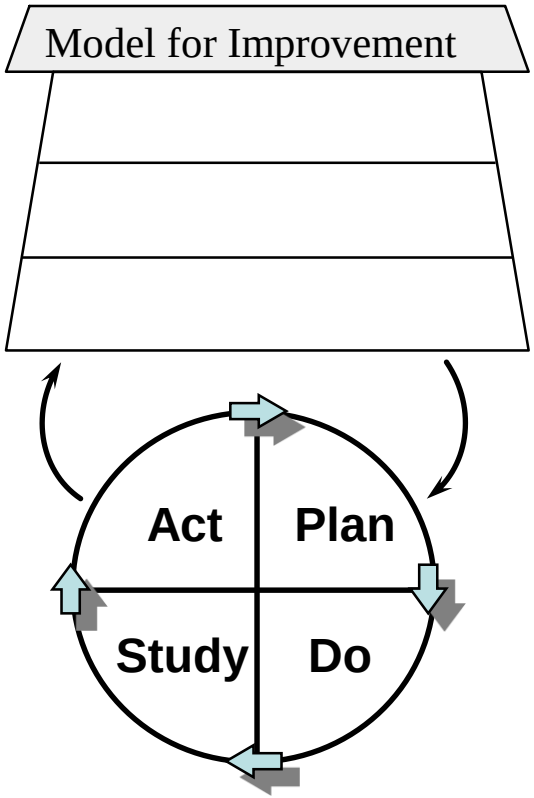
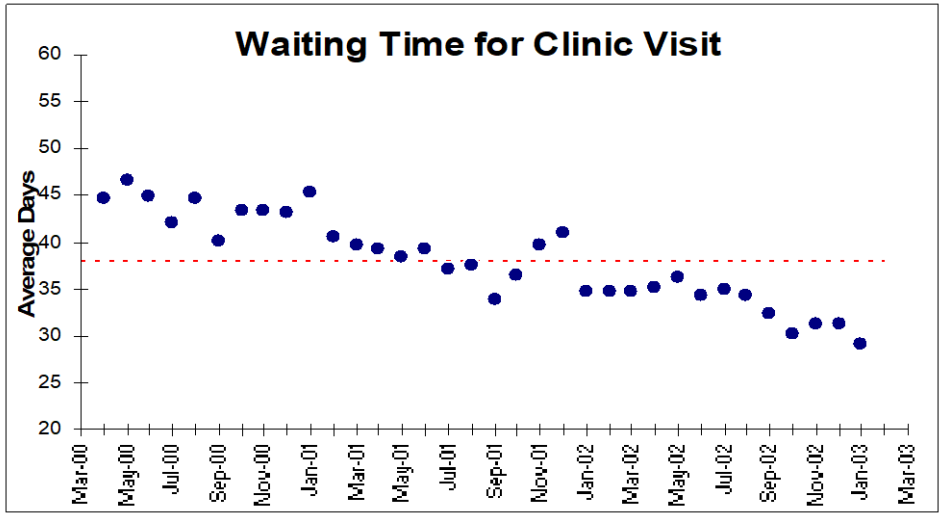
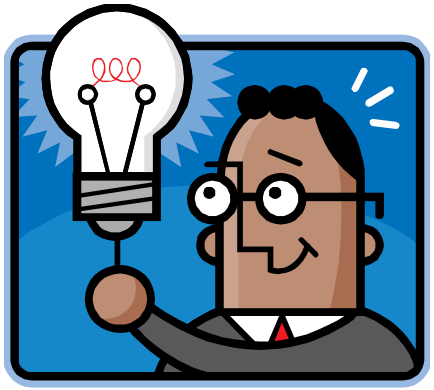
Accelerating the Rate of Improvement..

What We Have Learned the Hard Way!







WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- Identify the role of measurement and run charts in improvement
- Identify several ways to obtain more useful change ideas to take to testing
- Identify keys to accelerating the rate of testing and improvement
- As time permits: Identify keys to good implementation (making change stick)

General Resources

Books:

1. The Improvement Guide. Gerald J. Langley, Kevin M. Nolan, Thomas W. Nolan, Clifford L. Norman, Lloyd P. Provost, Jossey-Bass, 2009.
2. The Health Care Data Guide. Sandra Murray and Lloyd Provost, Jossey-Bass 2011.
3. Total Quality Tools for Health Care. Productivity-Quality Systems, Inc. Miamisburg Ohio. ISBN: 1-882683-04-8 Tel. 1-800-777-2255.

Videos:

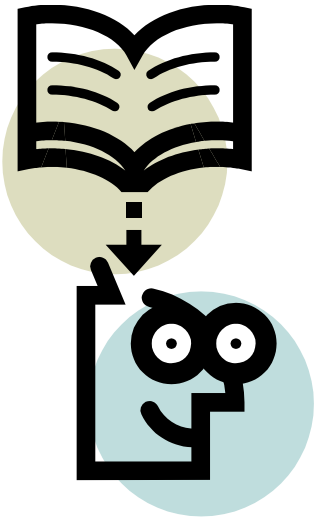
- Using Data for Improvement: The Toolkit. NAHQ. 1-800-966-9392

Software used in presentation:

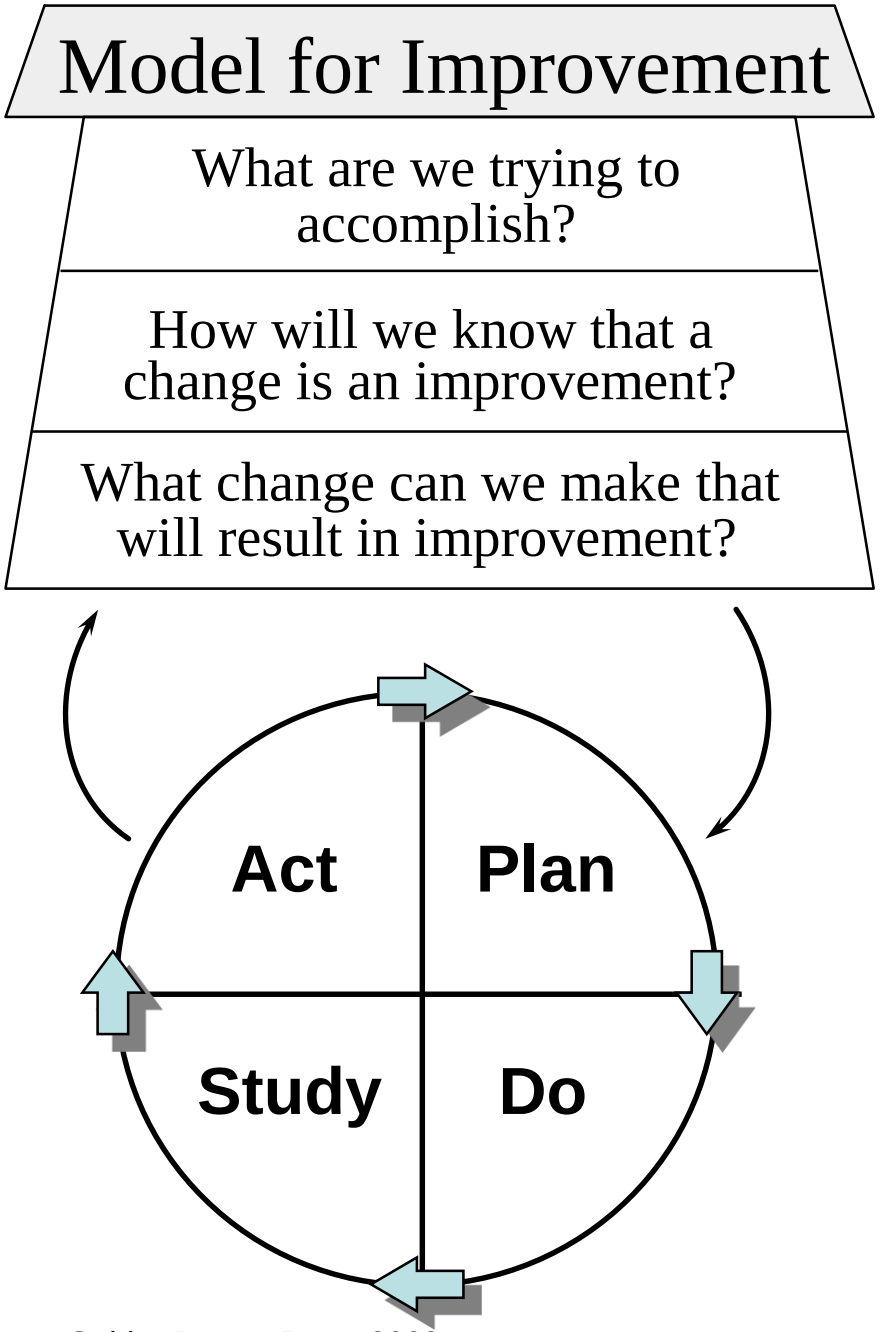
- ChartRunner. PQ Systems. 1-800-777-3020.
- QI Charts. API 1-512-708-0131

Internet:

www.ihi.org



My Favorite Framework for Execution

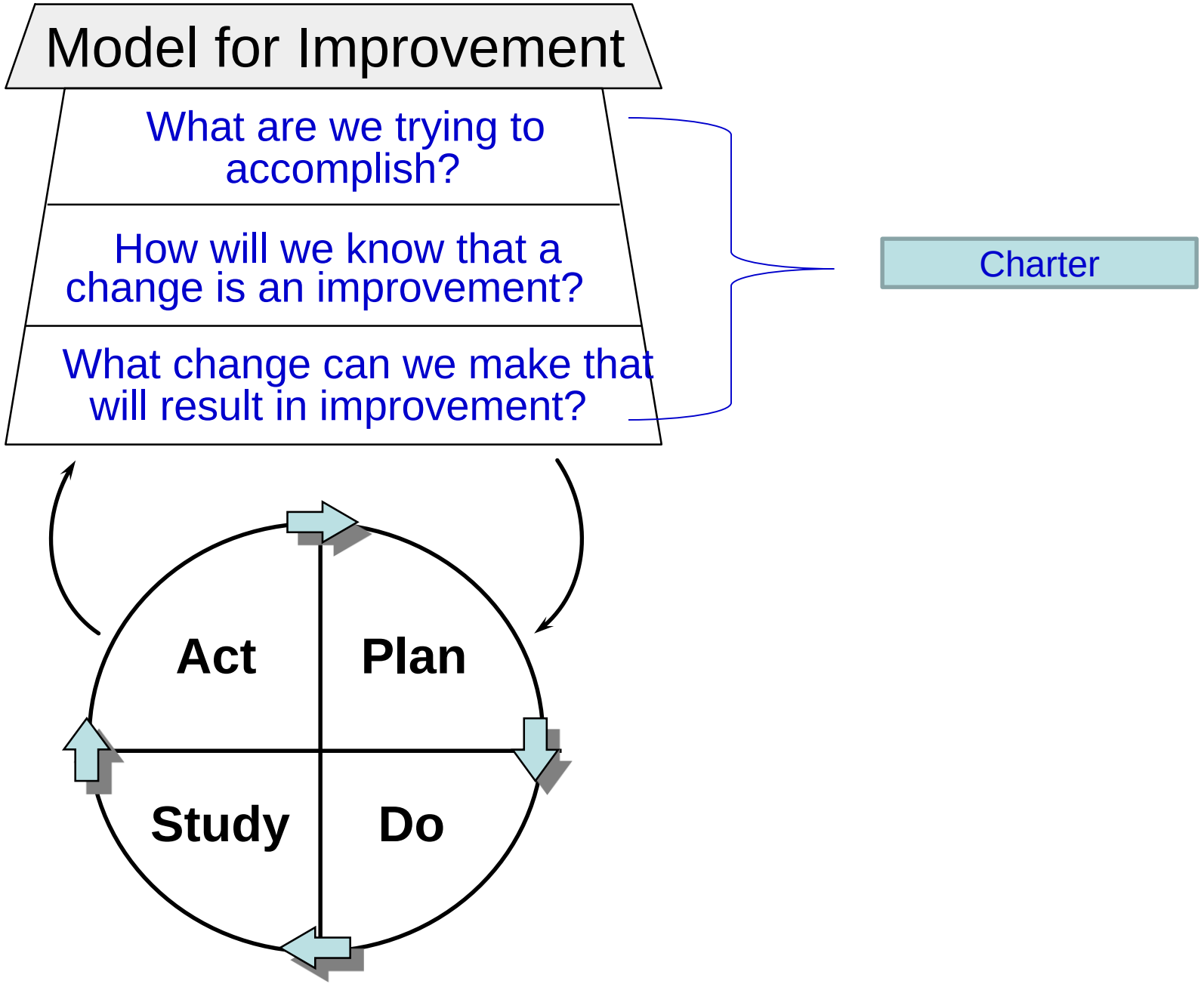


Used with permission: Improvement Guide Improvement Guide, Jossey-Bass, 2009

WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

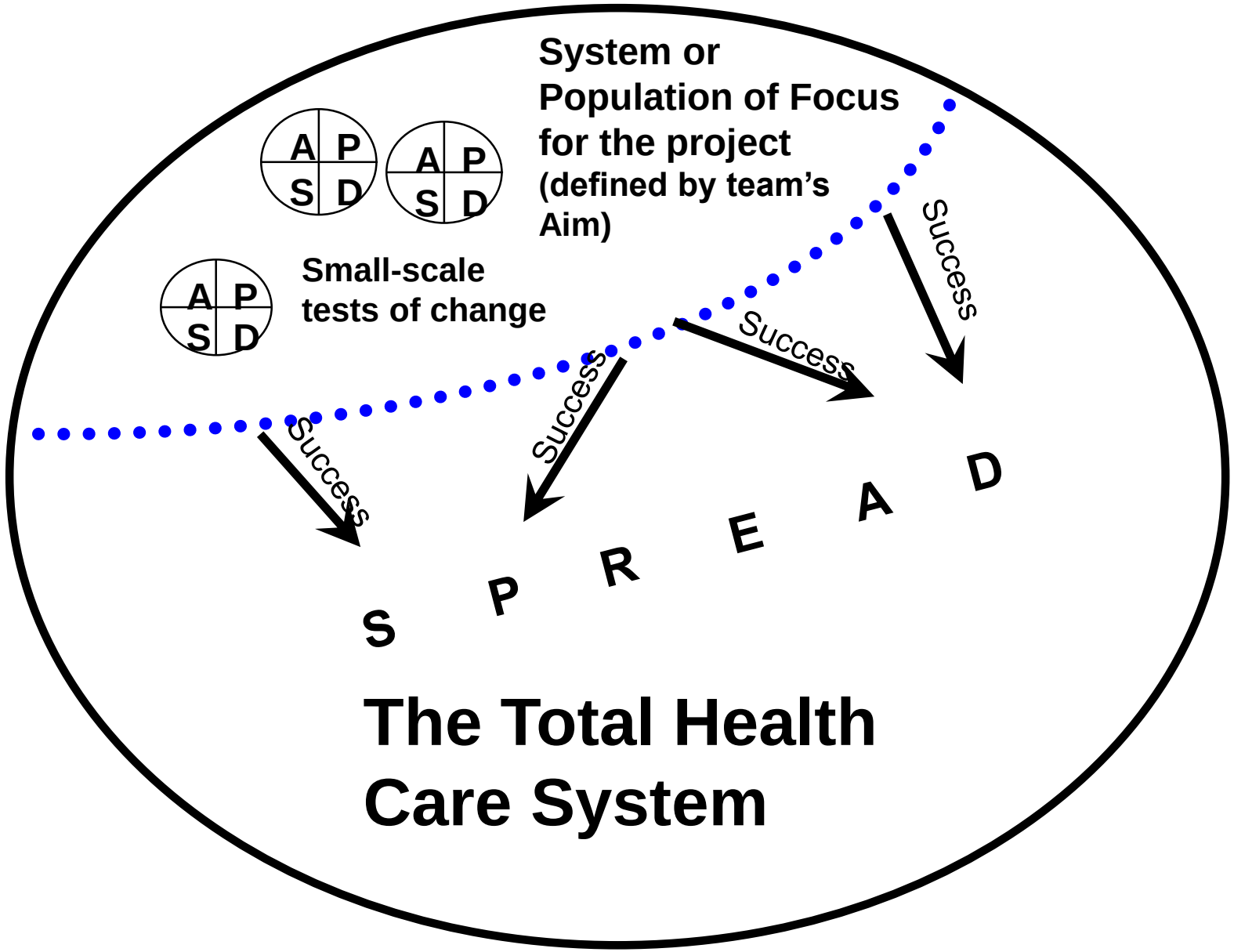
- Identify the Model for Improvement
- ***Diagnose & improve improvement project charters so they are more likely to succeed***
- Be able to analyze a run chart using statistically based rules
- Identify several uses for run charts in improvement projects
- Identify several ways to obtain more useful change ideas to take to testing
- Identify keys to accelerating the rate of testing and improvement
- Identify keys to good implementation (making change stick)



Elements of Success:
Great Charter!

- Starts with clear aim
  - Accomplish what (numeric stretch goal)
  - By when (dates)
  - Where (what part of org. start with)
    - **pilot population**

System to be Improved Vs. Pilot Populations

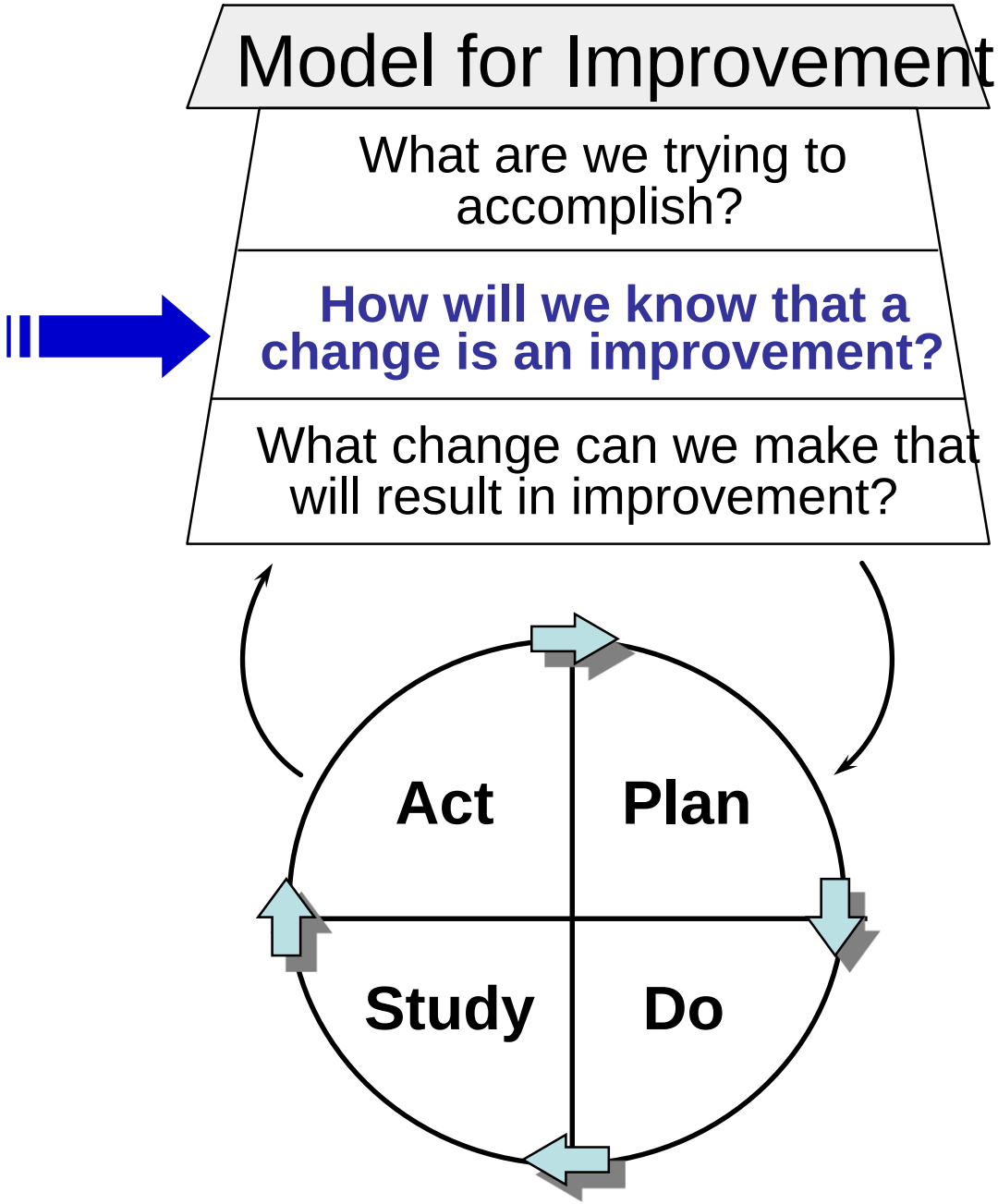


Elements of Success:
Great Charter!

- Starts with clear aim
  - Question 1:
    - Accomplish what (numeric stretch goal(s))
    - By when (dates)
    - Where (which org)
    - Pilot population
    - By what general method
    - Why bother—why important now?

Aim Statement for Well Child Visits

- We will increase the percentage of Well Child Visits (WCV) for children aged 3-6 from our currently dismal 26.6% to 60% by Dec 1 2018. Currently children are missing vital immunizations and screenings.
- We will start at North Clinic by:
  - improving current workflows, creating a recall system, and better engaging parents



Used with permission: Associates in Process Improvement

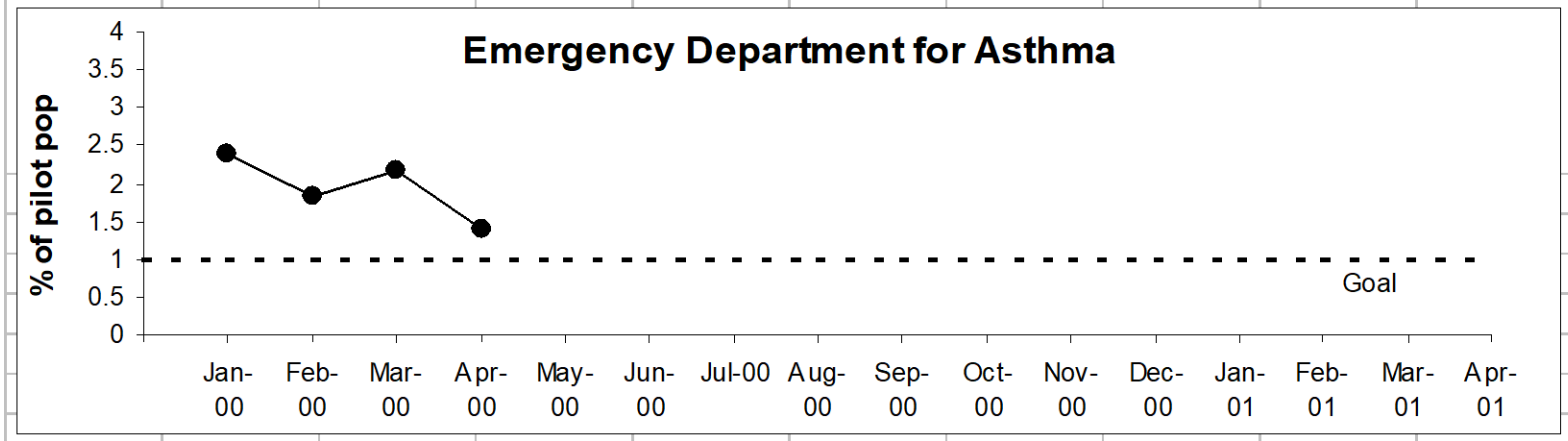
Elements of Success:
Great Charter!

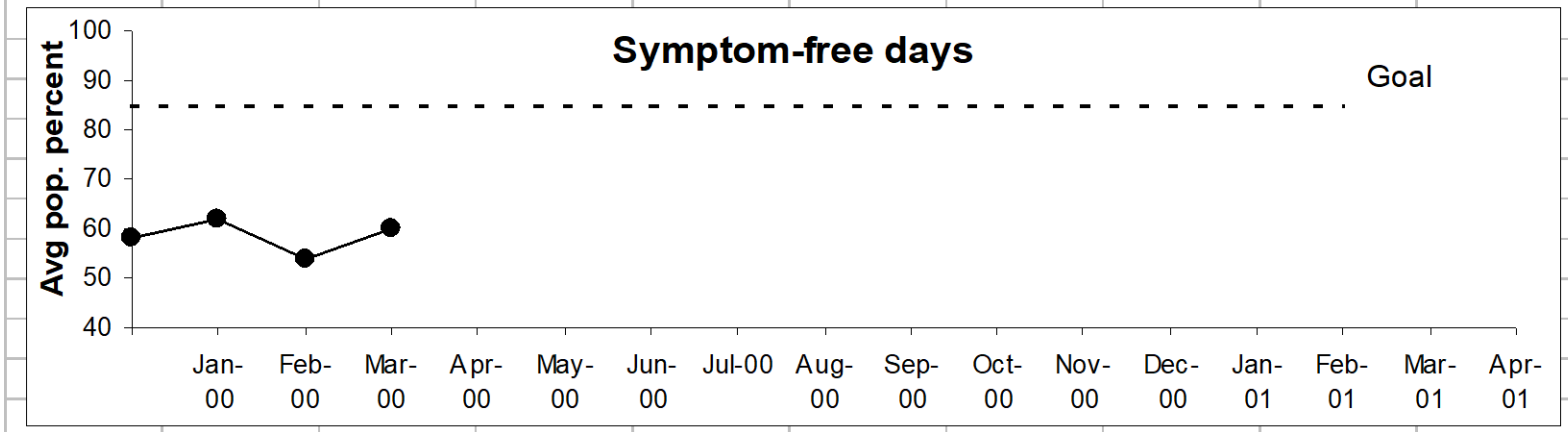
- Question 1:
  - Accomplish what
    - numeric stretch goal(s)
  - By when (dates)
  - Where (what org?)
  - Pilot population
  - By what method?
  - Why bother—why important now?
- Question 2:
  - Includes “just enough” measurement

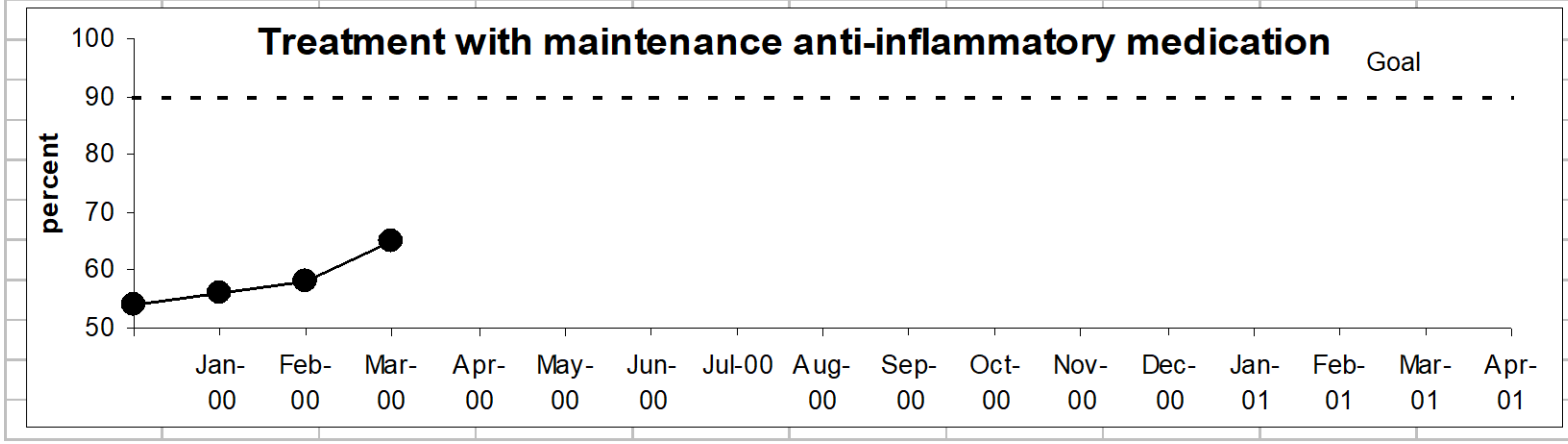
Measurement - “just enough”

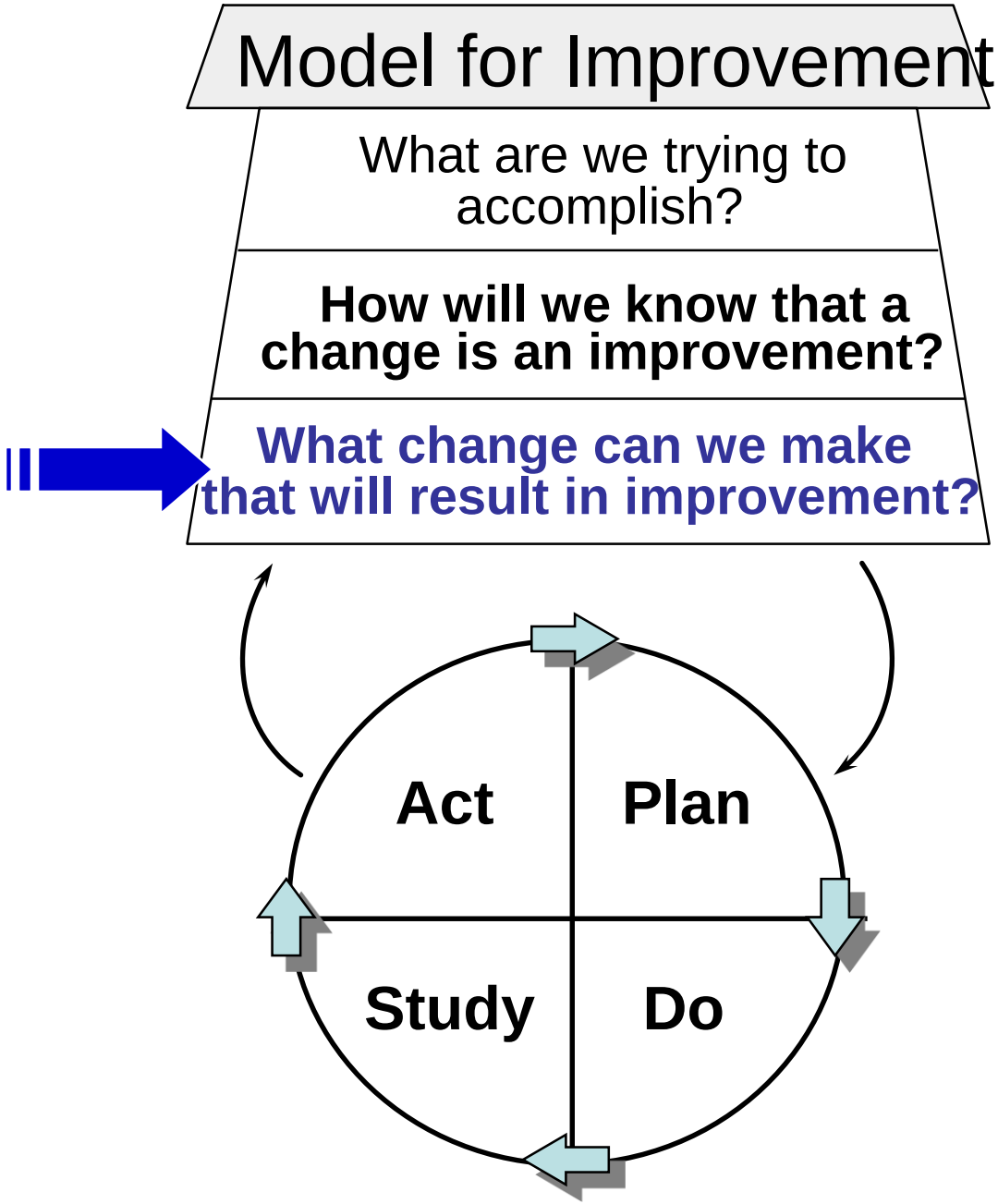
- Need small Family of Measures (FOM) that live for lifespan of project (typically 3-8 measures)
  - Outcome, process and balancing measures
  - Must be graphed at least monthly
- Also need just enough data to tell if test of change is promising

Family of Measures for Asthma Chronic Care









Elements of Success:
Great Charter!

- Question 1:
  - Accomplish what (numeric stretch goal)
  - By when (dates)
  - Where (what part of org. start with)
  - Pilot population
  - Why bother—why important now?
- Question 2:
  - Includes “just enough” measurement
  - Little family of 3 -8 measures
- Question 3: By what method?
  - What is our theory?
  - What changes will we test?

Exercise: Charter Improving Post Discharge Medication Reconciliation

- Northfield clinic serves 16 panels of patients.
- We will improve post discharge medication reconciliation from the current 41% to 85%
- We will focus on identifying panel members post discharge, RN follow-up calls, patient scheduling and record documentation
- Measure: % of post D/C patients with med rec within 31 days

Elements of Success

1. Clear aim with stretch goal and pilot population
2. Measurement - “just enough”
3. Theory with high quality ideas for changes to test

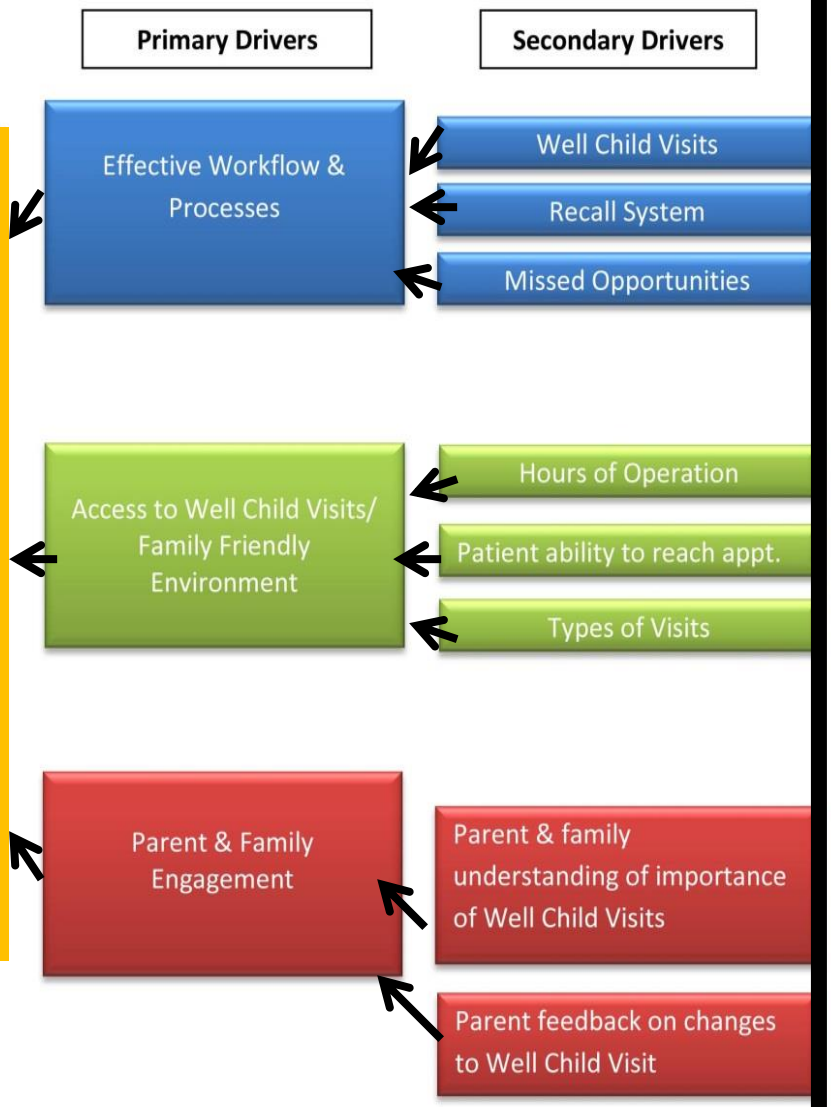
Our Theory:
Driver Diagram Definitions:

- A **Driver Diagram** is an improvement tool used to organize theories and ideas in an improvement effort. It displays visually, our theory about potential areas we can leverage to change the status quo. The driver diagram is often used to scope or size a project and to clarify the plan for reaching the aim.
  - **Primary Drivers**: major processes, operating rules, or structures that will contribute to moving towards the aim
  - **Secondary Drivers**: elements or portions of the primary drivers. The secondary drivers are system components necessary in order to impact primary drivers, and thus reach project aim.
  - **Specific changes /Change Concepts:** Specific changes are concrete actionable ideas to take to testing. Change concepts are broad concepts (e.g. move steps in the process closer together) that are not yet specific enough to be actionable but which will be used to generate specific ideas for change.
    - Note: measures can be indicated on the DD as it becomes more mature.

S

More Mature Driver Diagram

Improving Well Child Visit Rates



Aim:

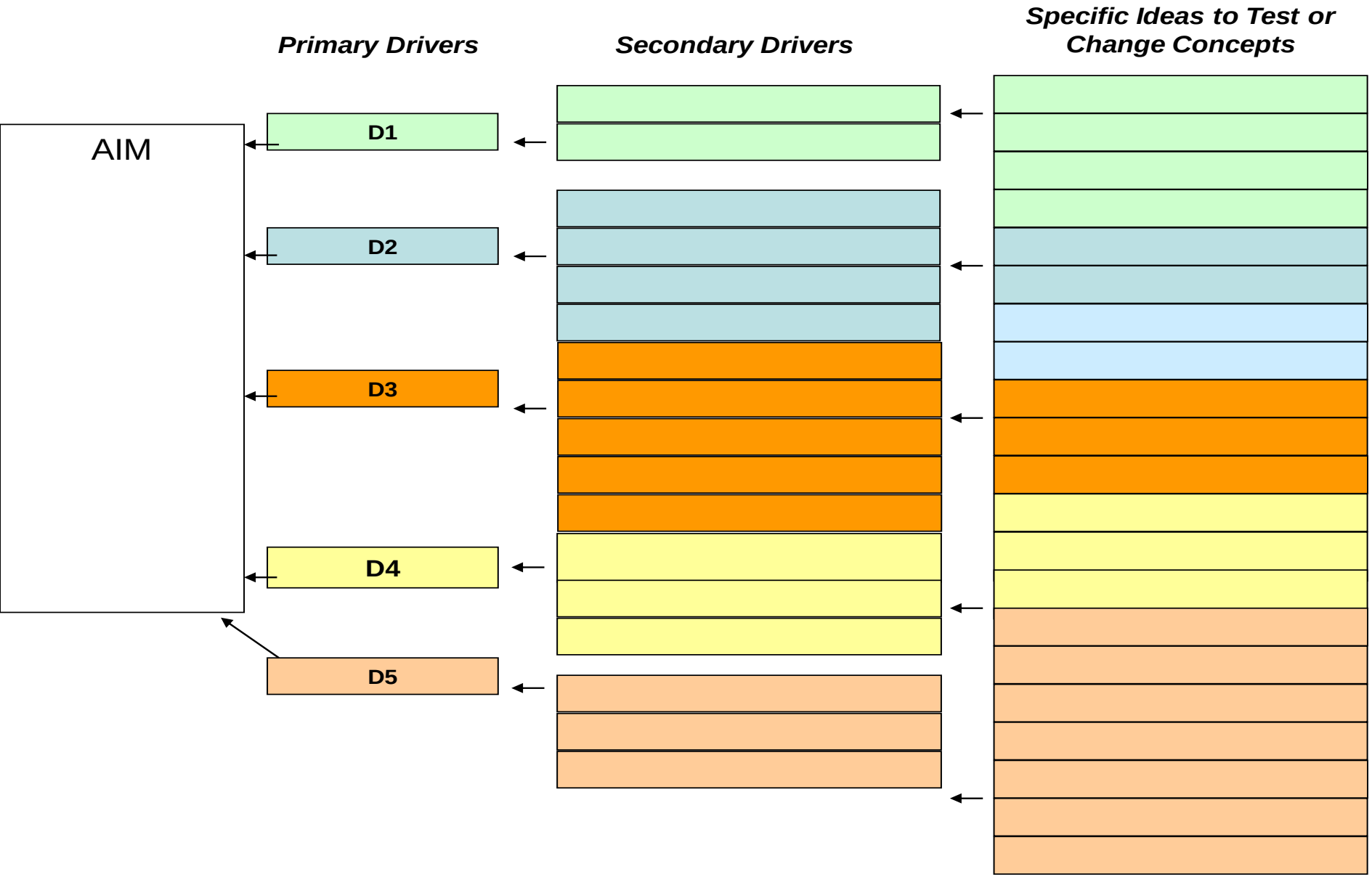
By June 2014 the Pediatrics team at the ABC Community Health and Wellness Center will increase the % Well Child Visits for children 3-6 from 26 to 60% by improving current workflow, creating a recall system, and better engaging parents on the importance of these visits.

Specific Changes to Test

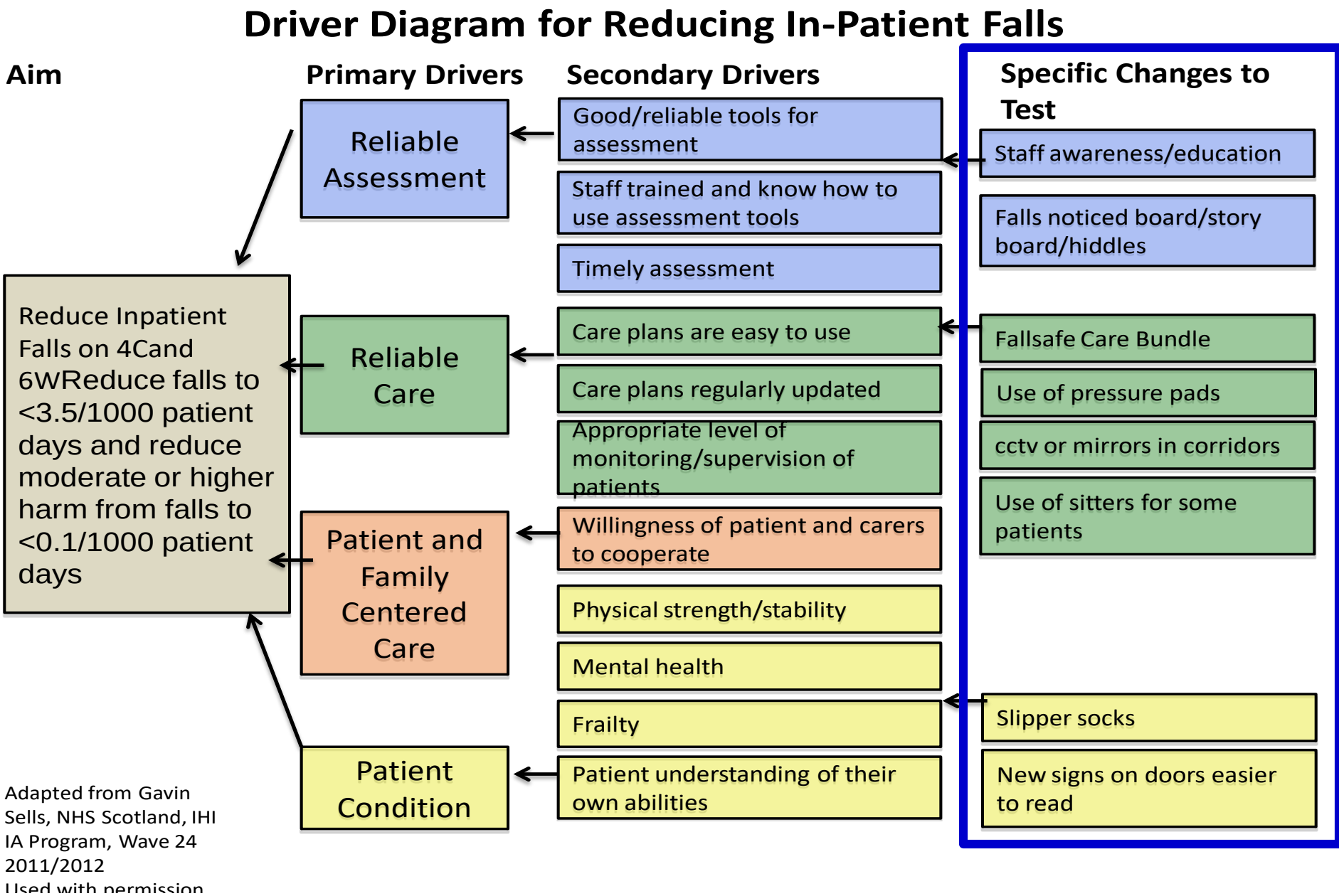
- MA, RN, Front Desk Protocols
- Well Child Flag in Epic
- MA makes appointment
- Well Child Calendar for Parents
- Postcards, Call, Text Message Reminders
- No Show Call Back
- Appt. Note during Chart Scrub
- Patient Portal – Appt. & Reminders
- Extended Hours
- Transportation Vouchers
- Educational Visits
- Same Day Well Child Visits
- Family Visits
- Language Services for Hispanic population
- English Class for Spanish-speaking families
- Parent Focus Groups
- WC Handouts: Components & Milestones
- Advertisement and PSA
- Surveys & Interviews

Trisha Cooke

Driver Diagram Basic Template

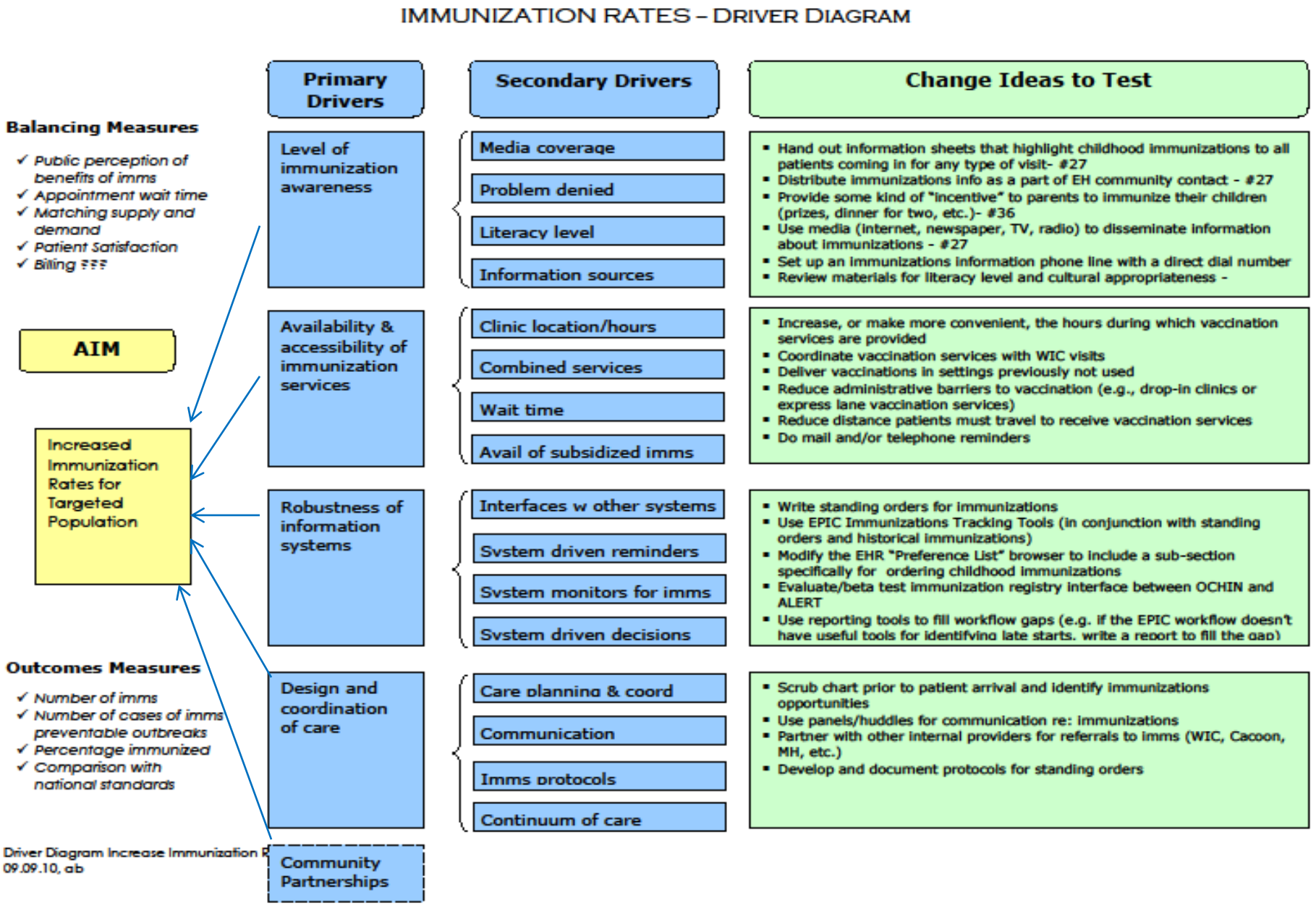


Driver Diagram Early in Project



Adapted from Gavin Sells, NHS Scotland, IHI IA Program, Wave 24 2011/2012
Used with permission

Example of More Mature Driver



Elements of Success

1. Clear aim with stretch goal and pilot population
2. Measurement - “just enough”
3. Theory with high quality ideas for changes to test
4. Effective teamwork

Effective Teamwork

- 3-8
- Meet often enough
- Work outside meetings
- Clear roles

Teamwork-Methods/ Structure

Developing a common purpose

Charter

p. 2-7

Establishing norms for the team

Ground Rules

1.On time
2.Everyone speaks
3.Use data

p. 2-8

Defining roles for team members

Team Leader, Facilitator, Scribe, Team Member

p. 2-10

Defining procedures for making decisions

- *One person*
- *Everyone*
- *Consensus*
- *Majority Rule*
- *One person with input*

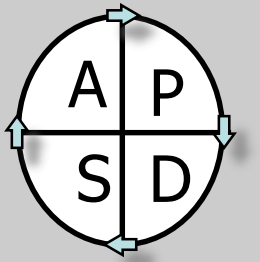
p. 2-13

Preparing for and running a team meeting

AGENDA

p. 2-15

Following a common Model for Improvement



p. 2-19

Team Responsibilities	Team Member	Team Leader	Facilitator	Technical Consultant	Management Sponsor
Using the Charter	Accept and work toward the **aim** of the team	Keep team meetings focused on charter	Use charter to focus team and provide input to team	Learn what team is trying to accomplish	Work with team to reach consensus on charter
Educating and Training for the Team	Learn model, tools, and teamwork princi-ples. Apply these methods and ideas	Communicate need for additional help	Teach or coach the team to practice improvement and teamwork methods	Assist with required education and training. Help assess needs	Help provide resources (time, schedules, use of experts) for the team
Organizing and Conducting Effective Meetings	Attend and participate in meetings; complete assigned tasks	Plan meetings, distribute agendas, minutes, and con-duct meetings	Focus on team decision making process, not deci-sions	Observe meetings and help leader and sponsor	Periodically, attend meetings and participate if needed
Using the Learning and Improvement Cycle	Participate in plan-ning, data collection, study, and action	Organize team activities and assignments using the cycle	Assist the team in under- standing of the tools and the Model for Im-provement	Provide assistance on spe-cial needs, design of surveys, studies, analysis of data	Provide resources and communicate to help teams take action for improvement
Taking Actions to Make Improvements	Carry out assignments	Plan and communicate team actions			Remove barriers to improvement; lead some implementation
Communicating the Status and Results of the Team	Share experience with co-workers	Serve as liaison to others outside the team	Help leader and sponsor summarize status		Keep abreast of team progress and report status to management

7 STEP MEETING AGENDA

Date: _____ **Time:** _____ **Place:** _____

1. Clarify Objective: _____

2. Assign Roles: **Leader:** _____ **Facilitator** _____ **Timekeeper:** _____ **Recorder:** _____

Members: _____

3. Review Agenda:

4. Work through Agenda Items: **TOPIC and/or TASK** (What need to do?)	**TOOL/METHOD** (How)	**TIME ALLOCATED** (Min.)	**DECISION/OUTCOME/NOTES / ETC.**
A.			
B.			
C.			
D.			
5. Review Meeting Record (Decide what to keep)	Review Flip Charts/Call Out Changes	1-3 min.	
6. Plan Next Steps & Next Meeting Agenda	What/Why/How/When/by Whom?	2-4 min.	
7. Evaluate (Provide feedback)	Went Well? Could Improve?	2-4 min.	

5-10 min.

Improvement Project Charter Assessment

IA Name_____ **Project Name**_____**Reviewer**_____

Assessment **1: Not at all** **2: To a small extent** **3: Somewhat** **4: To a large extent** **5: To a very great extent**

(Put assessment in the first column; add comments, questions, and suggestions in the last column)

Source: Associates in Process Improvement and Institute for Healthcare Improvement

WHAT ARE WE TRYING TO ACCOMPLISH? **Aim and Rationale**

	Charter relates to organization's strategic plans/objectives.	
	Charter description clearly states need for improvement.	
	Expected impact to the organization is clear (clinical outcomes, cycle time, financial etc.)	
	Improvement clearly points to process, product or service or sub-system improvement.	
	Impact on patient or external customer is clear	
	Expected outcomes are clear and the team will know when it has completed the project.	
	Specific, numerical goals to be attained.	
	Project can be completed within time frame	

HOW WILL WE KNOW A CHANGE IS AN IMPROVEMENT? **Feedback and Measures**

	An appropriate family of measures is identified	
	Measures identified are directly related to the project description, objectives, and goals.	
	Historical data exist on performance of the process or product to be improved.	
	Outcome, process, and balancing measures are specified.	
	Measures can be collected at intervals frequent enough to assess progress on the project	
	Improvement in the project measures can reasonably be expected within project time frame	
	Financial impact is easily calculated and supported by the organization's financial group.	

WHAT CHANGES CAN WE MAKE WHICH WILL RESULT IN IMPROVEMENT? **Initial Cycles, Boundaries, other Guidance**

	Specific issues to investigate and/or alternatives to consider are given.	
	A concept design or change package is identified	
	Project constraints are defined including what is NOT to be addressed.	
	The objectives clearly state the team can develop, test and implement changes.	
	Project is tied to specific processes or sub-systems	
	Initial activities or PDSA cycles are suggested	

PARTICIPATION: **Team Membership**

	All appropriate subject matter knowledge is represented on the improvement team	
	Process owner (authority to make changes) is represented or Sponsor of team.	
	People with detailed knowledge of the targeted system are on the team.	
	Patients, customers or suppliers are on the team.	

IN CONSIDERATION OF PROJECT SELECTION AND/OR SCOPE

	What could cause this project to fail? Subtract 1 (little) to 5 (many) things, Include narrative.	
	TOTAL RATING	

Total Evaluation Rating ⩒ > 95 Good Project charter definition ⩒ 76-95 Consider improving or clarifying the project charter (see low ratings)
⩒ < 75 Rework or Reevaluate the need for this improvement charter

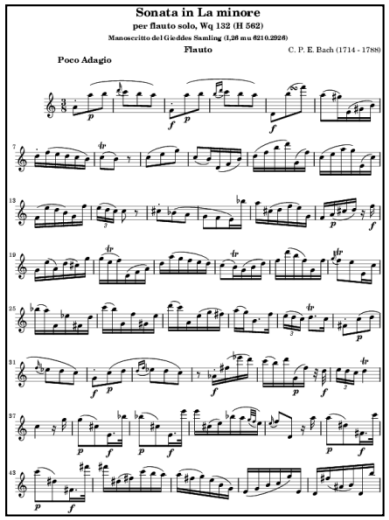
Elements of Success

1. Clear aim with stretch goal and pilot population
2. Measurement - “just enough”
3. High quality ideas for changes to test
4. Effective teamwork
5. **Supportive context for the project**

Using MUSIQ in Evaluating Potential Project Success

- Gives us a method to reflect on the set-up and contextual support for our projects at the beginning of the Wave.
- Opportunity to make adjustments to project and organizational support system early in our work.

Successful Quality Improvement is Like Making Beautiful Music…



PIECE OF MUSIC

INSTRUMENTS

PERFORMANCE SPACE

CHANGE CONTENT

Evidence-Based Care Processes and Bundles

CHANGE PROCESS

QI Methods—Model for Improvement, PDSA Cycles…

CONTEXT

Culture, Leadership, Resources, Training, Motivation…

MUSIQ

The Model for Understanding Success in Quality (MUSIQ): building a theory of context in healthcare quality improvement
Heather C Kaplan, Lloyd P Provost, Craig M Froehle, Peter A Margolis

Background: Quality improvement (QI) efforts have become widespread in healthcare, however there is significant variability in their success. *Differences in context* are thought to be responsible for some of the variability seen.

Objective: To develop a conceptual model that can be used by organizations and QI researchers to *understand and optimize contextual factors* affecting the success of a QI project.

Context: "…characteristics of the organizational setting, of the individual, of his or her role in the organization, and of any other environmental factor that may shape [quality improvement effectiveness]"

MUSIQ: Model for Thinking About Context

- Key features of MUSIQ include:
  - Applicable to QI in a health care setting using a broad range of QI approaches
  - Useful for QI projects within a single or multiple microsystems
  - Organized based on nested levels of the health care system
  - Focuses on modifiable factors
  - Makes relationships among contextual factors explicit

MUSIQ CALCULATOR (Excel Spreadsheet)

Provided a worksheet

- **Total Score**
- **168** **Highest possible MUSIQ score**
- **120-168** **Project has a reasonable chance of success**
- **80-119** **Project could be successful, but possible contextual barriers**
- **50-79** **Project has serious contextual issues and is not set up for success**
- **25-49** **Project should not continue as is; consider deploying resources to other improvement activities**
- **24** **Lowest Possible MUSIQ Score when all questions are answered**
- **1** **Lowest Possible MUSIQ Score (questions recorded as "don't know" or "N/A")**

Summary

- Context is important in the success of QI initiatives and needs to be examined systematically
- Using MUSIQ you can…
  - Identify aspects of context that must be addressed before or during the execution your QI projects
  - Plan strategies to modify context for increased success

MUSIQ

BMJ Qual Saf doi:10.1136/bmjqs-2011-000010

The Model for Understanding Success in Quality (MUSIQ): building a theory of context in healthcare quality improvement

Heather C Kaplan, Lloyd P Provost, Craig M Froehle, Peter A Margolis

- Available free on CCHMC website
  - http://www.cincinnatichildrens.org/service/anderson-center/research/projects/

Elements of Success

1. Clear aim with stretch goal and pilot population
2. Measurement - “just enough”
3. Theory with high quality ideas for changes to test
4. Effective teamwork
5. Supportive context for the project
6. **Communication/reporting**

Monthly Leadership Report

Community Mental Health Care in Low-Income Regions: Tackling Depression, Team MUSIQ Score 135.9, July 25th, 2013
J. Ling, S. Upton, MD
IA: R. Wilson

Approved by Project Sponsor

……
Name/Signature/Date

What are we trying to accomplish? (Include Project Start/End Date and Goals)

Improve clinical outcomes **to reasonable control** (PHQ9<=14) for **80% of patients** with depression, living in **two** highly marginalized communities in the *sierra* of XXX, Mexico by July 31st, 2013.

Goals:

- Improve clinical outcomes for patients with depression to reasonable control according to PHQ9 depression scale
- Expand the range of providers of mental health care tasks by training the physicians and nurses working at the community clinic, and the community health workers
- Deliver the tools, improvement methods and knowledge to implement community health-based solutions
- Strengthen the supply chain in the rural clinics

Why is it Important to work on now?

•High incidence of depression in the area
•Depression results in health and social burden
•Depression increases the risk of presenting other diseases
•Lack of mental health workers in rural areas of Mexico

Team

Name	Senior Leadership	Process Expert	PI Expert	Patient Care Experience
ctor	X			X
, Chief Clinical Strategist	X	X	X	
roject Coordinator		X		
) Community Programs Coordinator			X	X
D Physician (community)				X
a				X
ra				X
	X	X	X	X

Director of Operations, Improvement Advisor

PDSA's In Progress

•Implementing evidence-based pharmacologic and cognitive-behavioral therapy interventions
•Implementing active case finding programs in every community every 6 months
•Continuous training of physicians on pharmacologic and cognitive-behavioral interventions
•Implementing a support group program for patients with depression in both clinics
•Implementing push/pull systems to strengthen the supply chain in both clinics

Team Project Progress Score (0.5-5.0 Scale) and Reason

4.5 Sustainable improvement. Data on key measures begin to indicate sustainability of impact of changes implemented in system.

Business Case: Evidence Based Improvements & Savings

This project has proven value to the organization because it has helped us improve clinical outcomes for patients with depression, which has represented shorter time of treatments, reductions of complications and of DALYs as well as better clinical outcomes for concomitant diseases

Changes To be Tested Next

•Training of additional physicians on mental health
•Training of nurses and CHWs on cognitive-behavioral therapy
•Implementation of guidelines/algorithms for the most common mental health disorders in the area
•Implementation of an appointment system for patient follow-up

Barriers and Specific needs from Sponsor to Overcome Them.

•Need of psychiatry residents/psychiatrists to continually train staff, physicians, nurses and CHWs
•Need of social workers to lead support groups for patients with severe depression

Recommendations / Next Steps

•A program focused on addressing domestic violence will be launched in September 2013
•A safety network for victims of domestic violence in already in place in both communities
  - Patient identified at high risk for depression will be linked to the clinic
•We are in the process of recruiting a program coordinator/manager for our mental health program
•We are designing a qualitative research study to assess the impact of CBT on clinical outcomes for patients with moderate-severe depression

Name of measure

Outcome measures

1. *Percentage of patients with depression under reasonable control according to the PHQ9 questionnaire* (monthly)

Process measures

2. Total number of patients diagnosed with depression in the clinic

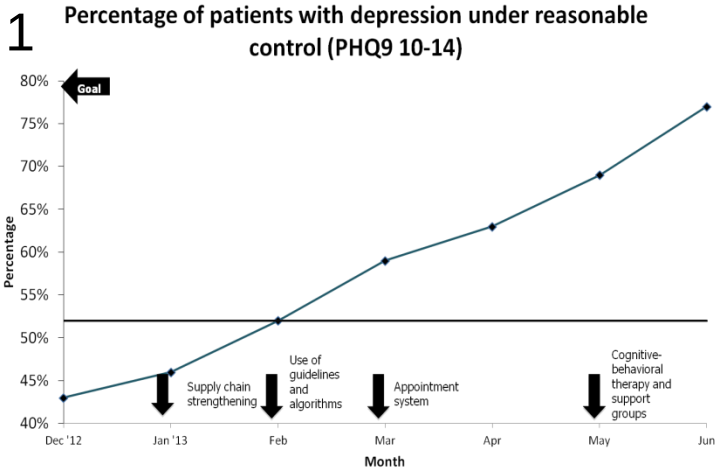
3.Average PHQ9 score per month

4.Percent of patients with depression attending follow up visits

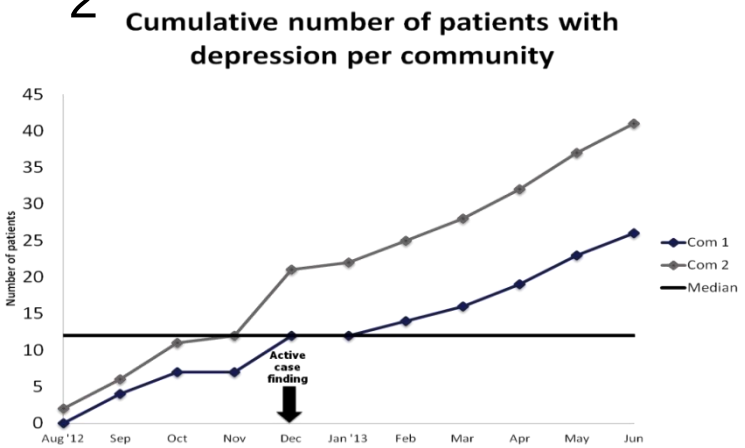
Balancing measures

5. Average patient satisfaction score (monthly)

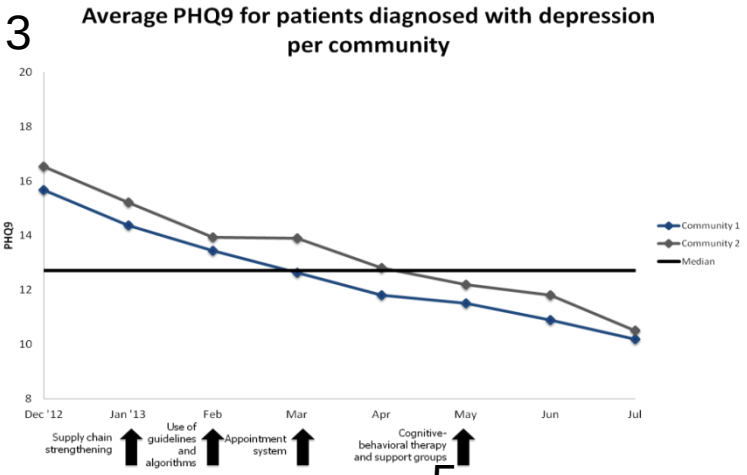
1



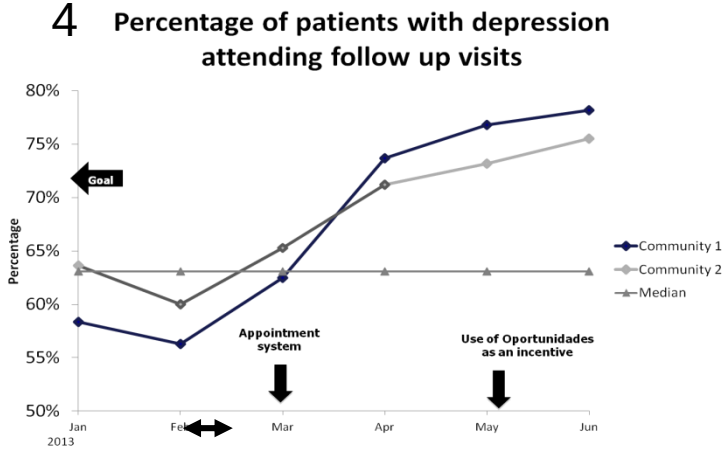
2



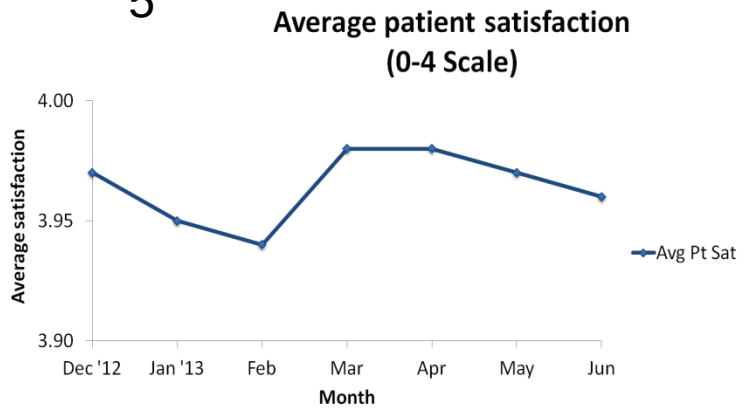
3



4



5



Elements of Success

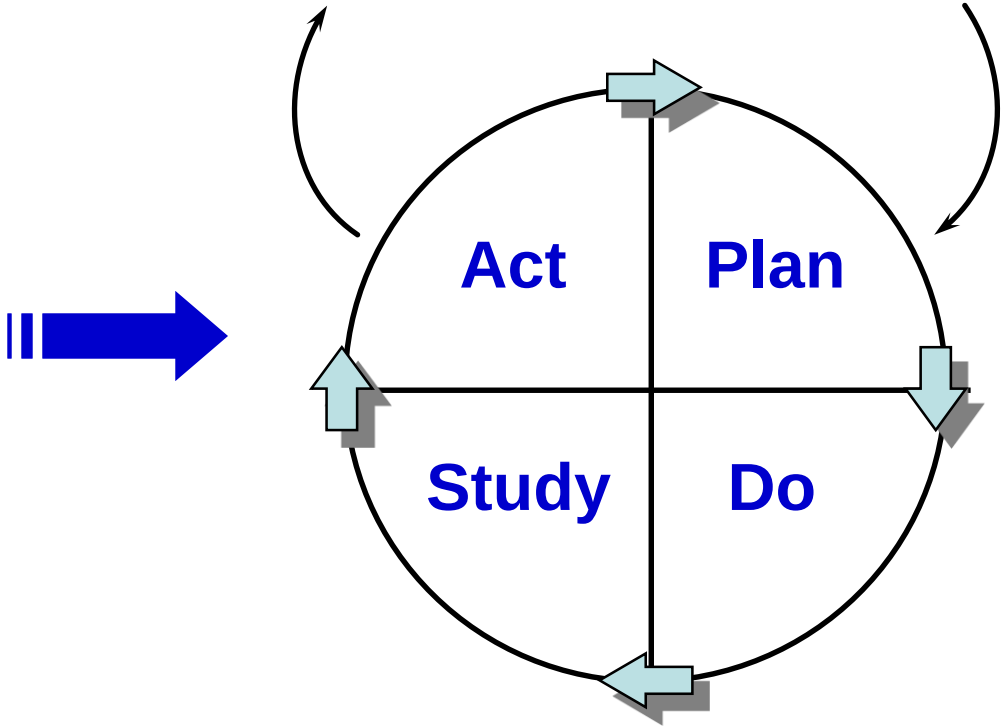
1. Clear aim with stretch goal and pilot population
2. Measurement - “just enough”
3. High quality ideas for changes to test
4. Effective teamwork
5. Supportive context for the project
6. Communication and infrastructure
7. **Repeated use of PDSA cycle**
   - **All 4 parts!**

Model for Improvement

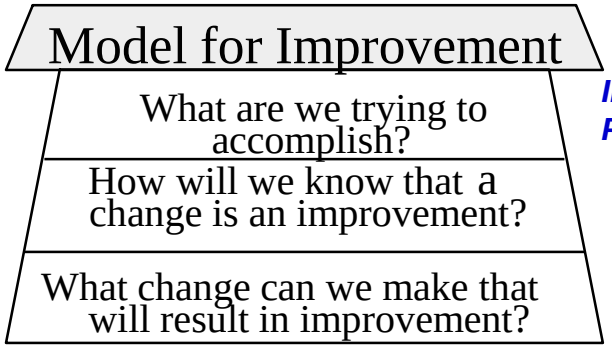
What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?



Repeated Use of the PDSA Cycle



Improve Depression Control to
PHQ9 <=14 for 80% of people with Depression

% Patients w/ PHQ9 score <=14
Average PHQ9 score for population

Community depression screening
Provider training
Follow up group visits
Funding for meds

Changes That Result in Improvement

DATA

Implementation of Change

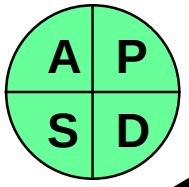
Wide-Scale Tests of Change

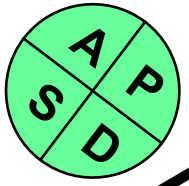
Follow-up Tests

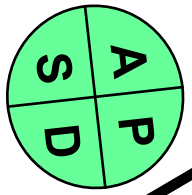
Very Small Scale Test

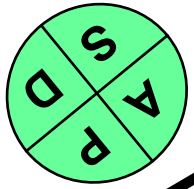
Hunches Theories Ideas

Depression screening









WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

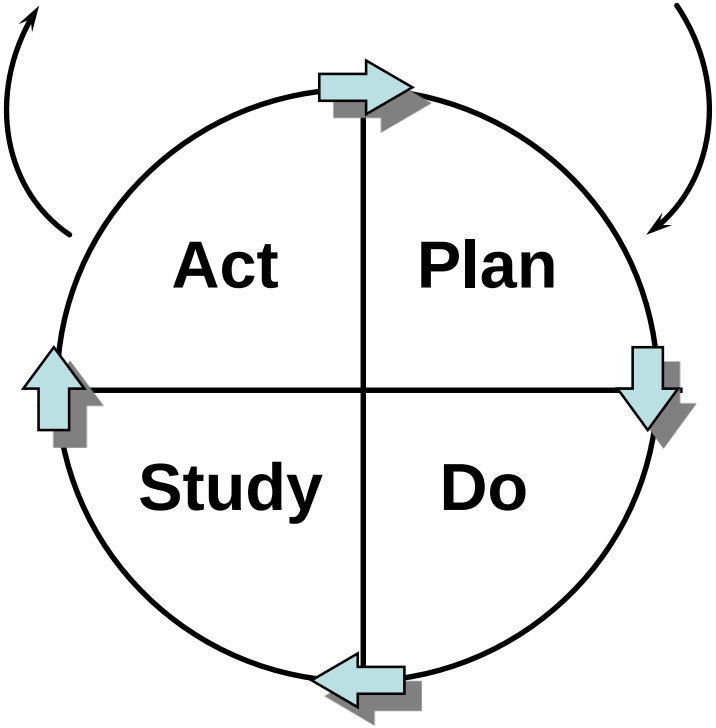
- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- **Be able to analyze a run chart using statistically based rules**
- **Identify several uses for run charts in improvement projects**
- Identify several ways to obtain more useful change ideas to take to testing
- Identify keys to accelerating the rate of testing and improvement
- Identify keys to good implementation (making change stick)

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?



Relationship Between Project Goals and Measures

•Goals are associated with the Aim statement – the first question of the Model for Improvement

•Specific, numerical goals provide a target for the improvement activities.

Team A

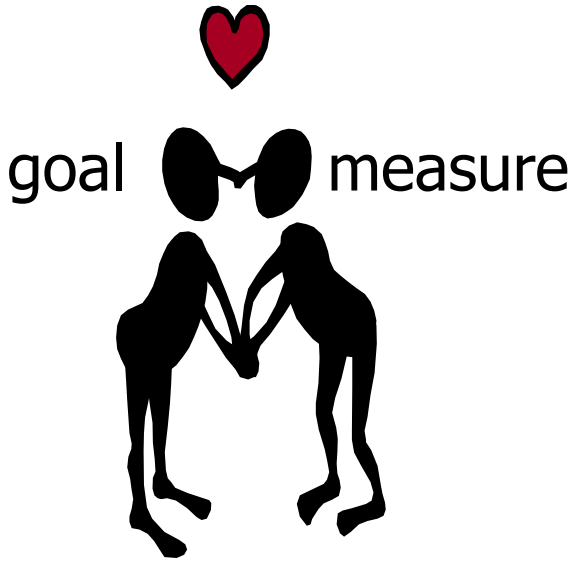
Aim Statement

Goal 1 ----→ Measure 1

Goal 2 ----→ Measure 2

Goal 3 ----→ Measure 3

Measure 4



• Measures are associated with the 2nd question of the model. Used to answer "are we accomplishing our goals?"

• Measures provide a way to evaluate performance relative to the goals

How Do We Know That a Change is an Improvement?

Improvement is about **making changes to systems, not measurement.** But measurement plays an important role:

- Key measures are required to assess progress on team's aim
- Balancing measures are needed to assess whether the system as a whole is being improved
- Data from the system (including from patients and staff) can be used to focus improvement and refine changes
- Specific measures can be used for learning during PDSA cycles
- **Limit time spent on measurement**

Measurement Guidelines

The question - How will we know that a change is an improvement? - usually requires more than one measure

1. A balanced set of a few (3-8) key measures that clarify a team's aim and make it tangible should be reported each month
2. Make use of the patient population data base for measurement
3. Integrate measurement into the daily routine
4. Plot data (graph) on the key measures at least each month during the Project
5. Be careful about over-doing process measures
6. Balancing measures are needed to assess whether the system as a whole is being improved

Outcome, Process, Balancing Measures

Outcome = Voice of the customer/patient. Direct link to AIM:

- How is the system performing?
- What is the **result?**
- How is the health of the patient affected?

--% of Patients who Fall
--Rate of harmful falls

Process = Voice of the workings of the system. What we work on to get to aim:

- Are the parts/steps in the system performing as planned?
- Are **key changes being implemented** in the system?

--% with risk assessment
--% intentional rounding

Balancing =Looking at a system from different directions or dimensions.

- What happened to the system as we improved the outcome and process measures?
- **Unanticipated consequences**
- **Competing explanations** for success

--rate of restraint use
--total patient days per month

Exercise: Evaluate Potential Set of Measures

Increase the % of children with a Well Child Visit (WCV) and improve immunization for enrolled children aged 3-6 in XX clinic by improving access, creating an appointment reminder system, creating a recall system, and better engaging parents on the importance of these visits.

Measure	O-P-B?
1.Days to Next Available Appointment for Well Child Visit	
2. % No Shows for Well Child Visits	
3 % of enrolled children aged 3-6 with at least one Well Child Visit	
4. % of children who were recalled who completed their Well Child Exam	
5. # Patients in Pilot Population each Month	
6. % of children aged 4-6 with DTap immunization	
7. Team satisfaction with workflow and systems changes	
8. % Cancelled Well Child Visits	

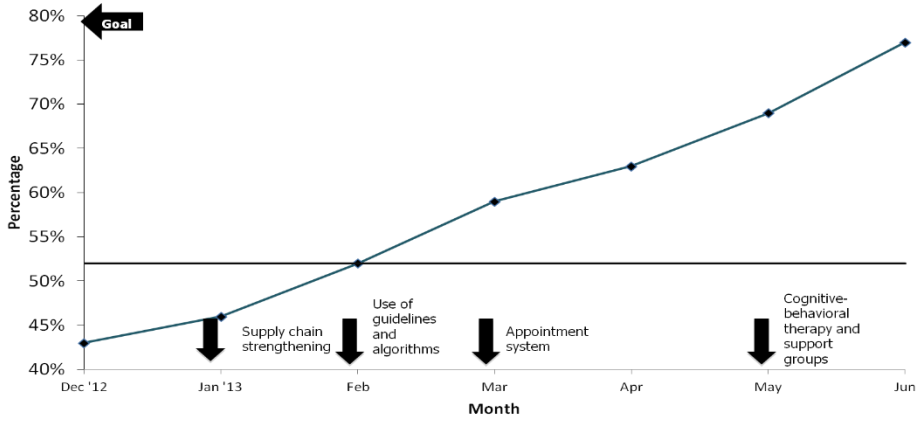
Measurement Guidelines

The question - How will we know that a change is an improvement? - usually requires more than one measure

1. A balanced set of a few (3-8) key measures that clarify a team's aim and make it tangible should be reported each month
2. Make use of the patient population data base for measurement
3. Integrate measurement into the daily routine
4. Plot data (graph) on the key measures at least each month during the Project
5. Be careful about over-doing process measures
6. Balancing measures are needed to assess whether the system as a whole is being improved

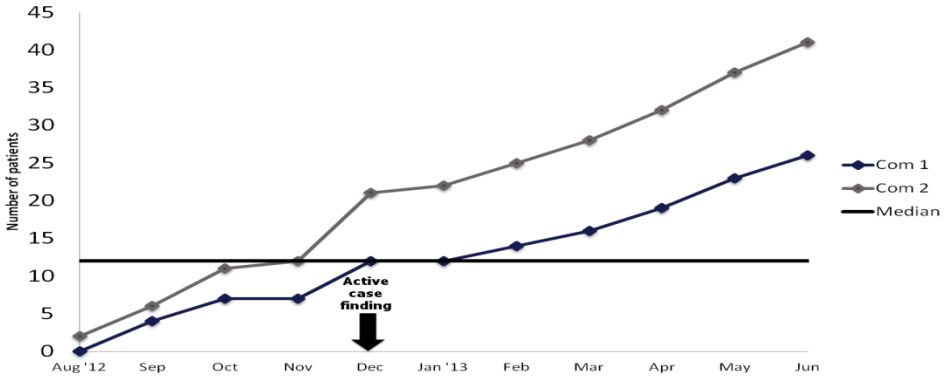
1

Percentage of patients with depression under reasonable control (PHQ9 10-14)



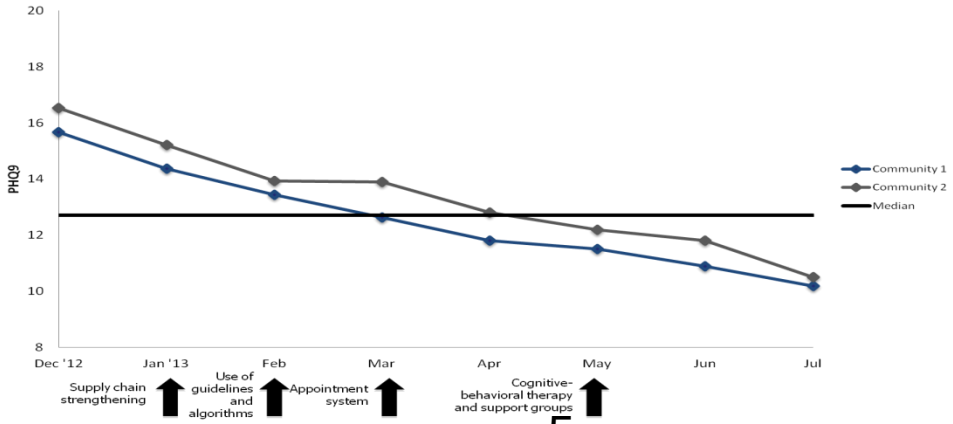
2

Cumulative number of patients with depression per community



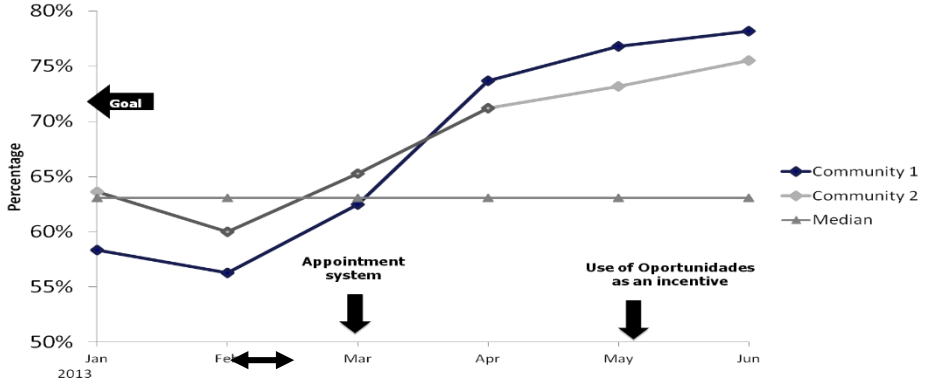
3

Average PHQ9 for patients diagnosed with depression per community



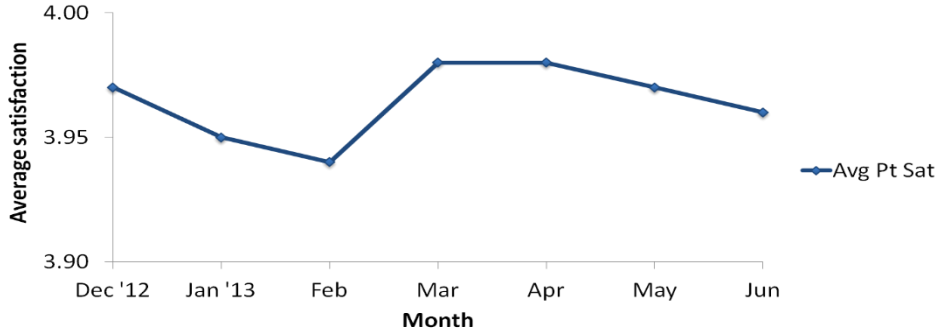
4

Percentage of patients with depression attending follow up visits



5

Average patient satisfaction (0-4 Scale)



WORKSHOP OBJECTIVES:

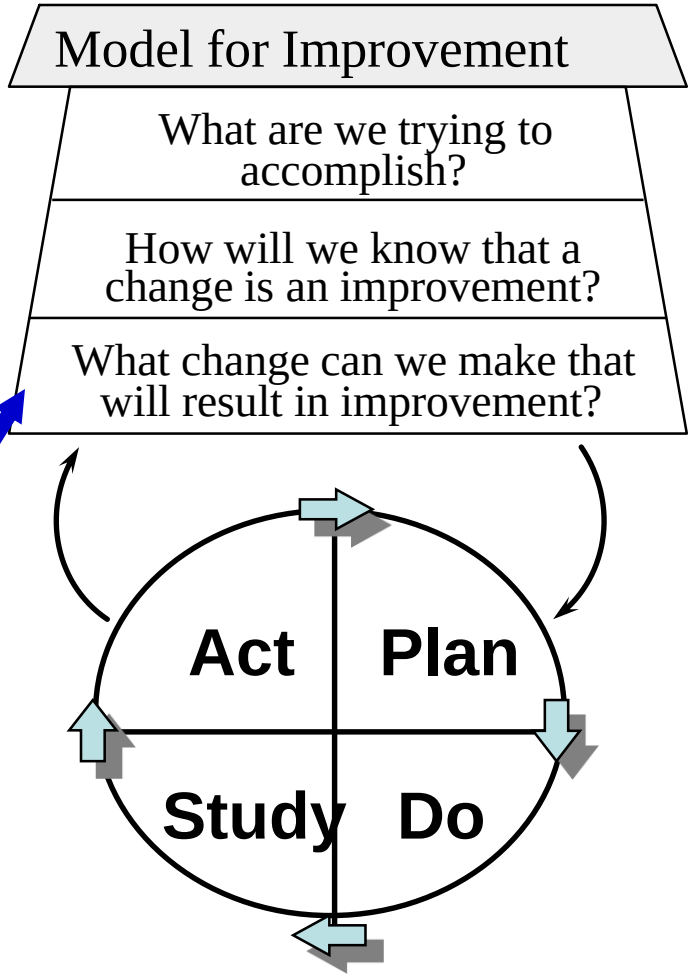
By the end of this workshop participants will be able to:

- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- Be able to analyze a run chart using statistically based rules
- Identify several uses for run charts in improvement projects
- ***Identify several ways to obtain more useful change ideas to take to testing***
- Identify keys to accelerating the rate of testing and improvement
- Identify keys to good implementation (making change stick)

Model for Improvement

Three Questions

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?



Developing Changes: Obstacles and Remedies

Early in the life of the improvement effort, there are two possible obstacles that hinder progress…

- **Doing more of the same**
  - **Issue: lack of powerful new ideas**
  - Remedy: Get better ideas
- **Utopia Syndrome**—This causes an individual or team to suffer from paralysis of action, trying to find the ultimate perfect change before *anything* is started
  - **Issue: Fear of Failure**
  - Remedy: use small scale tests

The Improvement Guide, Chapter 6, p. 111

Developing Better Changes

1. **Logical critical thinking about the current system** (IG page 120-123) (reflecting on current system and use existing subject-matter (IH Ch 10 and 11)

2. **Benchmarking or learning from others** (IG page 123-125)

3. **Using technology** (IG p 125-127)
   practical applications of science. IT systems.

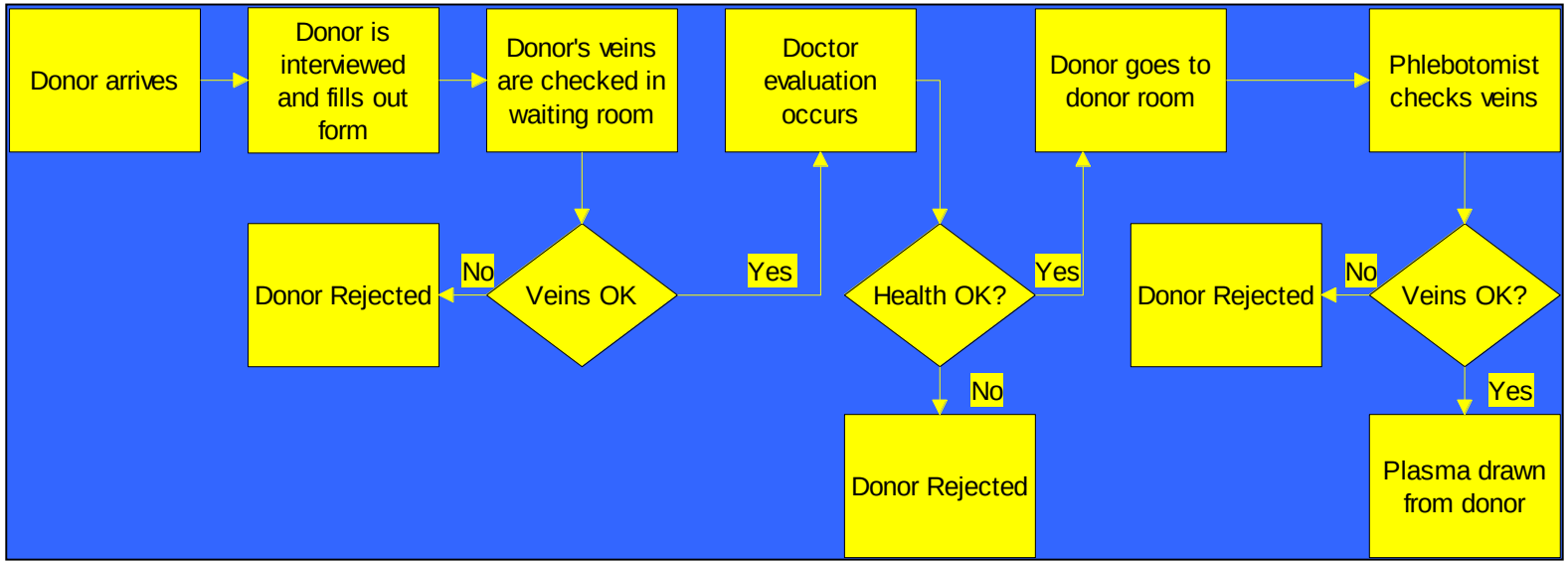
4. **Creative thinking** (IG p 128-131) inventing of a new idea, Managing the thinking : creative thinking, logical positive thinking, logical negative thinking

5. **Using change concepts** (IG page 131-136) A change concept is a general notion or approach that has been found to be useful in developing ideas for change that result in improvement. Change concept can be used to stimulate both critical and creative thinking.
6. **Using change packages**

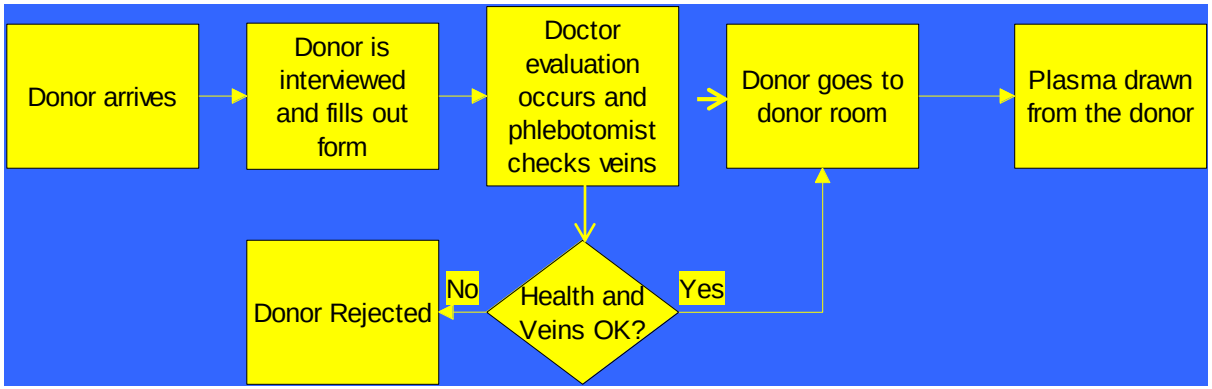
The Improvement Guide, Chapter 6, p. 120

Logical Thinking--- *Using Flow Diagrams*

Current Process

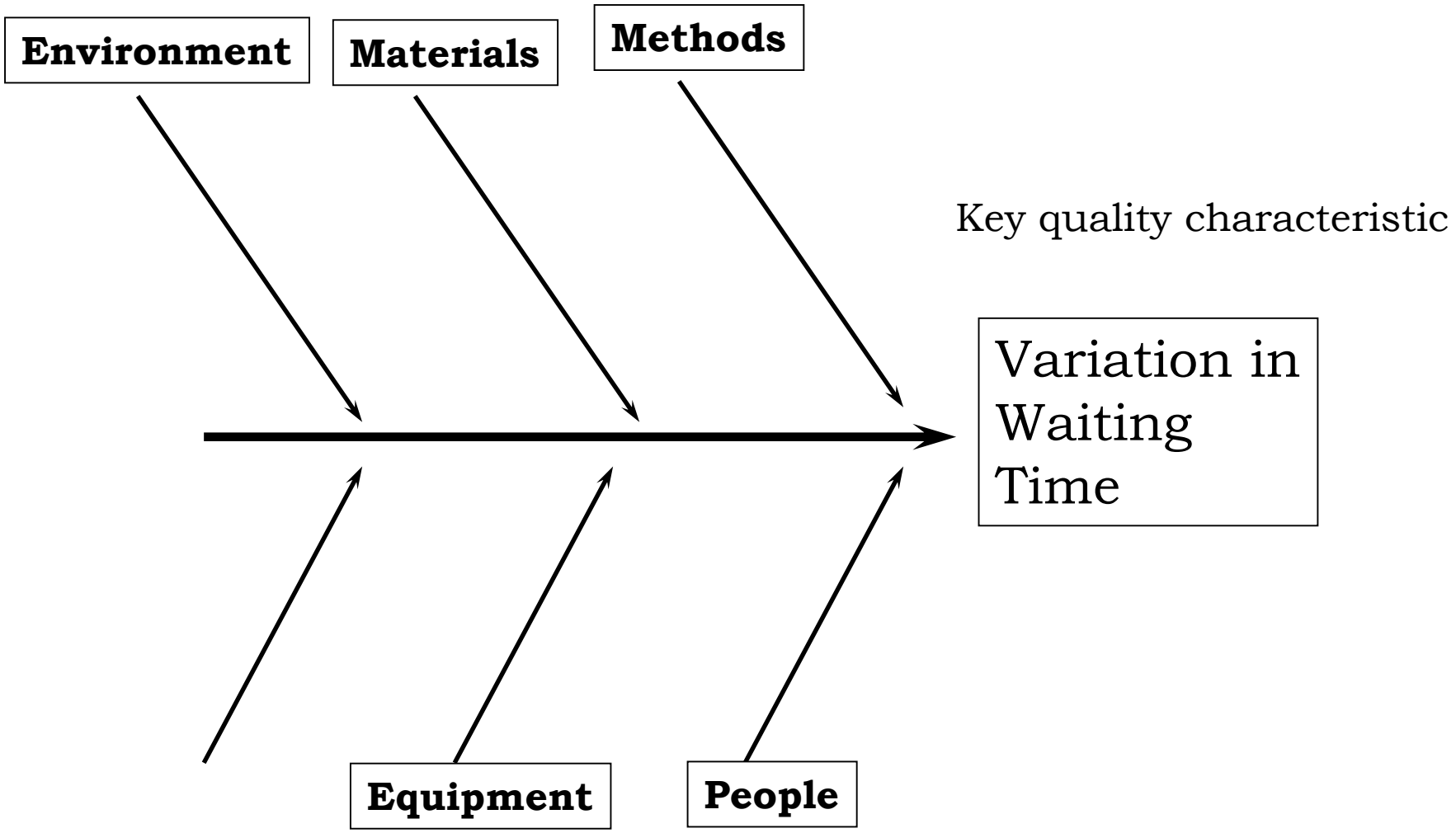


Redesigned Process



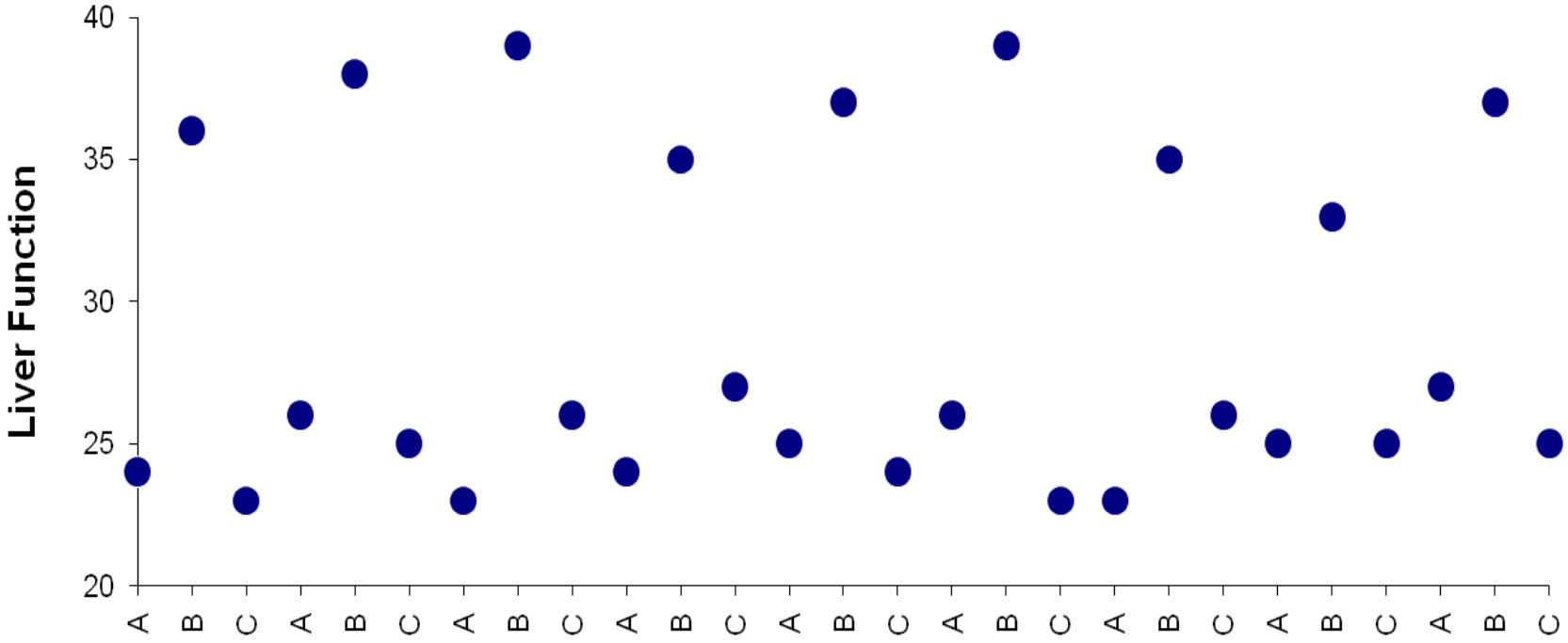
The Improvement Guide Pg. 121

Cause and Effect Diagram



Logical Thinking

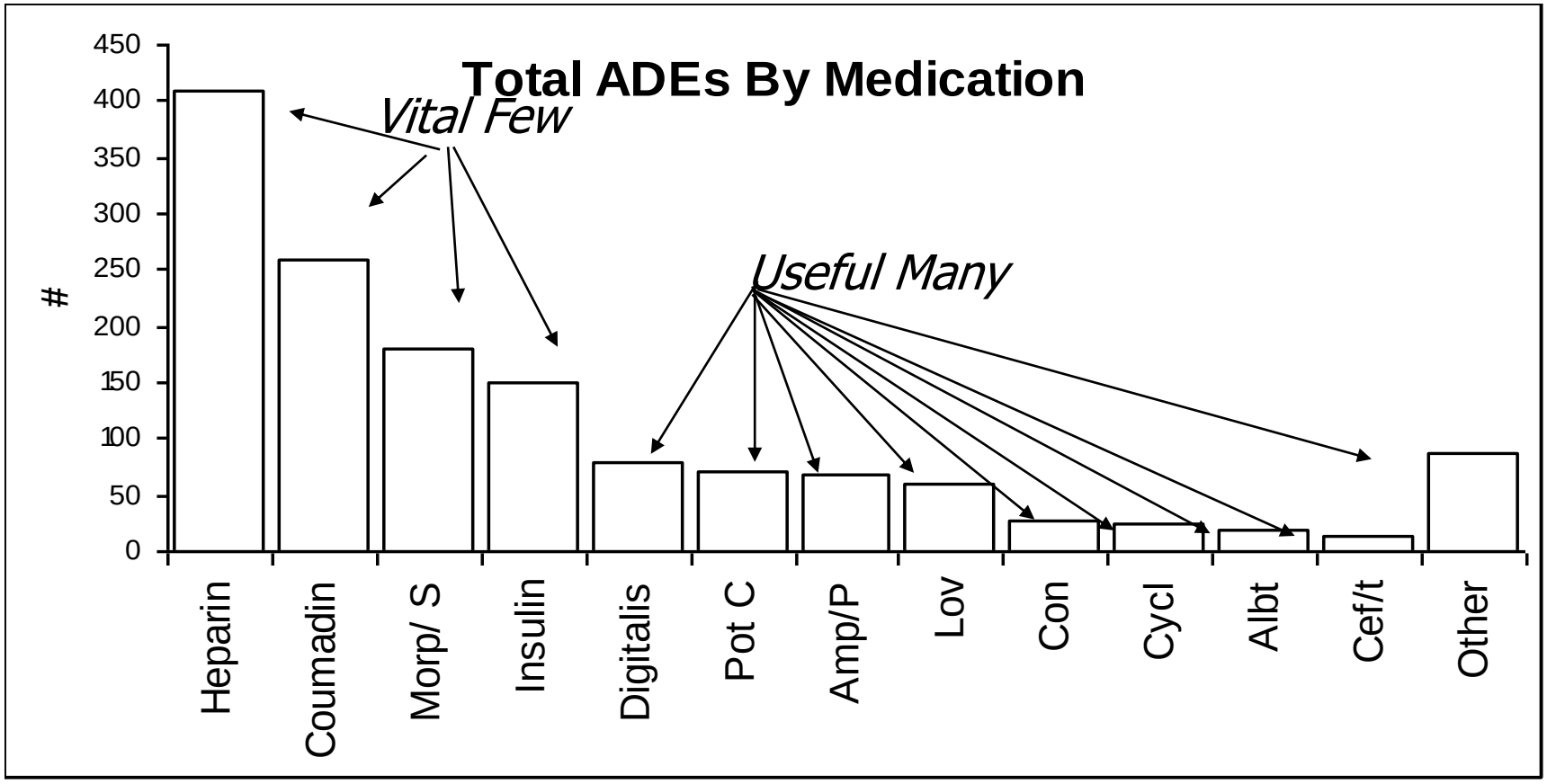
Using Data



The Improvement Guide,
Chapter 6, p. 122

Logical Thinking *Using Data*

Pareto Chart



Developing A Change

1. Critical thinking about the current system
2. Benchmarking
3. Using technology
4. Creative thinking
5. Using change concepts
6. Using existing change packages

Using Technology

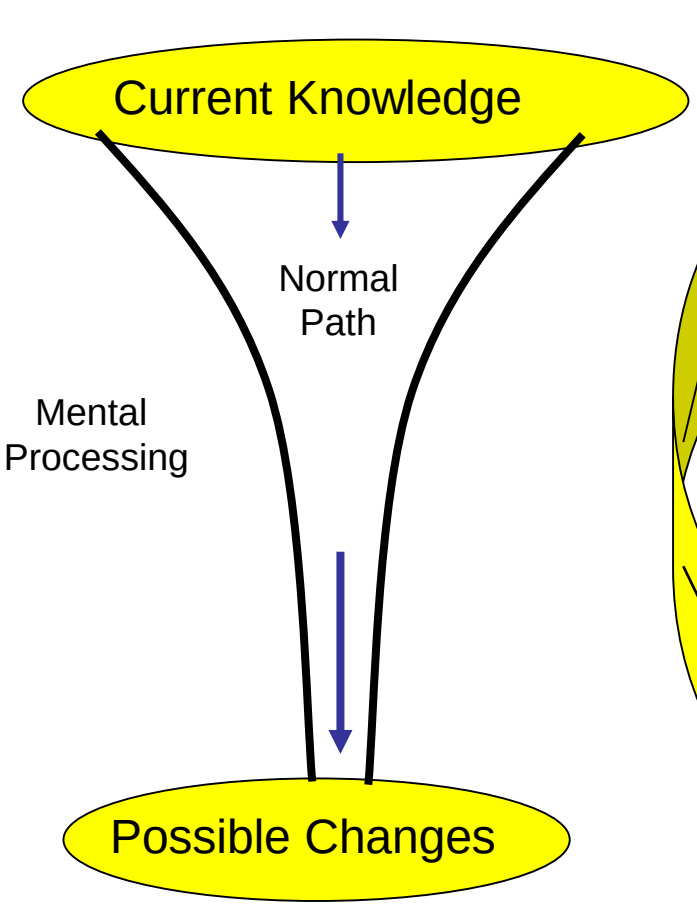
- Don’t automate a bad system
- Try to reserve technological solutions for improving stable systems rather than fixing special causes.
- Direct changes that involve technology at a bottleneck.
- A technology that is unreliable is worse than none at all.

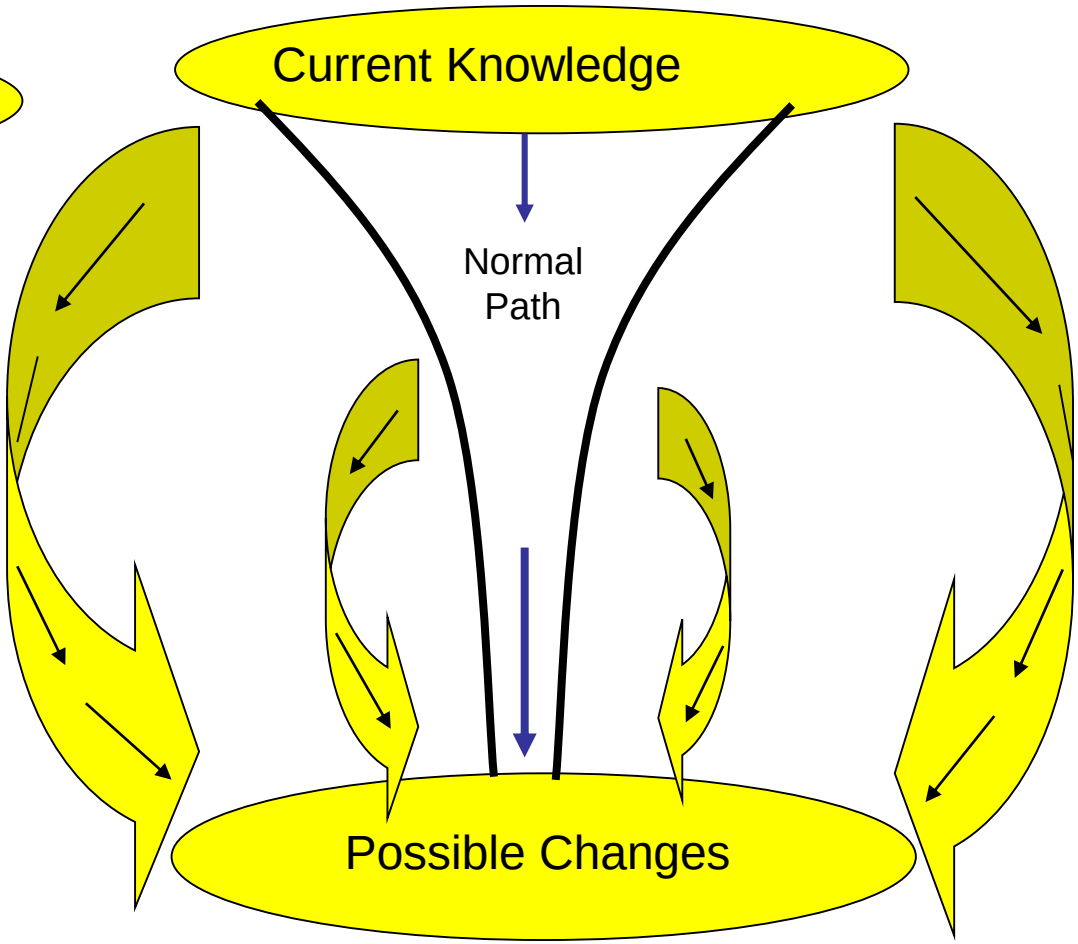
The Improvement Guide,
Chapter 6, p. 125-127

Developing A Change

1. Critical thinking about the current system
2. Benchmarking
3. Using technology
4. Creative thinking 
5. Using change concepts
6. Using change packages

Logical Thinking vs. Creative Thinking





The Improvement Guide,
Chapter 6, p. 128-129

Creative Thinking

Creativity implies having thoughts that are outside the normal pattern.

What can you do to have “new” thoughts?

BE PROVOKED

General Methods to Provoke New Thought Patterns

Take time-even 5-10 minutes on creative thinking

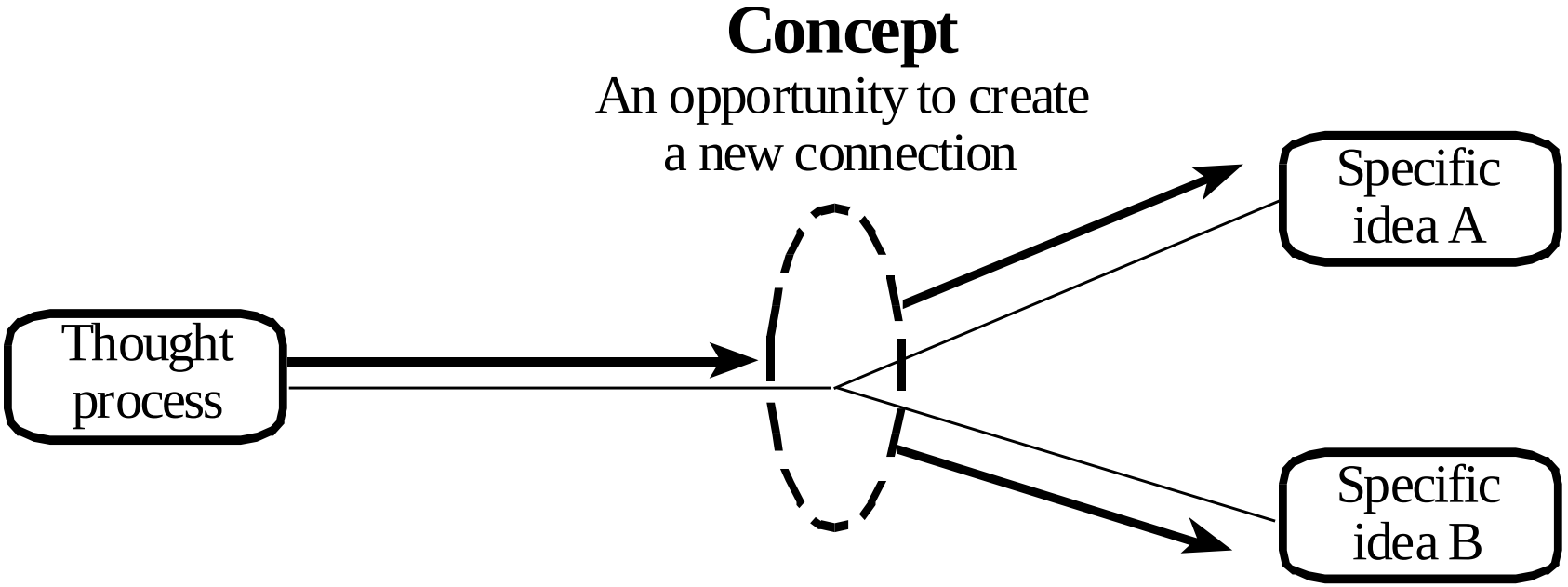
- Be at right place, right time
  - observe customers
- Challenge the boundaries
  - List them, eliminate, expand
- Attack the solution
  - list previous changes, what they had in common, look for change that doesn't involve that factor
- Use "unrealistic" goals
  - what would it take to reach XXX?
- Focus on the need
  - other ways to meet it?

Developing A Change

1. Critical thinking about the current system
2. Benchmarking
3. Using technology
4. Creative thinking
5. Using change concepts 
6. Using change packages

What Changes Can We Make That Will Lead to Improvement?

Change Concept: a general notion or approach to change that has been found to be useful in developing specific ideas for changes that lead to improvement.



Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Concepts vs. Changes

Vague, strategic, creative

Specific, actionable, Results

Improve process to reduce anxiety

Give patients and families access to information

Use beepers for family and friends waiting

Make beepers available to families of 10 surgery patients for 1 day next week

Figure A.1 Complete List of Change Concepts

1. Eliminate things that are not used
2. Eliminate multiple entry
3. Reduce or eliminate overkill
4. Reduce controls on the system
5. Recycle or reuse
6. Use substitution
7. Reduce classifications
8. Remove intermediaries
9. Match the amount to the need
10. Use Sampling
11. Change targets or set points
12. Synchronize
13. Schedule into multiple processes
14. Minimize handoffs
15. Move steps in the process close together
16. Find and remove bottlenecks
17. Us automation
18. Smooth workflow
19. Do tasks in parallel
20. Consider people as in the same system
21. Use multiple processing units
22. Adjust to peak demand
23. Match inventory to predicted demand
24. Use pull systems
25. Reduce choice of features
26. Reduce multiple brands of the same item
27. Give people access to information
28. Use proper measurements
29. Take Care of basics
30. Reduce de-motivating aspects of pay system
31. Conduct training
32. Implement cross-training
33. Invest more resources in improvement
34. Focus on core process and purpose
35. Share risks
36. Emphasize natural and logical consequences
37. Develop alliances/cooperative relationships
38. Listen to customers
39. Coach customer to use product/service
40. Focus on the outcome to a customer
41. Use a coordinator
42. Reach agreement on expectations
43. Outsource for “Free”
44. Optimize level of inspection
45. Work with suppliers
46. Reduce setup or startup time
47. Set up timing to use discounts
48. Optimize maintenance
49. Extend specialist’s time
50. Reduce wait time
51. Standardization (Create a Formal Process)
52. Stop tampering
53. Develop operation definitions
54. Improve predictions
55. Develop contingency plans
56. Sort product into grades
57. Desensitize
58. Exploit variation
59. Use reminders
60. Use differentiation
61. Use constraints
62. Use affordances
63. Mass customize
64. Offer product/service anytime
65. Offer product/service anyplace
66. Emphasize intangibles
67. Influence or take advantage of fashion trends
68. Reduce the number of components
69. Disguise defects or problems
70. Differentiate product using quality dimensions
71. Change the order of process steps
72. Manage uncertainty, not tasks

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Reliability Science and Your Goals

Reliability is failure free operation over time.

The measurable capability of a process, procedure or health service to perform its intended function in the required time under existing conditions.

Look at the Types of Changes on your Projects

Level 1 (10^{-1}):

"Intent, Vigilance and Hard Work" Design Concepts

- Awareness and training ("education)
- Common equipment (and other structural standardization)
- Standard orders sheets
- Personal check lists
- Feedback of information on compliance

Level 2 (10^{-2}):

Design Concepts

- Standardization of processes
- Building decision aids and reminders into the system
- Taking advantage of existing habits and patterns
- Making the desired action the default (based on evidence)
- Creating redundancy
- Scheduling using proper operations theory

Figure A.1 Complete List of Change Concepts

1. Eliminate things that are not used
2. Eliminate multiple entry
3. Reduce or eliminate overkill
4. Reduce controls on the system
5. Recycle or reuse
6. Use substitution
7. Reduce classifications
8. Remove intermediaries
9. Match the amount to the need
10. Use Sampling
11. Change targets or set points
12. Synchronize
13. Schedule into multiple processes
14. Minimize handoffs
15. Move steps in the process close together
16. Find and remove bottlenecks
17. Us automation
18. Smooth workflow
19. Do tasks in parallel
20. Consider people as in the same system
21. Use multiple processing units
22. Adjust to peak demand
23. Match inventory to predicted demand
24. Use pull systems
25. Reduce choice of features
26. Reduce multiple brands of the same item
27. Give people access to information
28. Use proper measurements
29. Take Care of basics
30. Reduce de-motivating aspects of pay system
31. Conduct training
32. Implement cross-training
33. Invest more resources in improvement
34. Focus on core process and purpose
35. Share risks
36. Emphasize natural and logical consequences
37. Develop alliances/cooperative relationships
38. Listen to customers
39. Coach customer to use product/service
40. Focus on the outcome to a customer
41. Use a coordinator
42. Reach agreement on expectations
43. Outsource for “Free”
44. Optimize level of inspection
45. Work with suppliers
46. Reduce setup or startup time
47. Set up timing to use discounts
48. Optimize maintenance
49. Extend specialist’s time
50. Reduce wait time
51. Standardization (Create a Formal Process)
52. Stop tampering
53. Develop operation definitions
54. Improve predictions
55. Develop contingency plans
56. Sort product into grades
57. Desensitize
58. Exploit variation
59. Use reminders
60. Use differentiation
61. Use constraints
62. Use affordances
63. Mass customize
64. Offer product/service anytime
65. Offer product/service anyplace
66. Emphasize intangibles
67. Influence or take advantage of fashion trends
68. Reduce the number of components
69. Disguise defects or problems
70. Differentiate product using quality dimensions
71. Change the order of process steps
72. Manage uncertainty, not tasks

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Standardization

51. Standardization (create a formal process)

(Eliminate quality problems)

- The use of standards, or standardization, has a negative and bureaucratic connotation to many people. But an appropriate amount of standardization can provide a foundation upon which improvement in quality and costs can be built. Standardization is one of the primary methods to reduce variation in a system. The use of standardization, or creating a more formal process, should be considered for the parts of a system that have big effects on the outcomes (i.e. leverage points).

- ***Example: Design or redesign process or system.*** *A hospital's records showed much variation among patients in recovery time from knee operations. Their average costs for this particular operation were higher than other health systems. They worked with a team of doctors and therapists to develop a standard process for patients who have a knee joint replaced. After implementing the standard process, recovery times became more consistent and the hospitals costs were in line with other systems.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Reminders

59. Use Reminders

(Eliminate quality problems)

- Many mistakes are made by forgetting to do something. Reminders are aids for remembering. They can come in many different forms. A reminder can be a written notice, e-mail, a phone call, a checklist of things to accomplish, an alarm such as on a clock, a standard form, or the documented steps to follow for a process. Reminders are simple to develop but probably the least effective way to mistake proof. Although they do make information available in the external world, reminders can still be over looked or ignored. For example, a standard process can be documented but people may chose not to refer to the flow diagram or other documentation.
- ***Example: Design or redesign process or system.*** *A number of people were missing or arriving late for their dental appointments. This caused disruption in the schedule of the dentist which had an effect on other patients. The dentist asked the receptionist to call and remind each patient the day before their appointment. This resulted in a reduction in the number of late arrivals and cancellations.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Constraints

61. Use Constraints

(Eliminate quality problems)

- A constraint restricts the performance of certain actions. A door that blocks passage into an unsafe area is a constraint. Constraints are an important method for mistake proofing because they can limit the actions that result in mistakes. They do not just make information available in the external world but make the information available within the product or system itself. To be effective, constraints should be visible and easy to understand. Constraints can be built into a process so that accidental stopping or an unwanted action that will result in a mistake can be prevented. Constraints can also be used to make sure that the steps performed in a process or when using a product are accomplished in the correct sequence.
- ***Example: Design or redesign product or service.*** *Many customers of a bank were leaving their cards behind after using the automatic teller machine (ATM). At this bank, if a person was making a withdrawal from the ATM, their money would come out first and then their card. The result was that once people had received their money, they often forgot to wait for their card. The bank changed the procedure so that the money would come out only after the card was removed.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Differentiation

60. Use Differentiation

(Eliminate quality problems)

- Mistakes can occur when we are dealing with things that look similar. We may copy a wrong number or grab a wrong part because of their similarity or close proximity to other numbers or parts. Mistakes can also occur when actions are similar. We may end up in the wrong place or use a piece of equipment in the wrong way because the right directions or procedures are similar to others we might have used in a different situation. For example, we wind up driving to work on Sunday morning instead of to the bakery. Our minds at times will associate the required things and actions with similar but inappropriate ones. Familiarity that results from experience can actually increase the chance of committing mistakes of association. To reduce mistakes, steps should be taken to break patterns. This can be done in such ways as color coding, sizing, using different symbols, or by separating similar things.
- ***Example: Design or redesign process or system.*** *A eight digit number (e.g. 31469518) was used by an order processing group to identify a specific product. Each two columns represented a specific bit of information that was necessary for inventory and shipping purposes. Mistakes were so frequent in these numbers that 100 percent inspection was used. Even then, not all of the mistakes were found and corrected. The group suggested that numbers and letters (e.g. 31DF95AH) be alternated for each of the two columns. This made it easier for them to distinguish the different columns and reduced the number of mistakes.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Contingency Plan

55. Develop Contingency Plans

(Eliminate quality problems)

- Variation in our everyday life often creates problems. Reducing the variation might eventually eliminate the problems, but how do we survive today? One way is to prepare backup plans, or contingencies, to deal with the unexpected problems due to variation. When the variation is due to a special cause that can be identified, then contingency plans can be ready when these special causes of variation occur.

- ***Example: Design or redesign process or system.*** *The staff of the doctor's office knew that waiting time to see the doctor was very important to their patients. They continually worked to develop a schedule that would minimize wait time and allow the doctor to see all patients. But when the doctor was called to the emergency room at the hospital, people usually had long waits. The office developed a contingency plan for times when the doctor was called out to the emergency room. The receptionist would immediately notify all patients in the waiting room and offer to reschedule. She then would call the patients scheduled to come in for the next appointments and offer to reschedule, or she would let them wait at home until she called back. The patients were very appreciative of this plan.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Affordances

62. Use Affordances

(Eliminate quality problems)

- An affordance provides insight, without the need for explanation, into how a task should be done or how something should be used. In contrast to a constraint that limits the actions possible, an affordance provides visual (or other sensory) prompting for the actions that should be performed. Once we see the fixtures on a door, we should be able to determine whether it opens in, opens out, or slides. There should not be a need to refer to labels or to use a trial and mistake approach. If a process or product can be designed to lead the user to perform the correct actions, fewer mistakes will occur.
- ***Example: Design or redesign product or service.*** *When visitors to a hotel entered their room, they were met with a horizontal array of eight switches. The switches turned on and off the lights situated in various areas of the room. Guests would get very frustrated trying to figure out which switch affected which lights. To make it easier to determine which switch turned on which light, the hotel arranged the switches on a diagram of the room. This diagram was visible as soon as the door to the room was opened.*

Source: The Improvement Guide: Langley, Nolan, Nolan, Norman and Provost. Jossey-Bass. 2009

Methods for Selecting a Change Concept

1. Choose a change concept that someone on the team thinks might contain some ideas that would be useful to the aim of the improvement effort.

2. Choose change concepts that have not been previously considered by the team.

3. Select one of the categories that is related to the aim of the improvement effort. Then randomly choose one of the change concepts in that category.

4. Randomly choose a change concept from the list of 72.

How Can we Use Change Concepts?

- About 10-20 Min session
- Ask team to generate ideas quietly when thinking of their problem and a particular change concept
- Or…have team identify an idea for change
  - Extract change concept used for that idea
  - Ask what other ideas we can generate using that same concept

Developing A Change

1. Critical thinking about the current system
2. Using technology
3. Creative thinking
4. Using change concepts
5. Using change packages

What is a Change Package?

- The Change Package is a document that answers these questions:
  - What are the elements of a great system of care?
  - What improvements are key to the best care?
  - Is not “same old, same old”
- Starting source for change packages: IHI.org

Improving Outcomes for High-Risk and Critically Ill Patients

Current Challenges:

Lack of reliability
Lack of standardization
Harm
Unnecessary deaths
Waste

Desired Outcomes:

Decrease
- **Mortality**
- **Complications**
- **Costs**

Improve
- **Satisfaction**

Primary Drivers:

- Identify & rescue worsening patients
- Provide appropriate, reliable and timely care to high-risk and critically ill patients using evidence-based therapies
- Create highly effective multi-disciplinary team
- Integrate patient & family into care so they receive care they want
- Develop an infrastructure that promotes quality care

Secondary Drivers:

- Rapid Response System
- Early Warning System
- Protocols and Standing Orders
- Bundles
- Care planning
- Reliable communication
- Family involvement
- Clarification of wishes
- End of life care
- Consistent care delivery
- Flow
- Leadership
- Financial Stewardship

Specific Changes:

See next page

Example:
Another way to organize change package:
Driver Diagram

Driver Diagram
IG: PP. 286,412,429

Primary Driver	*Secondary Driver*	*Key Change Concepts*	*Specific change ideas*
P1. Identify & rescue worsening patients	**S1. Rapid response system**	Implement a Rapid Response Team	Standardize call criteria
			Define response team members (including a sponsor)
			Establish protocols/guidelines
			Educate units about when and how to call
			Create process to gather data about calls
			Use steering committee for development and on-going testing oversight
		Perfect triggering	Review call criteria effectiveness
			Test/Add an Early Warning System
			Review missed opportunities (e.g. unscheduled transfers to ICU)
			Work towards "goal" call rate
		Perfect responding	Develop discipline-specific criteria for team members
			Review team performance in three spheres: care provided, response time, and caller satisfaction
			Develop tool box to be brought to activations (examples: i-stat, IV tubing, lab tubes, BP cuff, documentation form)
			Do case review
			Track response time
		Perfect evaluation	Review overall process to evaluate need to improve
			Develop data tool for tracking
	S2. Early warning systems	Use objective measures to assess disease severity	Test a measurement tool such as MEWS
			Use an overall bed-board to assess layout of unit
		Create a process for use of scoring tools	Create rules for when to call RN, MD, and activate system
		Improve identification of severe sepsis	Apply the Evaluation for Severe Sepsis Screening Tool in clinical areas such as the ED, wards, and ICU
			Have nurses and Rapid Response Team complete severe sepsis screening
P2. Provide appropriate, reliable and timely care to high-risk &	**S3. Protocols and Standing Order Sets**	Develop weaning protocol	Pre-extubation worksheet

WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- Be able to analyze a run chart using statistically based rules
- Identify several uses for run charts in improvement projects
- Identify several ways to obtain more useful change ideas to take to testing
- ***Identify keys to accelerating the rate of testing and improvement***
- Identify keys to good implementation (making change stick)

Testing/Implementation/Spread

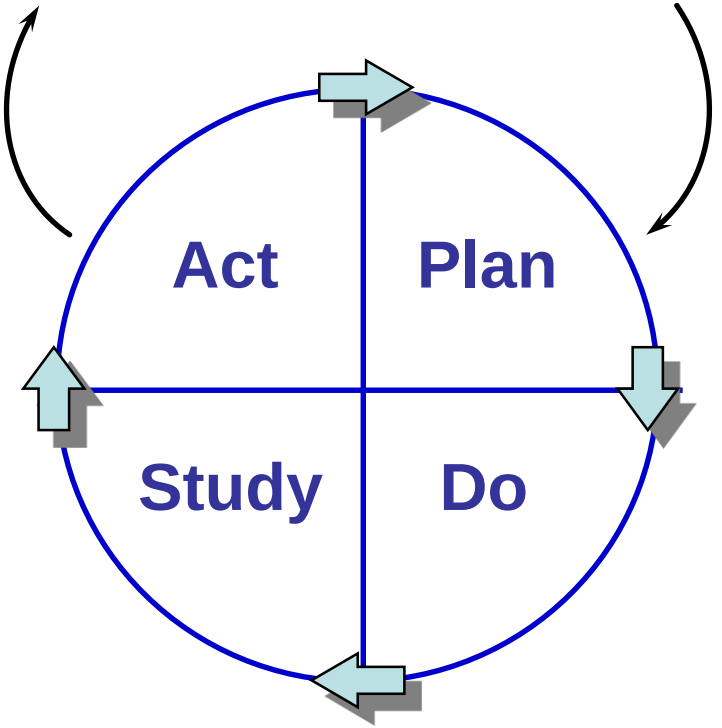
- Collecting data or developing a change: don't have an idea (theory) to test yet. We are learning about the system, looking for ideas to test.
- **Testing: Trying and adapting existing knowledge on small scale. Learning what works in your system.**
- Implementing: Making this change a part of the day-to-day operation of the system in your pilot population
- Spreading: adapting change to areas or populations other than your pilot populations

Model for Improvement

What are we trying to accomplish?

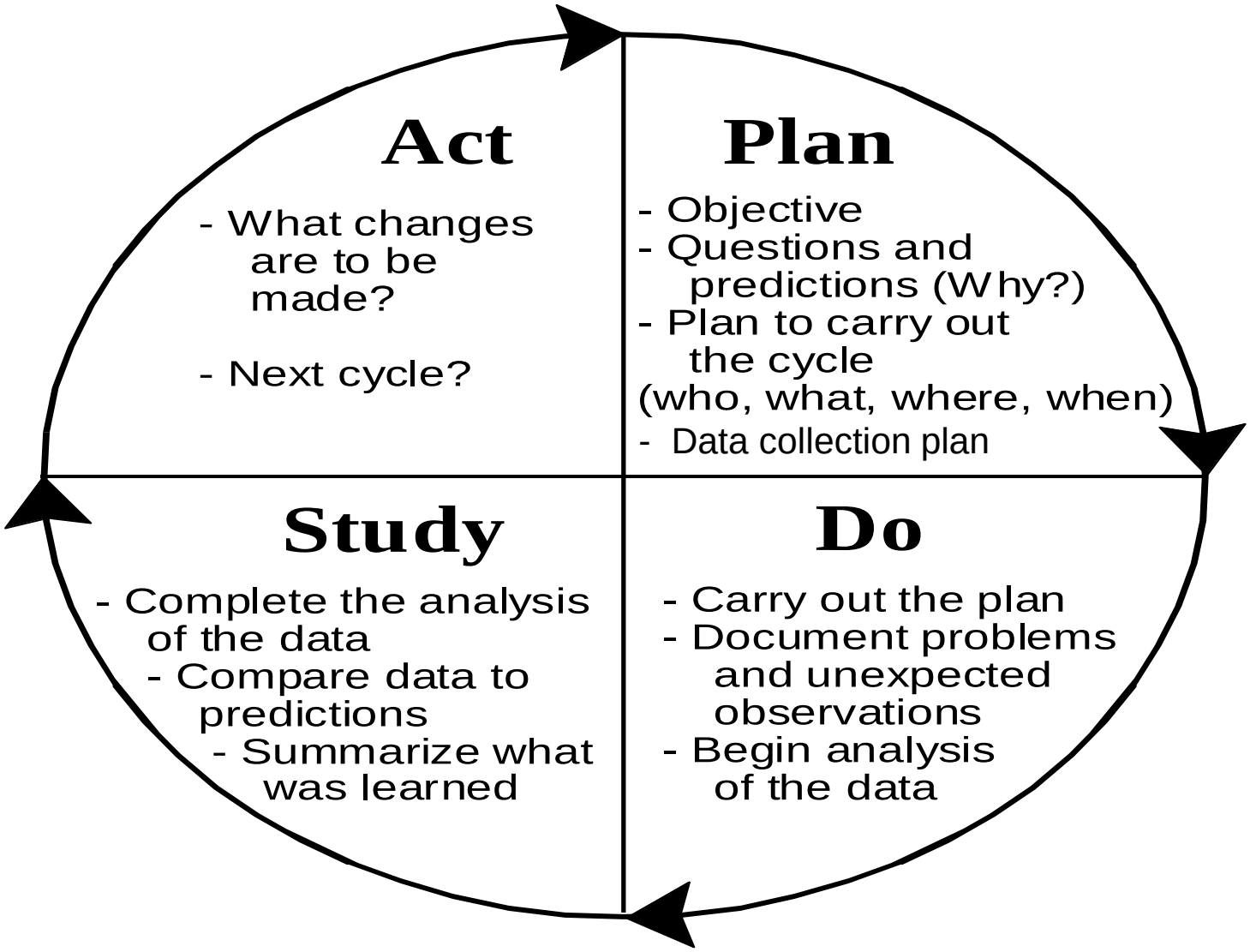
How will we know that a change is an improvement?

What change can we make that will result in improvement?



Not everyone means the same thing by PDSA

The PDSA Cycle for Learning and Improvement



Removing Razors: First PDSA: Miami Valley

- Objective: Replace the practice of pre-op shaving with the use of clippers
- Questions: Can we get cooperation from surgeon and O.R. staff? Are there any barriers? What are staff/physician perceptions about hair on incision site?
- Predictions: There will be a learning curve. There will be mixed acceptance and resistance.
- PLAN: On October 27, 20XX, one surgeon will be asked by a team member who is a clinical nurse manager in surgical service to use clippers on one surgery patient instead of having that patient shaved. Collection of data will be via direct observation by that team member.

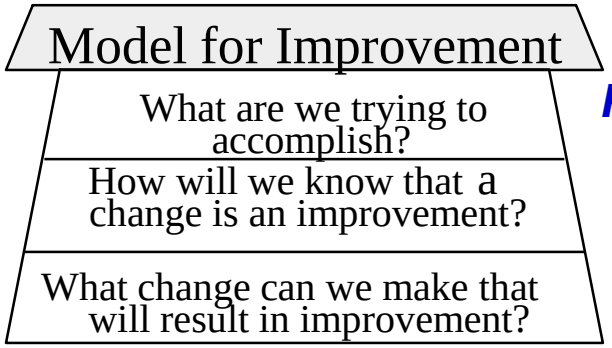
Removing Razors: First PDSA: Miami Valley (Cont.)

- DO: Dr. Moncrief was asked to use clippers on his patient instead of shaving by Linda Hawley. At first he said no, but after being told that it was a Class 1A recommendation, he agreed to try it. Not only did he comply, but he used clippers on two of his cases and instructed staff to never place another blade on his case cart.
- STUDY: There was full cooperation in this first test of change after some initial resistance. One barrier noted for spreading change was a lack of supplies. In this test, there were no negative perceptions related to using clippers noted.

To Be Considered a PDSA Cycle:

- **The test or observation was planned (including a plan for collecting data).**
- **The plan was attempted (do the plan).**
- **Time was set aside to analyze the data and study the results.**
- **Action was rationally based on what was learned.**

Repeated Use of the PDSA Cycle



Reduce Per-op harm by 30%

Peri-op Harm Rate
Unplanned returns OR

DVT Prophylaxis
Beta Blockade Prop
SSI interventions

Changes That Result in Improvement

DATA

Implementation of Change

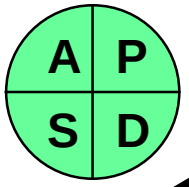
Wide-Scale Tests of Change

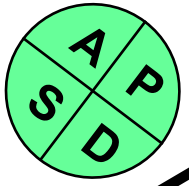
Follow-up Tests

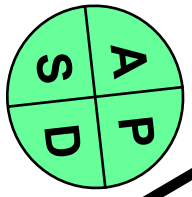
Very Small Scale Test

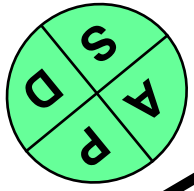
Use clippers Instead of Shaving site

Hunches Theories Ideas









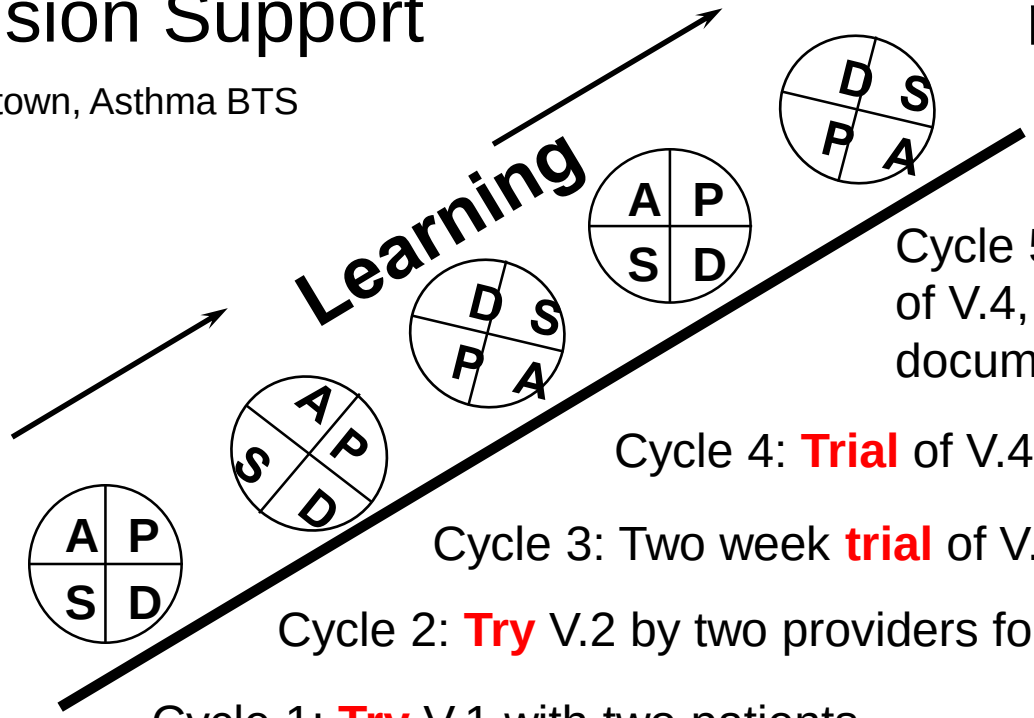
Multiple Cycles to Implement the ICIC Chronic Care Model

Component:

Decision Support

Chinatown, Asthma BTS

Use of Flow sheet V.4 by all physicians and nurses



Cycle 5: Implement use of V.4, do peer review of documentation and use

Cycle 4: **Trial** of V.4 by all providers

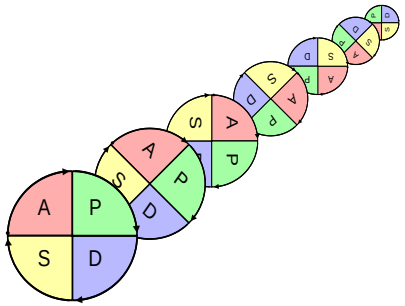
Cycle 3: Two week **trial** of V.3, review meetings

Cycle 2: **Try** V.2 by two providers for a few days

Cycle 1: **Try** V.1 with two patients

Will a flow sheet be useful for asthma patients?

Cycles for Testing



New concept for many teams:

- Increase belief that the change will result in improvement
- Document how much improvement can be expected from the change
- Learn how to adapt the change to conditions in the local environment
- Evaluate costs and side-effects of the change
- Minimize resistance upon implementation

Diagnosing the current process?

- **“Teams often spend too much time thinking about all of the possible options, ramifications, and implementation issues before proceeding with a test of a change.**
- **Improvement efforts are frequently stuck in the diagnostic journey (analysis paralysis).**
- **Can one learn more by diagnosing the current process or system, or by changing something?**
- **The *alternative* is to very quickly run a test.**
- **Experience has shown this latter approach leads to accelerated learning and improvement.”**

Improvement Guide p. 142

Testing/Implementation/Spread

- Collecting data or developing a change: don't have an idea (theory) to test yet. We are learning about the system, looking for ideas to test.
- **Testing: Trying and adapting existing knowledge on small scale. Learning what works in your system.**
- Implementing: Making this change a part of the day-to-day operation of the system in your pilot population
- Spreading: adapting change to areas or populations other than your pilot populations

Methods to accelerate the learning

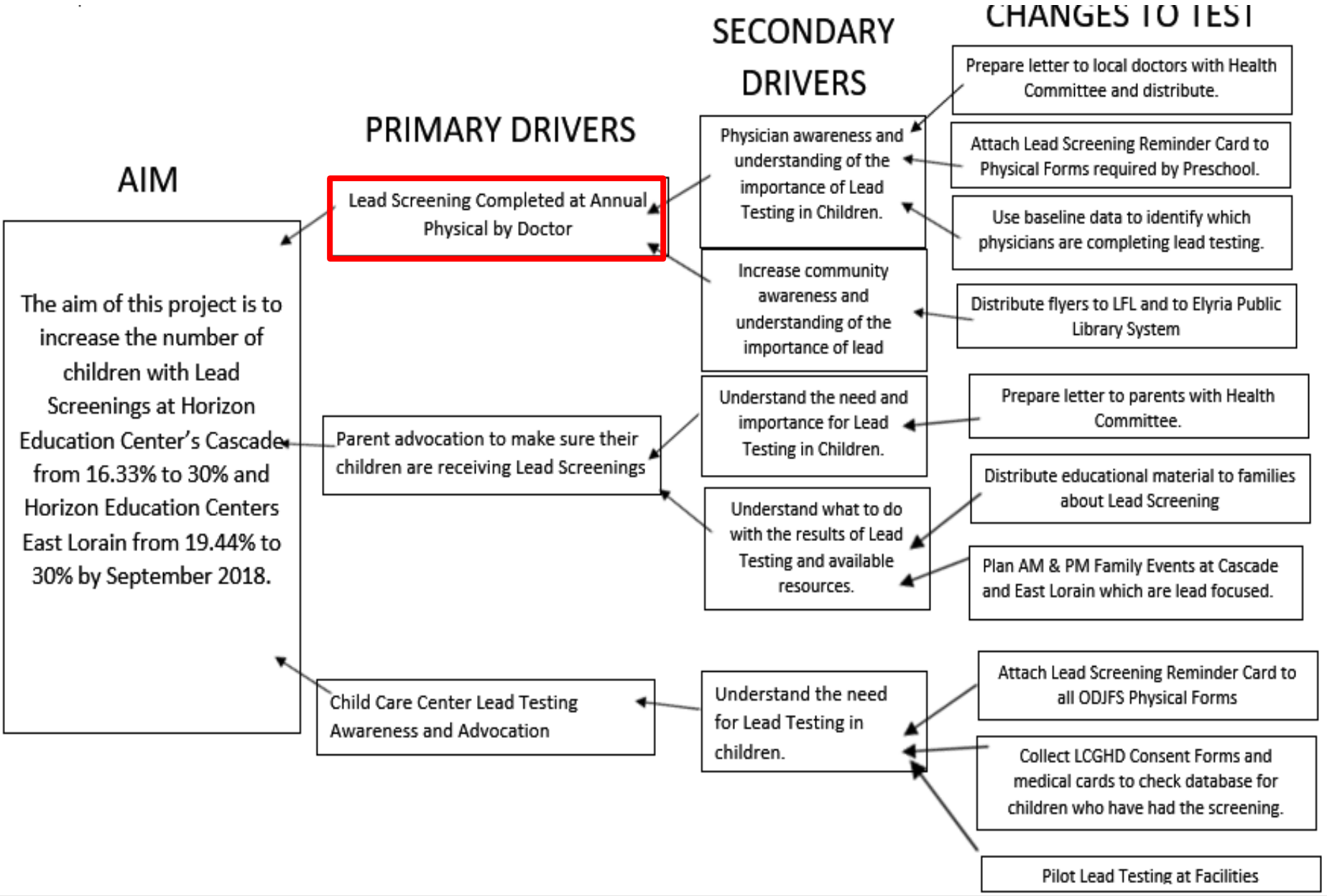
- **Use the PDSA Cycle to Accelerate Learning**
- **Three principles to guide testing a change:**
  - **Principle 1: Test on a small scale and build knowledge sequentially**
  - **Principle 2: Collect data over time**
  - **Principle 3: Include a wide range of conditions in the sequence of tests**

IG p. 145

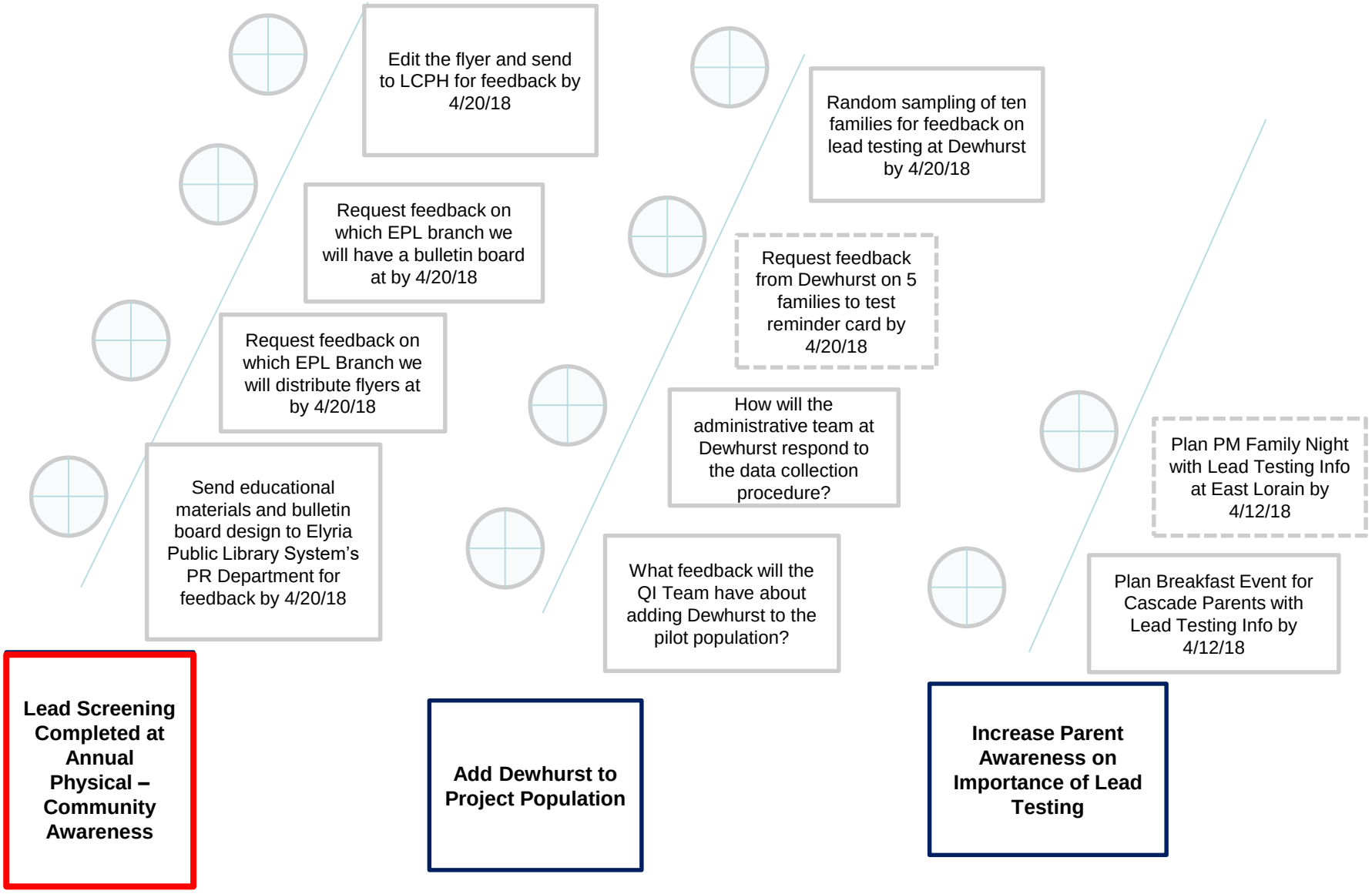
Techniques to Accelerate Testing

- Plan multiple cycles for a test of a change
- Work in parallel on multiple drivers
- Think a couple of cycles ahead

What change can we make that will result in improvement?



Lead Testing PDSA's



Techniques to Accelerate Testing

- Plan multiple cycles for a test of a change
- Work in parallel on multiple drivers
- Think a couple of cycles ahead
- Scale down size of test (# of patients, location)

Deciding on the Scale of the Test

		Current Commitment Within Organization		
		No Commitment	Some Commitment	Strong Commitment
Low degree of belief that change idea will lead to Improvement	Cost of failure large	*Very small-scale test*	*Very small-scale test*	*Very small-scale test*
	Cost of failure small	*Very small-scale test*	*Very small-scale test*	*Small-scale test*
High degree of belief that change idea will lead to Improvement	Cost of failure large	*Very small-scale test*	*Small-scale test*	*Large-scale test*
	Cost of failure small	*Small-scale test*	*Large-scale test*	*Implement*

Improvement Guide p. 146

Exercise: Scope of PDSA Cycles

- ***Scope of the next PDSA cycle?***
- ***--Very small scale test? –Small scale test? --Large scale test? --Implement?***

- Case 1: The staff is still resistant to begin using the registry for asthma patients, but you have high confidence that it will work. Even if it did not work out, there would be no negative impact on the clinic. What should be the scope of the next PDSA cycle?

Exercise: Scope of PDSA Cycles

- ***Scope of the next PDSA cycle?***
- ***--Very small scale test? –Small scale test? --Large scale test? --Implement?***

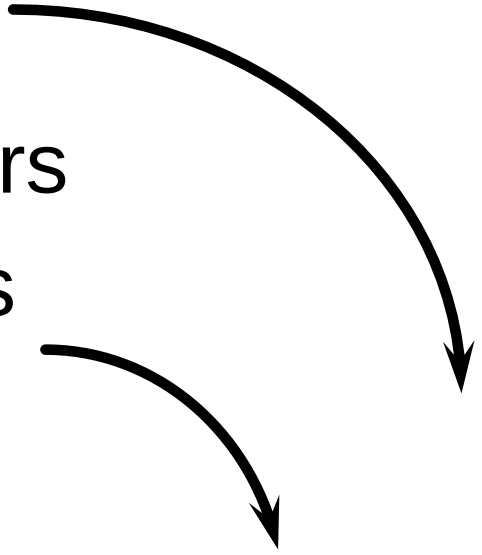
- Case 2: The new on-line decision support guidelines have been reviewed by all of the clinicians and approved. Your team has run tests on the system and it has worked well. If for some reason the system failed, a paper back-up is ready for use. What should be the scope of the next PDSA cycle?

Testing on a Small Scale

- Have others that have some knowledge about the change review and comment on its feasibility
- Test the new product or the new process on the members of the team that developed the change before introducing it to others
- Incorporate redundancy in the test by making the change side-by-side with the existing process or product
- Simulate the change

Decrease the Time Frame for a PDSA Test Cycle

- Years
- Quarters
- Months
- Weeks
- Days
- Hours
- Minutes

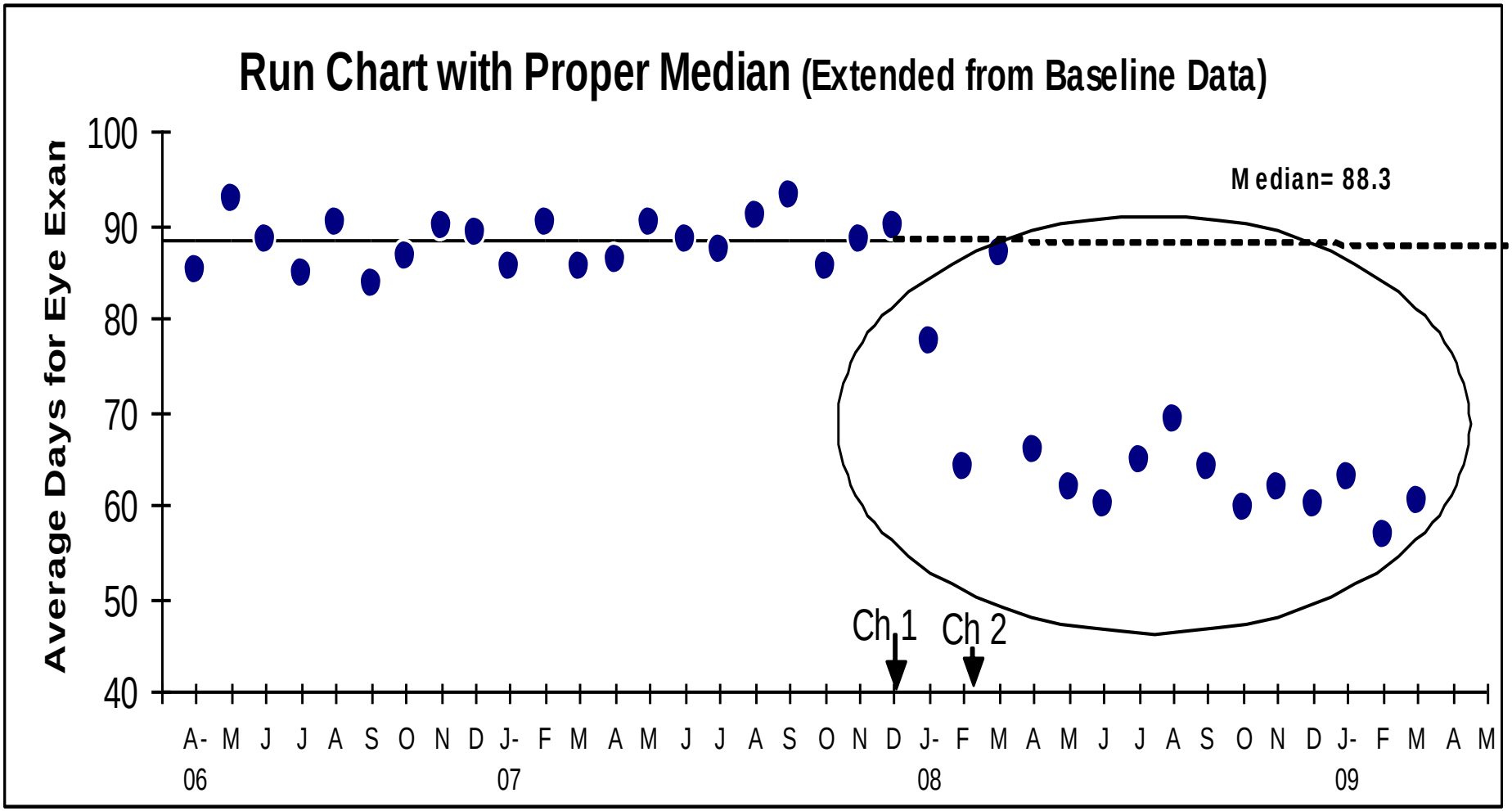


Drop down next "two levels" to plan Test Cycle!

Methods to accelerate the learning

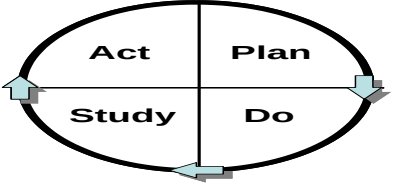
- **Use the PDSA Cycle to Accelerate Learning**
- **Three principles to guide testing a change:**
  - **Principle 1: Test on a small scale and build knowledge sequentially**
  - **Principle 2: Collect data over time**
  - **Principle 3: Include a wide range of conditions in the sequence of tests**

Principle 2: Track Data Over Time



Principle 3: Test Under Wide Range of Conditions

- Robust design:
  - Weekdays/weekends
  - Day shift/nightshift
  - Slow area/busy area
  - Experienced staff/inexperienced staff
  - Patients without complications/those with
- Larger scale
  - Longer timeframe
  - Bigger group



MODEL FOR IMPROVEMENT *DATE* _____

Objective for this PDSA Cycle:

Is this cycle used to develop, test, or implement a change?
What question(s) do we want to answer on this PDSA cycle?

Plan:
Plan to answer questions: Who, What, When, Where

Plan for collection of data: Who, What, When, Where

Predictions (for questions above based on plan):

Do:
Carry out the change or test; Collect data and begin analysis.

Study:
Complete analysis of data;

Compare the data to your predictions and summarize the learning

Act:
Are we ready to make a change? Plan for the next cycle

WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- Be able to analyze a run chart using statistically based rules
- Identify several uses for run charts in improvement projects
- Identify several ways to obtain more useful change ideas to take to testing
- Identify keys to accelerating the rate of testing and improvement
- **Identify keys to good implementation (making change stick)**

Testing/Implementation/Spread

- **Testing: Trying and adapting existing knowledge on small scale. Learning what works in your system.**
- **Implementing: Making this change a part of the day-to-day operation of the system in your pilot population**
- Spreading: adapting change to areas or populations other than your pilot populations

Differences Between Testing and Implementation

Testing

- Not Permanent
- Minimal supporting process changes needed
- Focus on learning at minimal risk
- Failure expected-even planned
- Minimal people effected
- Resistance lower

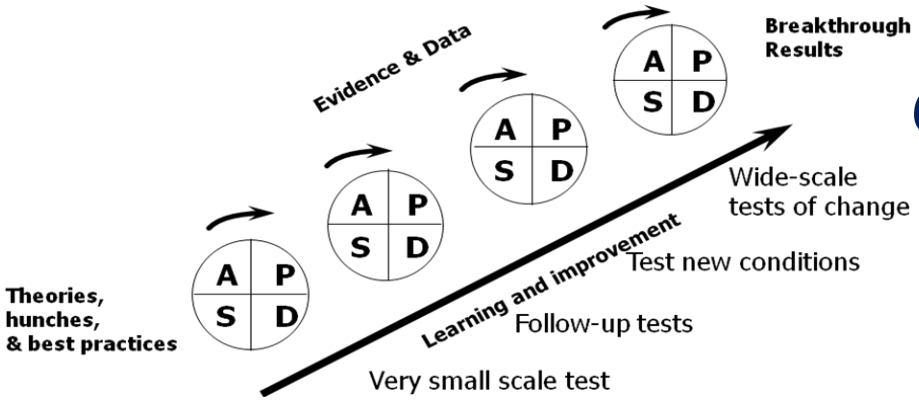
Implementation

- Become part of routine
- Supporting processes changed (improved)
- Performance should be close to predictions (less learning)
- Greater number of people impacted
- Takes more time than testing
- Potential for resistance higher

Improving Likelihood that We Will Hold Gains: During Implementation

- Successful **testing is not enough** to assume implementation has occurred.
- Implementation is **building it into the current system in which we have been testing**.

When to Implement?



Gold Standard met?

- **The team has a high degree of belief that the change will result in improvement, and**
- **The cost of failure is small (losses from a failed test are not significant), and**
- **The organization is ready to make the change.**

Improvement Guide p. 145

During Implementation

- **Use multiple PDSA cycles to implement the change**
  - **Testing is not de-facto implementation!**
- **Collect data over time when conditions are expected to change**
  - **Continue use of run or Shewhart chart**
- **Redesign support processes for new process**
  - **Training, getting forms, etc.**

Implementing Changes to Achieve and Maintain Improvement

What are these PDSA cycles about?

- Standardization--redesign support processes for new process
  - Policies, materials, methods, equipment, training
- Documentation
  - Initial
  - Ongoing knowledge transfer so stays “fresh”
- Collect data over time when conditions are expected to change
  - Continue use of run or Shewhart chart
- Training: explain why, timing important
- Resources: forms, equipment, training $. Need to think thru and plan for this

PROJECT TEAM WORKSHEET: **Redesign of Support Processes for Implementation of Change**

Change Implemented:

Date: _____

Cycle No.	Change Tested or Implemented	Lead	June 24	July 1 8 15 22 29	August 5 12 19 26	September 2 9 16 23 30	October 7 14 21 28	4 11 18
	Policies							
	Documentation							
	Hiring Procedures							
	Staff education/training							
	Job descriptions							
	Information Flow							
	Equipment Purchases							

During Implementation

- **Use multiple PDSA cycles to implement the change**
  - **Testing is not de-facto implementation!**
- **Collect data over time when conditions are expected to change**
  - **Continue use of run or Shewhart chart**
- **Redesign support processes for new process**
  - **Training, getting forms, etc.**
- **Address the social aspects of change**
  - **WIFM, appreciation, publicity, resistance**

Address the Social Aspects of Change

- **Provide information on why change being made**
  - Empathize w/anxiety-don't expect to eliminate it
  - Show how change supports aim of organization
  - Put it in historical perspective
  - Link to needs of patient/family/community
  - Reframe as opportunity
  - Provide hot line for questions/comments
- **Provide specific info on how will affect people**
  - Share results from testing
  - Be prepared for questions
  - Study rational objections and be prepared to address them
  - Include members of team who tested in presentations
- **Get consensus on resources and other support for implementation**
  - Define plan with milestones/dates
  - Ask leaders and key people to publicly support
  - Express confidence in those asked to carry out the change
- **Publicize the change**
  - Use symbolism, stores, pictures, etc.
  - Summarize key points and agreements as made
  - Show appreciation for those developing and testing change
  - Take advantage of significant events (crisis, inspection, complaint) and tie to implementation

THESE PATIENTS ARE NOT AT RISK FOR DEVELOPING HOSPITAL-ACQUIRED PRESSURE WOUNDS.

RIGHT?

The fact is acutely ill infants and children <u>are</u> at risk for pressure ulcers. We tend to use our intuition and experience in determining who might need special intervention, instead of a set of standards, based on best practice evidence.

The Wound Prevention Team, consisting of a multi-disciplinary team of nurses, respiratory therapists, and physical therapists from multiple areas of practice at CHOA, is addressing this need. Our ultimate goal is to prevent hospital-acquired pressure wounds. We want to educate you on proper pressure wound assessment and staging. We also want to shine the light on the misconceptions and myths we have about pediatric pressure wounds. Lastly, we want to update, standardize, and educate you on the products we have available to use to prevent and treat pressure wounds. When a patient does present with a pressure wound, we have provided direction on the proper reporting and consultation processes.

The need is evident. The desire to act is present. So, let's get started!

Children's Healthcare of Atlanta: Reducing Pressure Ulcers

Sense the Urgency!

And Act to Prevent Pressure Wounds !

It's been a crazy day in the PICU. Too many patients, not enough staff or rooms. You are the only nurse in the entire house open for an admission when you get the news– a six year-old is being life-flighted in from a neighboring county. The child is an unrestrained passenger in a bad MVA. You are informed this child has multi-system trauma with a serious head injury. The child is unresponsive and is currently intubated and requiring aggressive fluid resuscitation with pressors. You sense the urgency and serious nature of your patient's injuries. He will require the best of you and your team's assessment and intervention skills to survive.

As you prepare for his arrival, you begin thinking in your head about the ABC's– airway, breathing and circulation. You get your room prepared to meet your patients most critical needs– oxygen, bag-mask, suction, ventilator, fluids, IV access supplies. Every base covered, every scenario reviewed. You and your colleagues are ready to go, ready for anything….Right?

But wait! Is there any room in this process to anticipate the needs of your patient when it comes to pressure wound prevention? You know that according to the ***Braden Q*** *scale this patient is at* ***very high risk*** *for acquiring pressure wounds, due to his neuro status, immobility and cardiovascular instability. You also know that most* ***pressure wounds in the ICU setting occur in the first 12-24 hours from admission****.*

You go ahead and place an air-overlay mattress over the existing mattress, knowing it's a start. You obtain gel-pads and pillows. You review your decision tree for wound prevention. Now, you are ready for anything.

It is a paradigm shift for most critical care nurses- to think about prevention of pressure wounds **before** the admission of a critically ill patient. We tend to focus on this area after a patient stabilizes, which can often be too late. We know from research findings that we can **greatly reduce the incidence of pressure wounds in our critically ill patients by intervening at admission.** So, the next time you find yourself facing the same situation as the nurse above, remember to…..

Sense the Urgency and Act to prevent pressure wounds!

Children's Healthcare of Atlanta: Reducing Pressure Ulcers

Getting Commitment to Change

- **Create the will**
  - Create dissatisfaction with current state
  - Relentlessly communicate direction
  - Express excessive faith in success
  - Embrace the mess
- **Provide information on why change being made**
  - Empathize w/anxiety-don't expect to eliminate it
  - Show how change supports aim of organization
  - Put it in historical perspective
  - Link to needs of patient/family/community
  - Reframe as opportunity
  - Provide hot line for questions/comments

IG 2nd ed., p. 189-191

Getting Commitment to Change (cont.)

- **Provide specific info on how will affect people**
  - Share results from testing
  - Be prepared for questions
  - Study rational objections and be prepared to address them
  - Include members of team who tested in presentations
- **Get consensus on resources and other support for implementation**
  - Define plan with milestones/dates
  - Ask leaders and key people to publicly support
  - Express confidence in those asked to carry out the change
- **Publicize the change**
  - Use symbolism, stores, pictures, etc.
  - Summarize key points and agreements as made
  - Show appreciation for those developing and testing change
  - Take advantage of significant events (crisis, inspection, complaint) and tie to implementation

IG 2nd ed., p. 189-191

Testing and Implementation Key Points

- Degree of belief—is increased by testing
- Use series of PDSA cycles
- Small scale does not mean small change
- Need subject matter knowledge
- Gold standard for testing changes-can predict result under wide range of conditions
- Graph with annotated run charts
- Test before implementing
- Implementation is separate phase from testing

WORKSHOP OBJECTIVES:

By the end of this workshop participants will be able to:

- Identify the Model for Improvement
- Diagnose & improve improvement project charters so they are more likely to succeed
- Identify the role of measurement and run charts in improvement
- Identify several ways to obtain more useful change ideas to take to testing
- Identify keys to accelerating the rate of testing and improvement
- As time permits: Identify keys to good implementation (making change stick)