Improving Surgical Safety For Dental Extractions At Porth DTU

A Quality Improvement Project

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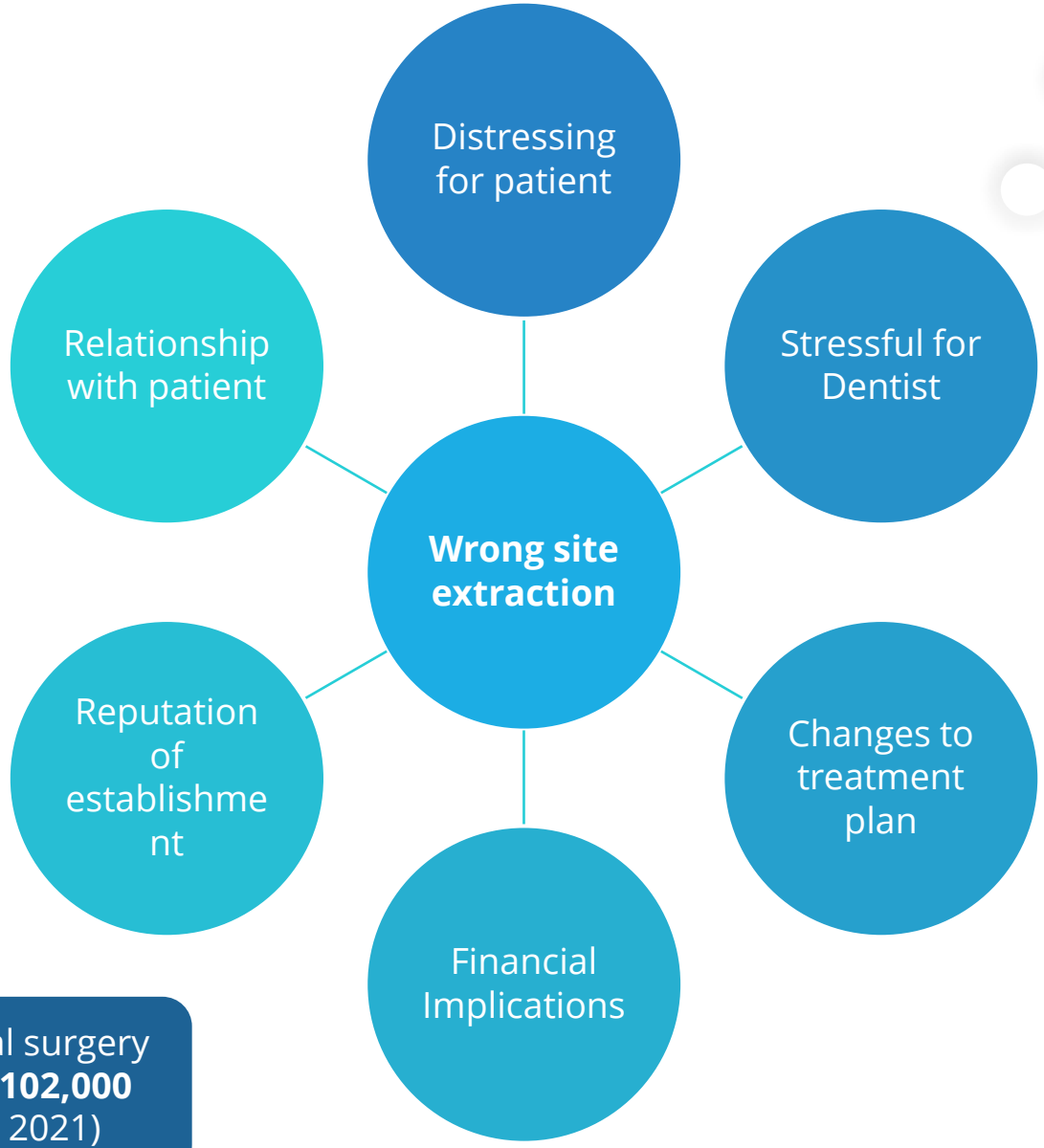
Background

- Although wrong site tooth extraction is no longer classed as a never event it is a distressing experience and is avoidable.
- The Royal College of Surgeons of England recommends that LocSSIPs should be used for dental extractions to reduce the risk of wrong site surgery.
- The GDC and the CQC both support this.



2019-2020 there were 8 claims for wrong site dental surgery in secondary care in England, with a total cost of **£102,000** including **£43,000** in damages (NHS Resolutions, 2021)

What is a LocSSIP and where did they develop from?

Locally derived Safety Standards for Invasive Procedures (LocSSIP)

- 2007-2008 Safer Surgery Saves Lives programme introduced the 19 WHO Surgical Safety Checklist (Haynes et al., 2009).
  - 47% reduction in deaths, 36% in complications
- 2015 NHS England produced ‘National Safety Standards for Invasive Procedures (NatSSIPS)’
  - Used to produce ‘Local Safety Standards for Invasive Procedures’ (LocSSIPs) specific to site and treatment (NHS England, 2015).

Porth DTU LocSSIP for Dental Extraction

Wrong site dental extractions have previously occurred at Porth DTU.

- The site LocSSIP was introduced as a result of a wrong site extraction in 2019

Key Points:

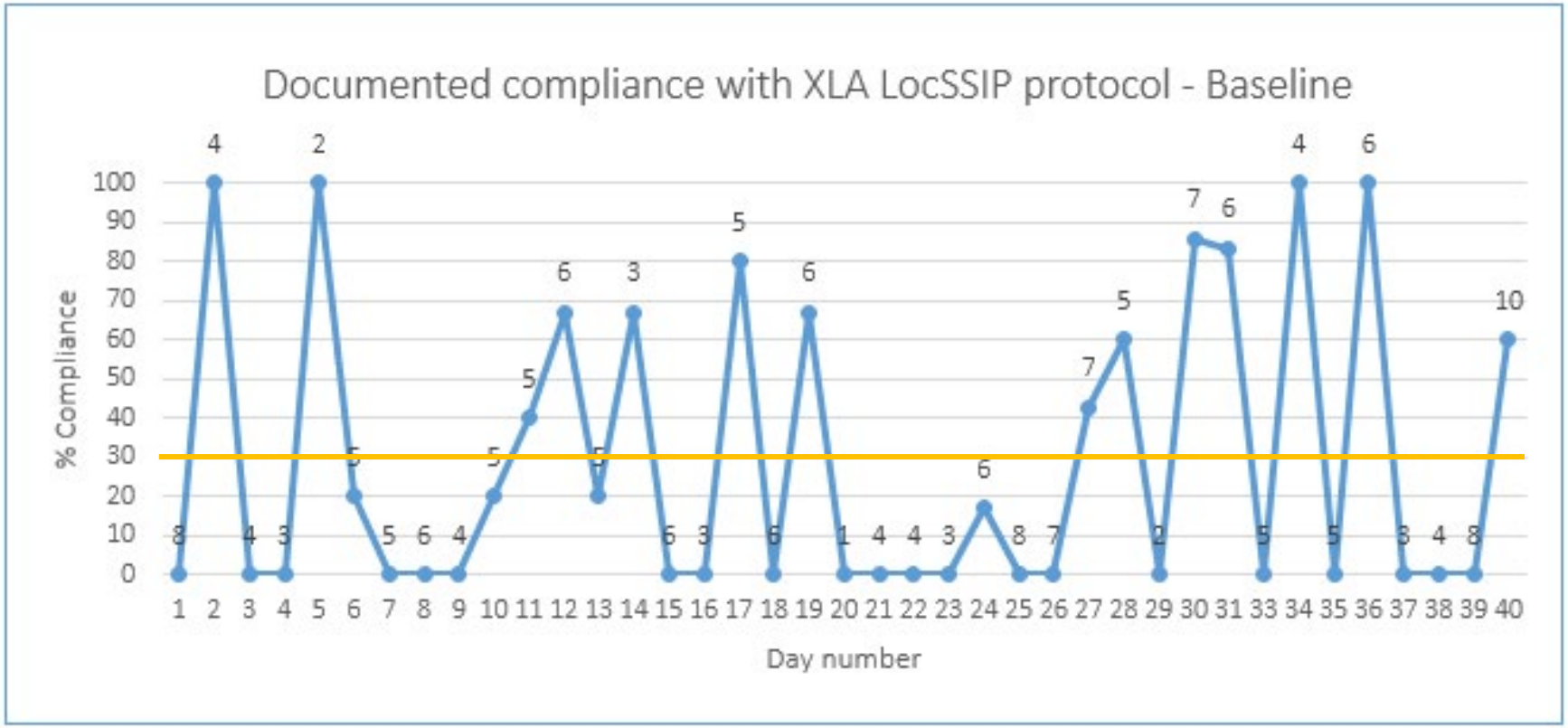
1. Patient identity checked
2. Treatment plan / Radiographs / Patient mouth all checked and matching
3. Plan and radiographs displayed
4. Patient confirms tooth and plan
5. Operator and assistant verbally agree correct tooth prior to application of force
6. Use of LocSSIP documented

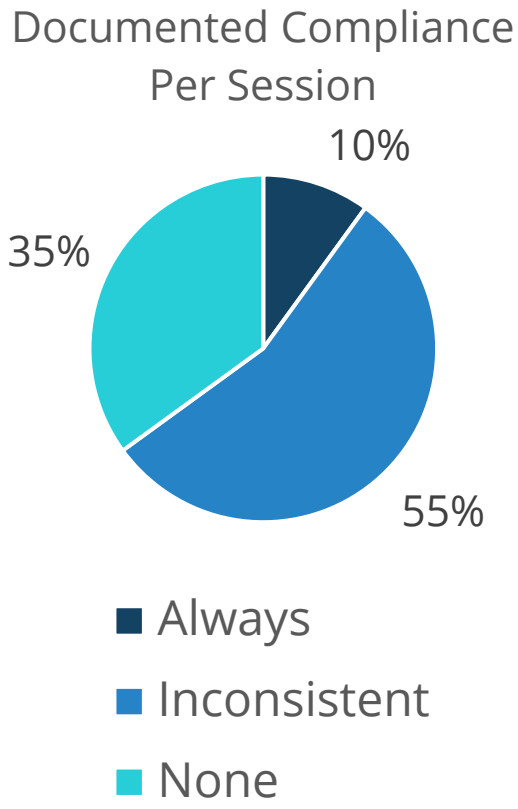
Data Gathering Process

- Direct assessment of appointments was not possible due to time involved in observing every case for 3+ months
- Indirect approach taken – possibility of inaccurate records acknowledged

1. Access R4
2. Identify sessions where MOS service provided
3. Check which appointments included extraction(s)
4. Look for evidence that XLA LocSSIP protocol used
5. Record whether evidence was found

Baseline Data





+ Total mean compliance over 196 extraction cases was **30.1%**
+ High variation in compliance per session (range 0-100%)

Problem Statement & Aim

Problem

+ Only **30.1%** of appointment notes from MOS dental extractions contain evidence that the LocSSIP protocol has been appropriately followed.
+ This suggests that the protocol is not being routinely followed, as documenting use is one of the stages

Project Aim

+ Increase the percentage of dental extractions carried out following the LocSSIP protocol including documenting use in the patient's notes **from 30.1% to 90.0%** by June 2022.

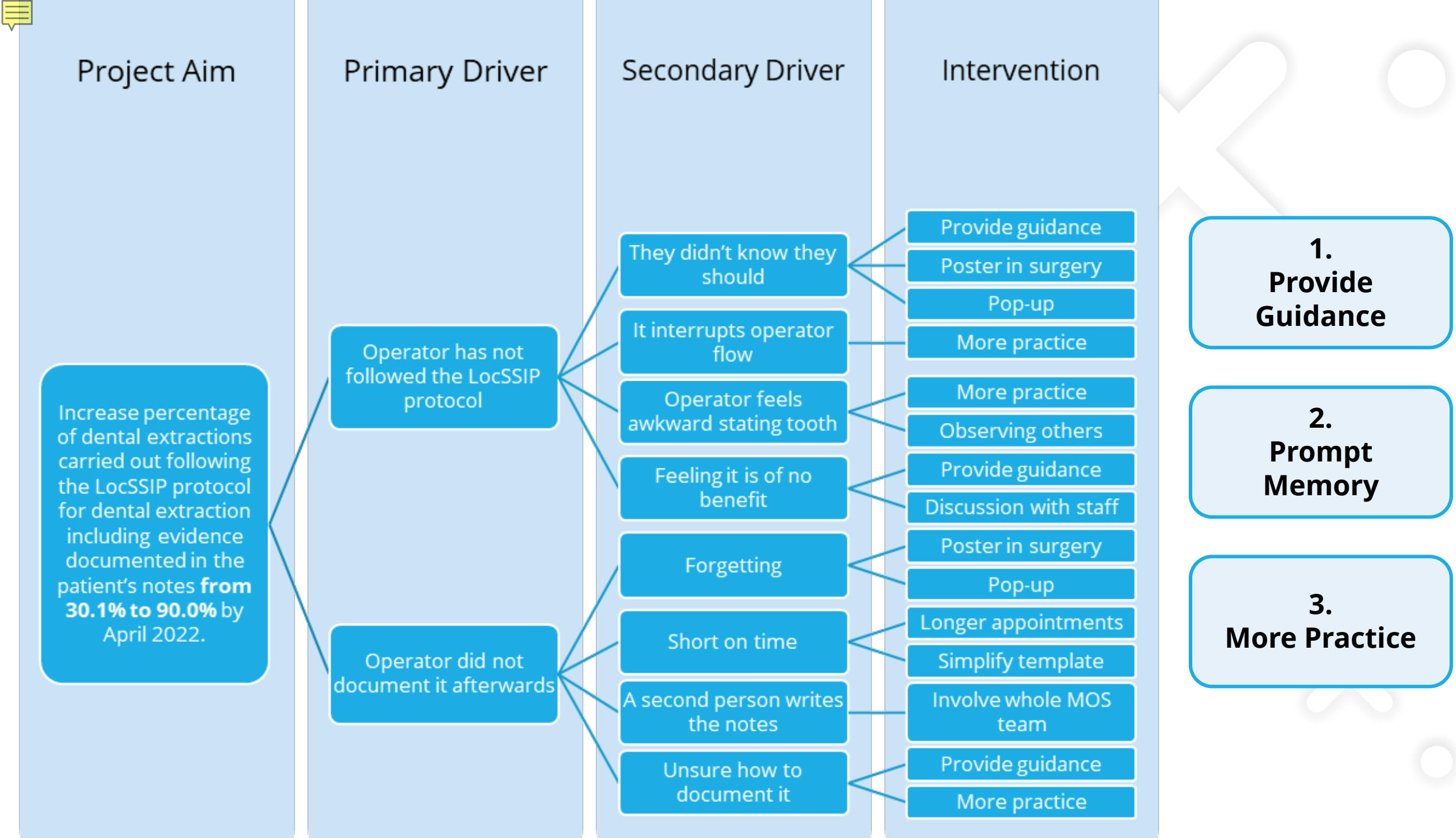
Inclusion & Exclusion Criteria

Inclusion:

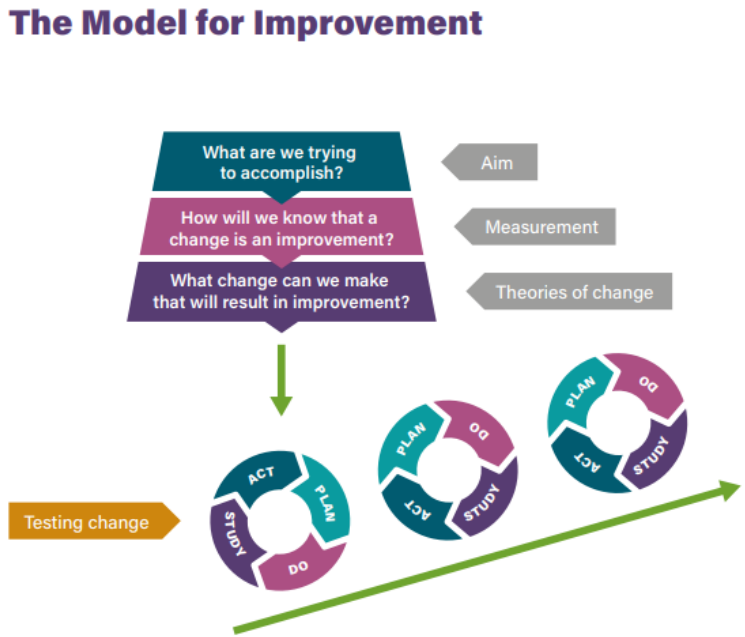
+ **What:** Digital patient records on R4
+ **Where:** Porth Dental Teaching Unit (PDTU)
+ **Who:** MOS service patients only
+ **When:**
    - 40 sequential treatment sessions (baseline)
    - Further 20 sessions following measure 1
    - Further 20 sessions following measure 2

Exclusion:

+ Coronectomy cases not included as not stated in LocSSIP protocol
+ Multiple extractions in single appointment treated as one


Project Aim
Primary Driver
Secondary Driver
Intervention
Increase percentage of dental extractions carried out following the LocSSIP protocol for dental extraction including evidence documented in the patient's notes **from 30.1% to 90.0%** by April 2022.
Operator has not followed the LocSSIP protocol
Operator did not document it afterwards
They didn't know they should
It interrupts operator flow
Operator feels awkward stating tooth
Feeling it is of no benefit
Forgetting
Short on time
A second person writes the notes
Unsure how to document it
Provide guidance
Poster in surgery
Pop-up
More practice
More practice
Observing others
Provide guidance
Discussion with staff
Poster in surgery
Pop-up
Longer appointments
Simplify template
Involve whole MOS team
Provide guidance
More practice
1. Provide Guidance
2. Prompt Memory
3. More Practice

PDSA Cycle 1: Plan



1. Provide Porth MOS staff with a summary of the LocSSIP
2. Discuss with staff why the LocSSIP is important
3. Provide guidance on appropriate documentation

+ Considerations:
    - Need to reach all staff involved
    - Face to face session difficult as staff working different days, risk of Covid-19
    - Not intruding into staff personal time

PDSA Cycle 1: Do

1. Email sent to all members of staff who routinely operate for the Minor Oral Surgery (MOS) Service at Porth DTU

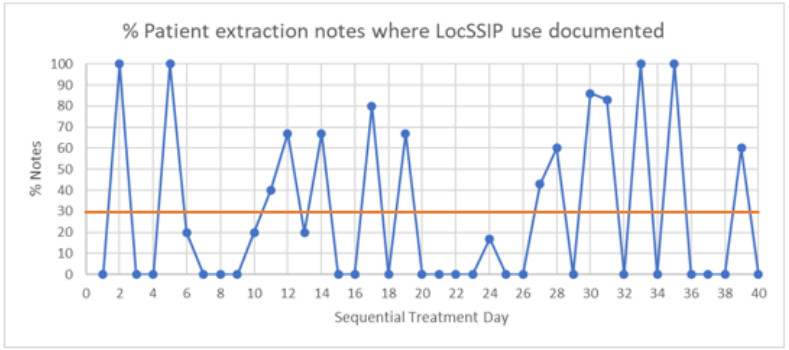
2. Follow up informal conversations one-on-one over the following week, where staff members had queries

Dear all,

I wanted to keep you updated on the results of my QIP. I have been looking at use of the Local Safety Standards for Invasive Procedures (LocSSIP) protocol for dental extractions at Porth.

As it was impractical to look at whether the protocol is being followed directly, I have been looking through past appointment notes for any record that the protocol has been used, either via the R4 template or as text.

I have attached a run chart of the baseline results below. The orange line represents the mean average to date (30%).

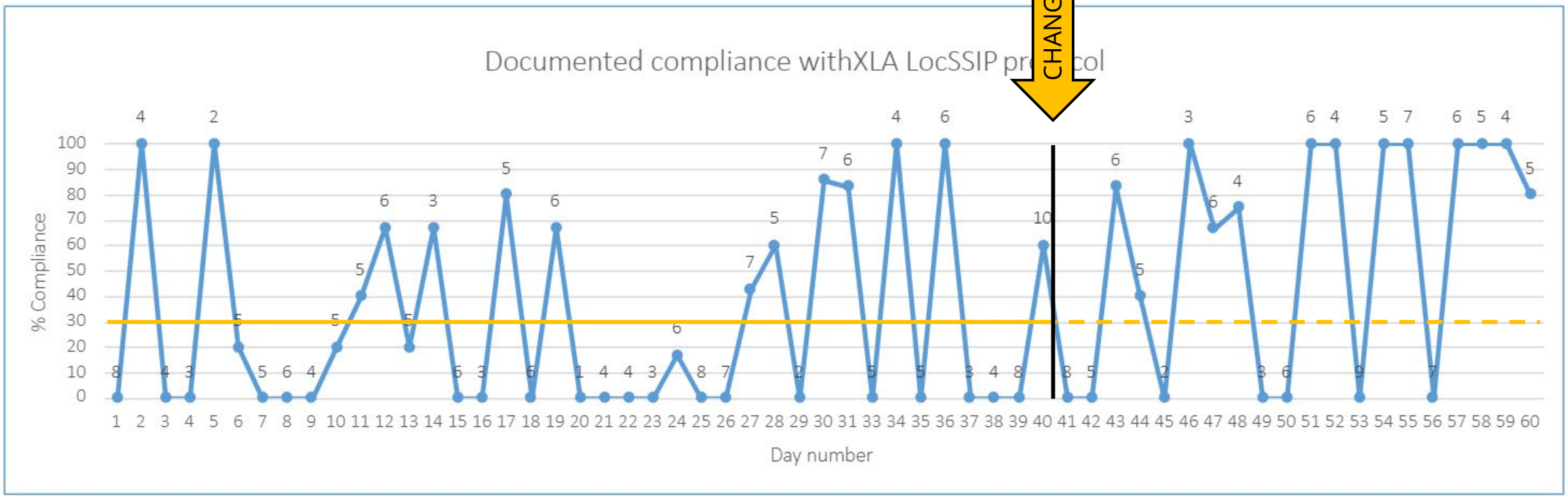


As the graph shows significant variability, I thought I'd take a minute to explain what the LocSSIP protocol is and why it is important:

PDSA Cycle 1: Study

- Overall compliance increased from **30.1% to 54.7%** but did not reach the target of 90.0%.

Consistency of LocSSIP use /day	Baseline	Following Measure
Always used	10%	**40%**
Inconsistent	55%	**25%**
Never used	35%	35%



PDSA Cycle 1: Act

Conclusion:

+ Providing guidance to staff was not adequate to achieve overall compliance to desired level (90.0%), but did generate improvement in some individuals (54.7%, previously 30.1%).

Actions:

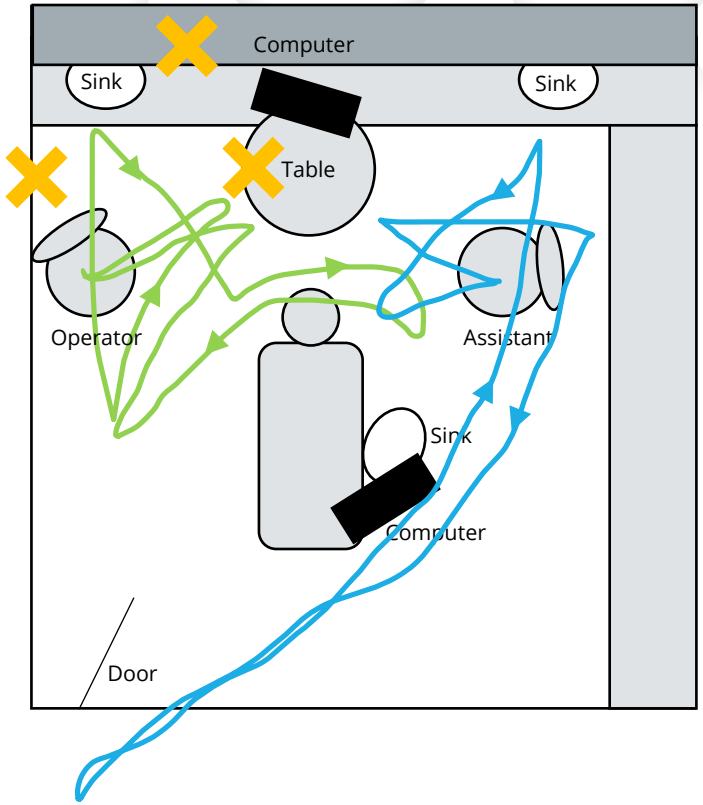
+ Continue to provide guidance to any future new staff members
+ Begin a second PDSA cycle

PDSA Cycle 2: Plan

1. Introduce new checklist poster to prompt memory
2. Reassess data after further 20 sessions
3. Seek feedback from staff on poster design

Considerations:

+ Must be displayed in easily reachable location
+ Must be wipe clean
+ Must be visible when operating
+ Should be simple and draw the eye



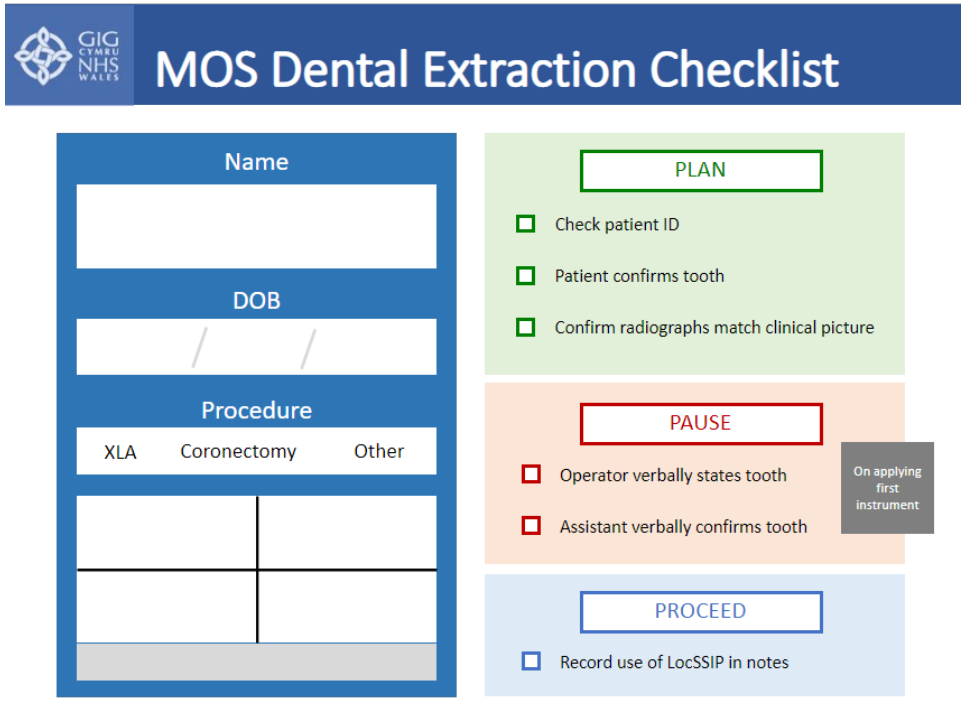
Flow around surgery during a typical extraction:

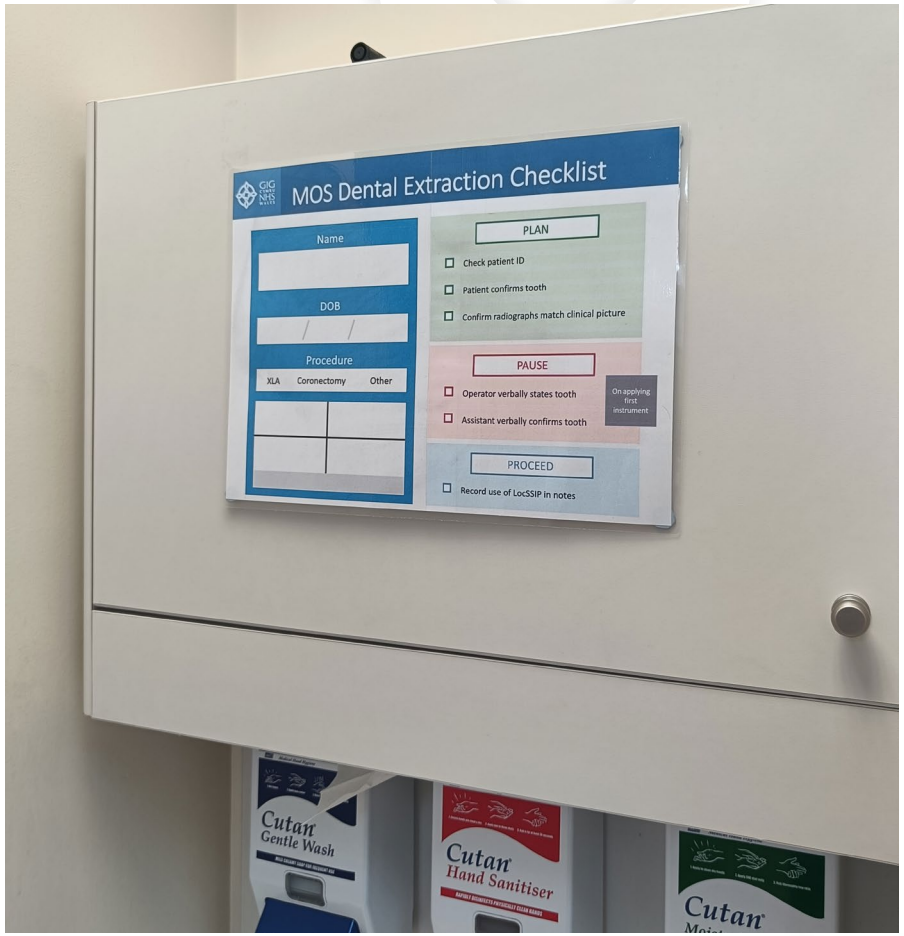
--- Path of operator

--- Path of assistant

X Possible poster locations for maximum accessibility by operator during treatment planning and extraction

PDSA Cycle 2: Do



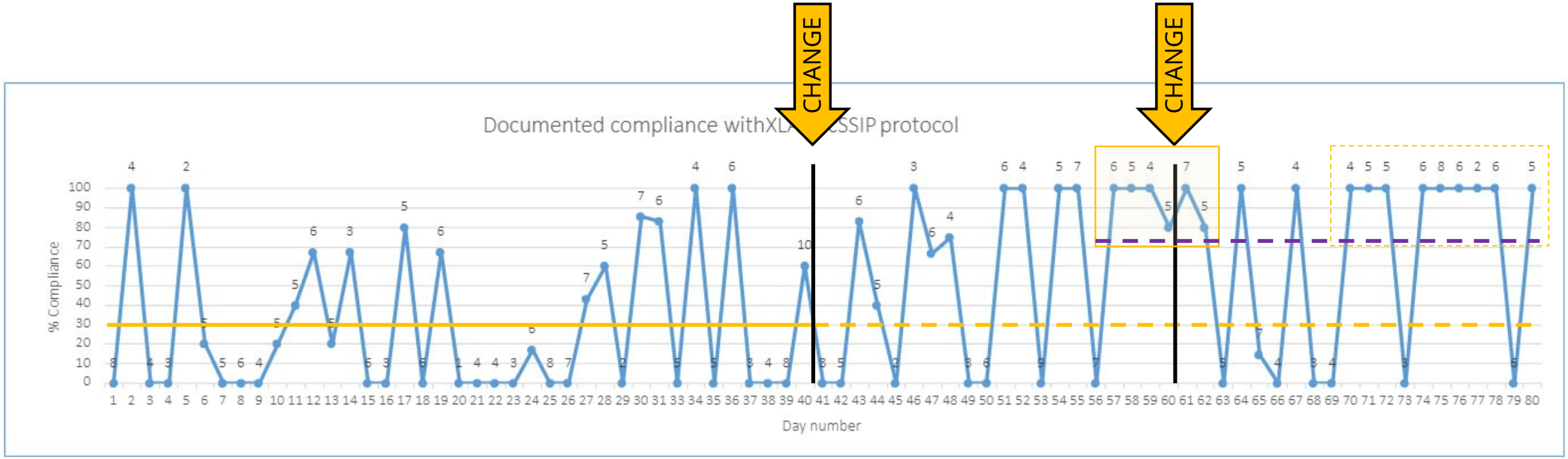


+ Poster provides visible prompt to complete checklist, with area to tick as each step is completed
+ Whiteboard pen and cleaning wipes are stored nearby

PDSA Cycle 2: Study

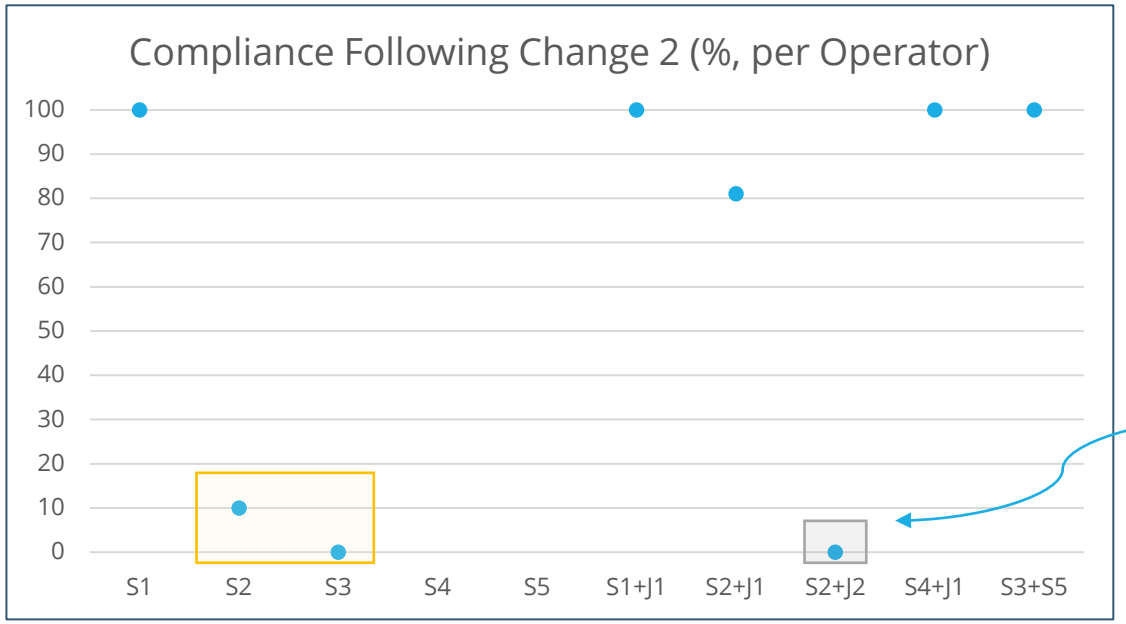
Consistency of LocSSIP use /day	Baseline	Following Change 1	Following Change 2
Always used	10%	40%	**60%**
Inconsistent	55%	25%	**10%**
Never used	35%	35%	**30%**

- Following Change 2 overall protocol compliance increased from 54.7% to 68.0% but did not reach the target of 90.0%.
- There has been a continuous run of 6 data points above the baseline mean indicating a non-random shift.
- Cycle 2 showed the most polarised results yet (Non 0 or 100 scores = 2 / 20)



PDSA Cycle 2: Study

- Some operators (S2, S3) fall consistently below the group for compliance with LocSSIP
- This appears to be particularly when no junior present
- Possible area for further study in future.



PDSA Cycle 2: Act

Results:

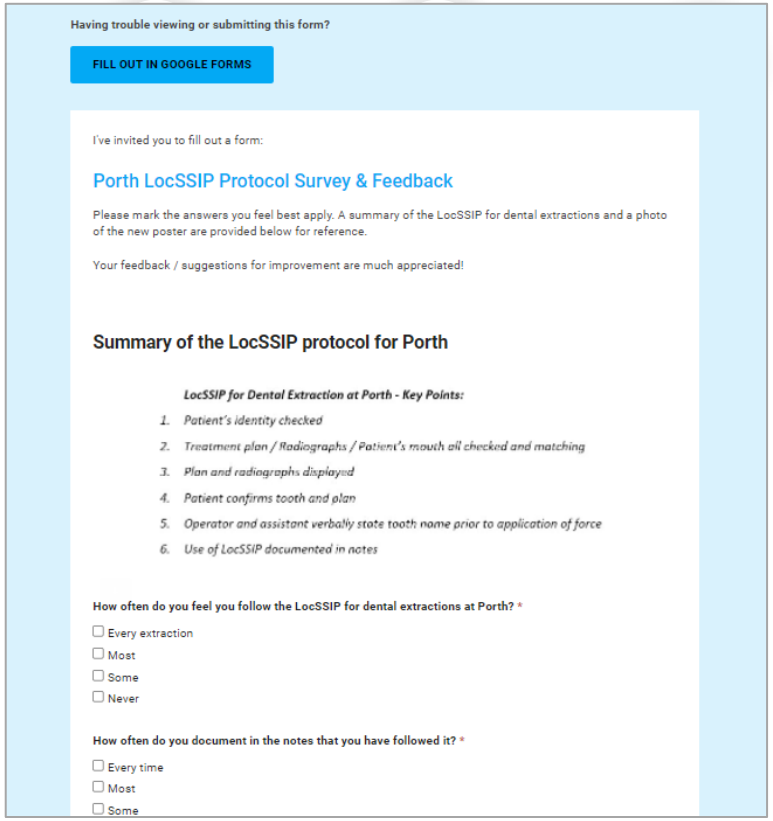
+ Moderate improvement from Cycle 1 (68% previously 54.7%) building on previous improvement (baseline period 30.1%), but failing to reach the target of 90.0%.
+ A continuous run of 6 data points above the baseline mean indicating a non-random shift from the baseline.
+ Polarisation of results in Cycle 2 (Scores 1-99% = 2/20) suggests operators behaving more consistently.

Actions:

+ Seek feedback from staff on the changes implemented so far (Adapt poster if necessary)
+ Seek insight from staff into the root causes of persistently low compliance rates amongst some operators

Plan: Staff Survey

- Google sheets e-Form emailed to Porth MOS staff
- Hard copies also available (results then digitalised)
- Results kept anonymous
- 6 out of 8 members of Porth MOS team responded


Having trouble viewing or submitting this form?

FILL OUT IN GOOGLE FORMS

I've invited you to fill out a form:

Porth LocSSIP Protocol Survey & Feedback

Please mark the answers you feel best apply. A summary of the LocSSIP for dental extractions and a photo of the new poster are provided below for reference.

Your feedback / suggestions for improvement are much appreciated!

Summary of the LocSSIP protocol for Porth

LocSSIP for Dental Extraction at Porth - Key Points:

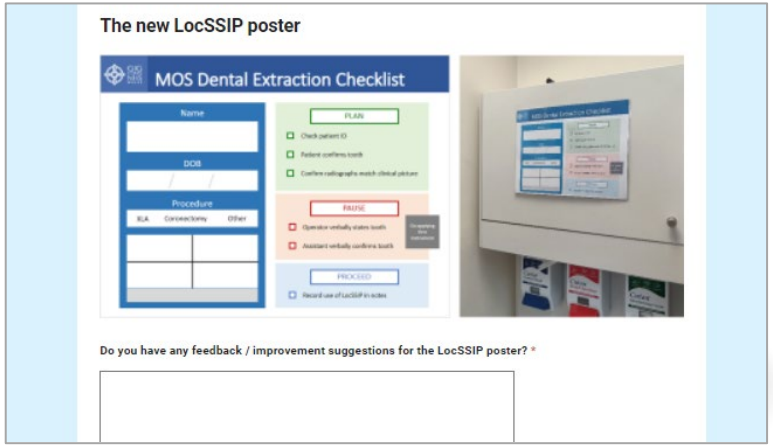
1. *Patient's identity checked*
2. *Treatment plan / Radiographs / Patient's mouth all checked and matching*
3. *Plan and radiographs displayed*
4. *Patient confirms tooth and plan*
5. *Operator and assistant verbally state tooth name prior to application of force*
6. *Use of LocSSIP documented in notes*

How often do you feel you follow the LocSSIP for dental extractions at Porth? *

- Every extraction
- Most
- Some
- Never

How often do you document in the notes that you have followed it? *

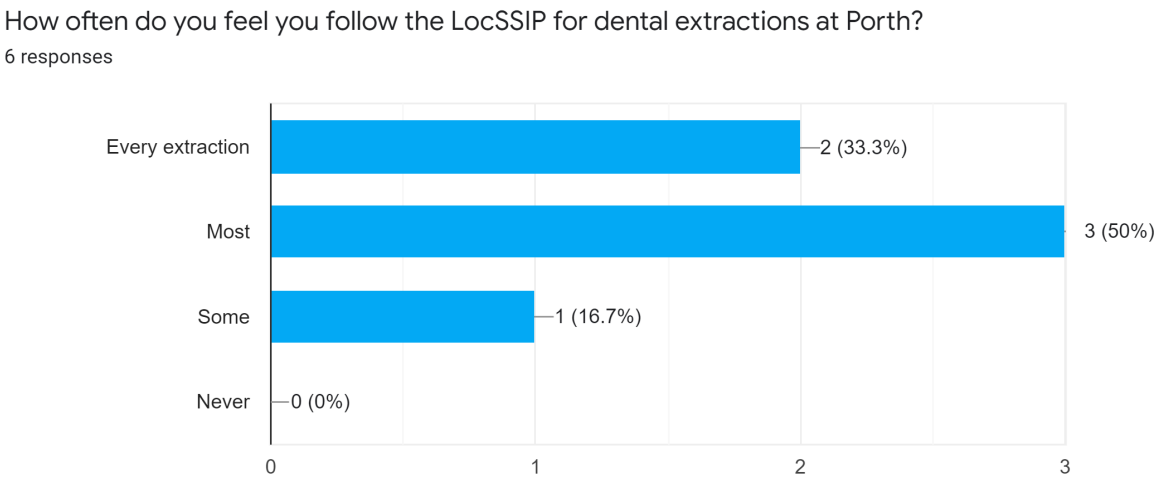
- Every time
- Most
- Some



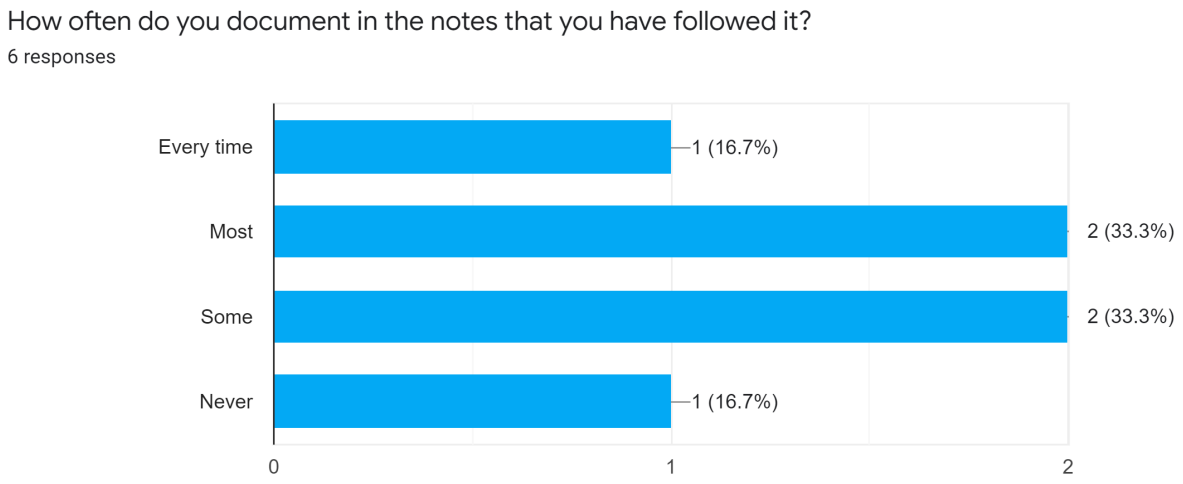
Study: Results of staff survey

Staff were asked:

1. How often do you feel you **follow** the LocSSIP for extractions at Porth?

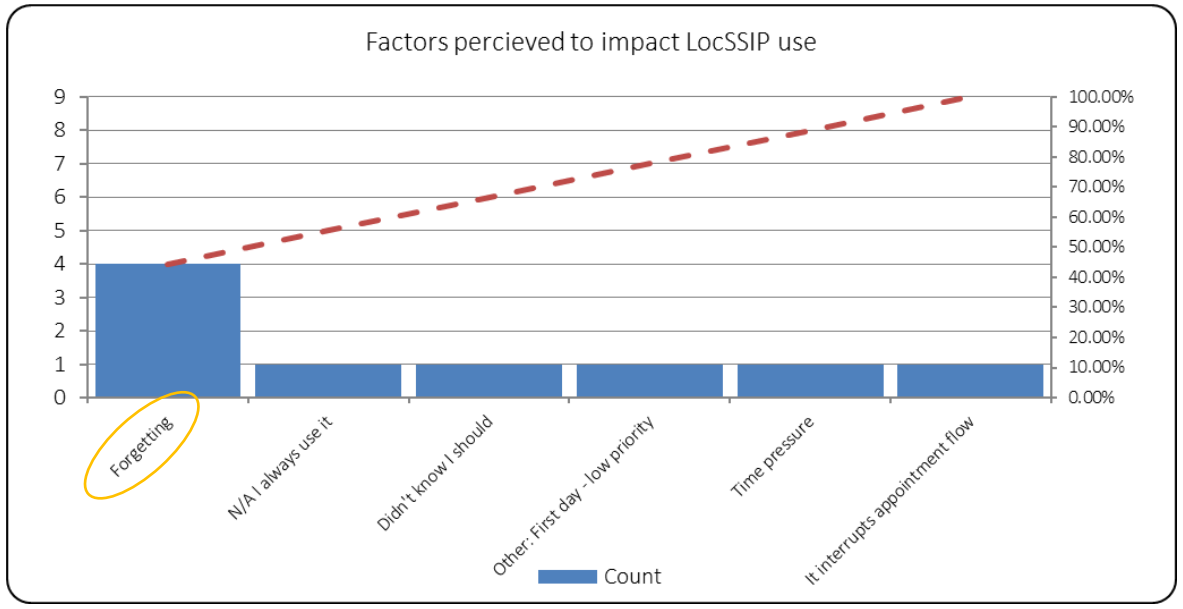


2. How often do you **document** in the notes that you have followed it?

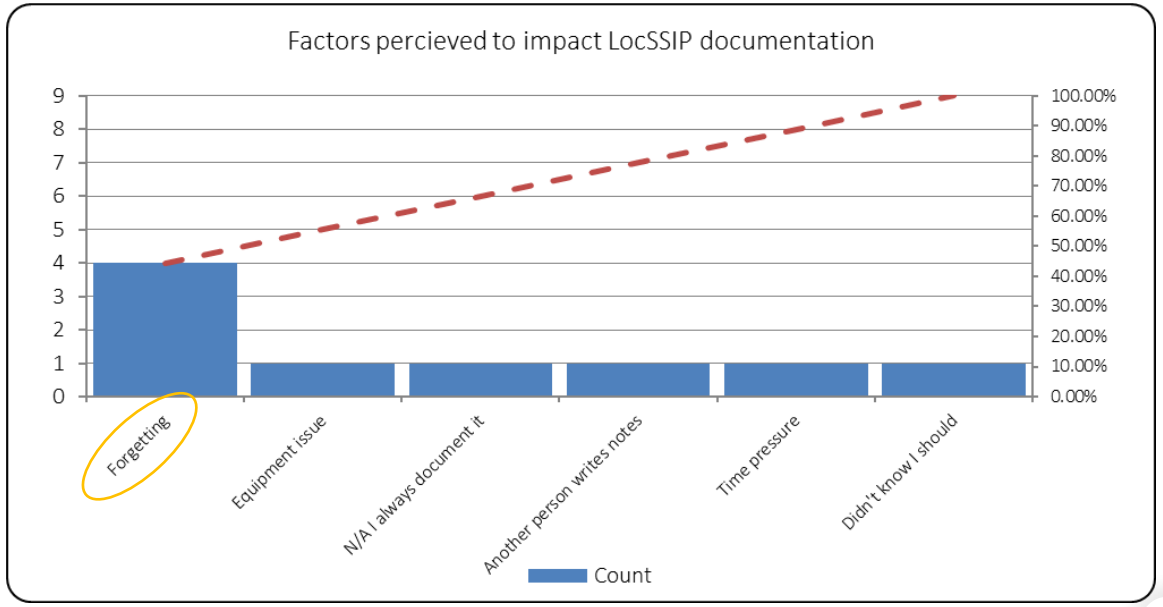


Study: Results of staff survey

3. What factors stop you from **following** the LocSSIP all the time?



4. What factors stop you from **documenting** whether you used it all the time?



Study: Poster Feedback

5. Do you have any feedback / improvement suggestions for the LocSSIP poster?

Do you have any feedback / improvement suggestions for the LocSSIP poster?

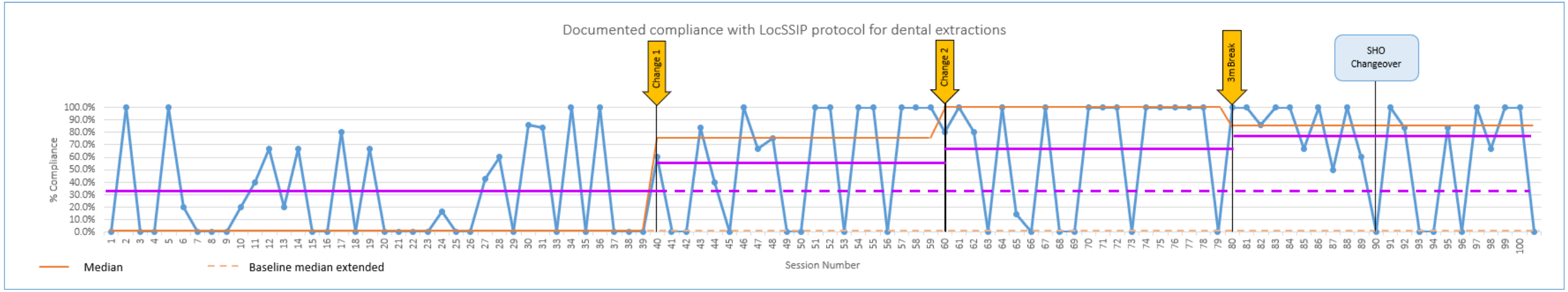
6 responses

It would be better if there was more space to write the patient's name
Really useful Name box too small Whole poster should be larger
Sorry! I'm rubbish I will improve
-
The aid memoire poster looks sensible and helpful. My failing to fill out the LocSSIP is forgetfullness. I am doing the checks, I just don't unfailingly document this, sorry!
No, the design is very clear and easy to understand

Additional ad-hoc verbal feedback:

+ Poster too far away for nurse to reach
+ Pen smudging on to wall
+ Nib on pen is too broad so running out of space for patient's name
+ Pen frequently lost

Stability of change: 3 Month Review



- Total mean compliance increased from **68.0%** to **77.4%**
- This is a fantastic result and demonstrates the change is self-sustaining
- However, consistency within a session did drop slightly..
- 90% target not yet met so important we keep going!

Mean LocSSIP compliance	Baseline	Following Change 1	Following Change 2	3 Month Review
Always used	30.1	54.7%	68.0%	**77.4%**

Consistency of LocSSIP use /day	Baseline	Following Change 1	Following Change 2	3 Month Review
Always used	10%	40%	60%	**45%**
Inconsistent	55%	25%	10%	**35%**
Never used	35%	35%	30%	**20%**

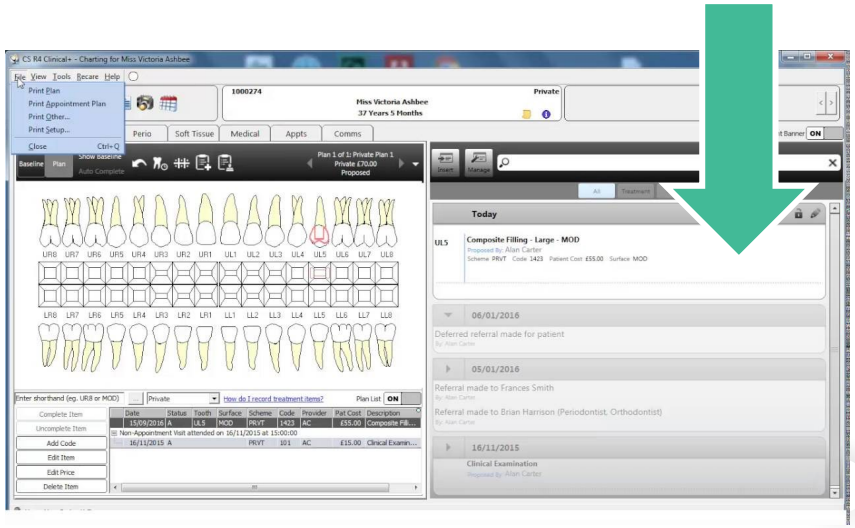
Future Action Plan

- Continue providing information on LocSSIP to new staff (Adopt)
- Update poster to reflect feedback (Adapt)
  - Larger size A3 -> A2
  - Move on to operator whiteboard
  - More text space for patient name
  - Pen attached on string (with smaller nib)
- (Present at audit)
  - So new staff understand reasons for LocSSIP
  - So all staff have a gentle reminder!
- Discussion of next steps.....

Next steps… for discussion!

Provisional plan:

- Change trigger words so that auto–generated LocSSIP template will be added to all MOS XLA notes…..
- R4 IT team can do this for us but need to know the ‘trigger’
  - Needs to be specific to MOS to not disrupt DFTs / other users
  - Needs to be something everyone types in notes…
- Possible suggestions:
  - “haem” … ?



Project Reflection

Strengths:

+ Addresses key safety issue which has previously led to a claim against NHS
+ Large size of baseline data (40 sessions) to compare results to
+ Continuous data gathering for full picture (no gaps between data periods)
+ Team involvement throughout project

Opportunities:

+ Other sites (RGH, PCH) for comparison
+ New staff arriving – can train good habits early

Weaknesses:

+ Unable to observe cases directly
    - Possibility for over-reporting – either due to poor operator recollection or inaccurate notes
    - Possibility for under reporting if protocol followed up to the extraction but not subsequently documented
+ Failure to achieve target of 90% compliance
    - An investigation is currently in progress to identify the contributing factors
+ Not surveying staff members earlier in project

Threats:

+ Staff changeover soon – will the improvement be sustainable?

Conclusion

+ This quality improvement project has led to an increase in the documented use of the LocSSIP protocol for extractions **from 30.1% to 68.0%** over changes 1 and 2.
+ Improvement was maintained 3 months' after the end of the original project, and overall compliance had actually increased to **77.4%** overall.
+ However, the improvement still falls short of the project target of 90% compliance.

+ A future change is planned – likely to involve R4 auto-templates.
+ Results would be more reliable if staff behaviour could be assessed directly.

Personal Learning Points

1. Motivating change is hard!
   - Encouraging behaviour change is challenging when the people with low compliance are senior to you
2. Careful planning is important to project success
   - No site access after 5:30pm, no remote access to data, not crossing paths with other team members
3. How to draw a run chart / pareto chart properly
   - (And how to use a macro)

References

- NHS Resolutions, 2021. FOI Request #5009. NHS Resolutions.
- Haynes, A., Weiser, T., Berry, W., Lipsitz, S., Breizat, A., Dellinger, E., Herbosa, T., Joseph, S., Kibatala, P., Lapitan, M., Merry, A., Moorthy, K., Reznick, R., Taylor, B. and Gawande, A., 2009. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *New England Journal of Medicine*, 360(5), pp.491-499.
- NHS England, 2015. *National Safety Standards for Invasive Procedures (NatSSIPs)*. 1st ed. NHS England Patient Safety Domain and the National Safety Standards for Invasive Procedures Group.

Thank you

Q & A

Why is wrong site tooth extraction not a never event (any more)?

- Since 1st April 2021 NHS England Improvement no longer considers wrong site dental extraction a 'never event'
- A Never Event is an incident with *"the potential to cause serious patient harm or death"* and that is *"wholly preventable where guidance or safety recommendations that provide strong systemic protective barriers are available at a national level and have been implemented"* – NHS England
- This isn't because it's somehow more acceptable, but because *"the national guidance in relation to tooth extraction does not provide the strong systemic barriers necessary to meet the definition of a never event."* - BDA

What are your responsibilities if a wrong site extraction happens?

- You have a duty of candour to tell the patient
- You should offer a full apology and explain the consequences
- You should direct them to the complaints procedure
- You must inform the practice manager / head of department
- An investigation should take place (including root cause analysis) and any failings addressed
- Your indemnity should be notified
- Must be reported as a Serious Incident
- **Reporting:**
  - NHS contractors should report to Health Board Dental Contract Officer
  - Private practices report to Health Care Inspectorate Wales
  - **Secondary care should report electronically via SI pathway to the Improving Patient Safety Team at the Assembly Government within 24h**

What is the guidance in Wales on dental extraction risk management?

- HEIW Overview of mouthcare pre-extraction checklist (English and Welsh)
- Welsh Health Circular – Never Events List and Assurance Review Process
- NHS Wales Putting Things Right – Guidance on the reporting and handling of serious incidents and other patient related concerns
- (Guidelines from British Orthodontic Society)