Value Stream Mapping

From Silos to Singularity

Transformation Consulting

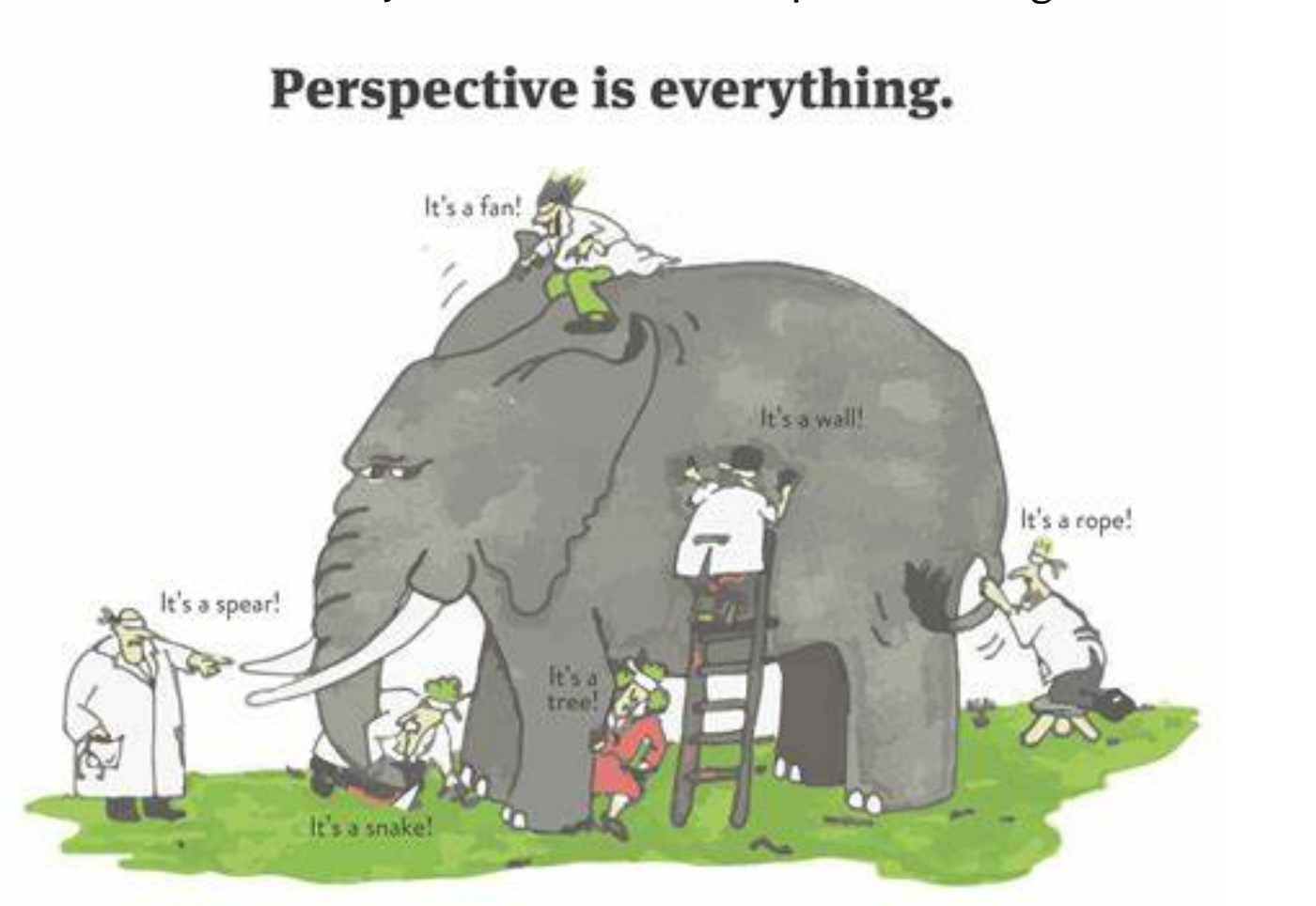
02.13.2020

Why Do a Value Stream Map?

- To understand the process from the patient/customer's point of view
  - They doesn't care about your departmental silos
- Creates a common vision amongst isolated teams
- Provides a foundation on which to build for continuous improvement

The Customer's Point of View

Remember, the Value Stream Map participants are a mixed bag of individuals who first see any situation from their particular angle…



What is a Value Stream Map?

A **Value Stream Map** (VSM) helps you see the big picture of how a process flows from beginning to end and uncovers hidden waste within the process.

Process Name: Going to the Dr's office when ill | **Team Members:** Abbott, Cathy; Davis, LaToya; Vasquez, Robert | **Date:** 9/14/2019

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PROCESS	Schedule a Dr. Appointment	Arrrive at Office & Sign in	Fill Out Forms	Go to Exam Room	Dr. Examines You and Writes a Prescription	Check Out
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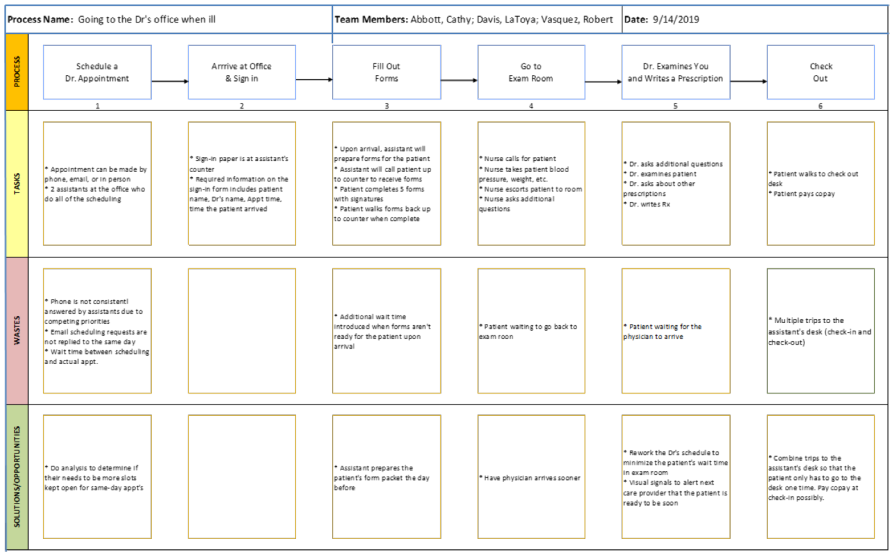
WASTES	* Phone is not consistentl answered by assistants due to competing priorities * Email scheduling requests are not replied to the same day * Wait time between scheduling and actual appt.		* Additional wait time introduced when forms aren't ready for the patient upon arrival	* Patient waiting to go back to exam roon	* Patient waiting for the physician to arrive	* Multiple trips to the assistant's desk (check-in and check-out)
SOLUTIONS/OPPORTUNITIES	* Do analysis to determine if their needs to be more slots kept open for same-day appt's		* Assistant prepares the patient's form packet the day before	* Have physician arrives sooner	* Rework the Dr's schedule to minimize the patient's wait time in exam room * Visual signals to alert next care provider that the patient is ready to be soon	* Combine trips to the assistant's desk so that the patient only has to go to the desk one time. Pay copay at check-in possibly.

A VSM Can Work in Conjunction with an A3

A **VSM** helps you see the big picture of how a process flows from beginning to end.

An **A3** helps you focus on **one specific waste** that you may have uncovered while doing the VSM.



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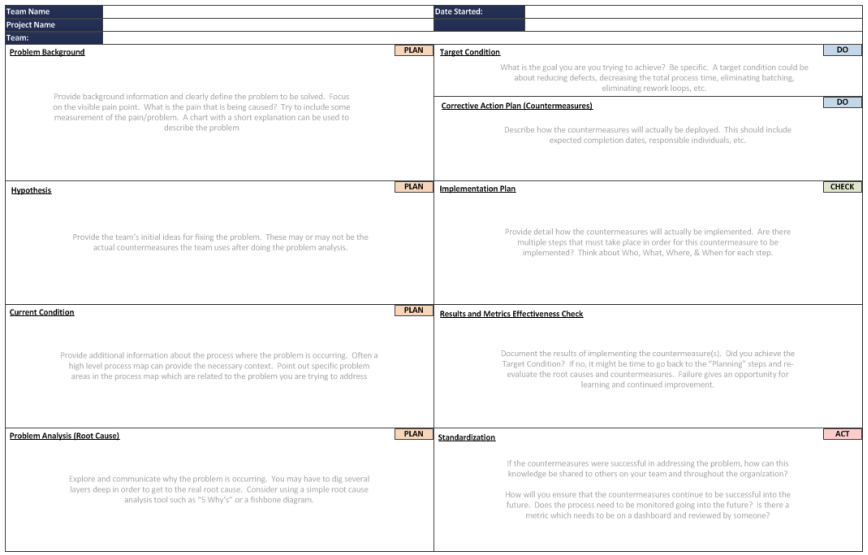


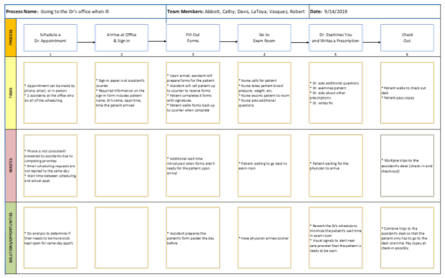
Team Name	Date Started:
Project Name	
Team:	

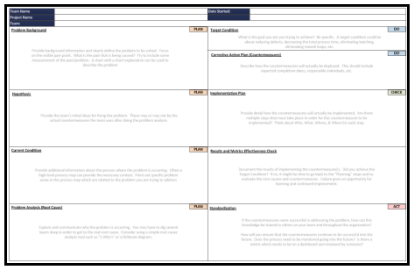
Problem Background (PLAN) Provide background information and clearly define the problem to be solved. Focus on the visible pain point. What is the pain that is being caused? Try to include some measurement of the pain/problem. A chart with a short explanation can be used to describe the problem	**Target Condition** (DO) What is the goal you are you trying to achieve? Be specific. A target condition could be about reducing defects, decreasing the total process time, eliminating batching, eliminating rework loops, etc.
	Corrective Action Plan (Countermeasures) (DO) Describe how the countermeasures will actually be deployed. This should include expected completion dates, responsible individuals, etc.
Hypothesis (PLAN) Provide the team's initial ideas for fixing the problem. These may or may not be the actual countermeasures the team uses after doing the problem analysis.	**Implementation Plan** (CHECK) Provide detail how the countermeasures will actually be implemented. Are there multiple steps that must take place in order for this countermeasure to be implemented? Think about Who, What, Where, & When for each step.
Current Condition (PLAN) Provide additional information about the process where the problem is occurring. Often a high level process map can provide the necessary context. Point out specific problem areas in the process map which are related to the problem you are trying to address	**Results and Metrics Effectiveness Check** Document the results of implementing the countermeasure(s). Did you achieve the Target Condition? If no, it might be time to go back to the "Planning" steps and re-evaluate the root causes and countermeasures. Failure gives an opportunity for learning and continued improvement.
Problem Analysis (Root Cause) (PLAN) Explore and communicate why the problem is occurring. You may have to dig several layers deep in order to get to the real root cause. Consider using a simple root cause analysis tool such as "5 Why's" or a fishbone diagram.	**Standardization** (ACT) If the countermeasures were successful in addressing the problem, how can this knowledge be shared to others on your team and throughout the organization? How will you ensure that the countermeasures continue to be successful into the future. Does the process need to be monitored going into the future? Is there a metric which needs to be on a dashboard and reviewed by someone?

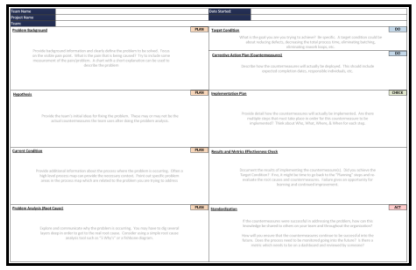
The **VSM** helps the team uncover the wastes.
The **A3** helps the team think through how to counter each waste, **one at a time**.

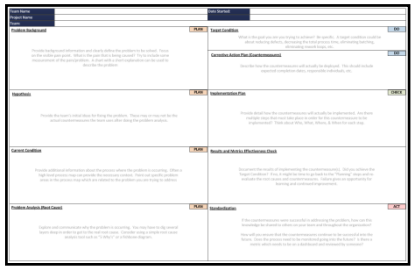
Think of It This Way…

One **VSM** could uncover multiple wastes in a process. . .









. . .and you could do **one A3** in order to understand and create countermeasures **for each waste**.

The VSM Template is Made Up of 4 Rows

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Process

Tasks

Waste

Solutions /Opportunities

When Completing a VSM…

Start at the Top Left, then go Left to Right, Top to Bottom.

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Start With The Top Row – The Process Row

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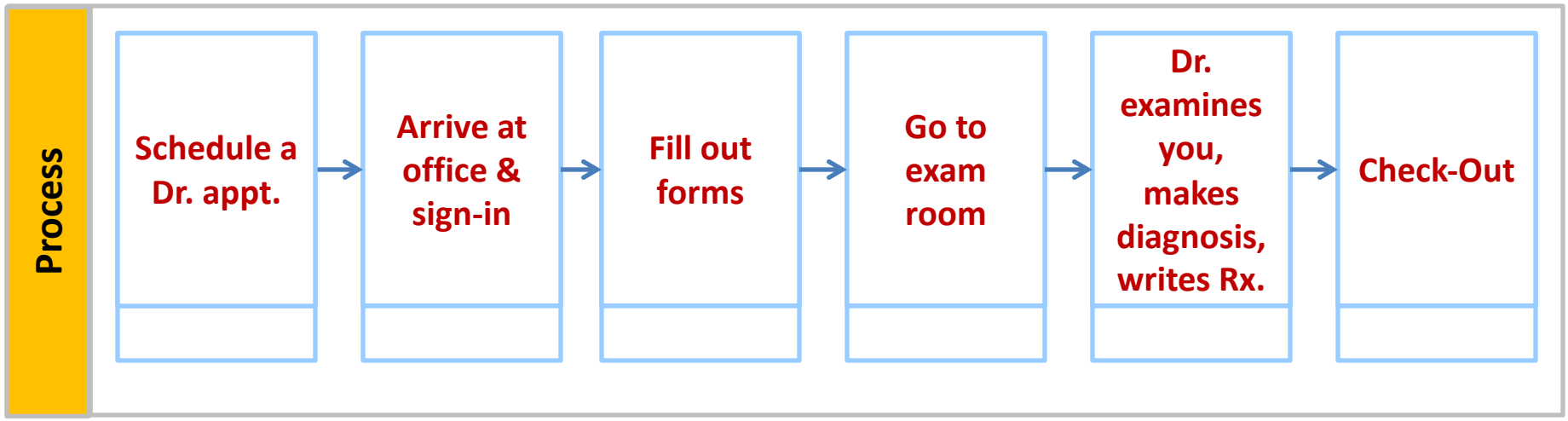
In the Process Row

1) Enter the high-level process steps. Try to keep it between 5-8 steps and avoid using decision boxes. Think of each as a hand-off to the next bucket of work.

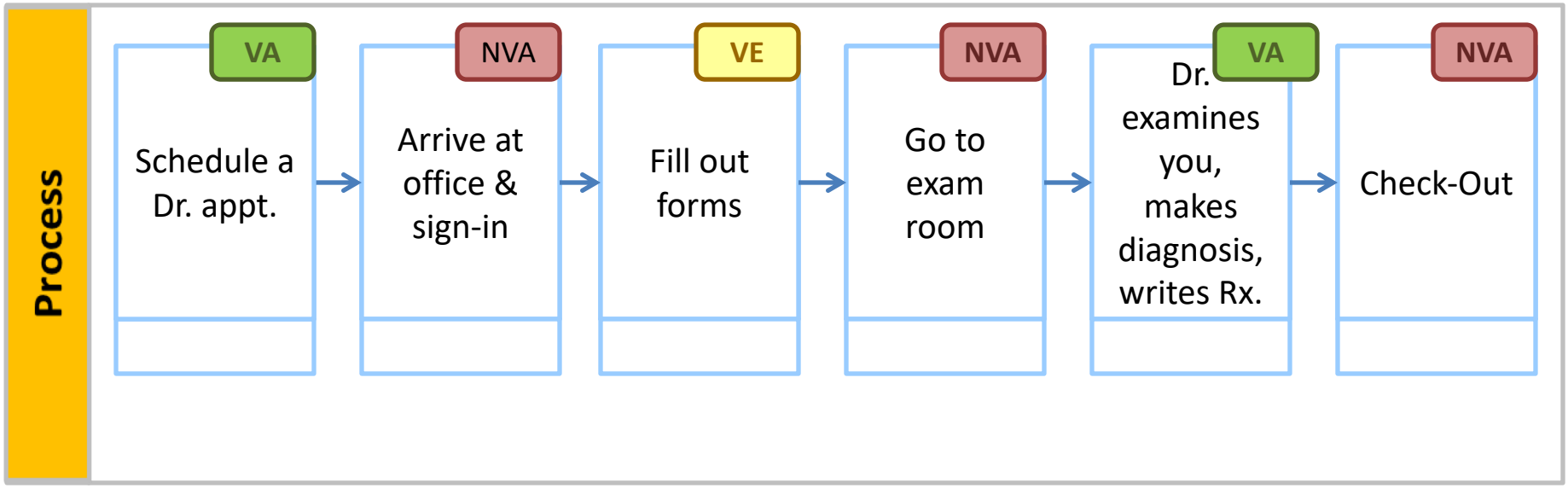
2) Complete each row, left to right, before you proceed to the next row.



In the Process Row (continued)

What does the customer truly value?

- **VA**: value-adding step. The customer directly benefits from this step.
- **NVA**: non-value-adding step. This is waste. The customer does not directly benefit from it.
- **VE**: value-enabling step. Not a value-adding step to the customer, but the business is required to do it



Process Row Completed, Move to the *Task*

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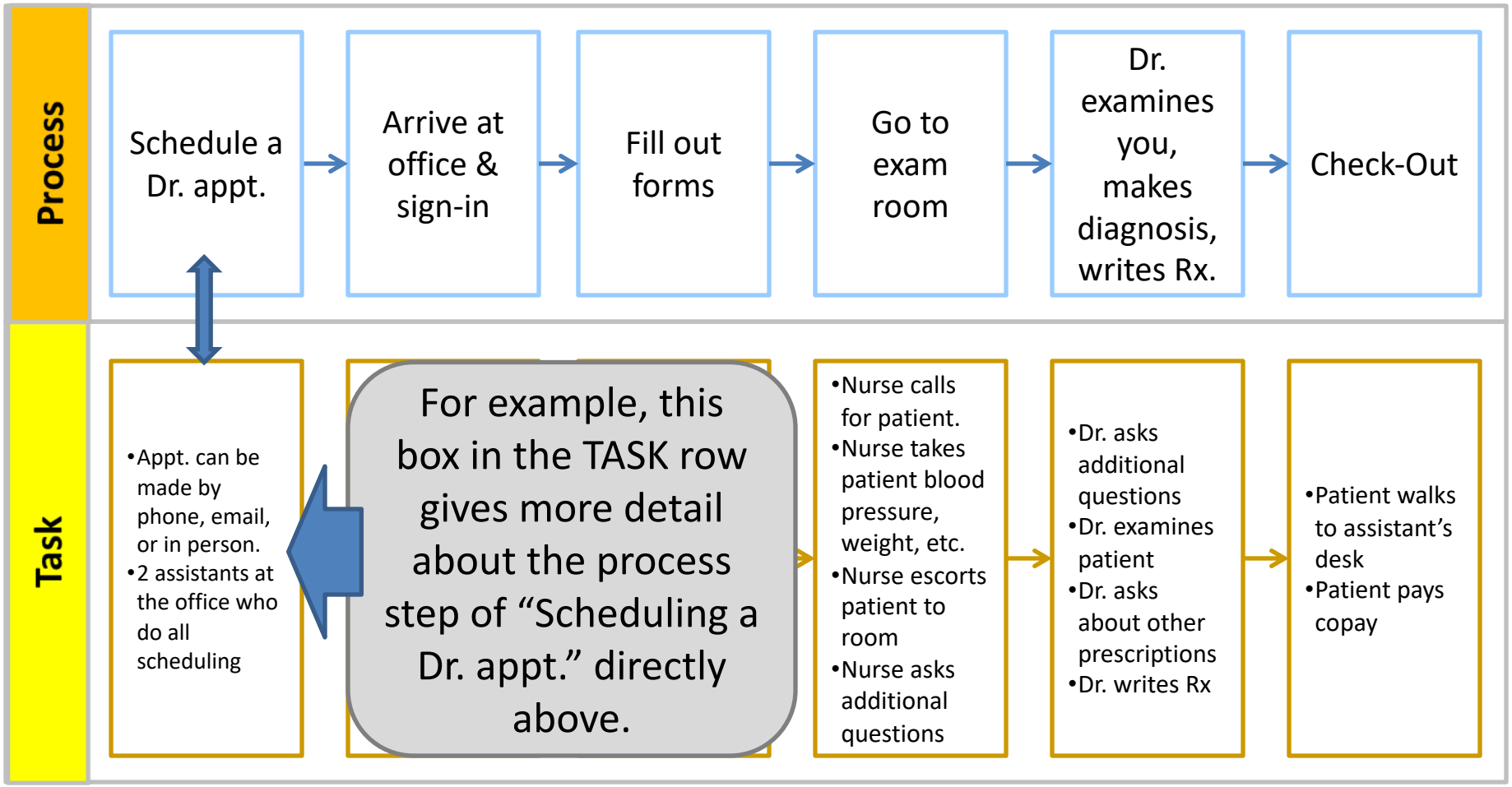
In the Task Row

Provide more detail about what actually happens in the process step above. There may be multiple small process steps which contribute to the high-level process step above. This can also be a place to note variations in the process.



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In the Waste Row

Document any waste identified in that process step. **Waste** is any activity that does not add value to the process. Below are the 8 different types of waste which occur in processes.

The acronym **DOWNTIME** articulates examples of waste for identifying potential metrics:

- **D**efects
- **O**verproduction
- **W**aiting
- **N**ot Using Creativity or Talent
- **T**ransportation
- **I**nventory
- **M**otion
- **E**xtra-Processing

In the Waste Row (continued)

Henry Ford Health System

Document any waste identified in that process step. Remembering the 8 different categories of waste can help you think through what possible wastes might be hiding in the process. **Every box does not have to be filled in.**

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Waste	•Customer calls are not consistently answered. •Email scheduling requests not responded to the same day •Wait time between scheduling and actual appt		•Additional wait time when form packets aren't ready for the patient upon arrival •Patient does not complete form entirely or correctly 30% of the time	ple trips e tant's (forms, k-in, and k-out)			

Once again, notice that this box in the WASTE row gives specific wastes regarding the process step of "Fill Out Forms" directly above

In the Waste Row (continued)

Henry Ford Health System

Try to add data to show the impact the waste is having on the process

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Waste	•Customer calls are not consistently answered. •Email scheduling requests not responded to the same day •Wait time between scheduling and actual appt		•Additional wait time when form packets aren't ready for the patient upon arrival •Patient does not complete form entirely or correctly **(30% of the time)**	•Patient waiting to go back to exam room.	•Patient waiting for the physician to come **(about 20 minutes on average)**	•Multiple trips to the assistant's desk (forms, check-in, and check-out)	

Waste row completed, move to the *Solutions/Opportunities*

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In the Solutions/Opportunities row…

1) Document any ideas for improving the process in general (Brain Dump).
2) Document any ideas for how to eliminate or reduce each of the wastes in the row above. You are ***not*** making any Decisions at this point.

Wastes	• Customer calls are not consistently answered. • Email scheduling requests not responded to the same day		• Patient does not complete form entirely or correctly **(30% of the time)**	• Patient waiting to go back to exam room.	• Patient waiting for the physician to come **(about 40 minutes on average)**	• Multiple trips to the assistant's desk (forms, check-in, and check-out)
Solutions/Opportunities	**1)** Do analysis to determine if there needs to be more slots kept open for same-day appt.'s. **2)** Consider cross training staff to handle front desk responsibilities		**3)** Assistant prepare the patient's form packet the day before. **4)** Assistant email or mail the forms to the patient prior to the appt	**5)** Have physician arrive sooner	**6)** Rework the Dr.'s schedule to minimize the patient's wait time in exam room. **7)** Visual signals to alert next care provider that the patient is ready to be seen	**8)** Combine trips to the assistant's desk so that the patient only has to go to the desk one time. Pay copay at check-in

COMPLETED!

Henry Ford Health System

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What Happens Next?

- The VSM eventually turns into a Work Plan to implement any and/or all of the **Solutions / Opportunities** identified in the fourth row that the team comes up with!

Each one of the **Solutions / Opportunities** gets assigned:

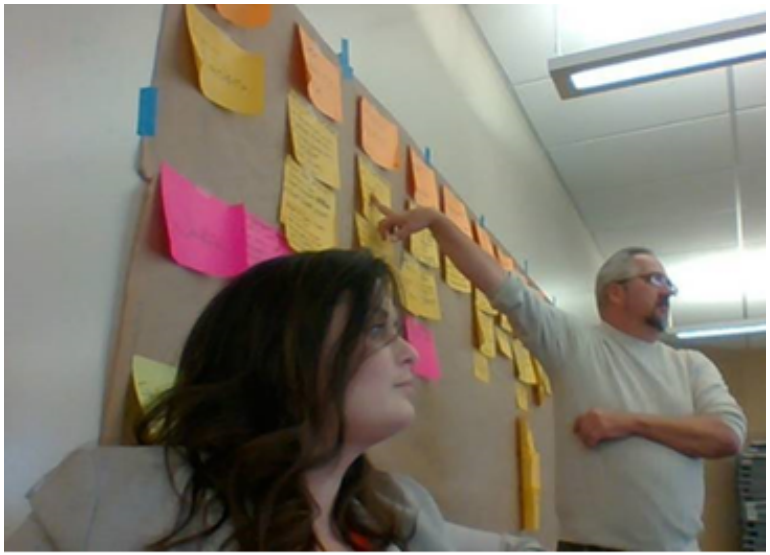
- ✓ an Owner
- ✓ a Targeted Implementation date
- ✓ a L (low), M (medium), or H (high) indicator for both the **Effort** and **Impact** of execution

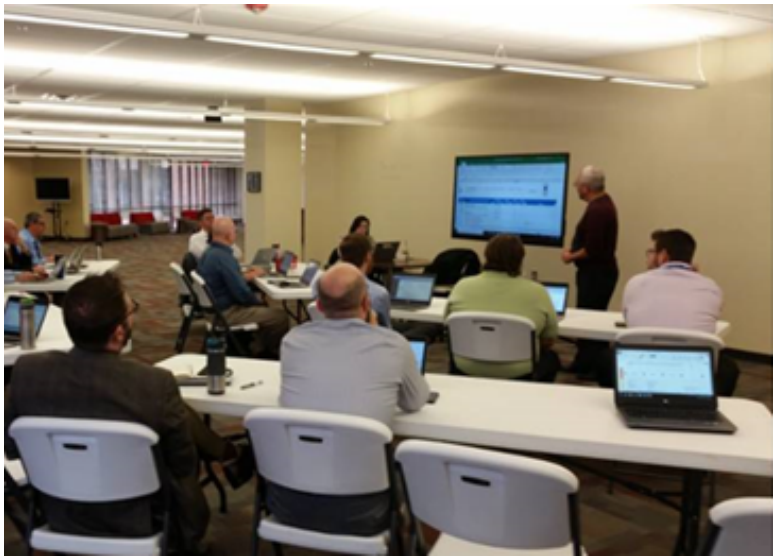
#	Owner	Task Name	Status Indicator	Description and Action Steps	Target Imp Date	Effort (H, M, L)	Impact (H, M, L)	Priority	Status
9	Maggie	Meeting Set-up	●	Set up meeting with claims to address the claims review prior to the mass adjustments	3/15; 2/29; 1/26/2016	L	L		2/25 - VSM meeting scheduled for 3/4. 2/5 - Maggie to set-up meeting with Ryan, Jeanne, Donna S and myself to first capture "Current" state via a swim lane diagram. Changed Target Imp Date. 1/19: Christine requested VSM that includes M. Kopczyk, Ryan Moore, Don Kiefiuk; Jeanne Blausey, Maggie Luke, Peggy Crandell, Christine Harder, Donna Siegmund.
10b	Kathy	Improve 100% audit process	●	Improve the 100% audit process	3/15/2016	M	H		2/25 - Christine still wants to do additional analysis within her group at a more detailed level of Kathy's process. In addition, Discovery has indicated that the 100% is still necessary on the back end. 2/5 - Added this new task as a splinter task off of item #10a that is nowshown as completed below.
1	Maggie	Automate Scrub	●	Automate scrub to eliminate second review	3/30; 2/2/2016	L	M		2/25 - Still under review, and a potential SR may be required. 2/5 - Changed the logic to see if we can narrow it downt to 1 record and not multiple. 1 subscriber to 1 carrier.
2	Celia	Create Workbasket	●	Create workbasket for analyst to pull work	4/19/2016	H	H		
3	Maggie	Re-evaluate questionaire	●	Re-evaluate the questionnaire to CMS standards	4/19/2016	H	H		1/19: SR needed
6	Maggie	Create Error Report	●	Error report for cases with dual HAP coverage	4/19/2016	M	L/M		1/19: SR needed - Ambu to review
8	Maggie	Automate Flags	●	Evaluate how to automate flags currently set manually	4/19/2016	H	H		1/19: See #3, flag rationale needs to be applied.
4	Maggie	Streamline COB Updates	●	Streamline COB updates to system in Aspect to stop duplicate work	7/19/2016	H	H		1/19: SR needed
10a	Kathy	Eliminate 100% audit	●	Automate Kathy's spreadsheet (Reporting/Celia)	2/2/2016	M	M		2/5 - **Completed.** Audit process will remain at 100% based on Vendor recommendation, but we will look at improving that particular process. 1/19: This really is to assess an audit frequency to eliminate 100% current review.
7	Maggie	Dummy SSN	●	Evaluation of the source for the dummy SSN	2/8/2016	N/A	N/A		2/5 - Completed. Ticket is closed. 1/19: Open a ticket
5	Maggie	Re-evaluate	●	Re-evaluate questionnaire to CMS standards	4/19/2016	H	H		1/19 - **Completed.**

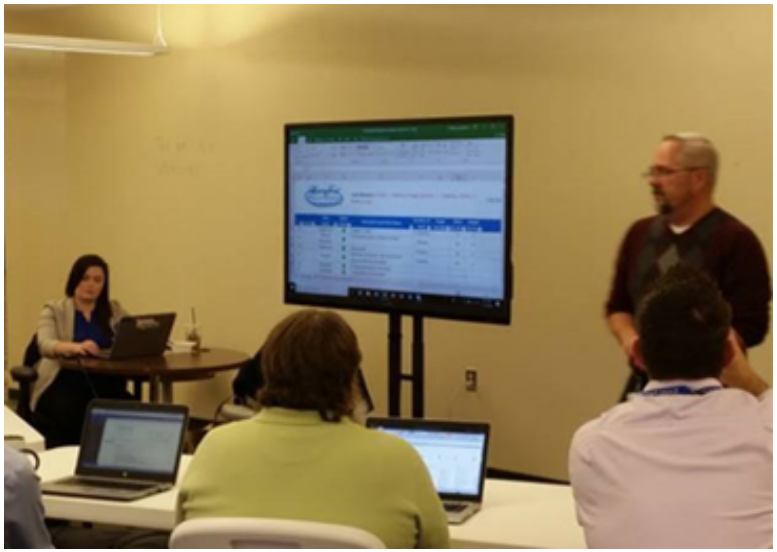
Key Points

- ✓ Keep the group small and focused
- ✓ Include *representatives from each department* that is involved in doing the work
- ✓ Actually observe the process (when possible)
- ✓ Objective analysis. . . **Blame Free**
- ✓ Avoid getting lost in the details – stay high level
- ✓ A large process may be broken up into multiple VSM's

IT Application Inventory VSM / Work Plan Sessions (Rochester Hills)







A3 & PDCA Problem Solving

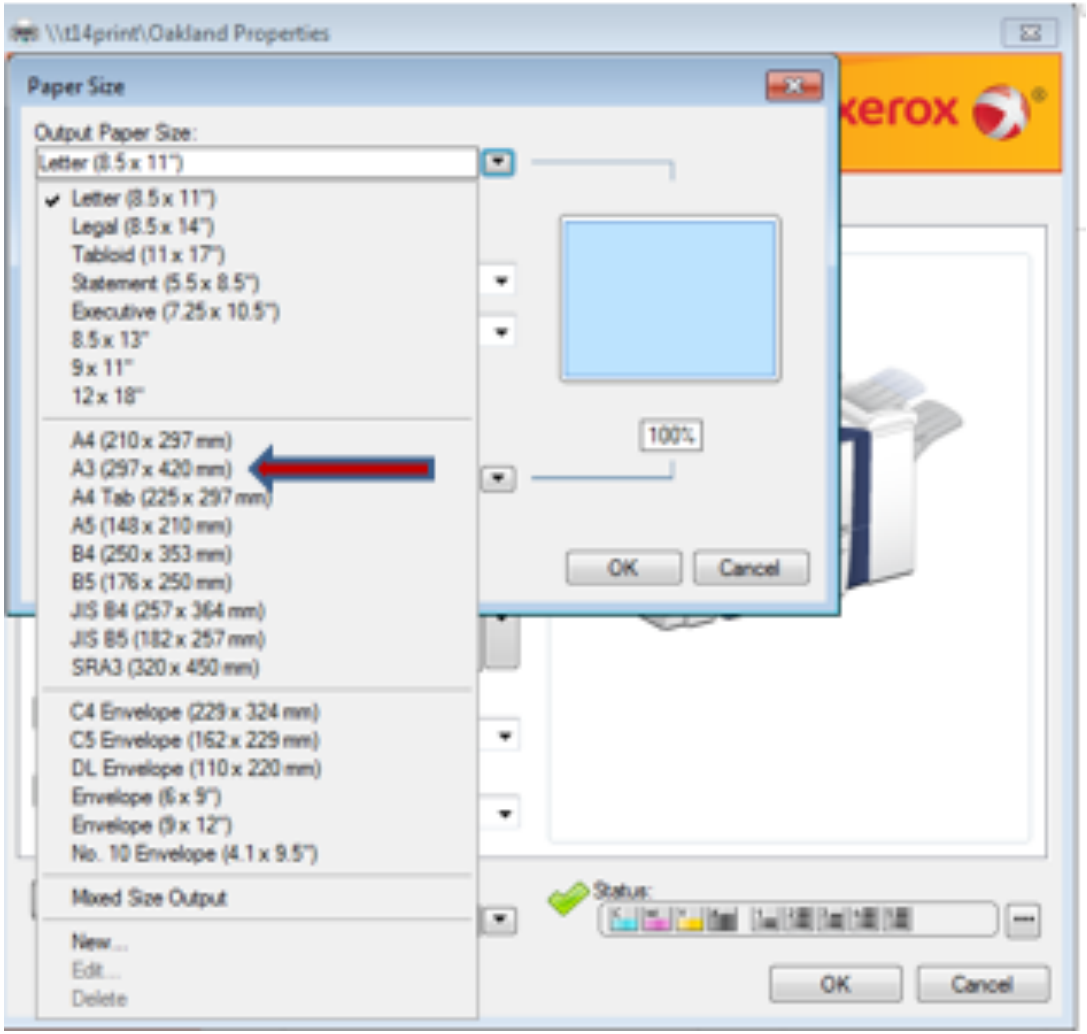
(TC / 02.13.2020)

Objectives

- Understand that the A3 is a tool to work through the PDCA (Plan-Do-Check-Act) cycle
- Be able to start solving real business problems using the A3 tool either individually or with your team
- Understand the relationship between the A3 and a VSM (Value Stream Map)

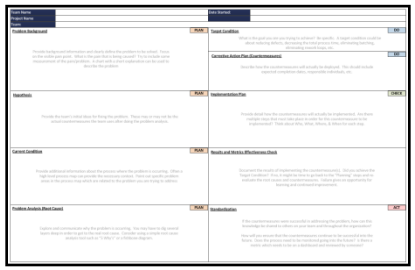
What is an A3?

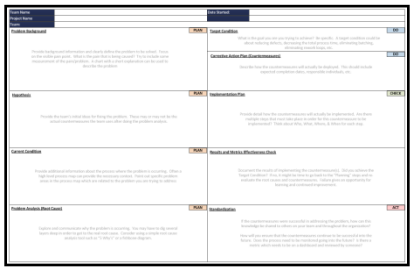
- Tells the story of solving a problem on 1 page
- Based on the **PDCA** cycle, which is the core of problem solving for continuous improvement
- Typically done on an 11 x 17 or larger size paper

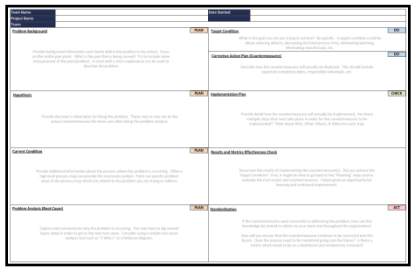


An A3 Can Work in Conjunction with a VSM

One **Value Stream Map (VSM)** could **uncover multiple wastes** in a process.





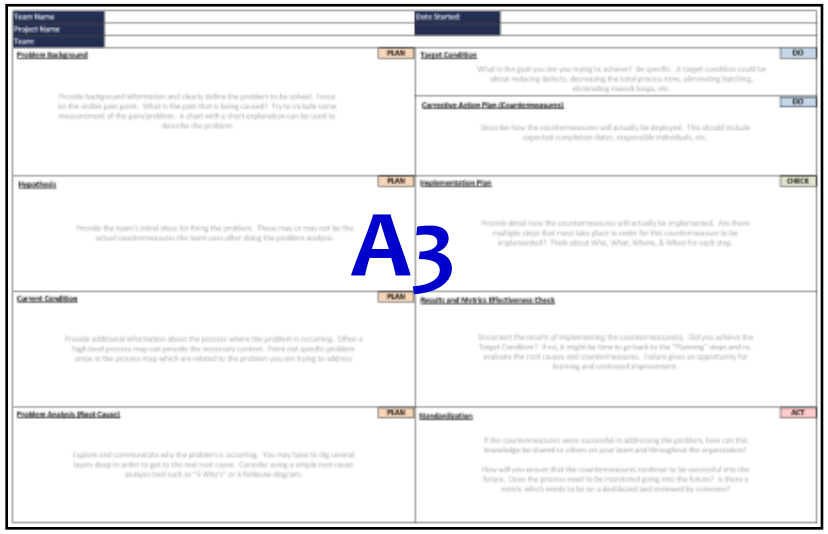


. . .and you could do **one A3** in order understand and create countermeasures **for each waste**.

But Can Also be Used Independently

Use an A3 for any identified waste for which the countermeasure (solution) is not clear.

Chose only one waste for each A3 that you do.



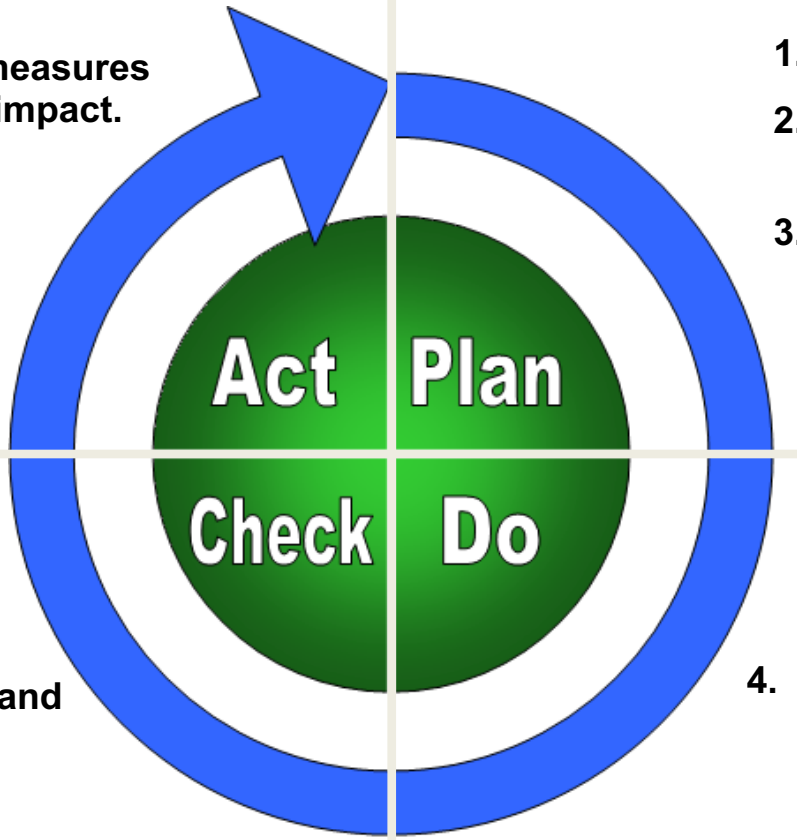
You don't have to do a VSM in order to use the A3. Often, you already know that there is a waste that needs to be solved for . . . Time to start an A3.

PDCA & A3

An A3 helps us work through the problem solving cycle.

6. **Standardize countermeasures which had a positive impact.**

   Share the learnings.



1. **Define the problem**
2. **Understand the current condition of the process**
3. **Uncover the root cause of the problem**

5. **Evaluate the results and effects of the implemented countermeasure.**

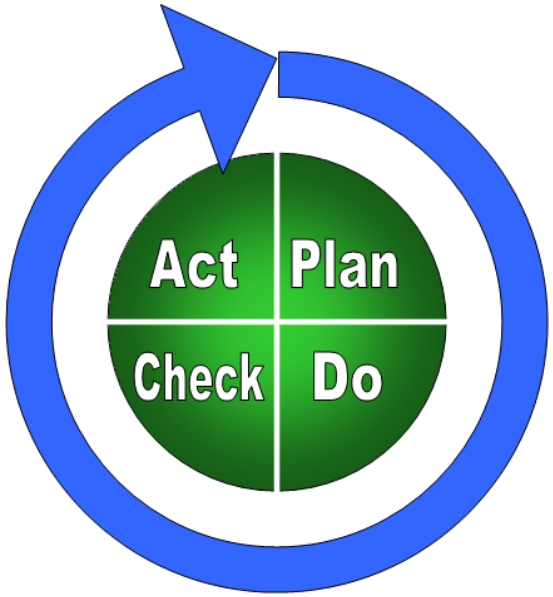
   What was learned from the experiment?

4. **Develop countermeasures which address the root cause of the problem**

   Implement the change decided by the team (on a small scale first if possible)

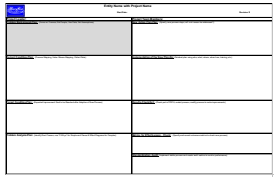
How an A3 Works with PDCA

An A3 template is really just a structured format for working through the PDCA cycle in order to solve a problem.



General Info	
PLAN	PLAN
PLAN	PLAN / DO
PLAN	DO / CHECK
PLAN	CHECK
	ACT

Problem Background

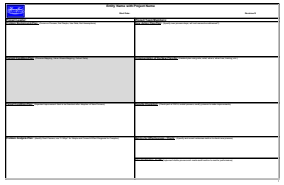


In the **Problem Background** box, clearly define the problem to be solved and provide background information. Focus on the visible pain point. What is the pain that is being caused? Try to include some measurement of the current pain/problem. State just the facts – no opinions, no hypotheses. A chart with a short explanation can also be used to describe the problem.

Problem Background

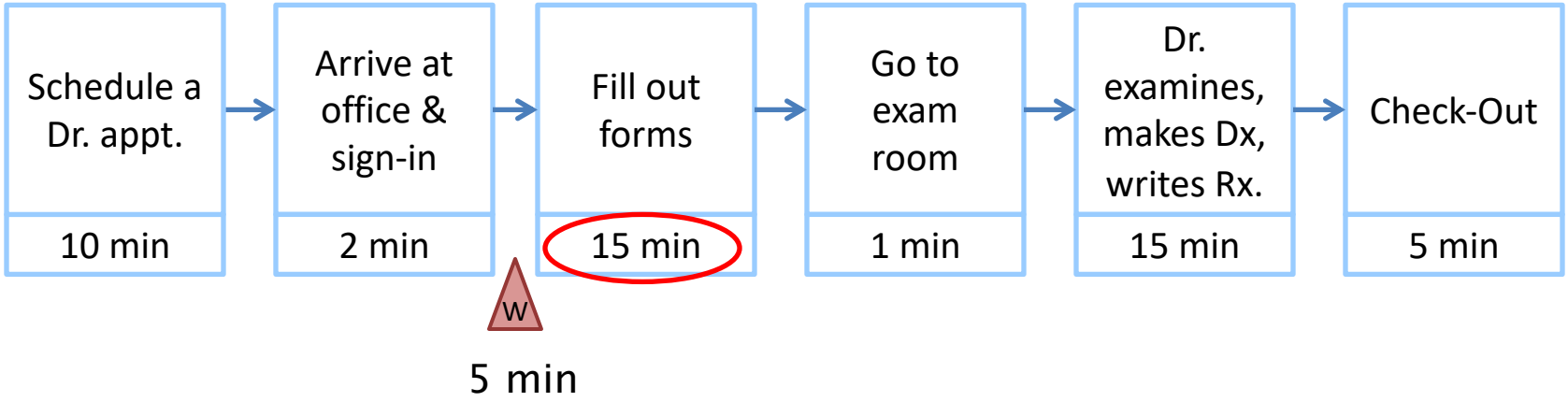
After entering the office the patient takes on average 15 minutes to complete the forms. Based on a recent customer survey, patients have voiced their displeased with the amount of time spent in the front office prior to seeing a care provider.

Current Condition

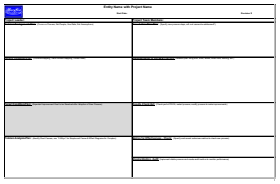


In the **Current Condition** box, provide additional information about the process where the problem is occurring. Often a high level process map can provide the necessary context. Point out specific issues which are related to the problem you are trying to address, such as how much team member time is spent on the work, how much work is produced, how many defects in the process, how much wait time, etc.

Current Condition



Target Condition

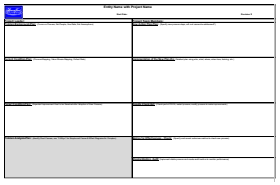


In the **Target Condition** box, document what the goal is that you are you trying to achieve. Be specific. A target condition could be about reducing defects, decreasing the total process time, eliminating batching, eliminating rework loops, etc. It should be an improvement from the current condition.

Target Condition

Over a three (3) month period, we plan to trim the visit time from 15 minutes to 5.

Problem Analysis

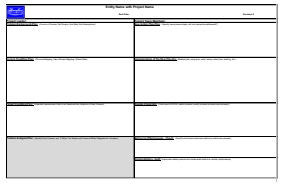


In the **Problem Analysis (Root Cause)** box, explore and communicate why the problem is occurring. You may have to dig several layers deep in order to get to the real root cause. Consider using a simple root cause analysis tool such as "***5 Why's***" or a fishbone diagram.

Problem Analysis (Root Cause)

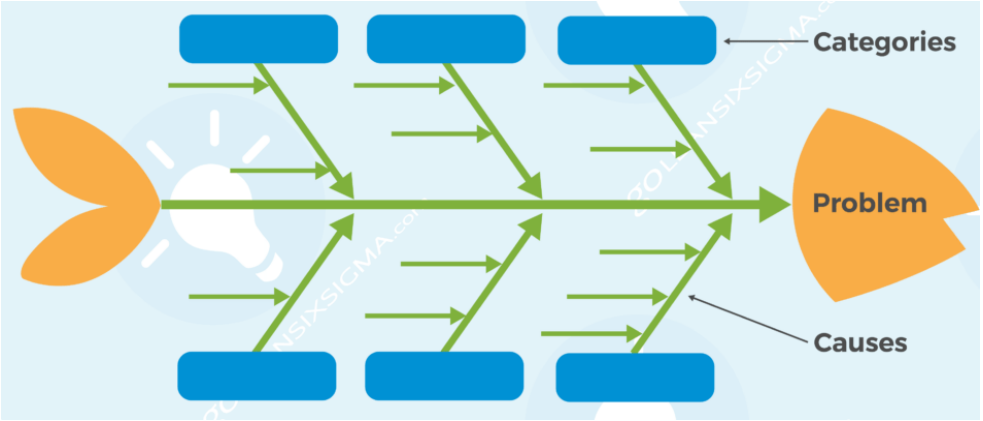
Patients are spending 15 minutes filling out forms in the office. **Why?**
There are many required forms. **Why?**
The forms are not given to the patient until they get in the office. **Why?**
Someone years ago didn't want to pay for postage. **Why?**
We don't collect the patient's email address. **Why?**

Problem Analysis - 2nd Option

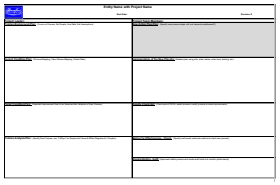


In the **Problem Analysis (Root Cause)** box, explore and communicate why the problem is occurring. You may have to dig several layers deep in order to get to the real root cause. Consider using a simple root cause analysis tool such as "5 Why's" or a ***Fishbone diagram***.

Problem Analysis (Root Cause)



New Action Plan

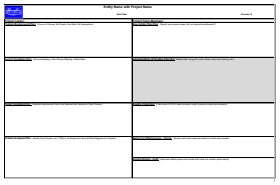


In the **New Action Plan** box, describe what your solution(s) are and how they address your root cause(s). How the Action Plan/Solution will be implemented will be placed in the Implementation Plan box

New Action Plan

A revised process which includes new scheduling phone script and email electronic forms which allow the patient to complete appointment information prior to their appointment saving time when they arrive.

Implementation of New Plan

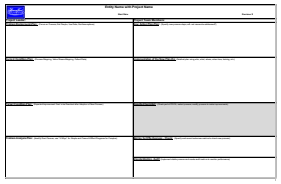


In the **Implementation Plan** box, describe how the countermeasures will actually be deployed. This should include the task, what individual it is assigned to this task and the completion date of this task. It is a high level project plan. Don't write a book. . . keep it simple on the A3.

Implementation Plan

John. By 2/15, develop electronic forms which can be sent to the patient via email.
Suzie. By 2/17, change the scheduling phone script
Ann. By 3/04, train the whole staff on the new process

Results



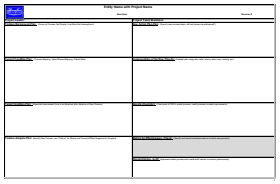
In the **Results** box, document the results of your implementation. Did you achieve the Target Condition? If no, it might be time to go back to the "Planning" steps and re-evaluate the root causes. Failure gives an opportunity for learning and continued improvement.

Results

Average patient time in front office -

January 2019: 15 minutes
February 2019: 12 minutes
March 2019: 6 minutes

Metrics for Effectiveness

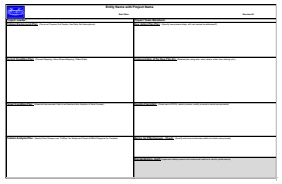


In the **Effectiveness Check** box, Review and discuss the metrics you're tracking. Did you reach your target condition /goal? If you did not reach your target condition, how will you refine your plan?

Metrics for Effectiveness

We missed our Target by 1 minute. We will do a fresh 5 Why's against the latest process to determine our next PDCA cycle to test.

Standardization



In the **Standardization** box. . . If the countermeasures were successful in addressing the problem, determine how this knowledge can be shared with others on your team and throughout the organization?

How will you ensure that the countermeasures continue to be successful into the future? Does the process need to be monitored going into the future? Is there a metric which needs to be on a dashboard and reviewed by someone?

Standardization

The team presented this improvement at the sister office so that they could take advantage of this newly improved process.

Key Takeaways

1) The A3 gives structure for problem solving

2) The A3 is meant to be flexible

3) Use visuals more than words when possible
   - Process maps, charts, pictures, tables, diagrams

4) Involve the front-line team members. They have the best view of the problem and often the best ideas to improve.

Does it Really Work? – Leadership Academy

EKG Process for Emergency Department:

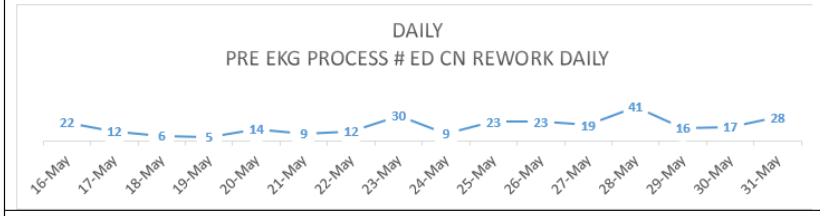
Problem Solving A3

Project Name: EKG process for Emergency Department

Owners Name: Kristina Cross **Sponsor:** Toni Silas
Team: K. Cross, D Marden, S. Plummer, E. Ashley, J. Cole, E Ashley, Dr Plemmons

Problem Background: Patient safety risk and rework identified with EKG process in the HFW Emergency Department. Multiple EKG orders not being entered EMR during triage process and for repeat EKGs. Poor quality or wrong name EKG's not getting deleted prior to Muse upload. Multiple EKG's that are ordered in Epic not crossing over into MUSE. Impact of process failures leading to delays in reads, excessive staff rework in CV and ED departments and impact on rev

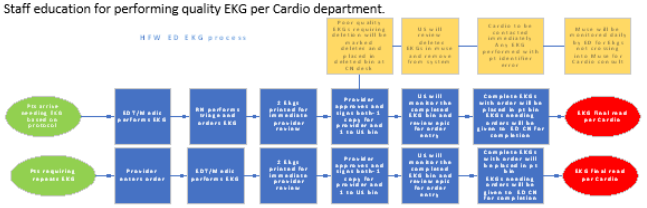
Current Condition: HFW ED performs avg 1600 EKGs/mo. Protocolized EKG process during triage requiring RN to enter order, high triage volume resulting in missed order entry. Medics performing EKGs unable to order adding increased RN work load an opportunity for missed entry. Many repeat EKG's order verbally without order entry. Ineffective process for deleting poor quality EKGs in real time. CV department unable to match decision making EKG having to determine which EKG to delete from Muse and ED Charge nurse needing to retro order EKGs for patient who have left the department.



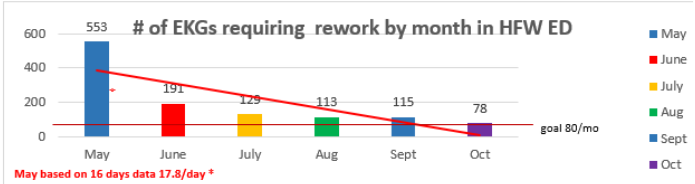
Problem Analysis: Avg 35%/mo of all EKGs performed in the ED requiring rework for order entry and/or poor quality (based on May 2019 data 553/mo 17.8/day requiring rework). High volume in triage with protocolized EKG process resulting in missed order entry. EGK machine unable to print and pause prior to upload creating multiple poor-quality EKG upload to Muse. Verbal ordered repeat EKG's not entered EMR. EKG's not ordered prevent Cardio final read. ED CN Charge required to order entry after pt visit. CV department spending approximately 2 hours daily to clean up multiple single pt EKGS and those requiring order entry. ED CN Charge Nurse and CV department requiring 2hrs/day/department rework to reconcile resulting in 1460 hrs or 60.8 days of rework waste annually.

Target Condition: 95% reduction in EKG rework, 100% will be reconciled by next business day and 100% of poor-quality EKGs deleted prior to Muse upload.

Implementation Plan: Multidisciplinary group establish use of LEAN and design thinking tools to analysis and design improved process. Roll out date June 12, 2019. Read and sign designed for Providers, RN, EDT/Medic and Secretaries along with Cardio department. EKG process Huddled twice daily and PRN x 1.5 weeks prior to start date. Staff education for performing quality EKG per Cardio department.



Results:



Effectiveness Check: 86% reduction of EKGs rework/mo by CV and ED departments for a total 1255.6 hrs or 52 days saved annually of waste. EKG's getting read in a timely manner and are appearing in Epic.

Standardization: Data posted for ED to review. Continue to encourage staff and doctors to follow new process. Put out monthly updates in break room about progress of process. MUSE not capturing all EPIC orders-continuing to work with IT. MUSE access available to all 4 FT/PT secretaries and Kris Cross to perform real-time reconciliation and review. Cardio department evaluation EKG machines for improved capabilities to delete from machine.

Data

Questions?