

# What is a Value Stream Map?

It is a scalable method of creating a one page picture of processes that occur in an organization, from the time an order is placed until the customer has received the product. It is meant to depict material and information flows across all value-adding processes.

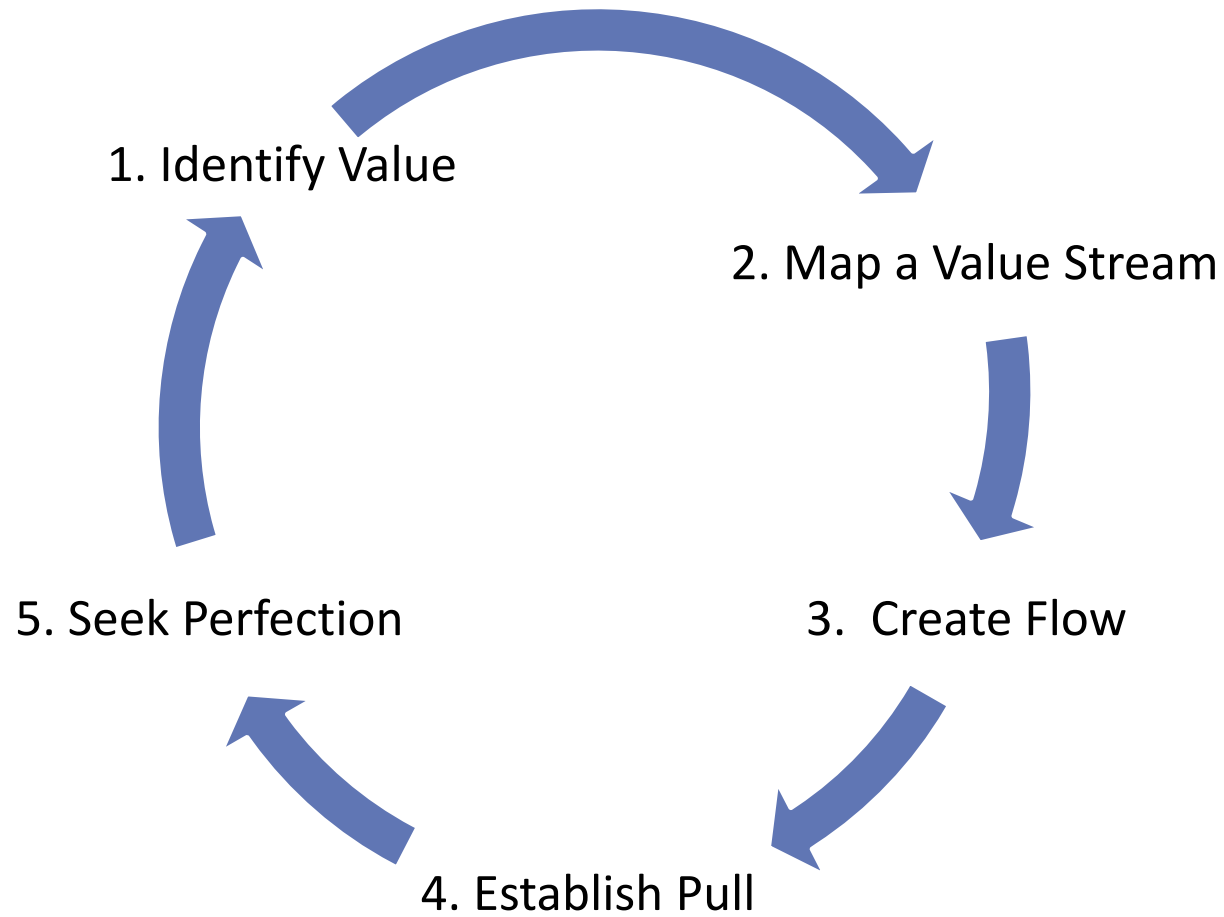
# Why Would One Map a Value Stream?

The team visualizes the work with a VSM. Visualization gives the team a common understanding of the work flow to identify waste and create a map of the current state. This map is used to eliminate unnecessary work to design the future state VSM. This future state map is used to implement and quantitate the improvements.

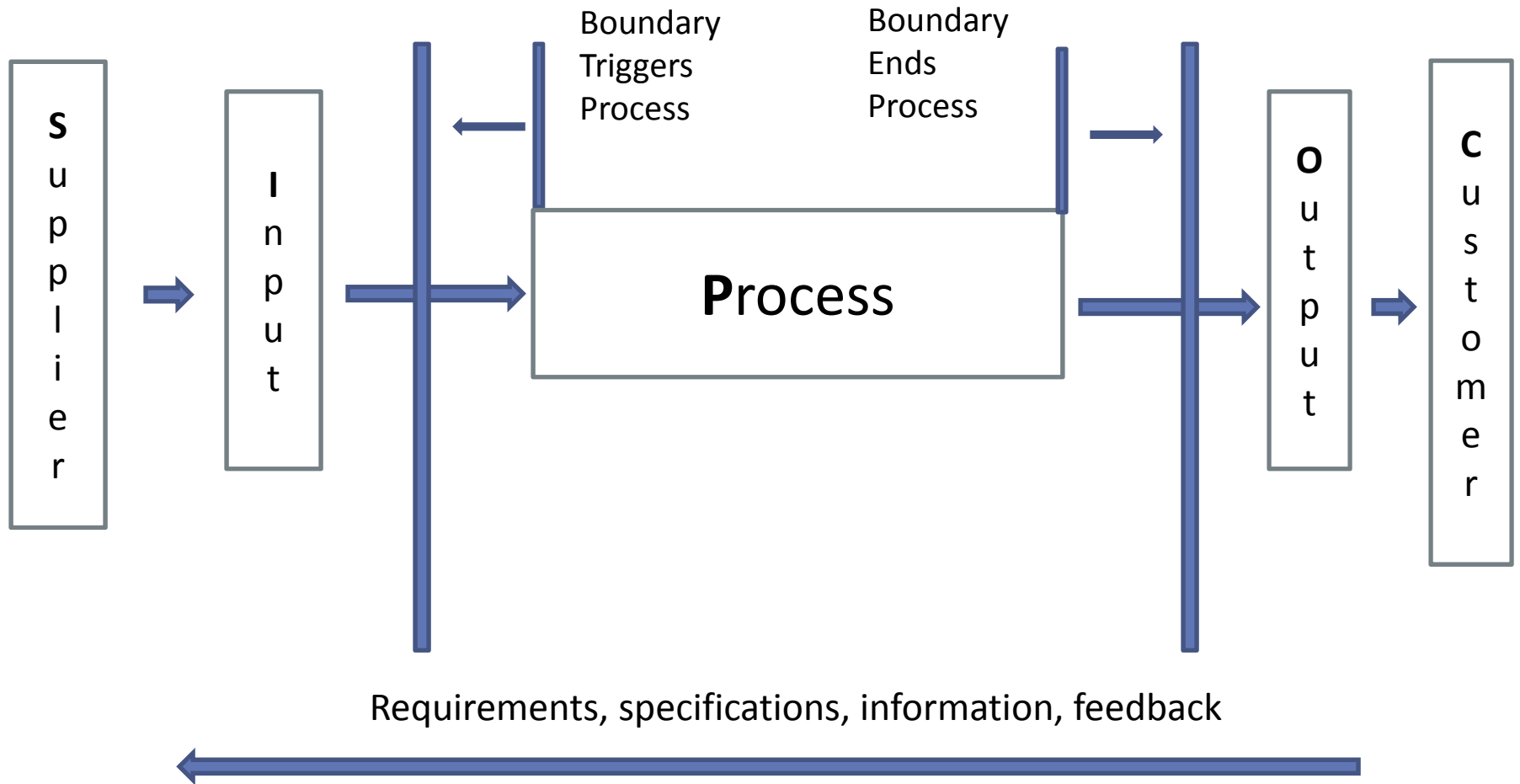
# Lean in Five Intentionally Over-Simplified Steps

- 1. Identify the value for your customer
- 2. Map the value stream for your products that add value and eliminate wasted steps used to provide it
- 3. Make the product flow through the remaining value-added steps
- 4. Introduce pull between steps where flow is possible
- 5. Use data driven management to continuously reduce the number of steps and the amount of time and information needed to give value to the customer

# Lean in a Nutshell



# SIPOC Diagram



# Start With a Blank Canvas



# Everyone Adds Their Process Steps



# The Team Works Together





# Simplifying the Visualized Process

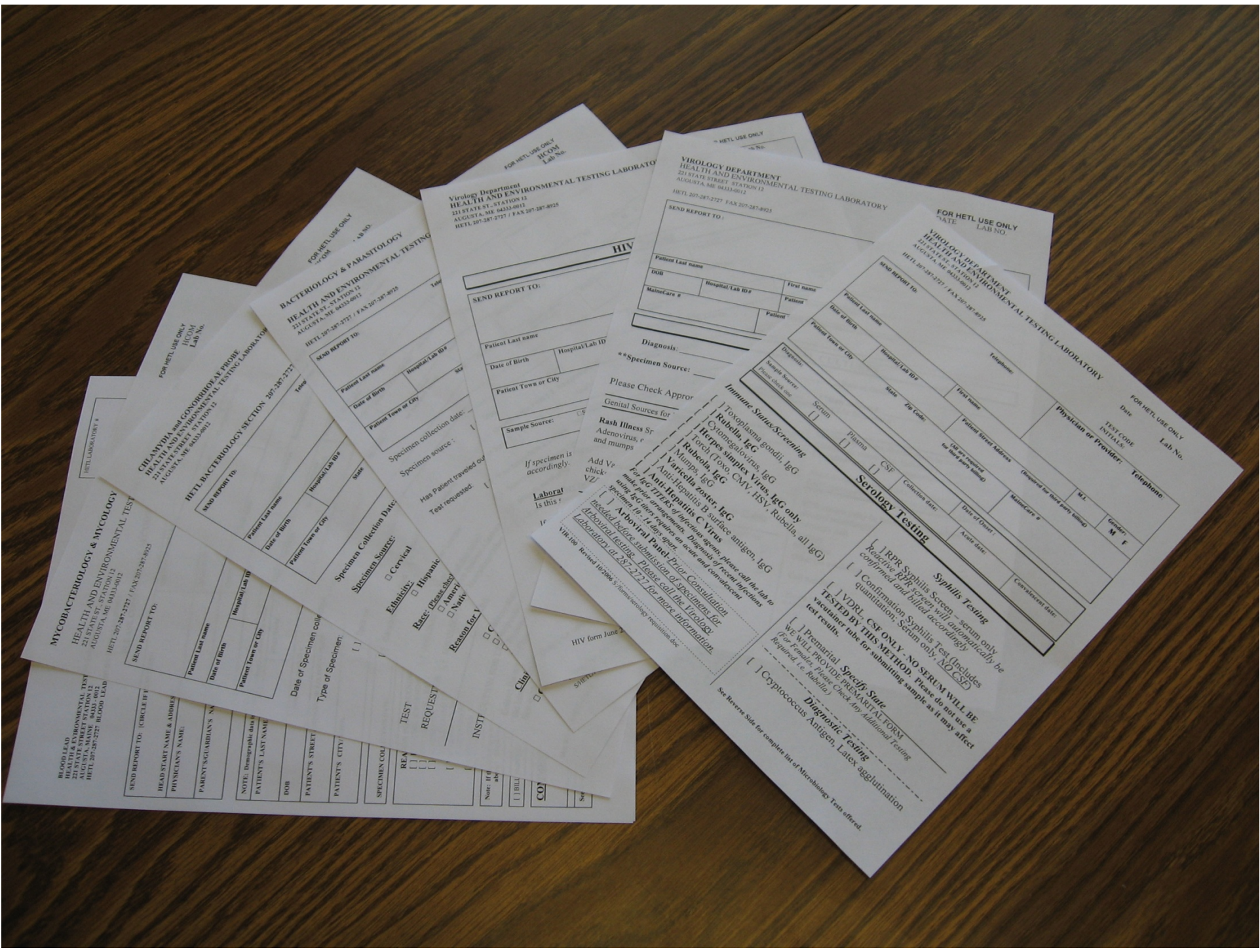


# Developing the Data Model



# Data Model of the Current State





BLOOD & CO  
HEALTH AND ENVIRONMENTAL TEST  
21 STATE ST. STATION 12  
AUGUSTA, MAINE 04333-6012  
HETL 207-287-2727 BLOOD LAB

SEND REPORT TO: (CIRCLE 1-4)  
HEAD START NAME & ADDRESS  
PHYSICIAN'S NAME  
PARENT/SURVIVOR'S NAME  
NOTE: Demographic data  
PATIENT'S LAST NAME  
DOB  
PATIENT'S STREET  
PATIENT'S CITY

SPECIMEN COLLECTION  
TEST REQUESTED  
INSTITUTION  
Note: If patient is  
BILL TO: COLLECTOR'S  
SEND REPORT TO: (CIRCLE 1-4)  
PATIENT'S LAST NAME  
PATIENT'S FIRST NAME  
PATIENT'S MIDDLE NAME  
PATIENT'S LAST NAME  
DOB  
PATIENT'S STREET  
PATIENT'S CITY

MYCOBACTERIOLOGY & MYCOLOGY  
HEALTH AND ENVIRONMENTAL TEST  
21 STATE ST. STATION 12  
AUGUSTA, ME 04333-6012  
HETL 207-287-2727 / FAX 207-287-8925

SEND REPORT TO:  
Patient Last name  
Date of Birth  
Patient Town or City  
Hospital Lab ID #  
State

Date of Specimen collection  
Type of Specimen  
Specimen Collection Date:  
Specimen Source:  
 Cervical  
 Urinary  
 Vaginal  
 Anus  
 Other

Reason for Test  
 Routine  
 Contact  
 Exposure  
 Symptomatic  
 Other

CHIAMAQUIDA and GOVERNOR AVENUE  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
21 STATE STREET, STATION 12  
AUGUSTA, ME 04333-6012  
HETL 207-287-2727 / FAX 207-287-2727

HETL BACTERIOLOGY SECTION  
SEND REPORT TO:  
Patient Last name  
Date of Birth  
Patient Town or City  
Hospital Lab ID #  
State

Specimen collection date:  
Specimen source:  
Has Patient traveled out of State?  
Test requested

FOR HETL USE ONLY  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
HETL 207-287-2727 / FAX 207-287-8925

BACTERIOLOGY & PARASITOLOGY  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
21 STATE ST. STATION 12  
AUGUSTA, ME 04333-6012  
HETL 207-287-2727 / FAX 207-287-8925

SEND REPORT TO:  
Patient Last name  
Date of Birth  
Patient Town or City  
Hospital Lab ID #  
State

Specimen source:  
Add Vt. chick. VZV  
If specimen is accordingly, Laborat. Is this?

FOR HETL USE ONLY  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
HETL 207-287-2727 / FAX 207-287-8925

Virology Department  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
21 STATE ST. STATION 12  
AUGUSTA, ME 04333-6012  
HETL 207-287-2727 / FAX 207-287-8925

SEND REPORT TO:  
Patient Last name  
DOB  
MaineCare #  
Patient  
Date of Birth  
Patient Town or City  
Hospital Lab ID #  
State  
First name  
Patient Street Address  
City  
State  
Zip Code  
Telephone

Diagnosis:  
\*\*Specimen Source:  
Please Check Appror  
Genital Sources for  
Rash illness Sr  
Adenovirus, e  
and mumps

Immunologic Screening  
Toxoplasma gondii, IgG  
Rubella, IgG  
Cytomegalovirus IgG  
Herpes Simplex Virus, IgG only  
Toch (Toxo, CMV, HSV, Rubella, all IgG)  
Mumps, IgG  
Varicella zoster, IgG  
Anti-Hepatitis B surface antigen, IgG  
Anti-Hepatitis C Virus  
IgG  
For all serologic specimens, please call the lab to make for appropriate diagnosis of recent infections  
specimen for 14 days after acute and convalescent  
need before submission of specimens for serologic testing, please call the Virology Laboratory at 287-2727 for more information

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HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
HETL 207-287-2727 / FAX 207-287-8925

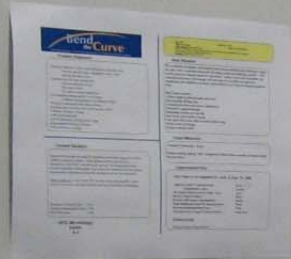
FOR HETL USE ONLY  
HEALTH AND ENVIRONMENTAL TESTING LABORATORY  
HETL 207-287-2727 / FAX 207-287-8925

Serology Testing  
 RPR Syphilis Screen - serum only  
Reactive RPR screen will automatically be confirmed and titered according to VDRL - CSF ONLY - NO SERUM WILL BE TESTED BY THIS METHOD. Please do not use a vacuum tube for submitting sample as it may affect test results.  
 VDRL - CSF ONLY - NO SERUM WILL BE TESTED BY THIS METHOD. Please do not use a vacuum tube for submitting sample as it may affect test results.  
 Premarital - Specific State  
For Female, please check any Additional Testing  
 Cytococcus Antigen, Latex agglutination  
Diagnostic Testing  
See Reverse Side for complete list of Microbiology Tests offered

PHYSICIAN OR PROVIDER  
Name  
Address  
City  
State  
Zip Code  
Telephone  
M.I.  
Gender: M F  
Date of Onset  
Acute date  
Convalescent date

# REQUISITION KAIZEN

## A3



### COMMENTS:

✓ shaded areas may not photocopy very well or be picked up when faxed.

### DRAFT REQUISITION



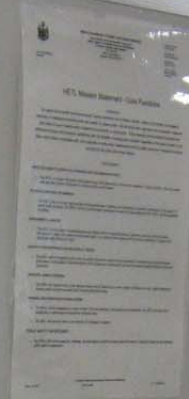
✓ My concern is if the facility is sending in multi samples on the same pt will they put it all on the one slip?

✓ The Ins box for Maine Core isn't big enough to put 8 digits. Dr & NP write big

✓ Boxes for others tests and Maine CDC in white to be different from routine tests

✓ The color scheme is lovely! no it is delightful! Top notch!

WBR-23  
KTRK



I like this color scheme

✓ Maine Core is the same as the other tests. I like that color scheme. I just want to say thanks to everyone who created this. It's so nice. I like it so much. I'll be back. I'll be back. I'll be back.

✓ ace tender box next ✓  
Date of birth of pt ✓  
pt of patient info ✓  
I like that color scheme. I like that color scheme. I like that color scheme.

✓ I like that color scheme. I like that color scheme. I like that color scheme.

✓ I like this color scheme



# Health and Environmental Testing Laboratory

221 State Street, SHS 12  
Augusta, Maine 04333

telephone:207-287-2727 / fax:207-287-8925 / web:maine.gov/dhhs/etl



Maine Department of Health and Human Services

## Maine CDC

Maine Center for Disease Control and Prevention

<b>Submitter Name/Address/Phone</b>			<b>Hospital/Lab ID#</b>		<b>Fax Number</b>	
Please Place Label/Stamp Here			<b>Physician Name</b>		<b>Physician Practice/Affiliation</b>	
			<b>Patient Name</b>			<b>Date of Birth</b>
<b>Last</b>	<b>First</b>	<b>M.I.</b>		<b>M</b> <b>F</b>		<b>Specimen Collection Date</b>
Please Use Label if available						

Below required for Blood Lead, Reportable Diseases, or MaineCare Primary Insurance

<b>Patient Street Address</b>		<b>Apt. #</b>	<b>City/Town</b>	<b>State</b>	<b>Zip</b>	<b>County</b>
<b>Race</b>		<b>Ethnicity</b>		<b>MaineCare #</b> (if primary) (Please include copy of MaineCare card)	<b>Parent/Guardian Name:</b> Blood Lead	<b>Code 1</b> Blood Lead
<input type="checkbox"/> American Indian or Alaskan Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African-American <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> White		<input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Non-Hispanic/Non-Latino			<b>Parent/Guardian Phone Number:</b> Blood Lead	

Please see reverse of this form for information on specimen type, storage and shipping conditions.  
Specimens MUST be labeled with patient name and Date of Birth.

### BACTERIOLOGY

- Chlamydia/Gonorrhea (amplified probe)
- Bordetella pertussis
- Campylobacter Identification
- E. coli Identification/serotyping
- Enteric pathogen screen  
(Salmonella, Shigella, Campylobacter)
- Neisseria gonorrhoeae confirmation
- Neisseria meningitides grouping
- Salmonella Identification/serotyping
- Shiga Toxin Test
- Shigella Identification/serotyping
- Vibrio Identification
- Yersinia Identification
- Miscellaneous Identification  
Organism Suspected:

Please attach previous test results

### BLOOD LEAD

- Blood Lead, Venous
- Blood Lead, Capillary
- Check if Symptomatic or Repeat Test

### SEROLOGY

- Arbovirus IgM Panel (West Nile, EEE, SLE, Powassan)  
(requires MECDC surveillance form)
- Cryptococcus Antigen
- Anti-Hepatitis B surface antigen; IgG
- Hepatitis C IgG
- HIV-1/HIV-2 screen (serum)
- HIV-1/HIV-2 screen (oral fluid)
- Mumps IgG
- Rubella IgG
- Rubella IgG
- RPR syphilis screen
- Syphilis serum confirmation
- Syphilis spinal fluid VDRL
- Varicella zoster IgG

### MYCOBACTERIOLOGY

- Acid fast smear/culture
- Acid fast smear
- MTD Amplified Probe (smear Positive only)

### MYCOLOGY

- Mycology Clinical Specimens  
(yeast/fungal culture)

### VIROLOGY

- Influenza A/B RT-PCR
- Mumps RT-PCR
- Norovirus RT-PCR
- Varicella/Herpes zoster PCR
- Herpes Simplex (HSV 1/2) PCR
- Viral Culture reflex for PCR  
test selected above (see reverse)
- Viral Culture, Routine (10 days)
- add CMV (21 days)

Other tests/  
Additional Information:

Maine CDC  
Outbreak Investigation ID# :

Investigator :

# HETL Microbiology Accessioning VSM

## Process

ing clinical samples, preparation of work lists, sample testing, data analysis and reporting of results.

## Problem Statement

to reduce lead time for samples accessioning

## Current State

Item Title:	HETL Microbiology Accessioning										Date:	Dec. 13&14, 2006					
Item State	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11*	Step 12*	Step 11*	Step 12*	Step 11*	Step 12*	
Description	BOOKEND Samples Arrive	Retrieve Samples/ Mail Retrieved	Samples Open/Start	Accessioning	Samples to Labs	Enter in Log Book	Slips Picked Up	Data Entry, Fax to EPL Lab	Worksheet and Worksheets Generated	Black Box - Testing	Results Entry	Verify Demographics	Print Reports	Result Validation	Reporting	BOOKEND Reports Out	
Inventory (Minutes)	0	400	400	400	100	100	100	400	100	0	100	100	100	100	400	0	
CT(Minutes)	0.00	10.00	17.00	70.00	1.00	10.00	32.00	120.00	5.00	0.00	1,200.00	1,110.00	30.00	15.00	483.00	0.00	
VA(%)	0.00%	75.00%	100.00%	100.00%	100.00%	25.00%	0.00%	50.00%	95.00%	0.00%	0.00%	0.00%	2.15%	7.00%	27.00%	0.00%	
Minutes	0.00	7.50	17.00	70.00	1.00	2.50	0.00	83.00	4.75	0.00	0.96	0.00	0.66	1.05	130.95	0.00	
CO	0.00	2.00	0.00	2.00	5.00	0.00	1.00	0.00	0.00	0.00	10.00	0.00	15.00	0.00	1.00	0.00	
UT(%)	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	95.00%	90.00%	0.00%	83.00%	100.00%	78.00%	100.00%	92.00%	0.00%	
First Pass Yield(%)	0.00%	92.50%	95.00%	97.00%	100.00%	100.00%	100.00%	99.00%	97.00%	0.00%	98.00%	100.00%	95.00%	100.00%	96.00%	0.00%	
No. of Staff	0	3.00	2.00	7.00	4.00	4.00	4.00	3.00	4.00	0.00	4.00	4.00	4.00	4.00	4.00	0.00	
Staff Time	0.00	30.00	34.00	315.00	4.00	40.00	40.00	378.00	20.00	0.00	120.00	40.00	80.00	40.00	480.00	0.00	

## Future State

Future State Step	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10	Step 11
Description	BOOKEND Samples Arrive	Central Processing I Open/ Check Recd.	Central Processing II - Assigns that Test Codes	Samples to Labs	Demographic Data Entry	Generate Worksheet/ Pending L-Logs	Black Box - Testing	Result Entry	Result Validation	Reporting	BOOKEND Reports Out
Inventory	0	400	400	100	400	100	0	100	100	400	0
CT(Minutes)	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00	1.00	5.00	0.00
VA(%)	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	0.00%
Minutes	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00	1.00	5.00	0.00
CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
UT(%)	0.00%	100.00%	95.00%	100.00%	100.00%	100.00%	0.00%	95.00%	100.00%	95.00%	0.00%
First Pass Yield	0.00%	100.00%	95.00%	100.00%	95.00%	100.00%	0.00%	95.00%	100.00%	95.00%	0.00%
No. of Staff	0	4	4	4	4	2	0.00	4	4	4	0
Staff Time	0.00	120.00	120.00	4.00	252.00	20.00	0.00	80.00	40.00	40.00	0.00

## Implementation Plan

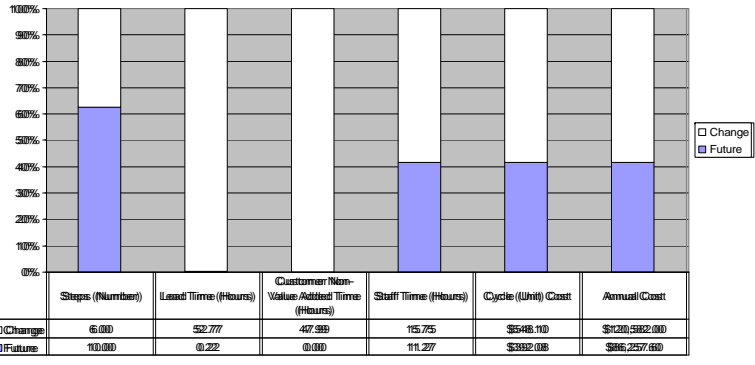
Current Process	Changes	Outcomes
Current Process: Manual data entry, separate steps for inventory, data entry, and reporting.	Changes: Automated data entry, integrated reporting, standardized workflow.	Outcomes: Reduced staff time, improved accuracy, faster turnaround.

Step	Description	Responsible	Status
Step 1	Inventory	Step 1	Complete
Step 2	Central Processing I	Step 2	Complete
Step 3	Central Processing II	Step 3	In Progress
Step 4	Samples to Labs	Step 4	Complete
Step 5	Demographic Data Entry	Step 5	Complete
Step 6	Generate Worksheet/ Pending L-Logs	Step 6	Complete
Step 7	Black Box - Testing	Step 7	Complete
Step 8	Result Entry	Step 8	In Progress
Step 9	Result Validation	Step 9	In Progress
Step 10	Reporting	Step 10	In Progress
Step 11	BOOKEND Reports Out	Step 11	Complete

Step	Description	Responsible	Status
Step 1	Inventory	Step 1	Complete
Step 2	Central Processing I	Step 2	Complete
Step 3	Central Processing II	Step 3	In Progress
Step 4	Samples to Labs	Step 4	Complete
Step 5	Demographic Data Entry	Step 5	Complete
Step 6	Generate Worksheet/ Pending L-Logs	Step 6	Complete
Step 7	Black Box - Testing	Step 7	Complete
Step 8	Result Entry	Step 8	In Progress
Step 9	Result Validation	Step 9	In Progress
Step 10	Reporting	Step 10	In Progress
Step 11	BOOKEND Reports Out	Step 11	Complete

## Opportunities

HETL MICROBIOLOGY ACCESSIONING  
Blue = Future State, White = Savings



	Current	Future	Change	Yearly Savings
Cycles (Lists) Per Year	16.00	10.00	6.00	1,320.00
Other Savings, If Any			\$ -	
Steps (Number)	16.00	10.00	6.00	1,320.00
Lead Time (Hours)	52.77	0.22	52.55	11,608.67
Customer Non-Value Added Time (Hours)	47.99	0.00	47.99	10,558.70
Staff Time (Hours)	115.75	11.27	15.75	3,465.00
Cycle (Unit) Cost	\$940.18	\$392.08	\$548.10	\$120,582.00
Annual Cost	\$206,839.60	\$86,257.60	\$120,582.00	

## The participants, sponsors and Kate!

Participants
<b>Sponsor:</b> Ken Pote <b>VSM Manager:</b> Peter Smith
<b>Team Members:</b> Lori Webber Julie Crosby Kristi Rossignol Heather Maul Laura Shepherd Rick Danforth Beth Chesley Beth Pritchard Darcy Degone Jermelle Bessette Becki Pike Brian Bernier Becky Poulin Jason Pushard Linda Smith Jeff Randolph T. K. Lee May Hincley Rebecca St. Pierre Rose Barnett Natalie Thompson Lynn Rawley Lisa Robbins Nancy Farrin



# Turns into Real Savings

	Current	Future	Change	Yearly Savings
Number of Steps	16	10	-6	\$1,320.00
Lead Time in Hours	52.98	0.22	-52.77	\$11,608.67
Customer Non-valued Hours	47.99	0	-47.99	\$10,558.70
Staff Time in Hours	27.02	11.27	-15.75	\$3,465.00
Cycle Unit Cost	940.18	392.08	-548.1	\$120,582.00
Annual Cost	206839.6	86257.6	-120582	
Based on 220 cycles per year				



# Contact Info



- Dr. Ken Pote
- Maine Health and Environmental Testing Laboratory
- [Ken.pote@maine.gov](mailto:Ken.pote@maine.gov)

*The Association of Public Health Laboratories adheres to established standards regarding industry support of continuing education for healthcare professionals. The following disclosures of personal financial relationships with commercial interests within the last 12 months as relative to this presentation have been made by the speaker(s): Ken Pote – Nothing to Disclose*