

Quality Control Tools

Tool	Description
Cause and Effect	Basic to quality improvement is the need to identify the root causes of a problem. The cause-effect diagram is an effective way to organize and display the various theories about what those root causes might be.
Control Chart	A statistical control chart is a graphic comparison of process performance data to computed “statistical control limits,” drawn as limit lines on the chart. The process performance data usually consist of groups of measurements that come from the regular sequence of production while preserving the order of data.
Flow Chart	A flow diagram is a graphic representation of the sequence of steps that we perform to produce some output. The output may be a physical product, a service, information, or a combination of the three.
Gantt Chart	Gantt Chart is a schedule monitoring tool that uses horizontal bars to show which tasks can be done simultaneously over the life of the project.
Histogram	A histogram is a graphic summary of variation in a set of data. The pictorial nature of the histogram enables us to see patterns that are difficult to see in a simple table of numbers.
Pareto Chart	Pareto analysis is a ranked comparison of factors related to a quality problem. It helps a quality improvement project team to identify and focus on the vital few factors.
Radar Chart	Radar chart visually show in one graphic the size of the gaps among a number of both current organization performance areas and ideal performance areas.
Run Chart	Run chart allows teams to study observed data for trends or patterns over a specified period of time.
Scatter Diagram	A scatter diagram is a graphic presentation of the relationship between two variables. In quality improvement, scatter diagrams are usually used to explore cause-effect relationships in the diagnostic journey.

Management and Planning Tools

Tool	Description
Activity Network Diagram	Activity Network Diagram is used to plan the most appropriate schedule for the completion of any complex task and all of its related sub-tasks. It projects likely completion time and monitors all sub-tasks for adherence to the necessary schedule.
Affinity Diagram	Affinity Diagram gathers large amounts of language data, organizes it into groupings based on the natural relationship between each item, and defines groups of items.
Interrelationship Digraph	Interrelationship Digraph takes a central idea, issue, or problem, and maps out the logical or sequential links among related items. It is a creative process that shows every idea can be logically linked with more than one other idea at a time.
Matrix Diagram	Matrix Diagram organizes large number of pieces of information such as characteristics, functions, and tasks into sets of items to be compared. It graphically shows the logical connecting point between any two or more items. It can also surface which items in each set are related.
Nominal Group Technique	Nominal Group Technique allows a team to quickly come to a consensus on the relative importance of issues, problems, or solutions by completing individual importance rankings into a team's final priorities.
Prioritization Matrices	Prioritization Matrices prioritizes tasks, issues, product/service characteristics based on known weighted criteria using a combination of tree and matrix diagram techniques.
Process Decision Program Chart	The Process Decision Program Chart is a method that maps out conceivable events and contingencies that can occur in any implementation plan. It in turn identifies feasible countermeasures in response to these problems.
Tree Diagram	Tree Diagram systematically maps out in increasing detail the full range of paths and tasks that need to be accomplished in order to achieve a primary goal and every related sub-goal.

Creativity Tools

Tool	Description
Brainwriting 6-3-5	Brainwriting 6-3-5 provides teams with a method for generating and sharing ideas in writing, which differs from brainstorming where ideas are shared verbally.
Classic Brainstorming	This tool allows team members to pool their knowledge and creativity in an open, non-critical environment. Brainstorming discourages same-old-way thinking by creating more and more ideas that team members can build upon.
Imaginary Brainstorming	Imaginary Brainstorming is a tool that provides a team with an opportunity to step out of the real problem, generate ideas for a radically different yet related imaginary problem, and apply the new ideas that are generated to the real problem.
Knowledge Mapping	Knowledge mapping is used to graphically breakdown a broad goal or problem into increasing levels of detail to better understand the existing knowledge about it.
Morphological Box	Morphological Box helps teams to identify all practical solutions to a problem. Morphological Box presents an exhaustive picture of all the potential solutions to every essential part of the problem.
Picture Associations and Biotechniques	Picture Associations and Biotechniques moves teams that are trapped in traditional thinking by using pictures and examples from nature as a way to stimulate fresh perspectives and new solutions.
Problem Reformulation	Problem Reformulation is a method of looking at a system in which a problem exists and for picking an approach that promises the greatest effect with the smallest effort.
Purpose Hierarchy	Purpose Hierarchy identifies the full range of possible purposes of an improvement effort in order to choose the one that best fits the needs of customer and the resources of the project team.
TILMAG	Through its structured and systematic approach, TILMAG helps a team to define ideal solutions for the problem at hand, create and explore associations based on paired combinations of ideal solution elements.
Word Association and Analogies	Word-Picture Associations and Analogies expand idea generation through the use of random and seemingly unrelated pictures, words, and biotechnical information to stimulate thinking about new dimensions and solutions for the team's problem.