Testing Changes & Using Data to Learn about Your Changes

Three Key Questions

1. What are we trying to accomplish? **(Aim – main outcome measure)**

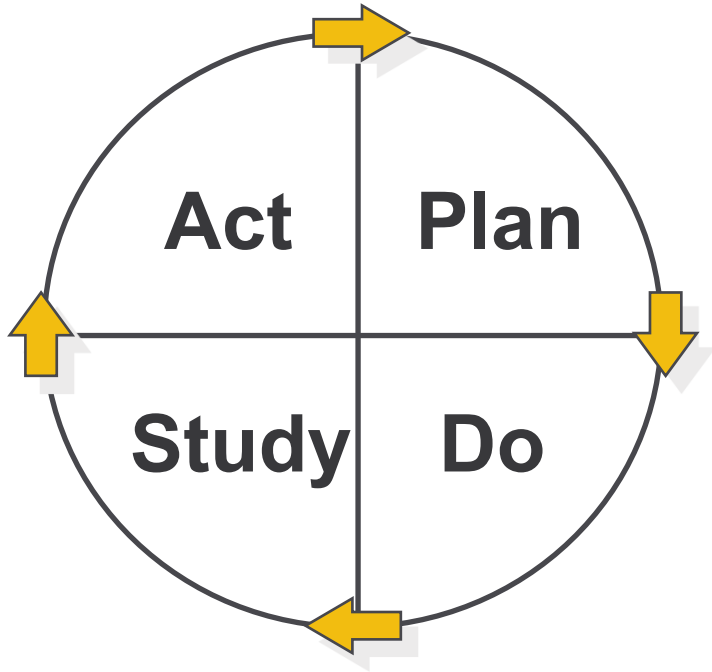
2. How will we know that a change is an improvement? **(Measure – process and balancing measures that link to changes)**

3. What changes can we make that will result in an improvement? **(Change – come from drivers)**

What do we mean by “changes”?

Model for Improvement: Large System Change

To get to Big Change, we need many Small Tests of Change – use the PDSA Cycle



Monthly Measures
1)% patients screened
2) % of patients outreached that were screened
3) Percent of patients screened at visit

Aim

Planned Care: Increase percent of women 23-64 screened for CCS from 55% to 75%

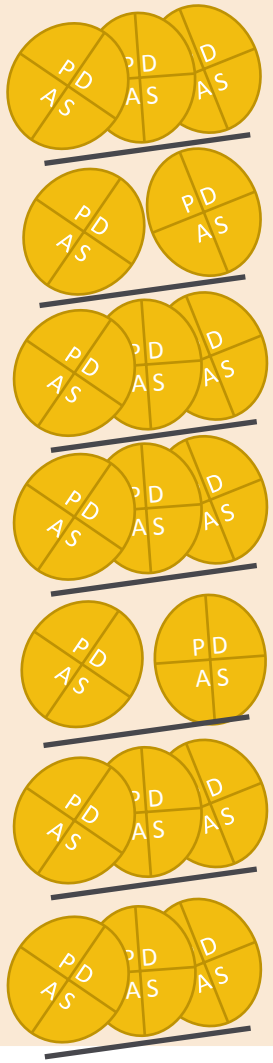
Primary Drivers

- Delivery System Design
- Decision Support
- Clinical Information Systems
- Patient Engagement
- Community Support and Partners

Secondary Drivers

- Core team huddles
- Assign the delivery of key services
- Protocols and standing orders
- Identify services required by evidence-based guidelines
- Create patient specific data on services due
- Partner with patient to plan follow up
- Leverage partnerships to expand services

PDSA Test Cycles

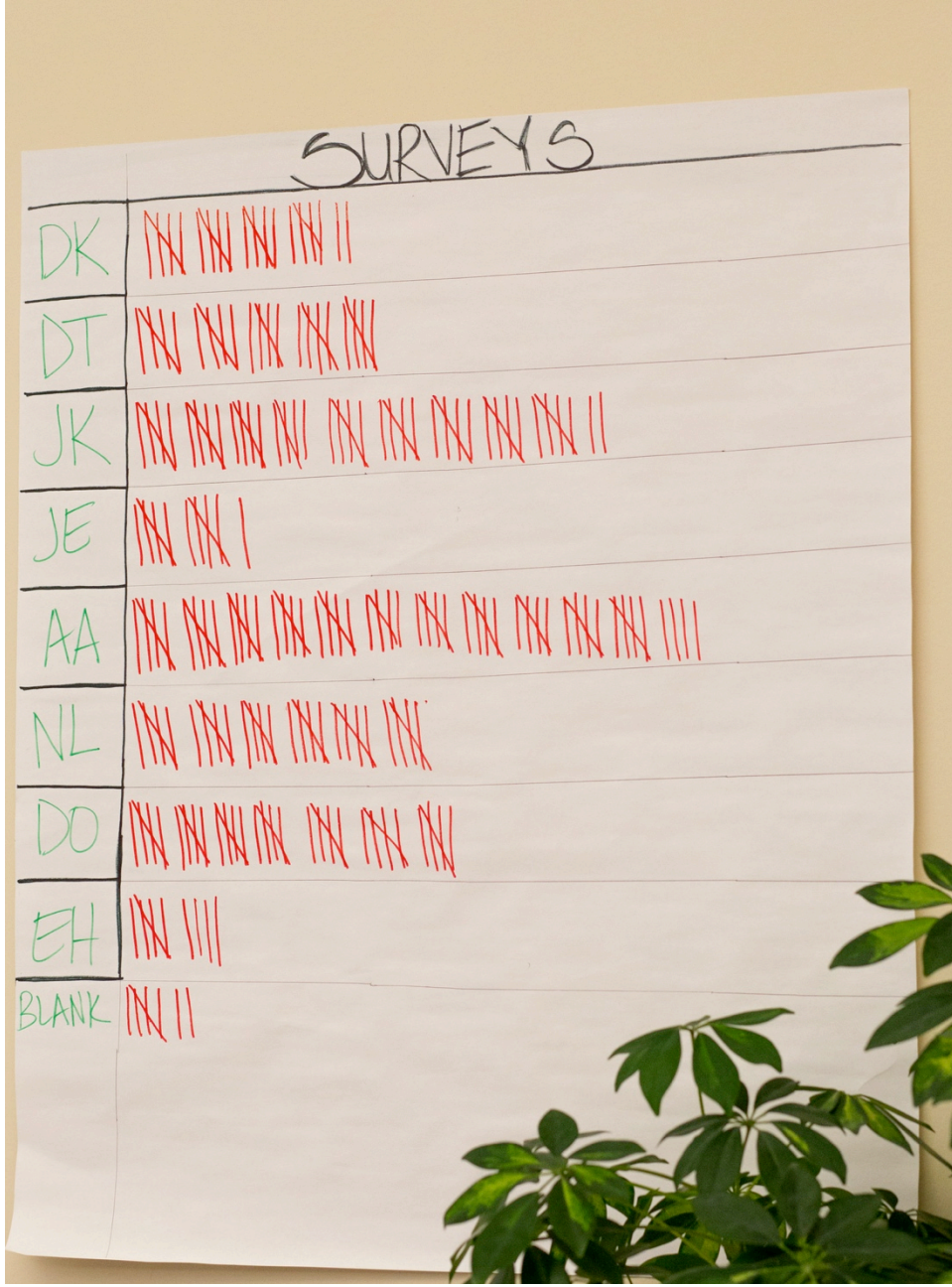


- Who didn't get it and why – check weekly or more
- % of patients successfully reached
- % of patients with scheduled appointments
- % of patients that showed for appointments
- % of patients captured in reports – validate via medical charts
- Staff experience using the protocols

PDSA measures

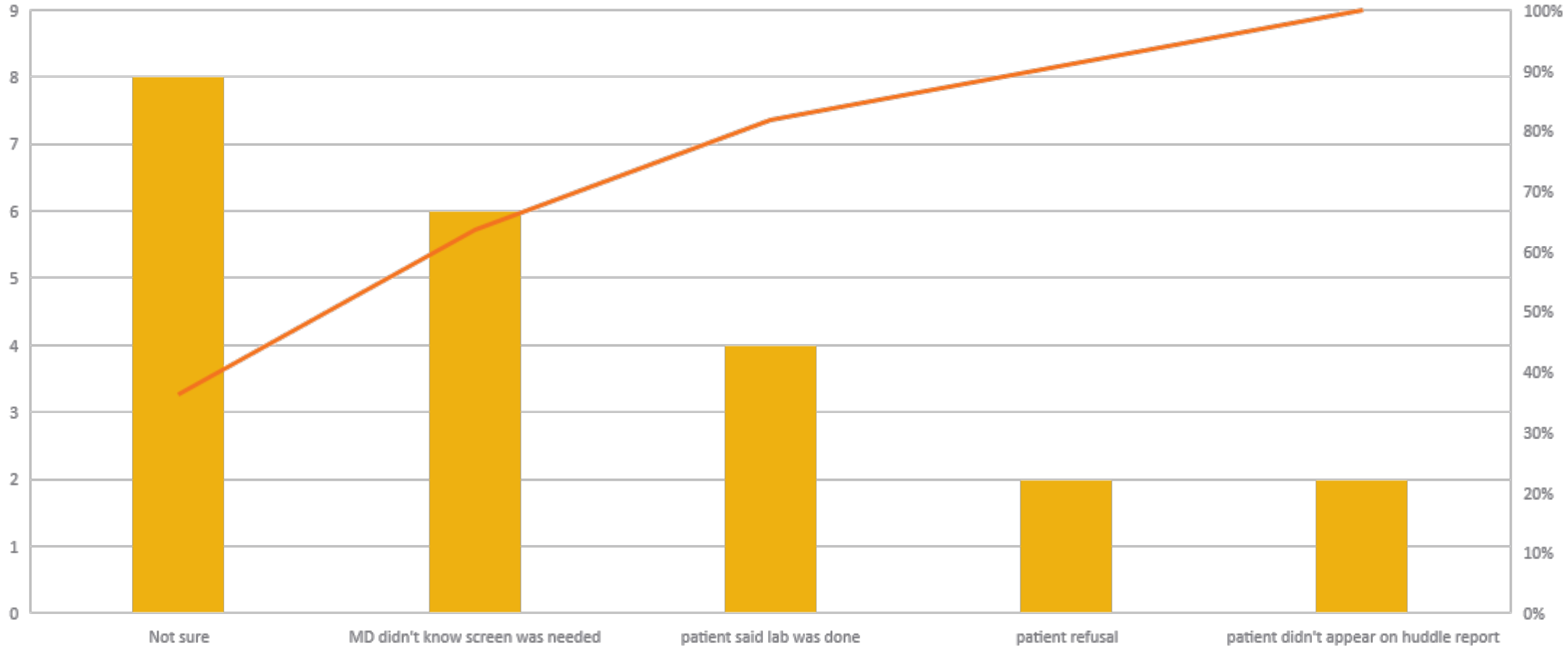
Collecting data for learning: use PDSAs

- Quick measures
- Just enough data to provide signal
- Quantitative and qualitative data
- Data is easily retrievable – same day or a week at most

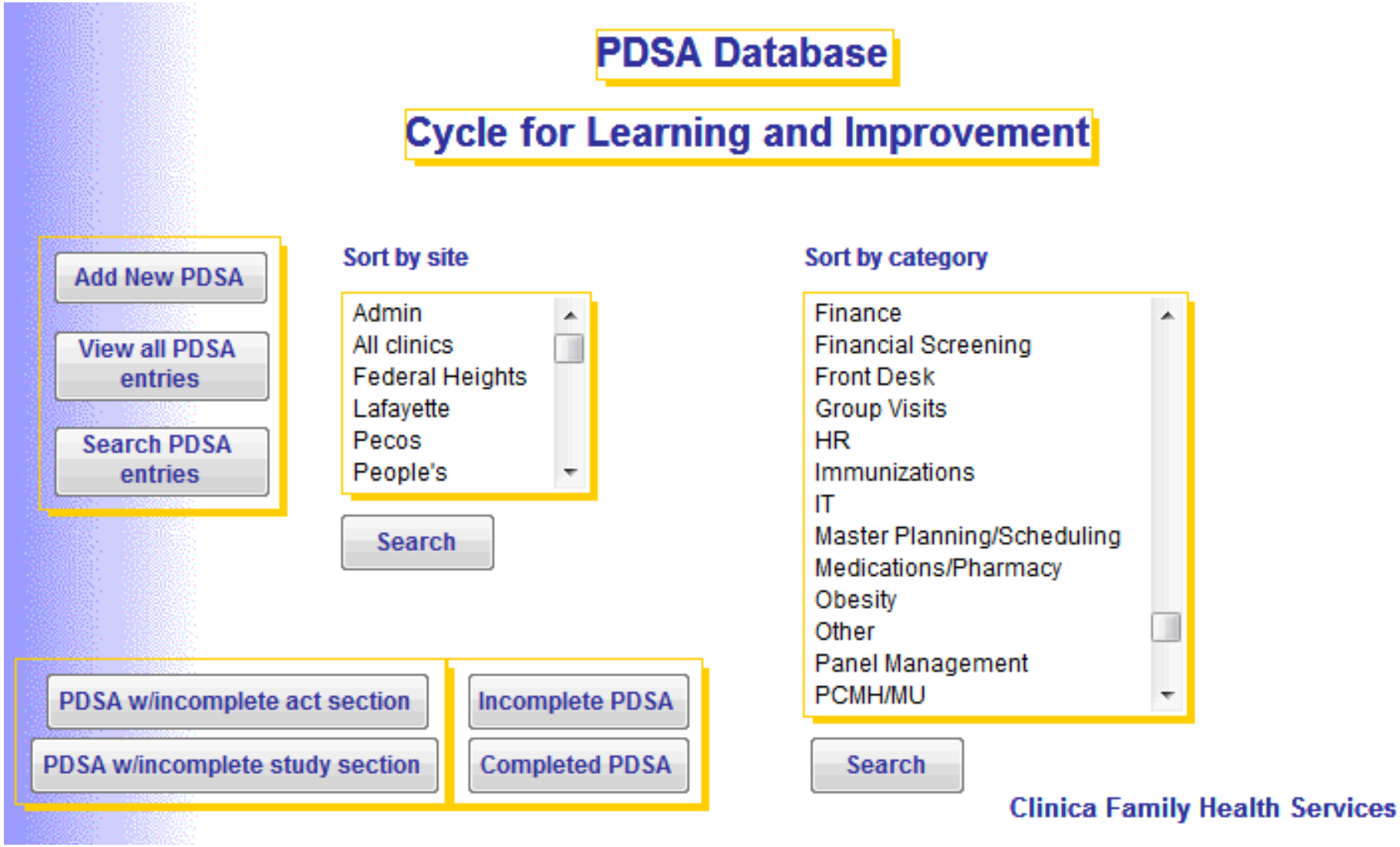


Example: Missed Opportunity Report

Most common reasons for no pap



Use IT to Support Organizational Learning

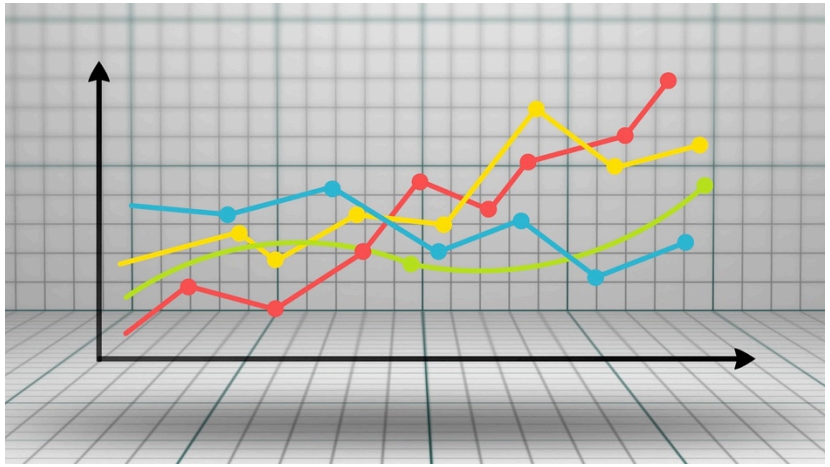


Use IT to Support Organizational Learning

File | Home | Create | External Data | Database Tools

	Category	Title	First Name	Last Name	Site	Date entered	completed?	Date completed	Disseminati
Open PDSA	Group Visits	Centering Patient Recruitment	Judy	Troyer	Pecos	10/9/2008	☑	9/1/2009	☑
Open PDSA	Group Visits	Cold/Flu Cluster Visit III	Judy	Detweiler	Pecos	2/4/2008	☑	3/1/2008	☑
Open PDSA	Group Visits	Cold/Flu Cluster Visit II	Judy	Detweiler	Pecos	1/7/2008	☑	2/4/2008	☑
Open PDSA	Group Visits	Group Visits for Sports Physicals	Beth	Versaw	People's	7/10/2009	☑	7/30/2009	☐
Open PDSA	Group Visits	Geriatric New patient group	Amy	Russell	Pecos	10/8/2008	☑	1/15/2009	☐
Open PDSA	Group Visits	Patient Specific New Patient Group Visits	Judy	Detweiler	Pecos	7/25/2008	☑	10/20/2008	☐
Open PDSA	Group Visits	Financial incentives to increase attendance at CDSM group	Mary	Faltynski	Lafayette	3/27/2008	☑	5/1/2008	☐
Open PDSA	Group Visits	New Patient Group Visit for all Clinicians	Victor	Montour	Thornton	3/4/2008	☑	6/1/2008	☐
Open PDSA	Group Visits	Back Pain Group Visit	Martina	Paiz	Thornton	3/4/2008	☑	3/11/2008	☐
Open PDSA	Group Visits	New Patient Group Visit	Victor	Montour	Thornton	11/1/2007	☑	12/1/2008	☐
Open PDSA	Group Visits	Cold & Flu cluster spread & having CCA schedule	Rebecca	Ballantyne	People's	10/1/2009	☐	3/25/2010	☑
Open PDSA	Group Visits	Share our Strength – Operation Frontline	Anne	Hansen	Thornton	10/26/2008	☐	12/1/2008	☐

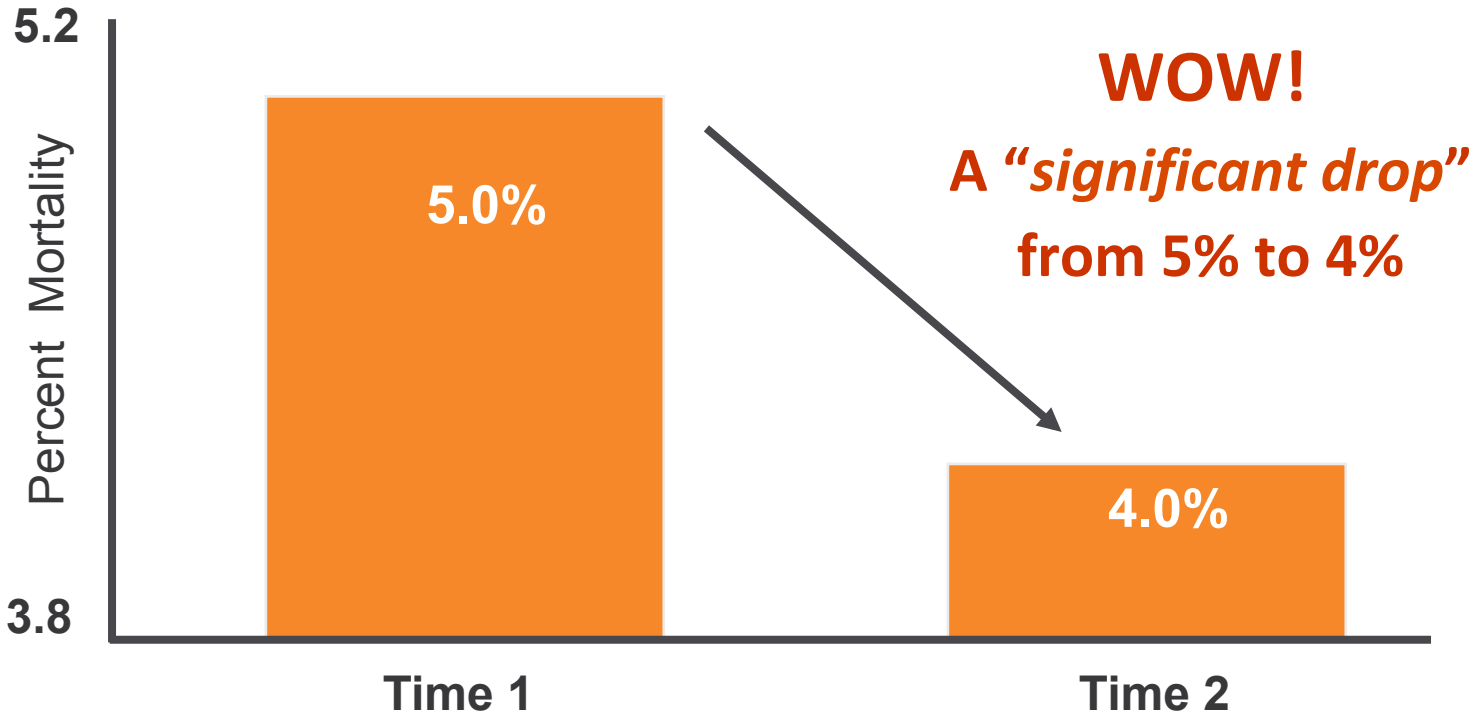
Collecting data to measure impact on AIM: use run charts



- Make performance of the process visible
- Determine if change is an improvement by comparing data before and after test
  - Aggregate measures alone do not lead to predictions about future performance or insights to explain past variations
  - Displaying data over time allows us to make informed predictions, and thus manage effectively
- Determine if holding the gain

Example 1: Average CABG Mortality

Before and After the Implementation of a New Protocol

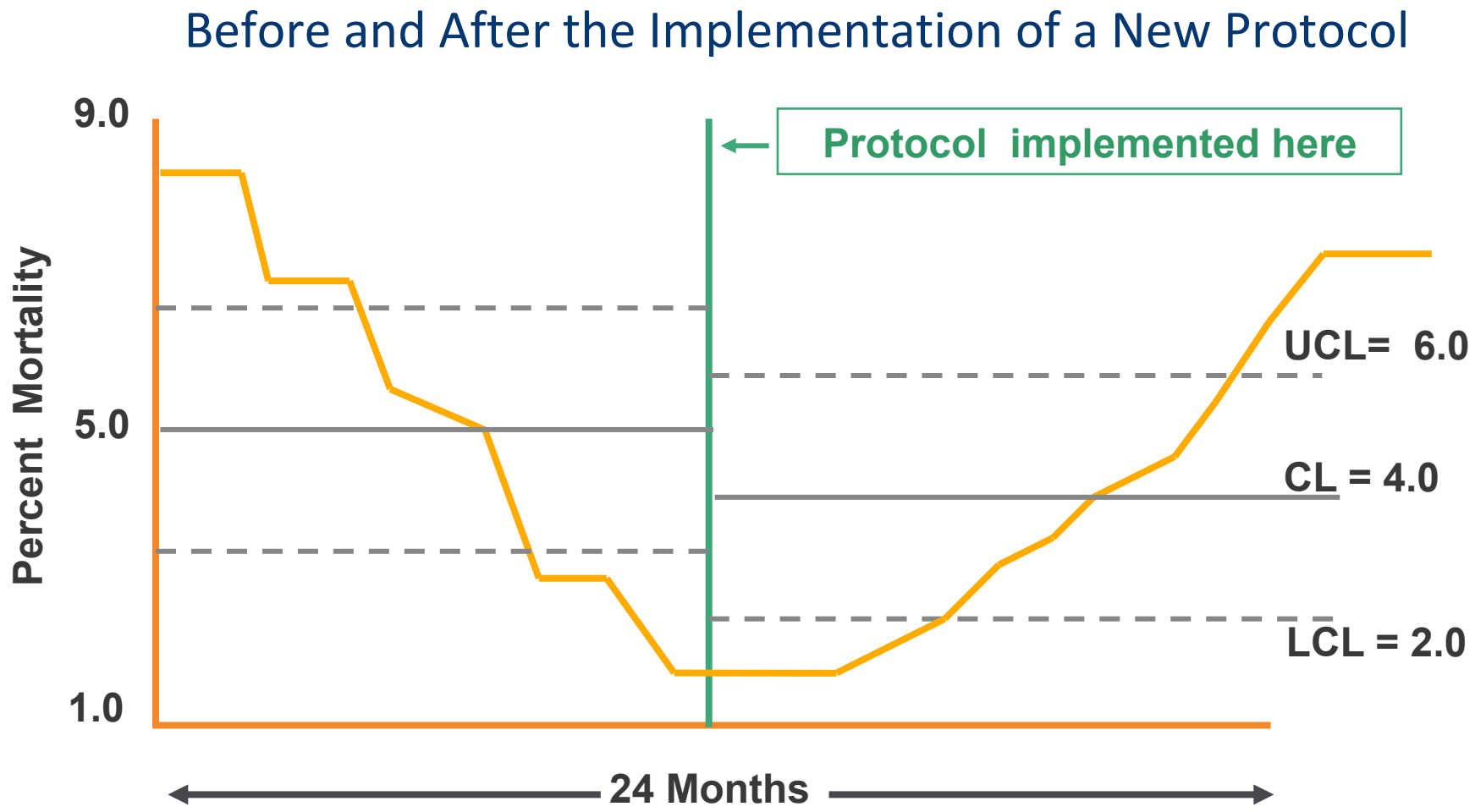


Conclusion – The protocol was a success!

A 20% drop in the average mortality!

Source: Robert Lloyd, IHI

Example 1: Average CABG Mortality



Source: Robert Lloyd, IHI

Example 2: Wait Time for ER Patients

Percent of ER patients with chest pain seen by a cardiologist within 10 min

Week	Date	Percent
1	3-Oct	88%
2	10-Oct	88%
3	17-Oct	94%
4	24-Oct	71%
5	1-Nov	88%
6	8-Nov	73%
7	15-Nov	78%
8	22-Nov	67%
9	29-Nov	69%
10	6-Dec	87%
11	13-Dec	83%
12	20-Dec	68%
13	3-Jan	83%
14	10-Jan	70%
15	17-Jan	73%
16	24-Jan	76%
17	31-Jan	78%
18	7-Feb	79%
19	14-Feb	84%
20	21-Feb	89%
21	28-Feb	95%
22	6-Mar	95%
23	13-Mar	91%
24	20-Mar	95%

Week 1-12	
Avg	80%
Max	94%
Min	67%
Week 13-24	
Avg	84%
Max	95%
Min	70%

Source: Robert Lloyd, IHI

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17	31-Jan	78%
18	7-Feb	79%
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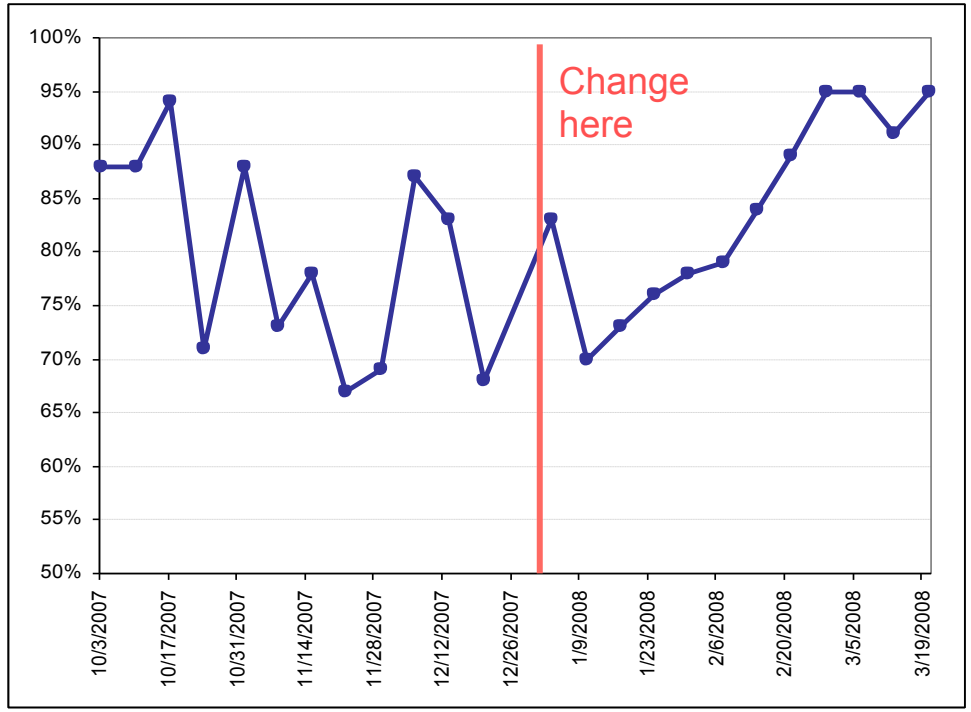
21	28-Feb	95%
22	6-Mar	95%
23	13-Mar	91%
24	20-Mar	95%



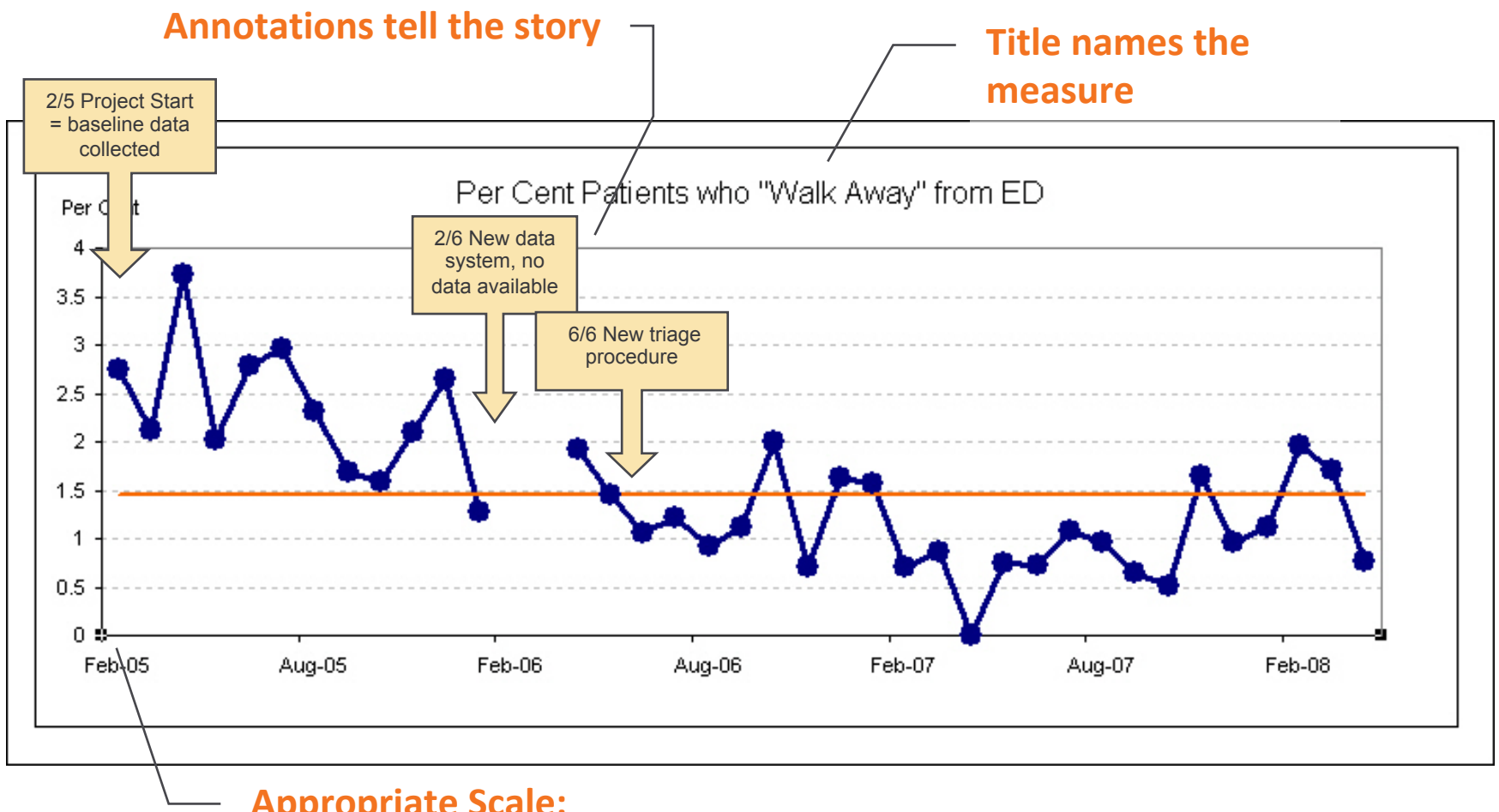
Source: Robert Lloyd, IHI

Run Charts

- Display ordered sequence of data and provide running record over time
- Can be used for any data that are sequenced over time (trending)
- Require no statistics
- Visually illustrate progress toward goal
- Allow us to detect signals of improvement or degradation in a process over time

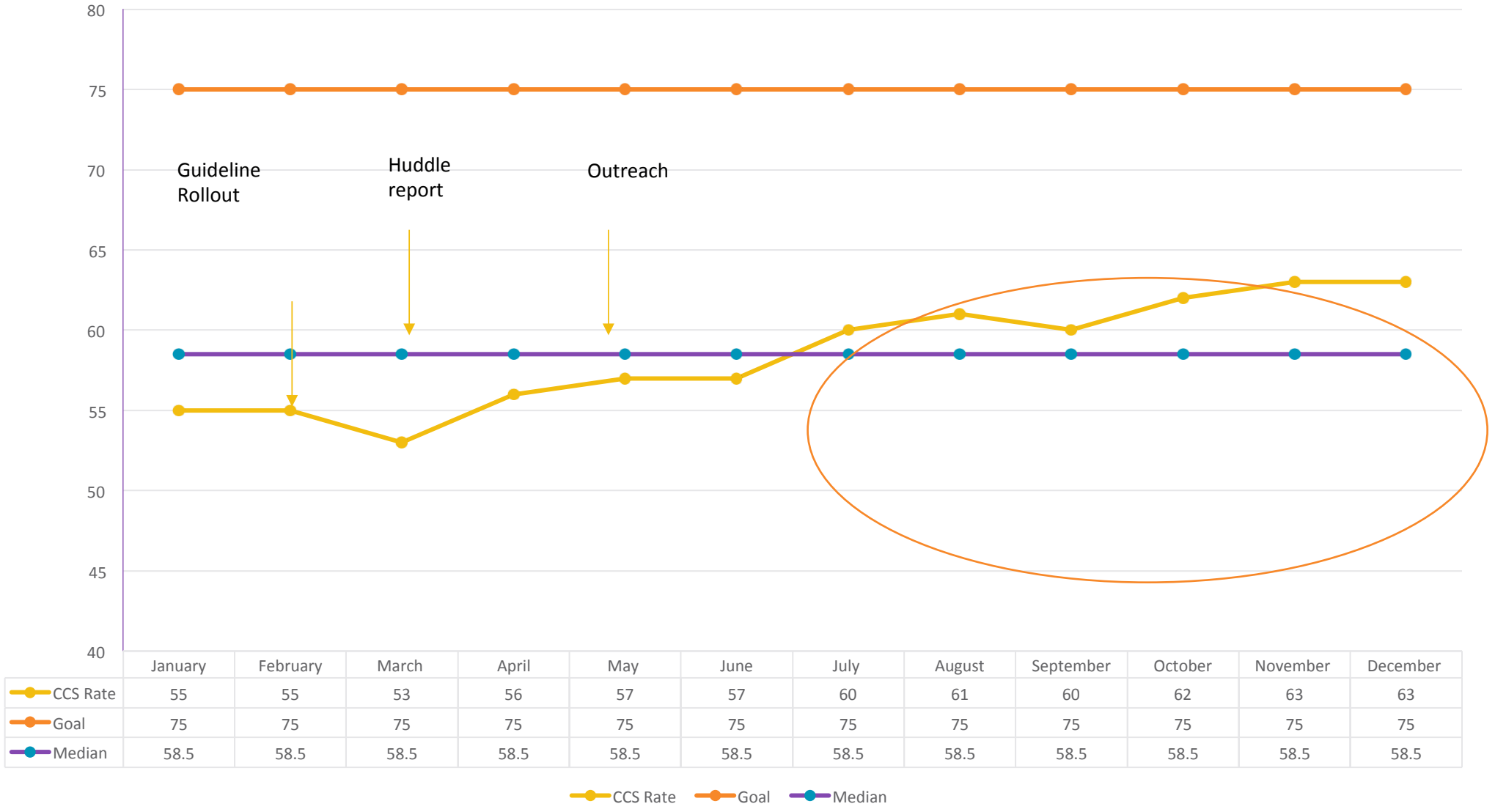
Adapted from, *NHS Scotland Tutorial Guide on Statistical Process Control*.
http://www.indicators.scot.nhs.uk/SPC/SPC.html

Run Chart Anatomy



Source: Richard Scoville, PhD

Run Chart: Cervical Cancer Screening



	January	February	March	April	May	June	July	August	September	October	November	December
CCS Rate	55	55	53	56	57	57	60	61	60	62	63	63
Goal	75	75	75	75	75	75	75	75	75	75	75	75
Median	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5	58.5

Understanding Variation

All data demonstrate variation

- Sources of variation
  - People, methods, environment, materials, measurements
  - Methods: measuring, collecting, analyzing, interpreting
- Two types of variation
  - Random / Common cause
  - Non-random / Special cause

Adapted from, *NHS Scotland Tutorial Guide on Statistical Process Control*.
http://www.indicators.scot.nhs.uk/SPC/SPC.html

Your turn!

- What big change do you want to test next within planned care?
- Which primary driver does it address?
- Shrink the change into one small PDSA?
- Documentation is important! Document the PLAN
  - What assumptions/hypothesis do you have?
  - Who will do what and by when?
  - How will you measure the change?
  - Who and how will data be collected?
  - How will you display it?
- Partner up, share your PDSA