance with current standards

(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com







(C) GoldCal LLC DBA GoldSRD 2018
dgoldberg@goldsrd.com

Root Causes

- Training (Don't Know)
- Don't Care
- Human Error
- Communication
- What Else?

GOLD NUGGETS – ROOT CAUSE ANALYSIS

- Keep it simple
  - Focus on the Why's
  - Connect with Auditee
  - Use Common Sense
- Great Listeners make Great Auditors