# 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 typically 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 10 tools in the toolkit includes a short

description, instructions, an example, and a blank template.

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**Cause and Effect Diagram**

Driver Diagram Failure Modes and Effects Analysis (FMEA)

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Flowchart Histogram Pareto Diagram

PDSA Worksheet

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Project Planning Form

Run Chart & Control Chart

Scatter Diagram

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## 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



**QI Essentials Toolkit**: Cause and Effect Diagram

## Template: Cause and Effect Diagram

### People Environment

Input causes here.

Input causes here.

Materials Methods Equipment

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Look at:

Access to Care: Needs and preferences, supply and demand, 3rd next available appointment, A

Patient experience: quantitative: access, communication, coordination, whole person care (self-management, comprehensive); qualitative

Obtains feedback from vulnerable population

Quality improvement: Sets goal and aims to improve

Clinical quality: immunization MMR

Patient experience

Care Coordination

Monitoring access

 Meeting needs of vulnerable population: Do we want to look at where patients live that need outreach and intervention in case there are alternative visit sites that might work; i.e. schools, churches?