

Improvement Cymru Academy Toolkit Guide



Swimlane Diagrams

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Introduction

Swimlane diagrams are a type of process map that displays roles and responsibilities of different stakeholders within a process. It is a visualisation of who does what within a process. It uses the metaphor of lanes within a swimming pool with each lane representing a particular job role, work group, or department. A Swimlane diagram can be displayed using horizontal or vertical lines. It displays connections and communications between different lanes and can highlight waste and inefficiencies within processes. Swimlane diagrams are sometimes referred to as cross-function diagrams, deployment charts or Rummler-Branche diagrams.

Background

Early variations of multicolumn flowcharts started appearing in the 1940s, however it wasn't until 1990 when Geary Rummler and Alan Brache in a book called 'Improving Processes' where they highlighted Swimlane diagrams and the benefits of using them to make improvements. Swimlane diagrams are widely used in process improvement, business process modelling and in software engineering.

Rationale

Swimlane diagrams are useful for mapping out processes that involve multiple stakeholders. This will help you to identify bottlenecks, waste, and other inefficiencies. This sometimes reveals duplicative or unnecessary steps in a process. There are many benefits to using Swimlane diagrams:

1. **Provides clarity** on the roles and responsibilities of stakeholders.
2. **Shows accountability** for each step in the process.
3. **Identifies the communication and handover points** between different stakeholders.
4. **Facilitates collaboration** between stakeholders by having a shared understanding and visual representation of the process.
5. **Identifies waste** within processes.
6. **Helps to troubleshoot and it may help you identify the root cause** of challenges within processes. However, to identify the root cause you may need to use other problem solving techniques such as fishbone analysis, 5

whys, pareto charts etc... (For more information see our [toolkits guide in the Resource Library on out Improvement Cymru Academy Webpage here](#)).

When to use

Swimlane diagrams are useful for mapping out and improving complex processes involving multiple stakeholders e.g. jobs roles, work groups or departments. You could use a Swimlane diagram to visualise the patient journey (as an outpatient or inpatient) and show the different interactions the patient will have during their time at hospital and the handovers between each job role, work group or department. You could use it to analyse the workflow of diagnostic testing or treatments. For example, you could use it to map out an ultrasound scan showing the different stakeholders involved in the different steps of the process starting from the time the referral is written by the clinician, to the patient being booked in by the admin staff, to the ultrasound technician performing a scan, and then the results being sent.

How to use

There are several steps involved when creating a Swimlane diagram which are shown below, along with an example of the patient journey when attending hospital for a routine blood test.

Step 1

Identify the stakeholders within the process to involve them in the creation of the Swimlane diagram. See our [Process Mapping toolkit guide here](#) for more information on holding a process mapping session. In the example of the patient journey when attending the hospital for a routine blood test the stakeholders identified are the receptionist, the nurse, the phlebotomist, the lab technician, the lab manger, the doctor, and the patient. See our [Involving Others Toolkit Guide here](#) for more information.

Step 2

Identify the lanes on the Swimlane diagram. Each lane represents a job group, work group or department. The lanes can be vertical or horizontal.

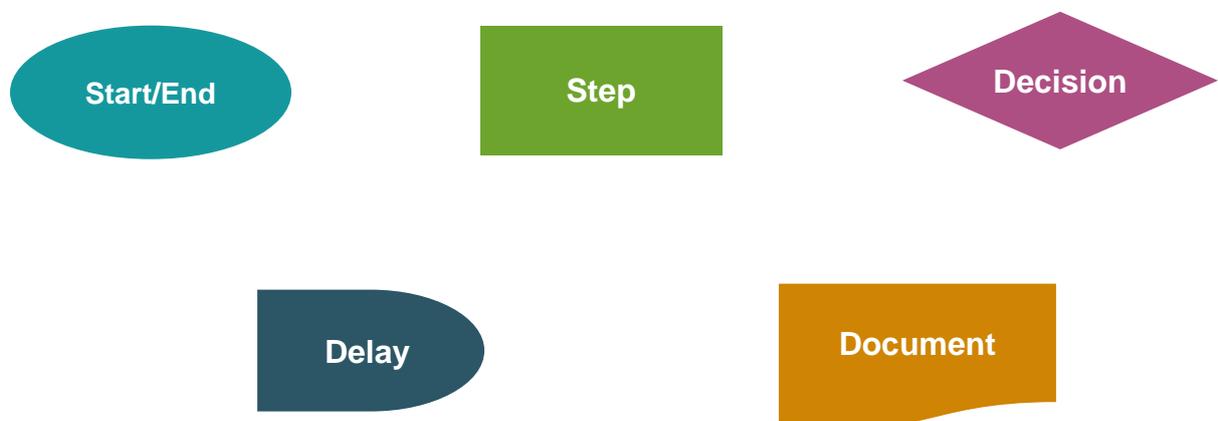
Patient	Receptionist	Nurse	Phlebotomist	Lab Technician	Lab Manager

Diagram 1: Table showing job groups within a Swimlane diagram.

Step 3

Define the start and end points of your process to understand where the process starts and finishes, and then map the steps within the process using the process map symbols as shown in Diagram 2. After you have mapped out the process which shows the responsibilities of different job roles, work groups or departments, it will look something like diagram 3.

Diagram 2: Symbols used in Process Mapping



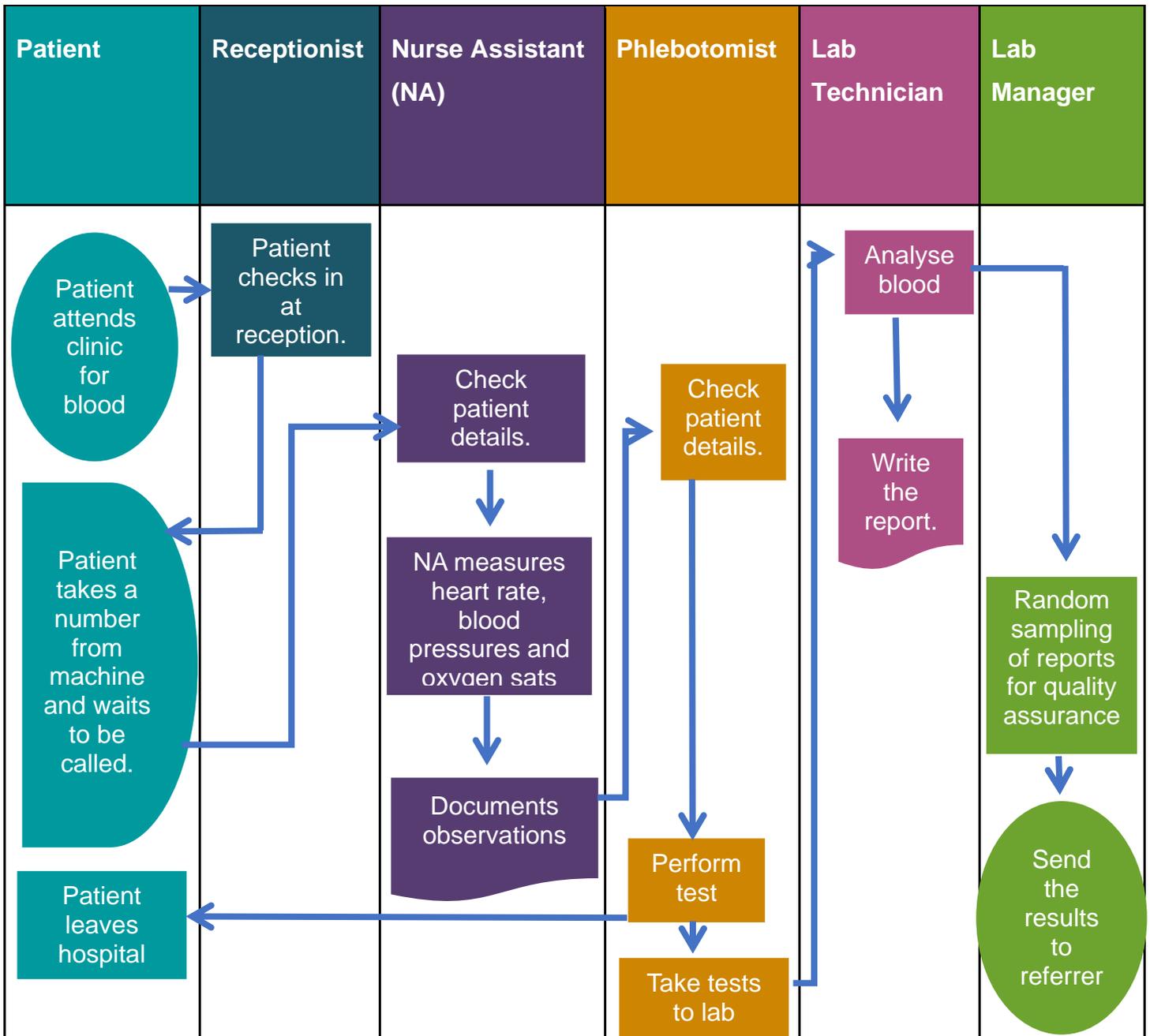


Diagram 3 above shows a high level Swimlane Diagram of the process of a blood test.

You do not need to colour code the steps, but it may help to visualise which steps belong to which lane of the Swimlane Diagram.

Step 4

Circulate the Swimlane diagram around with everyone involved in the process to ensure that everyone agrees with the job group/work group and department responsible of each process step.

What Next?

Once you have mapped the process and identified roles and responsibilities for each step of the process, you should analyse the map to see if you can make any further improvements. You can do this by utilising other toolkit guides such as TIMWOODS to help to identify and eliminate waste in the process. See our [TIMWOODS Toolkit Guide here](#) for more information.

Helpful Tips

Involve all stakeholder to agree and clarify roles so that each job role, work group or department takes responsibility for their involvement in each step they have a role in. When creating a Swimlane diagram it is important to use job roles, work groups or departments within the lanes and not individual names. This is because if a person is not in work, then someone else of the same job role or work group or department can take over performing step.

Additional Resources

If you are interested learning more about improvement please visit our website <https://phw.nhs.wales/services-and-teams/improvement-cymru/improvement-cymru-academy/> or email us at improvementcymruacademy@wales.nhs.uk to find out about the improvement courses we offer.

References

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