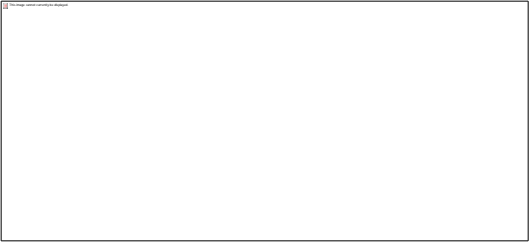




# Clinical Quality Improvement

Christopher Behrens, MD  
University of Washington  
July 2012





# Increasing IPT coverage at Windhoek Central Hospital and Katutura Health Center, Windhoek, Namibia

---

*Applying the Model for  
Improvement*





# Namibia context

- HIV Prevalence: 17.8% (2008)\*
- ARV coverage in PLHIV with CD4 <200 ~ 80%
- TB the leading cause of death among AIDS patients
- TB incidence: 722 / 100,000 (2007-08)
- ~59 % TB patients are HIV(+)
- National level commitment to IPT rollout

NTCP \*Annual Report 2007-08. MOHSS, Windhoek, Namibia

# Planning for Quality Improvement Project:

- Problem: just 2 of 2235 (0%) total registered patients at Windhoek Central and 103 of 2240 (5%) patients at Katutura had ever started IPT by September '08
- Initial assessment of reasons for low IPT coverage:
  - Windhoek: doctors anxiety, no IPT on site(only available at TB Hospital– patients rarely collected)
  - Katutura: Lack of IPT prescribing 'habit'. ARV Clinic in temporary location – limited pharmacy with no stock of IPT



# Katutura Health Center

## CYCLE 1

**Plan:**

Increase IPT

**Do:**

Prompting and modeling IPT initiation with doctors  
Discuss ordering and recording with pharmacist

**Study:**

Observations: 1) increasing IPT uptake 2) distribution breakdown at central site

**Act:** Discuss with regional pharmacy coordinator to assure regular supply to ARV clinic



**I-TECH**  
International  
Training & Education  
Center for Health



# Katutura Health Center

## CYCLE 2

### Plan:

Ensure supply of INH

### Do:

Contact regional pharmacist

Advocate for & support better communication and distribution of stock to ART clinic

### Study:

Observations: 1) no stockouts occurred, 2) continued increase of IPT uptake, 3) need for data collection on uptake & completion  
4) Hard to determine if patient on IPT or not

### Act:

Discuss how to capture IPT data in patient health passport and file



# Katutura Health Center

## CYCLE 3

### Plan:

Improve IPT data collection

### Do:

Assist KHC to develop IPT stamp

Order 10 stamps and orient all staff on use

Contact MSH to request database for IPT data collection

### Study:

Observations: 1) stamp making it easier to spot IPT patients,

2) increasing uptake of IPT, 3) More IPT data in passport than file – audit difficult

### Act:

More complete data transcription from passports to files needed



**I-TECH**

International  
Training & Education  
Center for Health



# The IPT Stamp

Start .....	/.....	/.....			
INH 300mg OD +pyridoxine 12.5 mg OD					
	2	3	4	5	6
Date					
Sig.					
Complete .....	/.....	/.....			
TB? ....	/.....	/.....			
S/E .....					

10 of these provided with inkpads. Used in passport and file, signed by pharmacy at each monthly collection (also by other pharmacies while in transit )



# Windhoek Central (1)

## CYCLE 1

### **Plan:**

Increase IPT

### **Do:**

Awareness raising –

Reassurance – provide supportive evidence

Modeling /prompting initiation of IPT with doctors

### **Study:**

Observations: 1) more INH prescribed 2) no INH supplied at WCH!

### **Act:**

Continue to support staff to initiate patients on IPT

Initiate (with pharmacist) initial supply



**I-TECH**  
International  
Training & Education  
Center for Health



# Windhoek Central (2)

## CYCLE 2

### Plan:

Increase IPT uptake by setting up supply

### Do:

Discuss with main hospital pharmacist to procure INH for ARV clinic

### Study:

Observations: 1) increasing IPT uptake, 2) stockout occurred

### Act:

Need better forecasting and ordering of INH



**I-TECH**  
International  
Training & Education  
Center for Health

# Windhoek Central (3)

## CYCLE 3

### Plan:

Increase uptake of IPT

### Do:

Follow up with nurses

Discuss need to monitor for stockouts

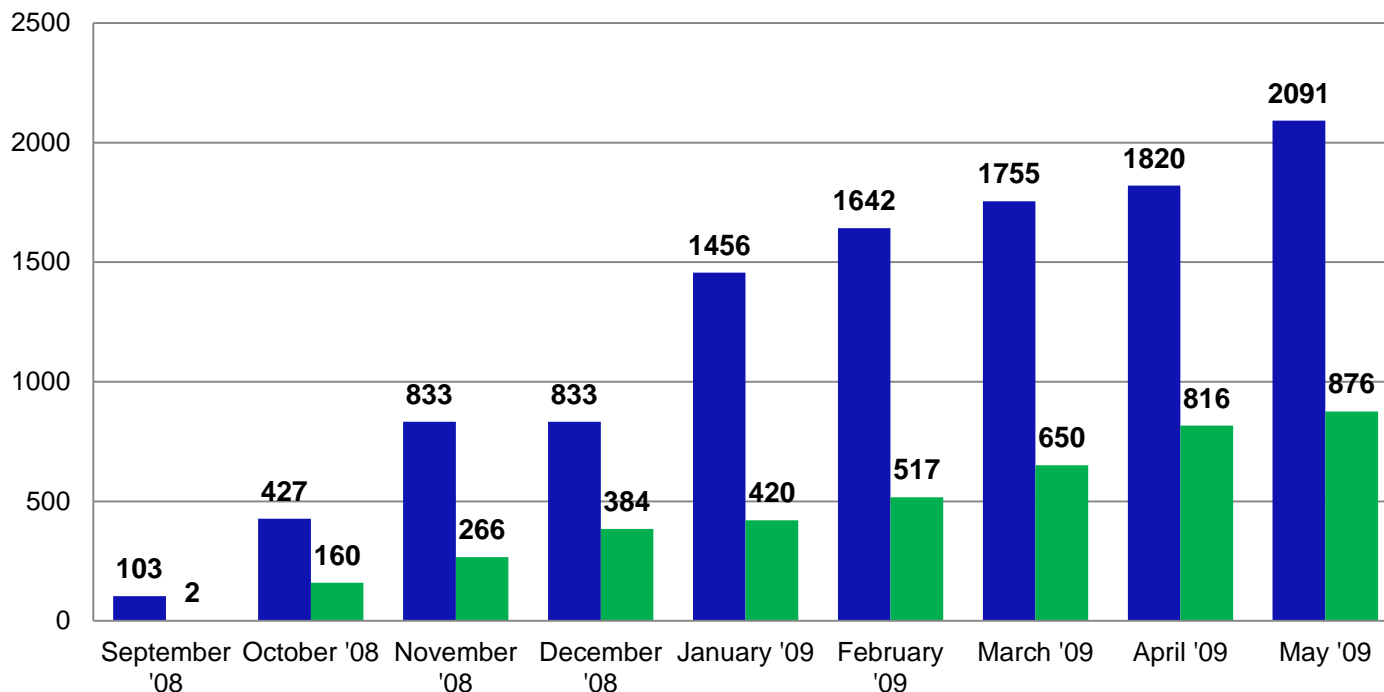
### Study:

Observations: 1) increasing IPT uptake 2) no stockouts 3) not obvious in passport if patient on IPT (only recorded in IPT register)

### Act:

Consider using IPT stamp

# IPT Coverage At KHC & WCH (09/08-05/09)

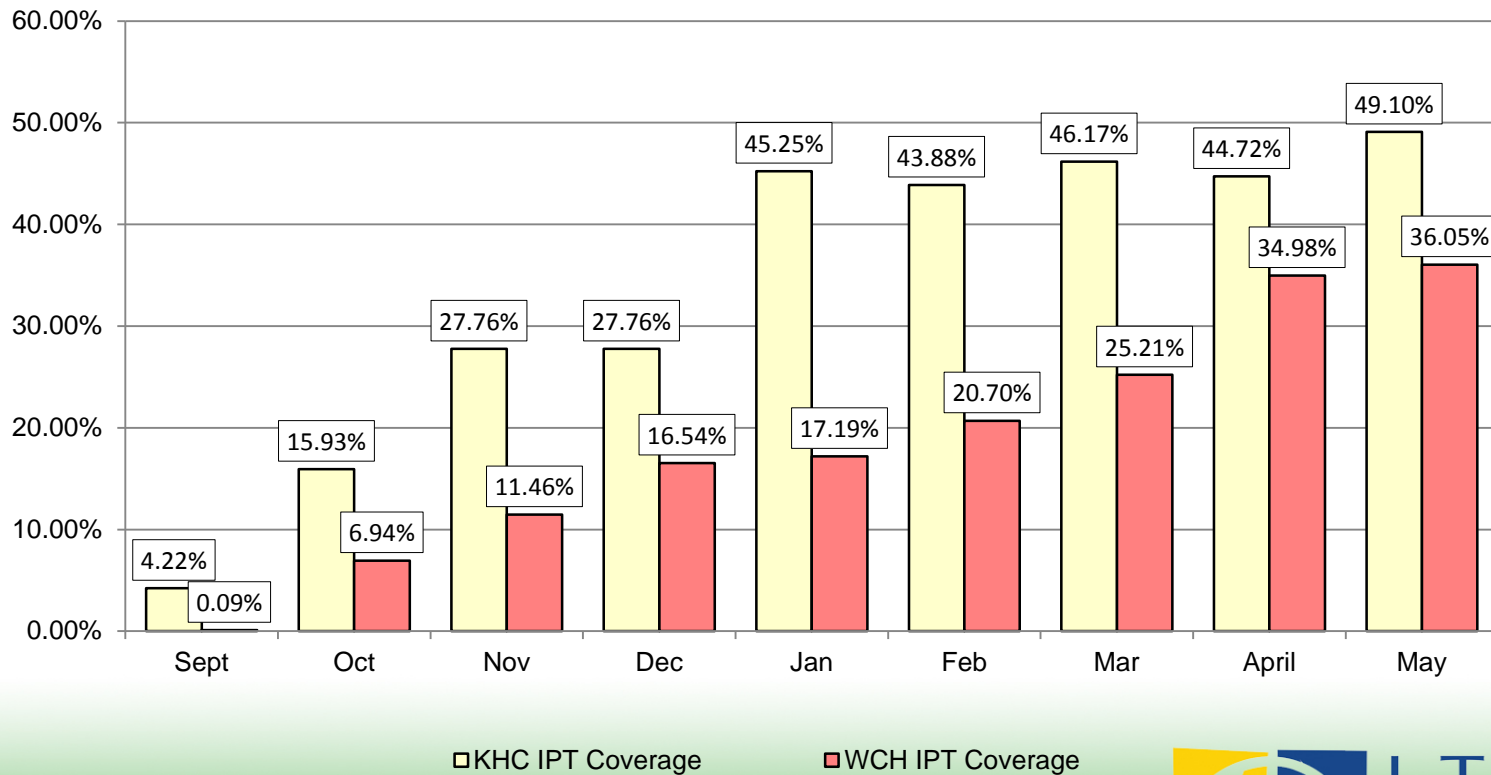


■ Katutura Health Center ■ Windhoek Central

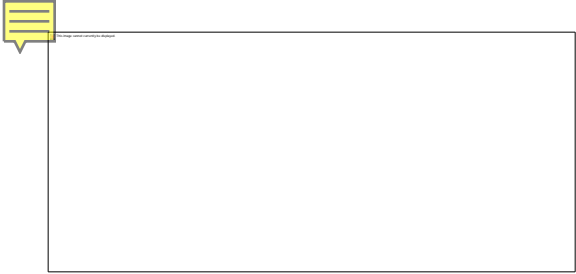


**I-TECH**  
International  
Training & Education  
Center for Health

# IPT Coverage at KHC & WCH (09/' 08 – 05/' 09)

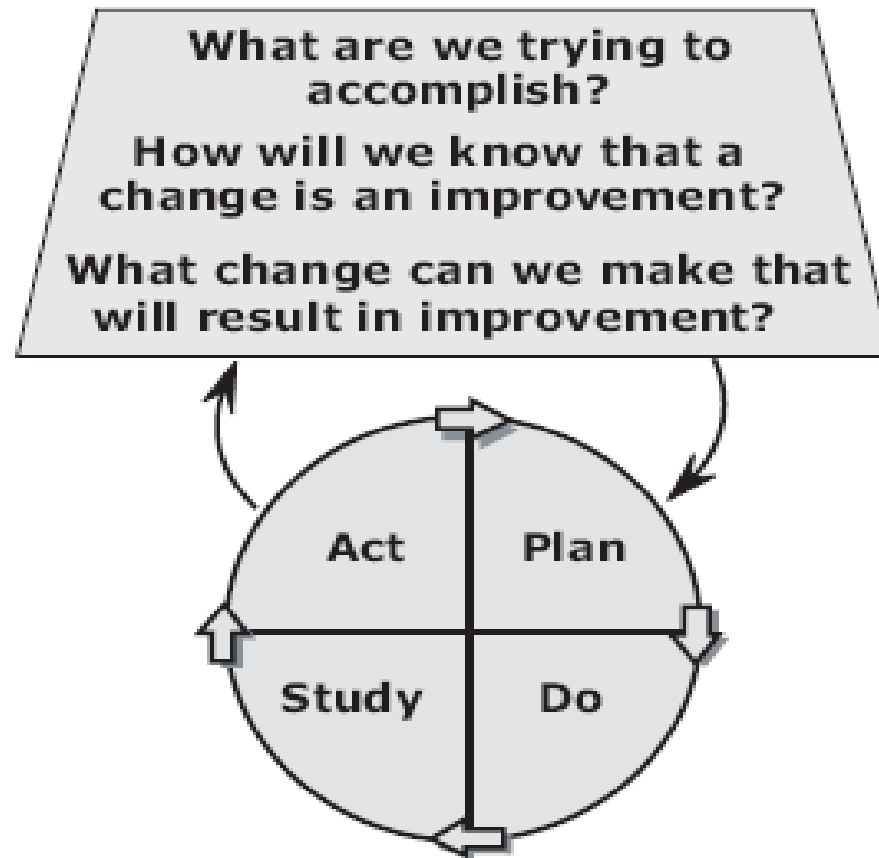


**I-TECH**  
International  
Training & Education  
Center for Health



# The Model for Improvement

**Fig 2. The Model for Improvement**



Source: Langley G et al. The improvement guide: a practical approach to enhancing organizational performance. San Francisco, Jossey-Bass Publishers, 1996.

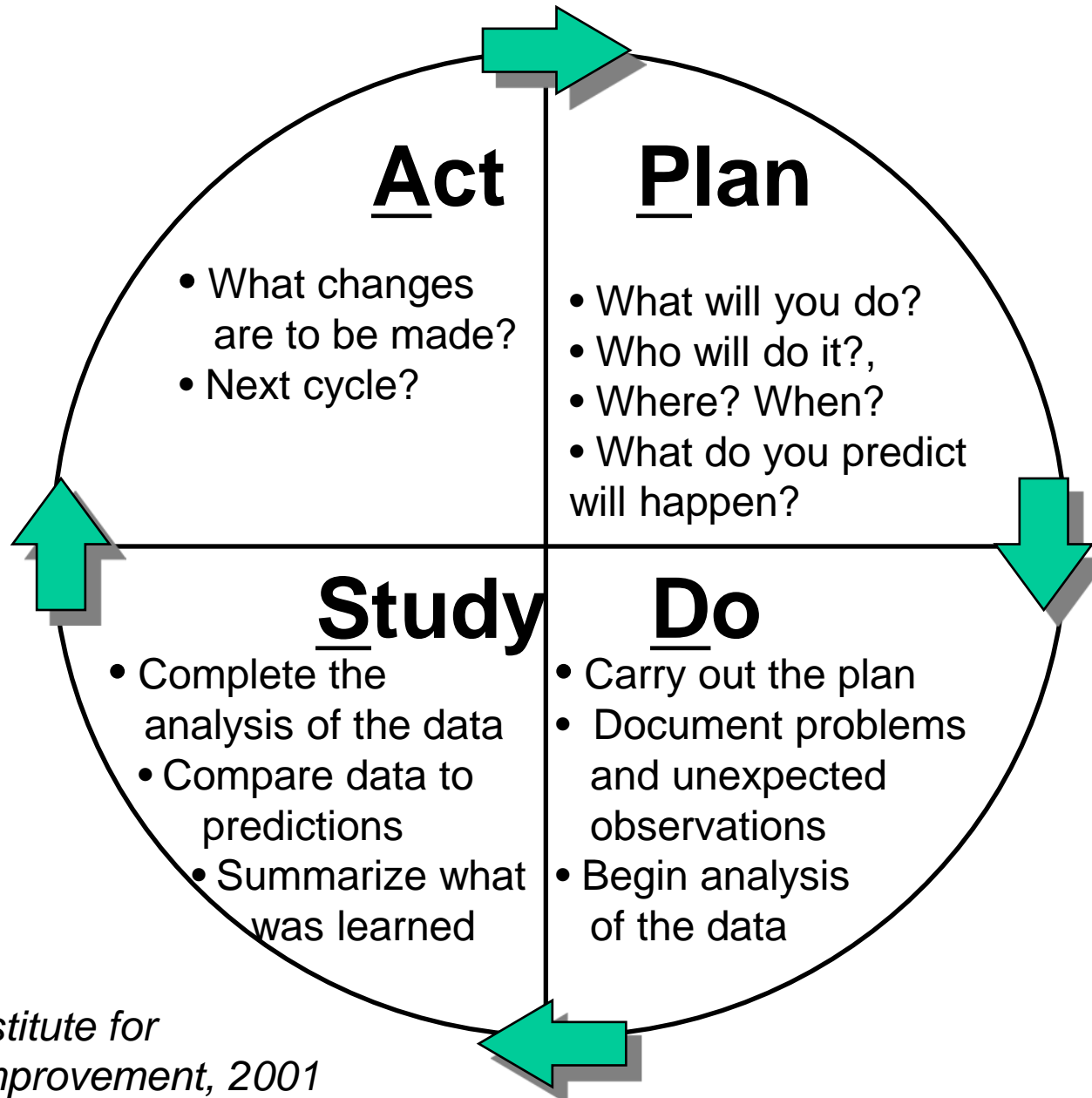


**I-TECH**  
International  
Training & Education  
Center for Health

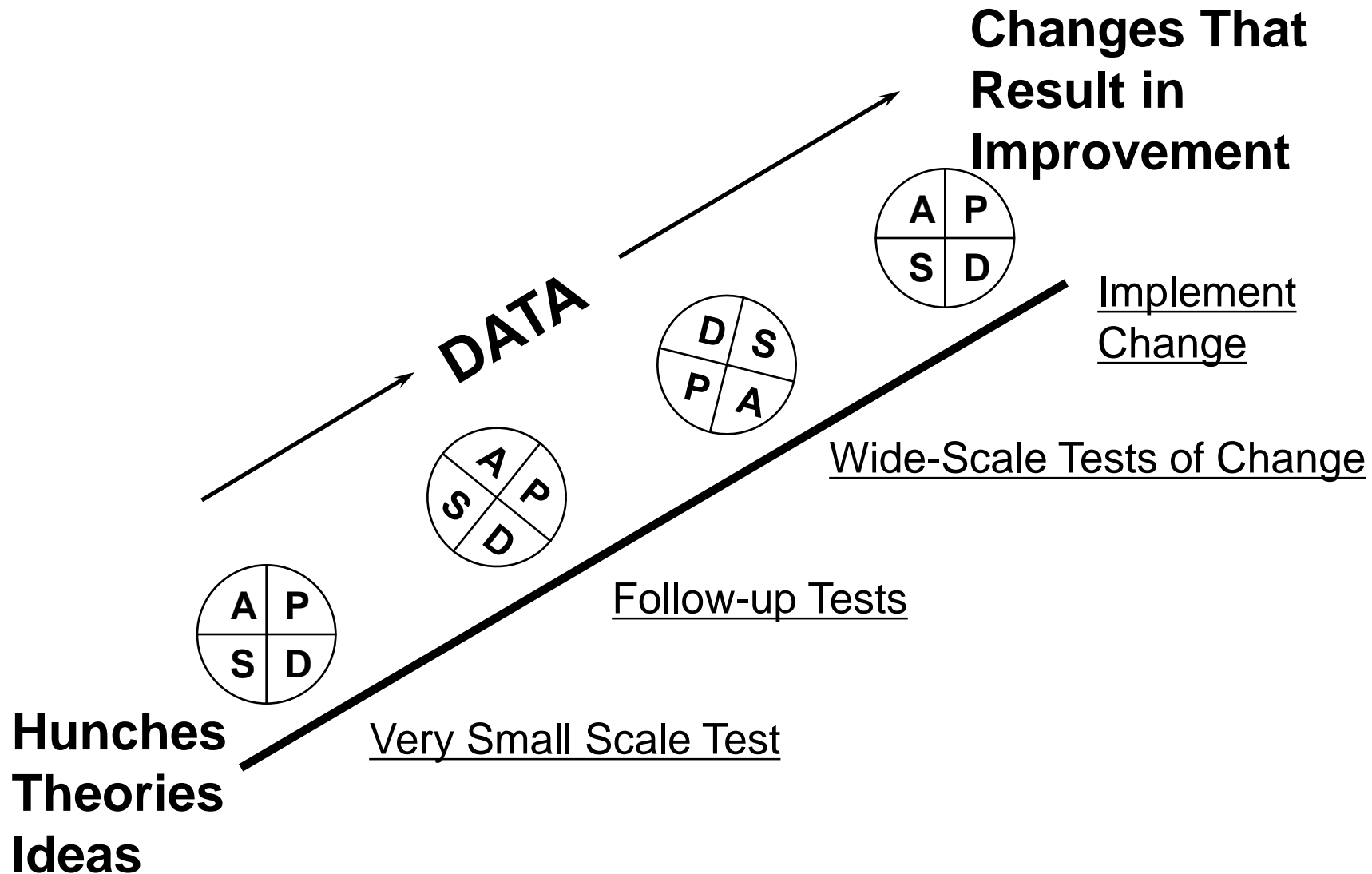


# Brief Overview: PDSA Cycle

- Stands for: **P**lan – **D**o – **S**tudy – **A**ct
- Involves small, rapid tests of change to move a system towards a desired objective
- Has demonstrated effectiveness in a variety of settings

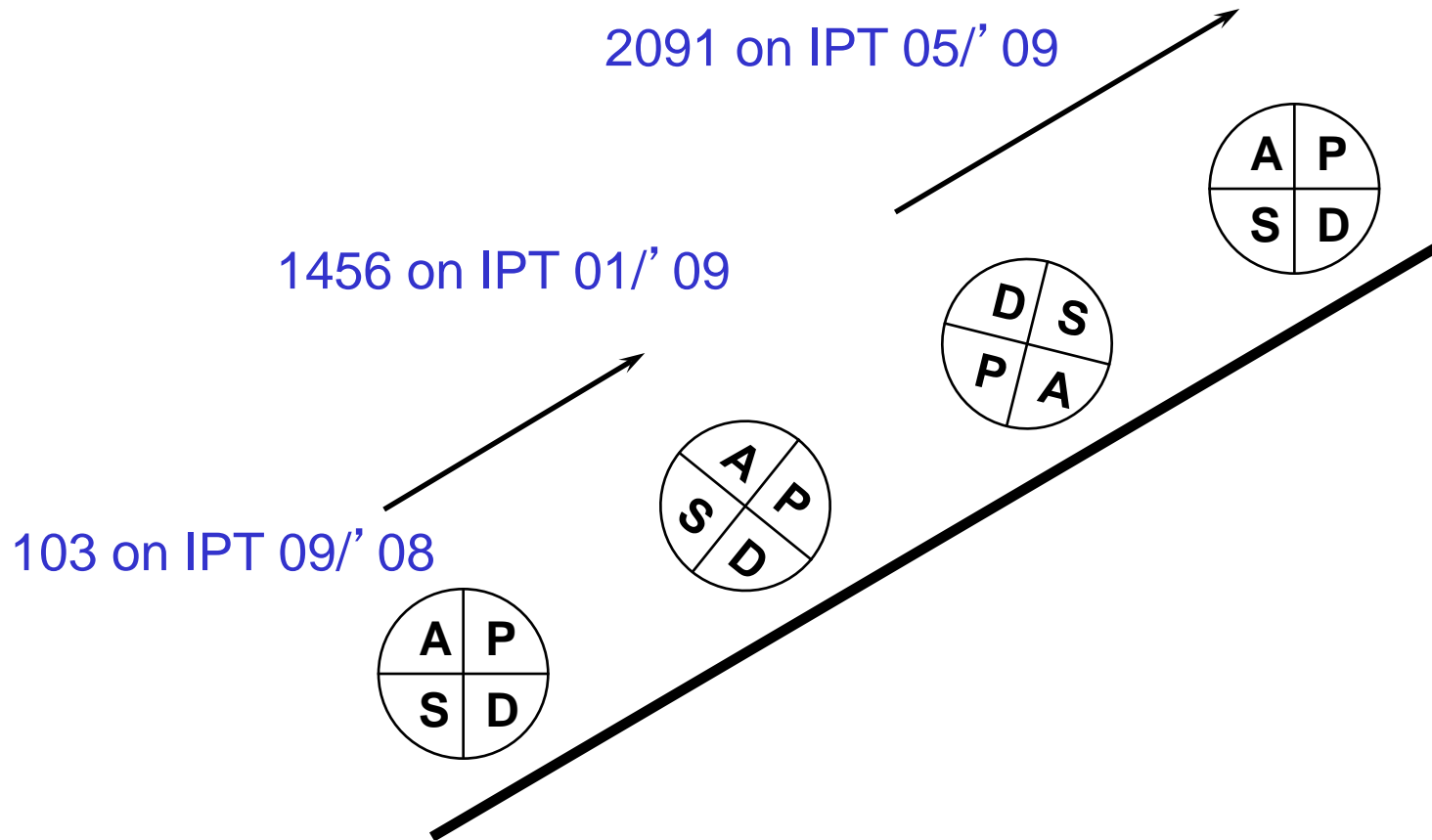


# Repeated Use of the PDSA Cycle

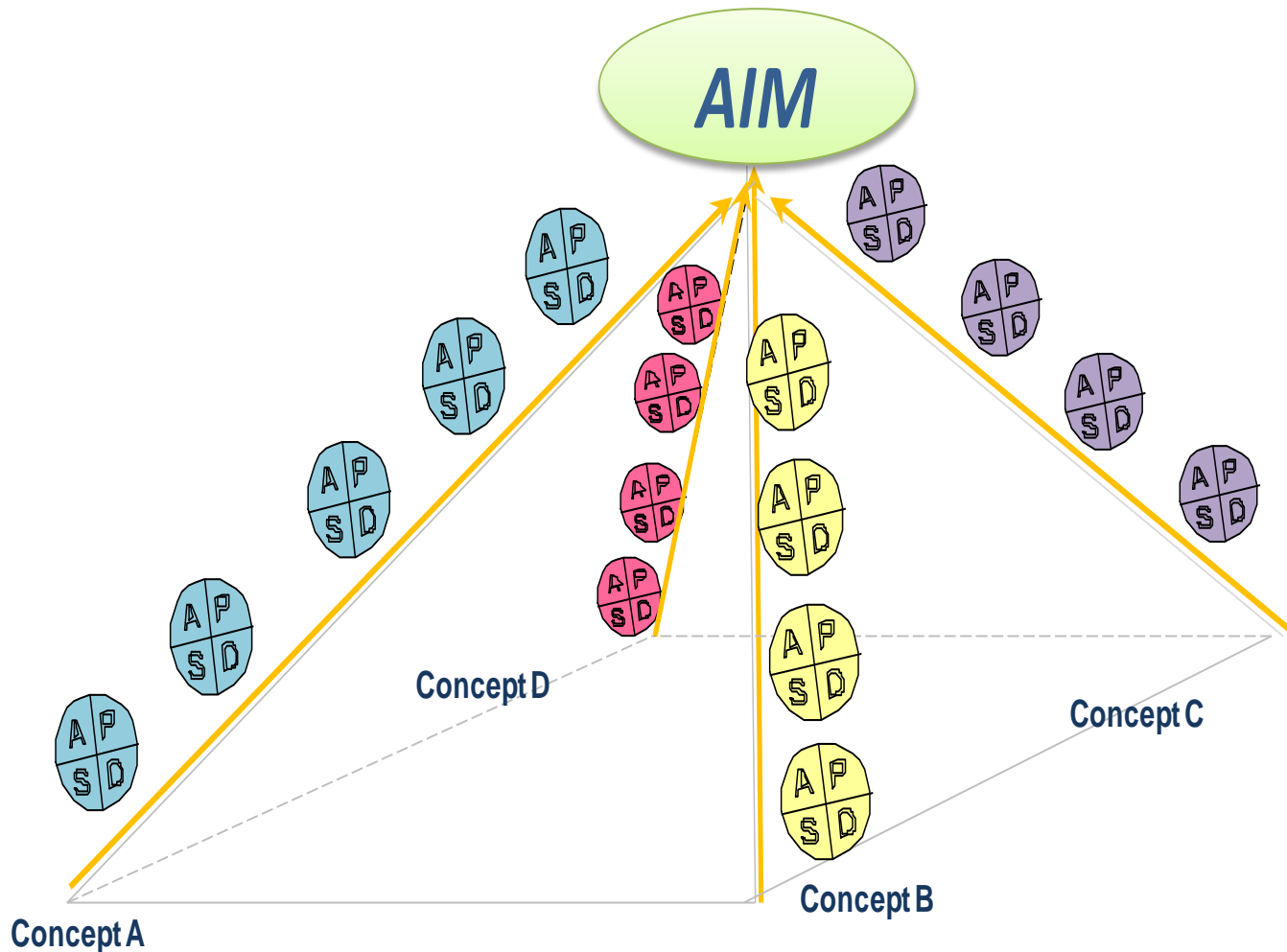




# PDSA cycles at Katutura Health Center

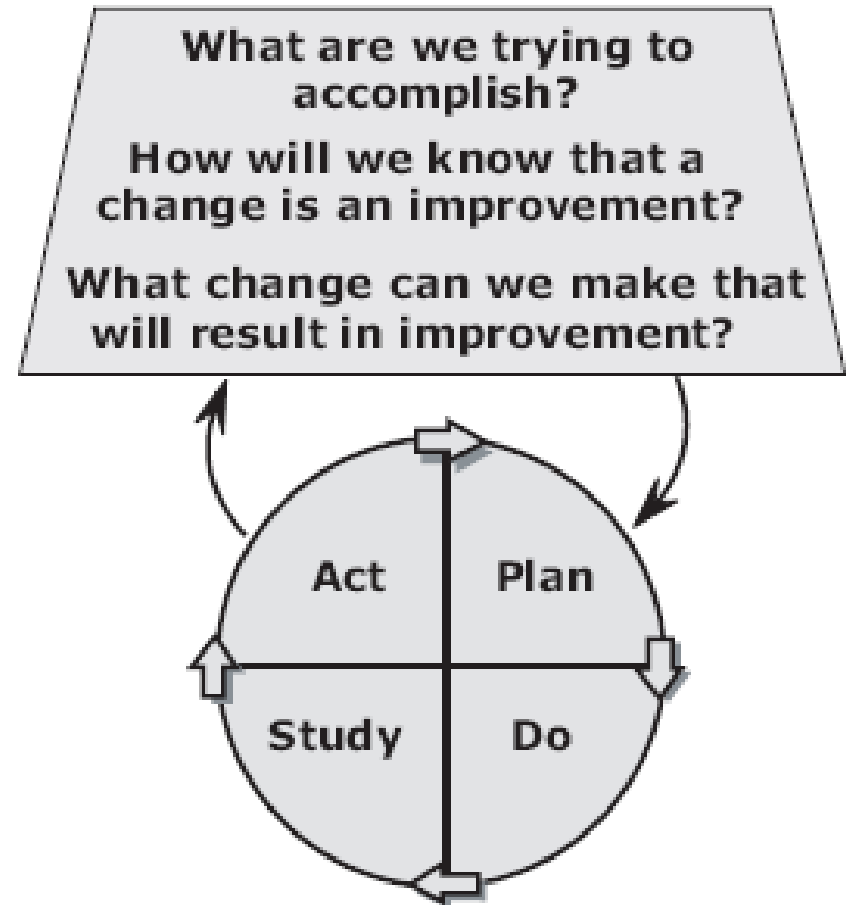


# Multiple PDSA “Ramps” towards Achieving an Aim



# Steps in Applying The Model for Improvement

1. Identify and define problem that you want to address
2. Form an improvement team
3. Write an aim statement
4. Choose a measurement strategy
5. Brainstorm improvement strategies to test
6. Test with PDSAs





# 1: Identify and Define Problem

*Identify and define the problem that you want to address*

*Provide baseline data related to the problem*

- Prioritize what problem to address:
  - Urgency of the problem; safety
  - Feasibility of improving the situation
  - Resources, including team
  - Availability of data
  - Alignment of goals with organizational goals and administrative support



## 2: Form an Improvement Team

*4-8 people who are involved in the area to be improved*

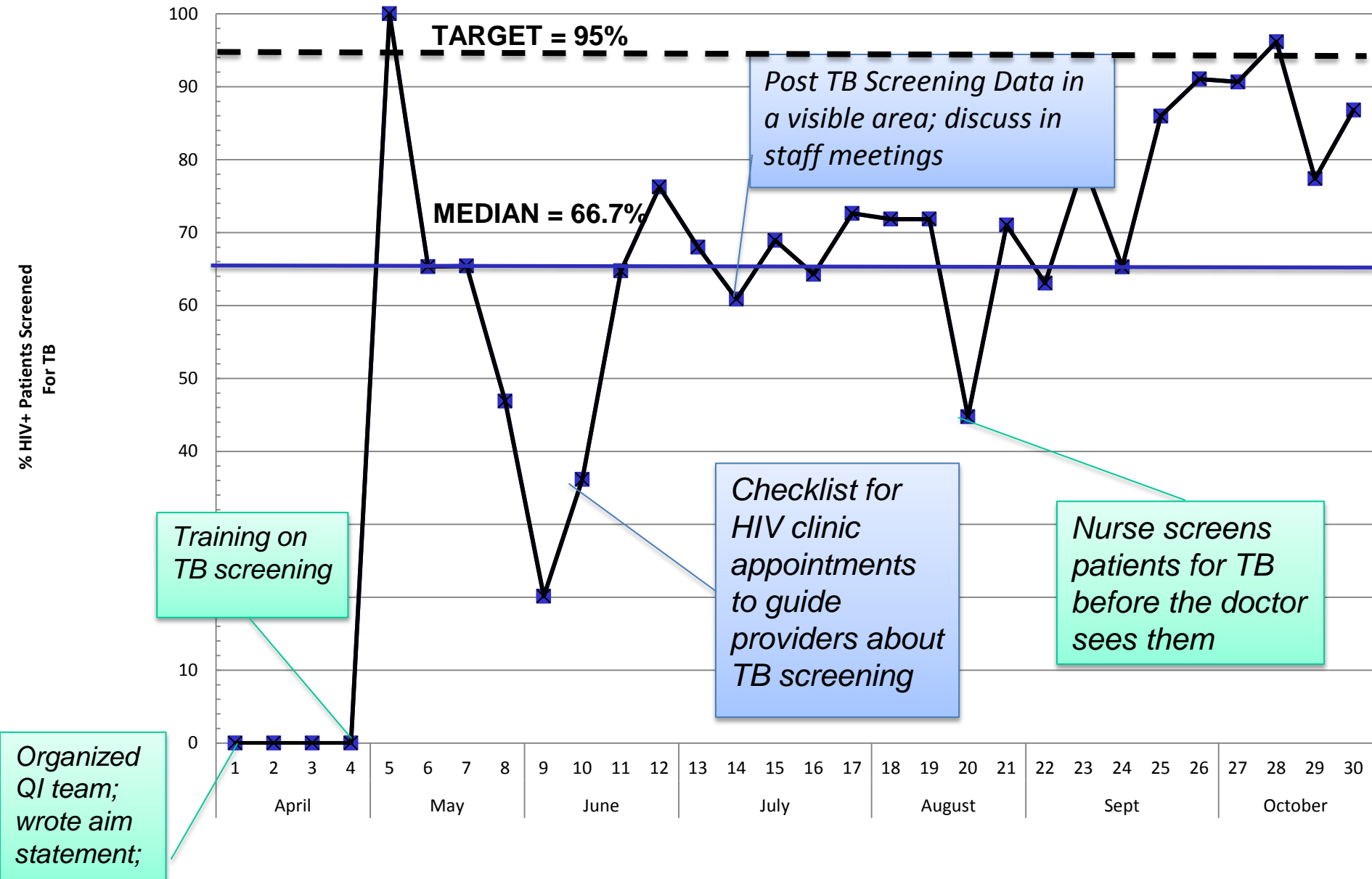
- Facilitator
  - familiar with improvement methods
- Day-to-day leader
  - coordinates work of the improvement team
- Testers
  - several people to conduct tests of change
- Record-keeper
  - documents improvement project progress



# Improvement Team Activities

- Meet regularly
- Brainstorm, test, document ideas for improvement
- Inform senior leaders/management of improvement work
- Collect and report on limited set of measures that relate directly to the aims of improvement
- Track data on a run chart

# Example of Annotated Run Chart: % HIV+ patients Assessed for TB, Hospital X



### 3: Write an Aim Statement

*What are we trying to accomplish?*

- Write an aim statement, making sure that it is measureable, time-bound, and realistic
- An example for meeting management would be:
  - “In one month, 95% of meetings will start and end on time.”

## 4: Choose a Measurement Strategy

*How will we know that a change is an improvement?*

- How will you measure progress towards achieving your aim?
- Come up with some measures to track if your strategies are effective.
- For example, to track meetings:
  - % of meetings which start on time on a given day



# Measurement and Data Collection During PDSA Cycles

- Collect useful data, not perfect data - the purpose of the data is learning, not evaluation
- Use a pencil and paper until the information system is ready
- Use sampling as part of the plan to collect the data
- Use qualitative data rather than wait for quantitative
- Record what went wrong during the data collection
- Collect data over time to learn about the system and see the effects of changes



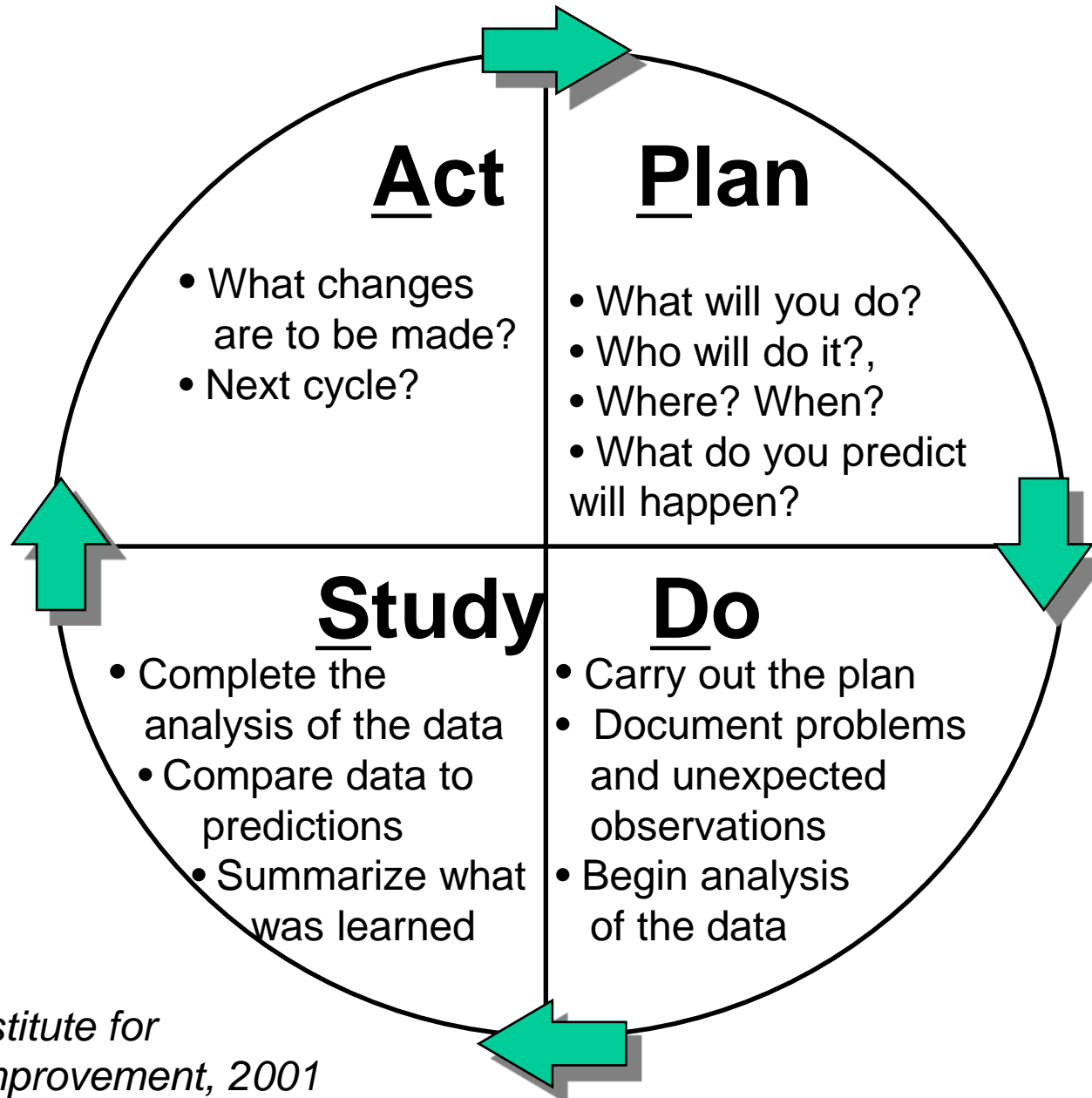
## 5: Brainstorm Strategies to Test

*What changes can we make that will result in improvement?*

- Consider what changes or strategies would contribute towards achieving the aim.
- Choose one to test in a PDSA cycle



## 6: Test with PDSAs

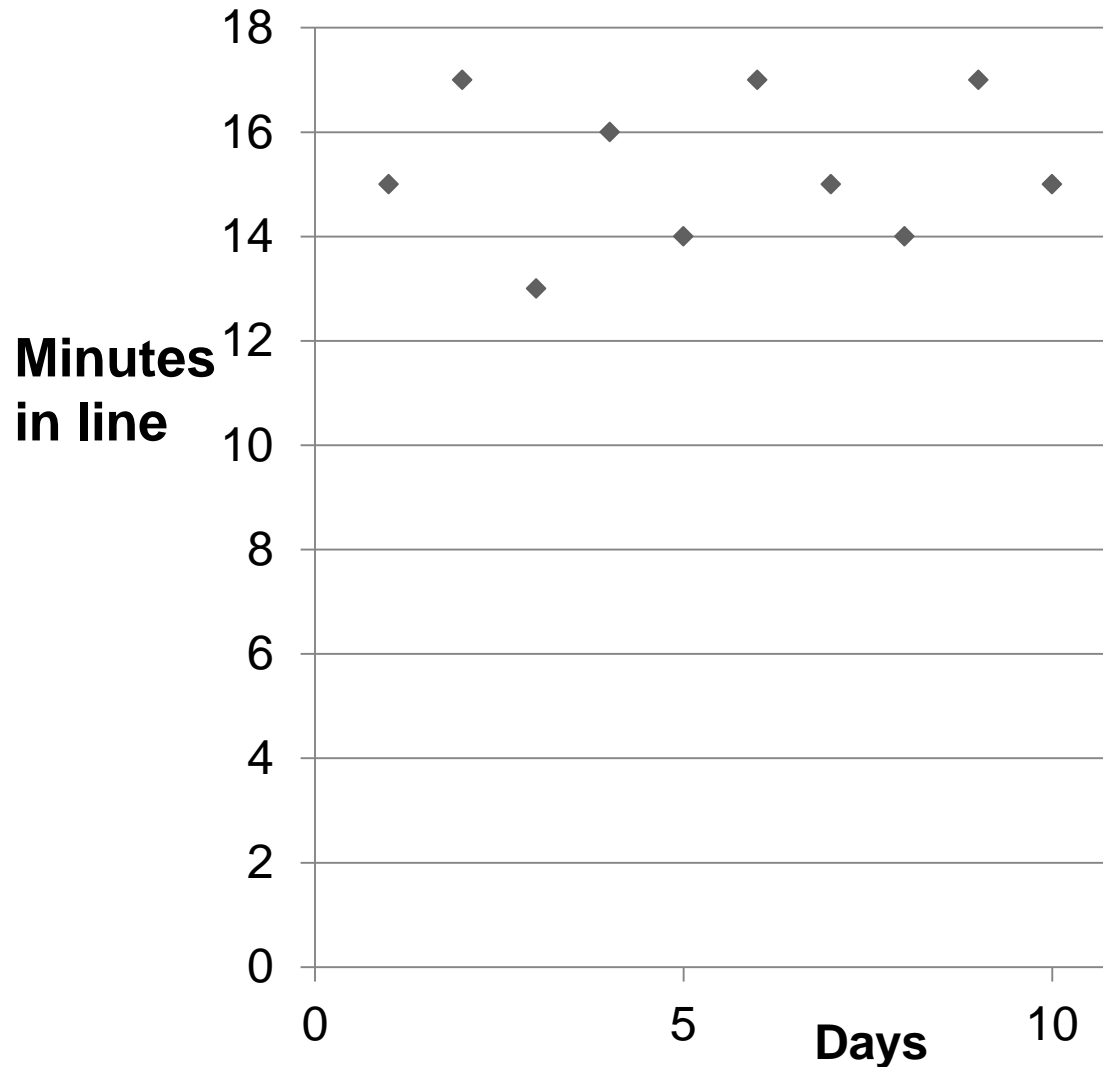


# Example from Langley et al, “*The Improvement Guide*”

- Parkside diner
  - 10 years in same location
  - Reputation for good food, service
  - Recent customer complaints: “*takes too long to get my food at lunch*”
- Owners of diner wanted to make changes to improve the situation
- Started with data collection



# Initial data collection





# What is the problem?

- Initial data + Employee input revealed:
  - 15 minute wait in line
  - Tables were available
  - Many regular customers
  - People taking orders and preparing food getting in each others' way
- What to do about it?

# Owners & employees brainstormed...

What changes could we make that would improve service at lunchtime?

Ideas:

- Change the menu
- Move to new location
- Change layout of serving, dining, food prep
- Have regular customers phone or fax orders in ahead of time
- Add another cash register

# Owners & employees brainstormed...

What changes could we make that would improve service at lunchtime?

Ideas:

- Change the menu
- Move to new location
- Change layout of serving, dining, food prep
- Have regular customers phone or fax orders in ahead of time
- Add another cash register

# Testing strategies with PDSA

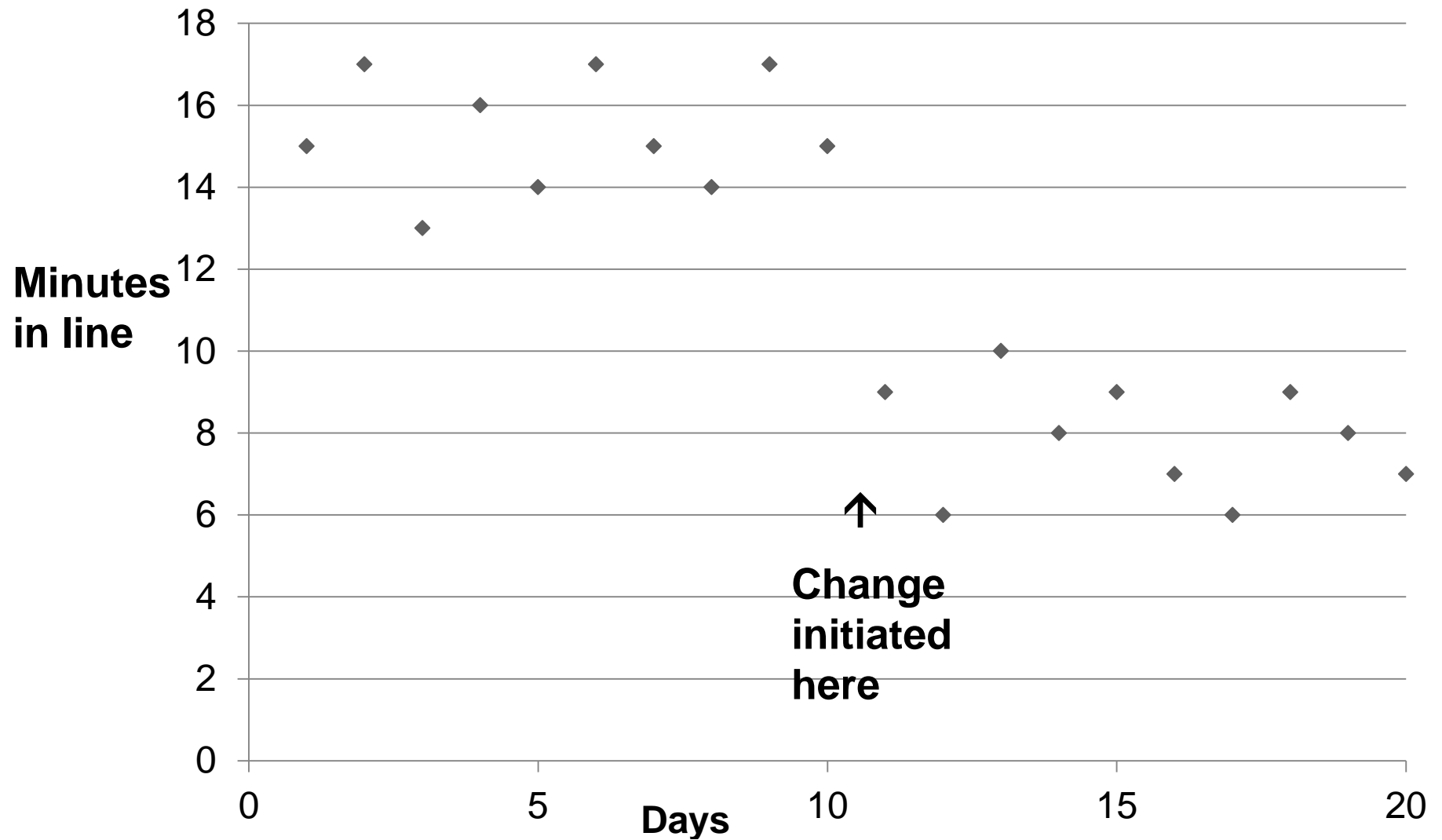
- Providing fax service
- Creating preparation area for food orders that had been faxed
- Organizing cash registers so that one was dedicated to handling faxed orders







# Results





# Why Go Through the Formal Process When You Could Just Make Changes?

- To increase likelihood that your improvement strategy will succeed
- To build support & minimize resistance upon implementation – joint ownership
- To minimize costs and risks of strategies that don't work (conserve financial and human resources)
- To challenge assumptions about what will make an improvement and what won't

# Determining appropriate scope for a PDSA cycle

		<i>Staff/ Physician Readiness to Make Change</i>		
		Resistant	Indifferent	Ready
Degree of Belief	LOW	<i>High cost</i>	v. small scale PDSA	v. small scale PDSA
		<i>Low cost</i>	v. small scale PDSA	Small scale PDSA
HIGH		<i>High cost</i>	Small scale PDSA	Large scale PDSA
		<i>Low cost</i>	Small Scale PDSA	Implement

Adapted from The Institute for Healthcare Improvement

# Questions for discussion

- What experience do you have implementing CQI methodologies?
- How might these methodologies be best harnessed in the region?

A close-up photograph of a pink flower, likely a dahlia, with many layers of petals. The petals are a soft pink color with some yellow highlights, especially towards the center. The flower is the central focus of the image.

*Thank you!*



# PDSA cycles at Windhoek Central

