LSSH
lean six sigma for healthcare

Process Mapping

U4 – Measure

E1 – Process Mapping & Data Collection

The element ‘Process Mapping & Data Collection’ sets out the different ways of process mapping to visualize the process. This element also covers types of data and the accuracy and integrity of data.

Lifelong Learning Programme

Yellow Belt

Process Mapping

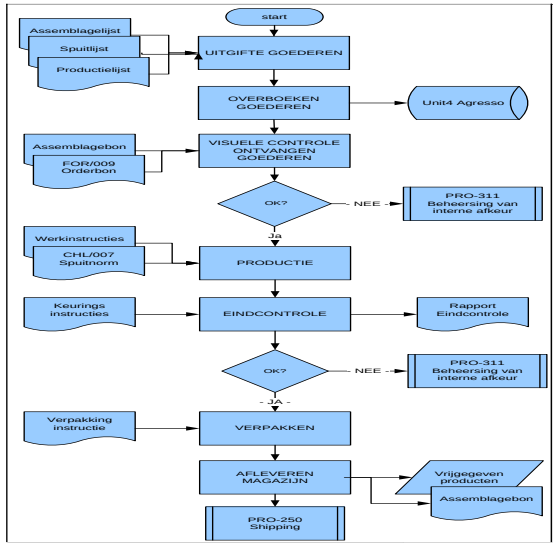
Process-thinking

Process: systematic series of activities required to achieve a goal

To find and reduce waste in your processes the following is important:

- **Know what your processes are**
- **Know how your processes flow through your organisation**

Tool: process mapping



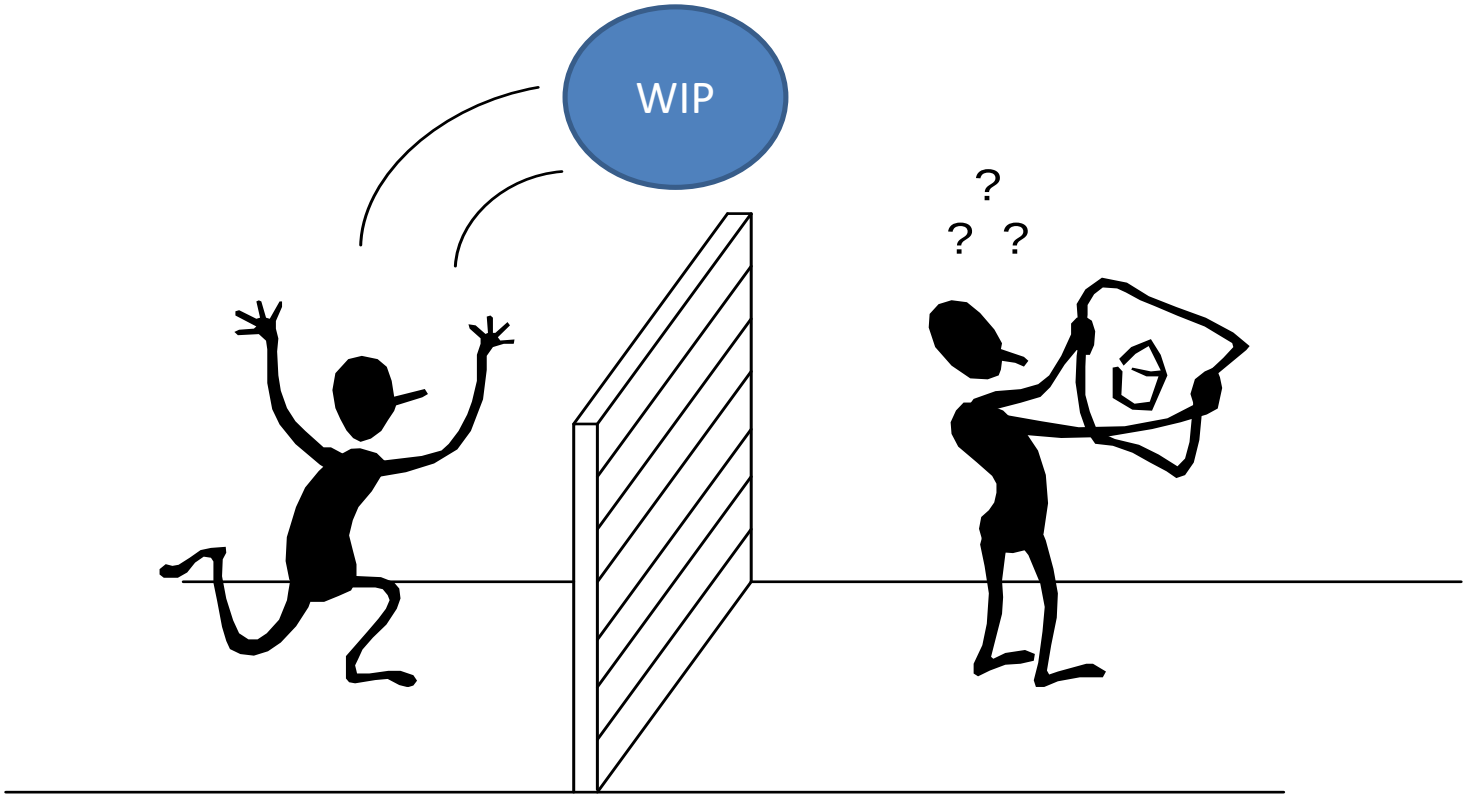
Process Mapping

Why is process-thinking important?

- To understand how all the work is done (and in which order)
- To understand interdependencies
- To get a clear view of what is actually happening in the organisation
- Blame the process, not the people

Disadvantage of thinking in departments

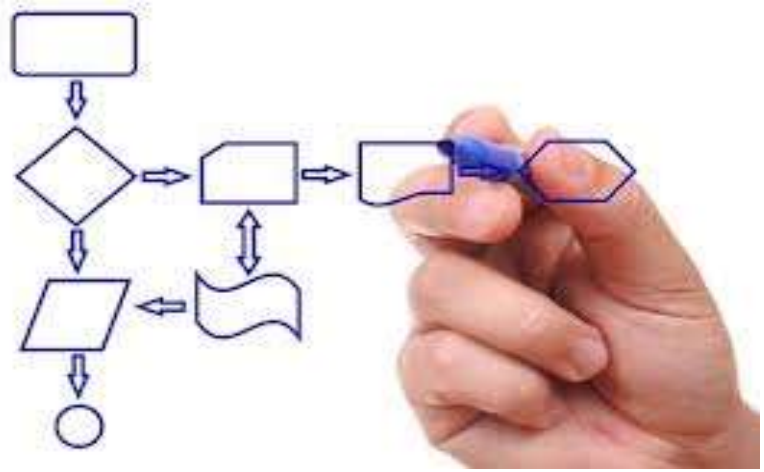
- **Throwing work (work in progress: WIP) over the fence**



Process Mapping

Why should you make a process map?

- To communicate the processes
- To define the scope of a project
- To describe and understand the processes
- To document and standardise the processes (ISO 9000)
- To define responsibilities and competencies
- To analyse the processes / problems
- To identify improvement opportunities



Process Mapping

Process flow or flowchart

- **Schematic representation of the current/ suggested process flow**
- **Overview of activities and decision points**
- **Has a clear beginning (start) and end (stop)**

Process map symbols (examples)

Activity

Should start with a verb

Decision Point

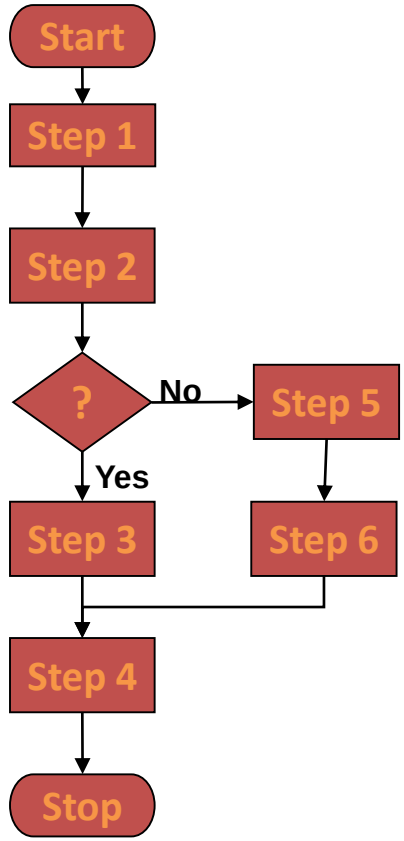
At least two paths emerge from a decision point. Usually: Yes and No

Direction

Shows connection and direction of flow

Start / End

Start or end of a process

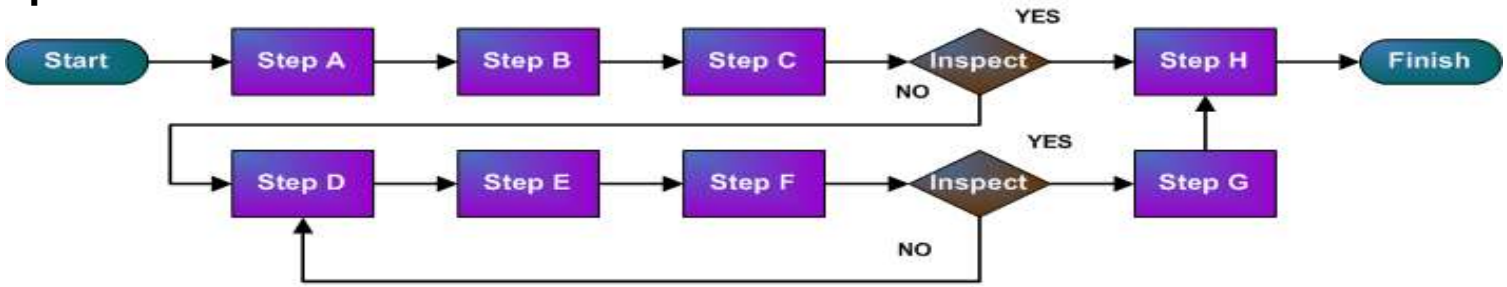


Process Mapping

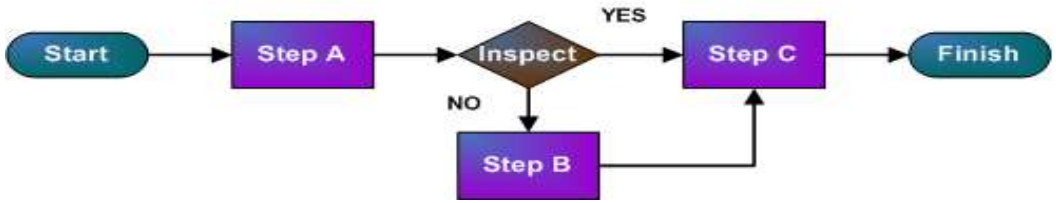
Three interpretations of a process

- **The process as you THINK it is:**

- **The process as it ACTUALLY is:**



- **The process as it SHOULD be:**



Process Mapping

Example creating a flowchart: visiting outpatient clinic

Identify the borders of the process

- Start: patient checks in
- End : patient leaves

Describe the primary purpose and activities

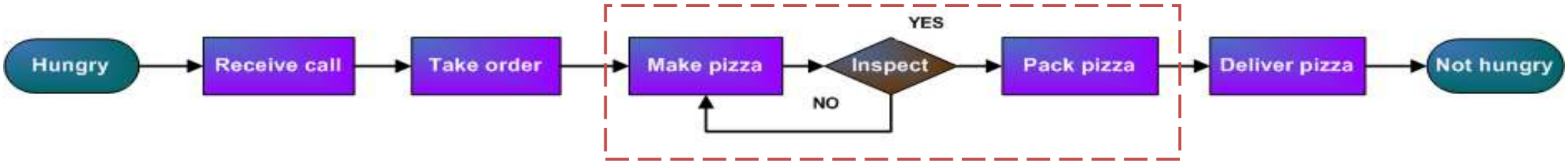
- Operational definition

Process Activities

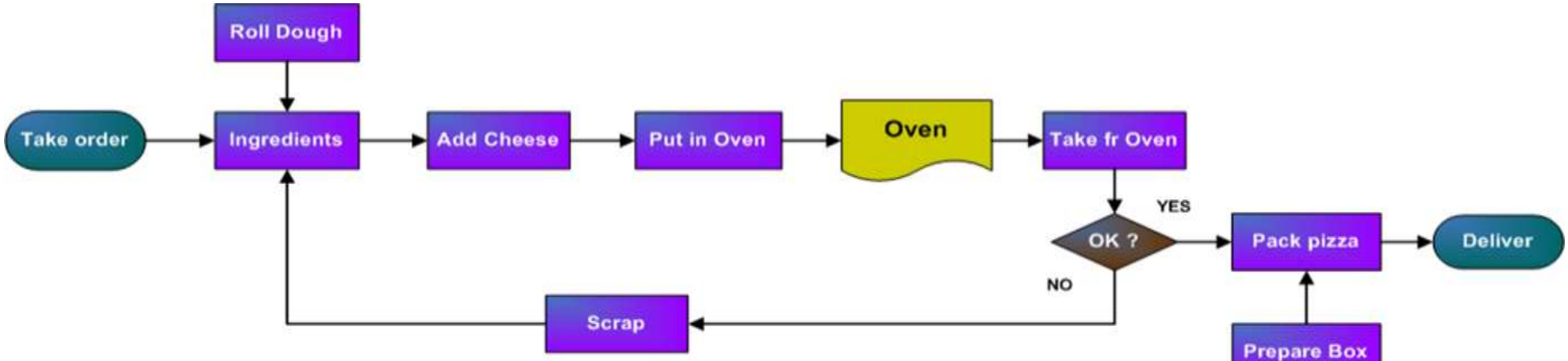
Patient at check in desk → Secretary enters patient into system → Secretary takes chart to nurse → Patient taken to room → Visits taken → Chart to doctor → Doctor reviews chart → Doctor sees patient → Consult with attendant physician → Doctor revisits patient → Patient to check out → Patient leaves clinic

Process Mapping

First, create a global process map of main activities



- When a 'higher level' process map is established, a more detailed map can then be created from the area we want to focus on.
- Select the area that represents the problem & create a detailed process map of this area

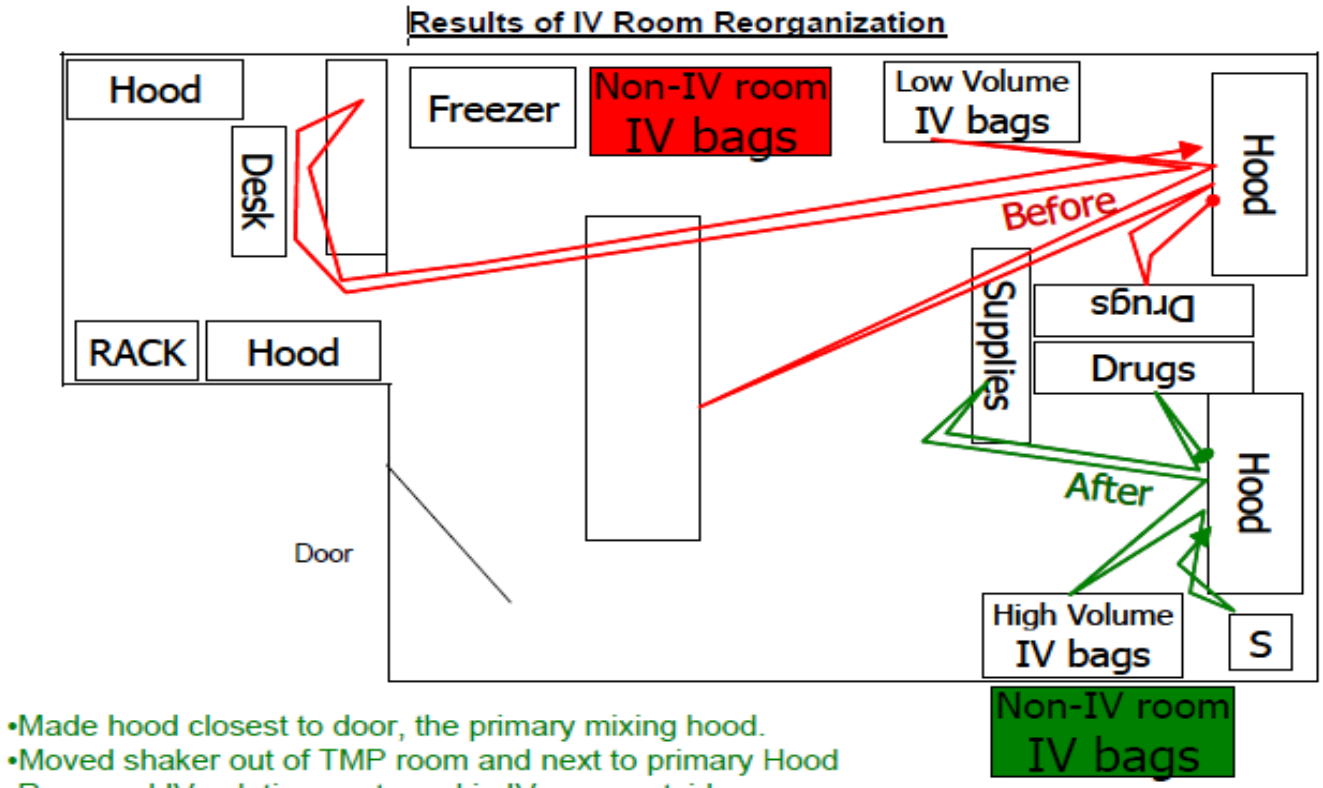


This example is from the perspective of the Pizza Chef

Process Mapping

Spaghetti diagram

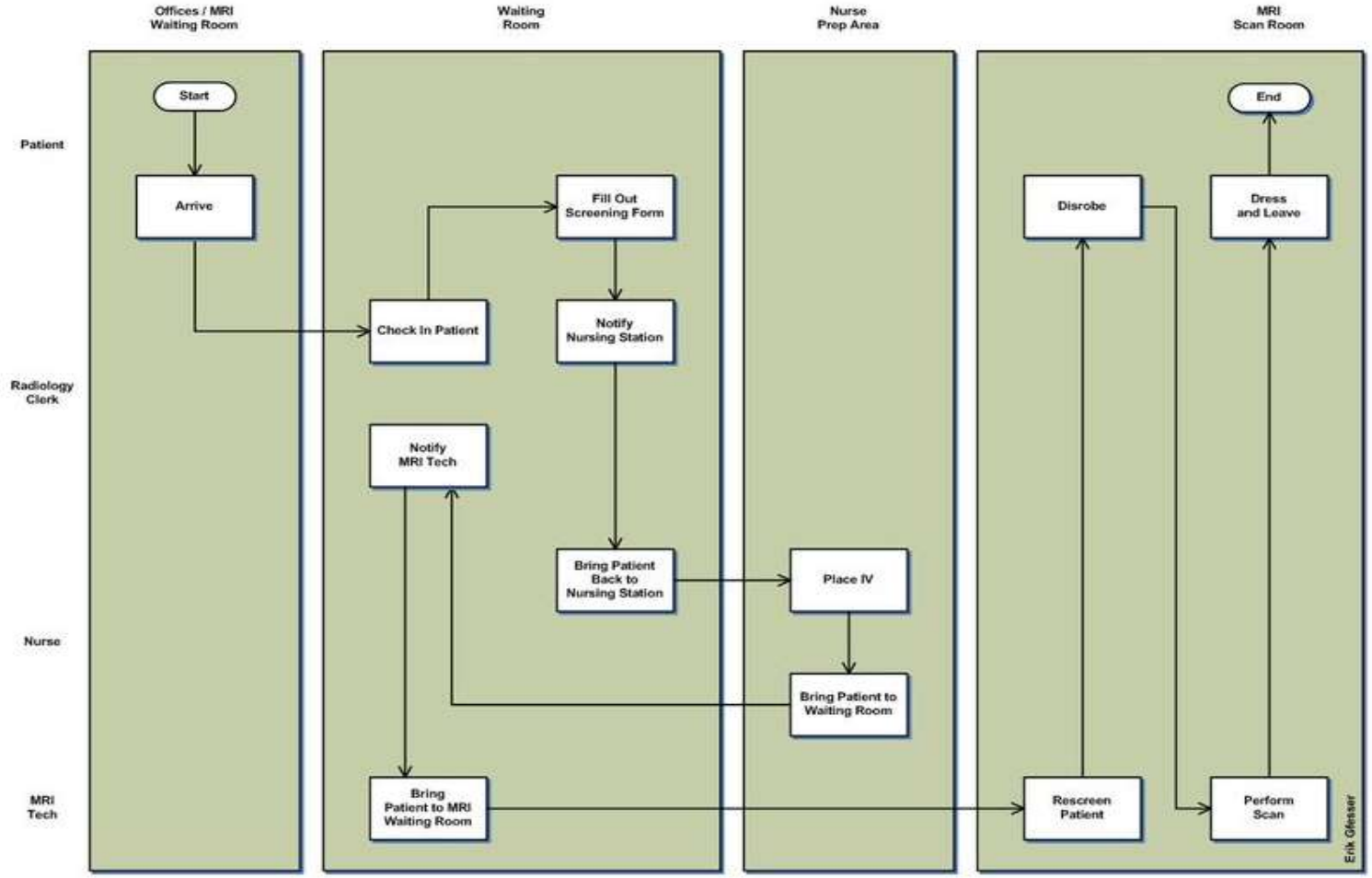
Re-organisation of laboratory based on mapping of motion within the lab:



- Made hood closest to door, the primary mixing hood.
- Moved shaker out of TMP room and next to primary Hood
- Removed IV solutions not used in IV room outside room
- Moved high usage meds, IV's, supplies next to primary hood

Process Mapping

Swimlane – Patient MRI



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VSM – Value Stream Mapping

U5 – Analyse

E3 – Analytical Methods

The element ‘Analytical Methods’ describes the tools that can be used for risk analysis, root cause analysis and waste identification.

Lifelong Learning Programme

Yellow Belt

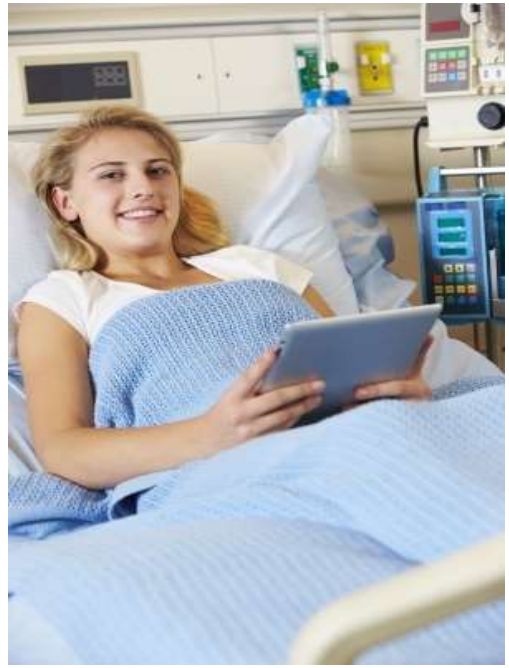
VSM Current State

What is ‘Value’?

- **If we want to use the concept ‘Waste’, we first need to understand ‘Value’**

Value

The activities that customers are willing to pay for



123RF Stock Photo

- **Not all activities in your process contribute to ‘Value’**

VSM Current State

Types of activities

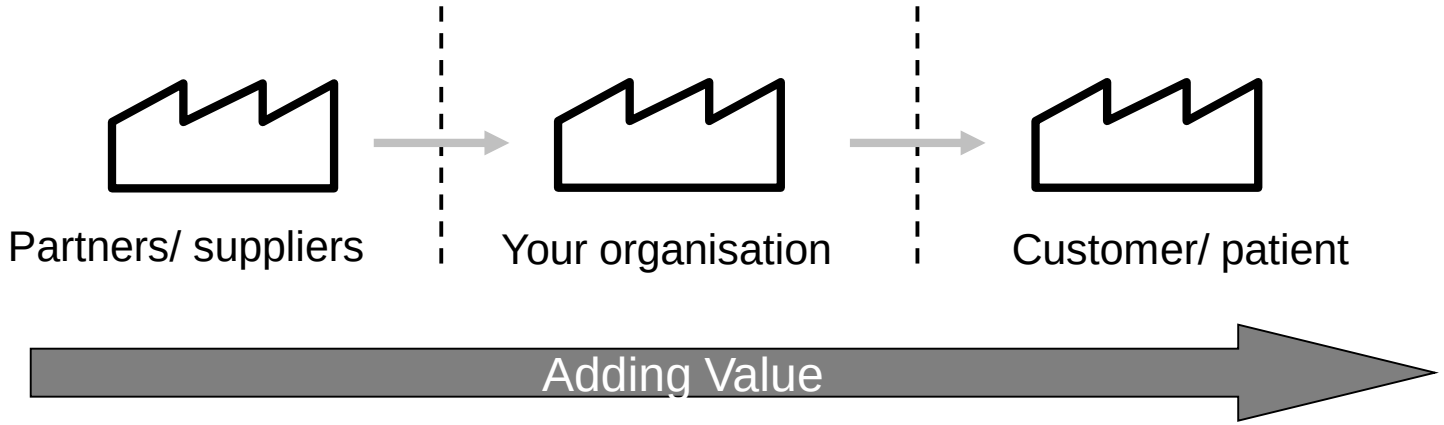
Every activity in your process can be classified as:

1.	Value adding activity	Customer wants to pay for this It must be done right first time The activity must change the product or service
2.	Non-Value adding activity	Customer doesn't want to pay for this
3.	Enabling activity	Necessary for the process

VSM Current State

Value stream mapping is a management tool

- **Many improvement activities simply focus on single processes, rather than accounting for possible connections with other processes**
- **By making a ‘door-to-door’ value stream, you can examine the bigger picture and account for the connections between all processes**



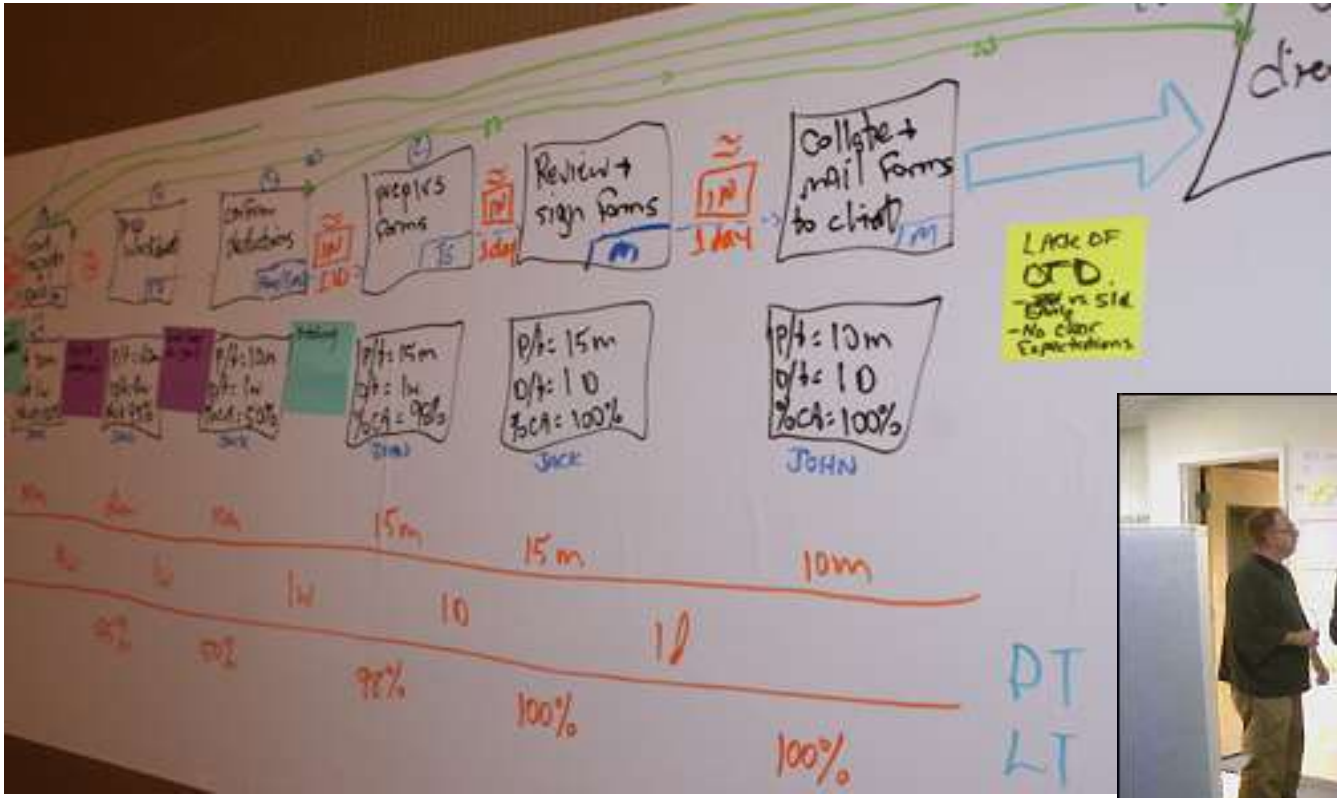
VSM Current State

Construction of a current state map

- **Start with a walk along the whole ‘door-to-door’ value stream**
- **Begin at the end of the value stream and move up the stream**
- **Use a stopwatch: don’t look at standard times, determine the actual times**
- **Bring the entire value stream map together: draw the value stream map**
- **Collect current state information by following existing roads of information and documents flows**

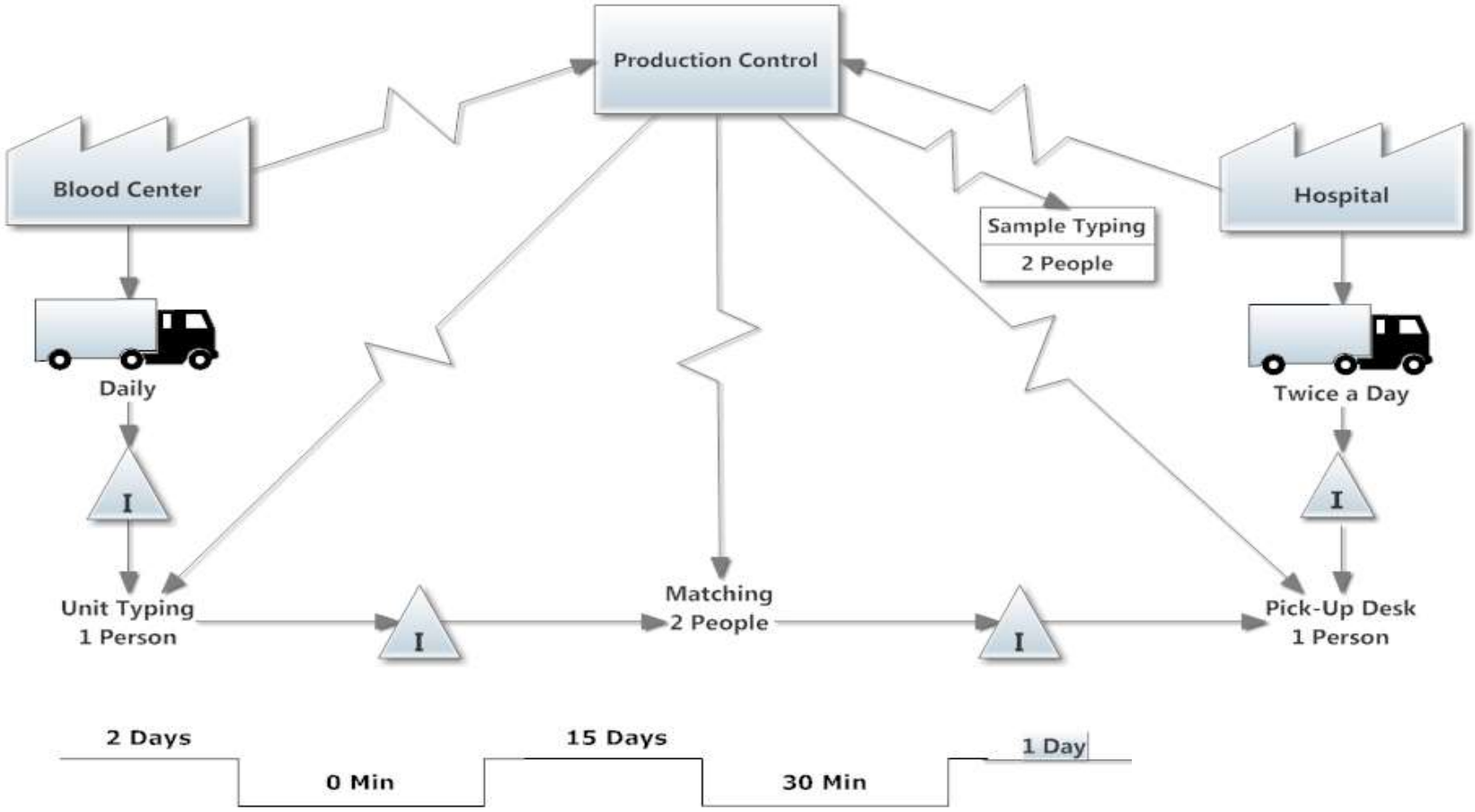
VSM Current State

Construction of a current state map



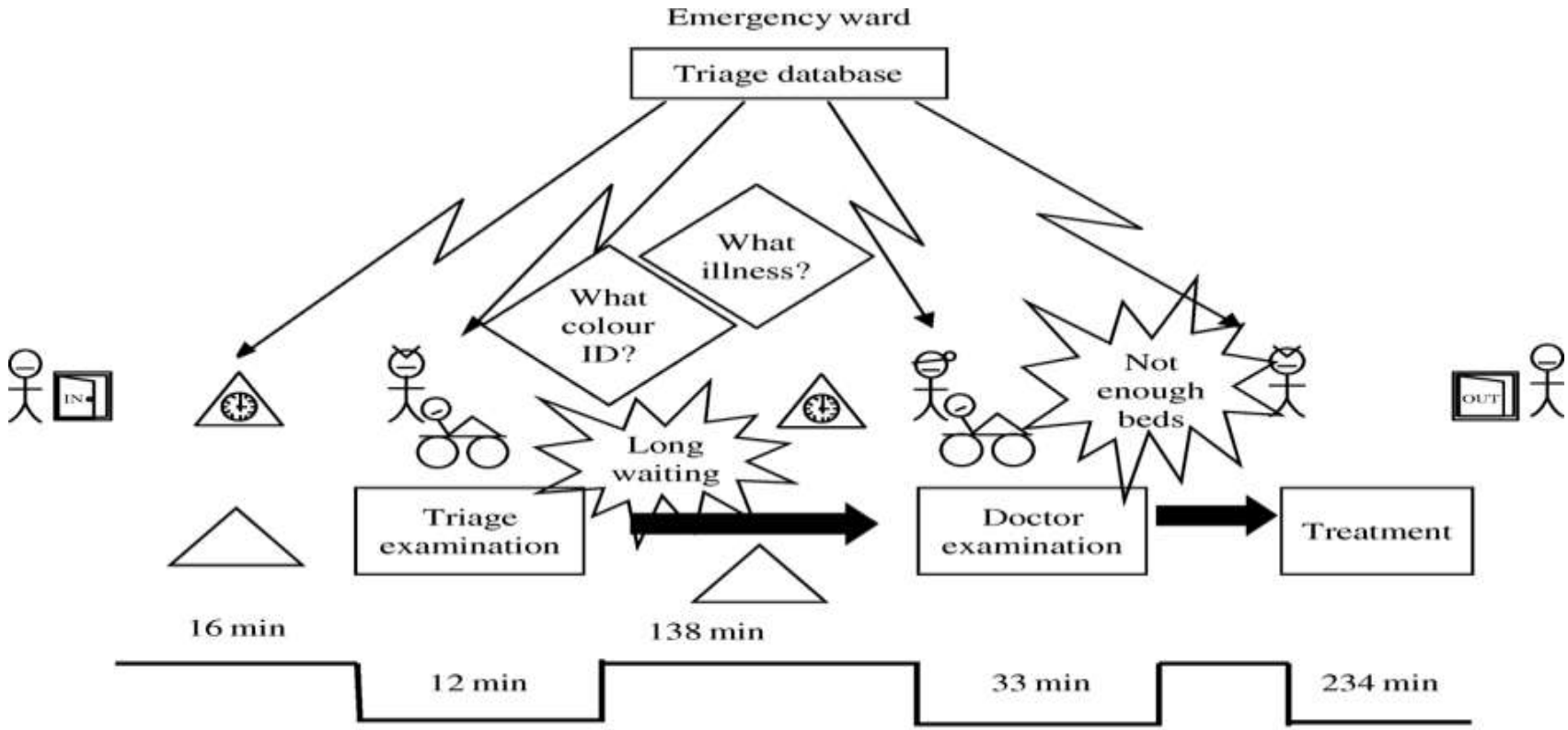
VSM Current State

Example 1 current state



VSM Current State

Example 2 current state



VSM Current State

Value adding time %

Value adding time % = value added time/ lead time * 100%

In example 1:

Value adding time: 12 min + 33 min + 234 min = 279 min

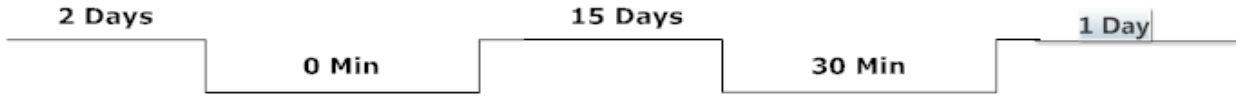
Lead time: 16 min + 12 min + 138 + 33 min + 234 min = 433 min

Value adding time % = 279/ 433 * 100%
= 64%

VSM Current State

Value adding time %

In example 2:



Value adding time: = 30 min

Lead time: 2 days + 15 days + 30 min + 1 day = 18 days

Value adding time % **= 18 * 24 * 60/ 30 * 100%**
= 0,12%

VSM Future State

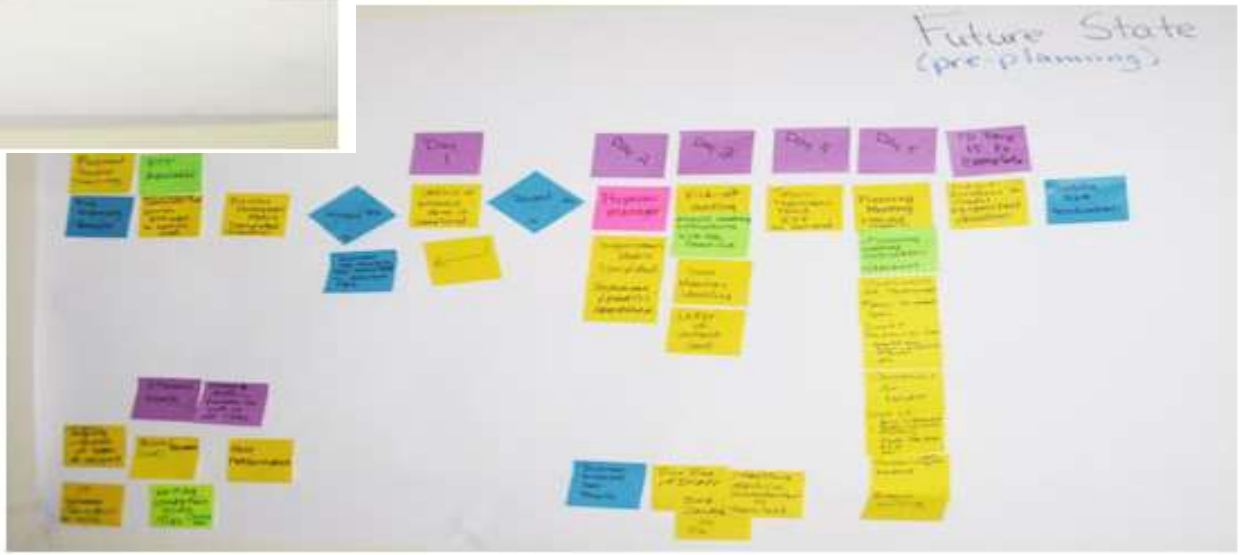
Construction of a future state map

- **Use the customer needs as a starting point, including quality demands and lead time**
- **Implement flow to get the right quality and quantity at the correct time at the customer**
- **Spread the work evenly, in order to reduce waiting time and use smaller work units**

At the end of these steps an important part of the waste in the process will be reduced or removed!

VSM Future State

Construction of a future state map



VSM Future State

Example future state