

# Root Cause Analysis Methods

| Tool                                | Description  | Application   | • Limitations  |
|-------------------------------------|--|---|--|
| 5 Whys                              | A simple, quick method for an individual or team to get from symptoms to the root cause of a problem by repeatedly asking <i>why?</i> (logic chain)  | <ul style="list-style-type: none"> <li>• Best for simple, clear problems</li> <li>• Use in conjunction with a cause-and-effect diagram to define secondary bones</li> </ul> | <ul style="list-style-type: none"> <li>• May limit thinking if you only investigate obvious potential root causes</li> <li>• May be perceived as confrontational</li> </ul>        |
| Cause-and-Effect Diagram (Fishbone) | A visual tool displaying possible root causes of a problem. The diagram is developed by a team brainstorming potential root causes for defined cause categories (e.g., people, equipment, process, environment, materials, tools). | <ul style="list-style-type: none"> <li>• Good for modest to complex problems</li> </ul>   | <ul style="list-style-type: none"> <li>• Defined cause categories may constrain team thinking regarding potential root causes</li> <li>• Requires a trained facilitator</li> </ul> |
| Affinity/Relations Method           | A team-based approach for sorting potential root causes into categories (themes), and defining relationships between categories to identify key drivers.   | <ul style="list-style-type: none"> <li>• Allows unconstrained team brainstorming</li> <li>• Best for modest to complex problems</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Requires a trained facilitator</li> <li>• Takes time</li> <li>• Can be messy</li> </ul>   |

MN Office of Continuous Improvement - 2014