An Introduction to Using Clinical Microsystems to Improve Healthcare

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MMCPHO

MMC PHYSICIAN–HOSPITAL ORGANIZATION

About us...

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Associate at The Dartmouth Institute,
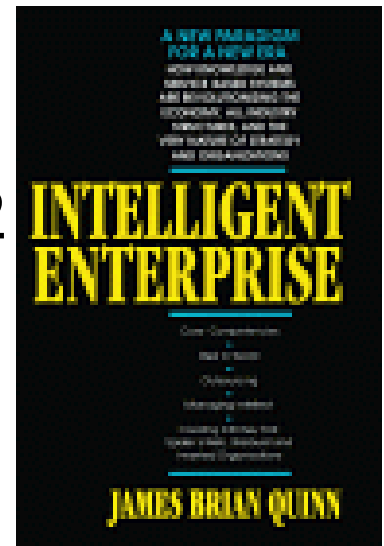Clinical Microsystem Academy

Today's Agenda

- Clinical Microsystem overview
- Clinical Microsystems – what and why
- Clinical Microsystems – application, and examples/case study
- Additional resources

Clinical Microsystem - History

James Brian Quinn

- The Intelligent Enterprise, 1992
- Intellect as a core resource
- Focus on the front line

Paul Batalden

- Application to health care

What is a Clinical Microsystem?

…the combination of a small group of people (including the patient) who work together on a regular basis to provide care to a discrete subpopulation of patients.

It has clinical and business aims, linked processes and a shared information environment, and generates performance outcomes.

There is no escaping it – Microsystems Exist!

- Not a verb – not something we do
- Something that is (noun)
- Could be high or low functioning

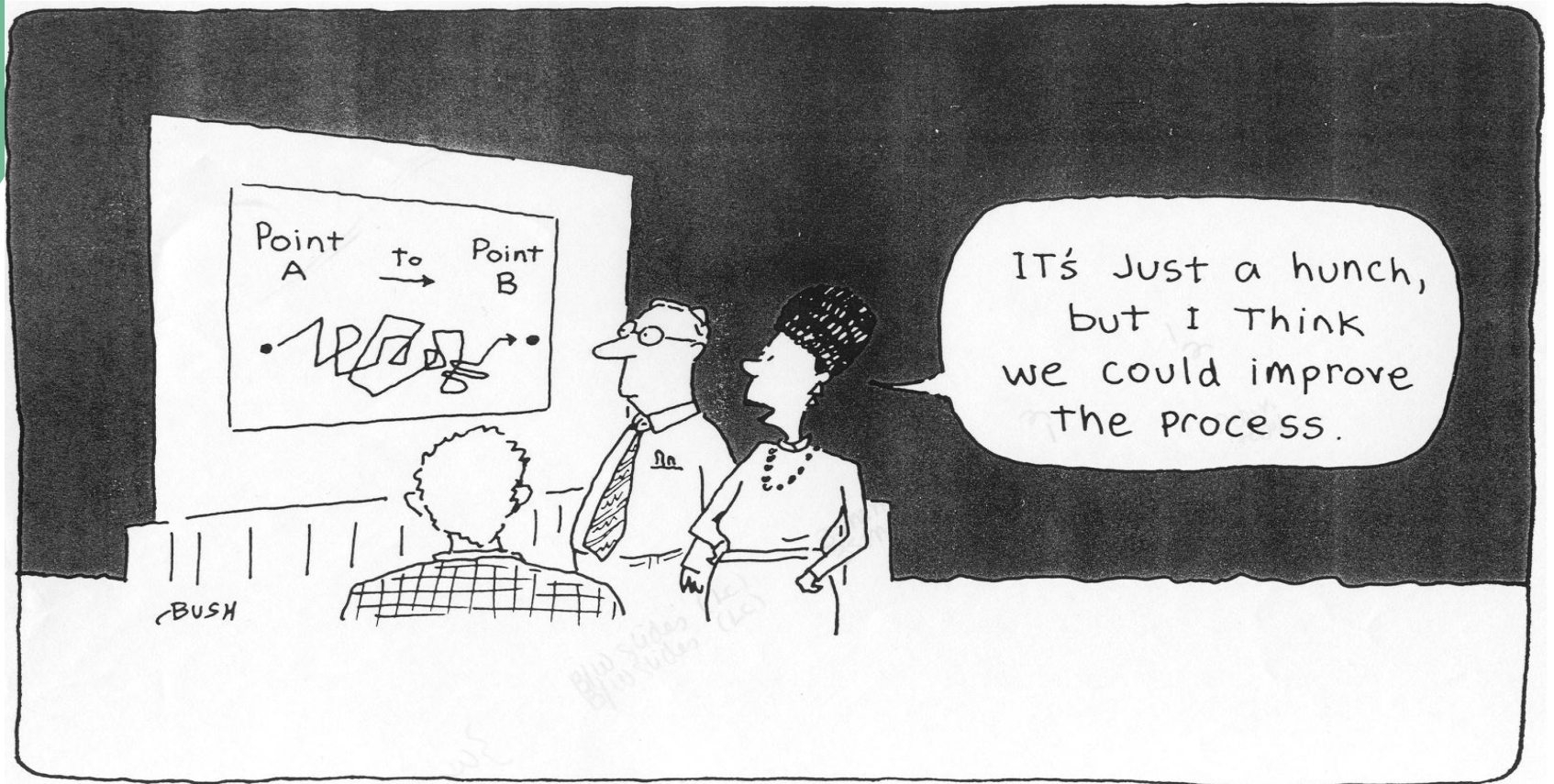# High Functioning Family "Micro-system"

Or…not so high functioning

High Functioning Clinical Microsystem

Or…not so high functioning

Every System Is Perfectly Designed To Get The Results Its Gets – *Paul Batalden*
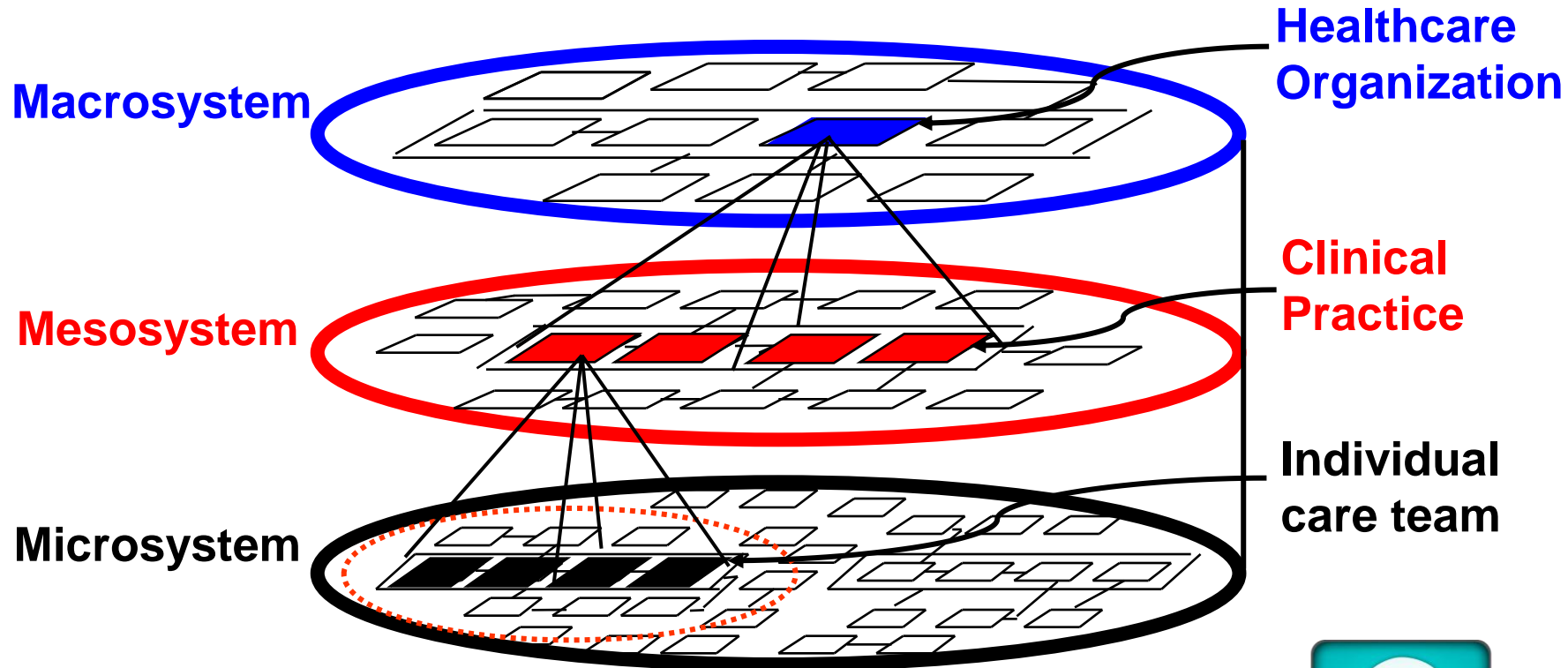
10 Characteristics of
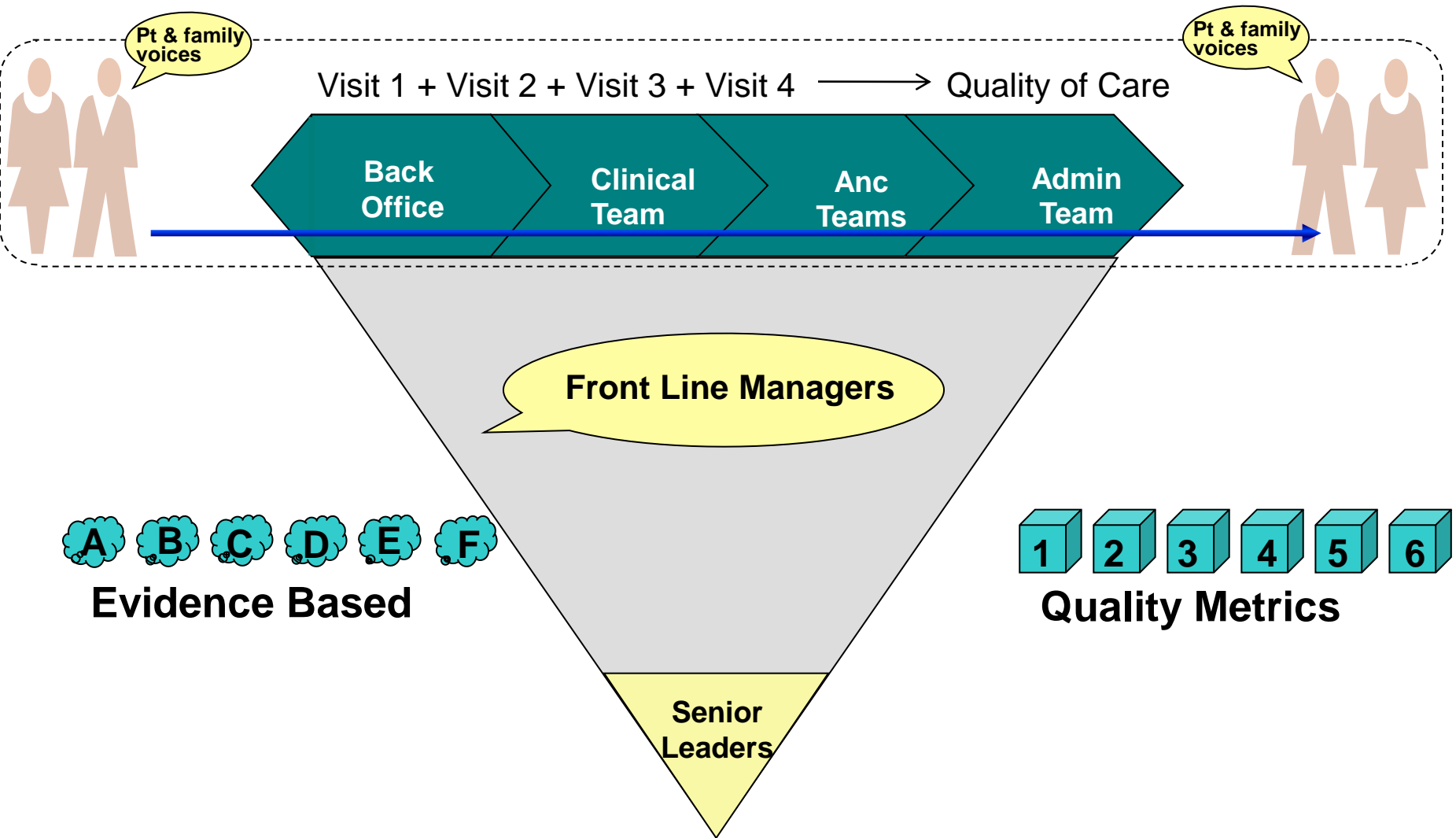High Performing Clinical Microsystems

- Leadership
- Organizational Support
- Staff Focus
- Education and Training
- Interdependence
- Patient Focus
- Community and Market Focus
- Performance Results
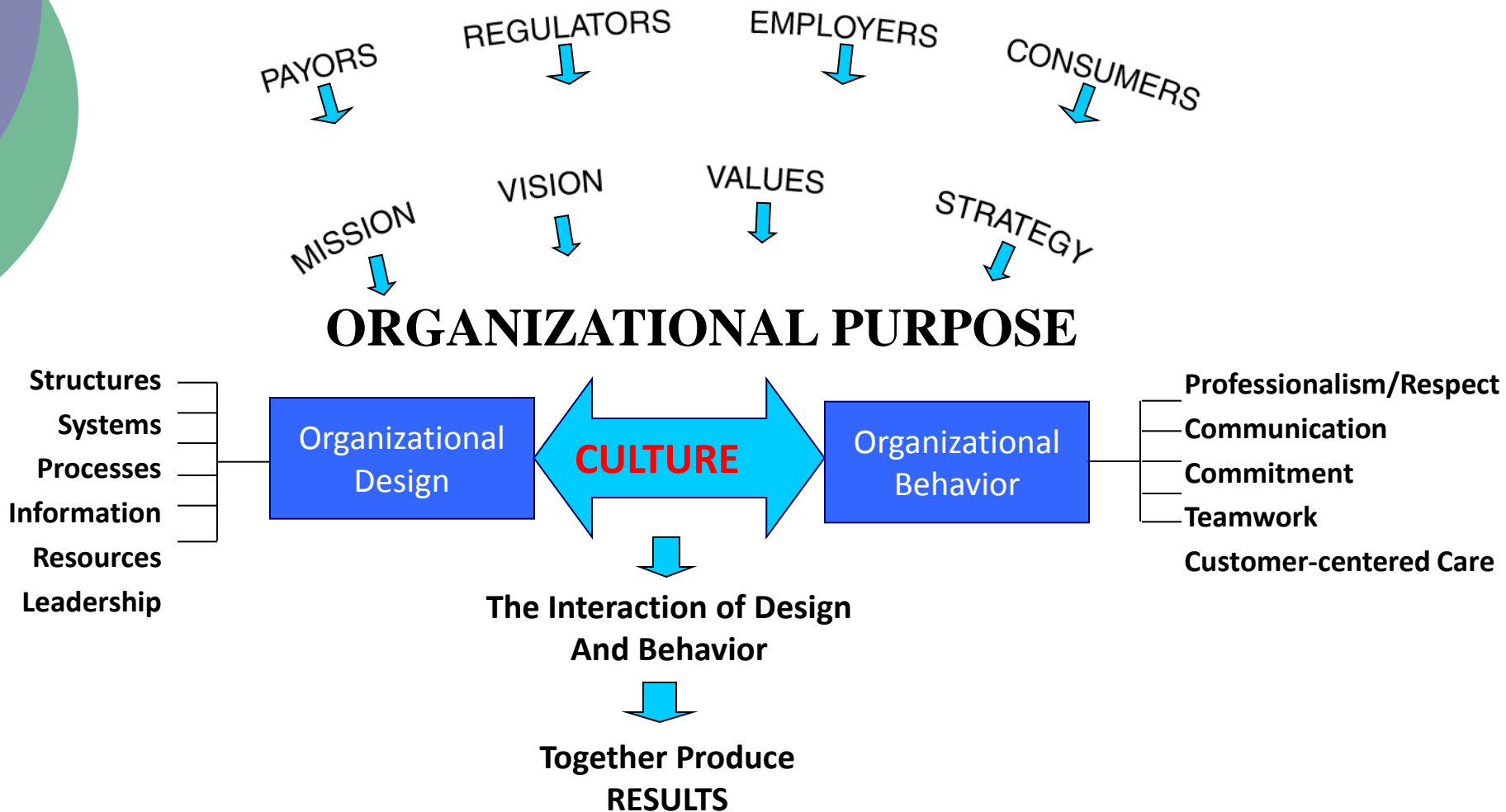- Process Improvement
- Information and Information Technology

QUALITY BY DESIGN

A Clinical Microsystems Approach

Eugene C. Nelson
Paul B. Batalden
Marjorie M. Godfrey

Systems Within Systems

The Big Picture

Visit 1 + Visit 2 + Visit 3 + Visit 4 ———→ Quality of Care

Pt & family voices

Pt & family voices

Back Office | **Clinical Team** | **Anc Teams** | **Admin Team**

Front Line Managers

A B C D E F
Evidence Based

1 2 3 4 5 6
Quality Metrics

Senior Leaders

14

How Organizations Succeed

PAYORS REGULATORS EMPLOYERS CONSUMERS

MISSION VISION VALUES STRATEGY

ORGANIZATIONAL PURPOSE

Structures
Systems
Processes
Information
Resources
Leadership

Organizational Design

CULTURE

Organizational Behavior

Professionalism/Respect
Communication
Commitment
Teamwork
Customer-centered Care

The Interaction of Design And Behavior

Together Produce RESULTS

Using Clinical Microsystems as an Improvement Methodology

The Foundation of the Method

Clinical Microsystems Improvement Method

Patient Centered

Measurement

Systems Perspective

Empowerment

The "Path Forward"

Dartmouth Microsystem Curriculum Improvement Ramp

Tools/Skills:
- Effective Meeting Skills
- Group Decision Making
- Data Collection
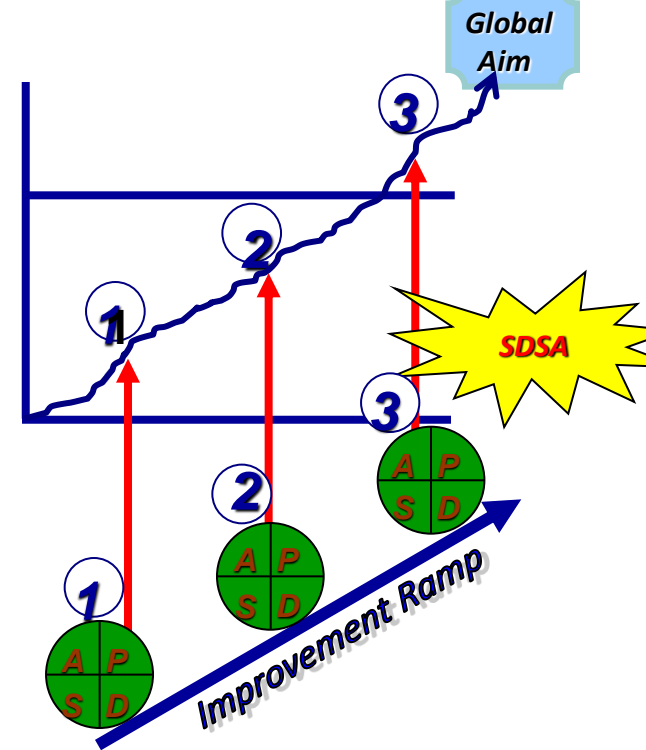- Process Mapping
- Fishbone Diagram
- Run Chart
- PDSA

Global Aim

SDSA

Improvement Ramp

PDSA

Measures

Change Ideas

Specific Aim

Global Aim

Theme

Assessment

Eugene C. Nelson, Paul B. Batalden and Marjorie M. Godfrey *Quality by Design* Jossey-Bass; 1 edition (March 16, 2007)

Assessment

○ The 5 P's (Green/Workbooks)

- Purpose
- Patients
- Professionals
- Processes
- Patterns

Clinical Microsystems

"The Place Where Patients, Families and Clinical Teams Meet"

Assessing, Diagnosing and Treating
Your Outpatient Primary Care Practice

www.clinicalmicrosystem.org

© 2001, Trustees of Dartmouth College, Godfrey, Nelson, Batalden, Institute for Healthcare Improvement.
Adapted from the original version, Dartmouth-Hitchcock, Version 2, February 2003
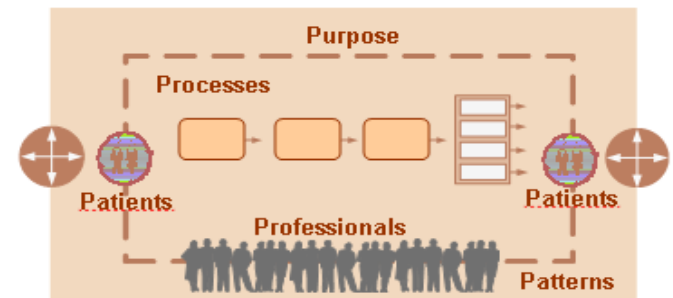
PURPOSE

"Why are we here?"

PATIENTS

The individuals and their families to whom care and services are provided.

Patients

Staying healthy can be difficult when you have a chronic condition. We would like to learn about the type of help you get from your health care team regarding your condition. This might include your regular doctor, the nurse, or the physician's assistant who treats your illness.

Assessment of Care for Chronic Conditions ®

Over the past 6 months, when I received care for my chronic conditions, I was:

	None of the Time	A Little of the Time	Some of the Time	Most of the Time	Always
1. Asked for my ideas when we made a treatment plan.	☐1	☐2	☐3	☐4	☐5
2. Given choices about treatment to think about.	☐1	☐2	☐3	☐4	☐5
3. Asked to talk about any problems with my medicines or their effects.	☐1	☐2	☐3	☐4	☐5
4. Given a written list of things I should do to improve my health.	☐1	☐2	☐3	☐4	☐5
5. Satisfied that my care was well organized.	☐1	☐2	☐3	☐4	☐5
6. Shown how what I did to take care of myself influenced my condition.	☐1	☐2	☐3	☐4	☐5
7. Asked to talk about my goals in caring for my condition.	☐1	☐2	☐3	☐4	☐5
8. Helped to set specific goals to improve my eating or exercise.	☐1	☐2	☐3	☐4	☐5
9. Given a copy of my treatment plan.	☐1	☐2	☐3	☐4	☐5
10. Encouraged to go to a specific group or class to help me cope with my chronic condition.	☐1	☐2	☐3	☐4	☐5
11. Asked questions, either directly or on a survey, about my health habits.	☐1	☐2	☐3	☐4	☐5
12. Sure that my doctor or nurse thought about my values, beliefs, and traditions when they recommended treatments to me.	☐1	☐2	☐3	☐4	☐5
13. Helped to make a treatment plan that I could carry out in my daily life.	☐1	☐2	☐3	☐4	☐5
14. Helped to plan ahead so I could take care of my condition even in hard times. Cont'd	☐1	☐2	☐3	☐4	☐5

Patient Assessment – Chronic Care from the Greenbook

PROFESSIONALS

Every member of the microsystem who provides care and/or services to the patient.

Professionals

- Creating a joyful work environment starts with a basic understanding of staff perceptions of the practice. All staff members should complete this survey. Use a tally sheet to summarize results.
- Ask all practice staff to complete the Staff Survey. Often you can distribute this survey to any professional who spends time in your practice. Set a deadline of one week and designate a place for the survey to be dropped off. You may have an organization-wide survey in place that you can use to replace this survey, but be sure it is CURRENT data, not months old, and that you are able to capture the data from all professionals specific to the Primary Care Practice workplace.

Primary Care Staff Satisfaction Survey

1. I am treated with respect every day by everyone that works in this practice.

   ❑ Strongly Agree   ❑ Agree   ❑ Disagree   ❑ Strongly Disagree

2. I am given everything I need—tools, equipment, and encouragement—to make my work meaningful to my life.

   ❑ Strongly Agree   ❑ Agree   ❑ Disagree   ❑ Strongly Disagree

3. When I do good work, someone in this practice notices that I did it.

   ❑ Strongly Agree   ❑ Agree   ❑ Disagree   ❑ Strongly Disagree

4. How stressful would you say it is to work in this practice?

   ❑ Very stressful   ❑ Somewhat stressful   ❑ A little stressful   ❑ Not stressful

6. How easy is it to ask anyone a question about the way we care for patients?

   ❑ Very easy   ❑ Easy   ❑ Difficult   ❑ Very difficult

8. How would you rate other people's morale and their attitudes about working here?

   ❑ Excellent   ❑ Very Good   ❑ Good   ❑ Fair   ❑ Poor

7. This practice is a better place to work than it was 12 months ago.

   ❑ Strongly Agree   ❑ Agree   ❑ Disagree   ❑ Strongly Disagree

8. I would recommend this practice as a great place to work.

   ❑ Strongly Agree   ❑ Agree   ❑ Disagree   ❑ Strongly Disagree

9. What would make this practice better for patients?

   _____

10. What would make this practice better for those who work here?

   _____

Professional Assessment – Satisfaction Survey from the Greenbook

PROCESS

Systems in place to care for patients.

Processes

- Beginning to have all staff understand the processes of care and services in the practice is a key to developing a common understanding and focus for improvement. Start with the high level process of a patient entering your practice by using the Patient Cycle Time tool. You can assign someone to track all visits for a week to get a sample, or the cycle time tool can be initiated for all visits in a one week period with many people contributing to the collection and completion of this worksheet.
- Typically, other processes will be uncovered to measure and you can create time tracking worksheets like this template to measure other cycle times.

Primary Care Practice Patient Cycle Time

Day: _____ Date: _____

Scheduled Appointment Time _____ Provider you are Seeing Today _____

Time

|_____| 1. Time you checked in.

|_____| 2. Time you sat in the waiting room.

|_____| 3. Time staff came to get you.

|_____| 4. Time staff member left you in exam room.

|_____| 5. Time provider came in room.

|_____| 6. Time provider left the room.

|_____| 7. Time you left the exam room.

|_____| 8. Time you arrived at check out.

|_____| 9. Time you left practice.

Comments:

Process Assessment – Cycle time data from the Greenbook
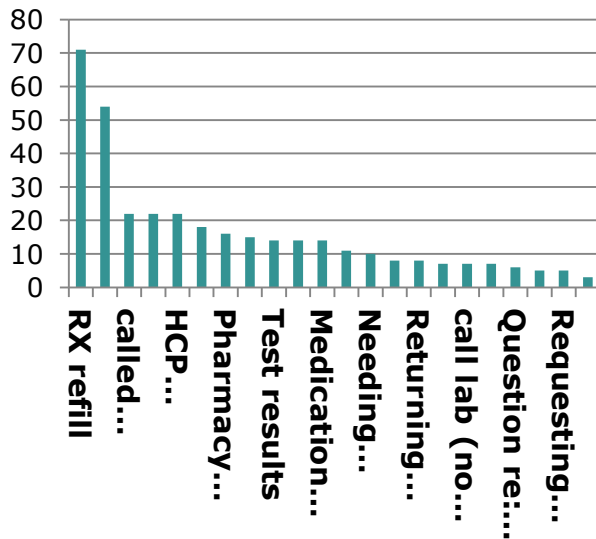
PATTERNS

What we "just do"

Patterns

- Patterns can be found through tracking the volumes and types of telephone calls. Review the categories on the telephone tracking list to ensure they reflect the general categories of calls your practice receives. Ask clerical staff to track the telephone calls over the course of a week to find the patterns of each type of call and the volume peaks and valleys.
- Put a tally mark each time one of the phone calls is for one of the listed categories. Total the calls for each day and then total the calls in each category for the week. Note the changes in volume by the day of the week and am/pm.

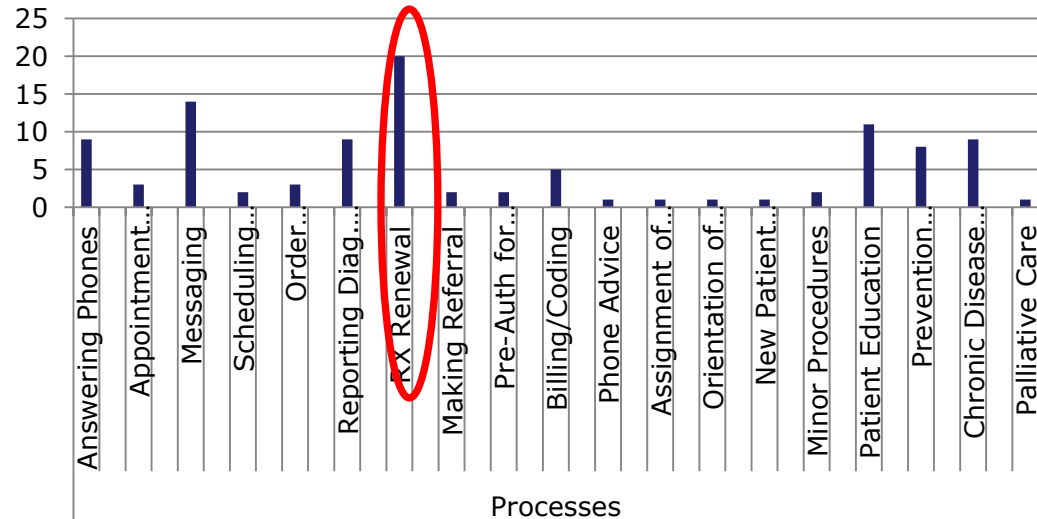| Primary Care Practice Telephone Tracking Log															
Week of _____	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Total
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Appointment for Today															
Total															
Appointment for Tomorrow															
Total															
Appointment for Future															
Total															
Test Results															
Total															
Nurse Care															
Total															
Prescription Refill															
Total															
Referral Information															
Total															
Need Information															
Total															
Message for Provider															
Total															
Talk with Provider															
Total															
DAY TOTAL															

Pattern Assessment – Phone call data from the Greenbook

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Adapted from the original version, Dartmouth-Hitchcock, Version 2, February 2005

21
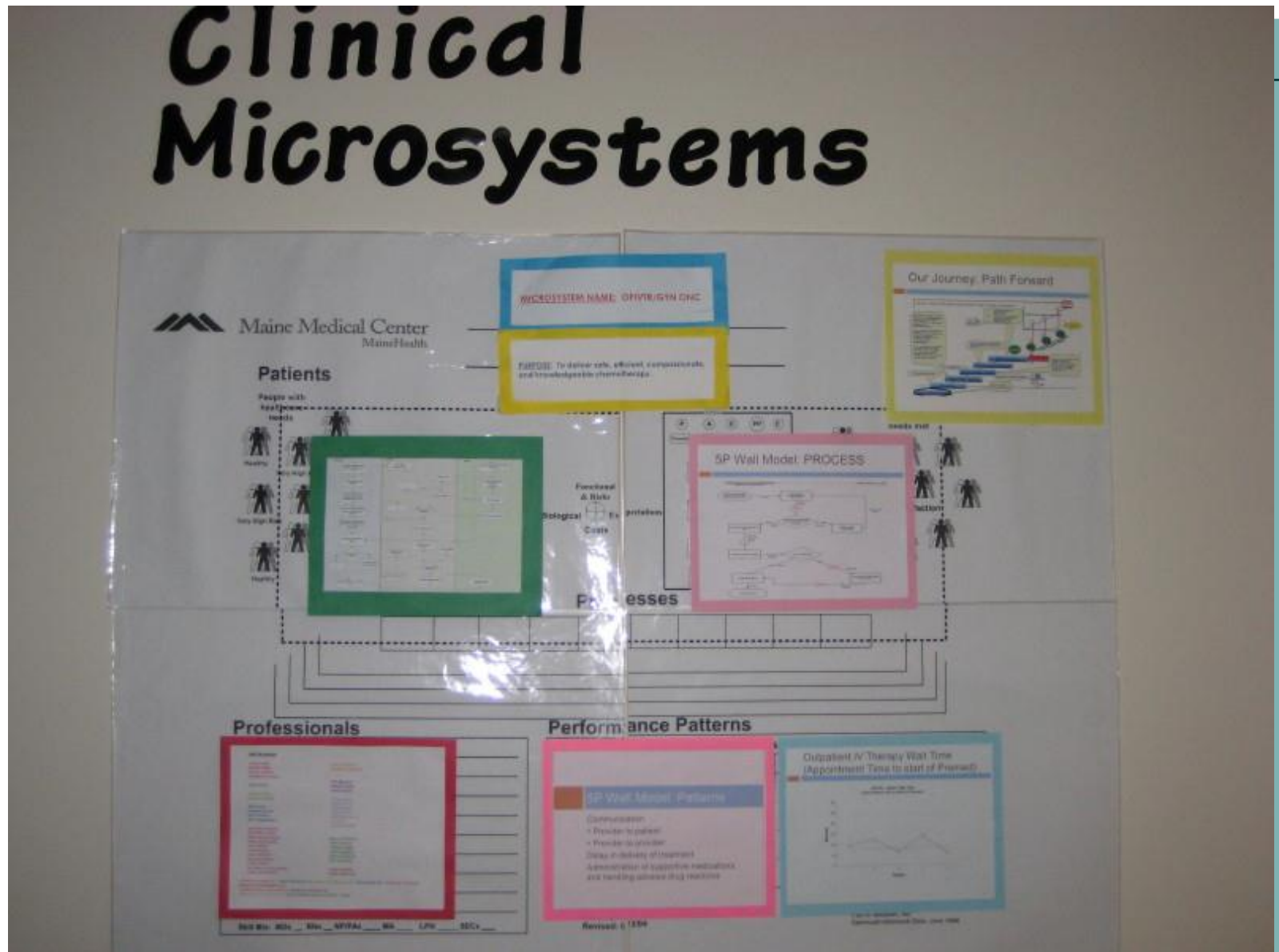
The Assessment Phase!

5P Wall Chart

The "Path Forward"

Dartmouth Microsystem Curriculum Improvement Ramp

Global Aim

Tools/Skills:
- Effective Meeting Skills
- Group Decision Making
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- Process Mapping
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Eugene C.Nelson, Paul B. Batalden and Marjorie M. Godfrey *Quality by Design*
Jossey-Bass; 1 edition (March 16, 2007)

Theme Examples

- Efficiency
- Access
- Safety
- Patient Satisfaction

Theme Example – RAMCCC

- Efficiency
  - Prescription refill turn around
  - Reducing hold times on the phone
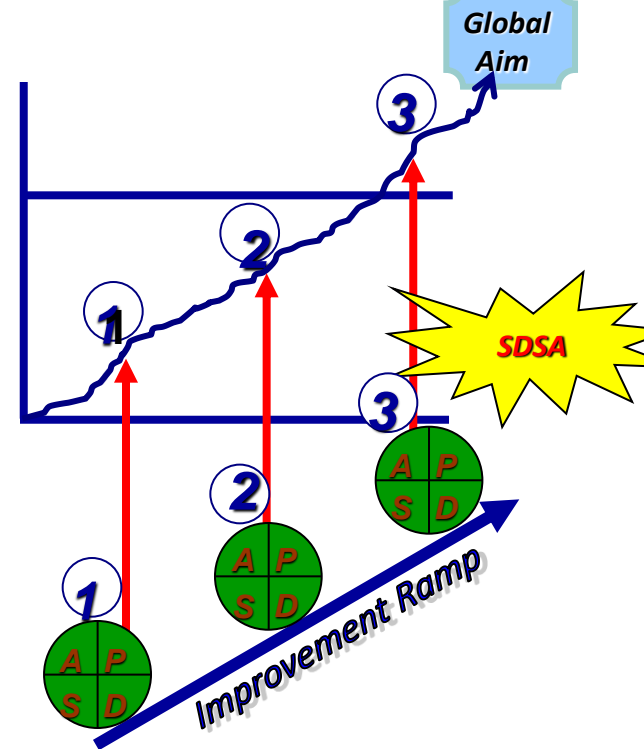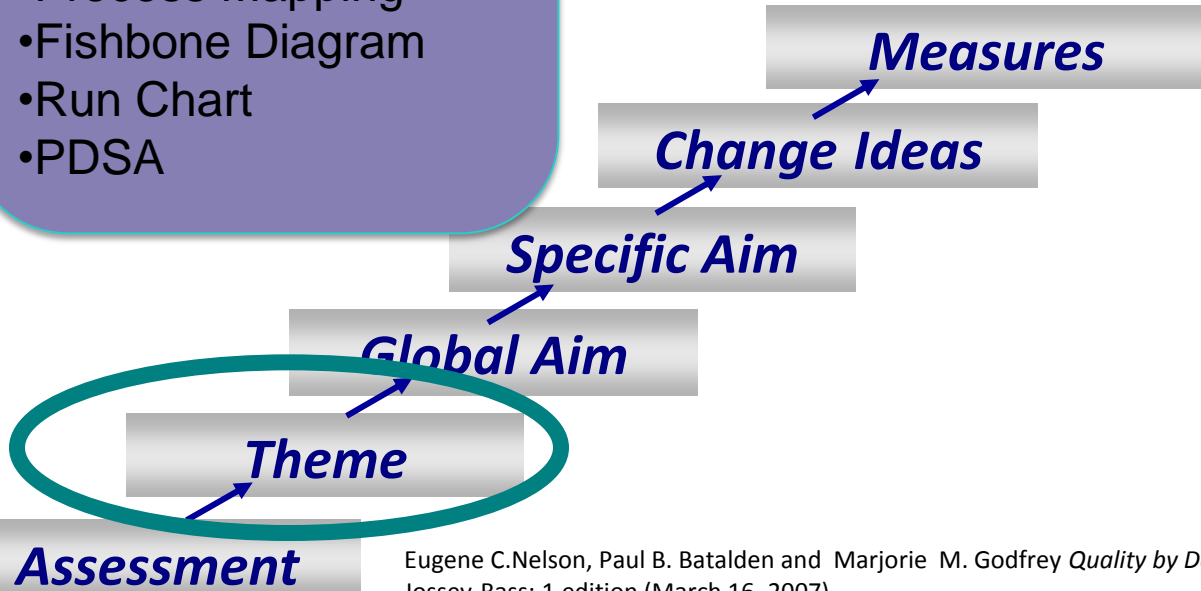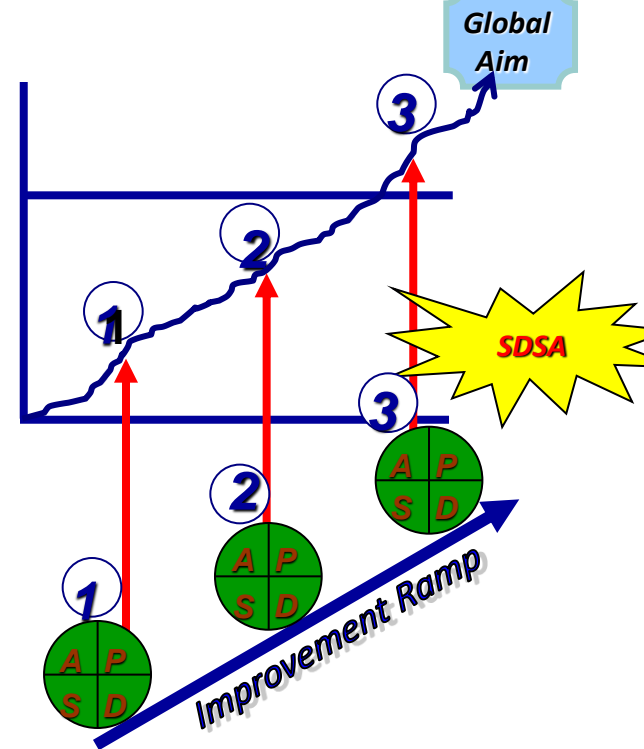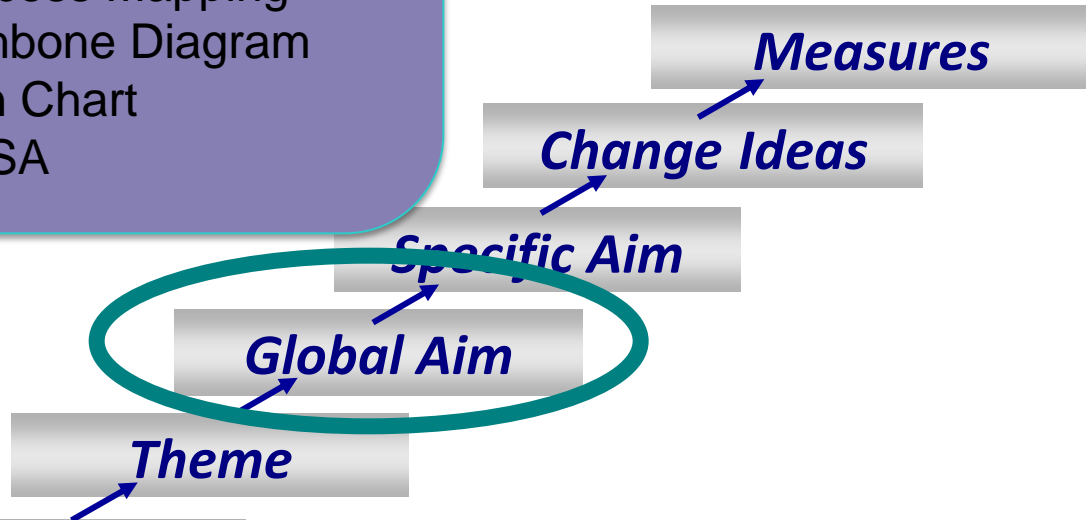 - Reducing check-in procedure

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Sample Global Aim

_____

We aim to _____.

The process begins with _____and ends with _____.

By working on this process we expect_____.

It is important to work on this now because_____.

Sample Global Aim

We aim to improve patient access to provider in the ABC Practice.

The process begins with the patient calling for an appointment and ends with the patient being scheduled with their provider of choice.

By working on this process we expect to increase patient satisfaction, provider satisfaction and increase availability to access provider of choice. It is important to work on this now because of the lengthy wait time of appointment being scheduled.

Principles of an Effective Global Aim Statement

- State aim clearly

- Focus on a PROCESS improvement

- Focus on Patients/Families

- Follow template to determine boundaries

- Avoid aim drift

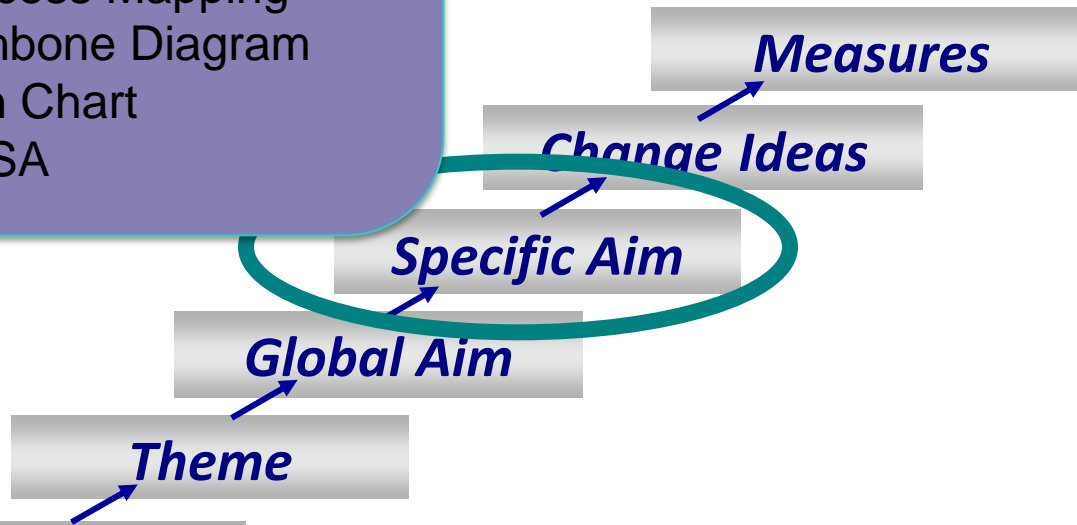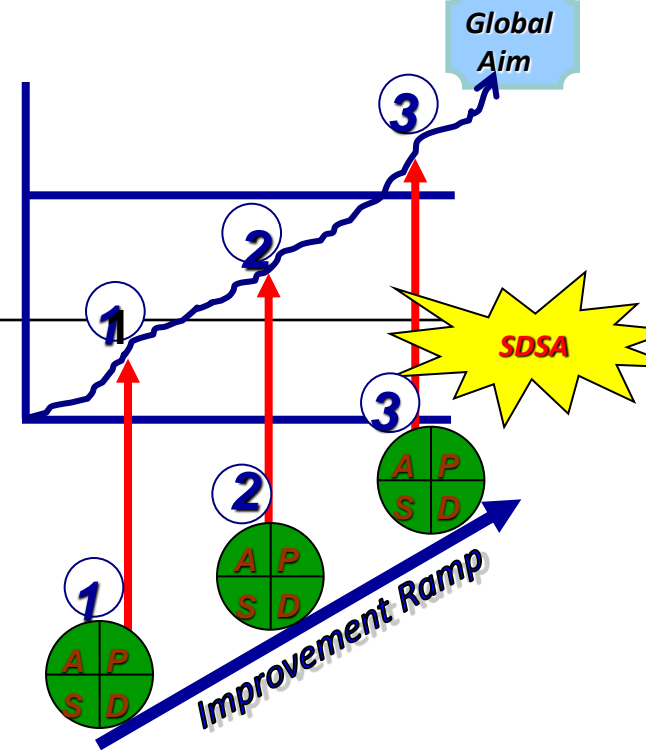- Be prepared to fully shift aim if necessary
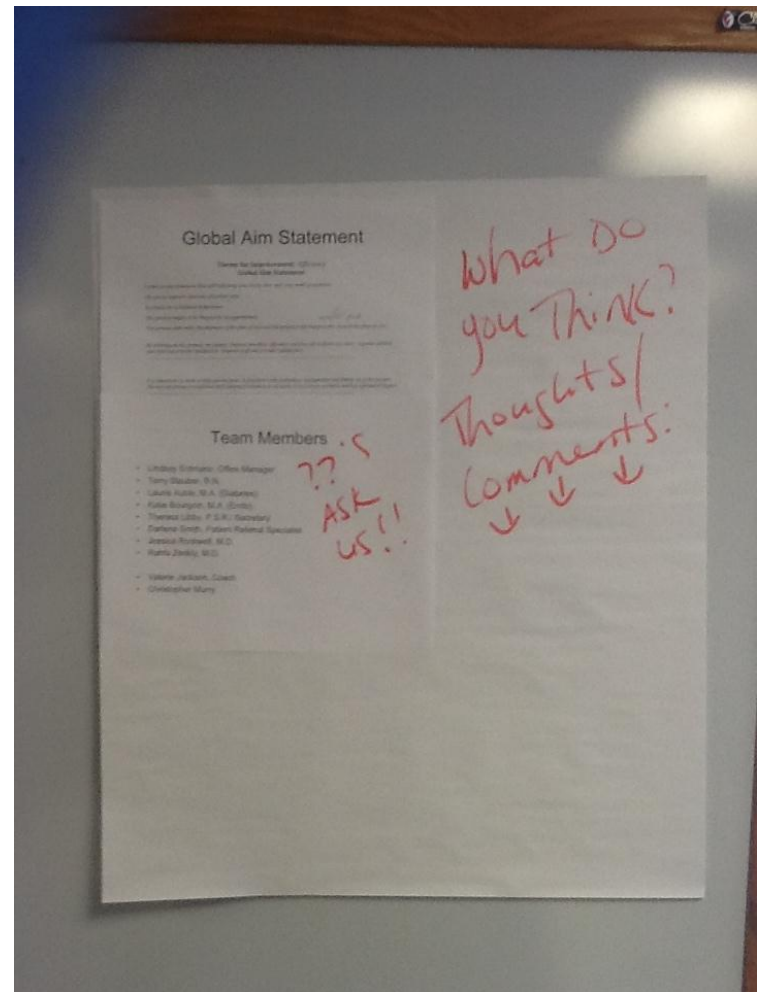
The "Path Forward"

Dartmouth Microsystem Curriculum

Improvement Ramp

Global Aim

3

2

1

SDSA

3

2

1

Improvement Ramp

PDSA

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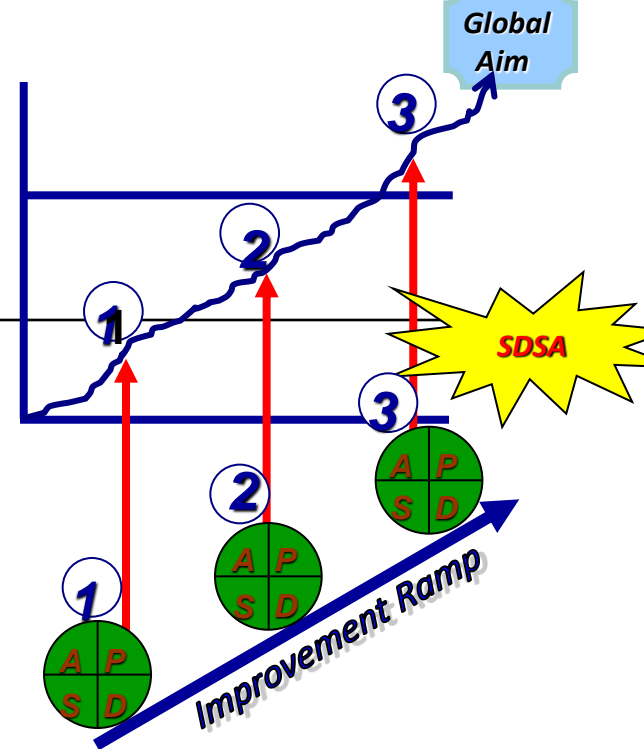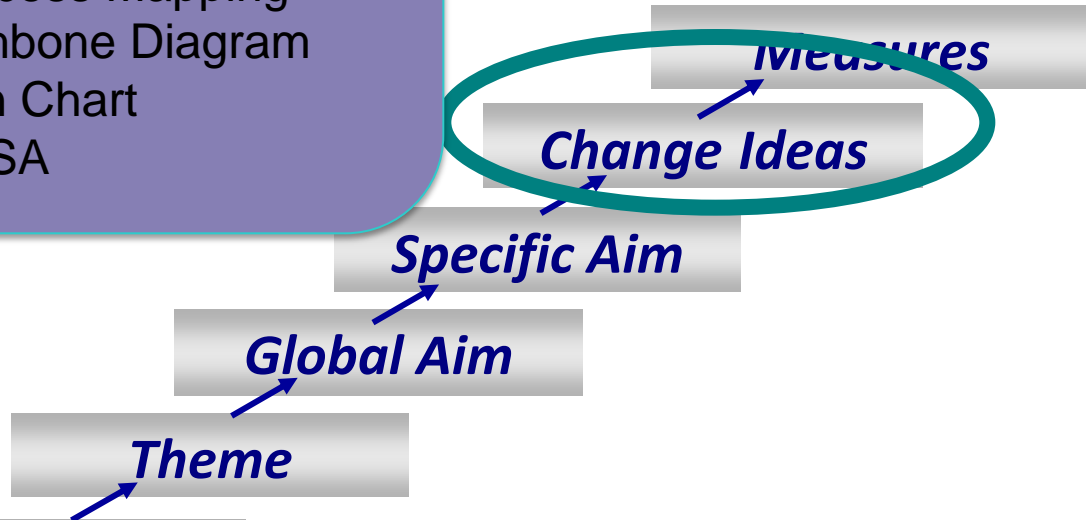
Sample Specific Aim

We will decrease the number of days to 3rd next available for a complete physical exam from 63 days to 14 days by September 17, 2012.

The "Path Forward"

Dartmouth Microsystem Curriculum
Improvement Ramp

Global Aim

3

2

1

SDSA

3
A P
S D

2
A P
S D

Improvement Ramp

1
A P
S D

PDSA

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Jossey-Bass; 1 edition (March 16, 2007)

Where Do Change Ideas Come From?

- Best evidence
- Change concepts – (eliminate waste, improve flow, manage variation)
- "Pain Points"
- Brainstorming

Change Ideas – Brainstorming!

The "Path Forward"

Dartmouth Microsystem Curriculum

Improvement Ramp

Global Aim

3

2

1

SDSA

3
A P
S D

2
A P
S D

1
A P
S D

PDSA

Improvement Ramp

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Measures – simple tics and tallys
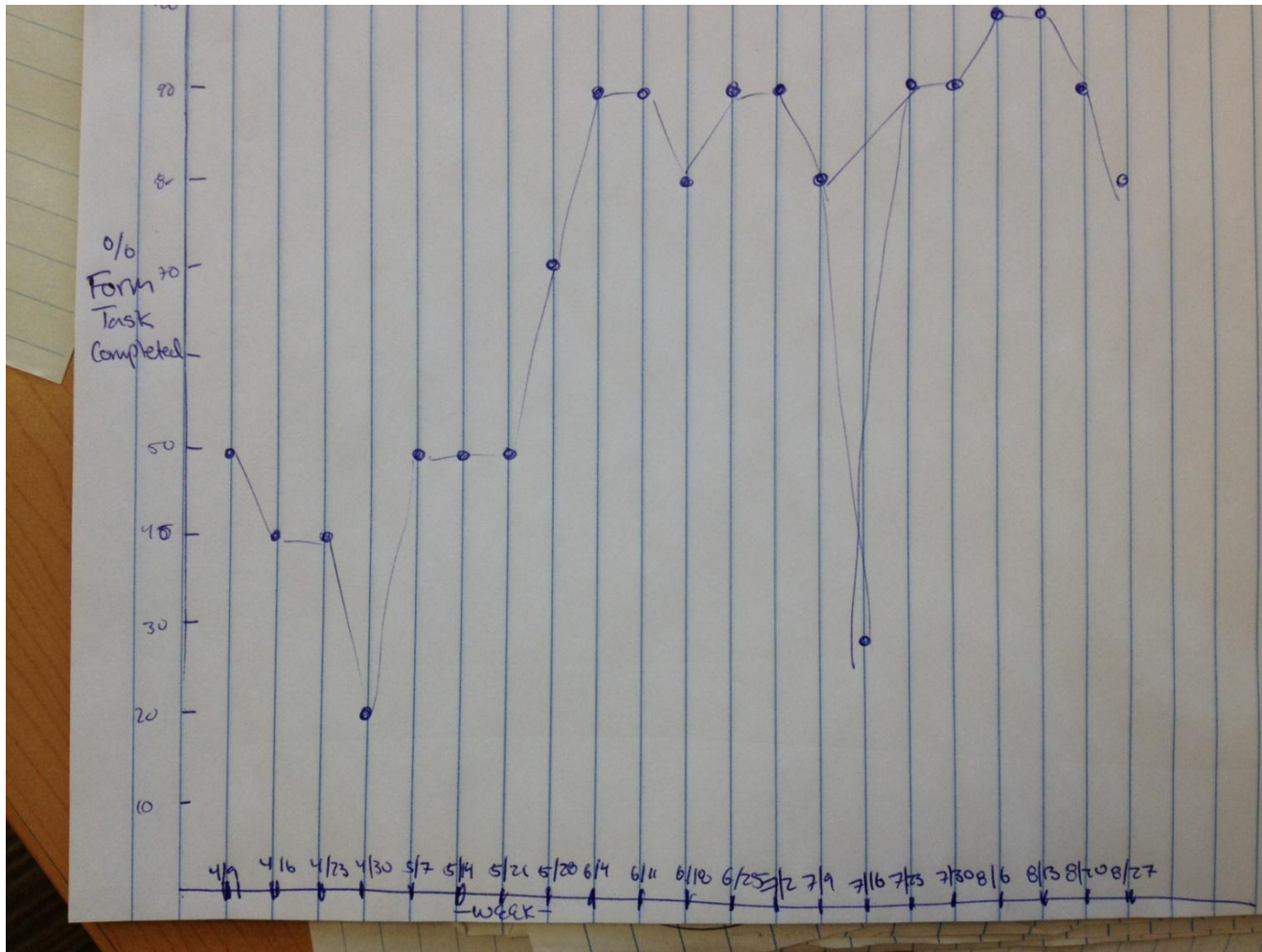
Percentage of Form Task Completion by Week

Baseline Measurement

	A	B	C	D	E
1	Request origin	# of requests/# days	N	Average request/day	% within 48 hrs
2	Task list	19-34 requests q 2 hrs	23	26/day	60%
3	Pharmacy fax	17 requests over 6 days	17	2.8/day	75%
4	Nurse line	7 requests over 5 days	7	1.4/day	86%
5	Script line	11 requests over 6 days	11	1.8/day	99%

% filled within 48 hrs
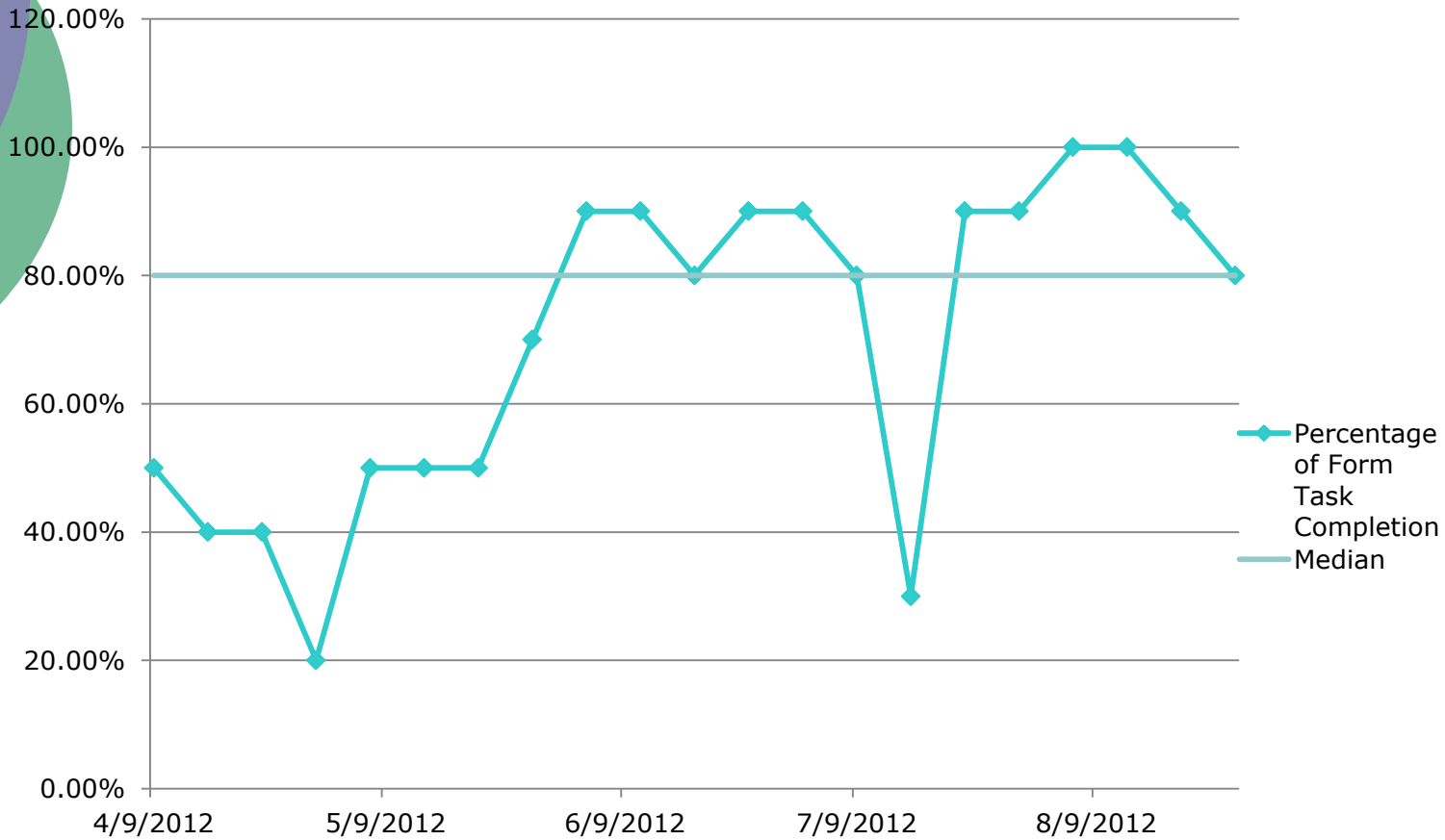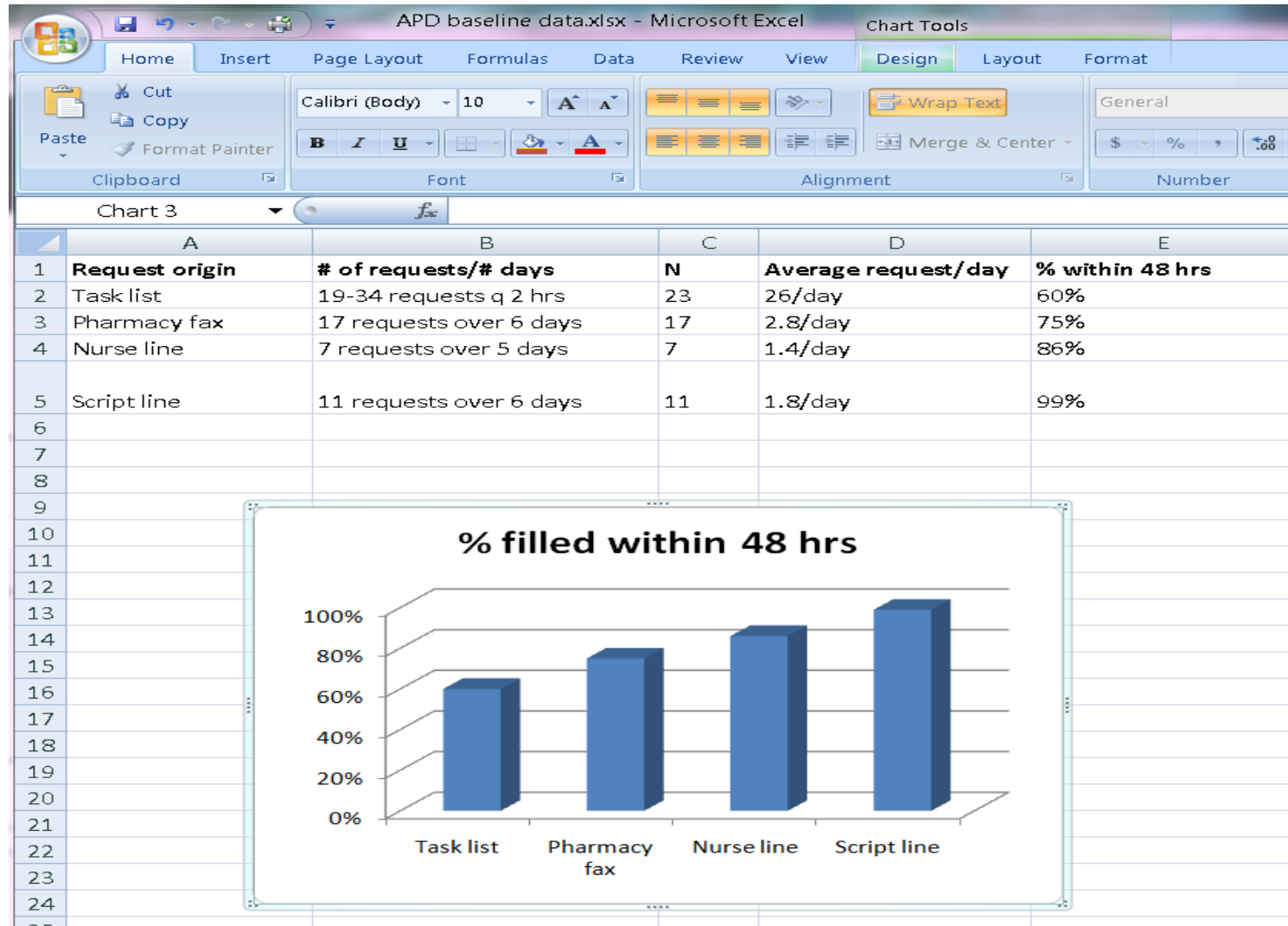
Improvement Tools

Process Maps

- Help team members understand what is happening now in a process
- It is important to flowchart the *current* process, not the desired process, unless…

Sample Process Map
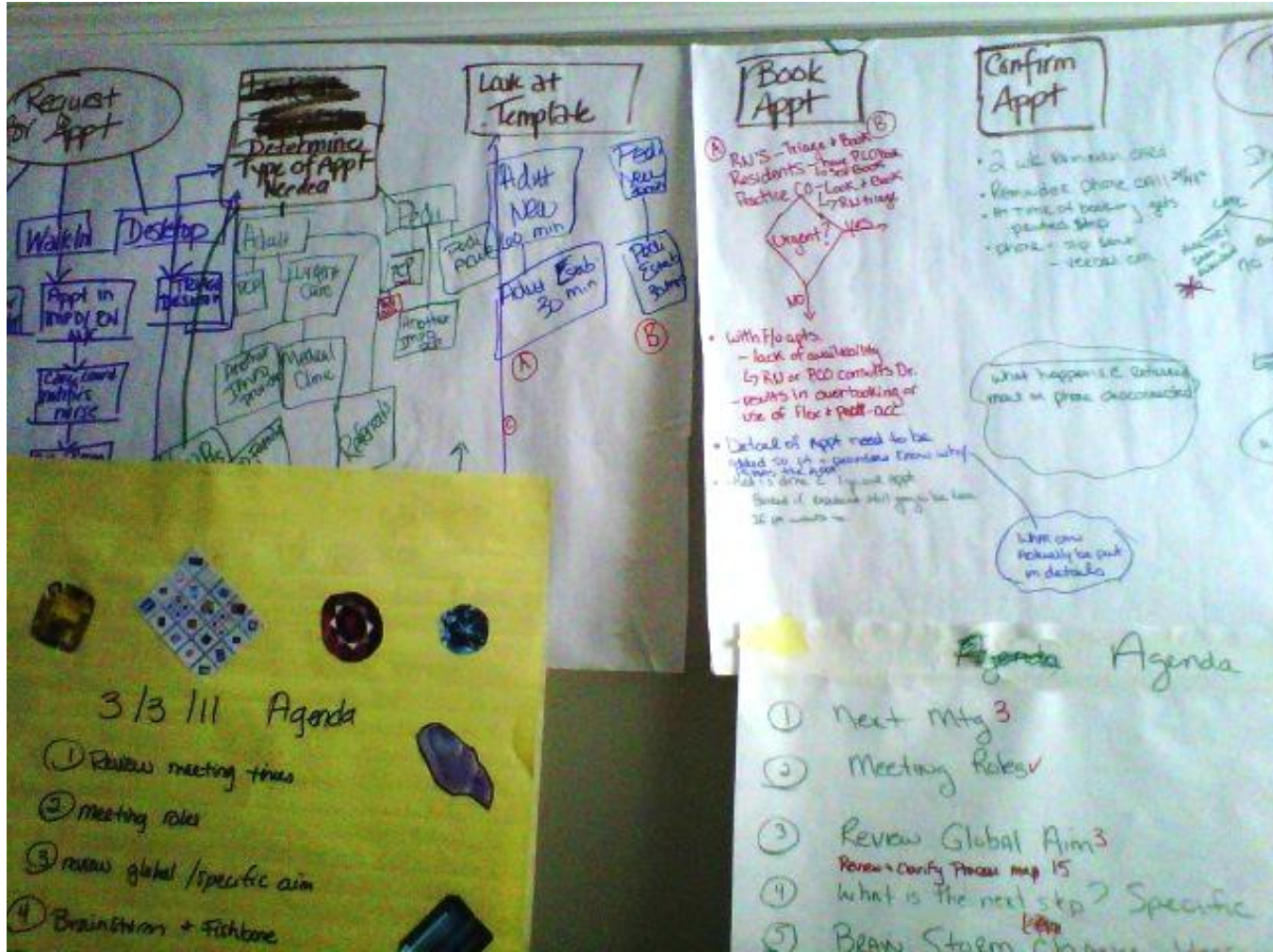
Sample Process Map
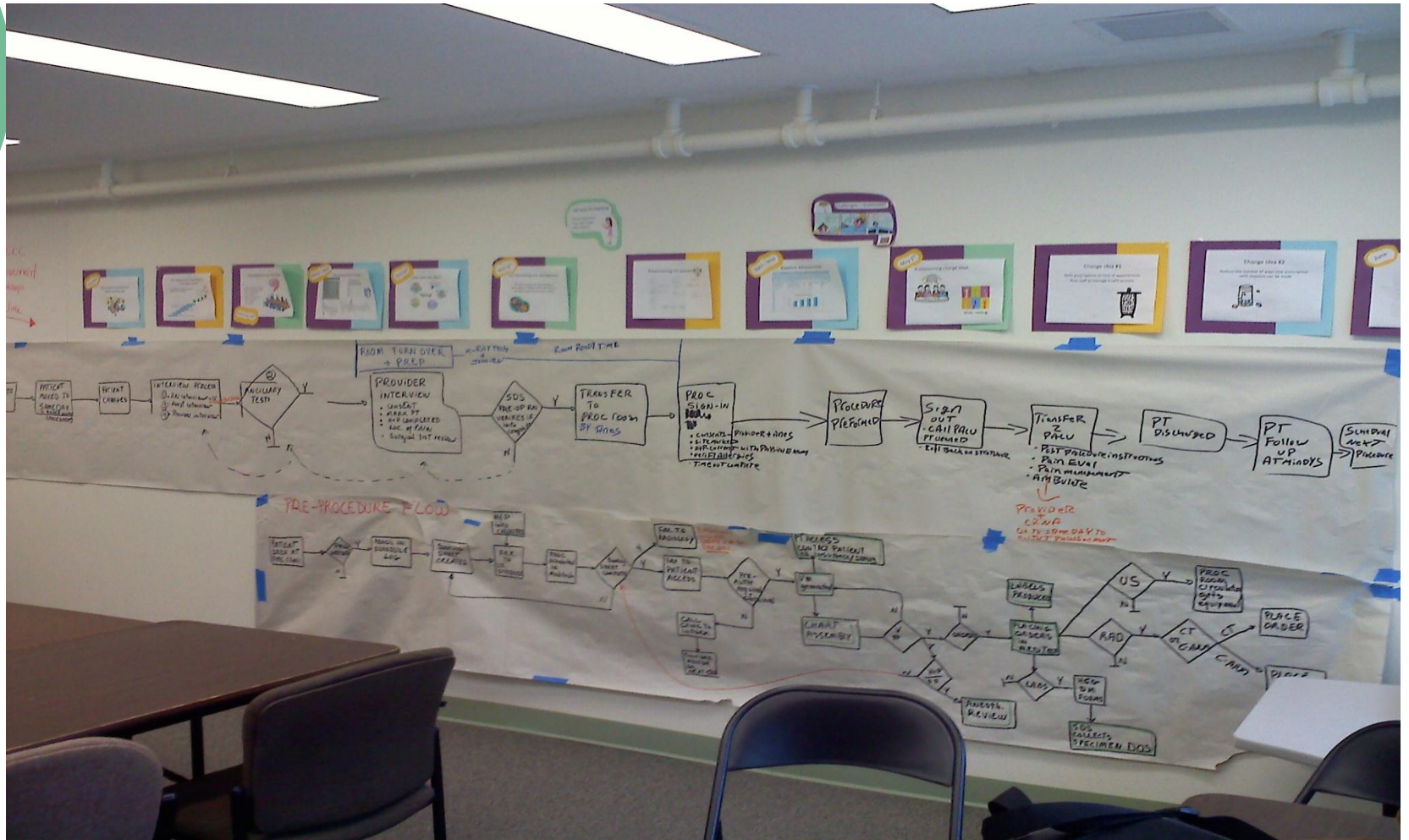
Flowcharting the process

CURRENT PRESCRIPTION REFILL PROCESS - APRIL 2011
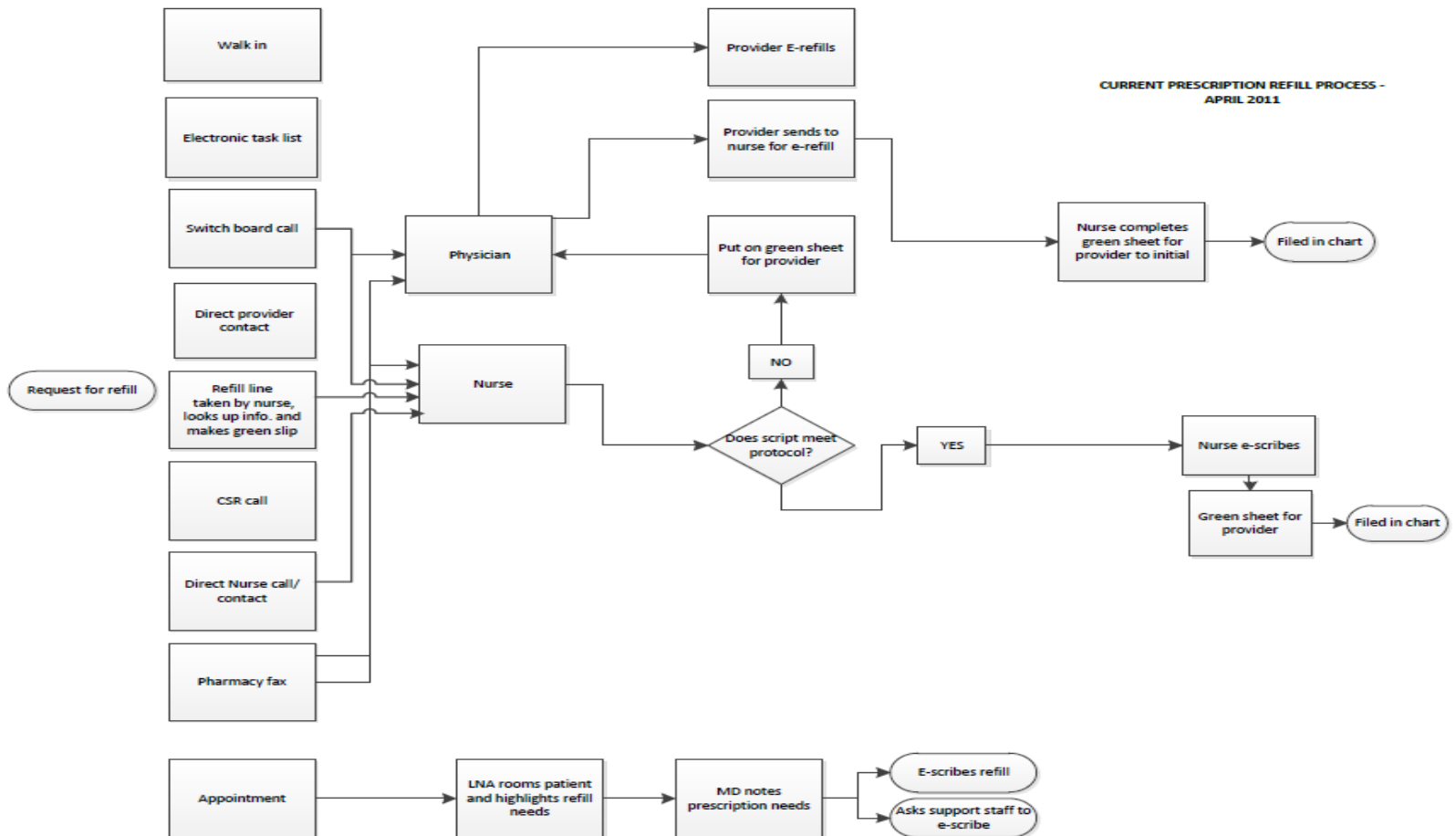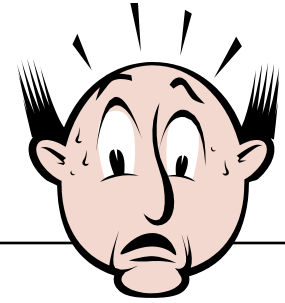
Fishbone (Cause & Effect) Diagrams

- Fishbone diagrams are a way to organize your thinking about the possible causes or solutions to a problem.

- The ideas generated by working on a fishbone need to be confirmed with data.

- The ideas from a fishbone can be used to generate one or more specific aims or change ideas.
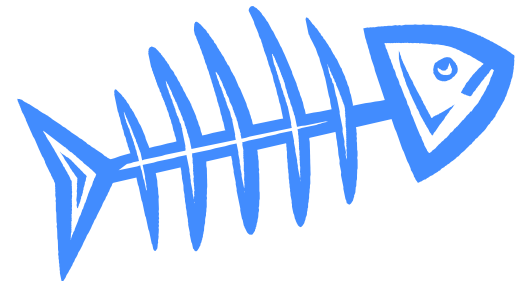
The "Path Forward"

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SDSA

Tools/Skills:
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1 A P S D

2 A P S D

3 A P S D

PDSA

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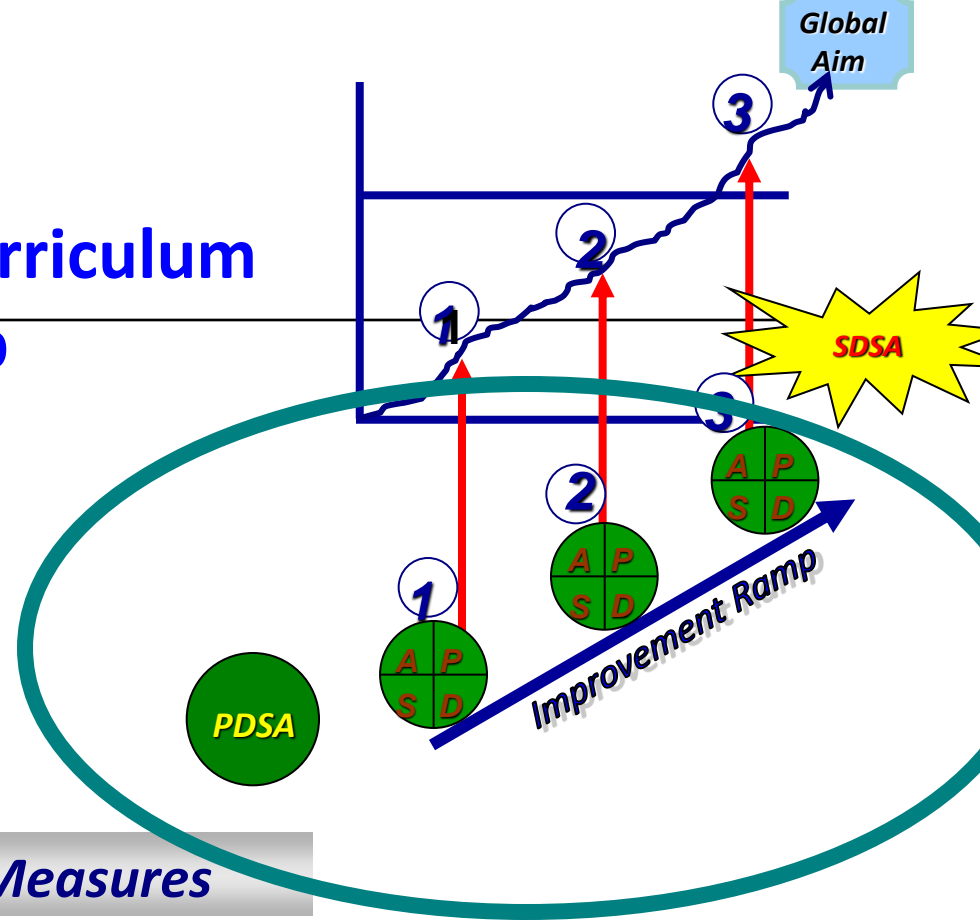
Plan **D**o **S**tudy **A**ct
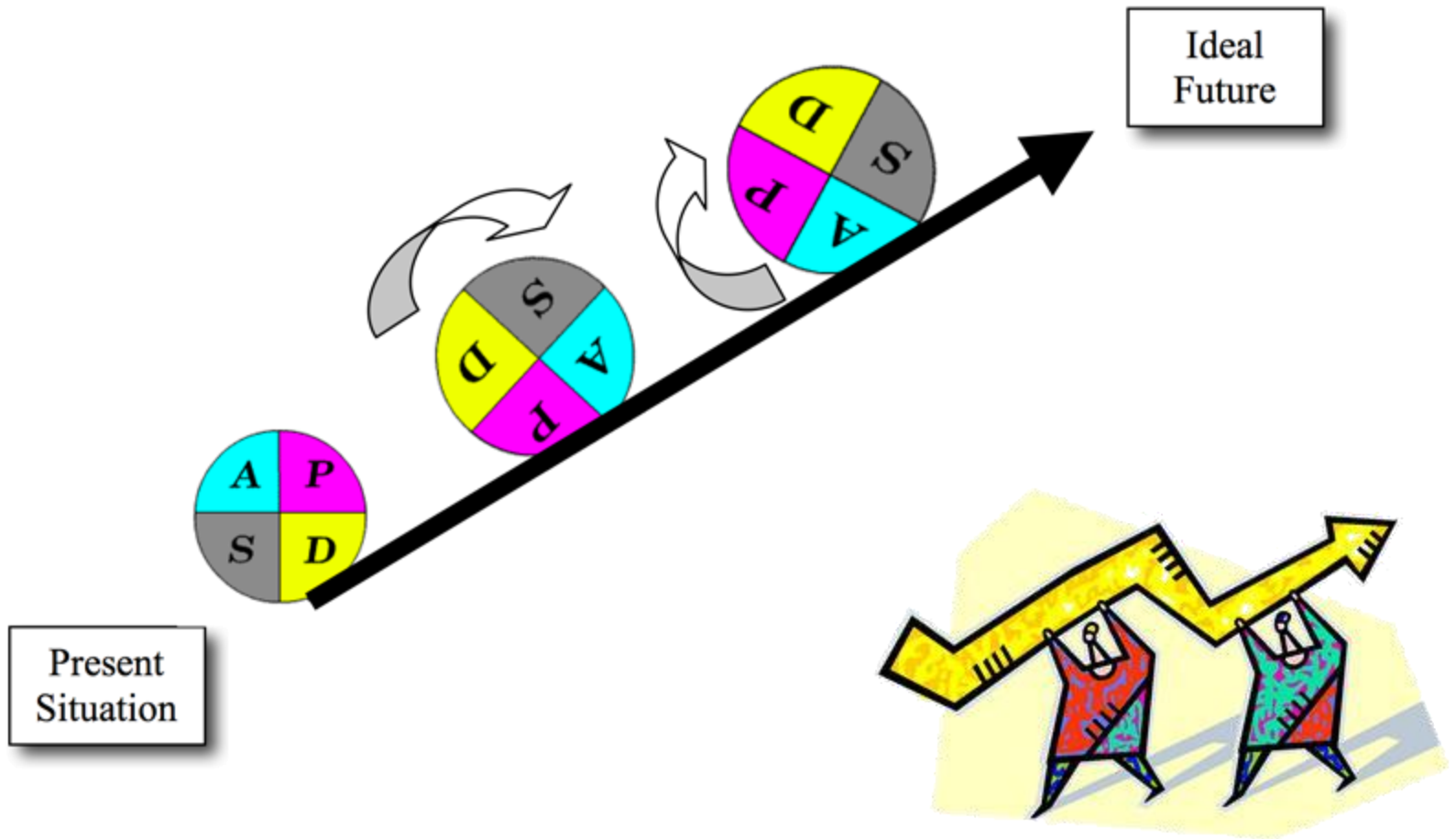
Why Test Changes?

- Increases belief that the change will result in improvements in your setting
- Learn how to adapt the change to conditions in your setting
- Evaluate the costs and "side-effects" of changes
- Minimize resistance when spreading the change throughout the organization

THE PDSA CYCLE

Act

- What changes are to be made?
- Next cycle?

Change, Keep or Toss?

Plan

- Objective
- Questions and predictions (why)
- Plan to carry out the cycle (who, what, where, when)

Study

- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

Do *(small scale)*

- Carry out the plan
- Document problems and unexpected observations
- Begin analysis of the data
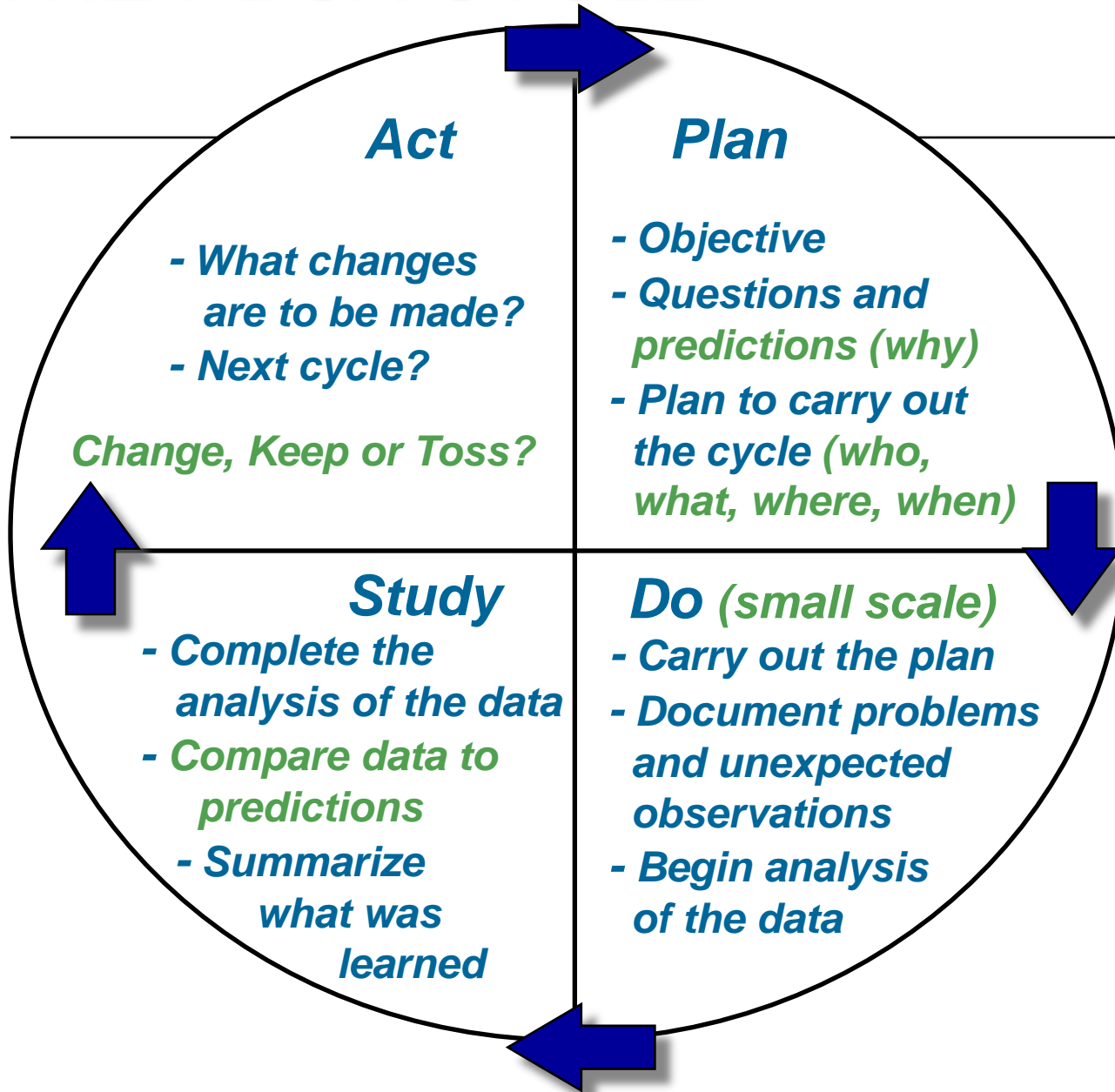
TIPS FOR SUCCESSFUL TESTS OF CHANGE
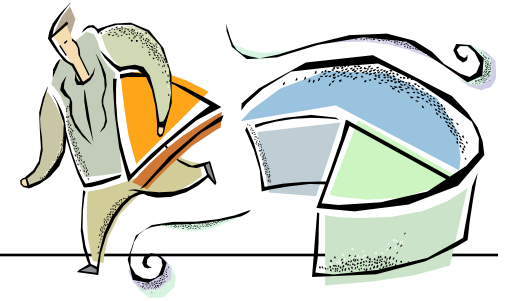
- Plan multiple cycles for a test of a change
- Think a couple of cycles ahead
- Scale down the size of the test (the number of patients or location)
- Test with volunteers
- Be innovative to make the test feasible
- Collect useful data during each test
- Test over a wide range of conditions. Test quickly; ask, "What change can we test by next Tuesday?"

The Three Faces of Performance Improvement

Aspect	Improvement	Accountability	Research
Aim:	Improve Care	Compare, reassure, spur change	New knowledge
Methods:			
• **Test observable**	Yes	N/A –evaluate current performance	Test blind or controlled
• **Bias**	Accept stable bias	Adjust data to reduce bias	Design to eliminate
• **Sample size**	Just enough data-small sequential samples	N/A – report 100%	Just in case data
• **Hypothesis flexible**	No-revised as learn and test	No hypothesis	Fixed hypothesis
• **How to determine improvement**	Run or Shewhart control charts	No focus on change	Hypothesis, statistical tests: F-test, t-test, chi square, p value
• **Testing strategy**	Small sequential tests	No tests	1 large test
• **Data confidential**	Data used only by those involved in improvement	No subjects-data is for public	Subjects protected

Source: Institute for Healthcare Improvement 2010

PDSA Worksheet

PLAN-DO-STUDY-ACT

Team/Practice Name:_____

Objective:_____

Predictions (what do we think will happen and why?):_____

_____

PLAN for change or test and collection of data:

Tasks to be completed to run test of change	Who	When	Tools Needed	Measures

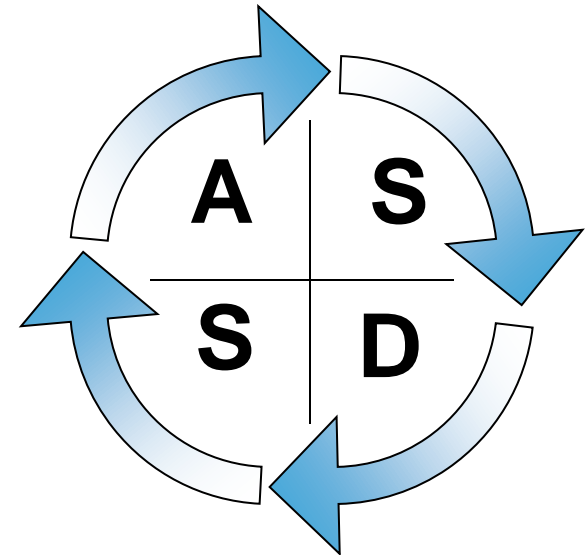**DO**: Carry out the change or test; Collect data and begin analysis.

STUDY: Complete analysis of data and compare to your predictions; Summarize what was learned.

ACT: Refine the change based on what was learned from the test. Plan for the next cycle.

PDSA ⟷ SDSA
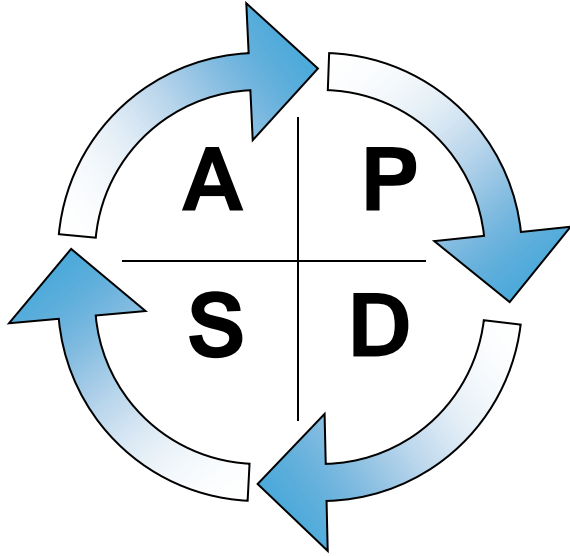
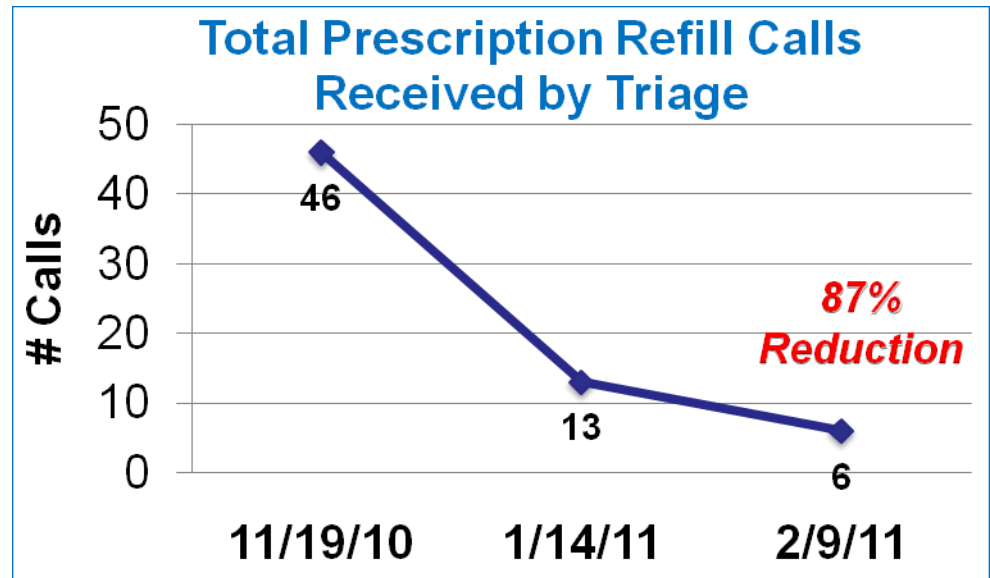**Experiment**

Standardize

Outcomes

Improvements to Medication Refill Process

1. Collected data to measure
   - Number of inbound prescription refill calls
   - Average length of call (1.83 min)
2. Redesigned process for incoming faxes to segregate refill requests from all others
3. Changed message on automated refill line to set realistic expectations for patients
4. Educated staff to direct refill requests to automated refill line rather than to triage staff
5. Re-sampled data to measure results of improvement
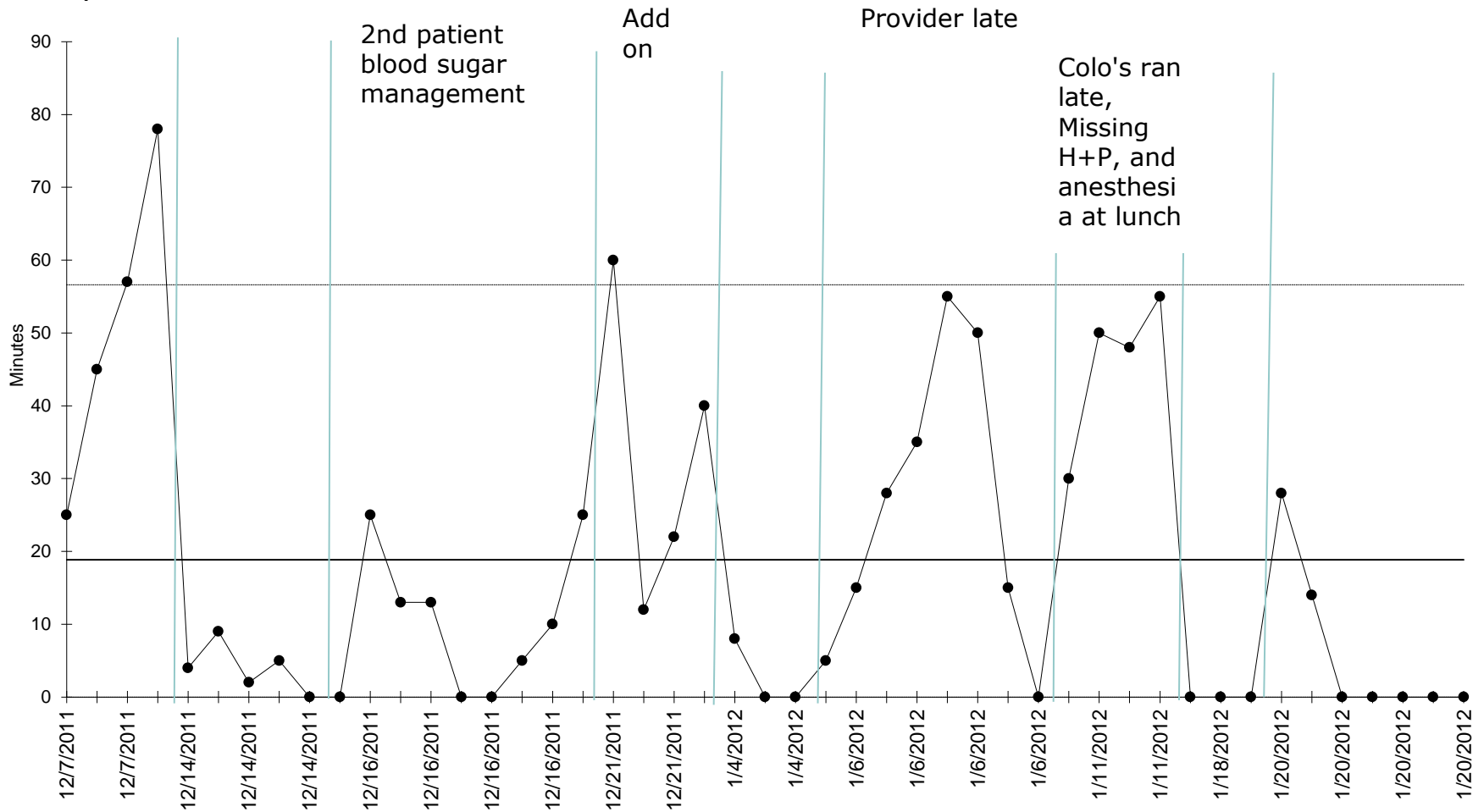6. Next Step: Measure Patient Satisfaction

Total Prescription Refill Calls Received by Triage

Calls

50
40 — 46
30
20 — **87% Reduction**
10
0 — 13
6

11/19/10   1/14/11   2/9/11

Total Triage Time Spent on Refill Calls
(# calls x 1.83 min avg/call)

Reduced from *high* of 84 min/day
To *low* of 11 min/day

Saved 6 hours/week!

START TIME DELAYS: MINUTES

Lessons Learned

- Project focus vs. learning organization
- Long-term commitment
- Importance of context
- Art vs. science

Resources

- Clinical Microsystems Website
  - clinicalmicrosystem.org
- Coaching Microsystems program

  www.mpin.org

  http://clinicalmicrosystem.org/events/ctc/

- Literature

  Quality by Design, Nelson, et al.

  Fifth Discipline, Peter Senge

  The Team Handbook