

Webinar Wednesdays

Back to Basics:

Discovering Improvement
in Healthcare Using
Value Stream Mapping



Antonio Vargas
Solutions Architect



Shelby Anderson
*Marketing Content
Manager*

Welcome. The webinar will begin in a few minutes.

AUDIO WEB:

Please make sure you have your computer audio system activated and your speakers turned up.

QUESTIONS:

Please enter your questions in the questions pane on the right at any time.

Back to Basics:

Discovering Improvement
in Healthcare Using
Value Stream Mapping



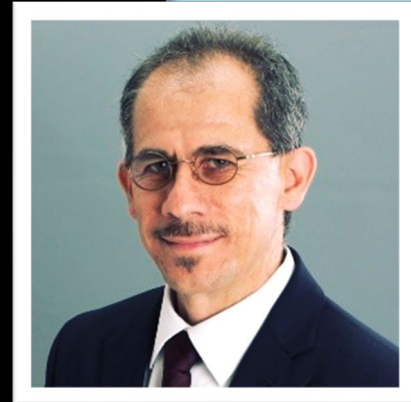


Meet the Presenter:

Antonio Vargas

Minitab Solutions Architect

- 20+ years applying and teaching data analytics tools to solve business problems in manufacturing, engineering, supply chain, finance, human resources.
- Certified Lean Six Sigma Master Black Belt.
- MS in ME and MBA from Marquette University.
- ASQ, PMI, ASA



For this webinar

- No previous knowledge of Value Stream Mapping is required
- No previous knowledge of Minitab Workspace is required
- Curiosity is essential!



Agenda

1. Industry Trends
2. Lean and Value Stream Map
3. Minitab Workspace
4. FAQ's – Key Points



Cost of healthcare

According to the Centers for Medicare & Medicaid Services, U.S. healthcare spending grew 4.6 percent in 2018, reaching \$3.6 trillion or **\$11,172 per person.**

As a share of the nation's Gross Domestic Product, health spending accounted for **17.7 percent.**



Quality improvement in healthcare

- Improve the health of the population
- Enhance patients and health care providers experiences and outcomes
- Reduce cost of care per capita

Source: Agency for Healthcare Research and Quality



Lean

is a business philosophy and set of methods that focuses on maximizing customer value while reducing waste or redundant activities in a process.

Assures that processes deliver the service patients need, in the way they need it, when they need it.

Lean starts with observation!



Value Stream Map

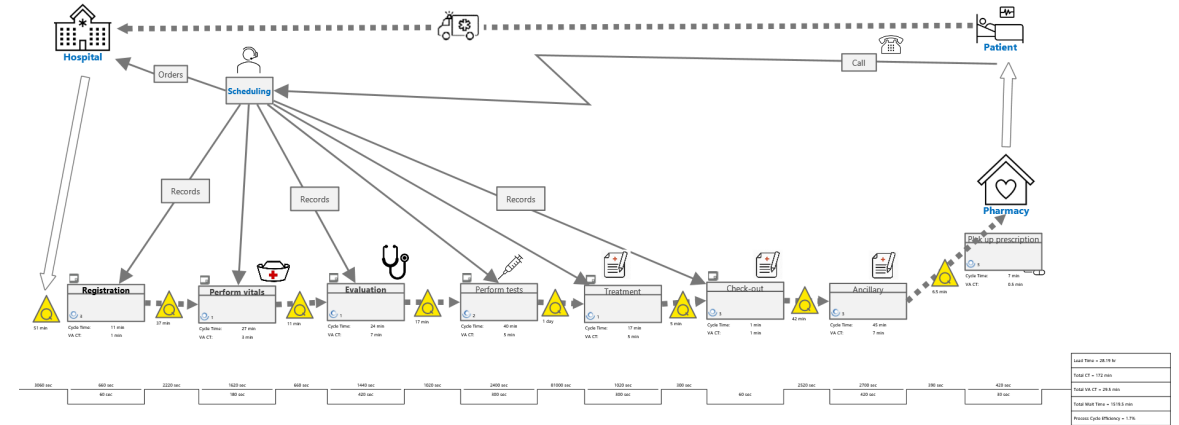
Visual representation of the activities, interactions, and flow in a healthcare process

Enables us to **see** the process the way work gets done

Turns “hidden” process steps into “visible” process steps

Identifies value added and wasteful steps

Provides direction for improvement



Lead Time = 28.19 hr
Total CT = 172 min
Total VA CT = 29.5 min
Total Wait Time = 1519.5 min
Process Cycle Efficiency = 1.7%

Deployment



Prepare

Define the problem

Identify patient's needs and translate into process metrics

Create charter and SIPOC



Create Current State Map



Identify Waste



Create Future State Map



Execute improvement action plan



7-steps to Current Value Stream Mapping

1. Customers and suppliers' boxes
2. Main process boxes
3. Process data in boxes, including people and process steps
4. Process time (PT), queue time (QT) and performance metrics
5. Interactions and flow of people, materials and information
6. Timeline
7. Total lead time, value added time, non-value added time and activity ratio

Current State in Minitab Workspace

VALUE STREAM MAP Value Stream Map Event.qcpx - Minitab Workspace - [Step 1. Value Stream Map]

FILE HOME INSERT VIEW MAP

Select Multi-Insert Pan Mode Shapes Connector Data Decimal Places Timeline Units Quick Format Fill Line Shadow Arrange Insert

Value Stream Map Event Project Charter **Step 1. Value Stream Map**

Add Tool Management Project Charter Financial Data Team Members & Roles Roadmap

- Preparation Phase
 - Preparation Checklist - 4 Weeks Prior to Event
 - VSM Event Assessment
 - Pre-Event Training Plan
- Day 1 - Create Current State VSM
 - A3
 - Day 1 Agenda
 - VOC Summary
 - CT Tree
 - SIPOC 1
 - Step 1. Value Stream Map
- Day 2 - Identify Waste
 - Day 2 Agenda

Lead Time	= 27.49 hr
Total CT	= 172 min
Total VA CT	= 29.9 min
Total Wait Time	= 1477.8 min
Process Cycle Efficiency	= 1.8%

Task Pane

What is Waste?

Waste is anything beyond the absolute minimum amount of information, people effort and resources needed to add value.



Value Added Activities

- must be something the customer recognizes as being important and is willing to pay for.
- must alter the process output.
- must be done right the first time.

Waste identification



Transportation

Excess movement of work-in process, information or material



Inventory

Information or material in queue



Motion

Wasted movement made by people while working



Waiting

Lost time due to poor flow



Over Processing

Work that adds no value to the customer or business



Over Production

Excess supply beyond the requirements of the next process



Defects

Rework of out-of-specification product or service



Poor Resource Utilization

Inefficient use of energy or people's time; not using people's ability

Developing the Future State

Activities:

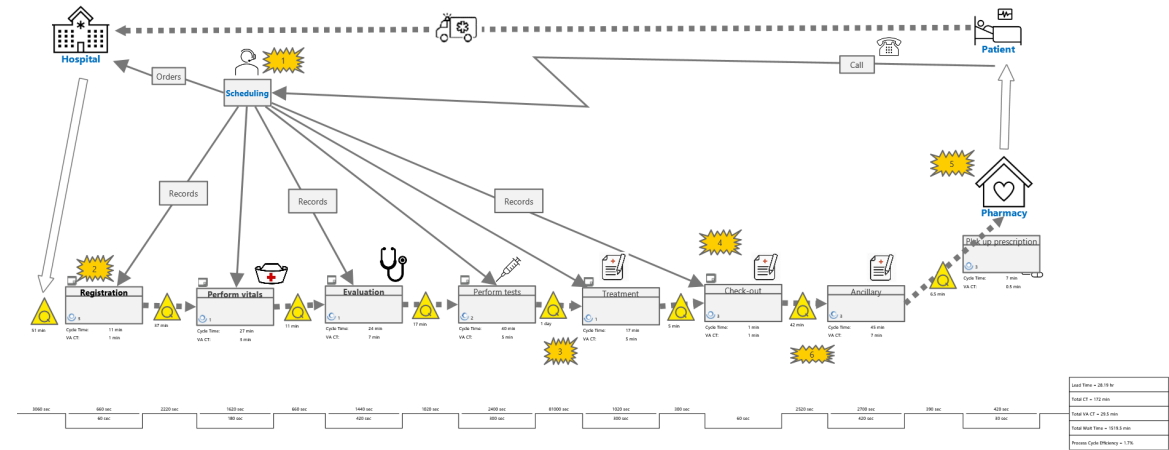
- What does the patient really need?
- Customer demand: Takt Time
- How are we doing in serving this need?
- How are health care activities performed?

Interactions:

- How do patients and healthcare providers interact with one another?
- Which interactions create value? Which are waste?

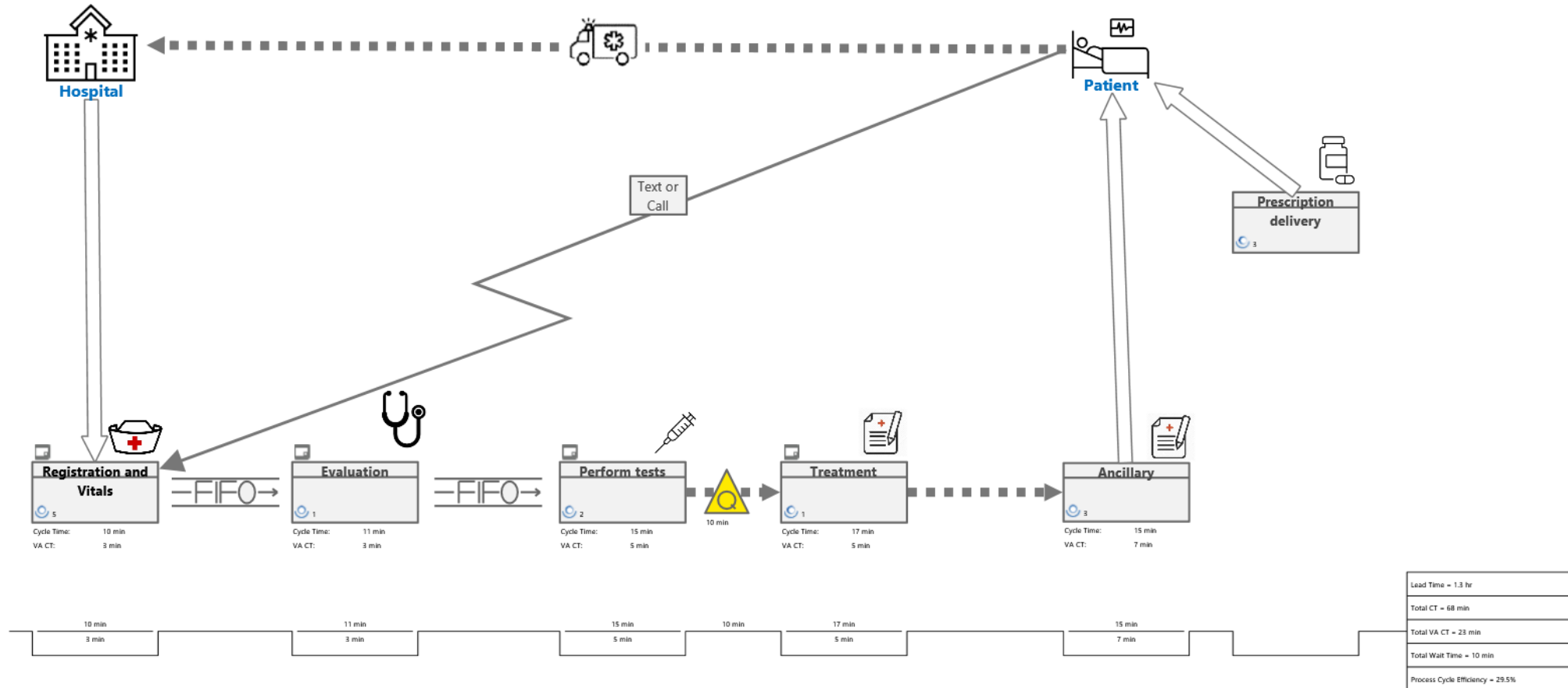
Flow:

- What are the paths that people, information, or material take?
- Less waiting and fewer interruptions?

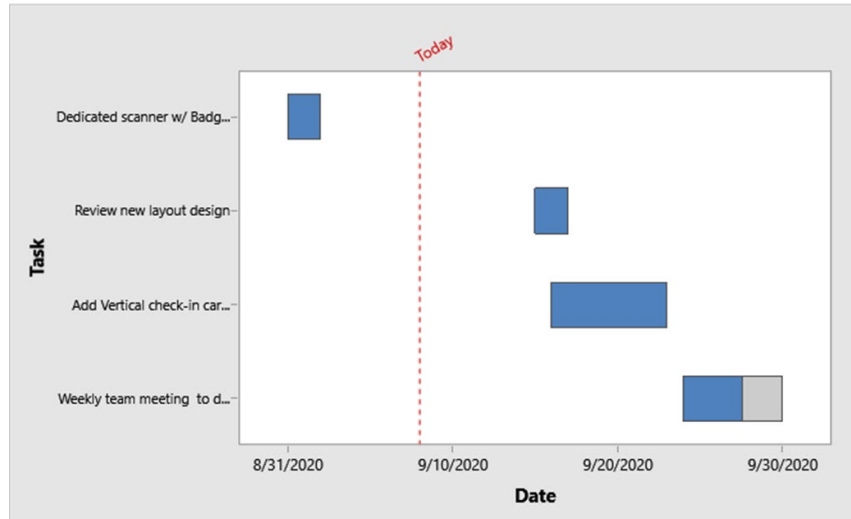


Operation/Process Step	Types of Waste							
	Overproduction	Waiting	Transportation	Overprocessing	Excess Queue	Unnecessary Movement	Defects	People Resource Utilization
Registration	8	8	0	7	8	7	1	3
Perform vitals	0	7	3	5	7	7	0	0
Evaluation	5	3	0	5	3	0	9	1
Perform tests	5	4	3	5	4	5	1	5
Treatment	5	6	0	5	6	8	7	1
Check-out	0	9	0	1	9	5	0	0
Ancillary	3	7	0	3	7	5	1	0
Pick up prescription	0	5	5	3	5	5	3	3

Future State in Minitab Workspace



Improvement action plan



Tasks

#	Status	Subject	Assigned To	Start Date	Due Date	Completion Date	% Complete	Chart End Date
1	In Progress	Add Vertical check-in cards in Close Proximity to waiting room or other Modification	Nurse	9/16/2020	9/16/2020	9/23/2020	100%	9/23/2020
2	Completed	Dedicated scanner w/ Badge Reader	Practice Director	8/31/2020	8/30/2020	9/2/2020	100%	9/2/2020
3	Completed	Investigate kanban process	Practice Manager	9/11/2020	9/10/2020	8/30/2020	100%	8/30/2020
4	Completed	Review new layout design	Value Stream Manager	9/15/2020	9/15/2020	9/17/2020	100%	9/17/2020
5	In Progress	Meet with Finance , team lead to discuss the following topics: contribution and current labor allocation.	Finance	9/24/2020	8/31/2020	9/9/2020	70%	9/9/2020
6	In Progress	Weekly team meeting to discuss the following topics: a. Site Status / Prelim Findings b. Next Site Visits c. Analytics for 5 sites to date d. Analytics for ADDITIONAL sites e. Ongoing Cadence for future calls	VP of Healthcare Operatic	9/24/2020	9/1/2020	9/30/2020	60%	9/30/2020
7	Waiting	Multiple calls to discuss purpose of gemba walks	Lean Sensei	9/2/2020	9/1/2020		30%	9/1/2020
8	Deferred	Gathered and reviewed data concerning a. cost per unit b. units per minute c. Core cost per associate d. Core hours per associate. This information will help us better prioritize effort and breakdown of labor	Practice Director	9/3/2020	9/1/2020		20%	9/1/2020

Results

Seq ID	Step/Activity	VA	NVA	QT minutes	Lead Time
1	Current Process Map - Registration	1.001 min	9.999 min	51	62.00 min
2	Current Process Map - Perform vitals	2.9997 min	24.0003 min	37	64.00 min
3	Current Process Map - Evaluation	6.9984 min	17.0016 min	11	35.00 min
4	Current Process Map - Perform tests	5 min	35 min	17	57.00 min
6	Current Process Map - Treatment	4.9997 min	12.0003 min	1440	1,457.00 min
7	Current Process Map - Check-out	1 min	0 min	5	6.00 min
8	Current Process Map - Ancillary	6.9975 min	38.0025 min	42	87.00 min
9	Current Process Map - Pick up prescription	0.4998 min	6.5002 min	6.5	13.50 min
Totals:		29.50 min	142.50 min	1,609.50 min	1,781.50 min
Activity Ratio %		1.66%			

Seq ID	Step/Activity	VA	NVA	QT minutes	Lead Time
1	Future Process Map - Registration and Vitals	3 min	7 min	0	10.00 min
3	Future Process Map - Evaluation	2.9997 min	7.9992 min	0	11.00 min
4	Future Process Map - Perform tests	4.9995 min	10.5 min	0	15.50 min
6	Future Process Map - Treatment	4.9997 min	12.0003 min	10	27.00 min
8	Future Process Map - Ancillary	6.999 min	7.9995 min	0	15.00 min
Totals:		23.00 min	45.50 min	10.00 min	78.50 min
Activity Ratio %		29.30%			

	VA	NVA	QT	Total Lead Time
Improvement:	6.50 min	97.00 min	1,599.50 min	1,703.00 min
% Improvement:	22%			



Lean is increasingly being used in healthcare

Based on studies performed for the Agency for Healthcare Research and Quality, success of **lean initiatives** depends on:

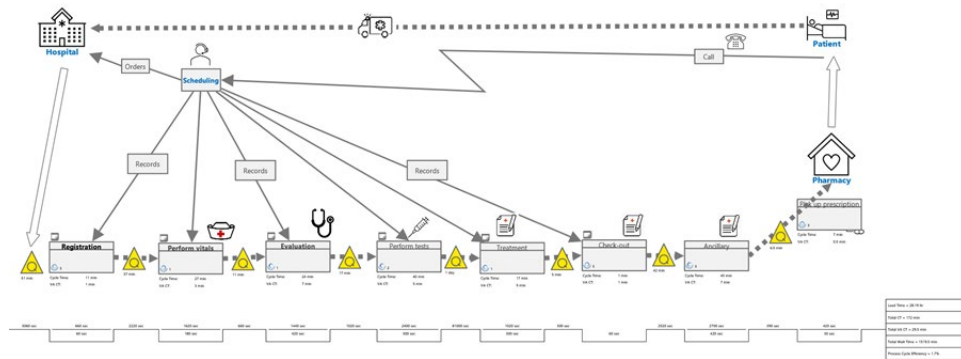
- Knowledge and skills 🧑🏻‍⚕️
- Vision, mission and scope
- Intermediate and ultimate outcomes
- Integration into organizational routines



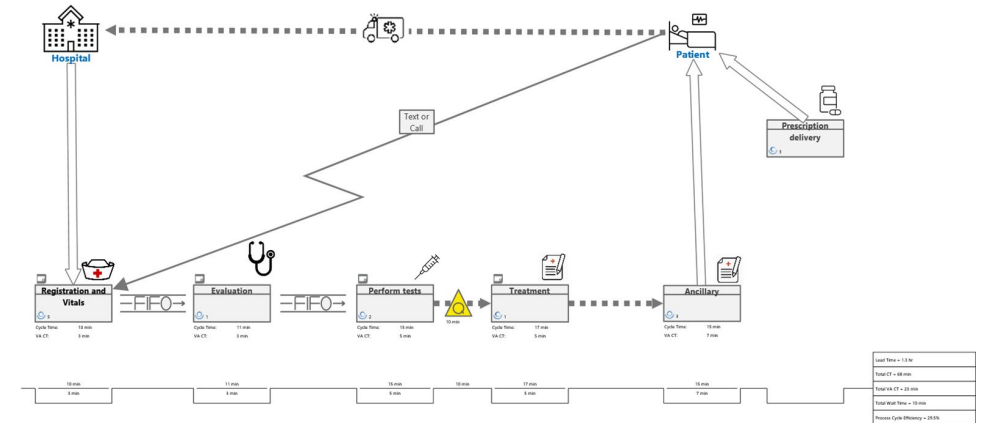
FAQ's and key points

1. Objectives of current and future state VSM?

Current State



Future State



FAQ's and key points

1. Objectives of current and future state VSM?
2. What is activity ratio?

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FAQ's and key points

1. Objectives of current and future state VSM?
2. What is activity ratio?
3. Do you always need to eliminate steps? What if you need to add steps?

FAQ's and key points

1. Objectives of current and future state VSM?
2. What is activity ratio?
3. Do you always need to eliminate steps? What if you need to add steps?
4. Would you consider segmenting the work by work type to improve flow?

Our Approach: More Than Business Analytics... Solutions Analytics

Solutions analytics is our integrated approach to providing software and services that enable organizations to make better decisions that drive business excellence.

Software

Data Analysis



Powerful statistical software everyone can use.

Predictive Modeling



Machine learning and predictive analytics software.

Visual Business Tools



Minitab Workspace™

Visual tools to process and product excellence.

Project Oversight



Companion by Minitab®

Start, track, manage and execute improvement projects with real-time dashboards.

Online Training



Quality Trainer®

Master statistics and Minitab anywhere with online training.

Services



Training

Learn first-hand by attending public or customized trainings in your facilities according to your requirements.



Statistical Consulting

Personalized help with statistical challenges from collecting the right data to interpreting analysis more.



Support

Assistance with installation, implementation, version updates and license management.





The Minitab Virtual Launch Event

ACCELERATING DIGITAL TRANSFORMATION

October 21st

10:30 AM ET/3:30 PM BST/4:30 PM CEST/2:30 PM UTC

Join us for this exclusive, free virtual event as Minitab unveils new solutions that will enable and accelerate your digital transformation journey and transform your business.

[REGISTER NOW](https://info.minitab.com/virtual-launch-event): info.minitab.com/virtual-launch-event

Thank You!

From all of us at

Minitab ®