

# **Corrective Action: Tools & Methods**

## **VT-ASQ April Program**

### **Presenter:**

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# Introduction

- ◆ *Process performance gaps cost the company money and resources that, over time, must be significantly reduced in order to provide customers with exceptional product and/or service quality... it's a competitive requirement.*
- ◆ *Workshop intention:*
  - *help your company improve*
  - *help you learn more about 8D-CA*
  - *help you do a better job completing CARs*



# Quality-in Approach: Benefits

- ◆ Prevention saves “many times” the costs of containment
- ◆ Prevention requires “risk prevention” thinking
- ◆ Corrective action requests are an opportunity to enhance prevention
- ◆ Nothing is perfect, but getting it closer is our job (i.e. increase process control & capability)



## Quality-In Benefits (cont'd)



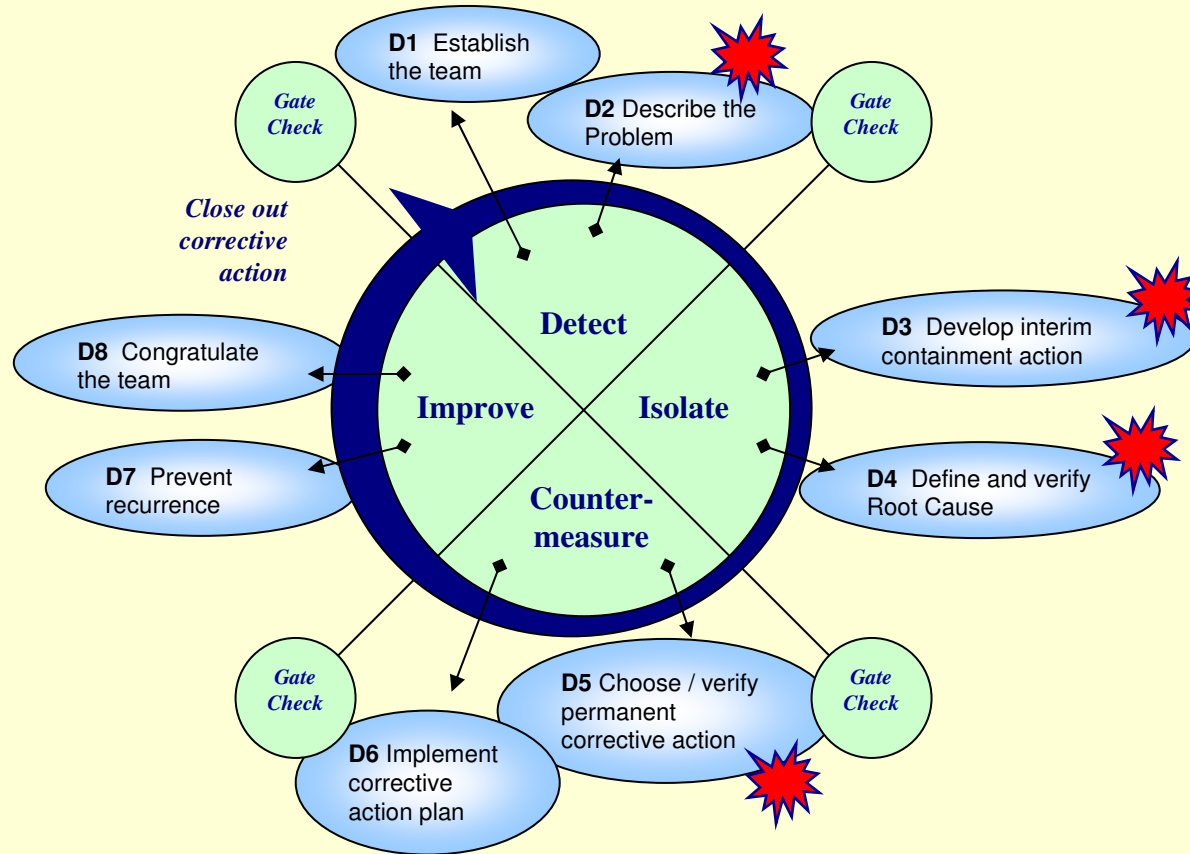
- ◆ **There is a point of diminishing return: your judgment of what is a key problem with a process is a critical expectation of performing your role in this process**
- ◆ **It takes more than one person to do this... take a team approach**
- ◆ **Plan-Do-Check-Act: learn and improve; you can not always do it right the first time but you can get it right the next time!**



# Self-Assessment

- ◆ This assessment will give you some sense of the ideal behaviors behind the “quality-in” mind-set
- ◆ Recognize that no one is perfect, but each of us can (and must) improve this mind-set
- ◆ Take 10-12 minutes (I will check to see if you need more time) Ratings: 1-5
- ◆ Be “objective” with yourself; no “right” answers here! Find some good strengths & “OFIs”

# 8D Approach





# CA- Systematic Approach

## Involves CONTAINMENT + PREVENTION

- **Prevention**: The studies, process design work and use of proven process-control methods that ensure the outcome of the process (or sub-process) is highly predictable and well within requirements to satisfy customer needs. (proactive/long-term)
- **Containment**: The studies, insights, confidence and actions that ensure a gap in process performance will be reduced to the desired level, in the short-term timeframe. (reactive/short-term)



# Contain & Prevent

- ◆ Responding to corrective action reports and requests is one way to improve process capability:
  - Service and/or product processes
  - QMS processes
- ◆ Containment (reactive)= ?
- ◆ Prevention (proactive)= ?

Exercise: Questions 1 & 2



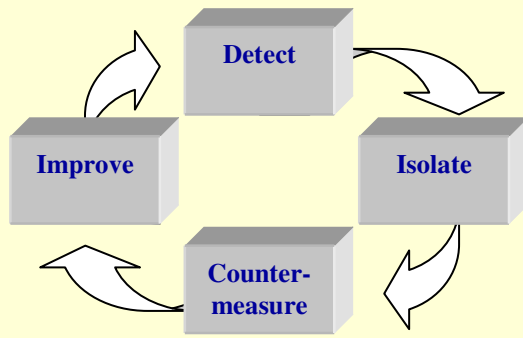
# Root-Cause Standard

It is not: operator error, rushing, etc.

“an underlying condition of the process or system that directly results in non-conformance in a product or service” (correlation is evident)

- it can be identified in terms of process or procedural terms
- it can be controlled through typical process controls and/or proper training
- if prevented, it results in indisputable improvement to achieving a “quality in” process

# 8D Steps: Summary



## D1 Establish the team

The purpose of D1 is to ensure multiple minds work on the problem

- Identify core team: 2-4 people most critical to solving the problem
- Assign team leader and other team management roles
- Define others to talk with as well, including process operators



# 8D Steps: Summary



## D2 Describe the problem

Describing the problem means stating the non-conformance in terms of measures and targets.

- State what the results were
- Include what the requirement was
- Include any other fact-based information that defines the problem
- Do not: add in a solution to the definition



**Gate Check**

# 8D Steps: Summary



## D3 Develop interim containment action (D1 in 3D version)

The purpose of containment is to avoid further problems of the same type while the corrective action study is taking place.

- Prevent certain process steps from being done by certain workers
- Check and purge inventory/WIP
- Remove bad equipment, gages or tools
- Inspect work at the source to catch the problem early

Tool: Brainstorming & class' work & ATX handout (job aid)



# 8D Steps: Summary



## D4 Define and verify root cause (D2 in 3D version)

This is the key part of the 8D process. Do it well.

- Create a plan for conducting the D4 activities
- Re-trace events; isolate “non-conformance” actions (people) or events (equipment)
- Use “is : is-not” logic: it is happening here, it is-not happening there, so this could mean \_\_\_\_\_.
- Map process if necessary so team members know everything that occurs
- Examine records and SPC data



**Gate Check**



Tools: Incident Diagram, Cause Logic Tree, and other CQI tools

# 8D Steps: Summary



## D5 Choose and verify permanent corrective action

(D3 in 3D version)

Choose solutions that truly countermeasure the root cause and can be sustained without someone's attention (minimize possibility of human tendencies).

- Use countermeasure selection chart
- Improve early-detection methods
- Test and verify the countermeasures really work
- Play “devils advocate”: what could go wrong with this solution?



# 8D Steps: Summary



## D6 Implement corrective action plan

Document a plan for implementing the countermeasure(s).

- What, when, how and who (use a Tree Diagram: Work breakdown structure)
- Identify all key tasks of the plan
- For all key tasks, identify the final deliverable of the task
- Identify who will monitor the plan, and how often
- Have an escalation process: what happens when someone is not getting his/her key tasks done



**Gate Check**

# 8D Steps: Summary



## D7 Prevent recurrence

Even after the corrective action plan has been implemented, the team must monitor and adjust the countermeasures:  
**Plan-Do-CHECK-ACT (PDCA!)**

- Adjust solution as needed
- Watch for this solution causing other problems
- Do any final work to build it permanently into the system (SOP)



# 8D Steps: Summary



## D8 Congratulate the team

This is the opportunity to re-enforce the value of the team's effort and thank them for helping out. It is also a time to learn how to do D8 better next time.

- Team leader: acknowledge your team; what worked well and how each person added value
- Conduct a lessons learned:
  - ◆ How can we do 8D even better next time?
  - ◆ What did we learn about prevention that we can apply in our every day work?
- Upper management: acknowledge the team!

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**Check & CA Close-out**

# Summary:



- ◆ CARs often times do only **CONTAINMENT** work
- ◆ 8D is a discipline: use it for the more critical CARs
- ◆ It requires a team of SMEs to do it right
- ◆ Other CQI & CA tools apply!