

# Value Stream Mapping

Chapter 2

# Value Stream

- The flow of *physical items*—patients, customers, or materials—through a process
- The flow of *information* related to the flow of patients, customers, or materials

# Value Stream Mapping

- Differs from “flow charting”
- Focuses on *flow* rather than *steps*
- Includes all important information associated with the flow of the process
- Best mapping tool: pencil, paper, Post-its !  
Expect to make lots of changes and corrections during the VSM process.
- Flow can be span multiple departments, so VSM might require a cross-departmental perspective

VSM is a “systems” view of the process.

Gives a picture of the “whole” process.

Emphasizes “flow” through the whole process.

Seeks identification of key problems and places in the process that delimit flow and causes other sources of waste.

# Steps

- ***Define the process*** (inputs, outputs, level of detail)
- ***Select a “process owner”*** to lead the VSM effort
- ***Plan the event***
- ***Form a process inspection team (kaizen team):***  
include everyone involved at all levels of the process (especially workers in the process); include “outside eyes” too.

# Do a walkthrough of the process at the workplace (Gemba)



- *Start with the last step of the process and work backward to the first step*
- *Observe the process, ask questions, take notes*

***Workshop: Meet to discuss findings***, define and draw the map, specify places needing more information. and identify areas for potential

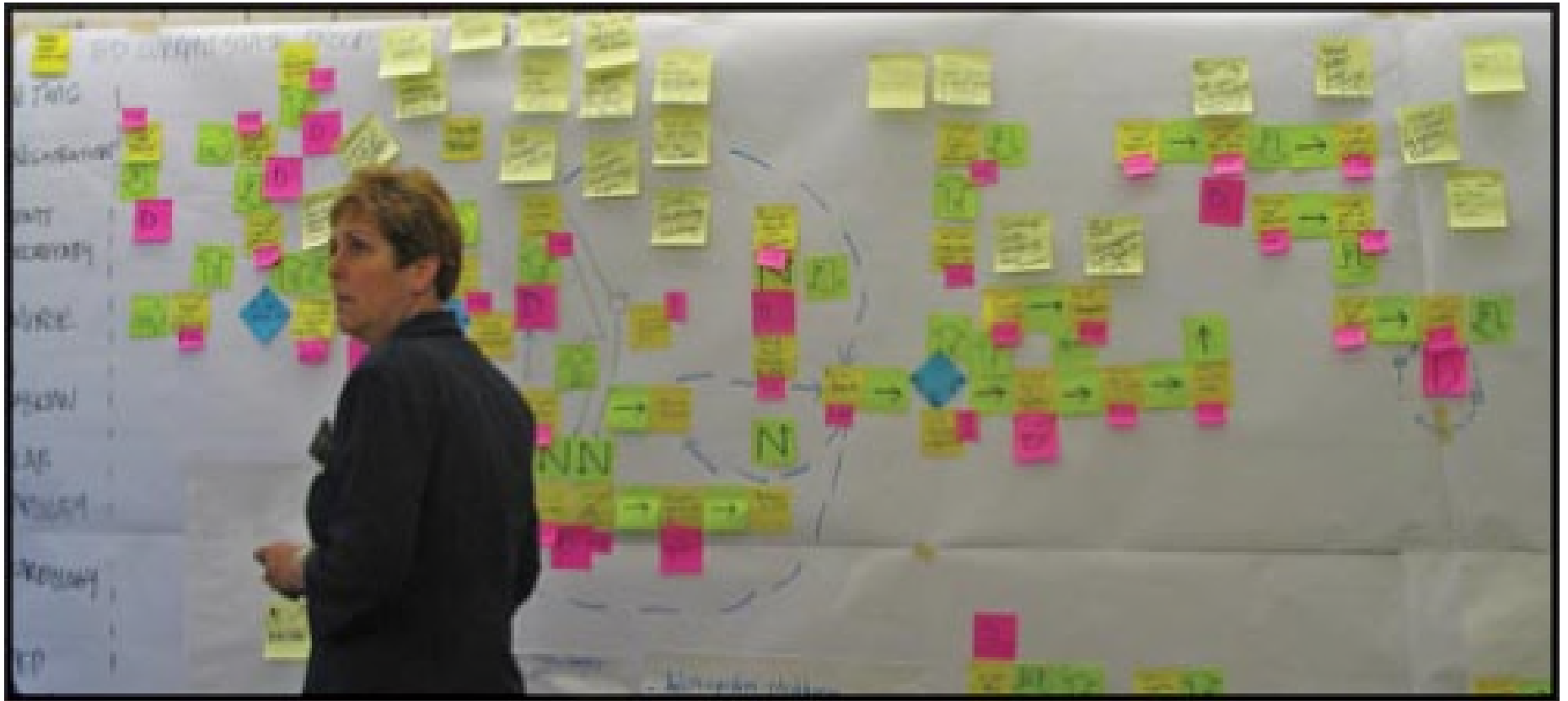


# Create value-stream map with Post-its





## Create value-stream map with Post-its

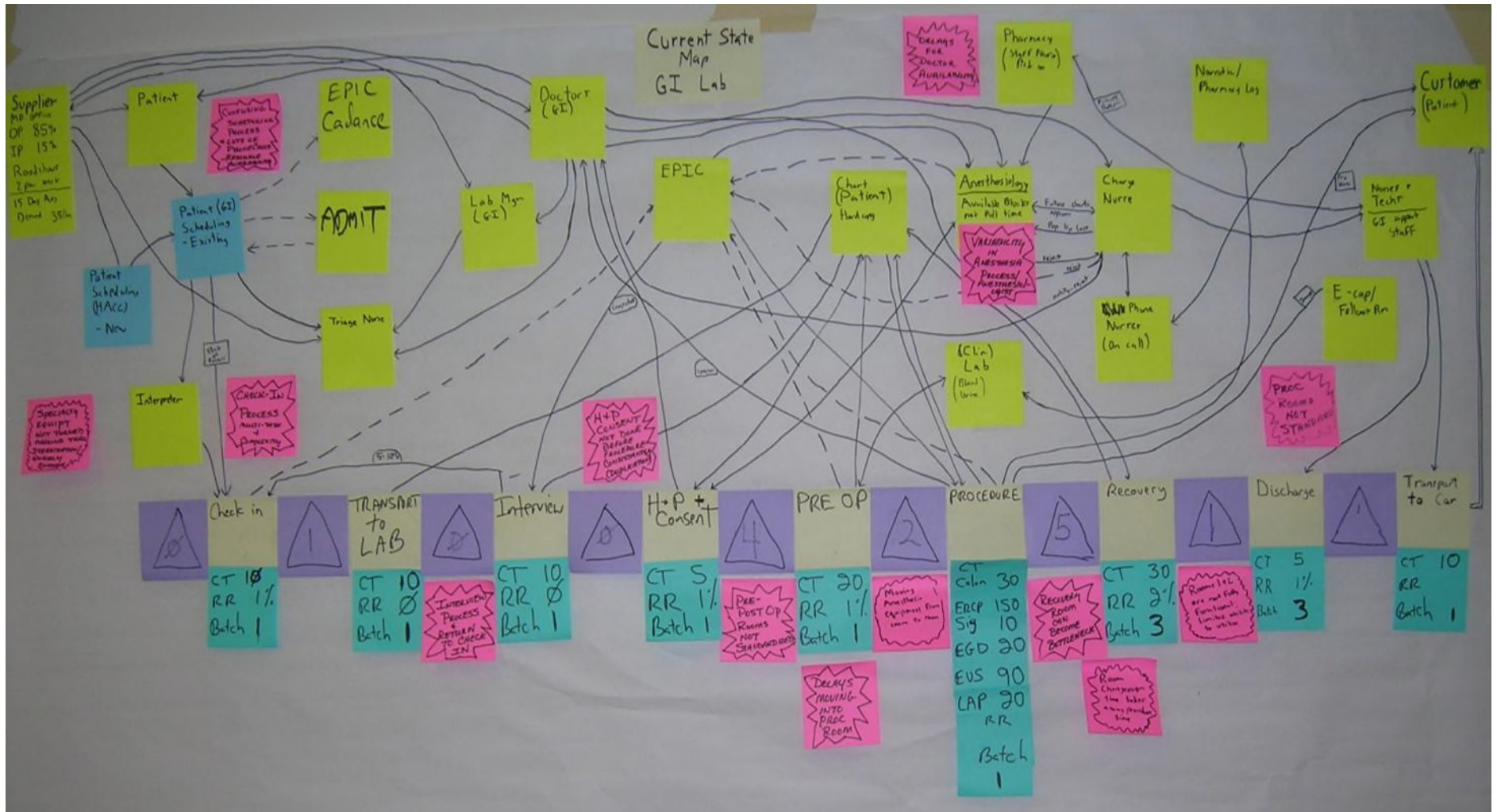


# The map

- Focus on the patient, customer, or product from beginning to end
- Whenever possible, use timed observations to determine *actual* times
- Never map from memory, no matter how familiar the process
- Everyone on the team must observe the process steps together.

# The map

- Focus on one process at a time.
  - E.g., if focus on patient flow through ED, do not map flow of specimens to Lab (although indicate order, transport of specimen, and receipt of results). If Lab is bottleneck, identify it as opportunity for improvement and the future target of a VSM.
- Draw the map as a team.

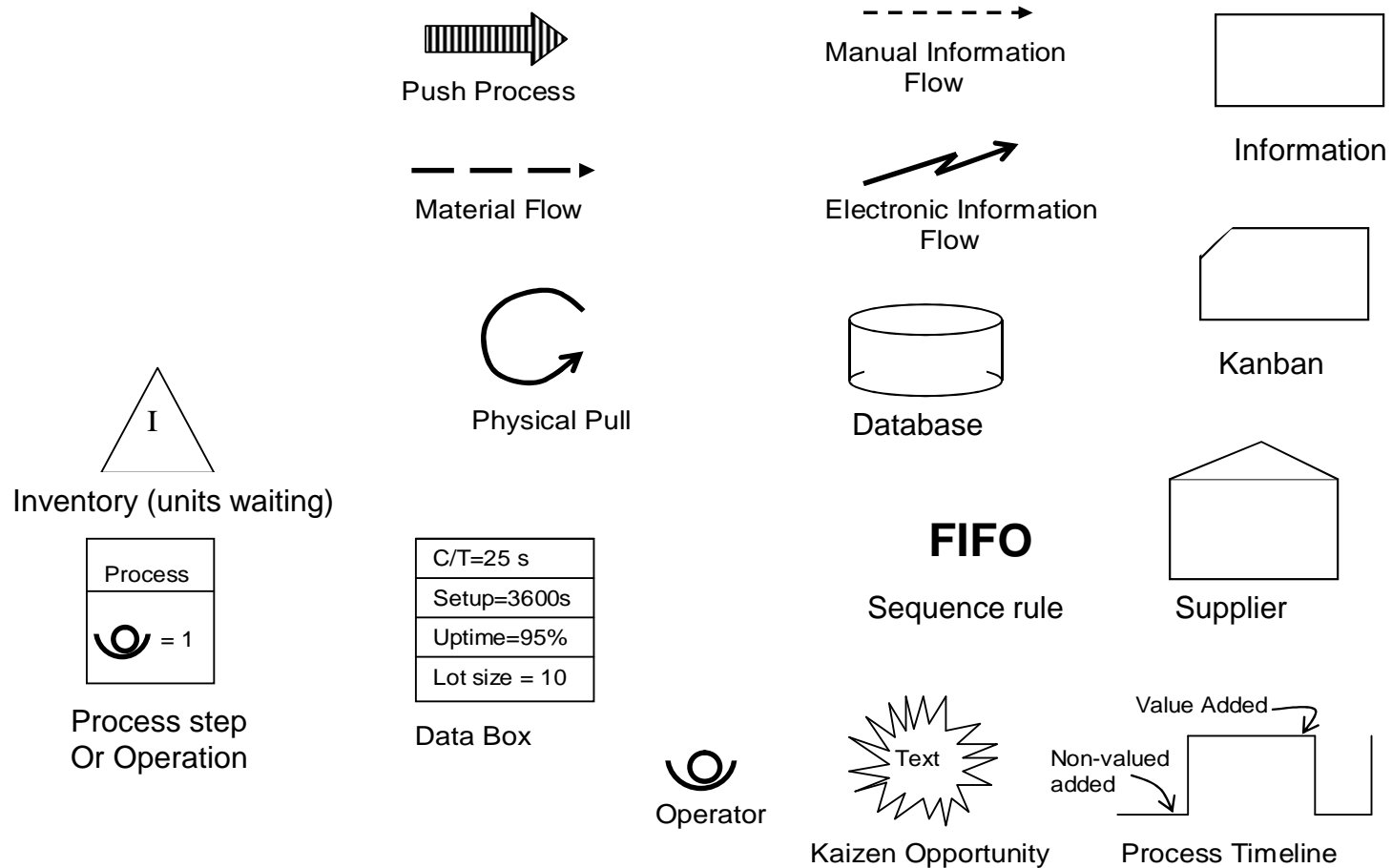


Develop the Current State Map on paper and using post it notes as a team

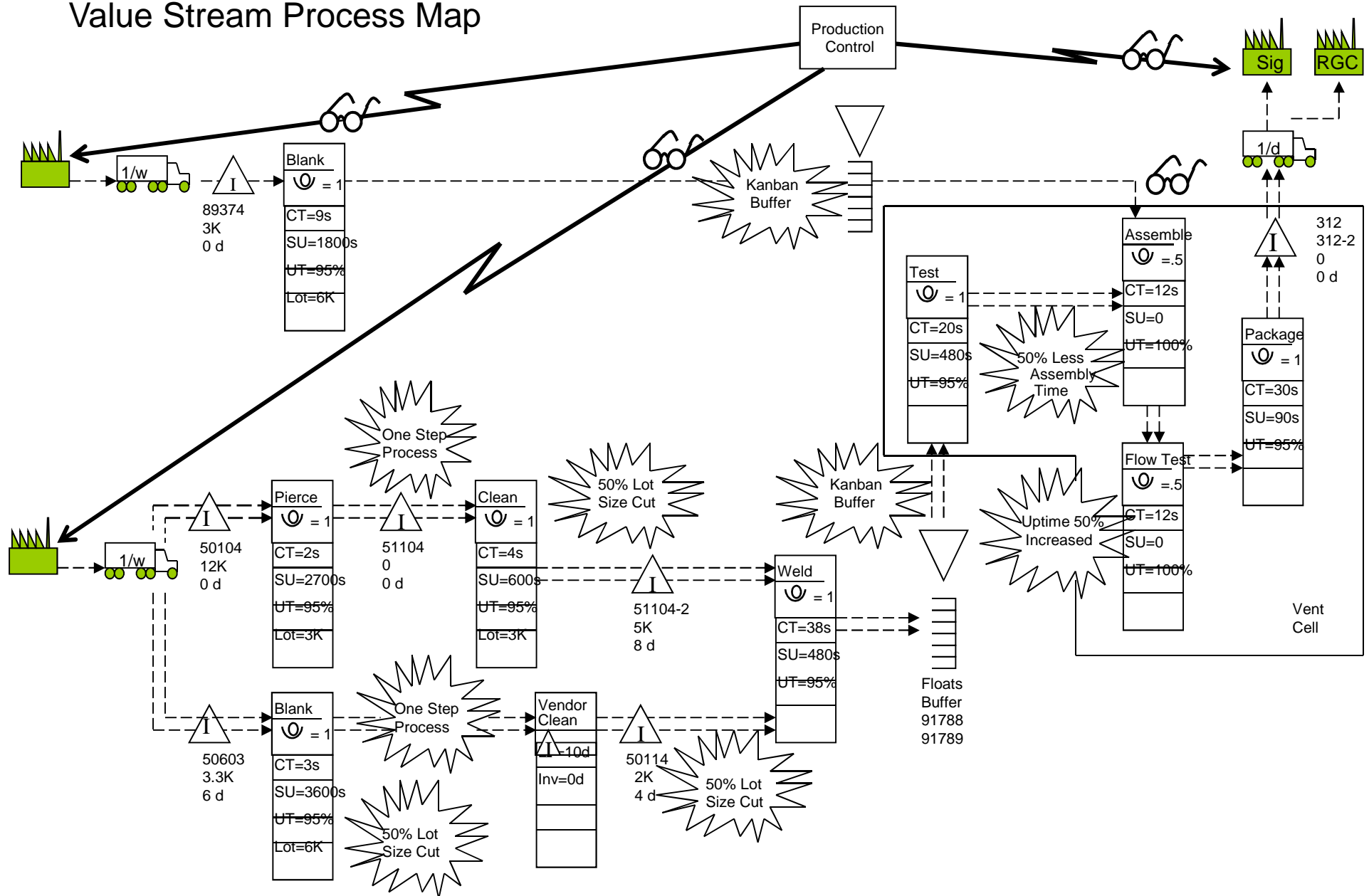
- Bright Yellow (Information Flow)
- Pink/Bright Pink (Problem Bursts)
- Yellow/Beige (Material/Customer Flow)
- Purple (Inventory)
- Light/Dark Blue (Process Data)



# Standard VSM Symbols



# Value Stream Process Map



# Identify Areas of Opportunity

## Possible Waste: Sources of Non-value-added Operations

### 1. Delay (Waiting)

Waiting for bed assignments, treatment, discharge, diagnostics, supplies, approvals, doctor, nurse, etc.

### 2. Over processing

Excessive paperwork, unnecessary tests, using IV when meds would suffice, multiple bed moves, approvals needed for “sure” things, etc.

### 3. Inventory

Lab specimens awaiting analysis, ED patients awaiting a bed, patients awaiting tests, excess supplies kept on hand “just in case”, etc.

### 4. Transportation

Transporting lab specimens, patients, medications, supplies

### 5. Motion

Searching for charts and supplies, nurses/patients/staff walking between procedural steps

### 6. Over producing:

Mixing drugs in anticipation of demand; forcing patients into ICU beds when unnecessary

### 7. Producing defects

Medication errors, wrong-site surgery, improper labeling of specimens, multiple sticks for blood draws, injury caused by drugs or restraints, etc.



# Ideal Future State

- Future state VSM is a *goal* to be reached.
- Can be achieved only through a series of improvement events (“kaizen blitzes”).
- *Bias: want to get things done!*  
Start improvement efforts immediately upon completing the VSM.
- Prepare a plan of action: set objectives, assign responsibility, set dates, and get going.

# Modify Existing Process

Useful tools (discussed later)

- 5S
- Visual Management
- Quick changeover
- Mistake-proofing (pokayoke)

# Value Stream Mapping

Loyola University Hospital

Process: Surgical Reprocessing (SRP) Area



**SRP: Data gathering  
at the gemba**





# SRP: Final Value Stream Map



# Goal

Create maps of all main hospital areas, then integrate maps into an “enterprise-wide” map



Women/pediatrics



Emergency department



## Other areas

- Cancer
- Inpatient floors
- Radiology
- Pharmacy
- Rehabilitation