

The Model for Improvement

A Proven Technique for Implementing Change

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THE PASSION TO LEAD



Objectives

The objectives of this presentation are

- ▶ To learn the components of the Model for Improvement
- ▶ To understand how this model can be used for implementing changes in a family medical practice or acute care setting
 - ▶ to achieve greater efficiency,
 - ▶ higher quality and safer patient care and
 - ▶ greater staff and patient satisfaction.



To improve, you must make
changes.

But...

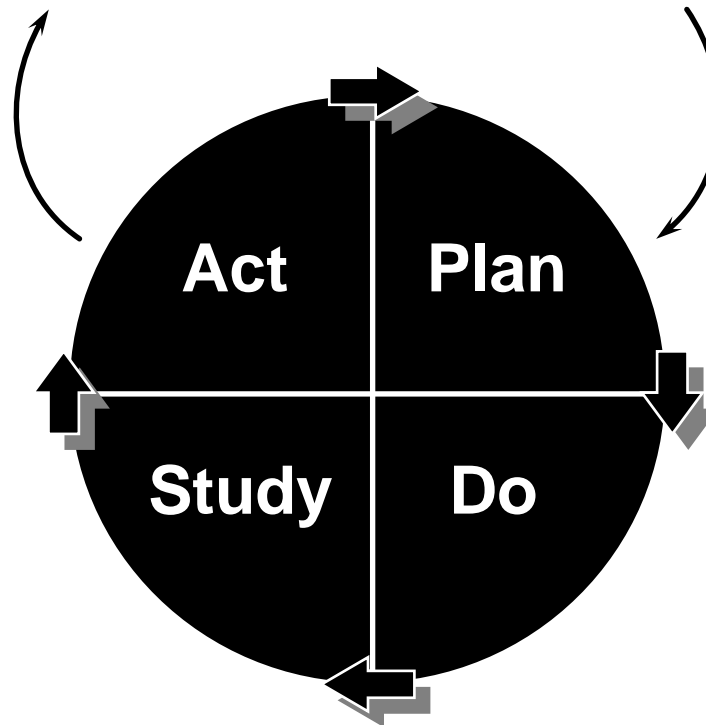
Not all changes lead to
improvement.

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?





Fundamental Questions for Improvement

- ▶ What are we trying to accomplish?
 - ▶ Define your aim statement
- ▶ How will we know that a change is an improvement?
 - ▶ Define your measures of success
- ▶ What changes can we make that will result in an improvement?
 - ▶ Identify changes will improve medication reconciliation



Setting the Aim

- ▶ Focused
- ▶ Manageable
- ▶ Data available or obtainable



Example:

Overarching Goal:

Improve the surgical care of
our patients



“Somewhat Focused” Aim

Improve the surgical care for patients having appendectomies, bariatric, and colon or rectal surgery



“Focused” Aim

Improve our surgical care for patients age 18 or older undergoing bariatric surgery and colon or rectal surgery by providing appropriate and timely prophylaxis



“Focused, Manageable, Measurable” Aim

All of Dr. Flum’s patients age 18 or older undergoing bariatric surgery and colon or rectal surgery will receive prophylactic antibiotics within 60 minutes and prophylaxis to prevent venous thromboembolism or contraindications will be documented.



Defining the Measures

A good “aim statement” helps define the measures.

- ▶ Measurement should not slow things down
- ▶ Seek usefulness, not perfection
- ▶ Use sampling
- ▶ Use accessible measures (don't wait for IS)



“Focused, Manageable, Measurable” Aim

Aim: All of Dr. Flum’s patients age 18 or older undergoing bariatric surgery and colon or rectal surgery will receive prophylactic antibiotics within 60 minutes and prophylaxis to prevent venous thromboembolism or contraindications will be documented.

Measures:

- ▶ % of Dr. Flum’s bariatric and colorectal surgical patients age 18+ and receiving antibiotics within 60 minutes of incision or documented contraindications
- ▶ % of Dr. Flum’s bariatric and colorectal surgical patients age 18+ and receiving VTE prophylaxis or documented contraindications



What is the purpose of the AIM statement?

- A. Describes to Senior Management as well as other clinicians and staff what the change team expects to accomplish with its improvement effort
- B. Describes what changes will result in improvement
- C. Describes how we will know what changes result in improvement as opposed to changes that do not get us closer to our goal



Exercise

- ▶ Write an aim statement for the next few months of your project.
- ▶ How will you measure it?
- ▶ Complete Worksheet #1



What changes could you make that would result in an improvement?

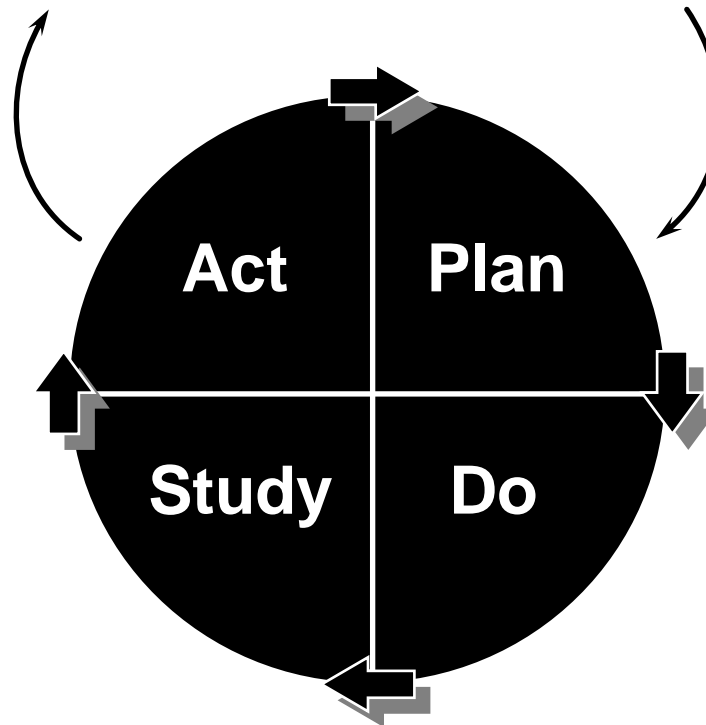
- ▶ Brainstorm with team members
- ▶ Ask colleagues at other organizations
- ▶ Review the literature
- ▶ Attend IHI calls, review website

Model for Improvement

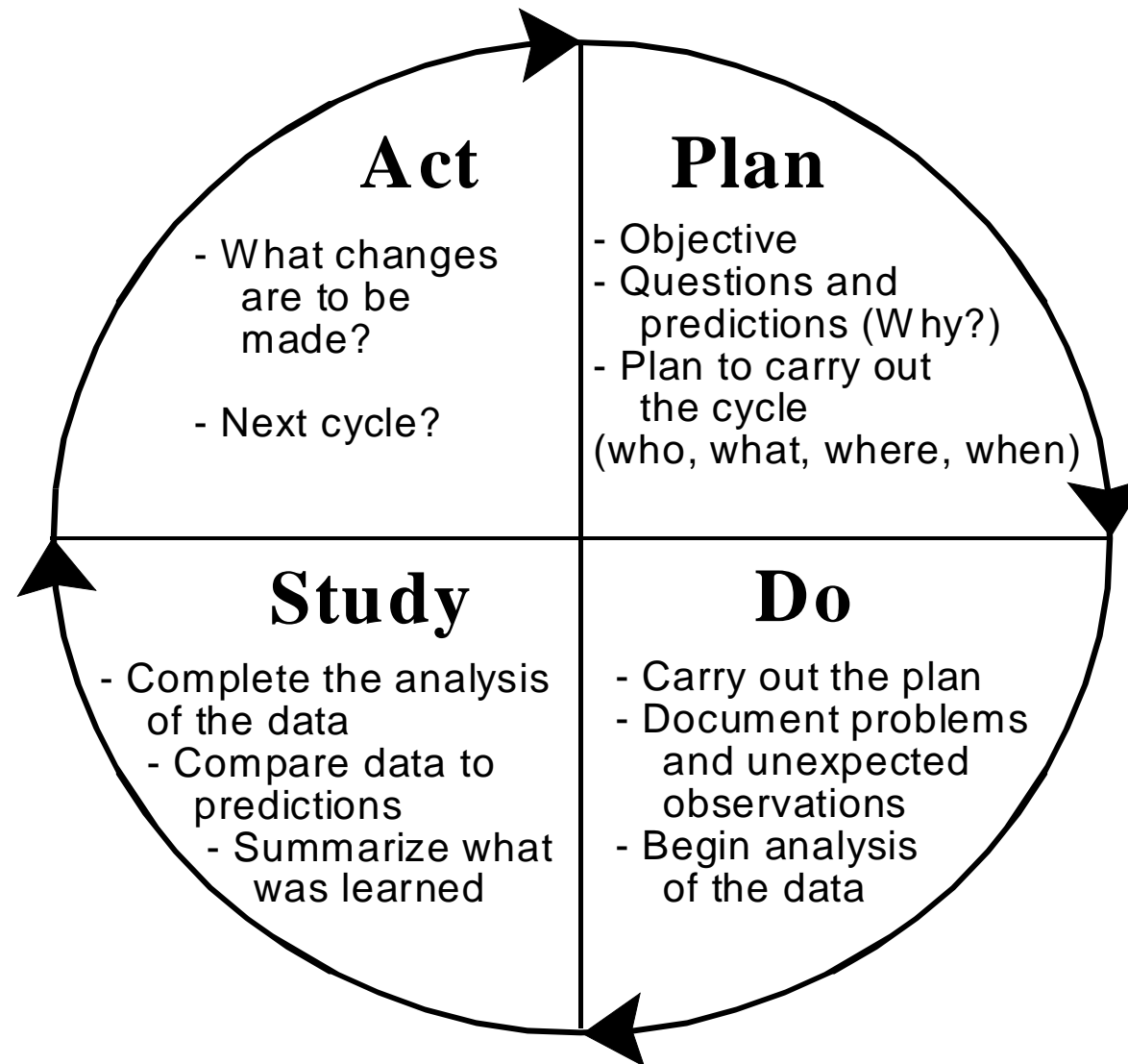
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The PDSA Cycle for Learning and Improvement





Testing changes

(What changes can we make that will result in an improvement?)

- ▶ Pick easy changes; start with the most feasible.
- ▶ Test on a small scale.
- ▶ Test under a variety of conditions.
- ▶ Avoid technological slowdowns, use manual methods if needed.
- ▶ Challenge your expectations about time...what can we do by next Thursday?

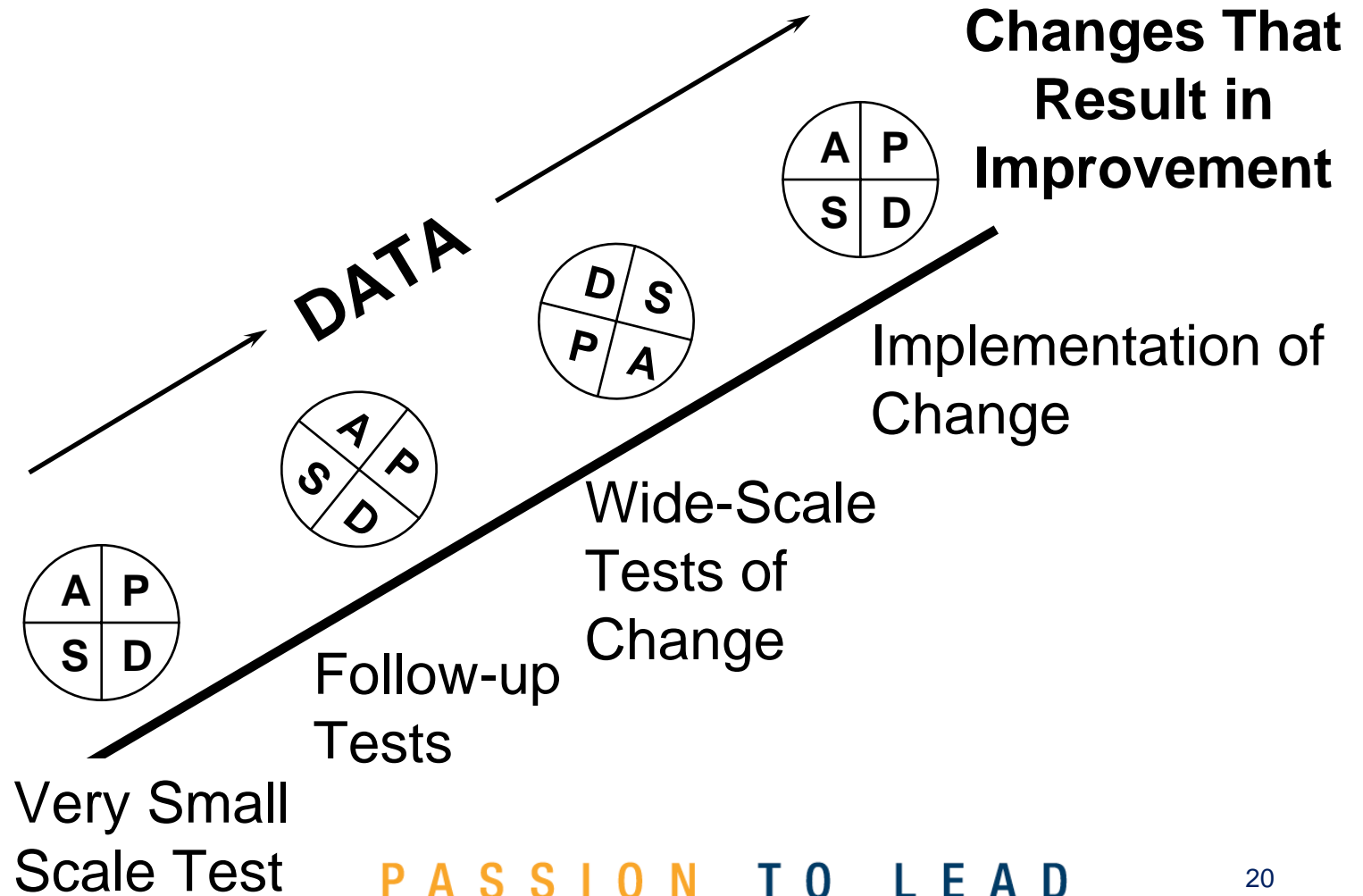


Testing changes

- ▶ Pick willing volunteers.
- ▶ Avoid the need for consensus, buy-in or political solutions. Save that for later stages.
- ▶ Be prepared to back off. This is a test. Learning is the goal.
- ▶ Replicate successes. Don't reinvent the wheel.



Repeated Use of the PDSA Cycle



Hunches
Theories
Ideas



Venous Thromboembolism Prophylaxis Medical Admission Orders

4937
PROOF 6
01/31/08
PATIENT ID
HERE

Height _____ Weight _____ kg Allergies: _____

VTE RISK STRATIFICATION

Low Risk <input type="checkbox"/>	Intermediate Risk <input type="checkbox"/>	High Risk <input type="checkbox"/>
• 0 risk factors (or expected LOS less than or equal to 2 days), plus patient ambulatory.	1 risk factor below. <i>Pharmacologic prophylaxis preferred</i>	2 or more risk factors below. <i>Enoxaparin, fondaparinux preferred</i>

VTE RISK FACTORS

Patient Circumstances		Medical or Surgical Conditions	
<input type="checkbox"/> Age greater than 40 years	<input type="checkbox"/> <u>CV</u> Myocardial infarction (less than 3 months) CHF (NYHA Class III or IV) Venous stasis/ varicose veins	<input type="checkbox"/> <u>Heme</u> Hypercoagulable state History of DVT or PE Family history DVT or PE (1 st relative) Sickle cell disease	<input type="checkbox"/> <u>Onc</u> Malignancy (active) Myeloproliferative disorder
<input type="checkbox"/> Hospitalization for <u>surgery</u> or <u>acute illness</u>	<input type="checkbox"/> <u>Pulm</u> Lung disease (acute or chronic)	<input type="checkbox"/> <u>Rheum</u> Rheumatologic disease (active)	<input type="checkbox"/> <u>Ortho</u> Elective hip or knee arthroplasty Fractured hip, pelvis, femur, or leg
<input type="checkbox"/> Critical Care Unit admission	<input type="checkbox"/> <u>Renal</u> Dehydration, severe (greater than 10% weight) Nephrotic syndrome	<input type="checkbox"/> <u>Gyn</u> Pregnancy or post-partum (less than 1 month) Estrogen-based therapy (OCP, HRT) Pelvic Floor Surgery (less than 1 month)	
<input type="checkbox"/> Obesity (BMI greater than or equal to 30)	<input type="checkbox"/> <u>GI</u> Inflammatory bowel disease		
<input type="checkbox"/> Immobility (confined to bed or chair) greater than or equal to 72 hr	<input type="checkbox"/> <u>Neuro</u> Acute ischemic stroke Spinal cord injury (less than 1 mo.)		
<input type="checkbox"/> Central venous catheter	<input type="checkbox"/> <u>ID</u> Previous ischemic stroke w/paresis Acute infection		
<input type="checkbox"/> Recent major surgery (less than or equal to 3 months)			

CONTRAINDICATIONS TO PHARMACOLOGIC VTE PROPHYLAXIS

ABSOLUTE	RELATIVE
Active hemorrhage Hemorrhage from severe trauma to head or spinal cord (less than 1 month) Immune mediated heparin induced thrombocytopenia (HIT) [See Argatroban protocol] Epidural catheter presence is an absolute contraindication for Enoxaparin/Fondaparinux]	Intracranial hemorrhage <i>within</i> 1 year GI hemorrhage <i>within</i> 1 month GU hemorrhage <i>within</i> 1 month Intraocular surgery <i>within</i> 2 weeks Epidural catheter removal <i>within</i> 12 hours Post-operative bleeding concerns <i>within</i> 4 hours Active intracranial lesions/neoplasm Hypertensive urgency/emergency Thrombocytopenia (less than 50 platelets/mL) or falling platelet count seconds Coagulopathy (INR greater than 2, or PT greater than 18) End stage liver disease Other: _____

VTE prophylaxis (all patients)

Fondaparinux (Arixtra) 2.5 mg subcutaneously once daily (If creatinine clearance greater than 30 mL/min & wt. greater than 50kg.)

Enoxaparin (Lovenox) 40 mg subcutaneously once daily (If creatinine clearance greater than 30 mL/min.)

Enoxaparin (Lovenox) 30 mg subcutaneously once daily (If creatinine clearance greater than 20 mL/min and less than 30 mL/min.)

Unfractionated Heparin 5,000 units subcutaneously every 8 hours every 12 hours (for patients 75 or older)

Intermittent Pneumatic Compression stockings/boots

This patient does not require VTE prophylaxis because _____

Physician Signature _____ Date/Time _____

Print Physician Name _____ Contact Number _____
AH29033576 (01/08)



Improve VTE Prophylaxis

Problems:

- ▶ Risk Assessment/Order Form not included
 - ▶ Can't find the form
 - ▶ Physician forgot
 - ▶ Partially completed
- ▶ No “system” for identifying patients receiving or needing to receive prophylaxis



Improve VTE Prophylaxis

Plan:

- ▶ **Objective of first test:** To prevent physicians forgetting and to support the ability to locate the form, the form will be included in the patient admission packet.
- ▶ **Prediction?** Forms in the packet will be more frequently used than forms in the bins.
- ▶ **(Who, what, where, when, how)** On Tuesday AM, when a patient is registered, Sally (admission clerk) will add the VTE Risk Assessment / Order Form to the admission packets of Dr. Flum's surgical cases.
- ▶ **Measure(s)** To assess the success of this test – All AM surgical patient charts for Dr. Flum's team will be reviewed at lunch time to determine if each form was completed.



Improve VTE Prophylaxis

Do:

- ▶ Tuesday AM: Sally (admission clerk) added the VTE Risk Assessment / Order Form to the admission packets of Dr. Flum's surgical cases.
- ▶ She got behind due to multi-tasking and was not able to add the form to all packets of Dr. Flum's patients.
- ▶ Some of the other physicians' surgical cases had the form added to their admission packet accidentally.



Improve VTE Prophylaxis

Study:

- ▶ On Tuesday, at lunch, Sally & Dr. Flum reviewed the AM charts and found forms in 2 out of 4 charts
- ▶ Prediction is not met
- ▶ Objective still appears valid



Improve VTE Prophylaxis

Act:

- ▶ On Tuesday, at mid-day, Sally & Dr. Flum huddled with Rosa, the nurse on the team. Rosa agreed to serve as a back-up to check that the packets had the form included.



Improve VTE Prophylaxis

Do:

- ▶ Tuesday PM: Rosa had a stack of forms and was able to place them in the patient packets if they were missing.

Study:

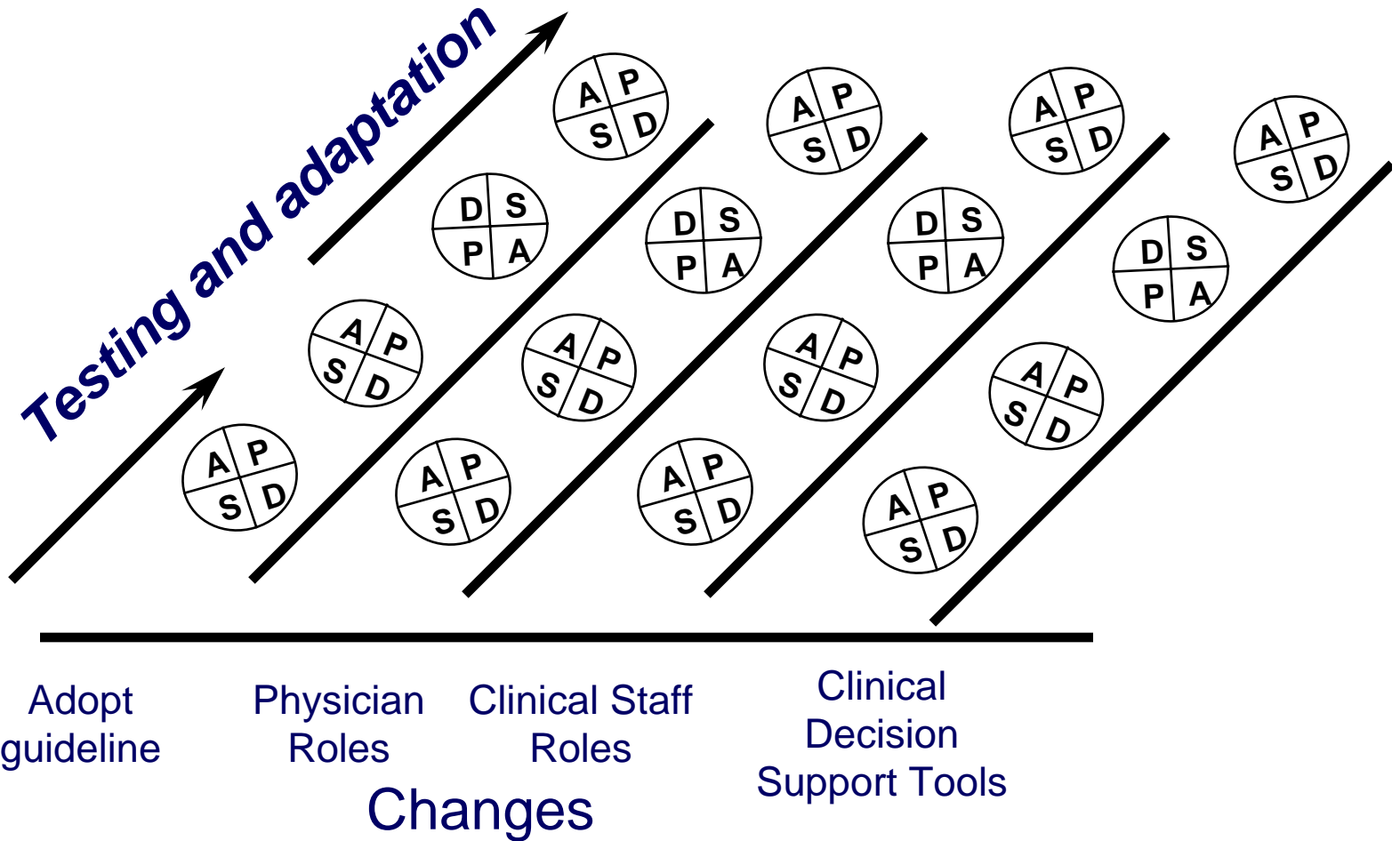
- ▶ On Tuesday, at the end of the day, Rosa, Sally, & Dr. Flum reviewed the charts and found 8 out of 8 charts had the form, but 2 were incomplete.

Act:

- ▶ Dr. Flum mentioned that checkboxes for typical contraindications would be easier and suggested the form be modified



Multiple PDSA Cycle Ramps



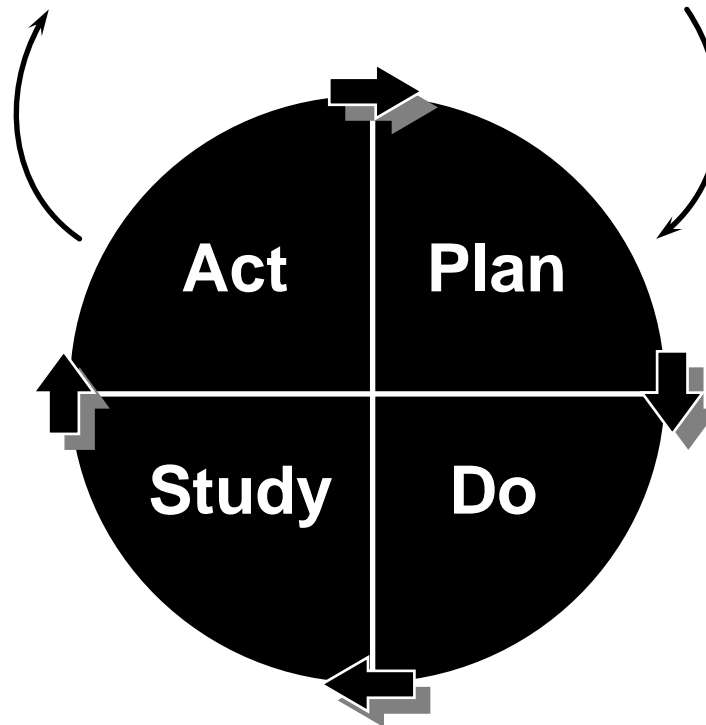
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Which of the following statements is FALSE re: the PDSA cycle approach?

- A. Learning can occur with just one patient, one physician, on one day, with one small-scale PDSA cycle.
- B. Small-scale PDSA cycles can be used to test those changes that some predict may fail.
- C. PDSA cycles are a great way to test changes that work in other hospitals, to see if modifications are needed to work effectively in your hospital.
- D. Data does not need to be collected when doing really rapid small-scale PDSA cycles.



Exercise

- ▶ Form a design team for your department
- ▶ Choose a project lead -- someone to keep track of progress
- ▶ Consider an “issues log” to monitor ideas and actions
- ▶ With your team, write two PDSA cycles that you could do when you get back
 - ▶ **MUST** involve a surgeon/physician and patient!
 - ▶ Complete worksheet #2



References

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