

Value Stream Mapping

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Learning Objectives

1. Recognize when to use a value stream map.
2. Identify the key information to include in a value stream map.
3. Apply the value stream map to identify bottlenecks for further evaluation.

Value stream mapping (VSM) is a useful tool that seldom sees use outside of the learning arena. It is one of the fundamental tools of the Lean Six Sigma method and has a very practical application in healthcare. One challenge of its implementation is the blurred lines between VSM and a more popular improvement tool, process mapping. Scoping and kicking off a new quality improvement project could benefit from the use of VSM and can ensure that all aspects of the process centers the patient.

The purpose of Value Stream Mapping is to map out the entire process from start to finish of a macro-level patient encounter. It is a process map viewed from the perspective of the patient and highlights all the individual steps that patient goes through from entering the system to exiting the system. Common examples might include:

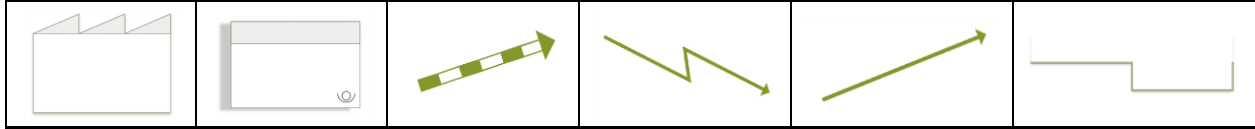
- Outpatient specialty consult clinic visit
- Primary care visit
- Routine diagnostic visits
- Inpatient or outpatient procedures
- Emergency room triage

VSM generally proves its value as a means of mapping out the current state, including process times, of a macro-level process and identifying whether there are opportunities to make improvements by reducing waste. The VSM will allow the team to organize the process, identify problems on the map, and select where a [waste walk](#) (or several) might be a valuable exercise to observe certain steps. The map and waste walks serve as a jumping off point to dive deeper into specific [process mapping](#) of, for example, the registration process or the discharge process. It is reasonable to have additional process maps that detail the steps identified in the VSM.

Mapping Components

The VSM contains several pieces of information in one diagram that represent the *value stream*, keeping the patient's perspective in mind.

Customer/ Patient	Process	Workflow	Electronic Information Flow	Manual Information Flow	Data Boxes
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Putting it all together, the resulting VSM, using the process of admitting a patient to the hospital from the ED, looks like:

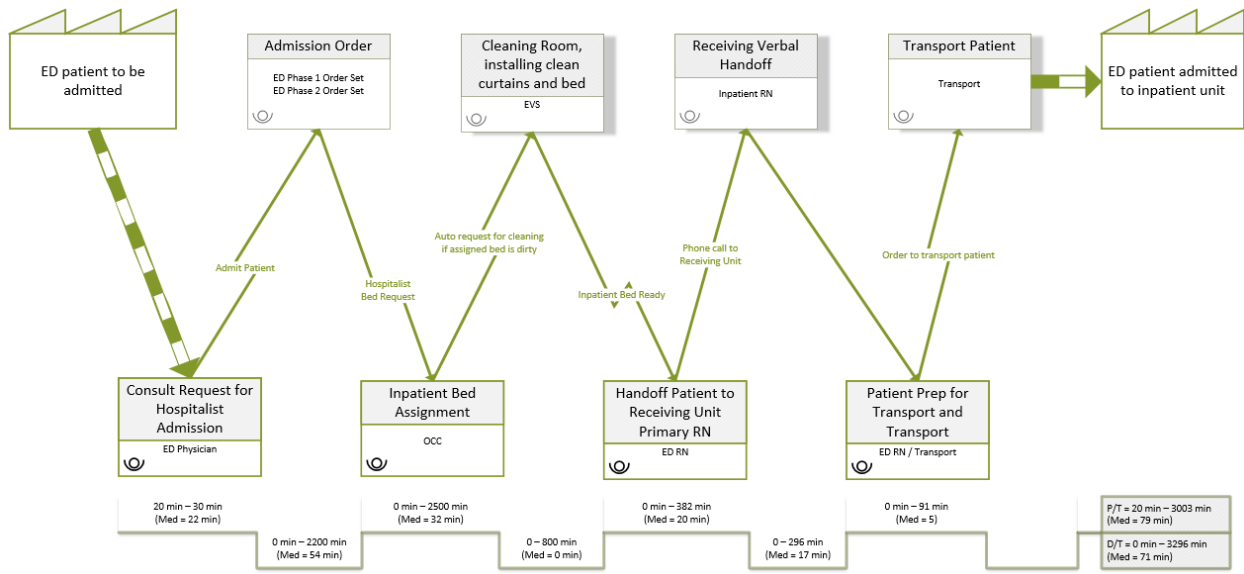
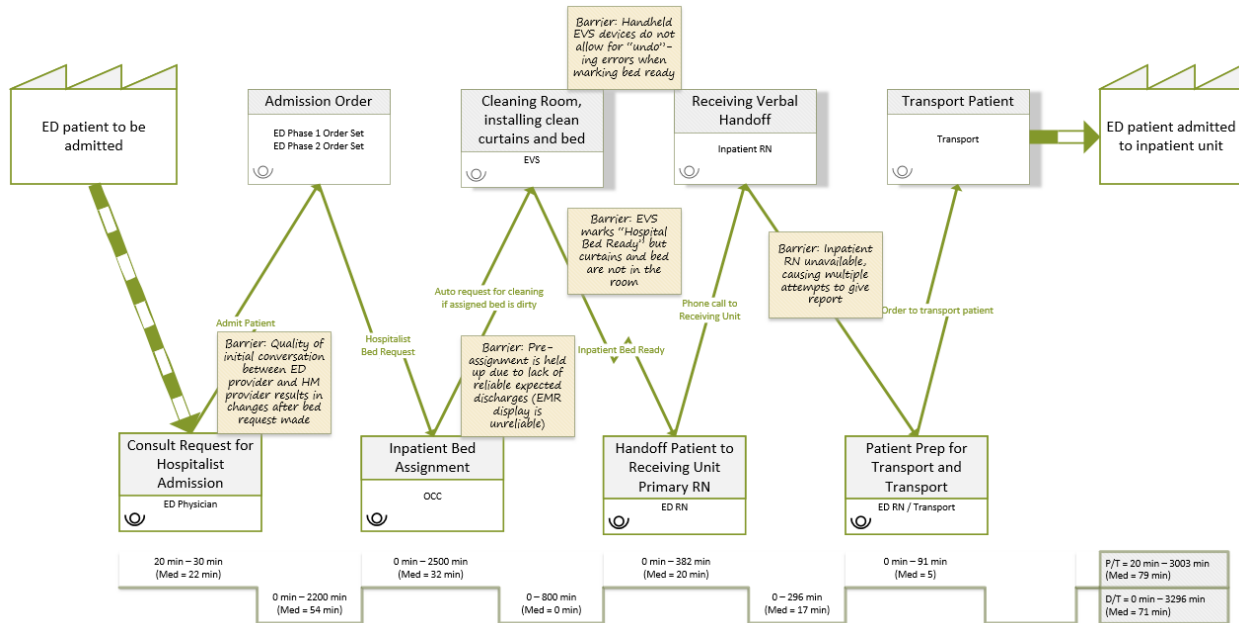


Figure 1: Value stream map of patient admission from the ED to inpatient unit.

Using the VSM to Guide Improvement

Once a VSM is completed, it will be the most useful reference tool throughout the rest of the improvement work. Once process metrics are filled in (through waste walks or reporting if there is capability), work with the improvement team to identify key barriers. Further process mapping to detail the smaller steps within process groups may be necessary. The team should prioritize both reducing the non-value add time (delays/wastes) and reducing process time where there may be extreme variation.



Conclusion

As with any improvement methodology tool, understanding how to use VSM, selecting the appropriate process or part of the process to map with VSM, and understanding the goals are important for effective implementation. It takes practice to adapt the VSM to healthcare processes, but can be extremely useful in lean implementation. There are key differences between the VSM and traditional process mapping – VSM is used to identify and consolidate macro level barriers. A good rule of thumb is if there is a need for outlining the “patient timeline”, likely a VSM will be an invaluable tool to do so.

References

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