



SAIA

Systems Analysis &
Improvement Approach

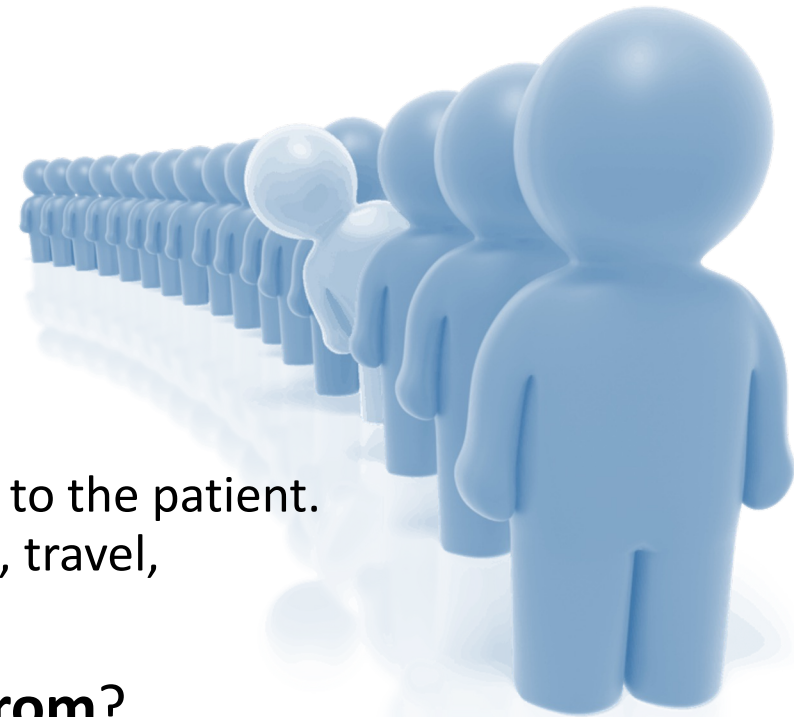
Module IV: SAIA Series Process Mapping

Overview

- What is Process Mapping?
- Why Process Map?
- How to Process Map?
- Summary



Cascade Analysis



What is Process Mapping?

A systems diagnostic tool used to identify value and reduce waste (*muda*)

Muda? the Japanese word for waste.

Waste is anything that does not provide value to the patient.
Examples of *muda* in healthcare: waiting time, travel, misdiagnosis, stock-outs

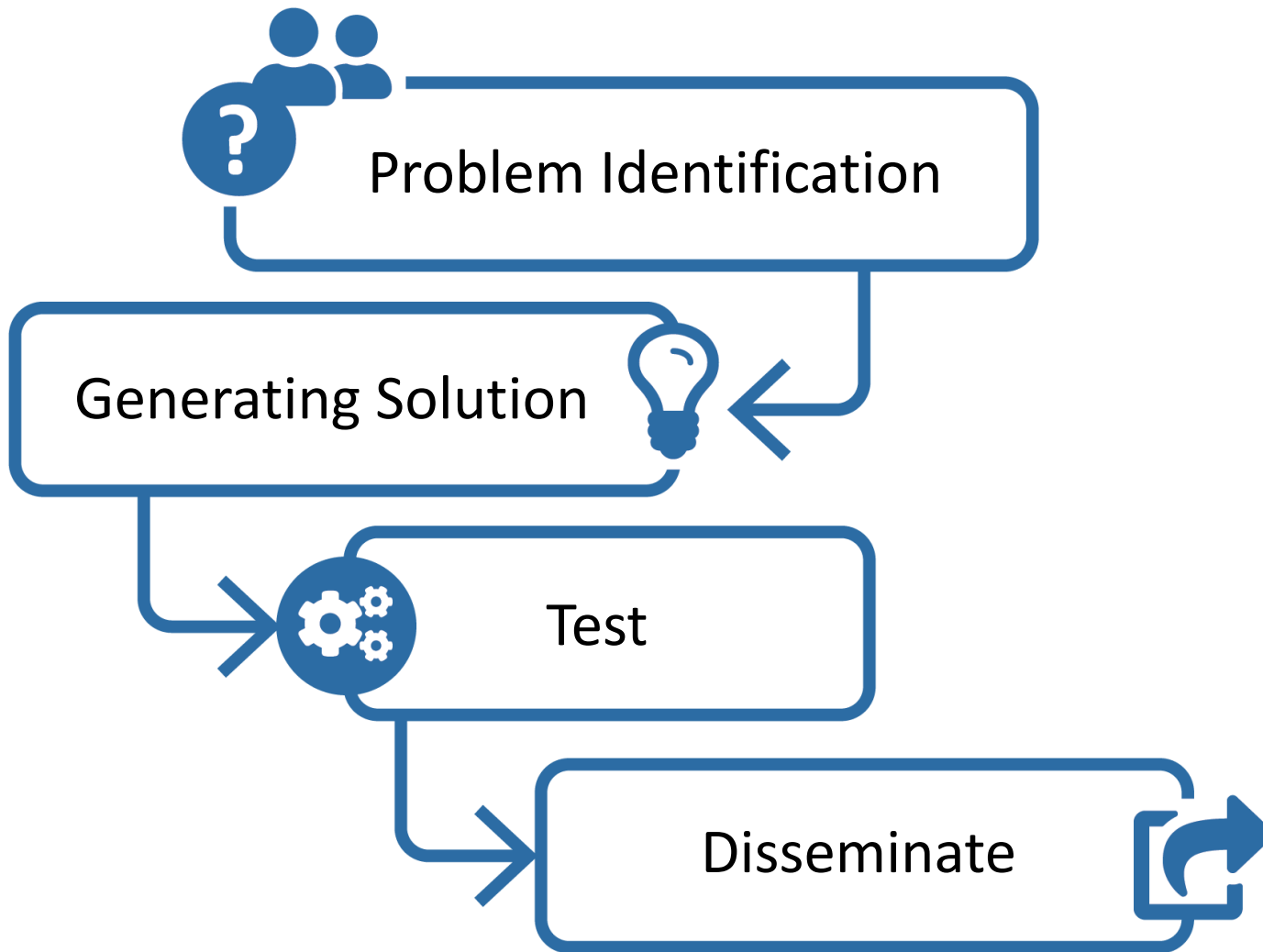
Where does Process Mapping come from?

Originated as a tool used in the post World War II Toyota Production System

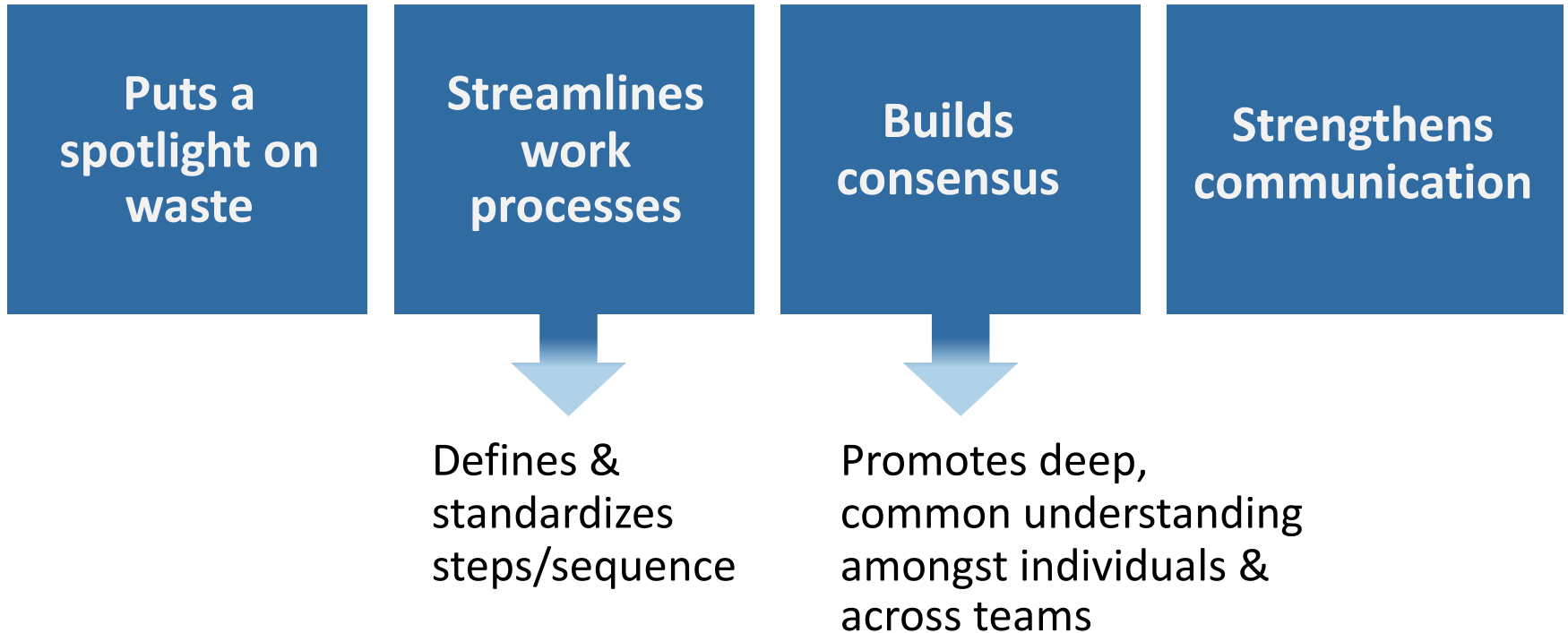
The Toyota Production System?

The Toyota Production System was intended to be a better way to organize and manage customer relations, the supply chain, product development, and product operations. The TPS is used around the world in variety of organizations and institutions, including health care.

Why Process Map?



Benefits of Process Mapping



Key tool for continuous quality improvement

Four Steps to Process Map

1. Decide which care process to map
 - Ask: Has it been done before?
2. Collect information for 2+ key informants and ***create a current process map***
 - ex. frontline healthcare worker, facility manager, other healthcare team member, receptionist
3. ***Share & analyze*** the current process map with local managers and frontline health professionals
4. ***Identify & prioritize steps*** to improve

Now you are ready to conduct small tests of change

Step 1: Decide which process to map

Look for areas for improvement

- Is the care process standardized, or are the people doing the work in different ways?
- Are steps repeated or out of sequence?
- Are there steps that do not add value to the output?
- Are there steps where errors occur frequently?

Hypothetical Example: *Health Center A*

We decide to map the flow of pregnant women (♀_{p+}) who receive a positive HIV test at their first prenatal visit at a rural Health Center in southern Africa. We follow women as they received care to prevent the transmission of HIV to her unborn child (PMTCT). This original map was done in 2006.



Step 2 (1): Collect information & create a current process map

- Remember to create a map of the **current** process
- Starting with the ANC nurse, we follow the path pregnant women take from ANC to maternity to postpartum services, to HIV-exposed infant care services.
- We then carry out process mapping with one or two additional staff members, (eg. 1x with the MNCH manager, 1x with an additional frontline MNCH health worker).
- We talk to frontline health care workers responsible at each step in process. Detailed note taking is necessary.
- We create a draft process map of the PMTCT process

Step 2 (2): Collecting information – Questions to ask

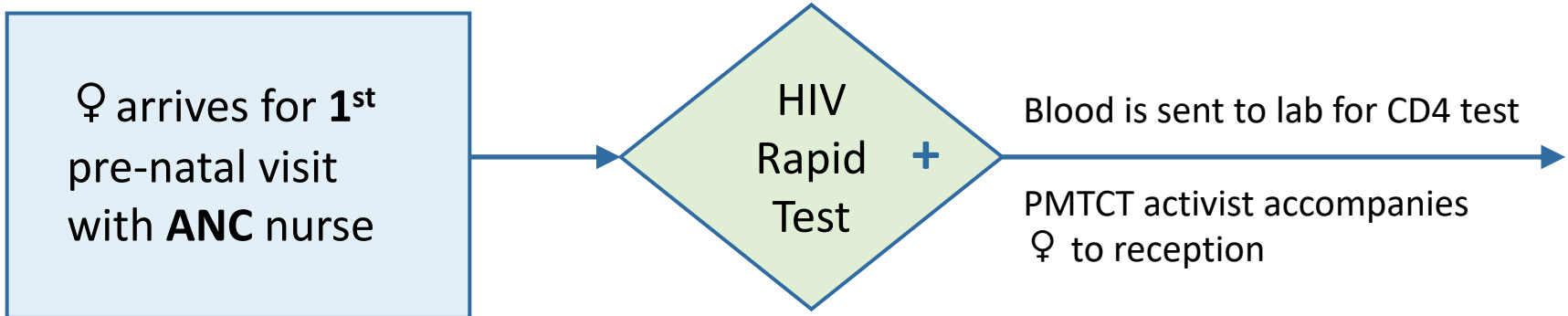
I am a patient entering the clinic presenting for PMTCT services:

- Where do I go first?
- What happens here?
- Who do I talk to (e.g. registration, triage, etc.)?
- How long does this take?
- How are my records stored and retrieved?
 - What type of identification number is used?

Step 2 (3): Create the map – Draw what is described

- Next, we draw the map— first by hand and then on a computer.

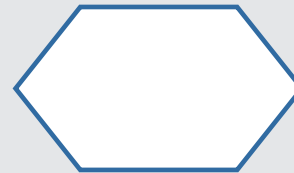
DAY 1



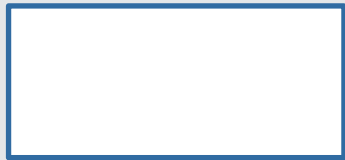
Process Mapping: Symbols



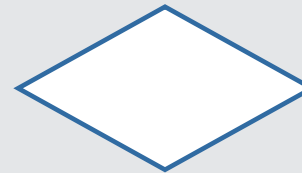
Next step



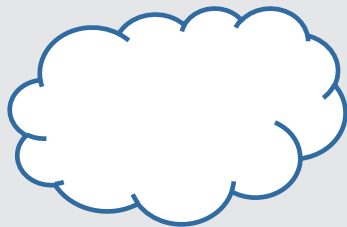
Endpoint



Care cascade activity



Branch point (Y/N, +/-)

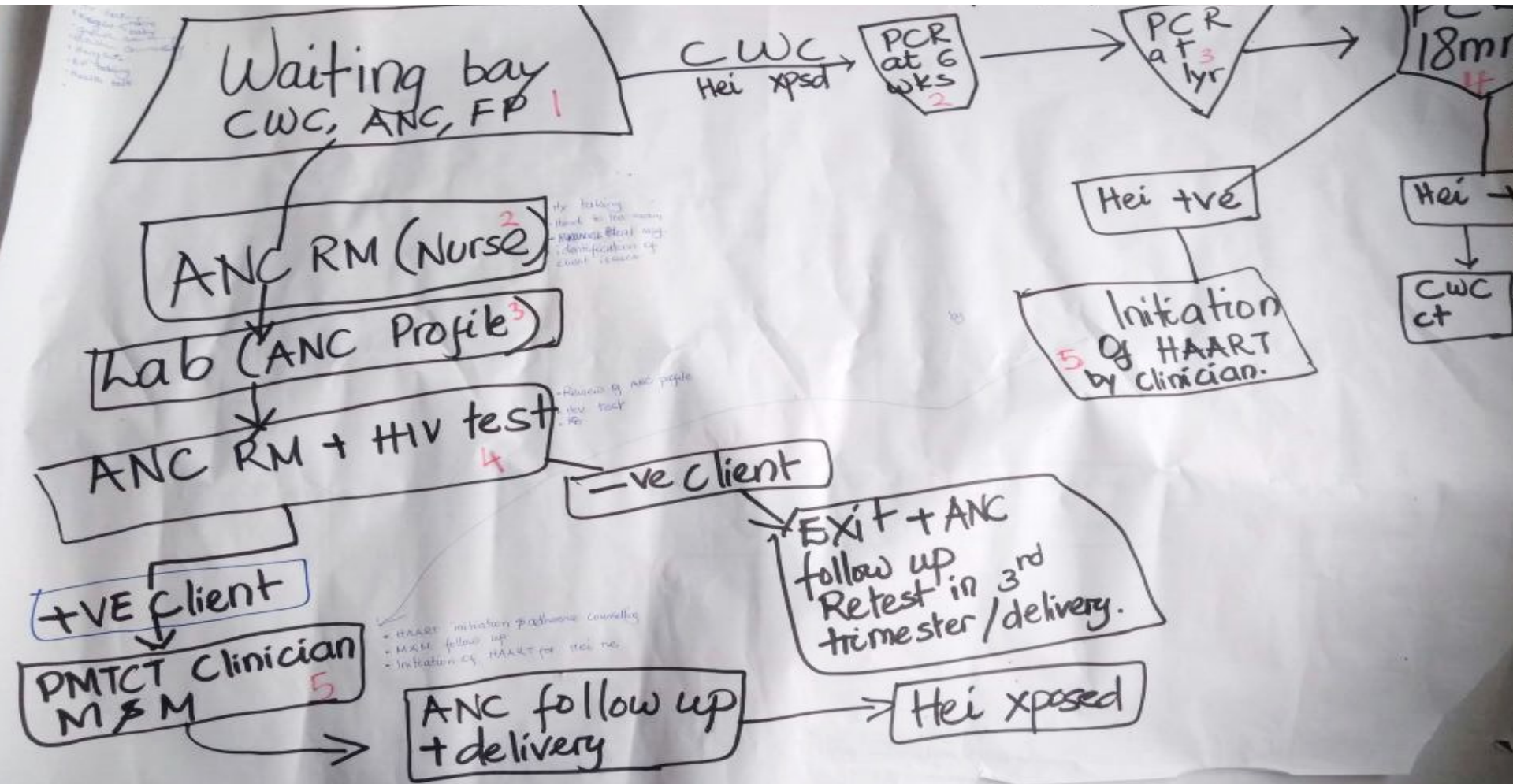


Wait/Travel time

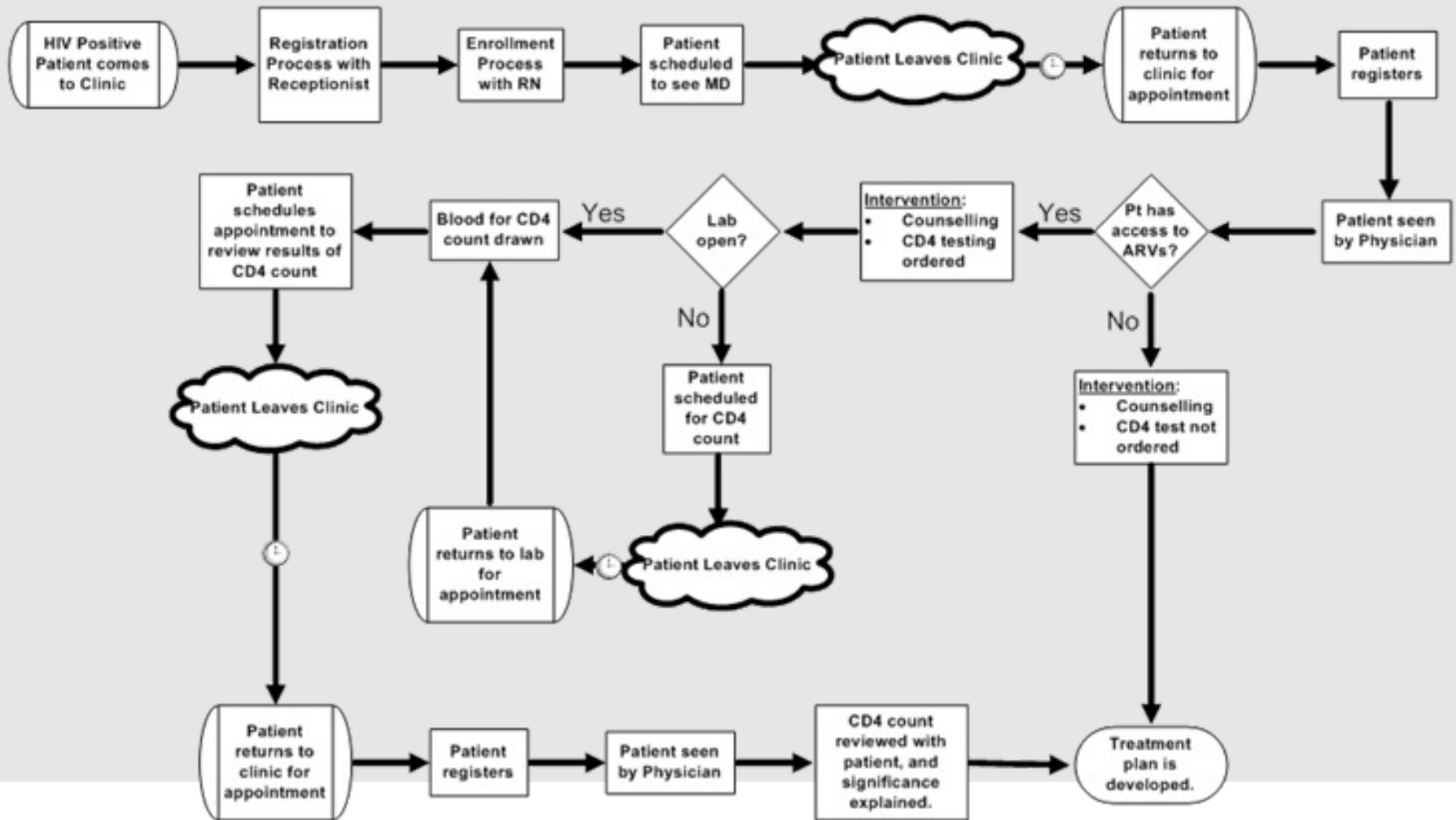


Color coding for different services, staff, spaces is an option

Example: Hand-drawn process map



Example: Simple computer drawn process map



Step 3: Share & analyze with the health facility team

When flow map is drawn, the team reviews each step of the flow map together.

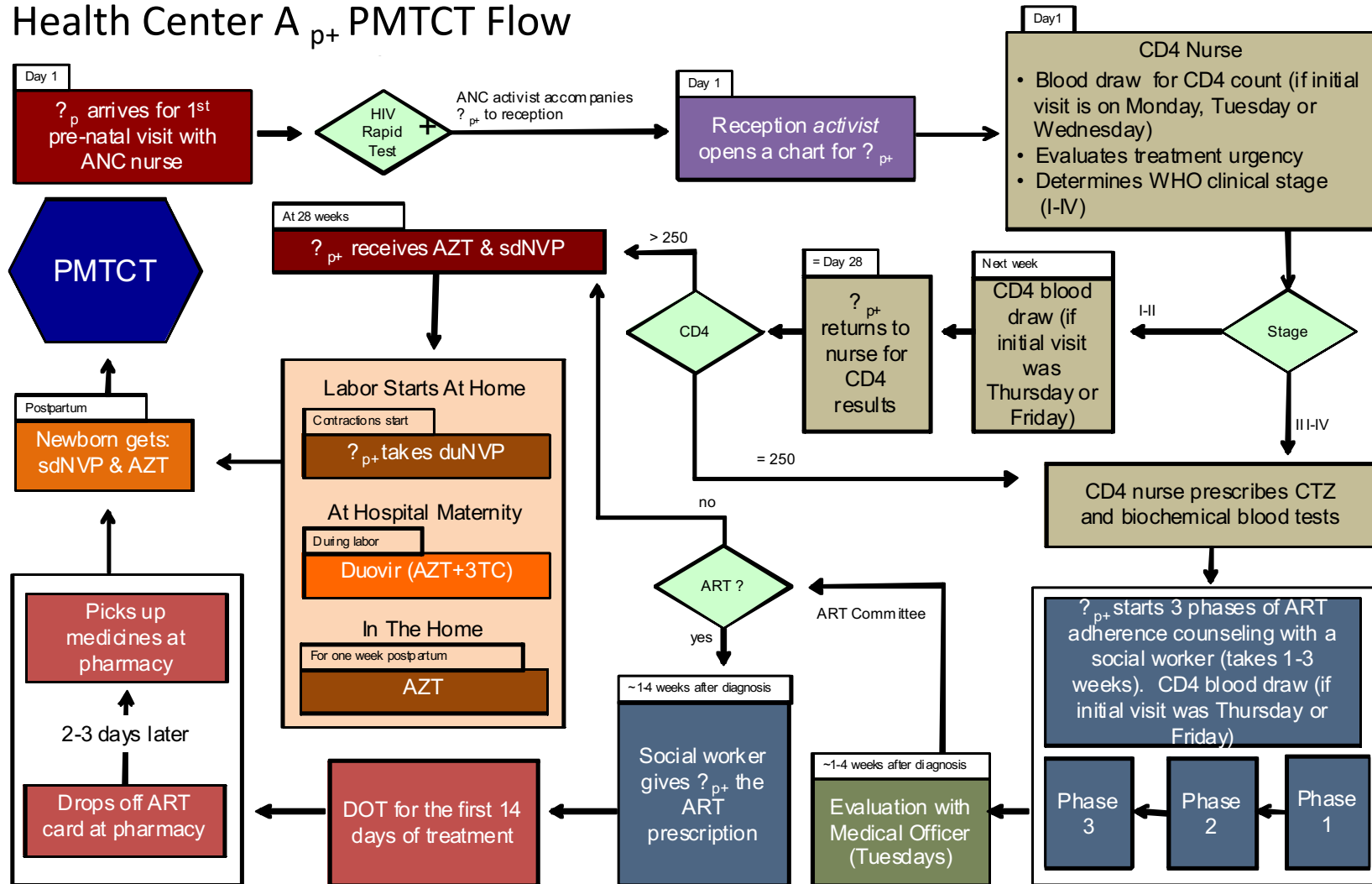
- Set the stage positively– “we know all members of this care team want to provide the best quality care”
- Then probe...
 - Do you see anything that looks incorrect or that needs to be changed?
 - Do you see any steps that are missing and should be added?
 - Is there redundancy in the pathway?
 - For example where health workers are doing steps differently
 - Are there any additional pathways along which patients can move that are not included on this map?

Step 4: Identify & prioritize areas for improvement with healthcare team

- After sharing & discussing the current state process map with the healthcare team it is time to identify priority areas for improvement efforts
- We rate each step as:
 - i) Unambiguously adding value to patient
 - ii) Adding no value to patient, but are unavoidable
 - iii) Adding no value to patient, but are avoidable
- We then discuss with the team how the map can be used to prioritize improvements to the system

Process Mapping of ANC HIV care

Health Center A p^+ PMTCT Flow



Potential Areas for Improvement

Process Mapping provides

1. System perspective
2. Team wide understanding and vision
3. Proactive problem solving & efficiency

Day1

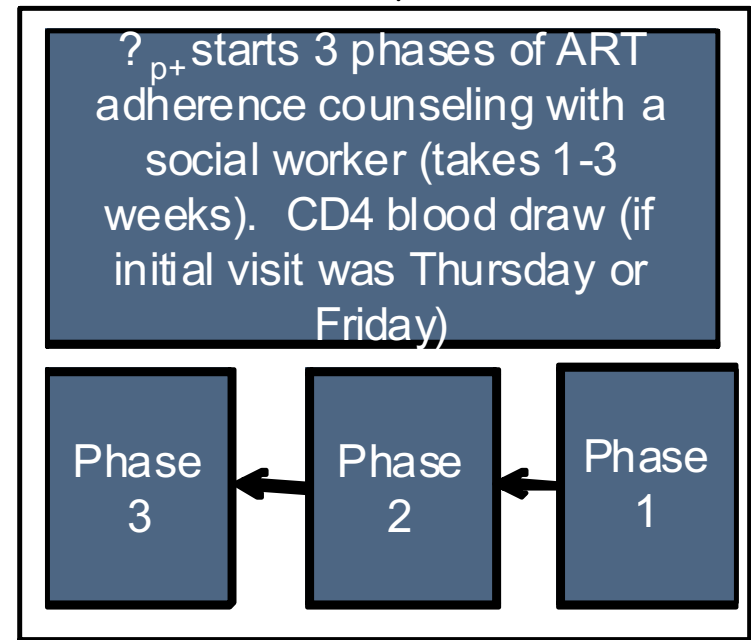
CD4 Nurse

- Blood draw for CD4 count (if initial visit is on Monday, Tuesday or Wednesday)
- Evaluates treatment urgency
- Determines WHO clinical stage (I-IV)



Potential Areas for Improvement

HIV adherence counseling takes at least three visits over the course of 1-3 weeks on average, sometimes longer.



Now you are ready for **Continuous Quality Improvement**

- The information gathered in the Cascade Analysis Tool and the Process Map give the team ample information to begin the improvement process
- Facility teams conduct Plan Do Study Act cycles (discussed in next deck) to plan, test and evaluate a small test of change.

Summary

- Process mapping is a useful way for health care teams to identify and address bottlenecks across complex health facility patient flows
- Process mapping tools are user-friendly and engage frontline staff
- Flexible to context and capable of addressing evolving policies and emerging challenges
- Scalable as it reinforces and strengthens existing health system roles and responsibilities

Acknowledgements

We acknowledge support for the development and expansion of the SAIA model

- NIH Institutes and Centers: NIAID, NCI, NIMH, NIDA, NICHD, NHLBI, NIA, NIGMS, NIDDK, NICHD
 - NIH Awards: R01HD0757 and R01HD0757-02S1 (SAIA-PMTCT), R01MH113435 (SAIA-SCALE), F32HD088204 and R34AI129900 (SAIA-PEDS), K24HD088229 and R01HD109117 (SAIA-FP), R21MH113691 (SAIA-MH), R01HL142412 (SAIA-HTN), 1UG3HL156390-01 (SCALE SAIA-HTN), R21DA046703 and R01DA055277 (SAIA-Naloxone), K08CA228761 (SAIA-CSS), R21AI124399 (mPCAT), T32AI070114 (UNC TIDE), P30AI027757 (CFAR), R01DA056883 (SAIA-PREP)
- Doris Duke Charitable Foundation (SAIA-PMTCT, SAIA-Juv)
- Rita and Alex Hillman Foundation (SAIA-Juv)
- Thrasher Research Fund (SAIA-Malaria)
- Washington State Healthcare Authority (SAIA-Juv)
- Department of Children, Youth and Families, WA State (SAIA-Juv)
- Implementation Science Core of the University of Washington/Fred Hutch Center for AIDS Research (AI027757)