

# Quality Improvement

## Cause and Effect (Fishbone)

Cause and effect analysis helps you think through causes of a problem thoroughly, including its possible root causes. **It is only by identifying the main causes that you can permanently remove the problem or reduce the delay.**

A cause and effect diagram is a tool that helps you do this. The 'Effect' is the problem you are working on, for example 'waiting times'. The tool can help you identify major causes and indicate the most fruitful areas for further investigation. It will help you understand the problem more clearly.

By going through the process of building the diagram with colleagues, everyone gains insights into the problem, alongside possible solutions. The people involved benefit from shared contributions, leading to a common understanding of the problem.



The cause and effect diagram is sometimes called a fishbone diagram (because the diagram looks like the skeleton of a fish) or the Ishikawa diagram (after its inventor, Professor Kaoru Ishikawa of Tokyo University).

### When does it work best?

The tool quickly helps you to fully **understand an issue and to identify all the possible causes**—not just the obvious. If you know the cause of the delay, you are then better placed to implement the solution.

### What does it do?

The tool enables a team to **focus on the content of the problem** rather than its history or the differing interests of team members.

- Creates a snapshot of the collective knowledge and consensus of a team around a problem.
- Focuses the team on the root cause of the problem—not its symptoms

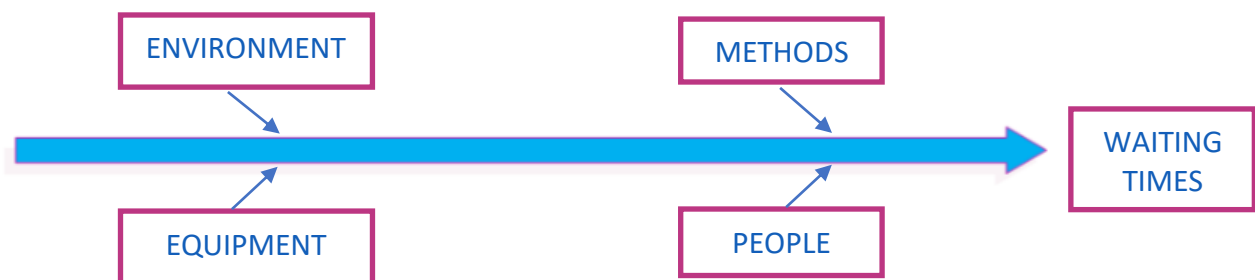


## How to use it

First identify the problem. Write it in a box and draw an arrow pointing towards it. Think about the exact problem in detail. Where appropriate, identify who is involved, what the problem is, and when and where it occurs.



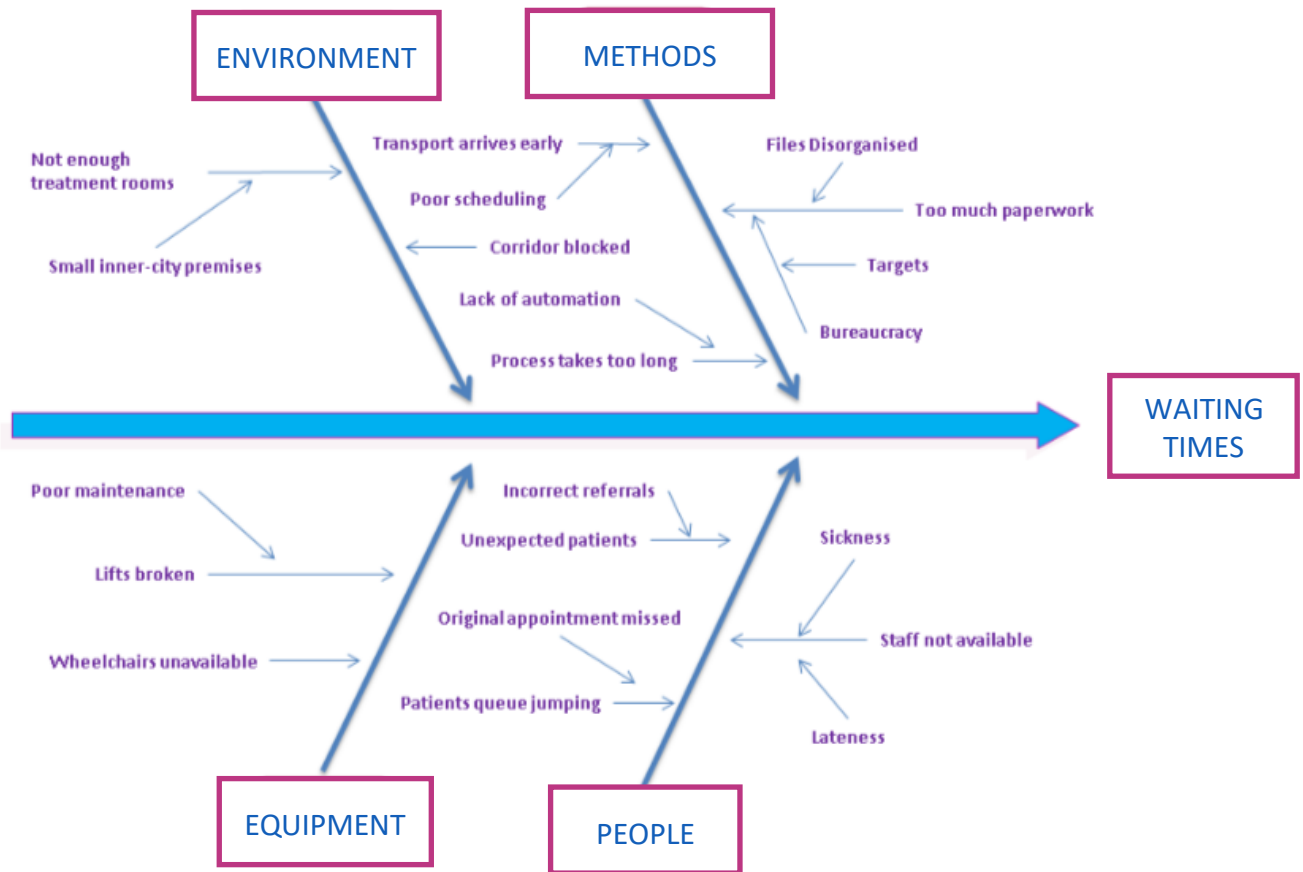
Next, identify the major drivers



## To complete the diagram

Take each of the main categories and brainstorm possible causes of the problem. Then, explore one to identify more specific 'causes of causes'. Continue branching off until every possible cause has been identified. Where a cause is complex, you might break it down into sub-causes. Show these as lines coming off each cause line.

Analyse your diagram. By this stage you should have a diagram showing all the possible causes of your delay/problem. Depending on the complexity and importance of the problem, you can now investigate the most likely causes further. This may involve setting up interviews with patients and staff, undertaking process mapping etc.



### Tips

- Make sure that your team agree on the problem statement. Include as much information as possible in the 'what', 'where', 'when' and 'how much' of the problem. Use data to specify the problem if possible.
- Aim to construct the diagram with the people involved in the problem
- You can use the cause and effect diagram as a working document that is updated as and when you collect more data, or to trial various solutions
- Use a paper surface so that you can transport the final diagram
- Ideally, causes should appear in only one category. To find out more, go to <http://fishbonediagram.org/>