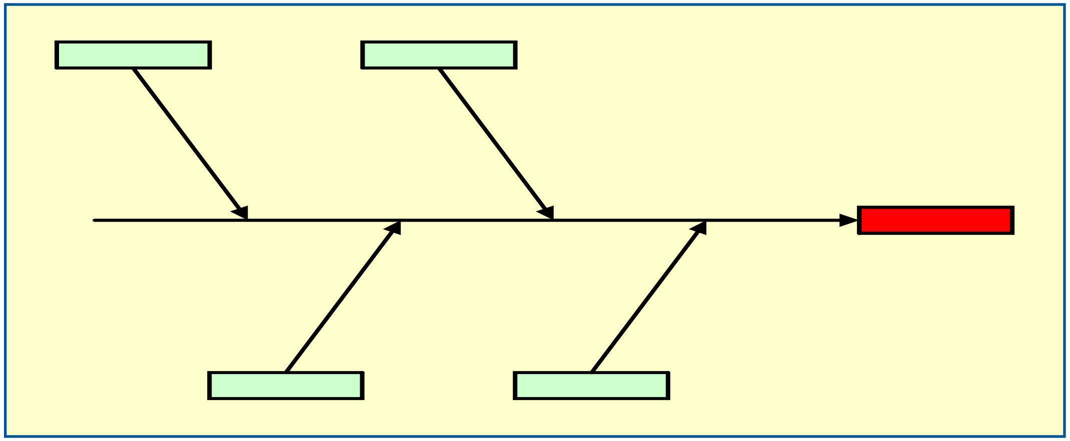
# Cause and Effect Diagram

## SixSigmaTV.Net

# Cause and Effect (C&E) Diagram

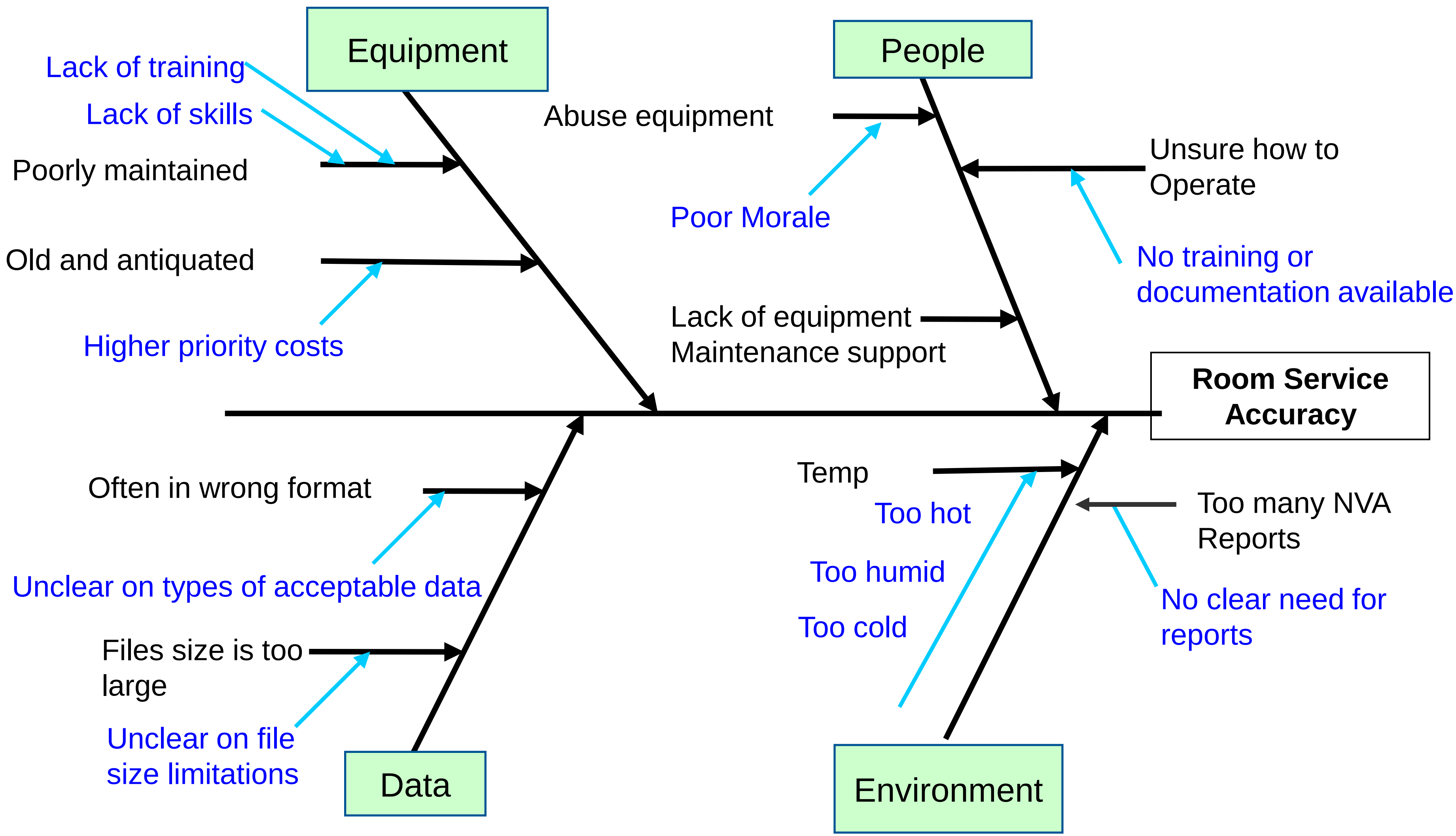
- A visual tool used to logically organize possible causes for a specific effect or problem by graphically displaying them in increasing detail.
- Helps to identify possible root causes and ensures common understanding of the causes.
- Causes are arranged according to their level of importance or detail, resulting in a depiction of relationships and hierarchy of events.



# Why Use a C&E Diagram?

- To study the potential causes of an observed effect.
- To help identify areas where there may be problems, and compare the relative importance of different causes.
- To help a project team systematically think of many possibilities, rather than focusing on a few typical areas.
- To understand relationships between potential causes.

# C&E Diagram Example



# C&E Diagram Steps

- Write the effect or problem on the right side of the diagram.
- Identify the major cause categories and write them in the boxes to the left.  You may summarize causes under categories such as:
  - Places, Procedures, People, Policies
  - Methods, Machines, Materials, People, Environment
- Continue to ask, "Why is that happening?" until you no longer get useful information.
- Analyze the diagram.
  - Review each of the identified root causes in each major cause category. Circle the most likely root causes on the diagram.
- For items identified as the most likely root causes, the team should reach consensus on prioritizing those items, with the first item being the most probable.

# C&E Diagram Tips



- Be sure everyone agrees on the effect or problem statement before beginning.
- Be succinct.
- Pursue each line of causality back to its root cause.  Some may take more steps than others.
- Root causes that occur more than once should be addressed.

# C&E Diagram Practice

In a small group, create a Cause & Effect Diagram.

- Select an effect identified in the analysis of one of the groups' project data.
- Decide which major cause categories will be used.
- Brainstorm potential root causes for each major cause category.
- Identify most probable root causes for the effect.