ED-PIP Wave 4: Team Lead Training
Introduction to Value Stream Mapping
Ontario Ministry of Health and Long Term Care
April 2011
### Session Learning Objectives

**By the end of this session, you should be able to…**
- Lead a value stream mapping session
- Determine value added steps and waste
- Identify and prioritize high level opportunities for improvement

### Topic Area

<table>
<thead>
<tr>
<th>Team Lead Training</th>
<th>Lean Concepts and Tools</th>
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<tbody>
<tr>
<td>Data Analysis</td>
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<tr>
<td>Project and Change Management</td>
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### Module

**Introduction to Value Stream Mapping**

### Time

1.25 hours
Value Stream Mapping – Overview

• A value stream map (VSM) is a pictorial representation of how things flow through the system from beginning to end (e.g., patient flow, information flow, lab request flow).

• It is used to highlight any inefficiencies in the current system (i.e., waste, flow issues, examples of variability)

• A VSM provides a great framework for opportunity identification and solution development

Allows the team to “See the flow” of the value stream and wastes in the flow
How does a Value Stream Map fit into the approach?

SIPOC

Value Stream Map

Opportunities

Root Cause Analysis

How does the process currently work?

What are the highest impact opportunities for improving the process?

What is the root cause of the problem?
Waste can occur at any step in a process

Steps in any process can be...

<table>
<thead>
<tr>
<th>Value added (for the patient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities performed to meet the customer (or patient’s) requirements</td>
</tr>
<tr>
<td>Steps must be important to the customer, they must change the thing going through the process and they must be done right the first time</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Value added (for the organization)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steps are required due to legal, fiduciary, fiscal, compliance, etc reasons</td>
</tr>
<tr>
<td>Contributes to running the organization and is indirectly providing value to the customer</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Waste</th>
</tr>
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<tbody>
<tr>
<td>Steps do not contribute directly to fulfilling customer needs</td>
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Our goal is to...

| Eliminate waste |
| Minimize the time required to do organization value-added steps |
Example of a Value Stream Map
Example: Testing a blood sample

STEP 1: Define customer requirements

Who are our customers?
What do they want?
When do they want it?

Customer Requirements
Lab results need to be accurate
Urgent need for results asap
Example: Testing a blood sample

STEP 2: Identify key steps in the process

Customer Requirements
Lab results need to be accurate
Urgent need for results asap

Blood sample taken
Label & register sample
Store sample
Test sample
Capture results
Example: Testing a blood sample

STEP 3: Gather process data

Customer Requirements
Lab results need to be accurate
Urgent need for results asap

CT refers to “Cycle Time”, the time to complete the step from start to finish
Example: Testing a blood sample

STEP 4: Identify additional information including material/information flows

Customer Requirements

- Lab results need to be accurate
- Urgent need for results asap

Customer order

Blood sample taken
CT = 1 min

Label & register sample
CT = 2 min

Store sample
CT = 1.5 hr

Test sample
CT = 30 min

Capture results
CT = 2 min

Results Available

80% < 2 hrs

Very variable (single test takes 10 min)
Example: Testing a blood sample  

STEP 5: Determine time between steps  

Customer Requirements:  
- Lab results need to be accurate  
- Urgent need for results asap  

Customer order  
Blood sample taken  
CT = 1 min  
Label & register sample  
CT = 2 min  
Store sample  
CT = 1.5 hr  
Test sample  
CT = 30 min  
Capture results  
CT = 2 min  

Results Available  
80% < 2 hrs  
Very variable (single test takes 10 min)  

2 hrs  
10 sec  
30 sec (transport)  
30 sec (walking)  
15 min (waiting)  
2 hrs
Example: Testing a blood sample

STEP 6: Identify value add and non-value add times

Customer Requirements
- Lab results need to be accurate
- Urgent need for results asap

Customer order

Value-add: ~15 min
Non value add ~ 6 hrs

Blood sample taken
CT = 1 min
VA

Label & register sample
CT = 2 min
VA

Store sample
CT = 1.5 hr
NVA

Test sample
CT = 30 min
VA – 10 mins

Capture results
CT = 2 min
VA

Results Available

2 hrs
NVA

10 sec
NVA

30 sec (transport)
NVA

30 sec (walking)
NVA

15 min (waiting)
NVA

2 hrs
NVA

Capturing results

80% < 2 hrs

Very variable (single test takes 10 min)
Example: Testing a blood sample

STEP 7: Determine initial areas of opportunity

Customer Requirements
- Lab results need to be accurate
- Urgent need for results asap

Opportunities – Potential Areas to focus on

Value-add: ~15 min
Non value add ~ 6 hrs

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VA

Results Available

Customer order

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Urgent need for results asap

80% < 2 hrs
Very variable (single test takes 10 min)

Blood sample taken

Label & register sample

Store sample

Test sample

Capture results

2 hrs

10 sec

30 sec (transport)

30 sec (walking)

15 min (waiting)

2 hrs

NVA

NVA

NVA

NVA

NVA

NVA

NVA

NVA

NVA

NVA

NVA
Tips for generating a Value Stream Map (VSM)

- Map the patient’s journey, not the provider’s journey.
- Think in terms of the process – not departments, professions or individuals.
- ‘80/20’ - Focus on the main flow and key sub-processes as well as those processes that have long lead times, high volume or high impact – there is no need to map the flow of every discrete part or input.
- Collect current state information for how long things take (e.g., wait, travel and service times), for hours of operation, varying practices, etc - observing a patient and documenting the experience and times is powerful in building credibility.
- Include ‘informal’ information flows (e.g., phone calls, hallway conversations, hand written notes).
- VSMs are non-evaluative – focus on the process, not the people doing the work.
- Map with a cross sectional team, don’t paste individual member’s parts of the process together.
- Keep the unit and measurement of time consistent throughout the map (i.e. Map per patient throughout the map; map in minutes or hours – but keep it consistent).
1. Define customer requirements
2. Identify key steps in the process
3. Gather process data
4. Identify additional information including material/information flows
5. Determine time between steps
6. Identify value add and non-value add times
7. Determine initial areas of opportunity
Materials for a value stream session

1. Brown (Butcher) Paper
   Assign a facilitator to lead the session – they should be the only one adding post-it notes on the butcher paper

2. Post it Notes – 5 different colours
   Assign a scribe from the team for each post-it colour

3. Tape and sharpies
How will it look....

- Nurse
- Triage Form & health card
  - 24 / 7

Registration

3 to 5 mins

60 to 90 mins

Nurse Assessment

5 to 10 mins

20 to 180 mins

MD Assessment

10 to 15 mins

Reduce Door to Doc time

- MD
- Patient Chart
- Tracking Board
  - 24 / 7

Additional information can include who is doing the step, what is the input to the step, hours of operations, reasons for variability, etc
Roles for Value Stream Mapping session

- **Facilitator (1)**
  - Lead the mapping exercise
  - Keep the group on task
  - Ensure the group is focused at the right level of detail

- **Scribes**
  - Record key information onto post-it notes
  - Support the facilitator

- **Content Experts**
  - Provide your knowledge and experience
  - Try not to get “into the weeds”

- **Outside Eyes**
  - Make sure you understand the process that is being described
    - if you don’t understand it, the context experts may have missed something
  - Think critically, ask questions
Where should you focus your efforts??

**STEP 7: Determine initial areas of opportunity**

**Customer Requirements**
- Lab results need to be accurate
- Urgent need for results asap

**Opportunities – Potential Areas to focus on**

**Value-add:** ~15 min

**Non value add:** ~ 6 hrs

**Customer order**

**Blood sample taken**
- CT = 1 min
- VA

**Label & register sample**
- CT = 2 min
- VA

**Store sample**
- CT = 1.5 hr
- NVA
- 80% < 2 hrs

**Test sample**
- CT = 30 min
- VA – 10 mins
- NVA
- Very variable (single test takes 10 min)

**Capture results**
- CT = 2 min
- VA

- 2 hrs
- 10 sec
- 30 sec (transport)
- 30 sec (walking)
- 15 min (waiting)
- 2 hrs

**Ontario**
Exercise

At your table agree on what is the single best opportunity to pursue with rationale to why.

Be prepared to share/debrief.
When identifying opportunities, think about…

• Where are the biggest pain points for patient? Staff?
• Which non-treatment related steps take the most time?
• Where do patients spend the most time waiting?
• Which steps are prone to errors?
• What steps are the most frustrating for the staff?
• What are the most complaints from patients?
• Where are there frequent handoffs?
• Where are there frequently quality issues?
• …
What additional questions do you need answered to be more confident in where you placed each opportunity?

Focus initially on opportunities that are high impact and easier to capture.
So what do you do next as the Team Lead???
What would you do next??

STEP 7: Determine initial areas of opportunity

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Opportunities – Potential Areas to focus on

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Results Available

Capture results
2 hrs  
NVA

Test sample
30 sec (walking)  
NVA

Capture results
15 min (waiting)  
NVA

Capture results
2 hrs  
NVA

Customer requirements

Lab results need to be accurate
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Customer order

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Opportunities – Potential Areas to focus on

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Capture results
2 hrs  
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Test sample
30 sec (walking)  
NVA

Capture results
15 min (waiting)  
NVA

Capture results
2 hrs  
NVA
Confirm that it is really an opportunity

- Review your VSM to identify any opportunities to improve the patient experience and remove waste
- Estimate the impact of capturing each opportunity and how easy it will be to do so
- Highlight what key questions are left to be answered related to the opportunity – what do you still need to know
- Identify which team member will ‘own’ this opportunity
- Remember… take advantage of the expertise and range of experience around the table!

High impact opportunities identified from Value Stream Map

<table>
<thead>
<tr>
<th>Opportunity Description</th>
<th>Expected Impact (small/med/large)</th>
<th>Ease of Implementation (easy/med/difficult)</th>
<th>Important Questions to Answer</th>
<th>Owner</th>
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Conducting a value stream mapping session

Checklist – Best Practice

- Have representation from all key stakeholder groups
- Ensure the room has sufficient wall space to post value stream mapping paper and flip chart paper
- All supplies are available – value stream mapping paper (butcher paper), 5 different post-it note colours, markers and tape
- Set session norms at the beginning of a session to set expectation and guides for interaction
- Deliver a short Introduction to Lean presentation – covering value stream mapping and 8 wastes
- Have clear roles and responsibilities – facilitator and scribes
- If you have data available prior to session…use it!
Summary of the benefits of a Value Stream Map

• Documents the process as experienced by the patient

• Builds consensus across the team and with stakeholders on the current state

• Helps visualize waste and the source of waste

• Provides a common language to talk about the process

• Helps identify and align on key opportunities
# VSM facilitation: tips and tricks

| Setting up the day | • Establish a concise set of group norms that give you the authority to effectively facilitate  
• Establish a parking lot where issues that are out of scope can be captured  
• Set an aggressive time limit for the mapping portion, but plan to go over; groups are more efficient when they’re running out of time  
  – E.g., book a 3 hour meeting, but schedule 2 hours for the VSM and 1 hour for project planning  
• Clearly define the scope of the processes to be mapped |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| While you’re mapping | • Recognize: you’ll never please everyone, just do the best you can to capture the collective knowledge of the group  
• Keep momentum and energy; don’t let the group slow down  
• As the facilitator, you control the language that goes on the map  
  – Don’t let the scribes paraphrase |
| If you get stuck | • Consider: are there other ways the work could be flowing?  
  – E.g., loop back, parallel processing  
• Confirm that everyone understand where the steps under consideration begins and ends  
• Put a question mark instead of a process step and move on |
| If the group is going off track | • Use the 80/20 rule to focus the group “what happens 80% of the time”  
• Summarize their issue as an opportunity, write a pink sticky and move on  
• If the group is debating, but there’s no evidence, cut the debate off and put a note about fact finding into the parking lot  
• Don’t be afraid to cut people off, just do it with energy and a smile! |
Questions?