

# Swim Lane Diagram

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Swim Lane Diagrams are a type of process map or flowchart, popularized by Rummler and Brache in 1990. Process maps and flowcharts are visual models used to understand processes and identify improvement opportunities like inefficiencies, delays, waste and process breakdowns. The overall process is displayed visually in a series of horizontal or vertical “lanes.” Each lane delineates an individual or group of individuals involved in the process. The Swim Lane Diagram is particularly helpful for complex interdisciplinary processes, where different individuals, departments, teams, or organizations are responsible for the various steps to complete a process. The diagram can display time, people/job functions, and tasks/processes. When an improvement opportunity is identified, a new swim lane diagram can be created to display the desired future state.<sup>1</sup> Generating a Swim Lane Diagram can serve as the “Plan” phase in Plan-Do-Study-Act cycles or be incorporated into a broader A3 approach to problem solving.<sup>2</sup>

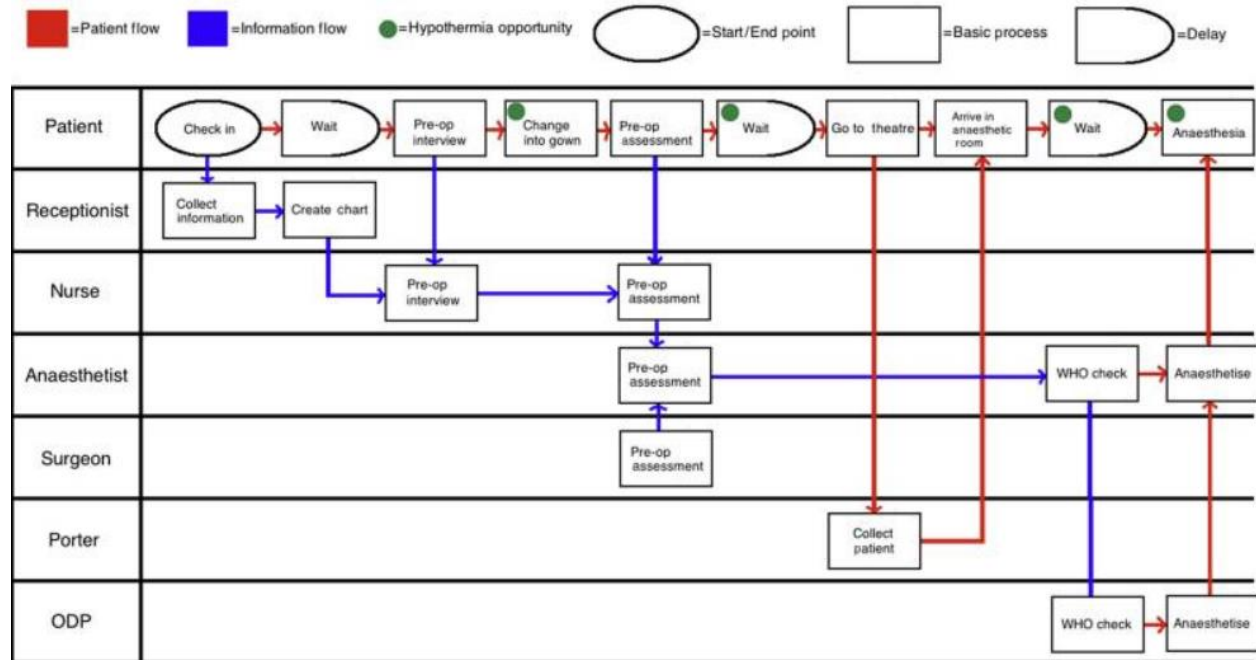
Development of the diagram usually requires a group, which should include representatives from all “lanes”. Rarely will one person understand the entire process correctly. For in-person groups, the lanes can be “drawn” onto an open wall where colored sticky notes can be posted. For virtual meetings, a variety of mapping tools can be utilized in real-time by sharing the screen.

To develop a Swim Lane Diagram<sup>2</sup>:

- Walk the process: perform a Gemba walk. Record the current process steps and flow, including the flow of information.
- Characterize the process: How long does each step take? Notice workarounds, duplication and delays. Notice what’s missing (information, equipment, etc.).
- Map the current state with standard symbols:
  - Circles = start/end points
  - Arrows display the direction of flow, typically from left to right or up to down
  - Squares/rectangles = action steps
  - Diamonds = decision points
  - Capitol D = Delay
- Map the desired future state: Generally, maximize efficiency and value provided by minimizing handoffs, waiting, and duplications. Ask whether it is possible to combine and/or eliminate some of the current steps.

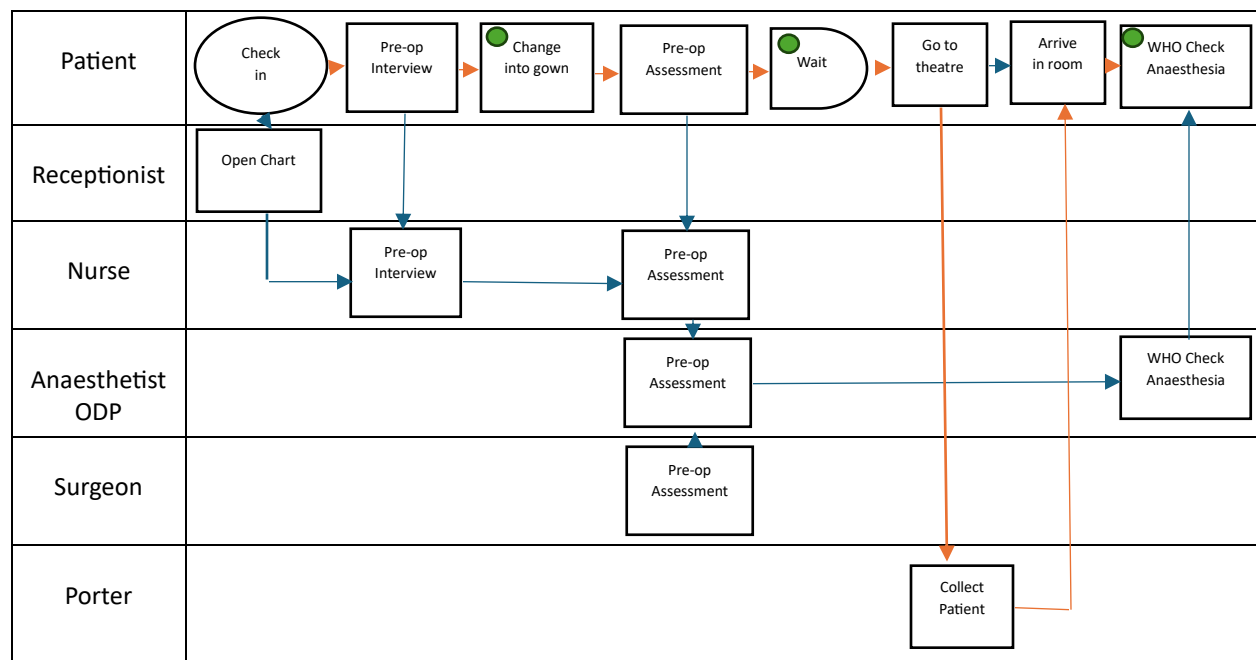
Example:

Current State<sup>2</sup>



ODP = Operating Department Practitioner, United Kingdom

Future state: Hypothesized by this author, eliminates two areas of delay. The patient chart is now made ahead of arrival and the anaesthetist and ODP work together, reducing duplicate work and the risk for hypothermia. The “Time” lane was added to aid in identifying future opportunities.



Time (min)	5	15	5	45	10+	10	5
	15						

**References:**

1. Minnesota Department of Health  
<http://www.health.state.mn.us/communities/practice/resources/phqitoolbox/swimlanemap.html>.  
Accessed 10.31.2024.
2. Weekes L, Lawson T, Hill M. How to start a quality improvement project. BJA Educ. 2018 Apr;18(4):122-127. doi: 10.1016/j.bjae.2018.01.004. Epub 2018 Mar 3. PMID: 33456821; PMCID: PMC7808003.

**Additional Resource:**

Institute for Healthcare Improvement. Flowchart. Embedded video “Whiteboard: Flowchart 2.”  
<https://www.ihl.org/resources/tools/flowchart>. Accessed 10.31.24.