



QI Essentials Toolkit:

Cause and Effect Diagram

A common challenge for improvement teams is determining what changes they can test to improve a process. A cause and effect diagram is an organizational tool that helps teams explore and display the many causes contributing to a certain effect or outcome. It graphically displays the relationship of the causes to the effect and to each other, helping teams identify areas for improvement.

The cause and effect diagram is also known as an Ishikawa diagram, for its creator, or a fishbone diagram, for its resemblance to the bones of a fish. Teams list and group causes under the categories of Materials, Methods, Equipment, Environment, and People.

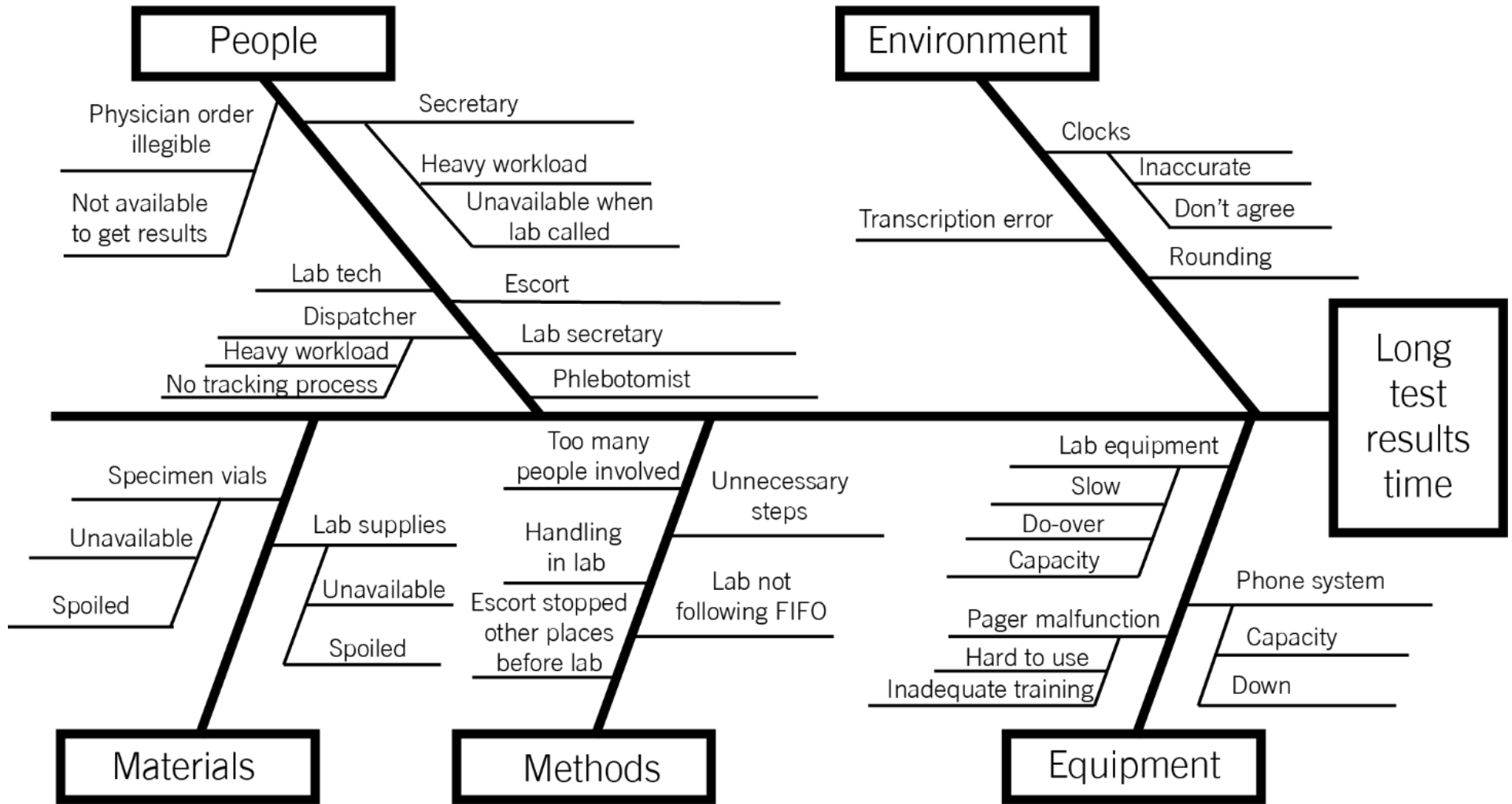
IHI's QI Essentials Toolkit includes the tools and templates you need to launch and manage a successful improvement project. Each of the nine tools in the toolkit includes a short description, instructions, an example, and a blank template. NOTE: Before filling out the template, first save the file on your computer. Then open and use that version of the tool. Otherwise, your changes will not be saved.

- **Cause and Effect Diagram**
- Driver Diagram
- Failure Modes and Effects Analysis (FMEA)
- Flowchart
- Histogram
- Pareto Chart
- PDSA Worksheet
- Project Planning Form
- Run Chart & Control Chart
- Scatter Diagram

Instructions

- 1) Write the effect you wish to influence in a box on the right-hand side of the page.
- 2) Draw a horizontal line across the page to the left, starting at the box you just drew.
- 3) Decide on five or six categories of causes for the effect. The standard categories in a classic cause and effect diagram are Materials, Methods, Equipment, Environment, and People.
- 4) Draw diagonal lines above and below the horizontal line to create “fishbones,” and label each line at the end with one of the categories you have chosen. Draw a box around each label.
- 5) For each category, generate a list of the causes that contribute to the effect. List the causes by drawing “branch bones.” As necessary, draw additional branch bones from the causes to show sub-causes.
 - Tip: Develop the causes by asking “Why?” until you have reached a useful level of detail — that is, when the cause is specific enough to be able to test a change and measure its effects.

Example: Cause and Effect Diagram



Before filling out this template, first save the file on your computer. Then open and use that version of the tool. Otherwise, your changes will not be saved.

Template: Cause and Effect Diagram

Team: _____ Project: _____

- 1) Input the effect you'd like to influence.
- 2) Input categories of causes for the effect (or keep the classic five).
- 3) Input causes within each category.

