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Part of the **Yorkshire & Humber AHSN**

# Quality Improvement: theory and practice

Dr John Bibby & Maureen McGeorge
*Y&H AHSN's IA*

*6 July, 2017*

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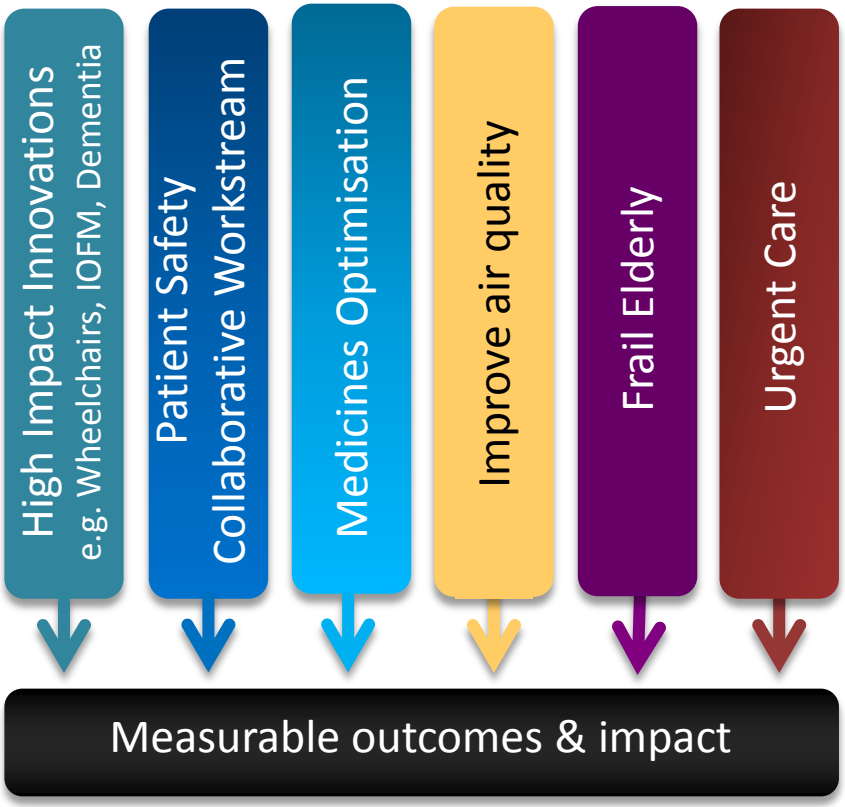
# Improvement Academy Overview

## Capability Building across Y&H

- 'How to' guides
- Guest blogs
- Video clips
- Masterclasses
- **QI Training – specialists**
- Resources & Tools for Improvement
  - *for wards*
  - *for GP practices*
  - *for community services*
- PPE training
- Improvement Fellows Network

## Themes & Work Programmes




## Capacity Building services to Y&H

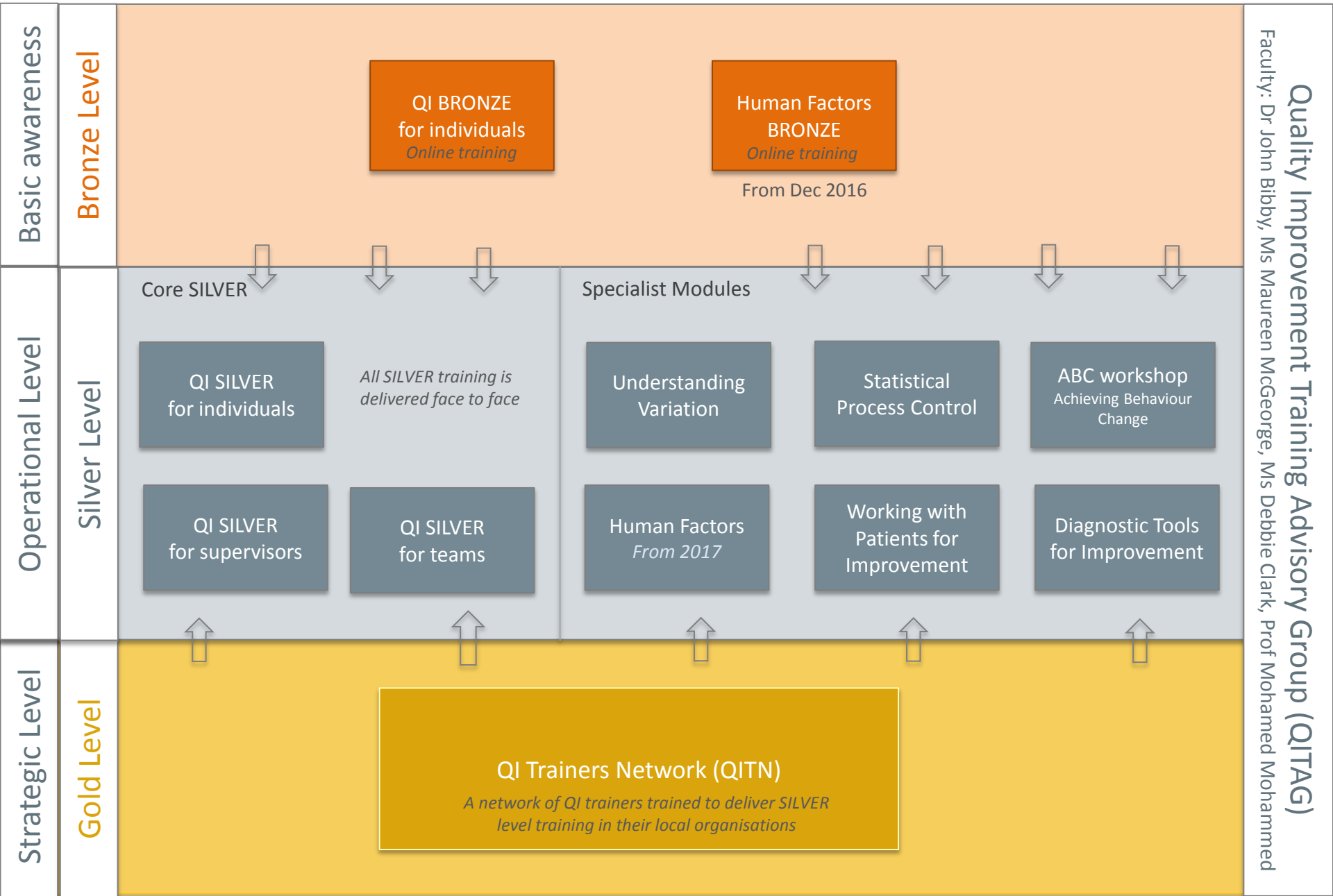
- Research evaluation & support
- Honest broker for system-wide work
- Evidence summaries
- Health Economics Access
- Strategy within support to partner organisations
- Links with industry
- Implement analysis/ support informatics

**Twitter presence** | **Website** | **Branding recognisable** | **Key regional national & international alliances**

*Thought Leadership*

# Quality Improvement Training

Improvement Academy • November 16



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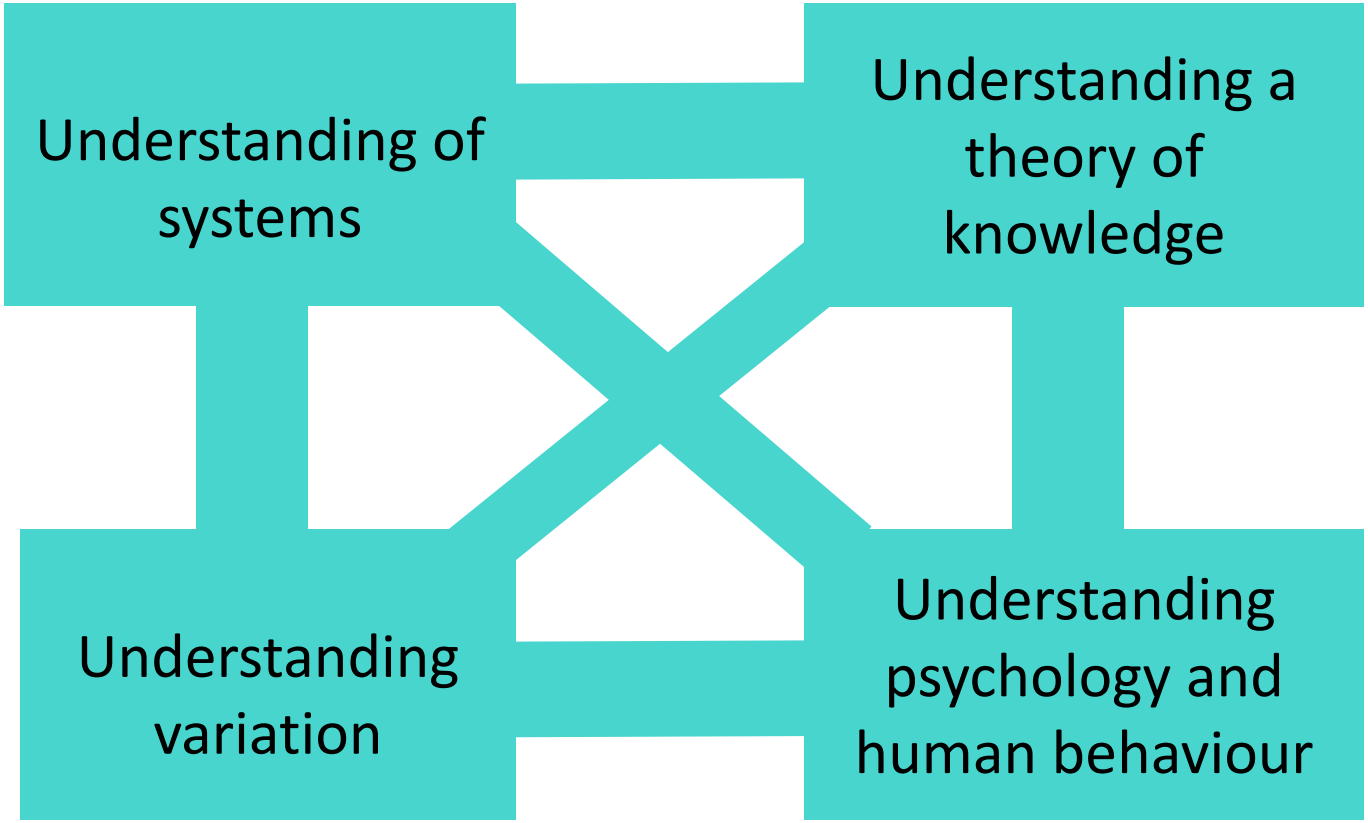
# Deming's System Of Profound Knowledge




W E Deming (1984) the New Economics

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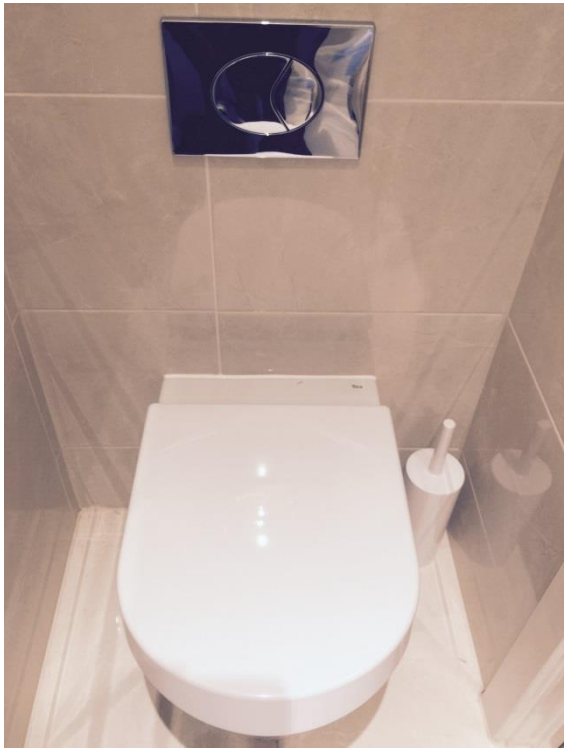
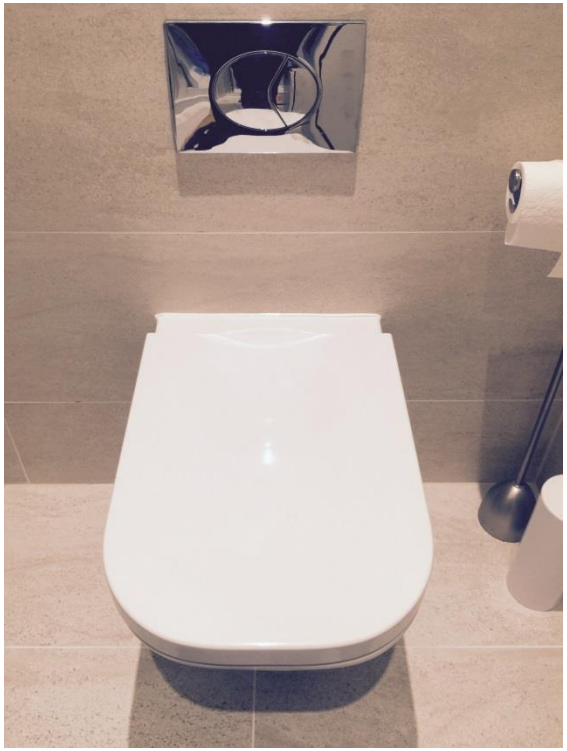
# SOME IMPROVEMENT PRINCIPLES

# John's daughter's two toilets.

## Why is this an illustration of quality improvement in action?



Toilet 1



(new and improved) Toilet 2

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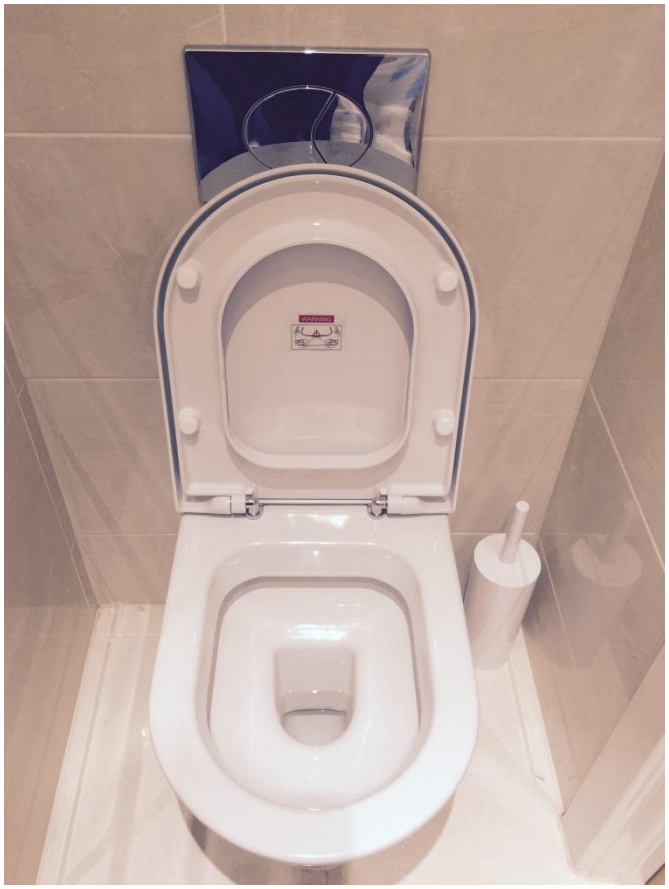

# An improvement principle

- Make it hard to do ‘the wrong thing”
- (Or) make it easy to do ‘the right thing’

Some examples …..

| ERROR | SOLUTION |
| --- | --- |
| Accidentally press fire alarm switch when intending to press light switch as they are next to each other | *Place fire alarm switch in an enclosed glass frame that needs to be lifted in order to press fire alarm* |
| *Leaving card in cash machine and walking away with the money* | *Card is released before money is dispensed* |
| Forgetting to put seat belt on when driving | *Car makes beeping noise to alert you to put seatbelt on* |

# Can you think of any examples from healthcare?

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# Another Improvement Principle

## Reducing (unacceptable) variation

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# Paediatric constipation

- Admitted Mon/Wed/Fri:

  surgeon = Laxative + “x”

- Admitted Sun/Tues/Thurs/Sat:

  physician  Laxative + ”y”

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# Can you think of any other examples from healthcare?

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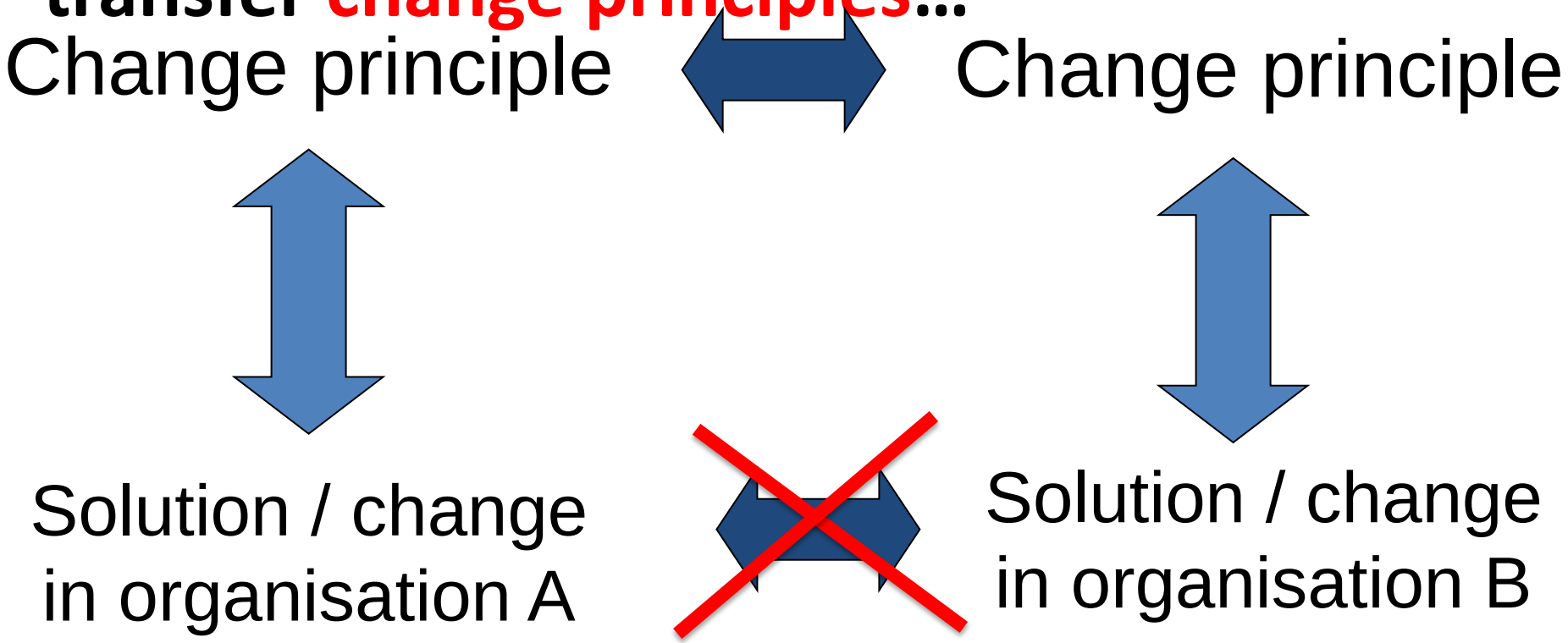
# Improvement principle

**Transferring solutions is rarely effective, transfer change principles…**

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# What is Quality?

**S**afety

**E**ffectiveness

**E**xperience

**Lord Darzi (2009)**
**Quality Framework: Guidance for Community Services**

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# What do we need to motivate/enable Frontline Teams?

- QI not just QA
- QI measurement not just Performance Measurement/Benchmarking

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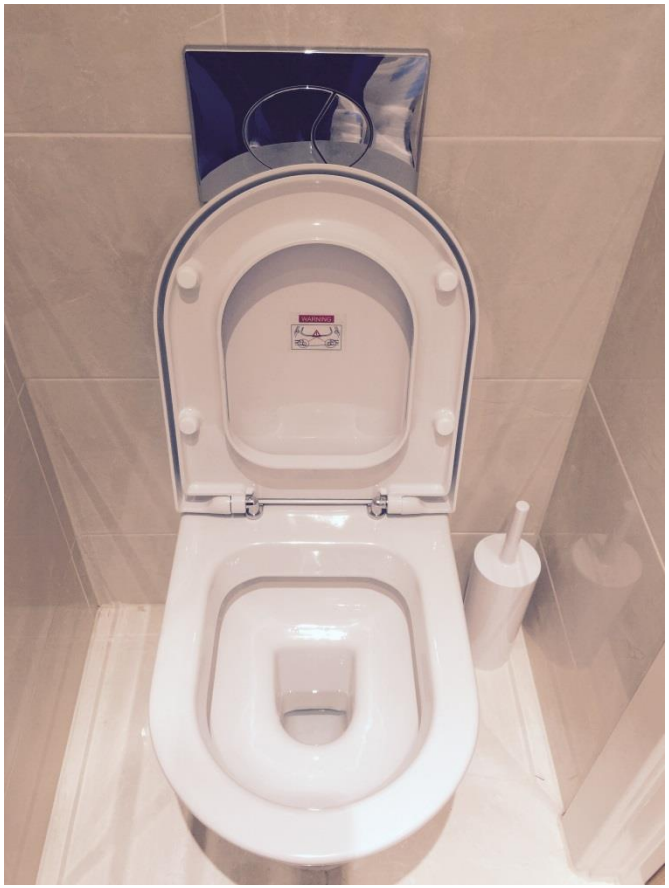
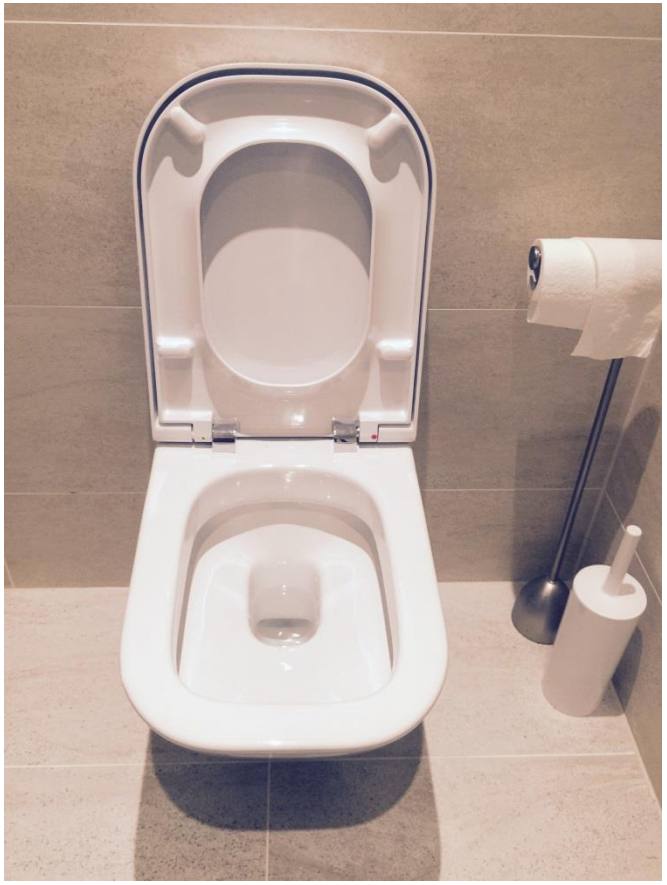
# For example …





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# An improvement principle

- Make it hard to do ‘the wrong thing”
- (Or) make it easy to do ‘the right thing’

Move the flush, OR

Put a sign up, OR

Install an alarm!, OR ?????

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# How do services ‘improve’ themselves?

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"Here is Edward Bear, coming downstairs now, bump, bump, bump on the back of his head, behind Christopher Robin.

It is, as far as he knows, the only way of coming downstairs, but sometimes he feels that there really is another way, if only he could stop bumping for a moment and think of it".

**AA Milne – Winnie the Pooh**

**Sometimes they don't …..**

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# Usual approaches to change in a complex environment

**Trial & Error?**
**Chaos**

**Too much action,**
**not enough thinking**

**Macho management**
**Just going ahead and doing it**

**Detailed prior study?**
**Paralysis**

**Too much thinking**
**not enough action**

**"We can't do anything until we know exactly what to do…"**

**"Trial and Learning" Approach**

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# The Model for Improvement

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# Model for Improvement

What are we trying to accomplish?

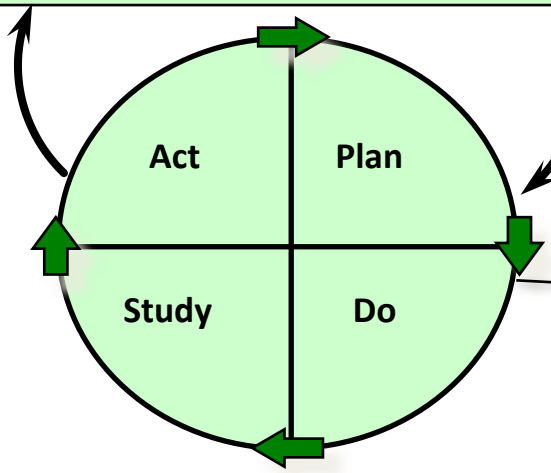
How will we know that a change is an improvement?

What change can we make that will result in improvement?

Understanding the problem. Knowing what you're trying to do - clear and desirable aims and objectives

Measuring processes and outcomes

What have others done?




What hunches do we have?
What should we test?
What can we learn as we go along?

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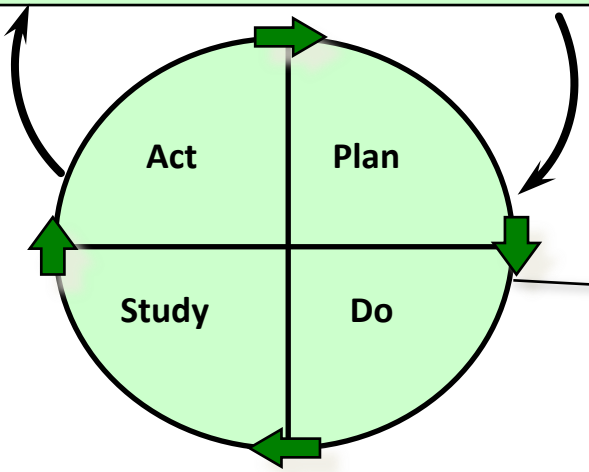
# Question 1

## 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?




Understanding the problem. Knowing what you're trying to do - clear and desirable aims and objectives

Measuring processes and outcomes

What have others done?

What hunches do we have?
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# Question 1
# What are we trying to accomplish?

Made up of 3 stages/tasks/elements

1. Being clear about what is the problem
2. Analysing/diagnosing the issues before you start
3. Defining the aim

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# The problem statement should:

- Be one or two sentences
- Encapsulate the essence of ‘the problem’ (not the solution)
- Be the root of the problem … not a symptom
- Agreed by those involved in or affected by the work

# Examples of tools for 'diagnosing' your problem

- Existing data/information
- New (easy to collect) data/information
- 5 Whys
- Brainstorming
- Process Mapping
- Pareto
- Ishikawa (Fishbone)

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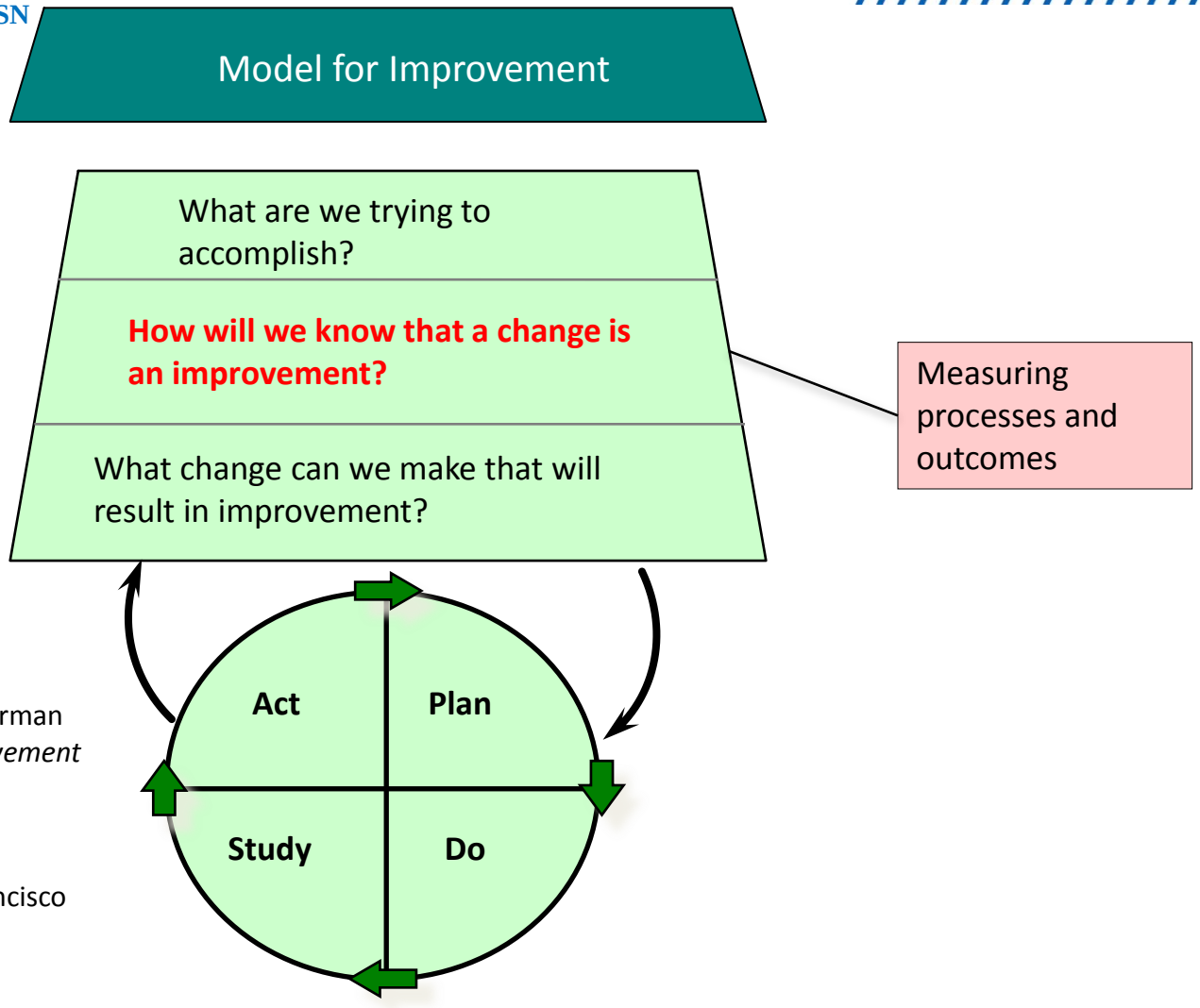
# Question 2

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# Select the correct measures!

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# Measurement for improvement

Why measure?

What will you measure and how?

What 'kind' of measures will you collect?

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# Why measure?

To know where you are …

… where you're going…


And when you've arrived … !!!

All improvement involves change, BUT, not all change is an improvement!

AND

Without measurement it is impossible to know whether you have improved.

# What will you measure and how?

Measurement can be split into the reason why you are measuring: what words are evoked by each?

- Measurement for **Research**

  *Science, rigor, hypothesis testing, statistics "big data"*

- Measurement for **Performance Management**

  *Comparison, justification, targets, FEAR …*

- Measurement for **Quality Improvement**

  *'Just enough' data, improvement of care, ownership*

# What kind of measures will you collect?

## Four types of 'measurement for improvement'

1. Structure
2. Process
3. Outcome
4. (Balancing measures)

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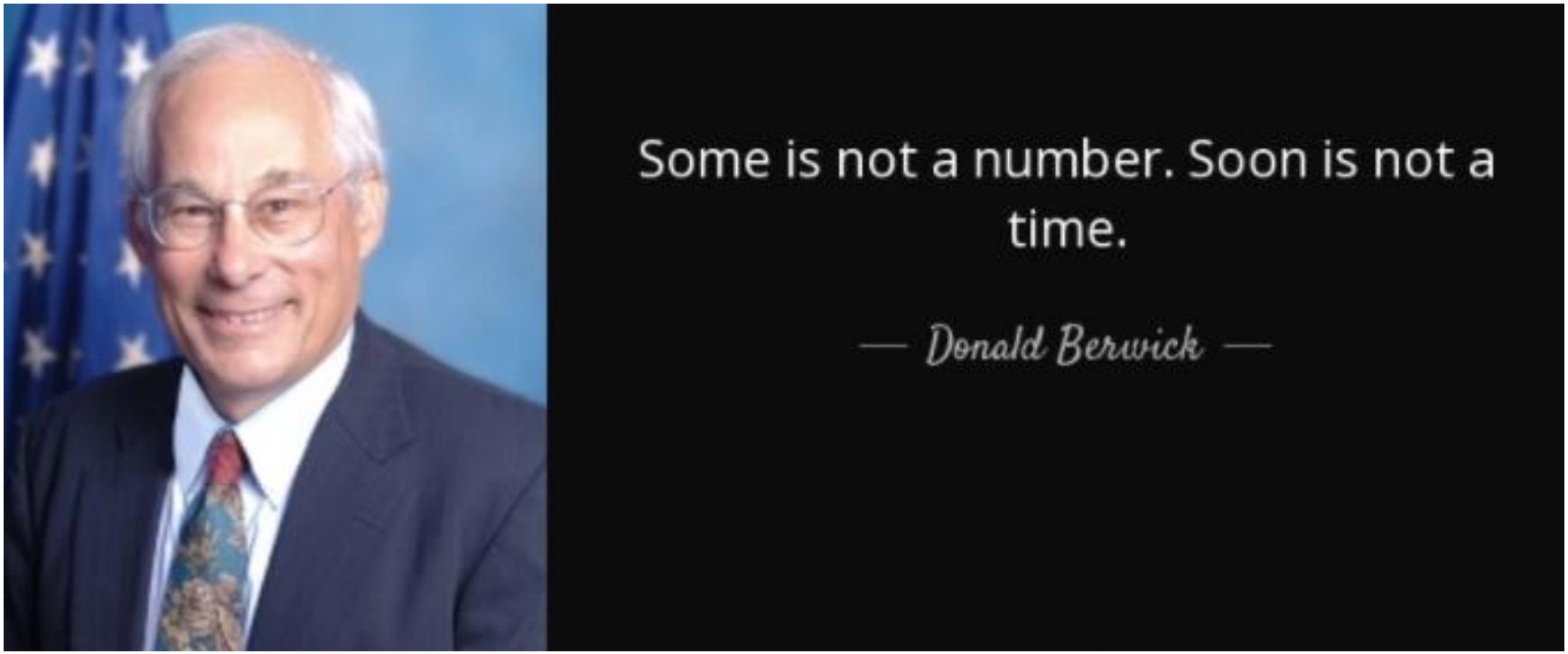
# Operational Definitions

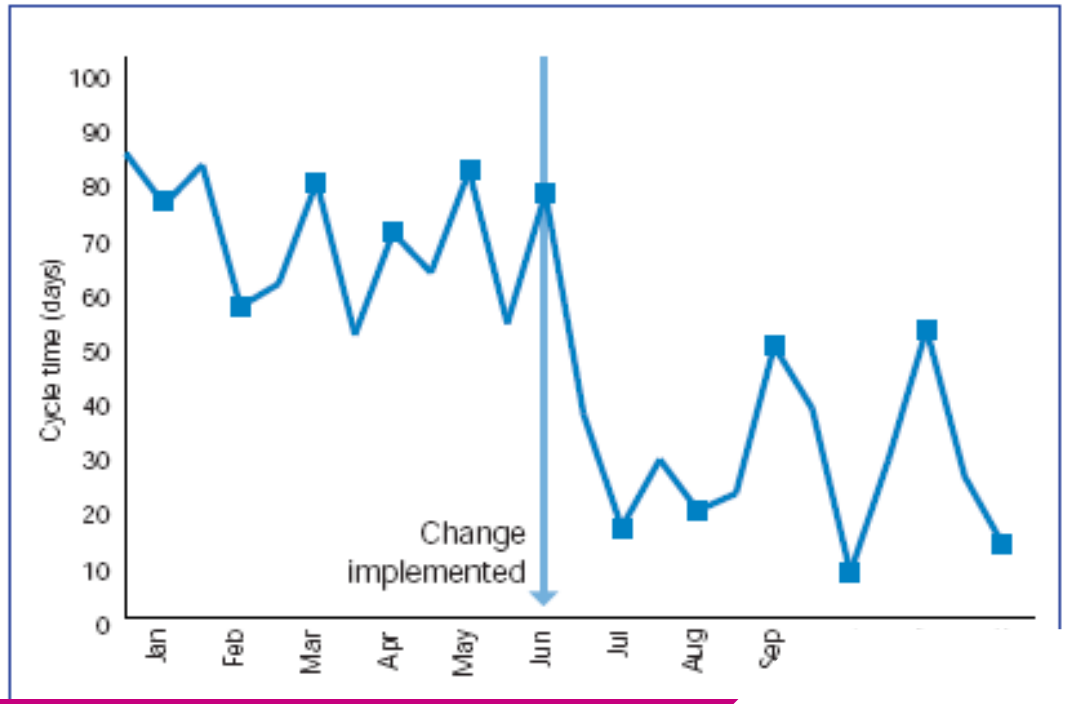


# Tables or Charts?

Example of poor presentation data – number of days between GP referral and appointment with specialist

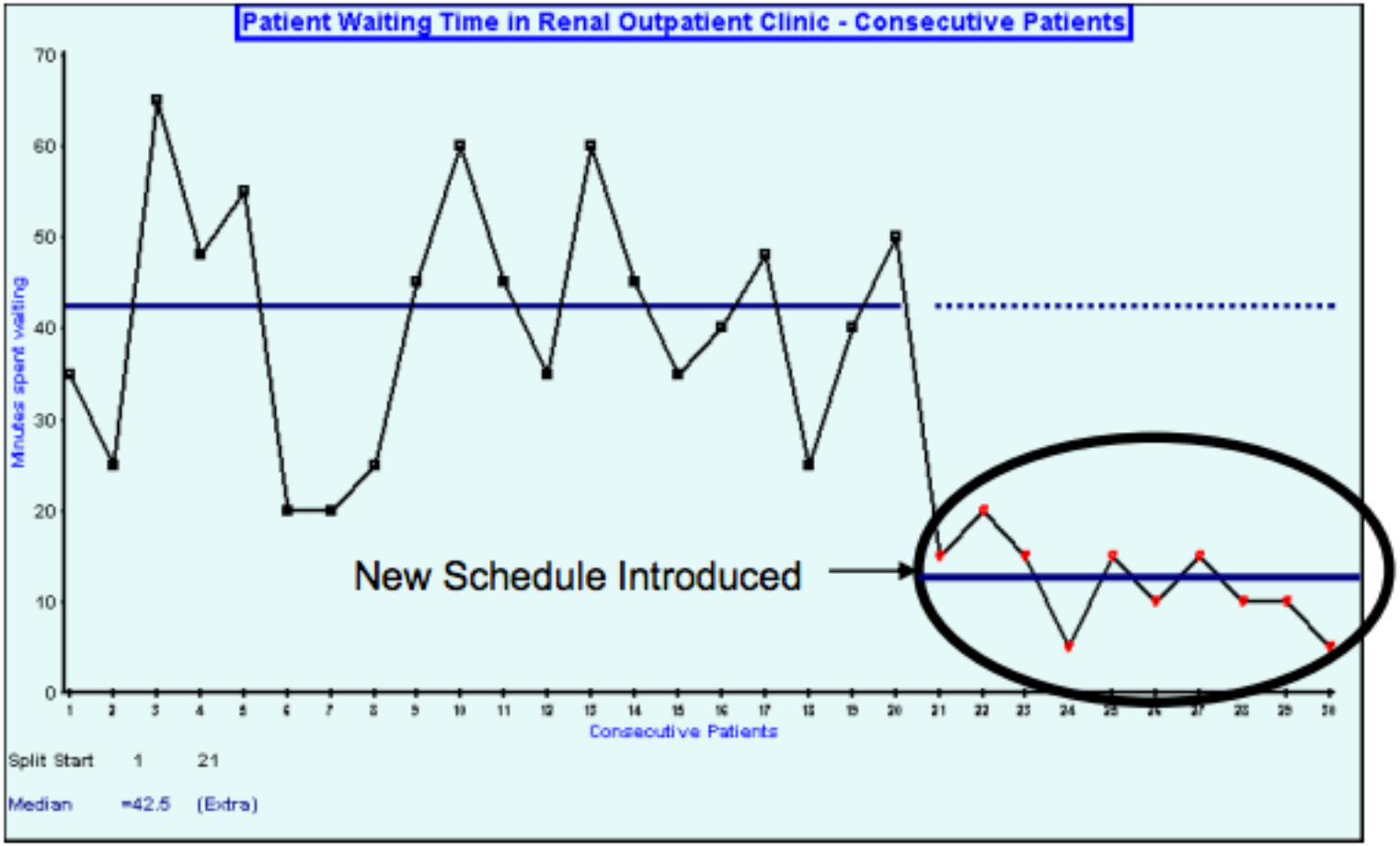
| Date | Cycle time *(days)* | Date | Cy |
|---|---|---|---|
| | 85 | | |
| Jan | 76 | Jul | |
| | 83 | | |
| Feb | 58 | Aug | |
| | 62 | | |
| Mar | 80 | Sep | |
| | 53 | | |
| Apr | 71 | Oct | |
| | 64 | | |
| May | 82 | Nov | |
| | 55 | | |
| Jun | 78 | Dec | |

Same data presented as a run chart – number of days between GP referral and appointment with specialist



Audit Baseline

Audit Outcome



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# The Run Chart

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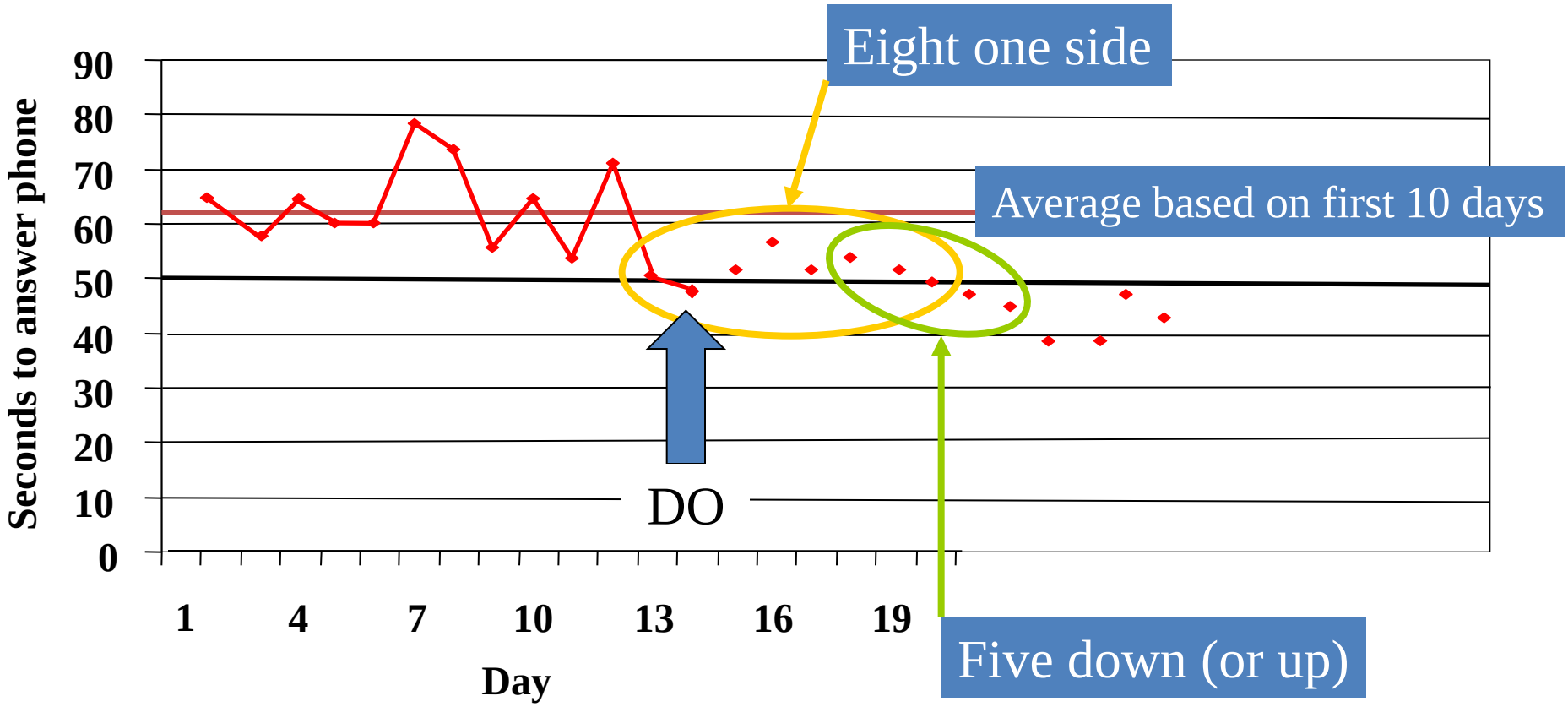


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# The Run Chart

http://qualitysafety.bmj.com/content/20/1/46.abstract

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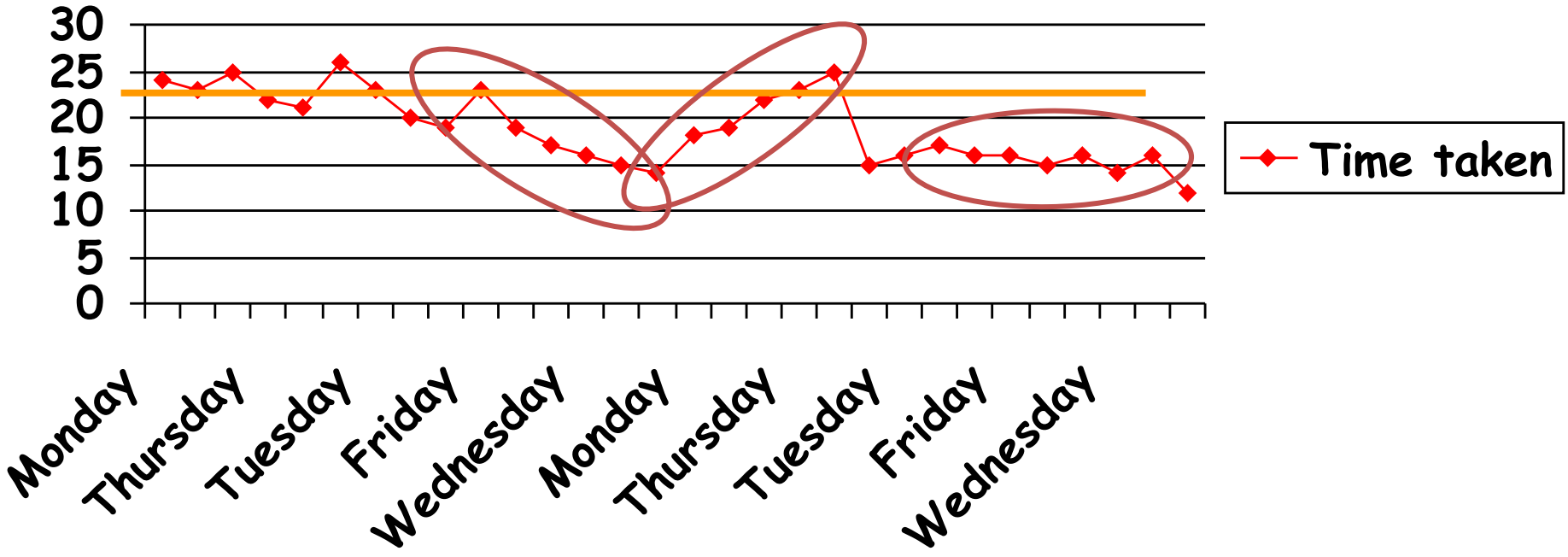
# Journey to work



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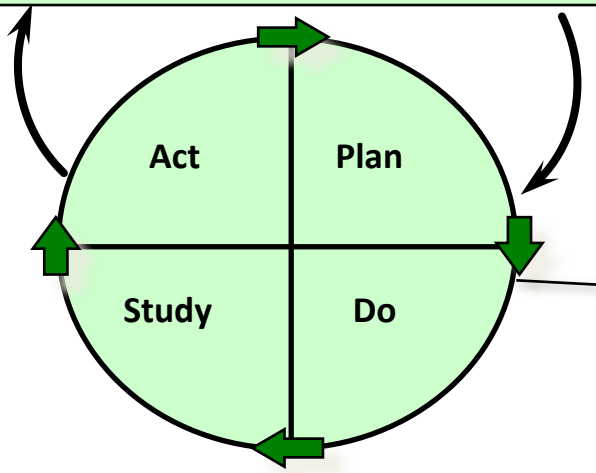
# Question 3

## Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

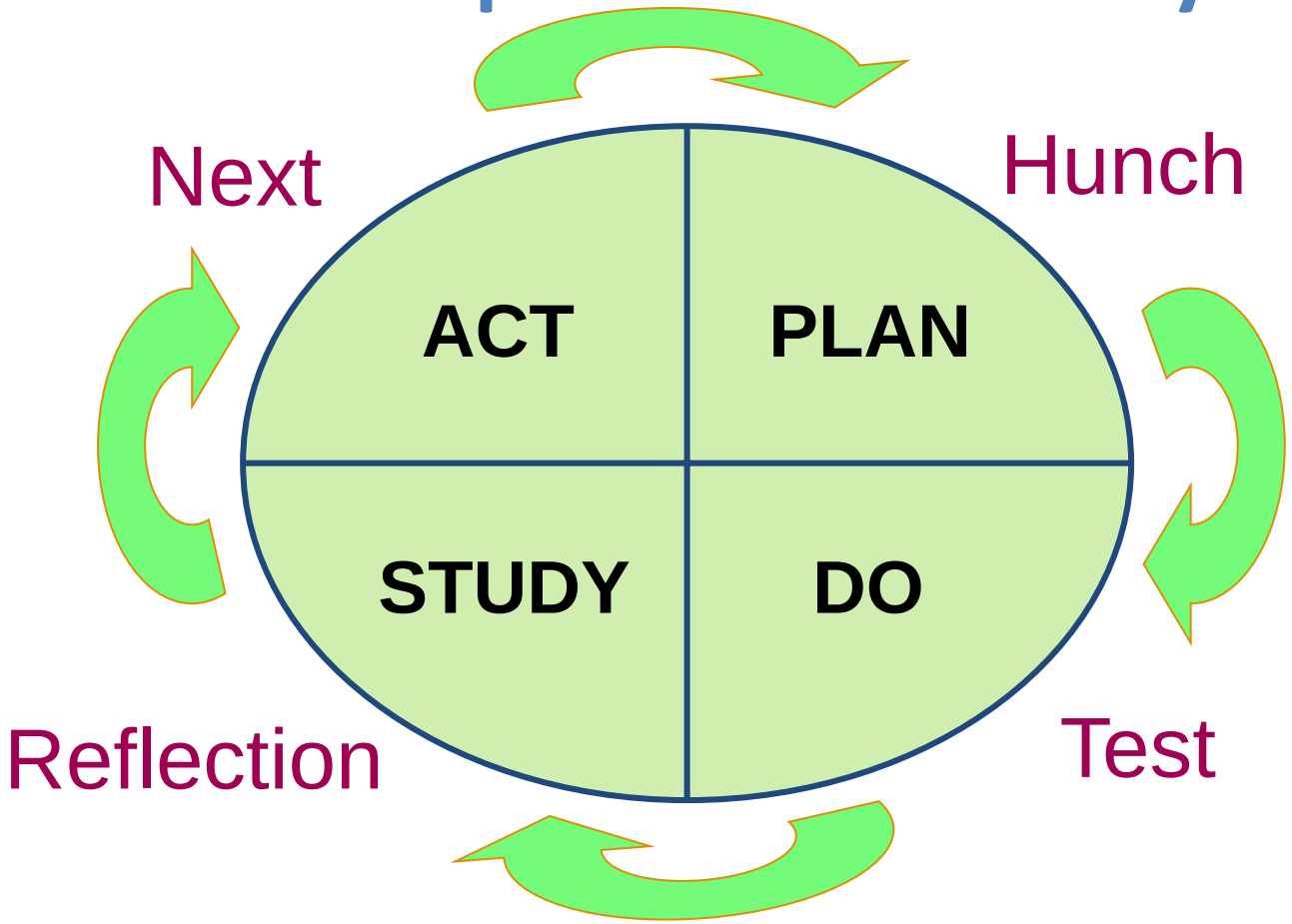
**What change can we make that will result in improvement?**




What hunches do we have?
What should we test?
What can we learn as we go along?

Langley G, Nolan K, Nolan T, Norman C, Provost L, (1996), *The improvement guide: a practical approach to enhancing organisational performance*, Jossey Bass Publishers, San Francisco

# Or to put it another way …



# Change ideas, & PDSAs

| **Aim: to loose 8lbs before I go on holiday at the beginning of September** | |
|---|---|
| **Change idea 1**: reduce consumption of calories | **Change idea 2**: burn more energy |
| **Measures**<br>Weight loss<br>Mood<br>Energy level | |
| **PDSA ideas**<br>Cut out snacks<br>Reduce portion size<br>Eat more vegetables<br>Reduce carbohydrate | **PDSA ideas**<br>Go swimming 2 mornings before work<br>Get off the bus 2 stops earlier<br>Use the stairs instead of the lift<br>Go to two exercise classes a week |

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# PDSA Template

| | |
|---|---|
| **Team name:** | |
| **Who has responsibility for this PDSA cycle?** | |
| **What are you hoping to find out?** | |
| **Plan**<br>**(Complete when you are developing your improvement plan for this cycle)** | What are you going to do? Who will be involved and how? When will it take place? How will it be done? What will you measure? What are your expectations? |
| **Do**<br>(Did)<br>**(Complete once you have carried out your improvement idea)** | How did you implement the plan? Did you encounter any unexpected problems? Did you achieve any unexpected benefits? |
| **Study**<br>(Studied)<br>**(Complete once you have reviewed your results)** | What results did you achieve? Did they differ from your expectations? How? What have you learnt from this cycle? |
| **Act**<br>(Acted)<br>**(Complete when you are planning your next improvement cycle)** | What action will you now take to either: Refine and re-test your improvement idea? Implement and embed the change? Reject the idea and prepare to test a new one? |

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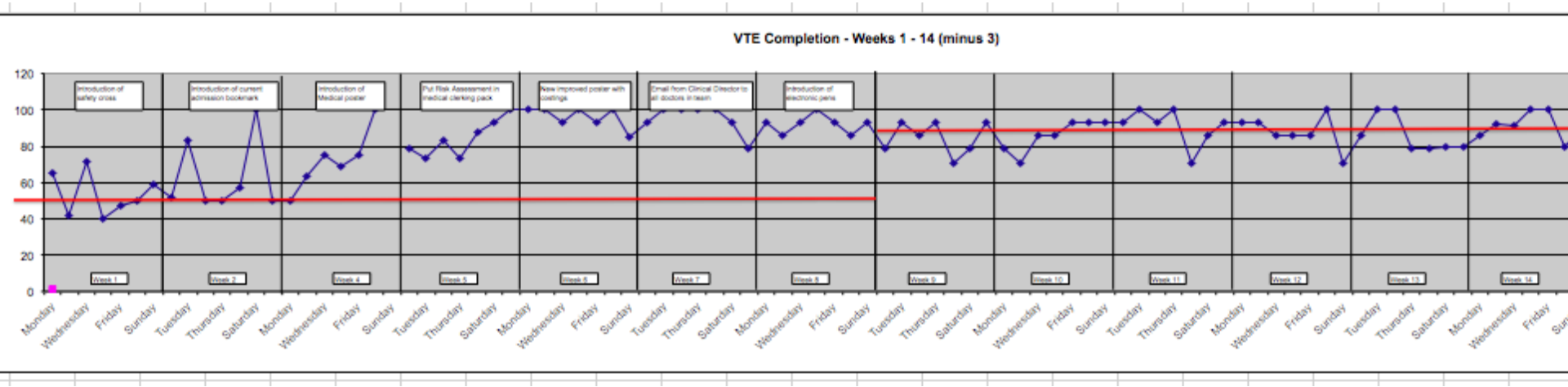
# Example

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Document

# Improvement planning sheet

**What is your problem statement?**

- One or two sentences
- Encapsulates the essence of 'the problem' (not the solution)
- Is agreed by those involved in or affected by the work
- What diagnostic tools might you need to use?

**What is your statement of aim?**

- What do you want to improve?
- For who? (population)
- By how much? (target)
- By when? (time frame)

**Choosing who may need to be in your team**

- Who else needs to be in YOUR team
- What are your first steps to bring your team together?

**What diagnostic tools might you need to use?**

- Existing data
- New data/information
- 5 Why's
- Brainstorming
- Process mapping
- Ishikawa
- Pareto analysis
- De Bono's 6 hats
- Gap analysis
- Tree diagram
- SPC charts

**What are your measures?**

- Is there retrospective data?
- What baseline data is needed?
- What 3 measures will be used for the run charts

1)
2)
3)

Are there operational definitions for these measures?

- Make it simple
- Think about KEY measures i.e. outcome, process, balancing

Make it do-able (easy to collect on a REGULAR, ONGOING basis)

**What are your changes ideas?**

- Ideas for change
  - Brainstorming
  - Ideas from others
  - 'the evidence-base'
  - "Steal ideas shamelessly

**What are potential PDSAs?**

1.

2.

3.

4.

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# Problem Statement

- **Patient safety problem statement:**

The inadequate assessment of sick children.

- **This is a problem because:**

Currently sick children may be seen by either a GP, GP trainee or prescribing nurse (backup systems exist for a second opinion from an experienced GP). However concern has been expressed by the nurses about whether they are appropriately trained for this. GP Registrars may not have had experience of working in paediatrics.

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# Aim

- **What we are trying to achieve?:**

All children under three years old with an acute illness should be assessed and managed according to the NICE guidelines for feverish illness in children and that clinicians are providing care appropriate to their level of competence. Timeframe 6/12.

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# Team

- All practice clinical staff:
  Doctors
  Trainees
  Nurses
- Receptionists

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# Diagnostic Tools

- Existing data
- New data/information
- 5 Why's
- Brainstorming
- Process mapping
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- Gap analysis
- Tree diagram
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# Measures

- **Measure 1:** What percentage of children under 3 presenting with an acute illness have had 4 parameters recommended by NICE recorded?
- **Measure 2:** What percentage of children under 3 presenting with an acute illness have an appropriate safety net documented in the records?
- **Measure 3:** What percentage of children under 3 who have been seen by an identified less experienced practitioner, presenting with one or more amber signs, have been refereed for a second opinion?

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# Change Ideas

- Improve Knowledge *e.g. Training on NICE Guidance*
- Improve Communication *e.g. Team Discussion*
- Make the right thing easy *e.g. Computer Templates*

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# Potential PDSAs

- *Training on NICE Guidance next PLT*
- *Computer Template for "ill child"*
- *Laminate NICE guidance Flow chart in each consulting room*

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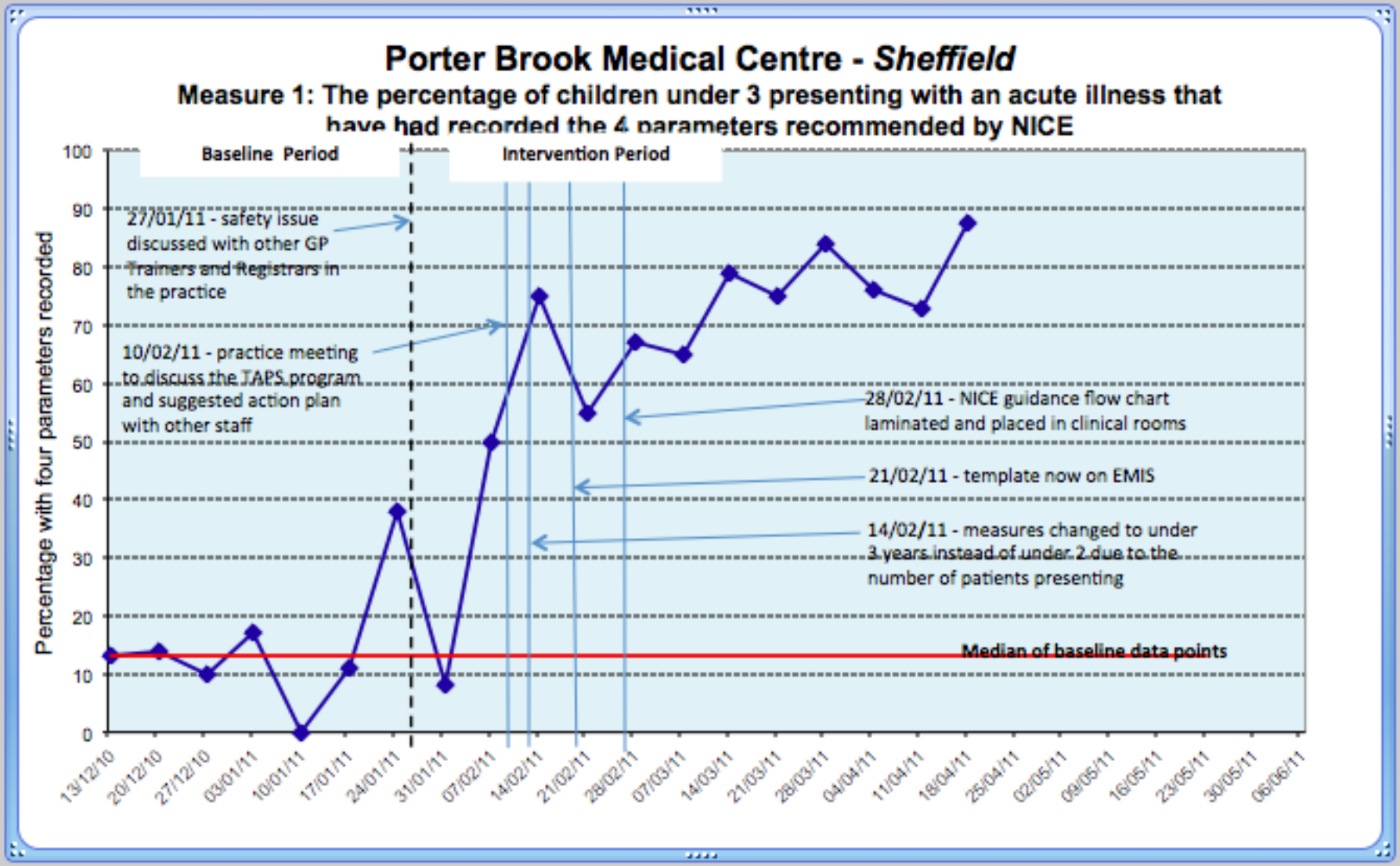


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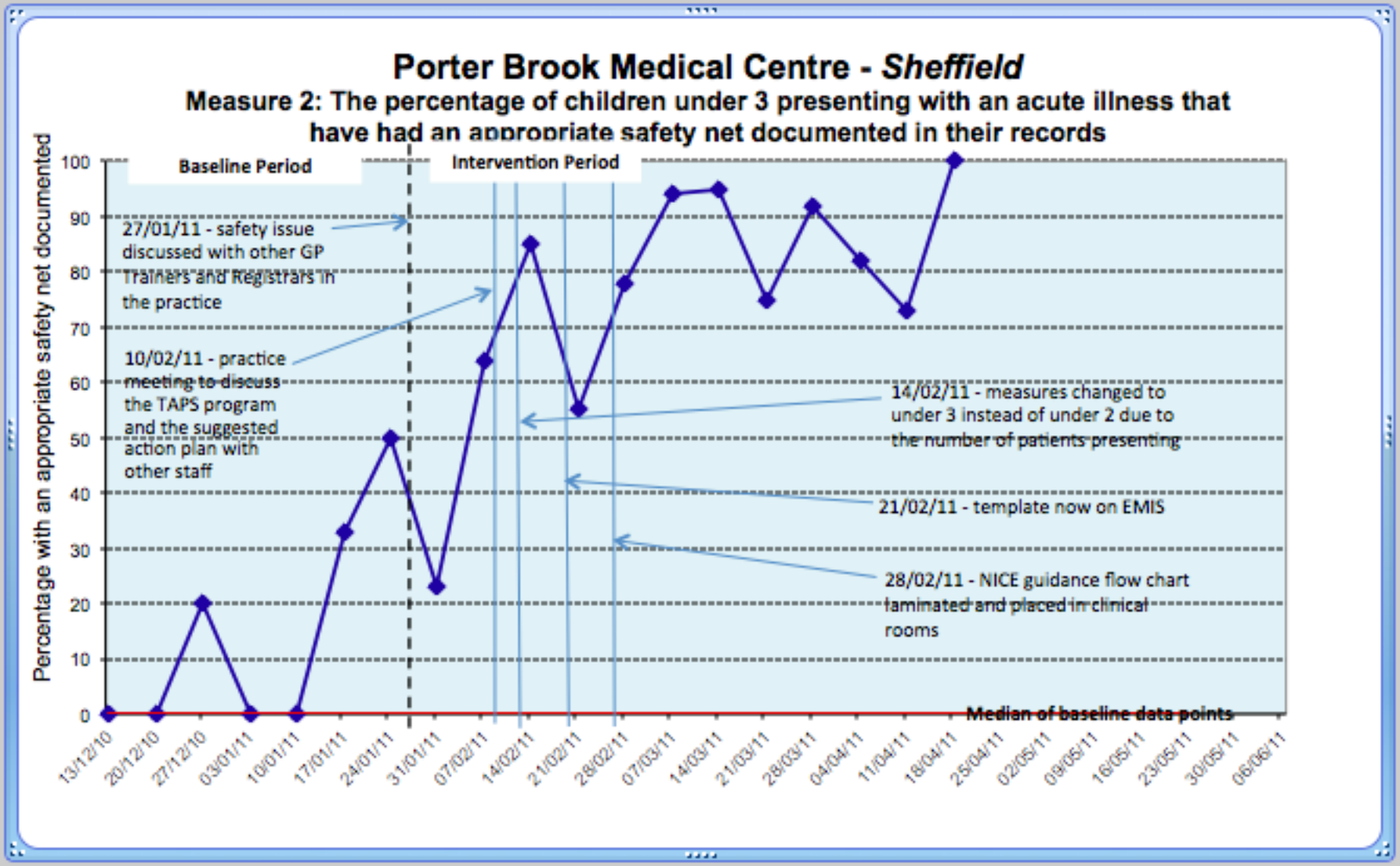
Porter Brook Medical Centre - Sheffield
Measure 2: The percentage of children under 3 presenting with an acute illness that have had an appropriate safety net documented in their records
Percentage with an appropriate safety net documented
Baseline Period
Intervention Period
27/01/11 - safety issue discussed with other GP Trainers and Registrars in the practice
10/02/11 - practice meeting to discuss the TAPS program and the suggested action plan with other staff
14/02/11 - measures changed to under 3 instead of under 2 due to the number of patients presenting
21/02/11 - template now on EMIS
28/02/11 - NICE guidance flow chart laminated and placed in clinical rooms
Median of baseline data points
100
90
80
70
60
50
40
30
20
10
0
13/12/10
20/12/10
27/12/10
03/01/11
10/01/11
17/01/11
24/01/11
31/01/11
07/02/11
14/02/11
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30/05/11
06/06/11

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# Further information

**Basic entry-level QI training:**

http://qitraining.improvementacademy.org/

*(coming soon … our on-line Human Factors)*

**Video ++ on behaviour change:**

http://www.improvementacademy.org/resources/abc-for-patient-safety-workshop-and-toolkit/

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# Thank you for listening

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