

MEASUREMENT OF KEY VARIABLE

Variable: Unit of Measure: Method of Measurement:

1. Enter your data

Table with 32 columns and 4 rows: Date, Time, Measures (X), Moving Range (R)

Average = X-bar = \_\_\_\_\_ Sum of X's / # of X's Upper Natural Process Limit = X-bar + (2.66 x R-bar) = \_\_\_\_\_

2. Do these calculations

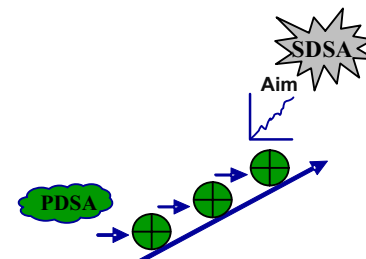
Moving Range = R = (X2 - X1) Absolute #'s only Lower Natural Process Limit = X-bar - (2.66 x R-bar) = \_\_\_\_\_
Average Range = R-bar = \_\_\_\_\_ Sum of R's / # of R's Upper Control Limit for Range Limit = 3.27 x R-bar = \_\_\_\_\_

3. Plot limits, data, averages

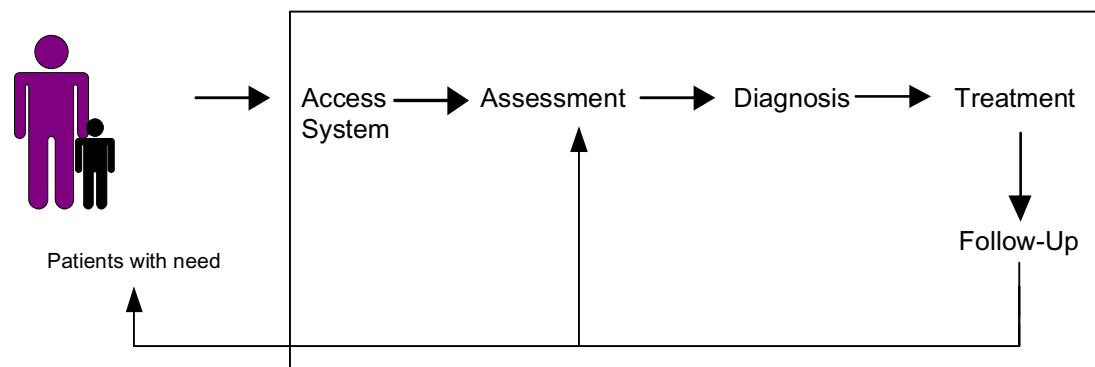
Measurements (X) grid with 32 columns and 7 rows

Moving Range (R) grid with 32 columns and 7 rows

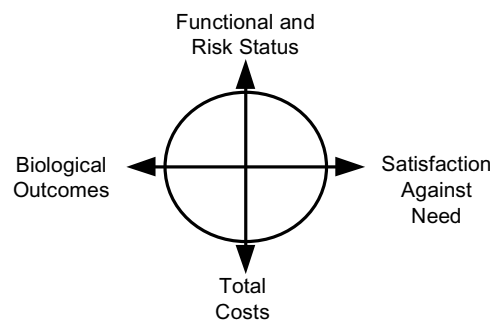
AIM: Accelerate clinical improvement by linking outcome measurements, structure, process and pattern knowledge with the design and implementation of pilot tests of change.



2 PROCESS -> Analyze the process
What's the process for giving care to this type of patient?



1 OUTCOMES -> Select a population
What's the general aim?
Given our desire to limit/reduce the burden of illness for "this type" of patient, what are the desired results?



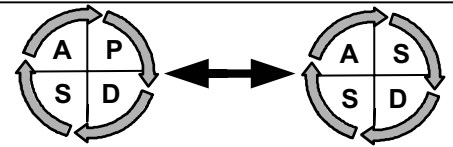
3 PATTERNS -> Identify the common patterns at work (feelings, behaviors, traditions and outcomes)
- Consider working relationships, people's feelings about working here, patient, family and community relationships.
- Do you meet regularly to improve the process of care?
- What have you successfully changed?
- What are the key outcomes for this type of patient?
- How do leaders relate to staff?
- How often do you meet to discuss safety and reliability?
- What is the most significant pattern of variation?

5 CHANGES -> Develop Change Ideas
What ideas do we have for changing what is currently done (the process) to get better results?
- 
- 
MORE CHANGES -> Ideas from literature search?
Evidence to support proposed changes?
Best practices or "benchmarking"?
Change concepts?

4 STRUCTURE -> Visualize the Actual Setting
- What and who's there?
- What equipment?
- What technology is available?

6 PILOT -> Select first/next change for pilot testing
How can we pilot test an improvement idea using the PDSA, plan-do-study-act method?

MAKING IMPROVEMENTS



A. **SELECTED CHANGE** → How would you describe the change that you have selected for testing?

**TEAM MEMBERS** → Who should work on this improvement?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_

**RELEVANT ASPECTS OF:**

- structure
- process
- pattern

B. **AIM** → What are we trying to accomplish? (more specific AIM)

C. **MEASURES** → How will we know that a change is an improvement?

D. **PLAN** → How shall we **PLAN** the pilot? (structure, process, pattern)

- Who? Does what? When? With what tools and training?

- Baseline data to be collected?

E. **DO** → What are we learning as we **DO** the pilot? (structure, process, pattern)

F. **STUDY** → As we **STUDY** and check what happened, what have we learned? (structure, process, pattern)

- Did original outcomes improve?

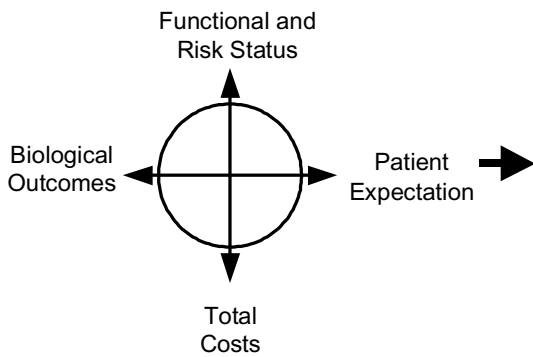
G. **ACT** → As we **ACT** to hold the gains or abandon our pilot efforts, what needs to be done? (structure, process, pattern)

H. **SDSA (STANDARDIZE-DO-STUDY-ACT)** → How do we ensure changes are standardized and practiced?

- What do we measure?

FLOWCHART OF BASIC CLINICAL PROCESS

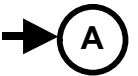
**Patient with need for care**



**Access System**

**Assessment**

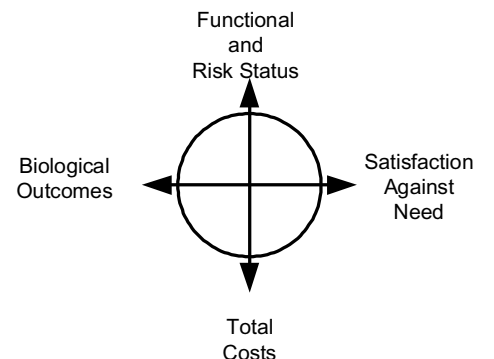
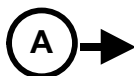
**Diagnosis (Dx)**



**Treatment (Rx)**

**Follow-up**

**Outcomes/Costs**



**Tips:**

- It's important to diagram the actual process first -- to discover improvement opportunities.
- Identify the first step, then identify each additional step by asking "What is the next thing we do?"
- Record steps on sticky notes so they can be easily rearranged.
- If you've written the steps, action verbs are tips to activities, "ifs" are tips to decisions. (See the shape descriptions to the right for treatment of the steps.)
- Reviewing drafts of individual work is a better team activity than creating flow diagrams over again.



Represents the beginning or an ending (i.e., the boundaries) of the process.



Represents an activity (step) in the process.



Represents decision points in the process. They should be written in the form of a question, with a "yes" path.



Represents connections. A letter inside the circle means the process is continued elsewhere on the same page; a number inside means the path is continued on another page.