



arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis

## Network 18 Fistula First Late Adaptor Project

Introducing Rapid Cycle Improvement  
February 27, 2008

### Fistula First Goals (AVF Rates)

- CMS goal – 66% by June 30, 2009
- Yearly Network 18 goal – 53.4% by June 30, 2008
- Yearly Network Stretch Goal – 55.0% by June 30, 2008
- Dec. 2007 AVF rates: NW 18 – 52.0%  
US – 48.6%



2

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis

## FFBI Partners

- Dialysis facilities
- Dialysis patients
- Nephrologists
- Surgeons
- CMS
- ESRD Networks
- State Survey Agencies
- QIOs
- And many more!

3



## Tools & Best Practices: Fistula First Change Concepts

1. Routine CQI Review of vascular access
2. Timely referral to nephrologist
3. Early referral to surgeon for “AVF Only”
4. Surgeon Selection
5. Full range of appropriate surgical approaches
6. Secondary AVFs in AFG patients
7. AVF evaluation/placement in catheter pts
8. Cannulation training
9. Monitoring and maintenance
10. Continuing Education
11. Outcomes feedback

4

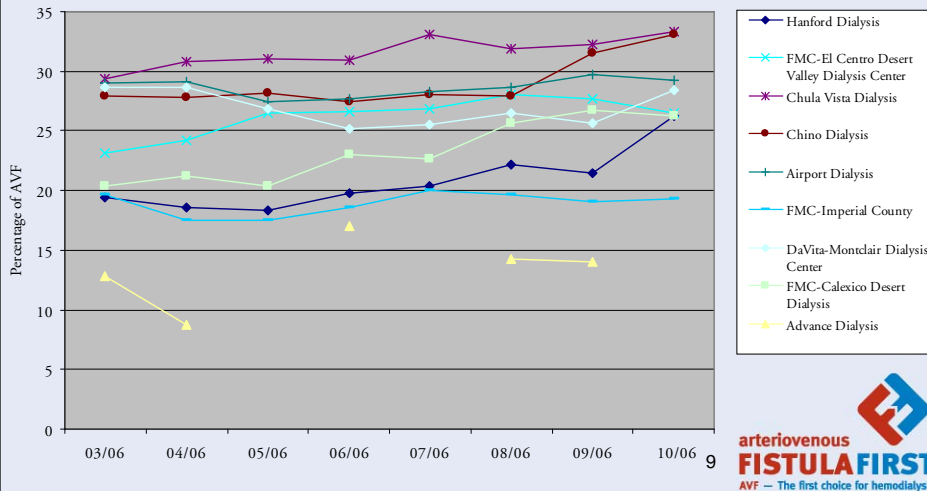






## Late Adaptor Group: Goal – 6% Increase AVF rate in the next 6 months – you can do it!

AVF Trend: <40% AVF Rate FIP Facilities



## Why “Late Adaptors”?

- AVF rate < 40%
- Long-standing issues
- Remotely located
- No good surgeon in the area
- Patient insurance problems
- AVFs not maturing
- Cannulation Problems
- More?



## What have we tried before?

- Facility monitoring & feedback
- CQIs and/or FIPs
- Fistula First Sharing Sessions
- Facility Site Visits
- Network letters to nephrologists and vascular surgeons
- What worked? What did not?

11



## Need new approach!

***Rapid Cycle Improvement:  
Simple Methods, Powerful  
Results***



## Special Acknowledgement for Content Contributions:

Institute for Healthcare Improvement  
Associates in Process Improvement  
Paul Plsek and Associates  
Laura L. Adams  
President and CEO, Rhode Island Quality Institute  
Faculty, Institute for Healthcare Improvement

13



## *Aims to Action*

14



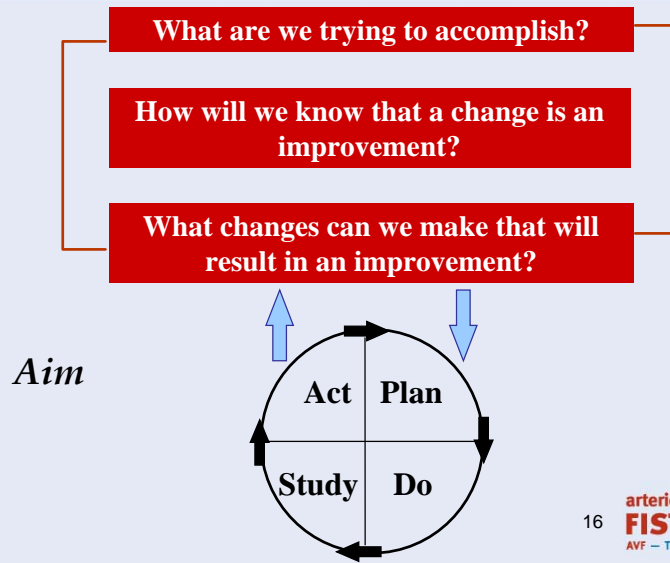
# What is Rapid Cycle Improvement?

- Variant of process improvement that:
  - relies on existing knowledge
  - dramatically shortens discovery process
  - works on “rapid trial & learn” method
  - relies heavily on action

15



# Model for Improvement



16



## Root-Cause ANALYSIS (Fishbone Diagram)

- Determine the problem and create a problem statement (effect). Write it at the right center of the chart
- Brainstorm the major categories of causes of the problem. Write them as the main branches steaming from the center line
- Brainstorm all possible causes of the problem. Ask “Why did this happen?” about each cause.

17

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



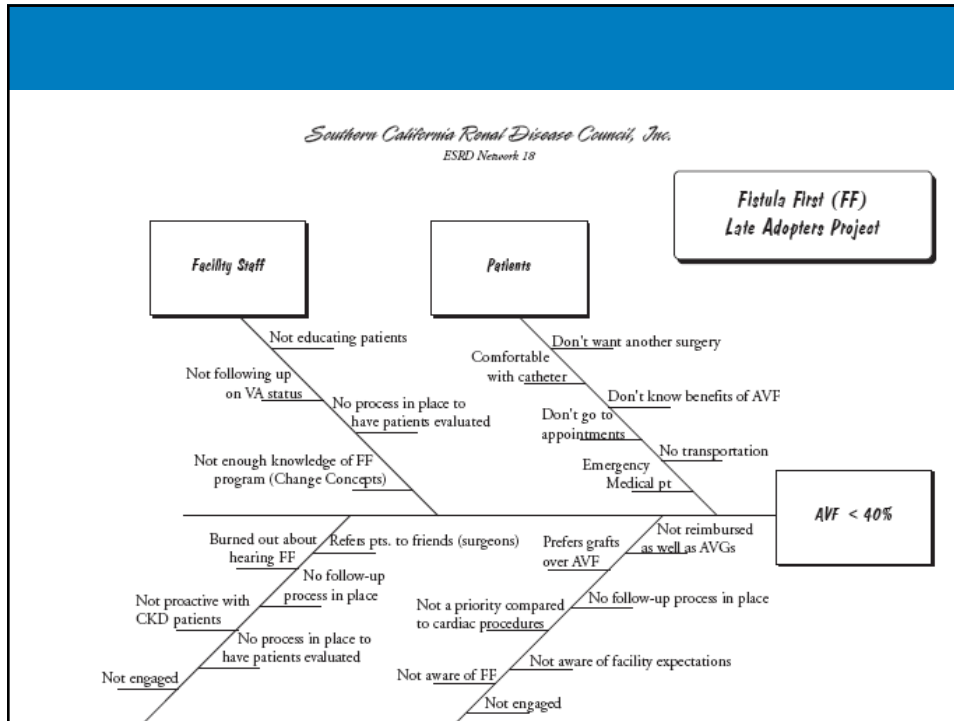
## Root-Cause ANALYSIS (Fishbone Diagram – cont).

- Write sub-causes stemming from the category of causes
- Collect data to confirm root-cause
- If no further causes can be identified, then you found the root causes of the problem

18

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis





## Plan-Do-Study-Act

- **Plan** – Identify Opportunity and plan for change
- **Do** – Implement the Change on a small scale
- **Study** – Use data to analyze for the change and determine whether it made a difference
- **Act** – If the change was successful, implement the plan and continuously monitor results. If the change did not work – start the process again.

# The Myth of One **Big** Improvement

- Research
- Benchmark
- Plan, Plan, Plan, Plan, Plan
- Educate, Educate, Educate
- Roll Out (often 12- 18 months)
- Debug

*By-products:*

*Skepticism & resistance.*

*Lost energy & resources before the roll-out leading to apathy and discouragement.*

*“Bugs in the system” at roll-out resulting in the belief that the improvement does not work.*

*Lost time and opportunity.*

*and...the problem has changed before you get to a solution.*

21



# This Is Different From Research!

## Learning and Improving

**Aim: Applying New Knowledge**

Methods:

- Test observable
- Stable bias
- Just enough data
- Adaptation of changes
- Sequential tests

## Doing Research

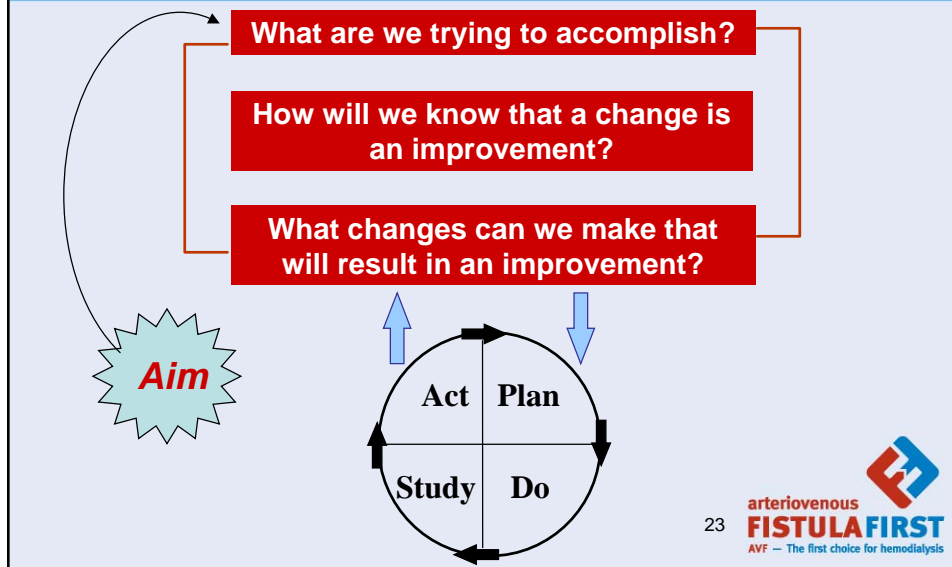
**Aim: Discovering New Knowledge**

Methods:

- Test blinded
- Eliminate bias
- Just in case
- Fixed hypothesis
- One large test



## Model for Improvement



## Developing Your Aim

- Write a clear statement of aim--make the target for improvement unambiguous
- Include numeric goals
- Set "stretch" aims
- Focus on issues that are important to your organization - choose appropriate goals

## Developing Your Aim (cont.)

- Improvement relies on intention to improve
  - Senior leaders set & align aim with strategic goals
  - Agreement on aim is critical
- Include a specific time frame for accomplishing your aim

25



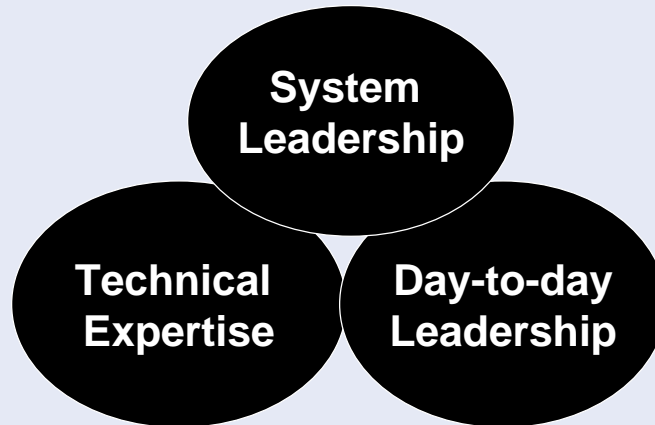
## Examples of Aims

- To increase the number of patients utilizing AVF as a primary vascular access for hemodialysis by 6 percentage points between January and June 2008
- 100% of all dialysis patients with failing grafts will be converted to secondary fistulae by XYZ date

26



## Three Ingredients of an Effective Team



## Establishing Your Team

- Have day-to-day, system, and technical expertise
  - Day-to-day leader gives at least 20% (loses sleep)
  - System leader can arrange for the resources to do the work
  - Technical experts know the subject matter-- often bedside people
- Use multidisciplinary teams



## Applying The Model: Aims to Action

- Work together in twos or threes
- Identify your project
- Identify:
  - A strong, clear aim statement to guide your improvement work on your project
  - An aim that has a numeric, stretch goal included
  - How you will form your team using the three ingredients of an effective team
- Give feedback to each other in the large group



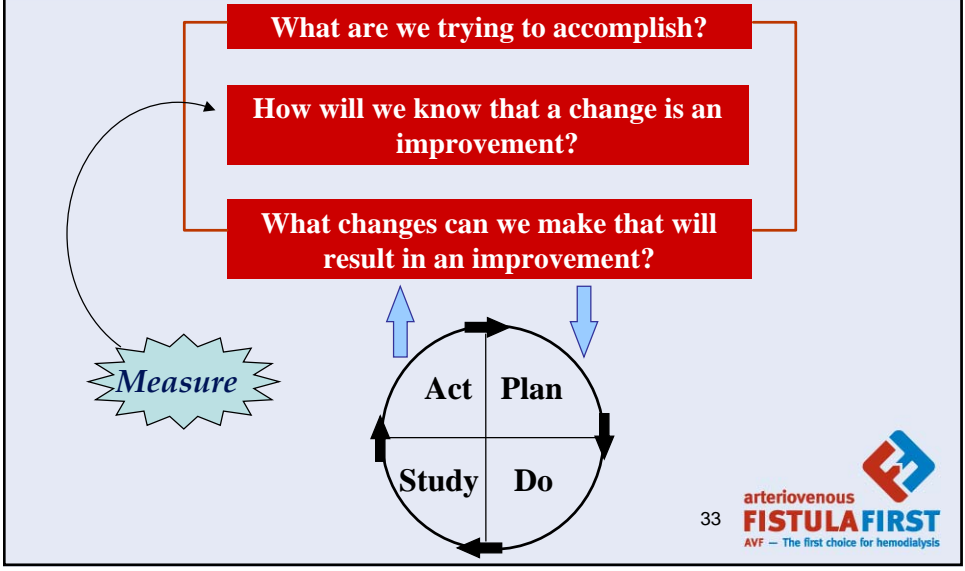
## *Using Data for Improvement*





**You can't fatten a cow by  
weighing it.  
-Middle Eastern Proverb**

# Model for Improvement

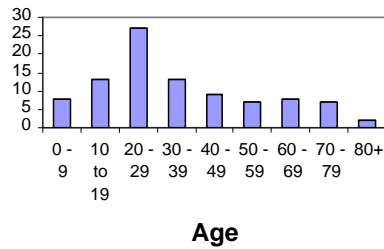


# Measurement Guidelines

- The key measures should clarify the aim and make it tangible
- Use outcome and process measures
- Integrate measurement into the daily routine
- Use qualitative as well as quantitative data
- Seek usefulness, not perfection

# Seek Usefulness Not Perfection

Age Distribution of Asthma ED Patient:  
(n = 94 patients)



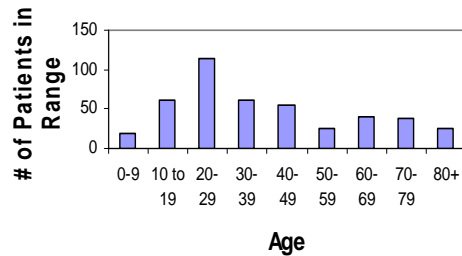
35

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



# Seek Usefulness Not Perfection

Age Distribution of Asthma ED Patients  
(n = 437 patients)



36

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



## Measurement Guidelines

- Use sampling to make measurement efficient
- The question - *How will we know that a change is an improvement?* usually requires more than one measure. Balancing measures help to assure that the *system* is improved.
- Plot data on the measures *over time*

37



## Examples of Sampling Plans Using Satisfaction Surveys

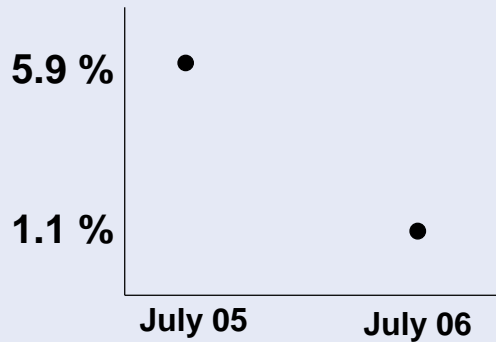
- Call approximately 50% of patients (usually about 15) discharged from the unit each week. Information Systems provides list of all discharges each week.
- Patients are given a short survey and asked to place it in a sealed box before leaving the center. Twenty surveys are randomly selected each week.

38



# The Danger of Comparing Two Data Points!

Peritonitis Episodes/Year

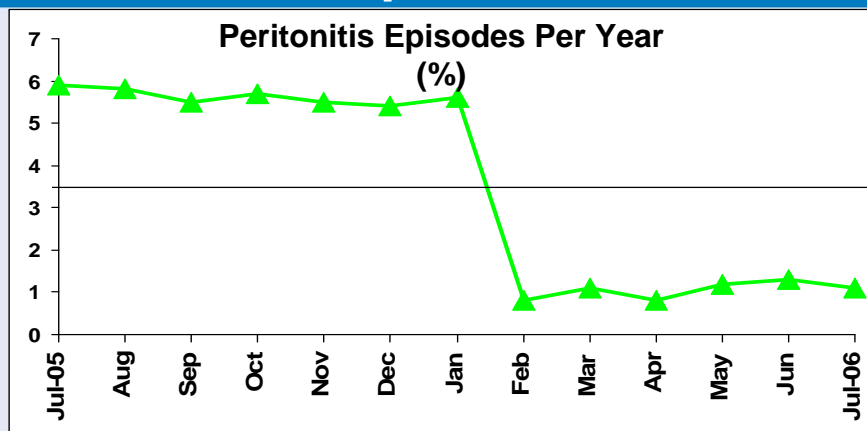


Average = 3.5%



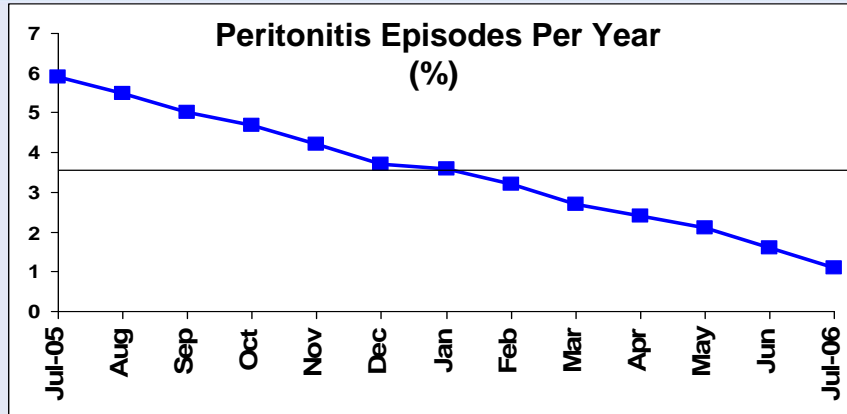
39

# Facility A: Peritonitis Episodes Per Year



40

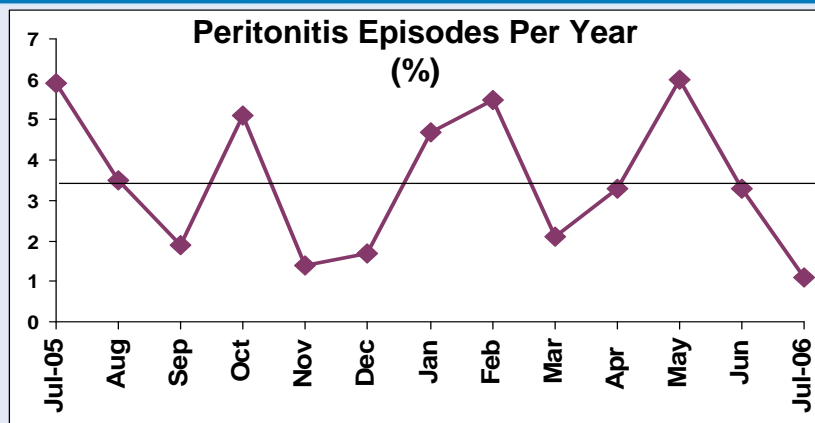
## Facility B: Peritonitis Episodes Per Year



41



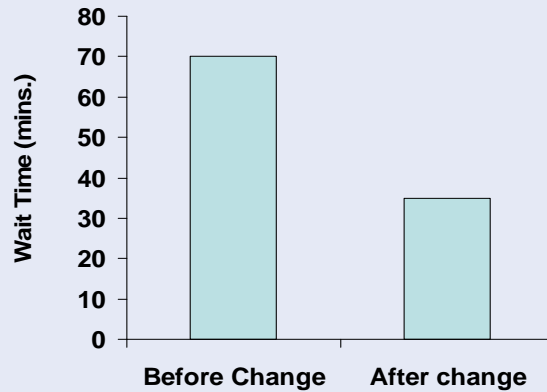
## Facility C: Peritonitis Episodes Per Year



42



## Improvement in Wait Time (Team A)

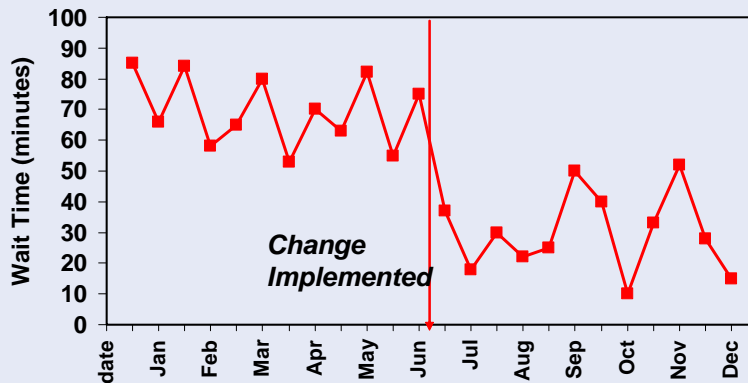


43

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



## Improvement in Wait Time (Team A)

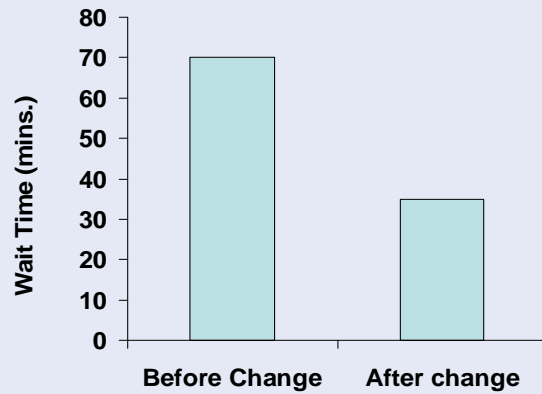


44

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



## Improvement in Wait Time (Team B)

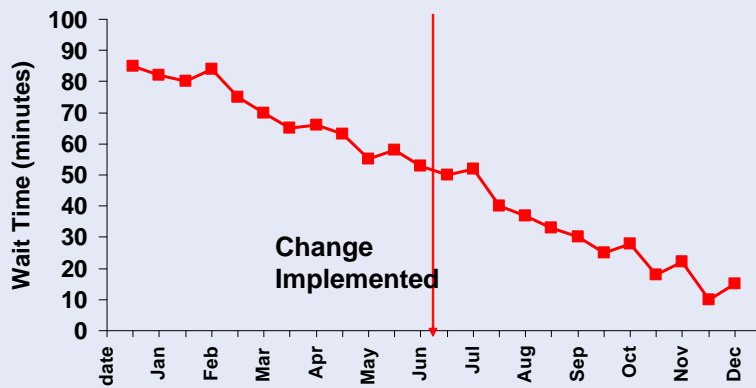


45

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



## Improvement in Wait Time (Team B)



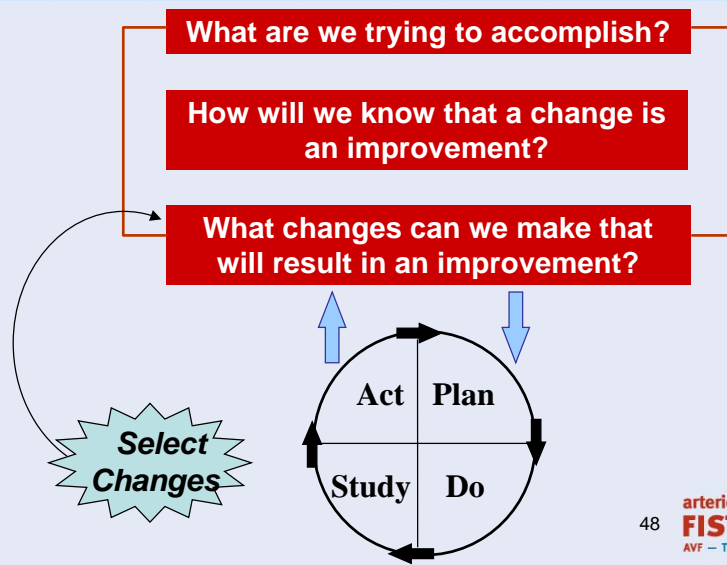
46

arteriovenous  
**FISTULA FIRST**  
AVF — The first choice for hemodialysis



# Conducting Small-Scale (Rapid Cycle) Tests of Change

## Model for Improvement



## Selecting Changes

- *Blatantly steal*: Use the literature, the experience of others, hunches and theories
- Be strategic: Set priorities based on the aim, known problems, and feasibility
- Avoid low impact changes



## Capitalize on Good Ideas... Resources Abound — Steal Shamelessly and Start Testing!

- Example: Hypertension

Go to:

<http://www.ihl.org/IHI/Topics/ChronicConditions/AIIConditions/ImprovementStories/AFocusonHypertensionFourYearsofImprovement.htm>

- Find a team's report of 4 years of learning:
  - Aim (to 70%)
  - Results (from 35%)
  - The Team Learned/Barriers
  - Lessons
  - Measures Information
  - Next Steps/Contact
  - More than 20 changes they tested



## Objective of the Test: Change or No Change?

### Probably Change

Test

Redesign

Eliminate

Reduce

Deliver

Implement

### Probably No Change

Recruit

Distribute

Continue

Examine

Discuss

Teach



## Selecting Changes

- Test the changes on a small scale
  - “By next Tuesday”
  - Capitalize on curiosity
  - Have a bias for the “doable”
- Use change concepts
  - Simplify
  - Error-proof
  - Minimize the hand-offs



## Using the Change Concept of Simplicity: The Probability of Performing Perfectly

No. Elements	Probability of Success, Each Element			
	0.95	0.99	0.999	0.999999
1	0.95	0.99	0.999	0.9999
25	0.28	0.78	0.98	0.998
50	0.08	0.61	0.95	0.995
100	0.006	0.37	0.90	0.99



## To Be Considered a Real Test

- Test was planned, including a plan for collecting data.
- Plan was attempted and data was collected.
- Time was set aside to analyze data and study the results.
- Action was taken, based on what was learned.



## Two Key Points

- Small scale  $\neq$  small change
- Success (or failure) in one PDSA cycle  $\neq$  success or failure of the project

55



## Applying The Model: Developing Tests of Change

- Work together in twos or threes
- Stay with your original aim
- Design a test of change using the worksheet provided
- Give feedback to each other



## The Value of Small Scale Tests of Significant Changes

- Moves us to action and learning
- Promotes “real time science”
- Reduces the need for buy-in during the early phases of testing a change
- Allows us to test multiple changes at one time
- Respects experiential learning
- Is faster and more reliable than “just try this”

57



## Next Steps:

- Perform Root-Cause Analysis
- Utilize PDSA model– Network will provide a template
- Network – monthly monitoring & feedback
- If physicians are issues - MRB help is there!
- Conference Calls
- We are all partners!

58



***I have heard it said by cynics that  
the quality of medical care would be  
far better and the hazards far less if  
we, like pilots, were passengers  
in our own airplanes.***

59



**We are.**

**-Donald M. Berwick, MD, CEO  
Institute for Healthcare Improvement**

60



**Together we can make a  
difference!**



**Svetlana (Lana) Kacherova, QI Director**  
**[skacherova@nw18.esrd.net](mailto:skacherova@nw18.esrd.net)**

**Lisle Mukai, QI Coordinator**  
**[lmukai@nw18.esrd.net](mailto:lmukai@nw18.esrd.net)**

**Southern California Renal Disease Council, Inc.**  
**ESRD Network 18**