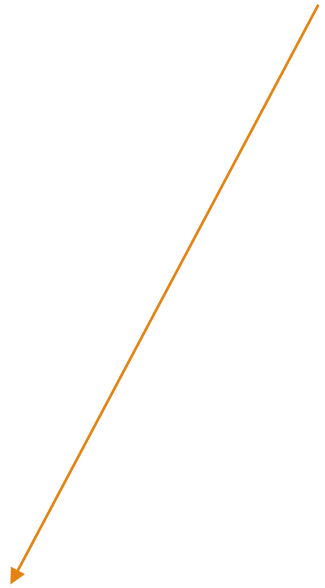
# Improving Quality Together

## Silver

PHILIPPA BATESON

# Assessment criteria:

Learning outcomes and their assessment criteria referenced on each slide



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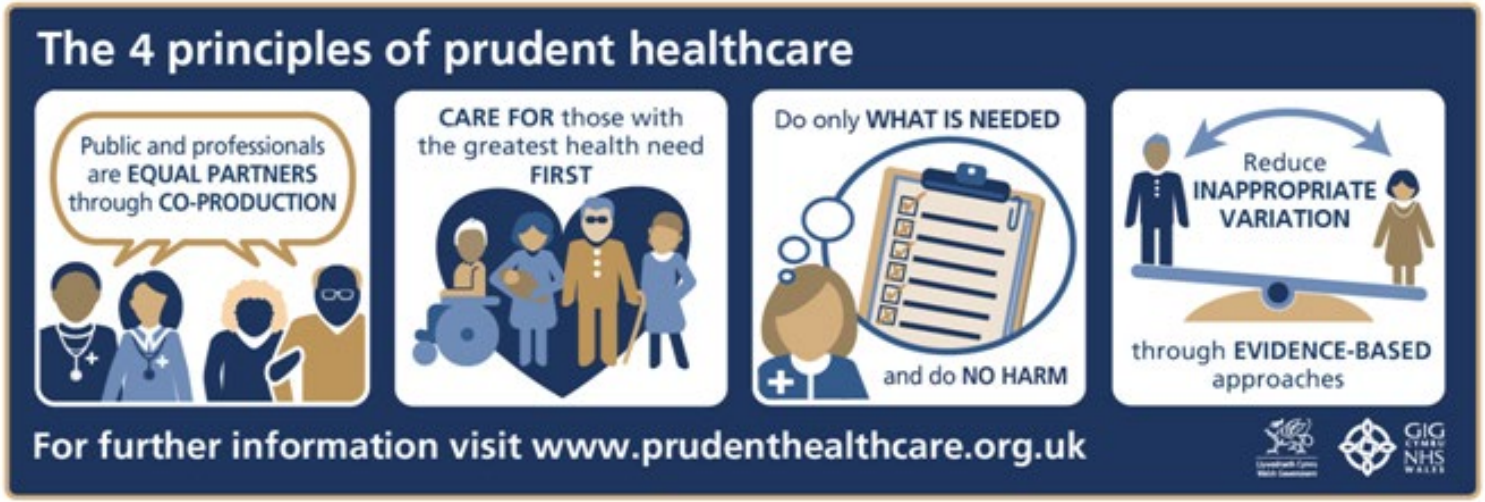
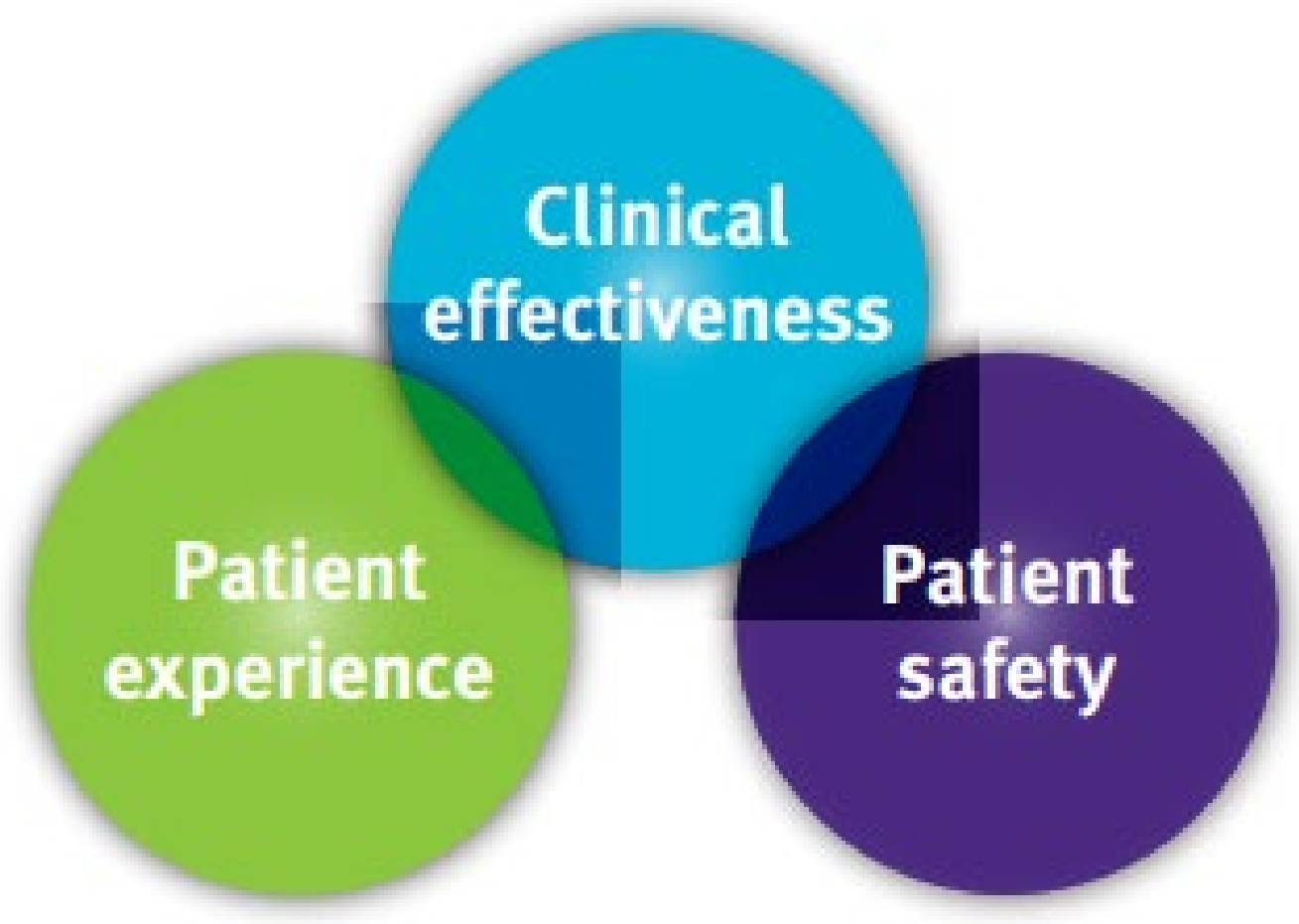



# Everything that is appropriate… rather than everything that is possible!

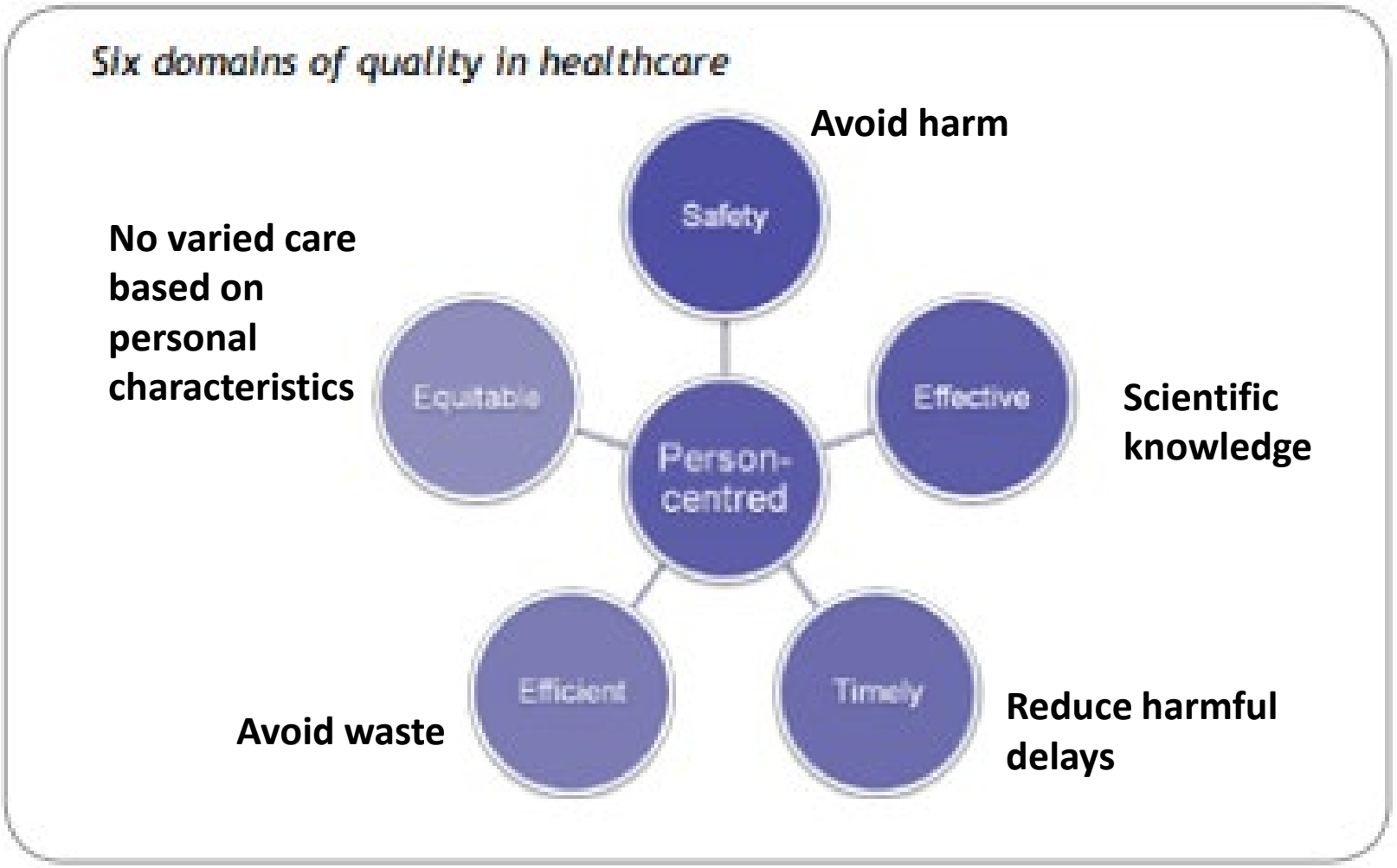
**↓ Unnecessary and inappropriate tests, treatments and prescriptions.**

**To provide the right care, right place at the right time.**




# What is ‘Quality’?

# IQT provides an opportunity to…




Improved quality

Reduced waste

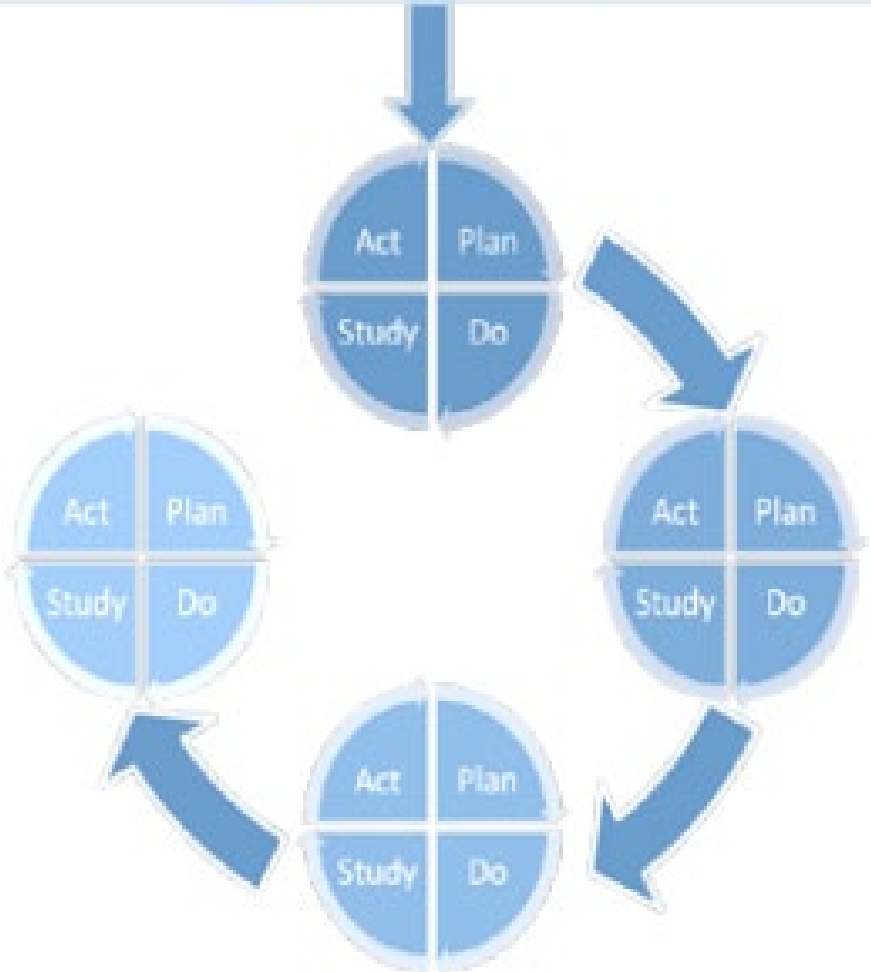
Better experience of care

Better use of resources

# Principles of quality improvement

1. Data and measurement for improvement
2. Understanding the process
3. Improving reliability
4. Demand, capacity and flow
5. Enthusing, involving and engaging staff
6. Involving patients and co-design

| QI method | Used to: | Most effective: |
|---|---|---|
| **Lean/six sigma** | Eliminate waste and redirect resources towards a more efficient, improved and consistent quality of care. | When healthcare systems are inefficient, wasteful and inconsistent in quality of care |
| **Performance benchmarking** | Raise awareness of local and national performance targets and sharing best practice | When there are established local and national target requirements to be met |
| **Healthcare failure modes and effects analysis (HFMEA)** | Systematically and proactively evaluate processes for quality improvement opportunities. | When a critical process requires careful and systematic review and improvement to prevent failure |
| **Statistical process control** | Measure and control process quality against predefined parameters | |


**Used to:**

Decide on measurable quality improvements required and test them on a small scale

**Most effective when:**

When a procedure, process or system needs changing

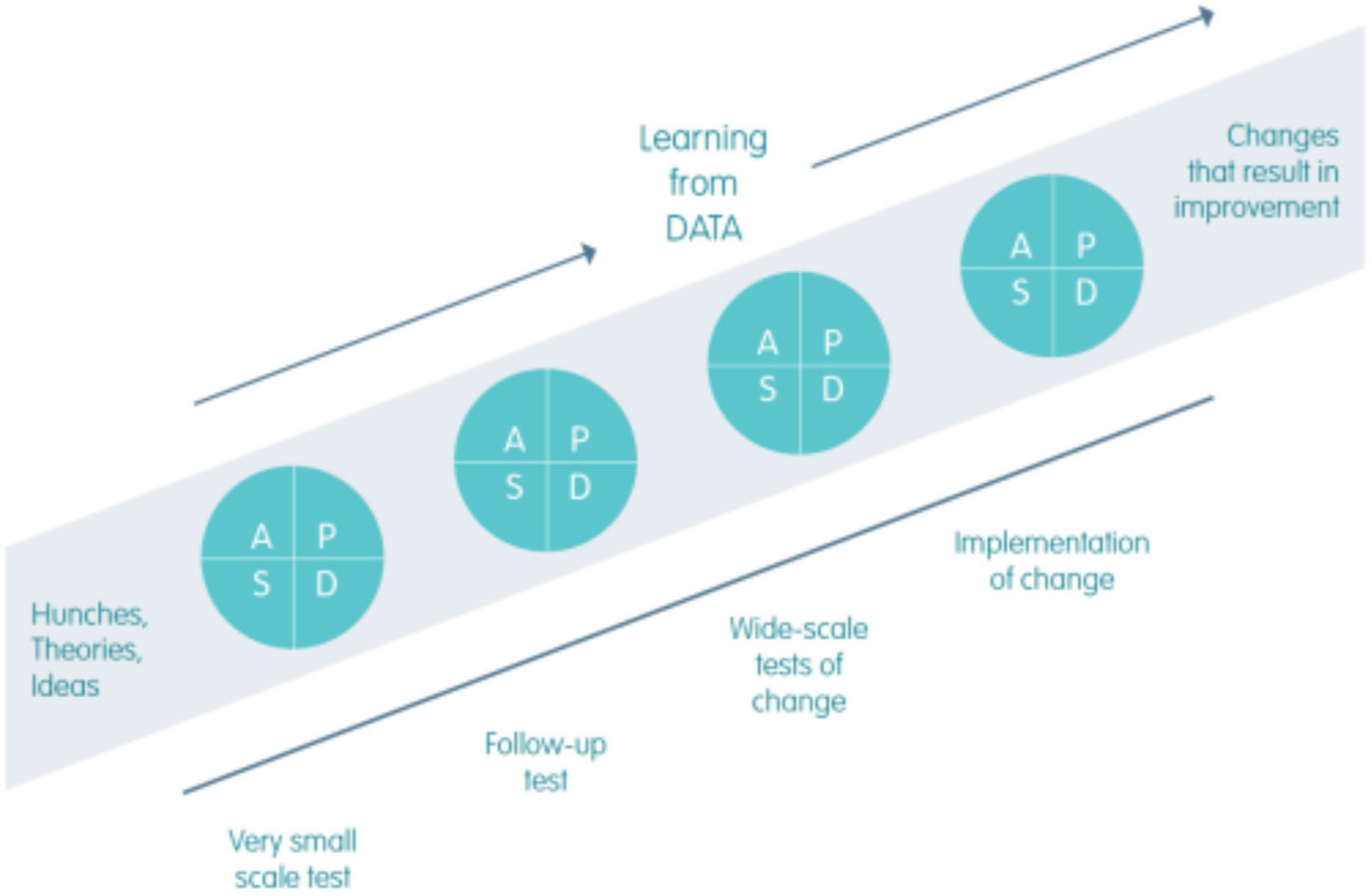
**Overview:**

1. Three questions
2. PDSA

# Quality improvement methodologies (4) The model for improvement

# Overview of steps

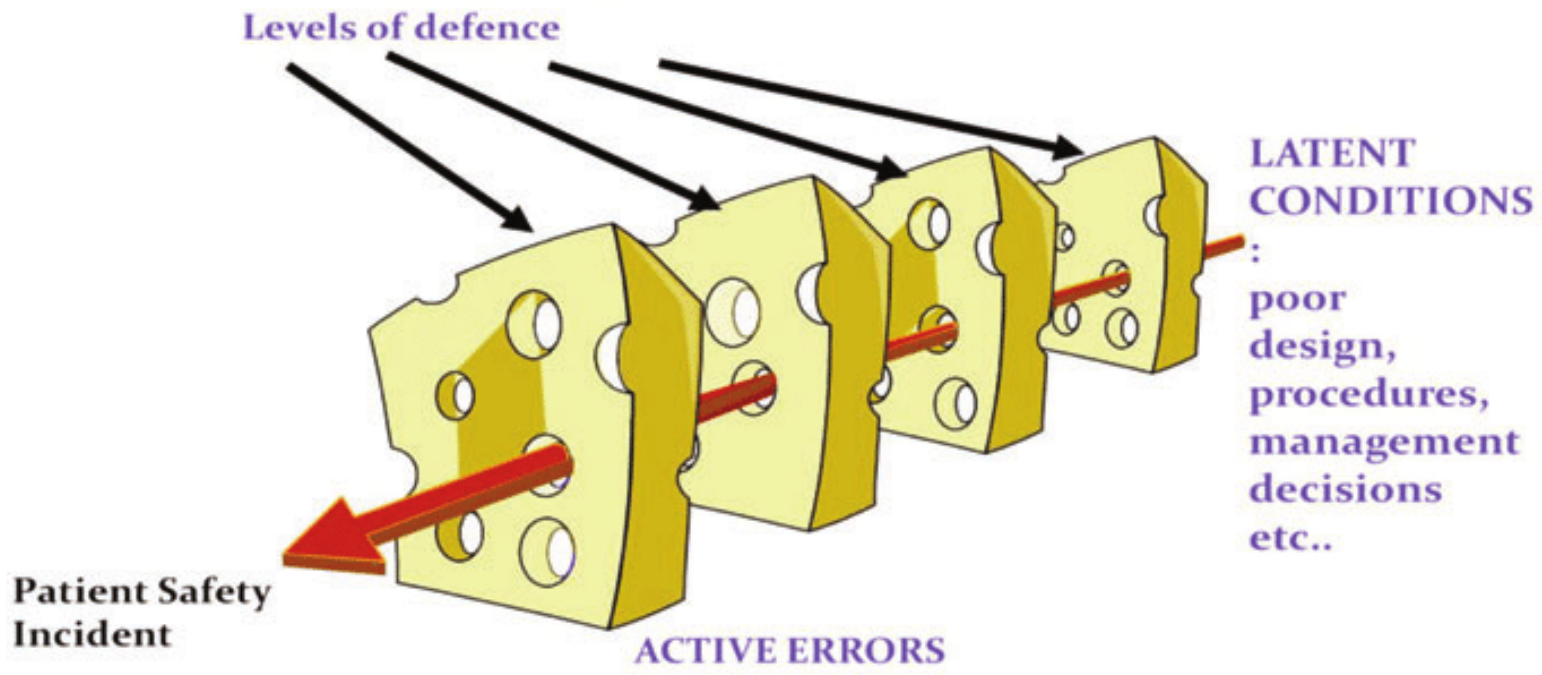
1. What problem to select?
2. Identify the real issue
3. Decide aim
4. Set up measures
5. Identify changes
6. Test changes with continuing measurement over time!


Learning
from
DATA
Changes
that result in
improvement
A P
S D
A P
S D
A P
S D
A P
S D
Hunches,
Theories,
Ideas
Very small
scale test
Follow-up
test
Wide-scale
tests of
change
Implementation
of change

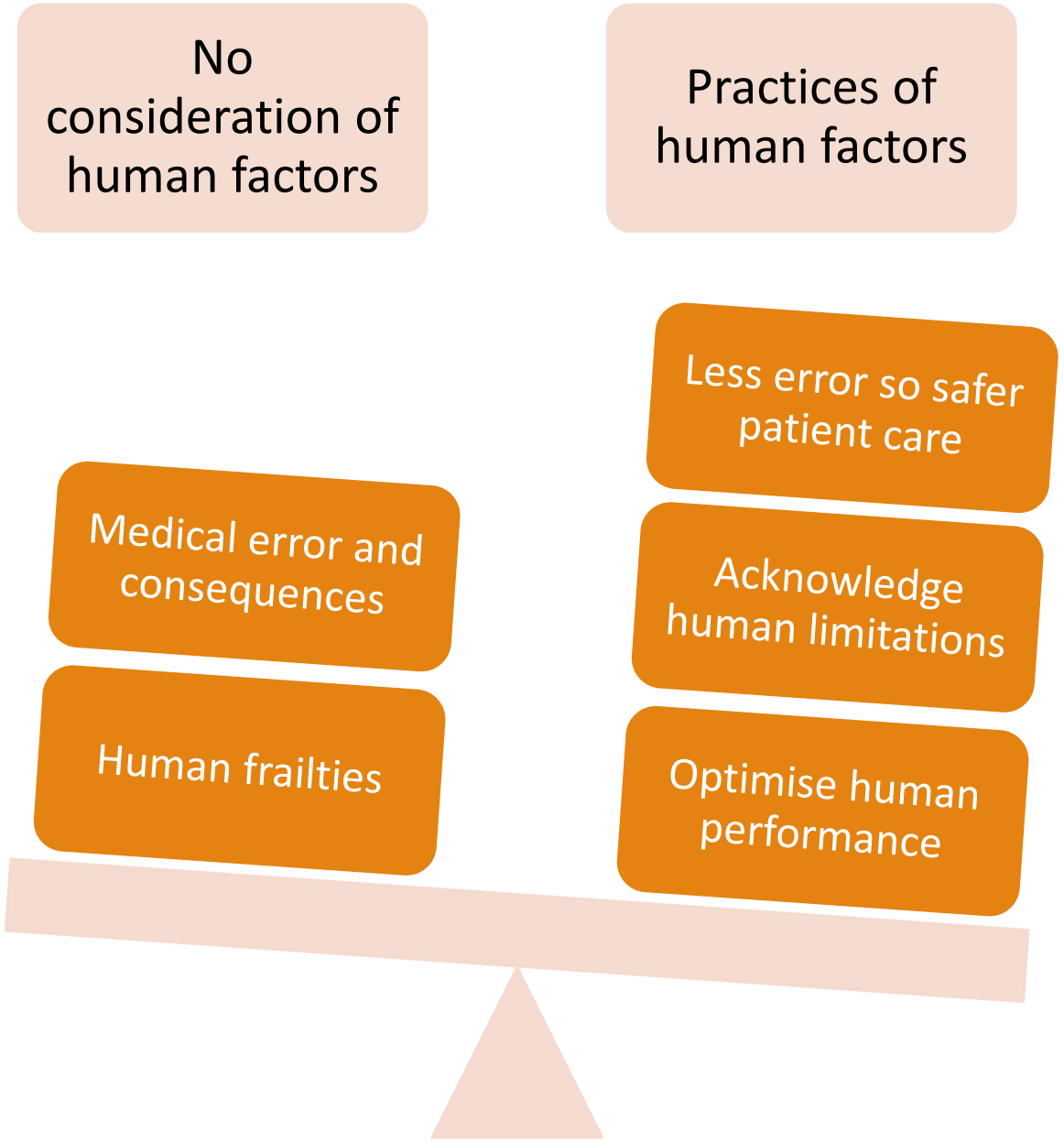
# Human Factors/Errors

**What are Human Factors in healthcare?**

"Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture and organisation on human behaviour and abilities and application of
that knowledge in clinical settings"



**Failure to apply human factors principles is key in adverse events in healthcare – we are only human**



## Human factor principles – World Health Organization

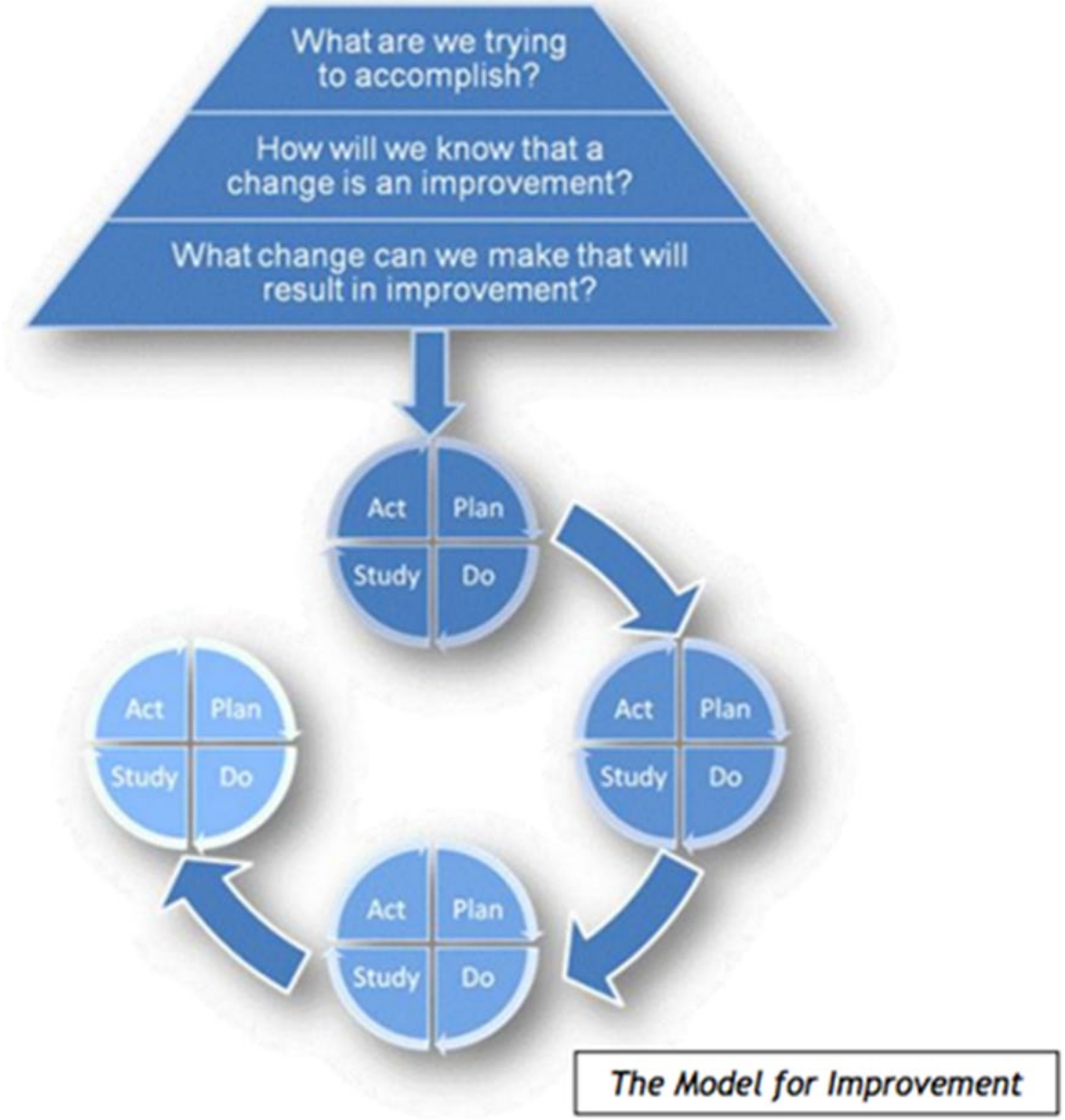
| | |
|---|---|
| **1** | **Avoid reliance on memory** |
| **2** | **Make things visible** |
| **3** | **Review and simplify processes** |
| **4** | **Standardise common processes and procedures** |
| **5** | **Routinely use checklists** |
| **6** | **Decrease the reliance on vigilance** |

# Human factors methodologies improves…

| | |
|---|---|
| **Quality** | "Delivering healthcare can place individuals, teams and organisations under pressure. Staff have to make difficult decisions in dynamic, often unpredictable circumstances. In such intense situations, decision making can be compromised, impacting on the quality of care. |
| **Reliability** | **Perform consistently well – e.g.- checklists**<br>The NHS learns where it can from other high reliability industries where safety of employees and customers is paramount such as; nuclear, petro-chemical, military operations, rail, maritime, civil aviation and emergency services. |
| **Team working** | Standardised procedures for teams to follow |

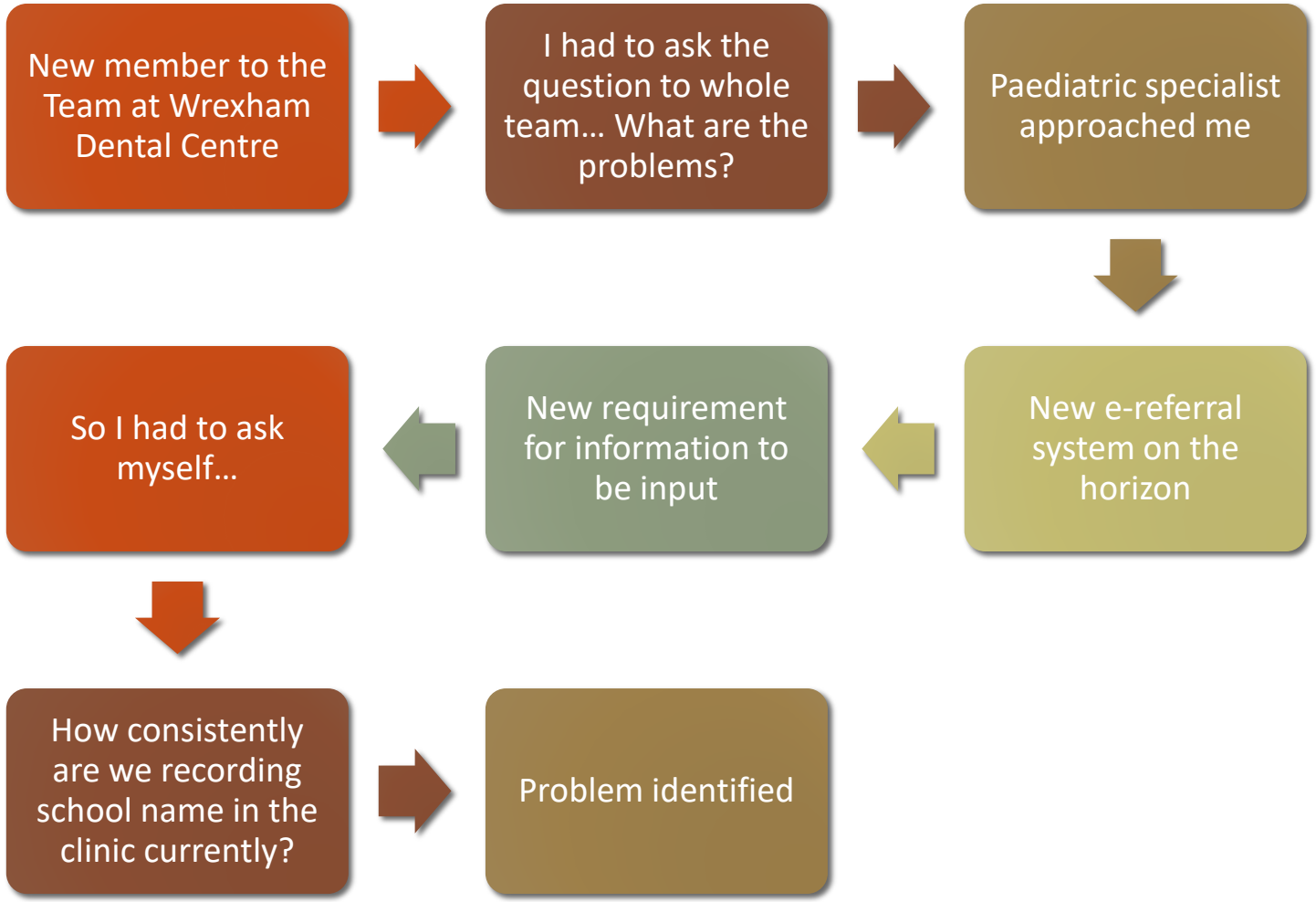
# Now for my Quality Improvement Project

*Dental Core trainee*
*Community dental services*
*Wrexham Dental Centre*




# Based on the Model for Improvement Methodology

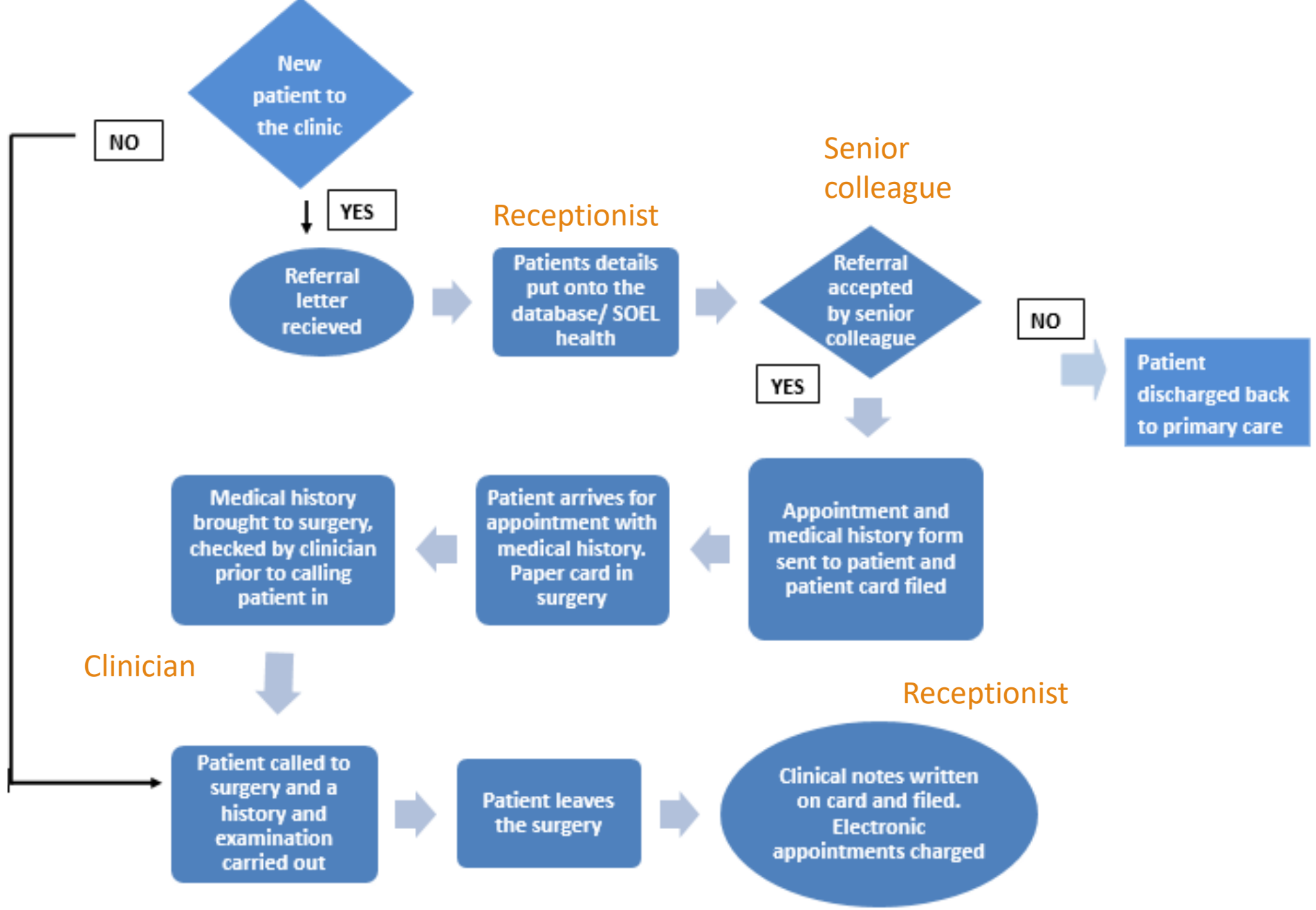
# Identifying the problem



# Why is it important?

**Background**

- Safeguarding children is a responsibility shared by all.
- The recording of school name by dental professionals is considered best practice by the British Dental Association.
- Highlighted in high profile child protection cases as information to be checked at every visit, as noted in recommendation 12 of the Victoria Climbie inquiry .
- The social services and well being (Wales) Act 2016 reinforce that information sharing is a key element to safeguarding with schools being well placed to identify concerns due to daily contact.
- There are approximately 5800 school aged children at Wrexham Dental Centre on the active patient list → therefore a successful change in the system could potentially have a positive impact on many.


New patient to the clinic
NO
YES
Referral letter recieved
Receptionist
Patients details put onto the database/ SOEL health
Senior colleague
Referral accepted by senior colleague
NO
Patient discharged back to primary care
YES
Appointment and medical history form sent to patient and patient card filed
Patient arrives for appointment with medical history. Paper card in surgery
Medical history brought to surgery, checked by clinician prior to calling patient in
Clinician
Patient called to surgery and a history and examination carried out
Patient leaves the surgery
Receptionist
Clinical notes written on card and filed. Electronic appointments charged

# Stakeholder analysis

## What is a stakeholder?

A person, group, systems or organisations who affects and can be affected by an organisational action or change

## What is a Stakeholder analysis?

‘Actively engaging a wide variety of people such as clinicians, administrative staff, patients and user groups will help you deliver your change project. A stakeholder analysis enables you to identify everyone who needs to be involved and assess how much time and resource to give to maintaining their involvement and commitment.’

- Identified by the process map

| Key people/groups | WIFM<br>+ impact | WIFM<br>- impact | What could they do to support or prevent the improvement? | What can we do to reduce the risks and support impact? |
|---|---|---|---|---|
| **Senior staff/management** | -Complying with best practice.<br>-information available should a safeguarding issue occur<br>-Maximise efficiency | -Lack of time<br>-Lack of resources and cost to enforce change | -Openness to change<br>-Provide local policies<br>-Not accept changes | -make the change simple<br>-not impact daily workload<br>-Cost effective<br>-Require little resources |
| **Reception** | ? | -Potential increase in workload<br>-Parent/carers may question why being asked | -Ensure this information is available before booking appointments<br>-Not accepting referrals without this info<br>-Not open for change | -Make change simple<br>-Not impact daily workload<br>-Poster explaining reasons behind recording schools |
| **Clinicians** | -Complying with best practice.<br>-information available should a safeguarding issue occur<br>-Maximise efficiency | -Increase in record keeping<br>-Increase in workload | -Not check if this information has been recorded<br>-Forget to ask | -Make it simple<br>-Not impact daily workload |

# How I involved stakeholders

**Senior staff/management**

- Provided baseline of current performance
- Involved with possible ideas for change

**Reception**

- Analysing current process
- Education
- Identifying the real issues in the process
- Involved with possible ideas for change
- Help implement change, involved in distribution

**Clinicians**

- Identifying the real issues in the process
- Education
- Involved with possible ideas for change

# What are we trying to accomplish?

To improve record keeping of school name

# What do we need to measure?

$$\text{Measure calculation} = \frac{\text{No. of school aged children (4-16) with school recorded}}{\text{No. of all school aged children seen in clinic that day}} \times 100$$

## Analysis with rules applied:

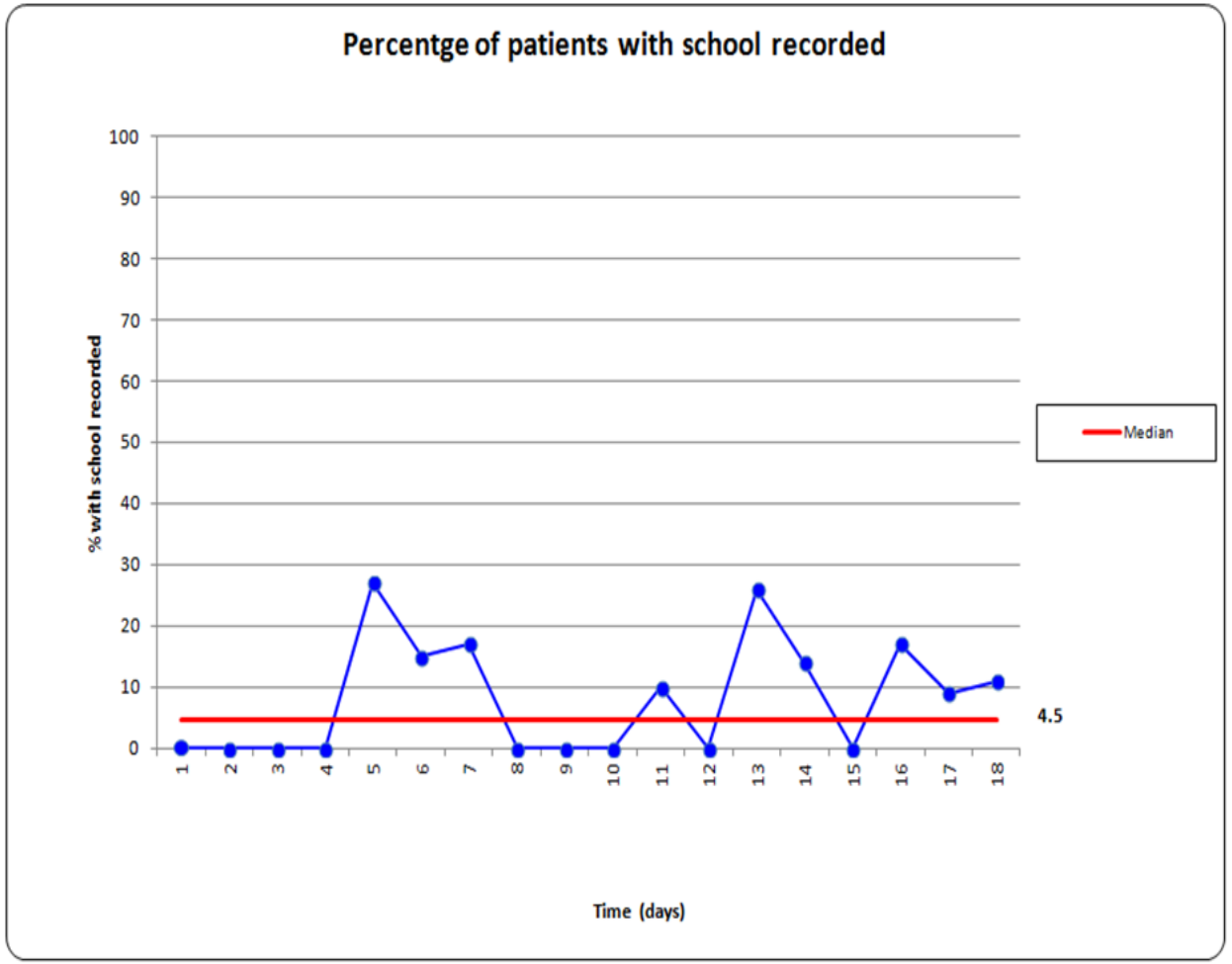
**Rule #1**: There is no shift detected. (There are not 6 or more consecutive points above or below the median)

**Rule #2:** There is no trend detected (there are not 5 or more consecutive points all decreasing or increasing)

**Rule #3**: 8 runs= okay (using the table it is suggested for 18 observation lower limit = 6 and upper limit =14)

**Rule #4:** No astronomical data point

Variation can be seen = **common cause variation**
Due to the PROCESS itself!




# Baseline measurements = School recorded on average 8% of cases collected in a 18 day clinic period

**5.1**

# So…Why is not being recorded? ‘5 WHYS’

**WHY**

No section on the medical history form for school to be recorded

**WHY**

Not widely recognised as necessary information

**WHY**

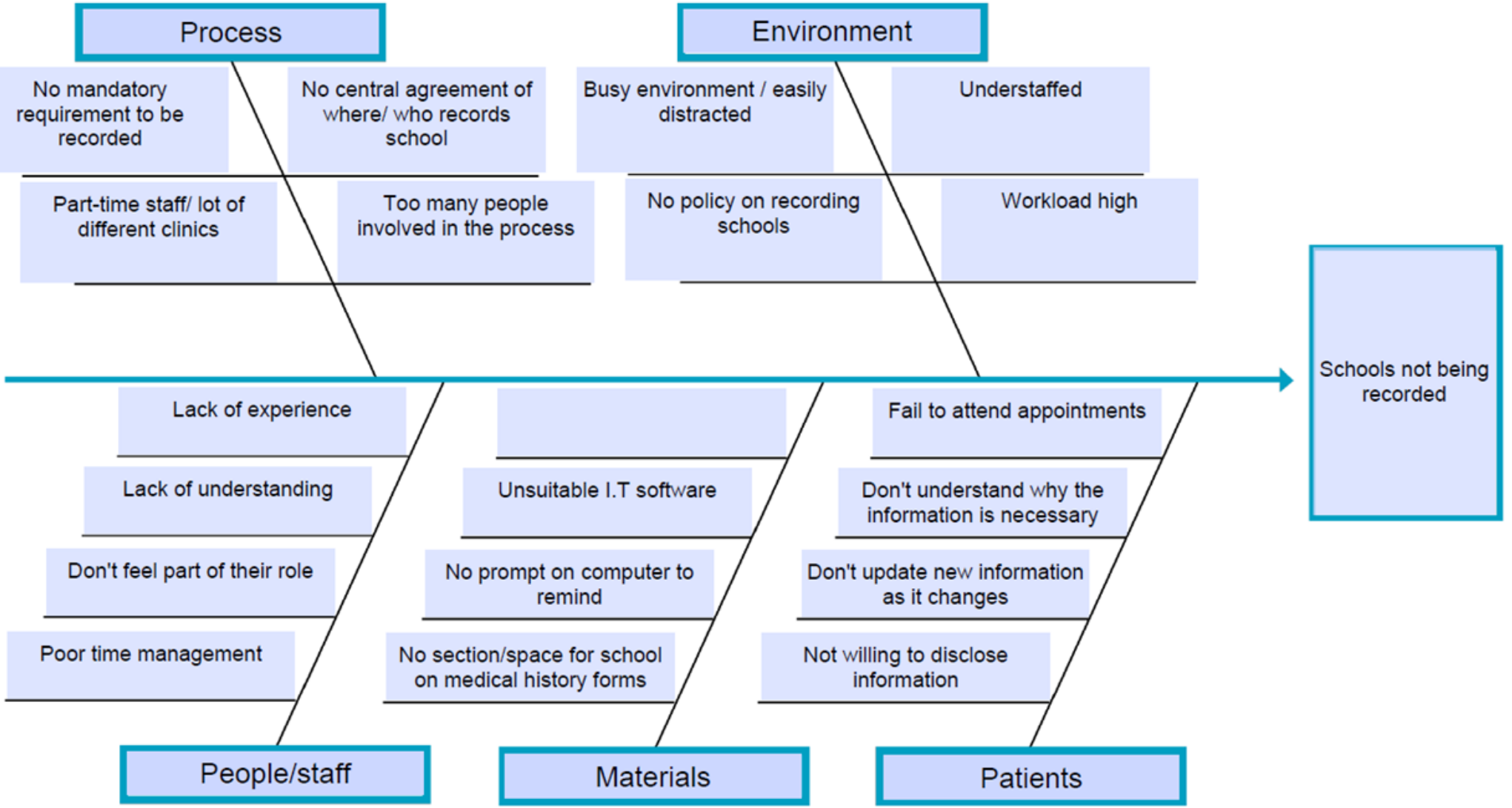
Not taught during dental education

**WHY**

Not a mandatory requirement

**WHY**

A lack of understanding of the benefits of information-sharing for the safeguarding of children




# Fishbone analysis

Institute for Healthcare Improvement · ihi.org

# Human factors related to my project

- Clinicians stressed high workload, fatigued: along with…

- no set layout/ place for recording school, currently relying on memory
- No visual reminder
- No common standard shared process
- No checklist for checking for school recording

- Need to consider human factors when planning my project to ensure to can bring about a positive change
- Simplify the implementation into the current process without increasing workload

# Aim

To increase the record-keeping of school name for school aged children (4-16 years) initially from 8% to 70% by March 2019.

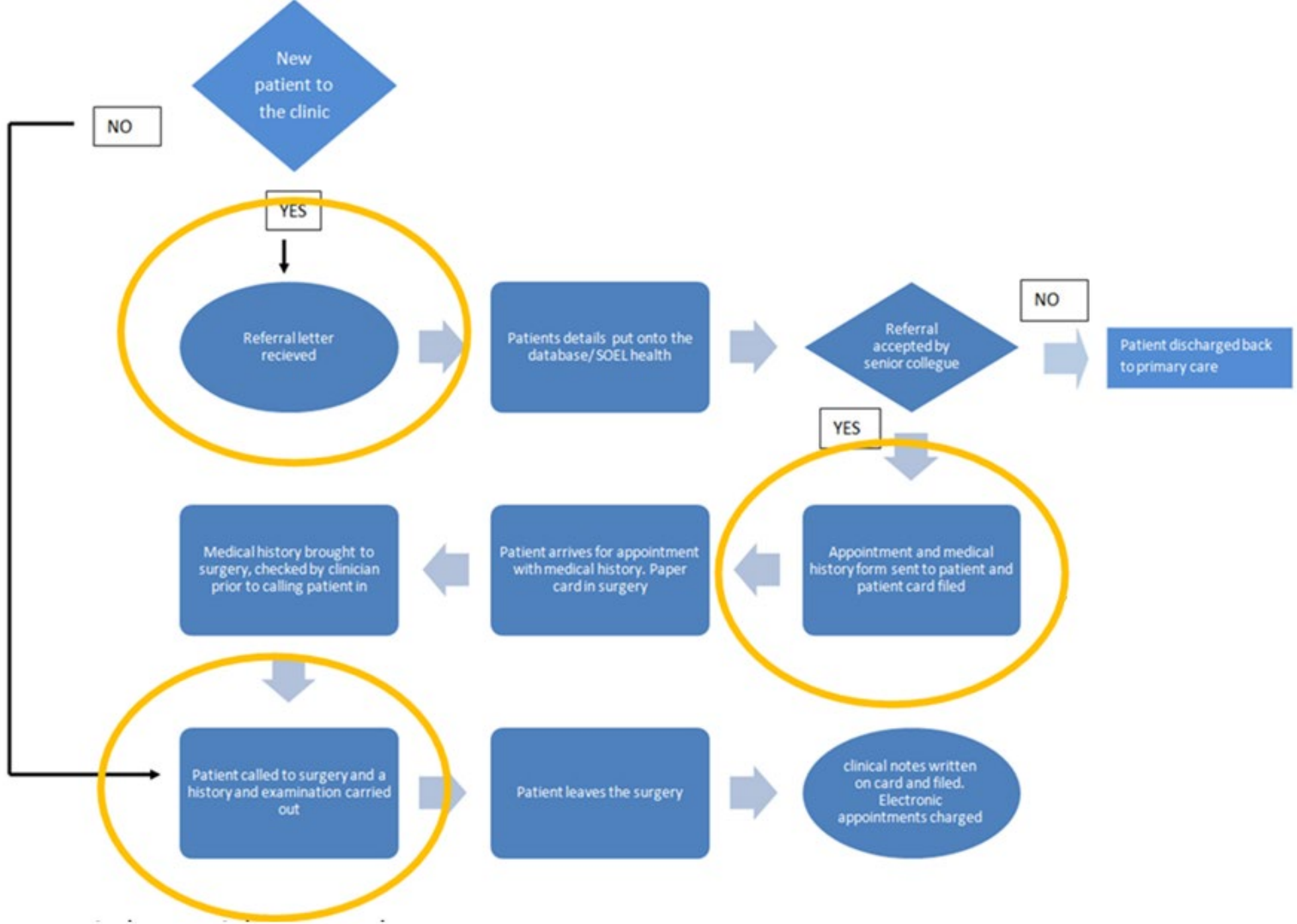
**S** – 4-16 years only

M – school name recorded. Yes or no?

A – given plenty of time to show an improvement

R – not expecting 100% straight away

T- by March 2019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YES
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Patients details put onto the database/SOEL health
Referral accepted by senior collegue
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Patient discharged back to primary care
YES
Appointment and medical history form sent to patient and patient card filed
Patient arrives for appointment with medical history. Paper card in surgery
Medical history brought to surgery, checked by clinician prior to calling patient in
Patient called to surgery and a history and examination carried out
Patient leaves the surgery
clinical notes written on card and filed. Electronic appointments charged

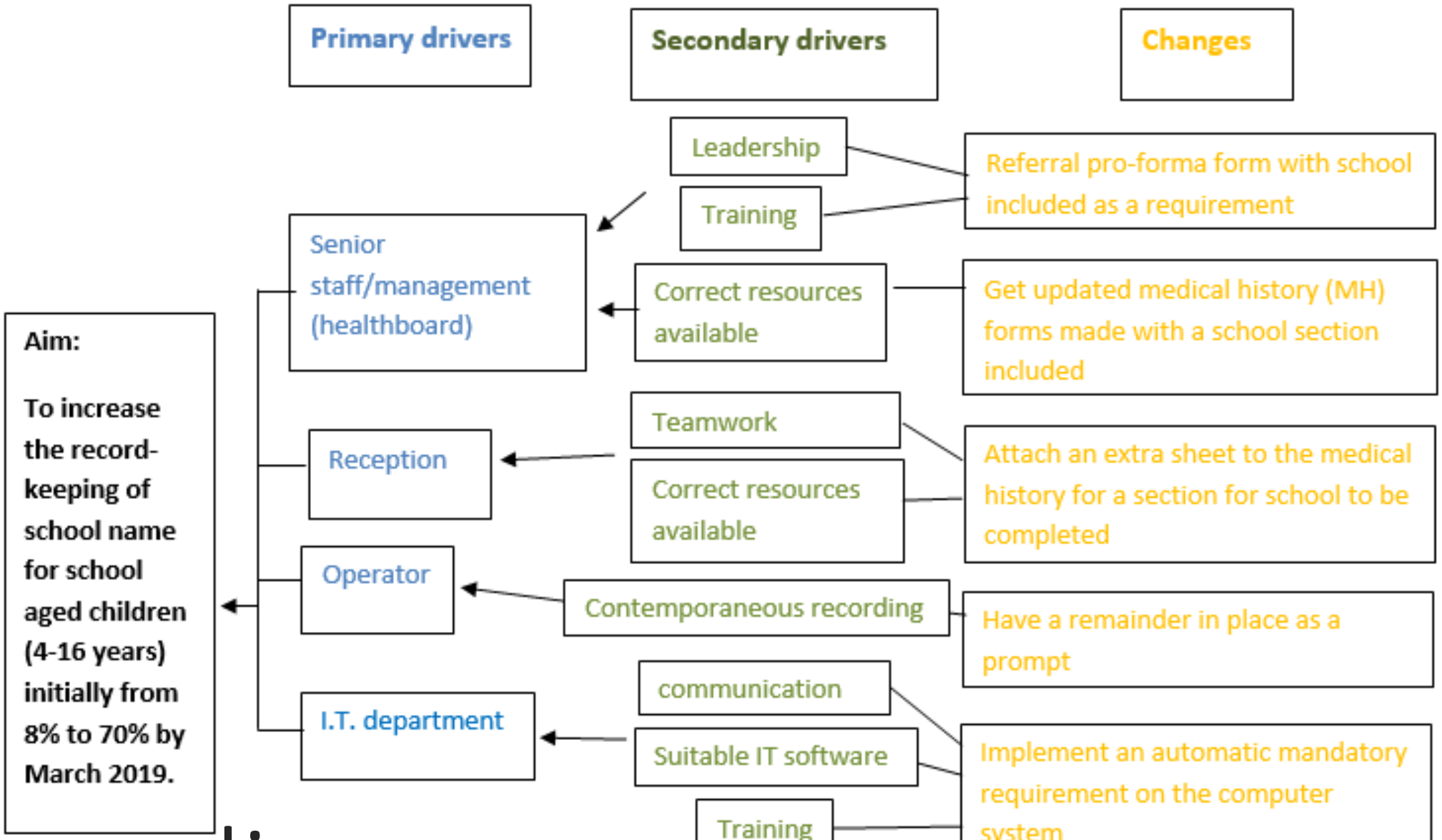
# Options for change:

| | |
|---|---|
| **1. Referral pro-forma with school included as a requirement** | ✗Out of my influence<br>✓ Would ensure it is recorded without influencing workload in clinic<br>✗Doesn't necessarily mean it would be checked regularly |
| **2. Get updated medical history forms made with school section included** | ✗ Out of my influence to change<br>✗ not relevant to all our patients (adult)<br>✗ Means more paper waste, as lots of old MH forms already printed (not cost-effective)<br>✓ Would mean that it is regularly checked and updated (at least 6 monthly) |

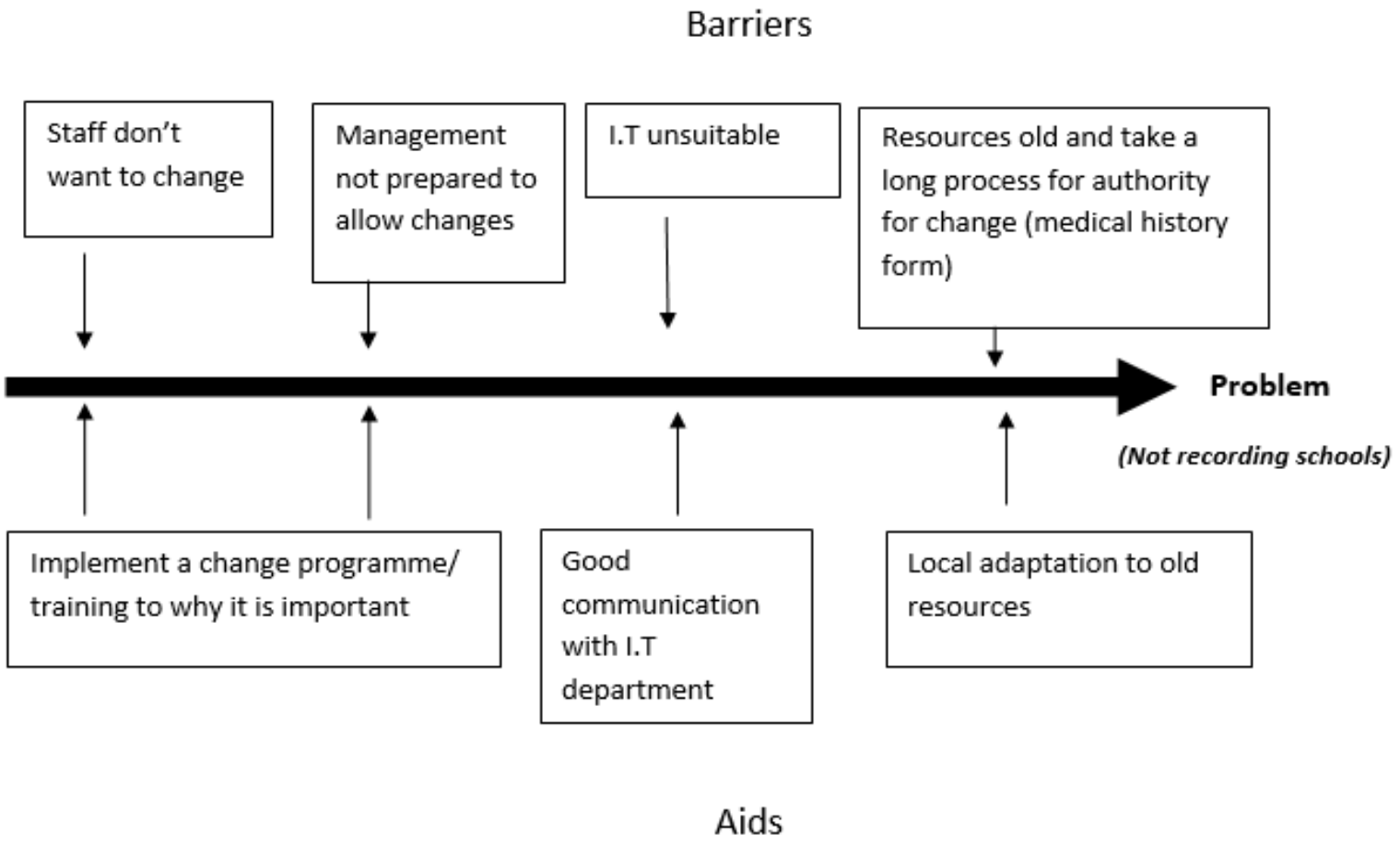
| | |
|---|---|
| **3. Attach an extra sheet to the medical history for a section for school to be completed** | ✗ May not be sustainable (requires someone to continue to staple extra sheets onto medical history)<br>✗ More difficult to implement for those with medical histories already completed (not new patients)<br>✓ Quick and easily visible<br>✓ Can be started without need to get higher authority to make changes out of my influence<br>✓ Should be checked at every visit or at least new exam |
| **4. Have a prompt in place (post-it note/poster) to remind everyone to ask patient/ parent when attend and record on patient file/notes** | ✗ Prompts can be ignored with time<br>✗ Currently schools not being recorded in paper notes<br>✓ Prompts should remind people to ask for the information |

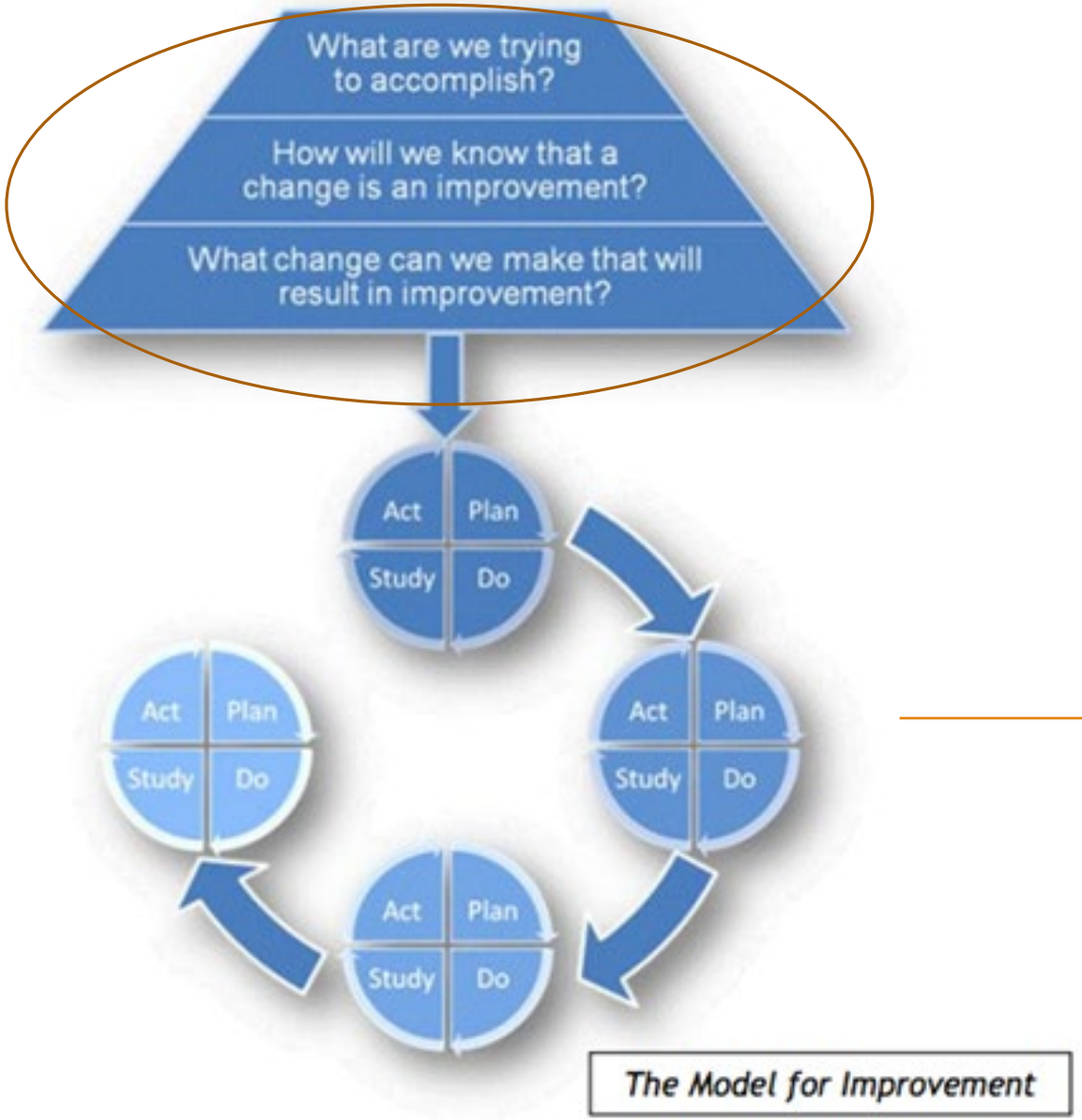
| | |
|---|---|
| **5. Make the prompt a mandatory requirement so that information needs to be included before continuing (on the IT software system)** | ✗ Requires suitable I.T. support<br>✗ Discussion at a directorate meeting before change can be implemented<br>✗ Requires suitable IT software system<br>✓ Increases the likelihood of the information being recorded<br>✓ Will be checked every time the patient attends<br>✓ Electronically recorded information means information available when paper notes not available |

# Driver diagram

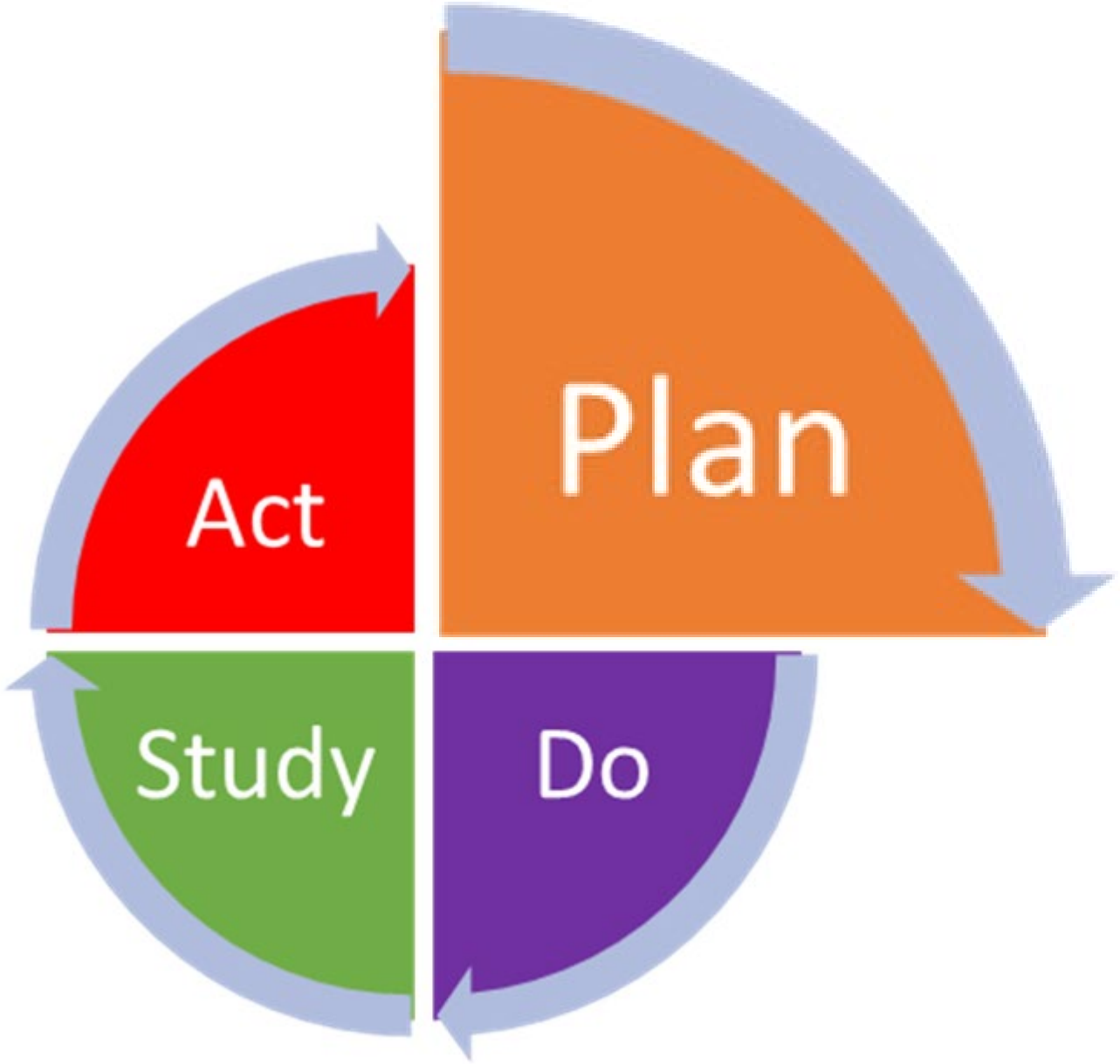


# Barrier aid analysis – what is going to help or stop us from improving?






*The Model for Improvement*


Plan
Do
Study
Act

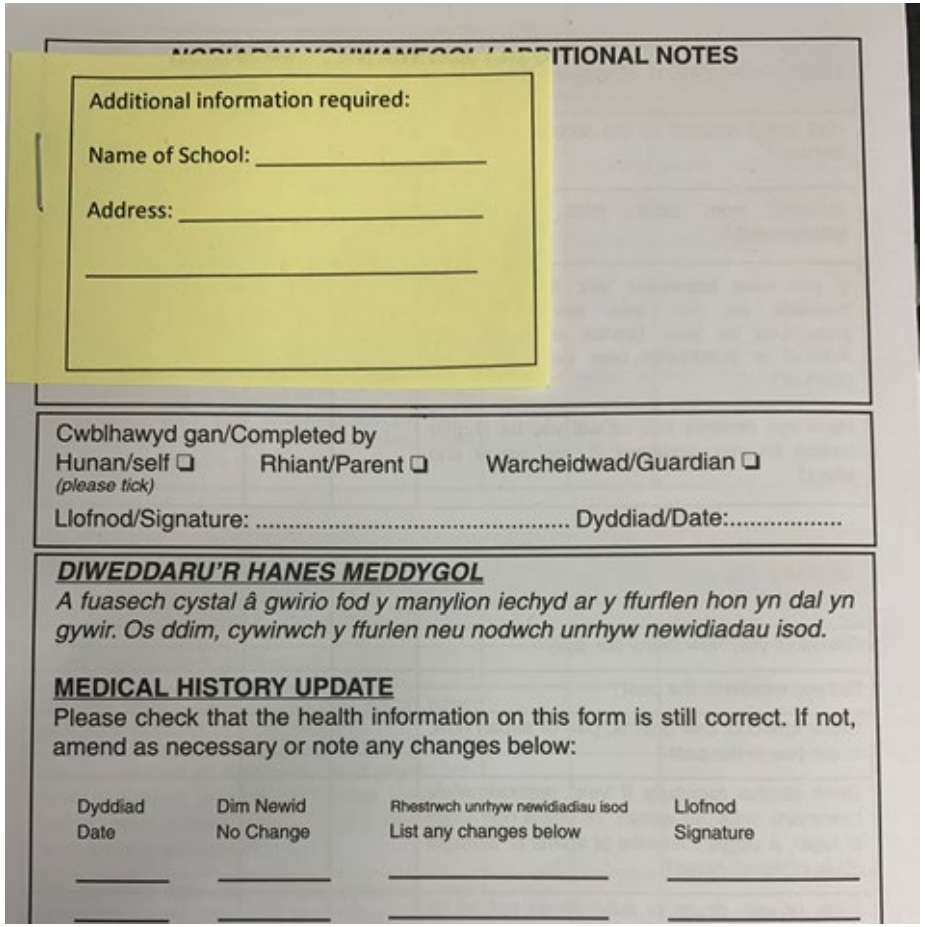
# Plan

**Step 1:** The initial idea process was to discuss with clinical staff about why recording of school name was important

## Option chosen:

To attach an additional paper slip to medical histories for schools to be recorded → it was agreed that medical histories are an area which are updated at each appointment

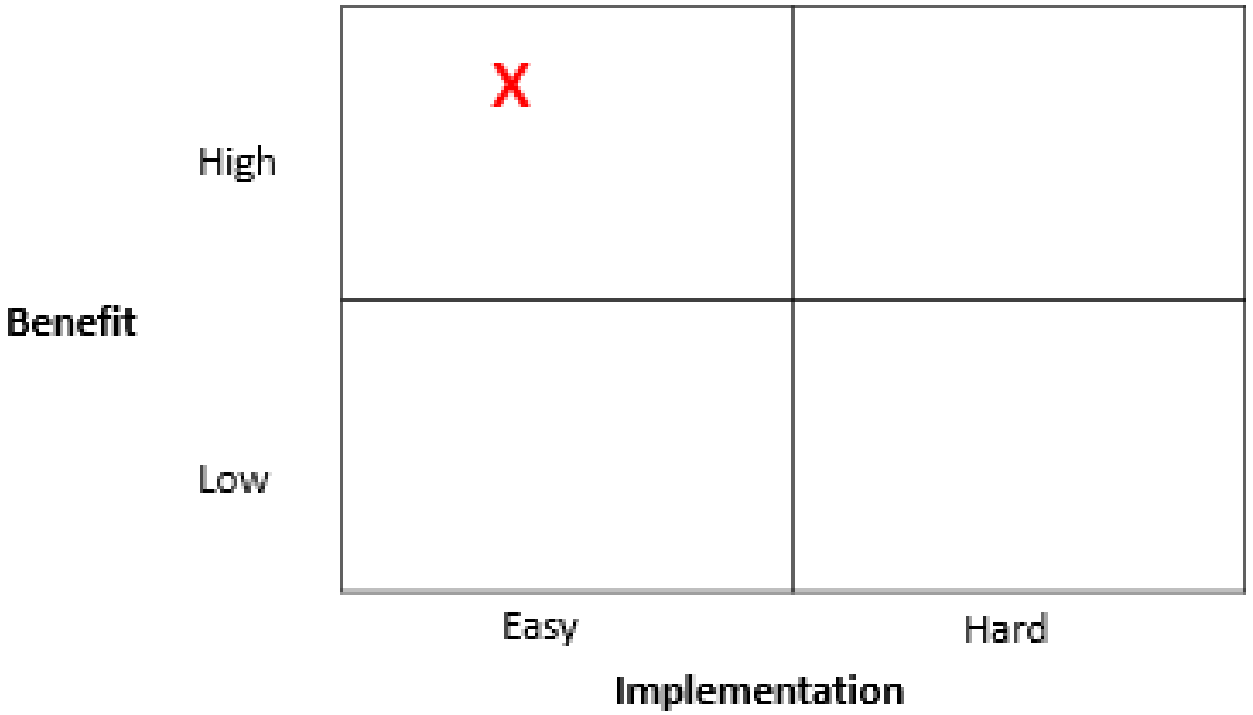
Workload least affected



# Human factors considered

| Human factor principles | Change implemented |
|---|---|
| Avoid reliance on memory | ✓ |
| Make things visible | ✓ |
| Review and simplify processes | |
| Standardise common processes and procedures | ✓ |
| Routinely use checklists | |
| Decrease the reliance on vigilance | ✓ |

# Ease-benefit matrix




Act
Plan
Study
Do

# Do- Data collection

| Date | Gender | Age | school recorded? | If recorded, where? | Easy or hard to find? | Referral source? |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Who?
Me

Why?
Workload

When?
Weekly → reduce variation

Time period?
43 clinic dates

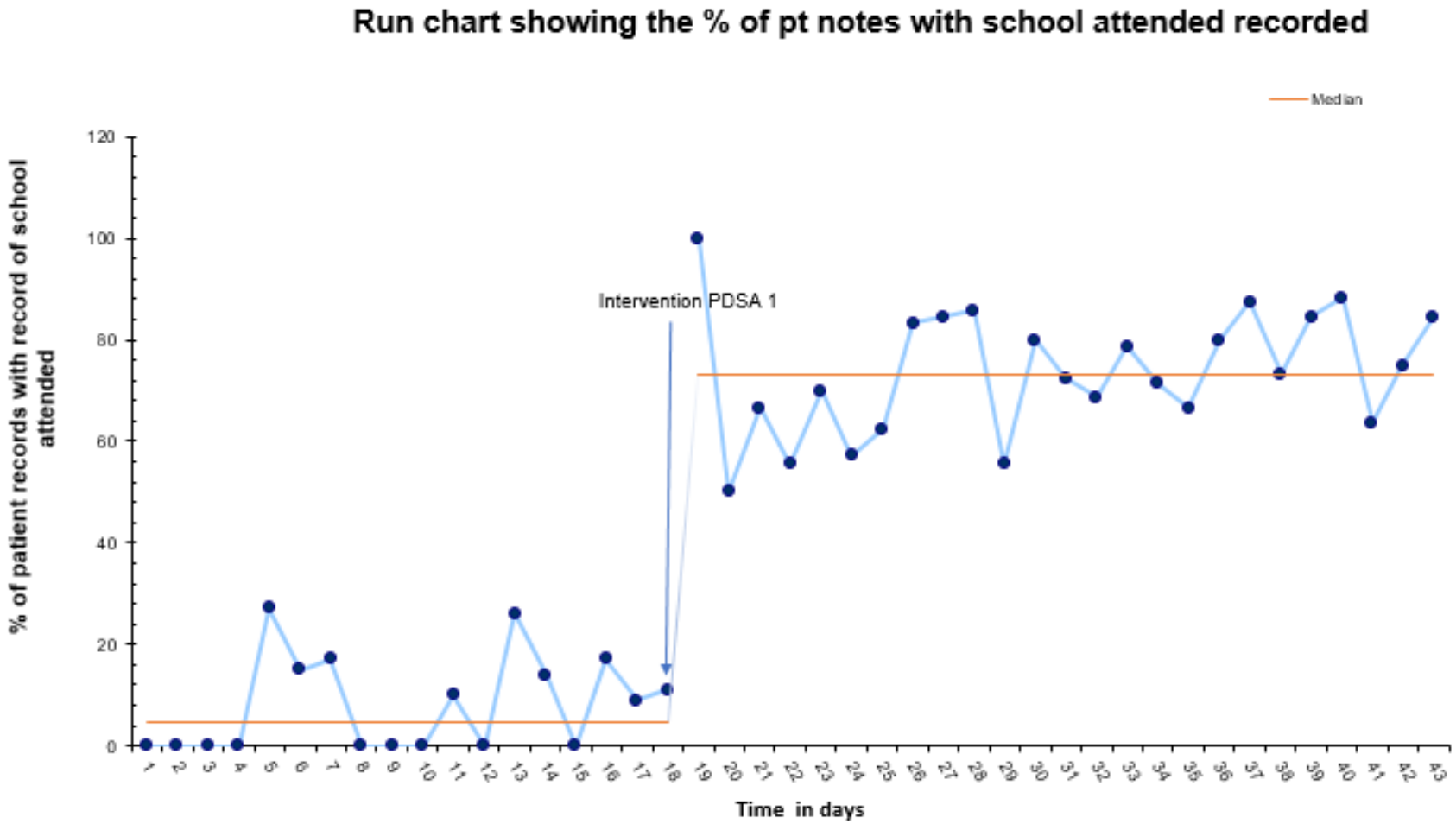
How much ?
226 before intervention
354 after intervention
Total of 580 clinical notes

Who's data?
The whole clinic across all operators


Act
Plan
Do
Study

# Study -Analysing data

- On average school was recorded in **73.8%** of cases after the intervention was implemented.
- Baseline average (before intervention) was 8%
- 65.8% ↑ in uptake over a period of 25 clinics days
- Varied clinicians and operators



# Variation

| | | |
|---|---|---|
| **Common cause variation** | Fluctuation resulting in a steady but random distribution of output around the average of the data,<br>An inherent part of a process | Observed on the run chart before implementation of change |
| **Special cause variation** | When something out of the ordinary happens in the process | Observed on the run chart due to the implementation of the change, MH slip |

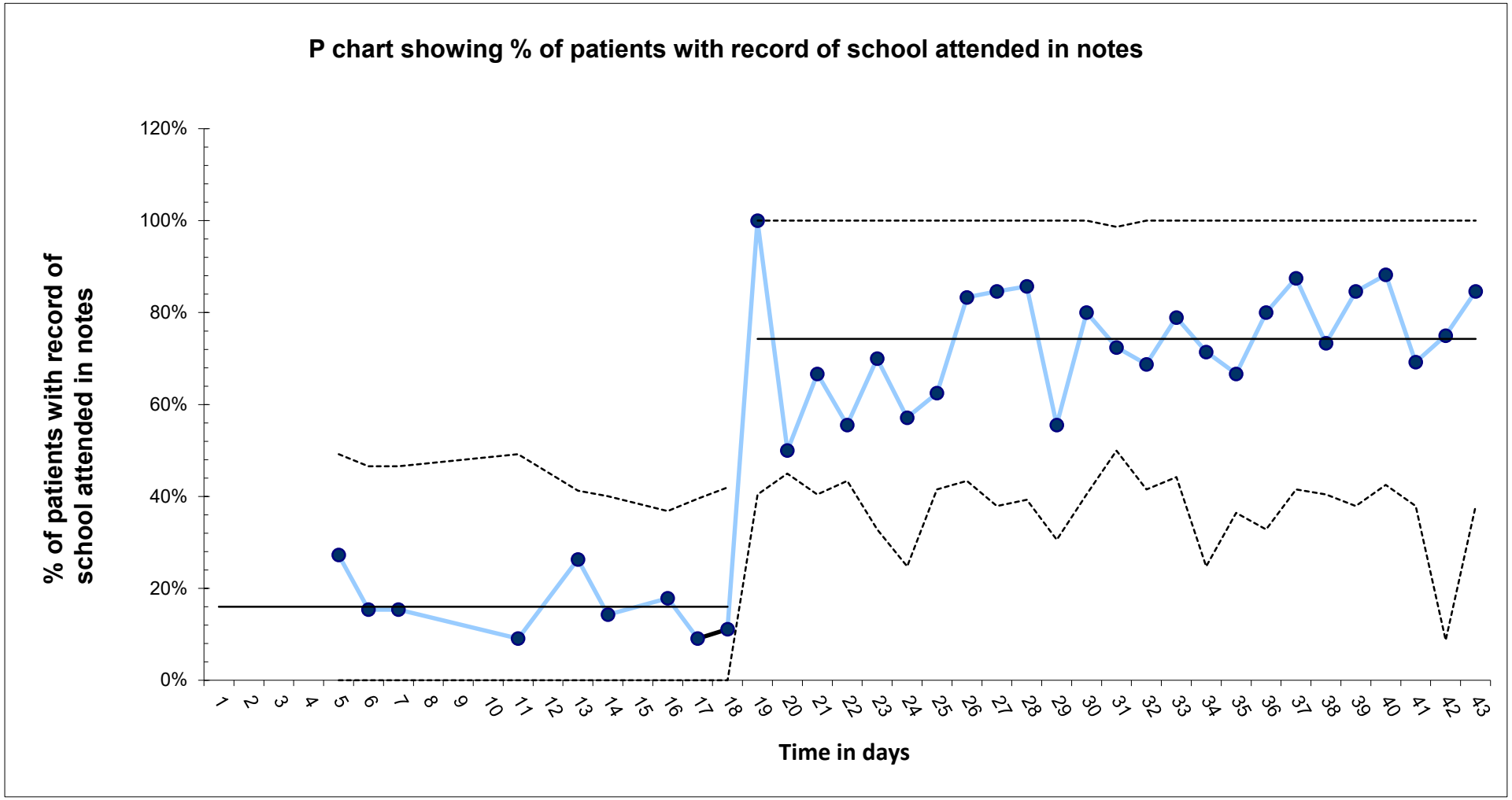
**Expect common cause due to :**

-Differing clinician variation

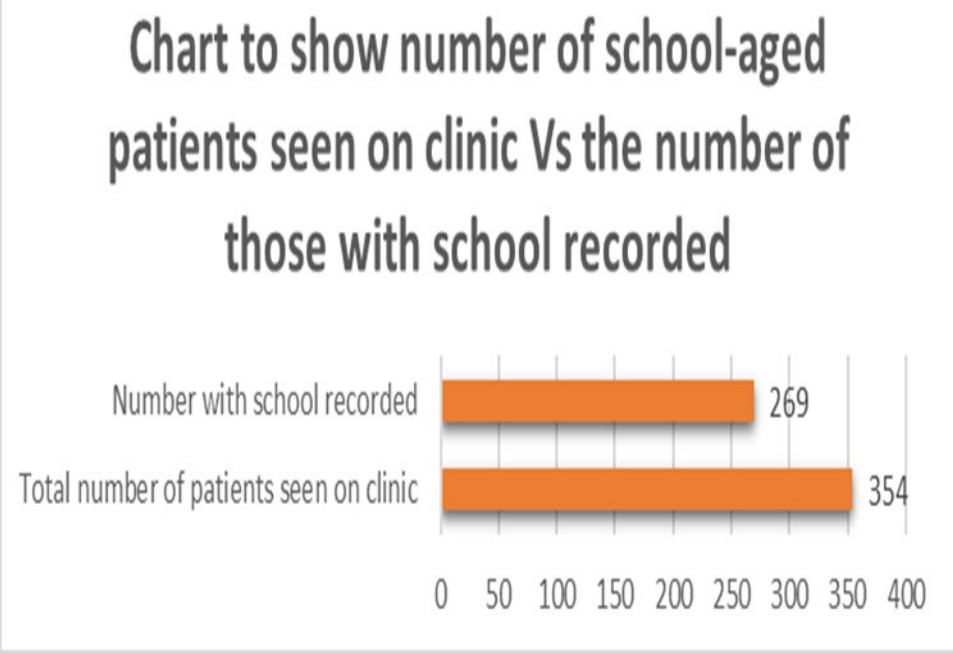
- Differing medical forms handed out (differing reception staff)

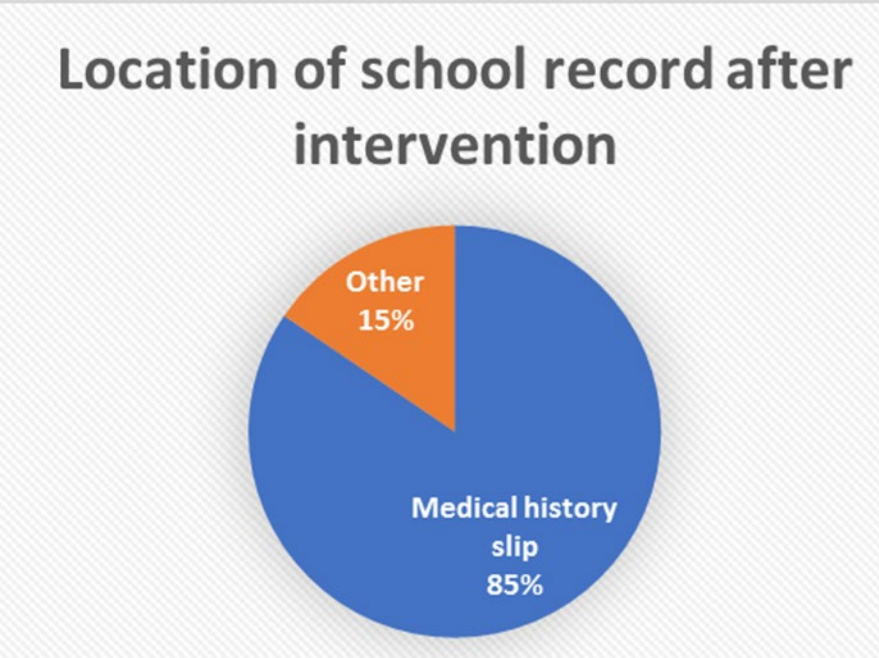
- Dental Students present from University for 2 week placement

-A one-off special cause variation also observed


P chart showing % of patients with record of school attended in notes
% of patients with record of school attended in notes
120%
100%
80%
60%
40%
20%
0%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
Time in days

# Study - Analysing Results



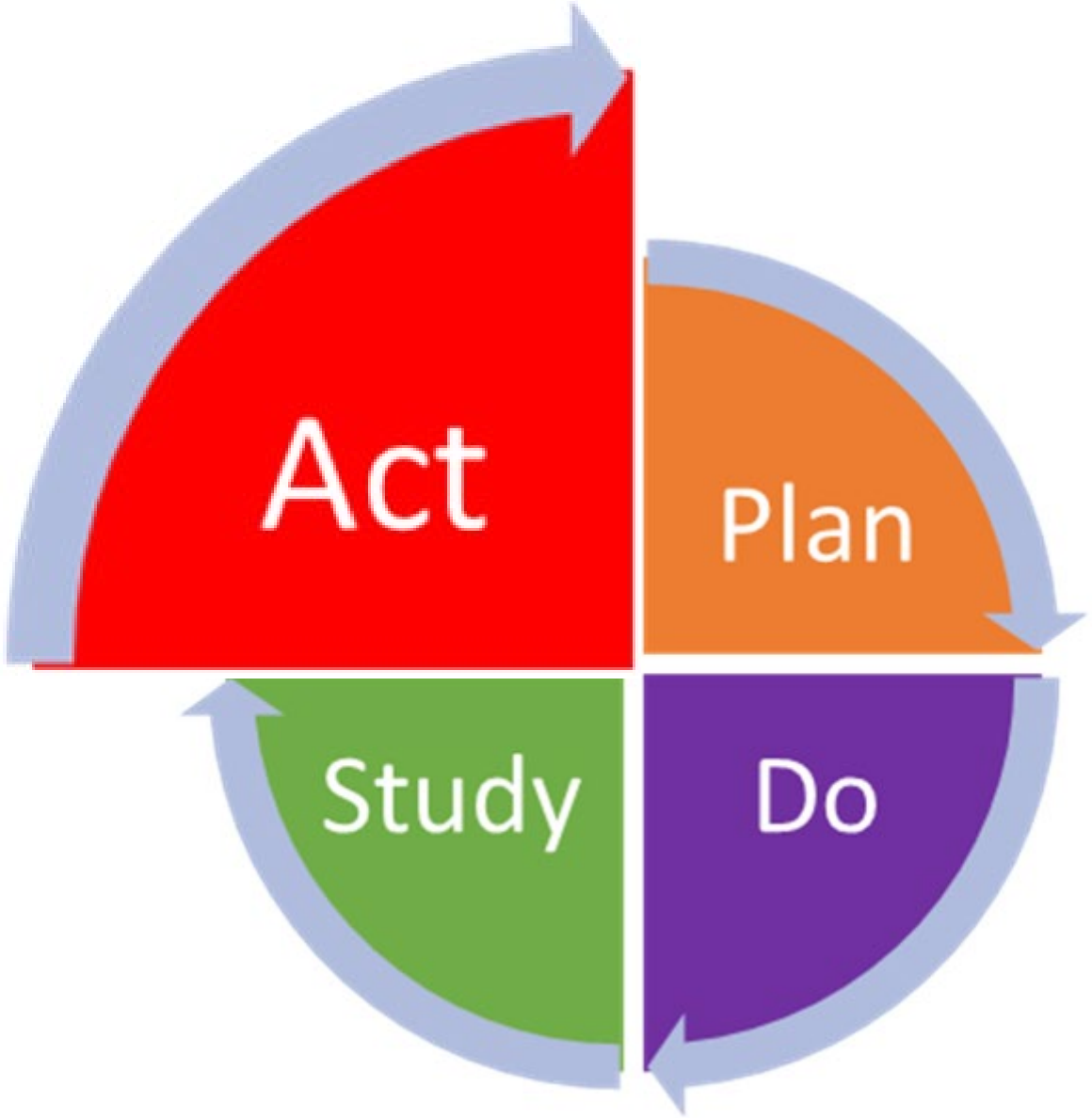



# Study -Evaluating Results

**So what does this all mean?**

A shift in the process signals that the change implemented, the addition of the MH slip, resulted in a true improvement

Beyond the shift (6 consecutive points) a further 8 data points stayed at this level and therefore this indicates that the change implemented is a sustained improvement.


Act
Plan
Study
Do

# Act

- I achieved my aim ✓

  However there is still room for further improvement to attain 100%

  100%  should be gold standard for safeguarding best practice !

Therefore going forward…

- Further PDSA cycles to test **Step 2:**

To ensure school name is a mandatory requirement on the computer software system for referrals and checking by reception and clinical staff at each visit.

# Barriers?

- Healthboard regulations
- IT software system

| S<br>Strengths | W<br>Weaknesses | O<br>Opportunities | T<br>Threat |
|---|---|---|---|
| • The change brought about an improvement almost instantly<br>• Change incorporated into the current process map without much need to change the process<br>• Simple<br>• Raise awareness of the importance of safeguarding | • Repeated patients being recorded in the timescale<br>• Need for batches of medical history slips to be attached<br>• Up to reception staff/clinicians to ensure a new style MH form used for existing patients<br>• Students on 2-week rotation within the clinic<br>• Paper notes not always available (e.g.- GA or different clinics) | • To share idea across other community dental service units<br>• To share idea with local GDPs, particularly with the e-referral system on horizon – school is a requirement on the form<br>• Incorporate into standardised medical history form for future prints (would be more sustainable) | • Sustainability<br>• IT software systems<br>• Health board regulations (delays from health board to allow permission to dial in) |



# Evaluating performance

# Potential spread?

- Similar issue within other community dental units across the region – good potential for spread
- If spread among other units within the community – highlight the need/give more reason for school section to be included on newly printed MH forms which lead to an opportunity for a more sustainable change
- To share idea with local GDPs to implement into their daily practice (e-referral)

# Priorities for future QI

- **Enhanced communication between stakeholders**
  - particularly with the healthboard (management):
  - discuss proposal of new updated MH layout
  - Mandatory requirement

- **Discussion with the IT department and software system:**

-To assess feasibility of the changes wanted within the system itself

-Push for electronically recording and not just medical history forms/ paper copies as differing community centres or other reasons patient file not available on the day (electronically accessible across all sites)

# Sustainability

**‘When new ways of working and improved outcomes become the norm’**

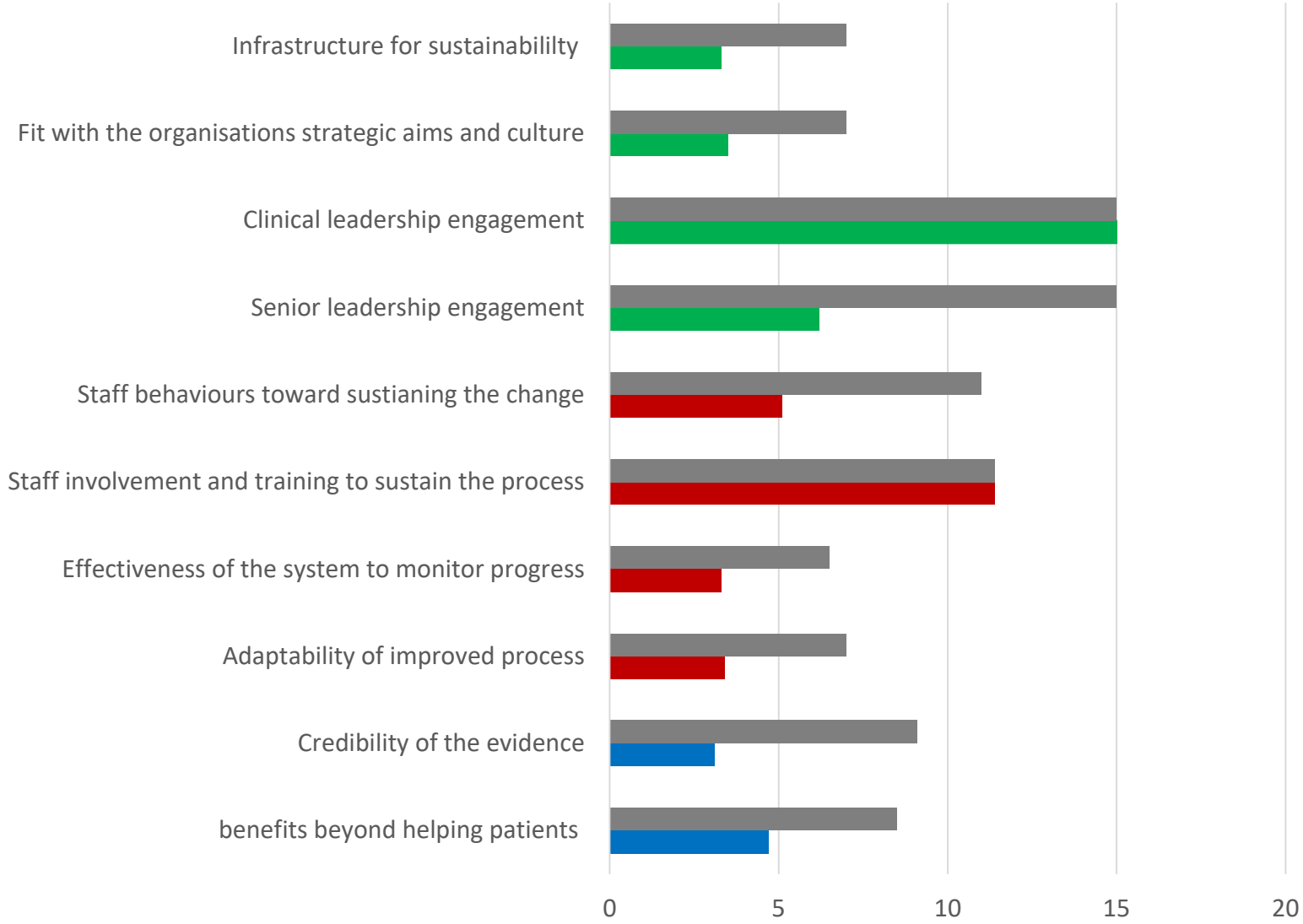

The sustainability Model- Predicts the likelihood of sustainability for a improvement project

# Sustainability model + bar chart

Sustainability total
Score: 59/100

## Main domains where I fall short:

1. Infrastructure for sustainability
2. Credibility of the benefits



# Sustainability model

## 1. Infrastructure for sustainability

-There isn’t a policy to reflect the new process

-The facilities and equipment are not appropriate to sustain the new process

## 2. Credibility of the benefits

-Benefits are known and supported by stakeholders but the benefits but not necessarily seen on a day-to-day basis

# Sustainability continued.

- A shift identified behaviour/ process observed in the results and then an extra 8 data points stayed at this level → sustainability
- Currently relying on the up-keep of attachment of slips to MH forms
- We know by adding the info onto medical forms mean it gets recorded – just need a way of it being on the original forms to cut out the job of having to attach extra sheet

# References

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Thank you for listening

Any Questions?