Use of Improvement Methodology to Introduce CPOT -
A Pain Scoring Tool for ICU

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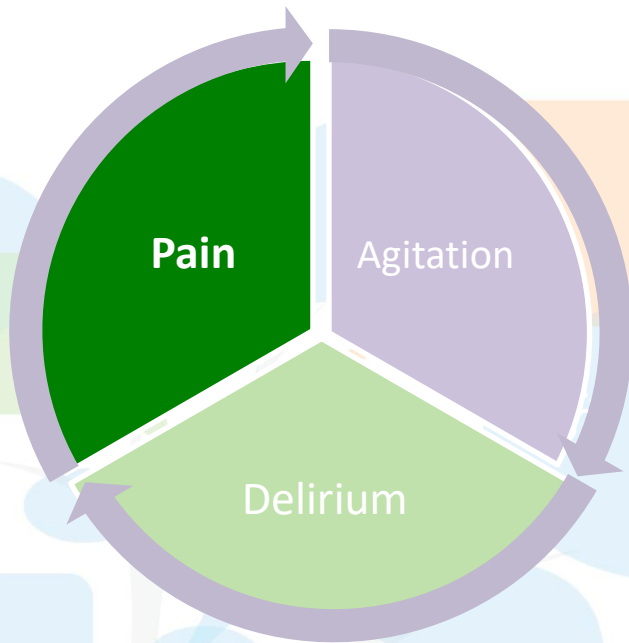
Pain Control in ICU – Why the Need for Change

- Critically ill patients often cannot self report pain
- Impaired communication
- Self report tools commonly used for pain scoring are not suitable (Rose et al, 2013)

Background

Pain, Agitation and Delirium Scoring Tools

By assessing, treating and preventing all of the above will:

↓ mechanical ventilation duration

↓ ICU and hospital length of stay

↑ ICU throughput (less bed shortages)

Pain, Agitation, and Delirium Are Interrelated

Barr J, et al. *Crit Care Med.* 2013;41:263-306.

Learning Needs Analysis

NHS
Ayrshire & Arran

- Questionnaire

- 89% compliance

Pain assessment and Management ICU Crosshouse

As part of our ongoing Improvement work within ICU we are planning to introduce a pain assessment tool. To help us determine a suitable tool to support staff and improve our patients experience please answer the following questions and return to Jen or Janice.

How well do you think we assess and manage patient's pain in ICU?

Please circle appropriate answer

A I think we do both very well

B I think we assess well but could improve management

C I think we manage pain well but could improve assessment

D I think we need to improve both

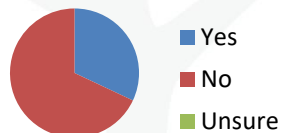| Please answer yes or no to each question	YES	NO	UNSURE	COMMENTS
1. Do you feel confident when assessing pts pain?				
2. Do you use a pain scoring tool? If so which one..				
3. Have you heard of the Critical Care Pain Observation Tool (CPOT)?				
4. Do you think introducing a pain scoring tool would improve pt care?				
5. Do you think we manage pts pain well in ICU?				
6. Do you think analgesia is adequately prescribed? If no why do you think this is?............................				
7. Would you feel confident voicing your concerns if your pts pain control was inadequate?				

Thank you for your time.

Jen and Janice

Findings

Overall how well do you think we assess and manage patient's pain in ICU?

- Both very well
- Improve management
- Improve Assessment
- Improve Both
- no reply
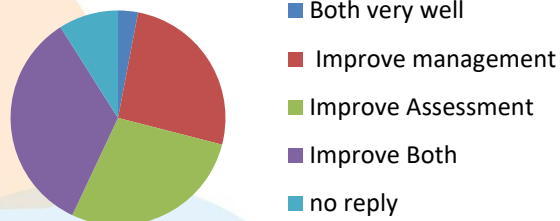
The majority (61%) felt confident assessing patient's pain

Do you use a pain scoring tool?

- Yes
- No
- Unsure

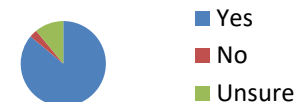**Only 32% of staff currently use a pain scoring tool at present**

Do you feel confident when assessing pts pain?

- Yes
- No
- Unsure
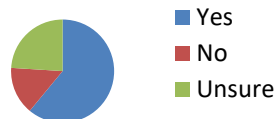
Most staff felt confident assessing pt's pain

Do you think introducing a pain scoring tool would improve pt care?

- Yes
- No
- Unsure

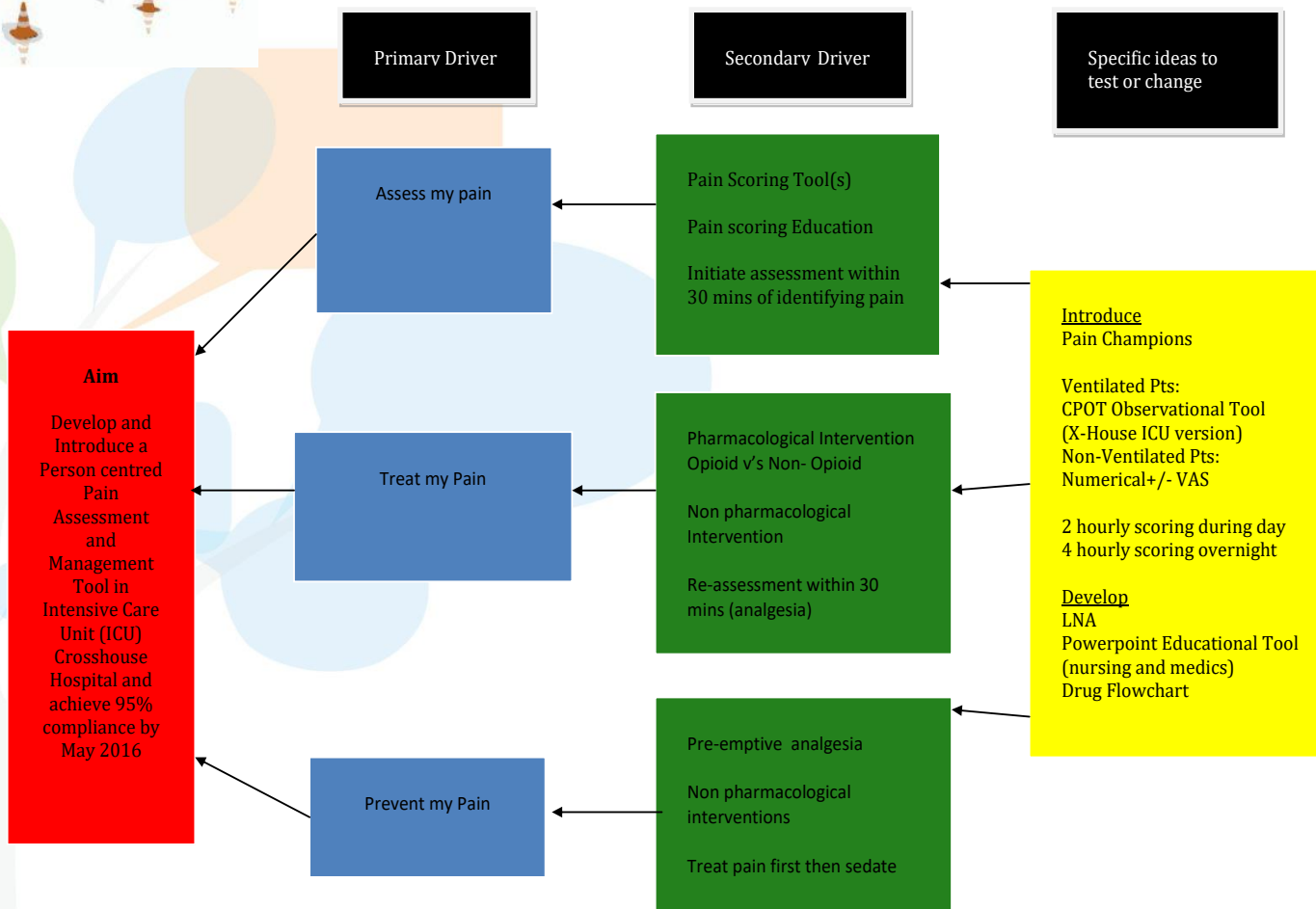**An overwhelming 86% of staff are supportive of introducing a pain scoring tool**

NHS
Ayrshire & Arran

How We Did it

Driver Diagram – Development of Pain Assessment/Management Tool

Primary Driver	Secondary Driver	Specific ideas to test or change

Aim

Develop and Introduce a Person centred Pain Assessment and Management Tool in Intensive Care Unit (ICU) Crosshouse Hospital and achieve 95% compliance by May 2016

Assess my pain

Pain Scoring Tool(s)

Pain scoring Education

Initiate assessment within 30 mins of identifying pain

Treat my Pain

Pharmacological Intervention Opioid v's Non- Opioid

Non pharmacological Intervention

Re-assessment within 30 mins (analgesia)

Prevent my Pain

Pre-emptive analgesia

Non pharmacological interventions

Treat pain first then sedate

Introduce
Pain Champions

Ventilated Pts:
CPOT Observational Tool
(X-House ICU version)
Non-Ventilated Pts:
Numerical+/- VAS

2 hourly scoring during day
4 hourly scoring overnight

Develop
LNA
Powerpoint Educational Tool
(nursing and medics)
Drug Flowchart

Measurement Plan

Process Measures:

• % compliance with CPOT scoring 2 hourly during the day

• % compliance with CPOT scoring 4 hourly overnight

Outcome Measures:

• To ensure pt is painfree =CPOT<2

Balancing Measure:

• Reduction in Propofol Usage

Step 1 – Develop/Agree Tool

NHS Ayrshire & Arran

INDICATOR	DESCRIPTION	SCORE	
Facial Expression	No muscular tension observed	Relaxed, Neutral	0
	Presence of frowning, brow lowering	Tense	1
	All of the above facial movements plus eyelids tightly closing	Grimacing	2
Body Movements	Does not move at all (does not always mean absence of pain)	Absence of movements	0
	Slow, cautious movements, touching or rubbing at pain site	Protection	1
	Pulling tube, attempting to sit up, moving limbs/ thrashing not following commands, striking at staff, trying to climb out of bed	Restlessness	2
Muscle Tension	No resistance to passive movements	Relaxed	0
	Resistance to passive movements	Tense, Rigid	1
	Strong resistance to passive movements	Very tense, Rigid	2
Compliance with the Ventilator	Alarms not activated, easy ventilation	Tolerating ventilator	0
	Alarms stop spontaneously	Coughing but tolerating	1
	Asynchrony with ventilator	Fighting ventilator	2

CRITICAL CARE PAIN OBSERVATION TOOL (CPOT)

Agree appropriate tool

CPOT – validated – well used in other ICU's

Staff Education

Use of PDSA for testing change

NHS
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& Arran

Aim
Roll out of Cpot

Implement new process

Testing of CPOT

A	P
S	D

D	S
P	A

A	P
S	D

A	P
S	D

Cycle 4 Feedback suggested roll out to all bed spaces

Cycle 3: Tool amended and retested at different bed spaces/nurse

Cycle2: Modify the tool/wording – test 1 bed space/nurse
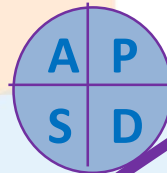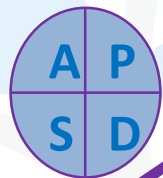
Cycle 1: Agree appropriate tool, BPS v's CPOT

IMPROVE

Step 2 – Develop Pain Assessment Chart

NHS Ayrshire & Arran

➢ **Cycle 1** Development of assessment tool

➢ **Cycle 2** – tested with staff – too wordy - retest

➢ **Cycle 3** – Invited medical feedback - retested
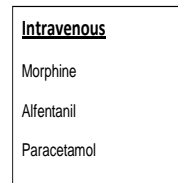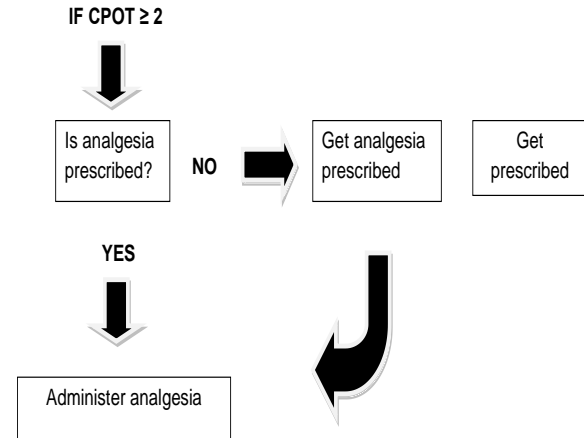
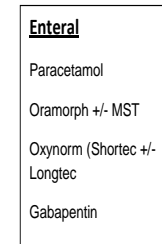➢ **Cycle 4** Revised prior to general roll out
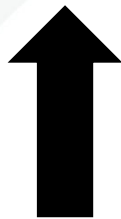
Use of PDSA for testing change

Crosshouse ICU

Pain Assessment Guidance (Flow chart)

If patient ventilated use CPOT/Non vent use NRS

IF CPOT ≥ 2

Assess
2 Hourly Dayshift
4 hourly Nightshift

Treat
See Flowchart

Prevent
Administer pre-emptive analgesia
Treat pain first then sedate

Is analgesia prescribed? → **NO** → Get analgesia prescribed → Get prescribed

YES

Administer analgesia

Intravenous
Morphine
Alfentanil
Paracetamol

← **Options** →

Enteral
Paracetamol
Oramorph +/- MST
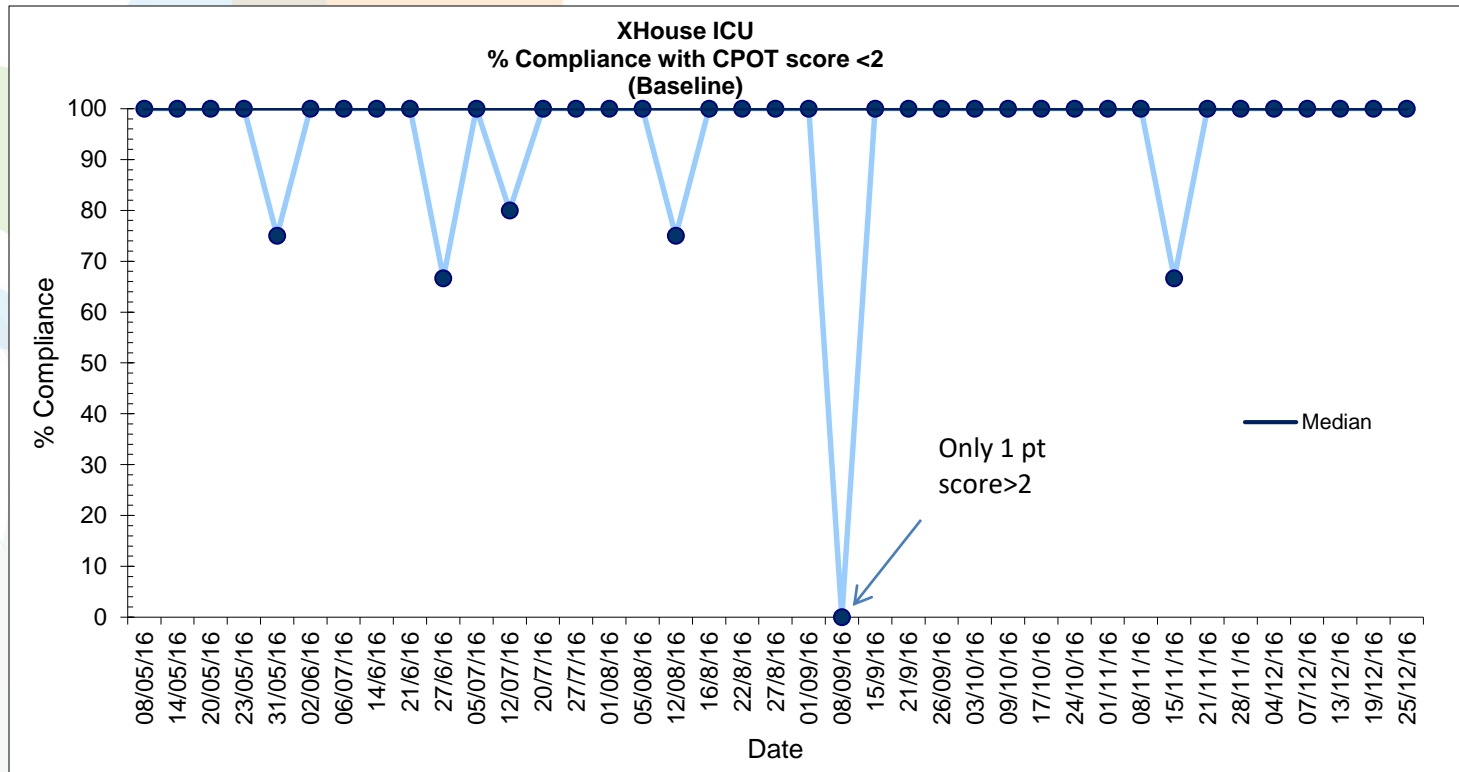Oxynorm (Shortec +/- Longtec
Gabapentin

ADMINISTER CHOSEN ANALGESIA AND REASSESS WITHIN 30 MINUTES

GIVE CONSIDERATION FOR REGULAR ANALGESIA AND PRN BREAKTHROUGH

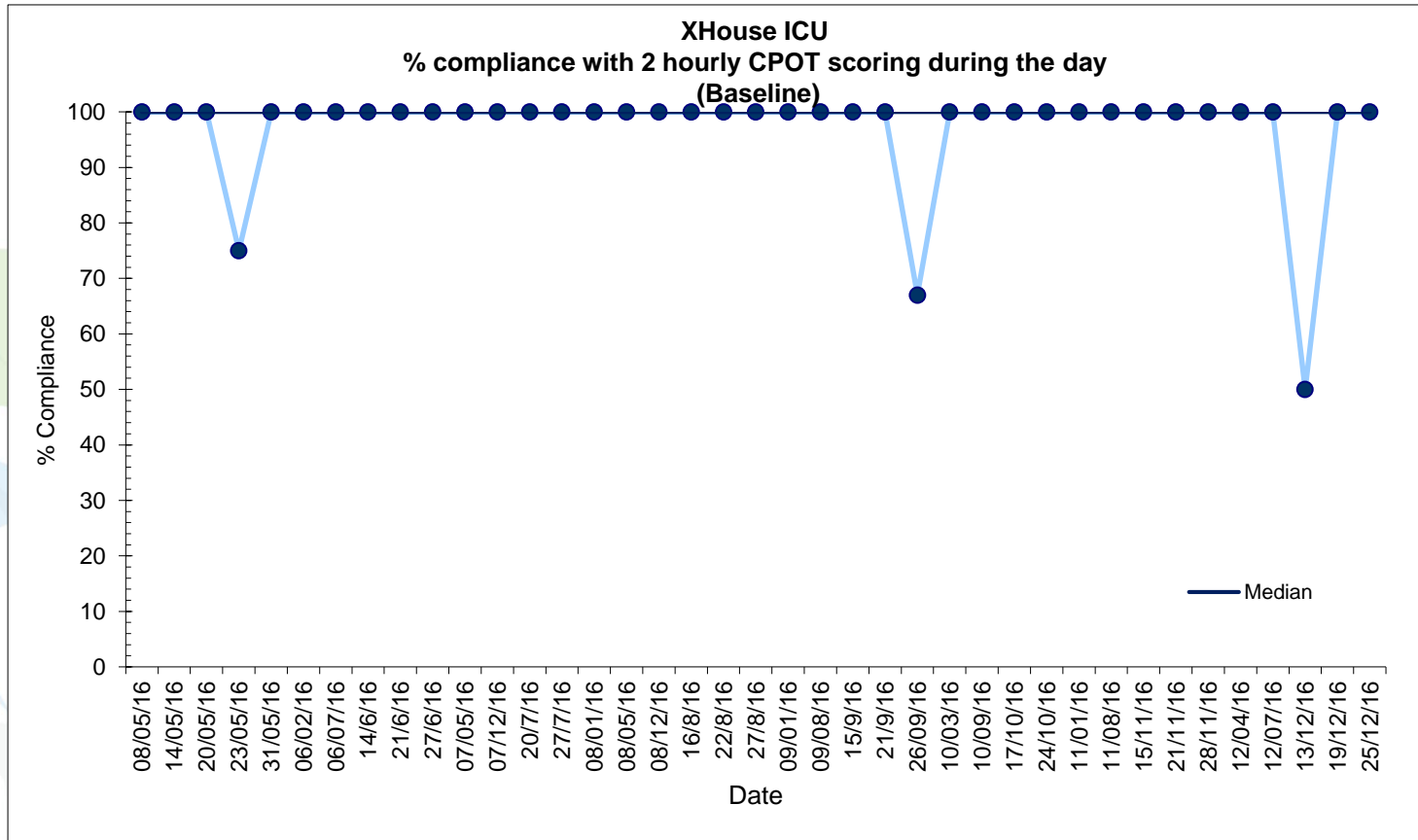IF REQUIRING FREQUENT BOLUSES CONSIDER LONGER ACTING ANALGESIA
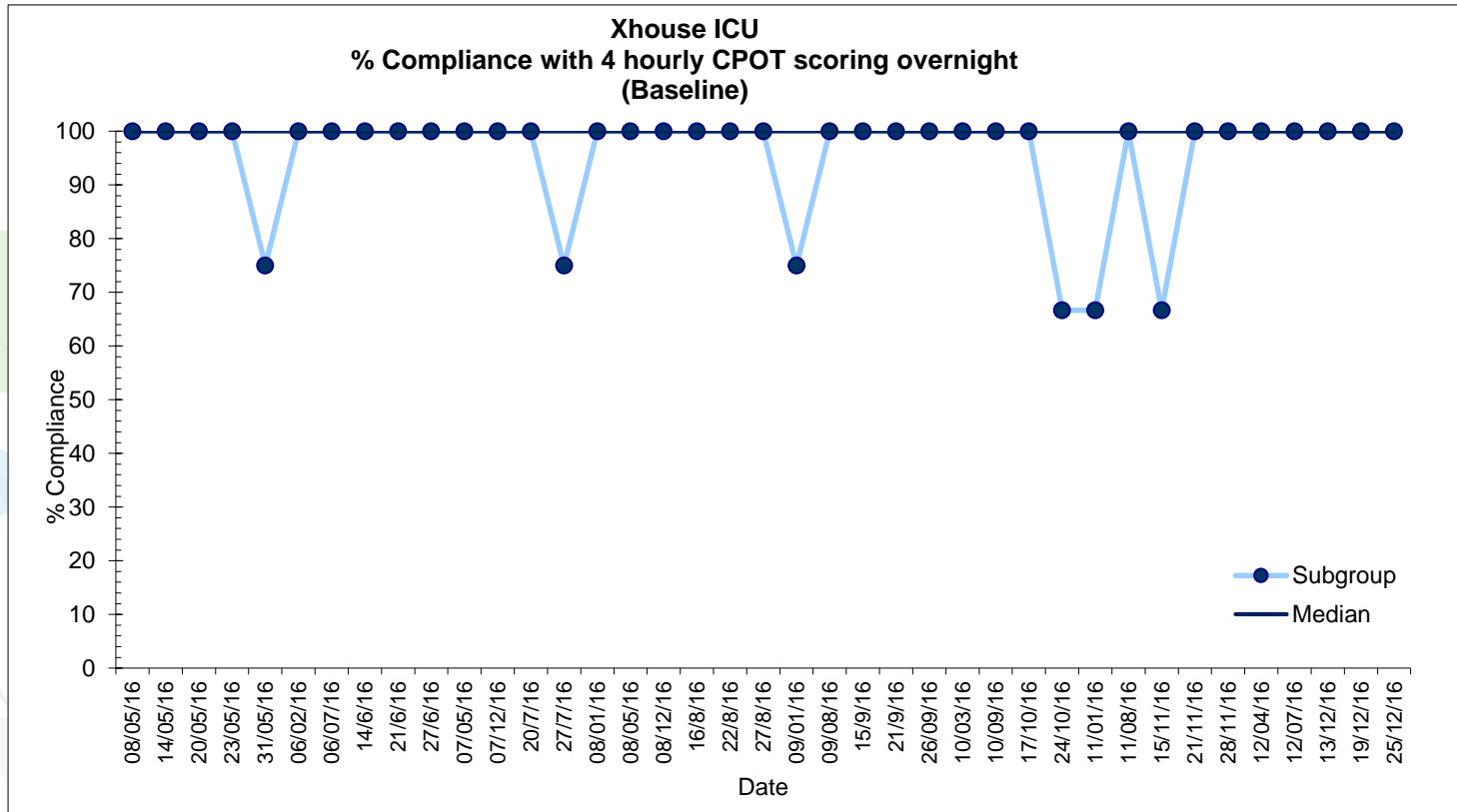
Baseline Data
CPOT<2 Scoring

XHouse ICU
% Compliance with CPOT score <2
(Baseline)

Only 1 pt score>2

Baseline Data
2 Hourly Scoring

Baseline data showed excellent compliance with initial
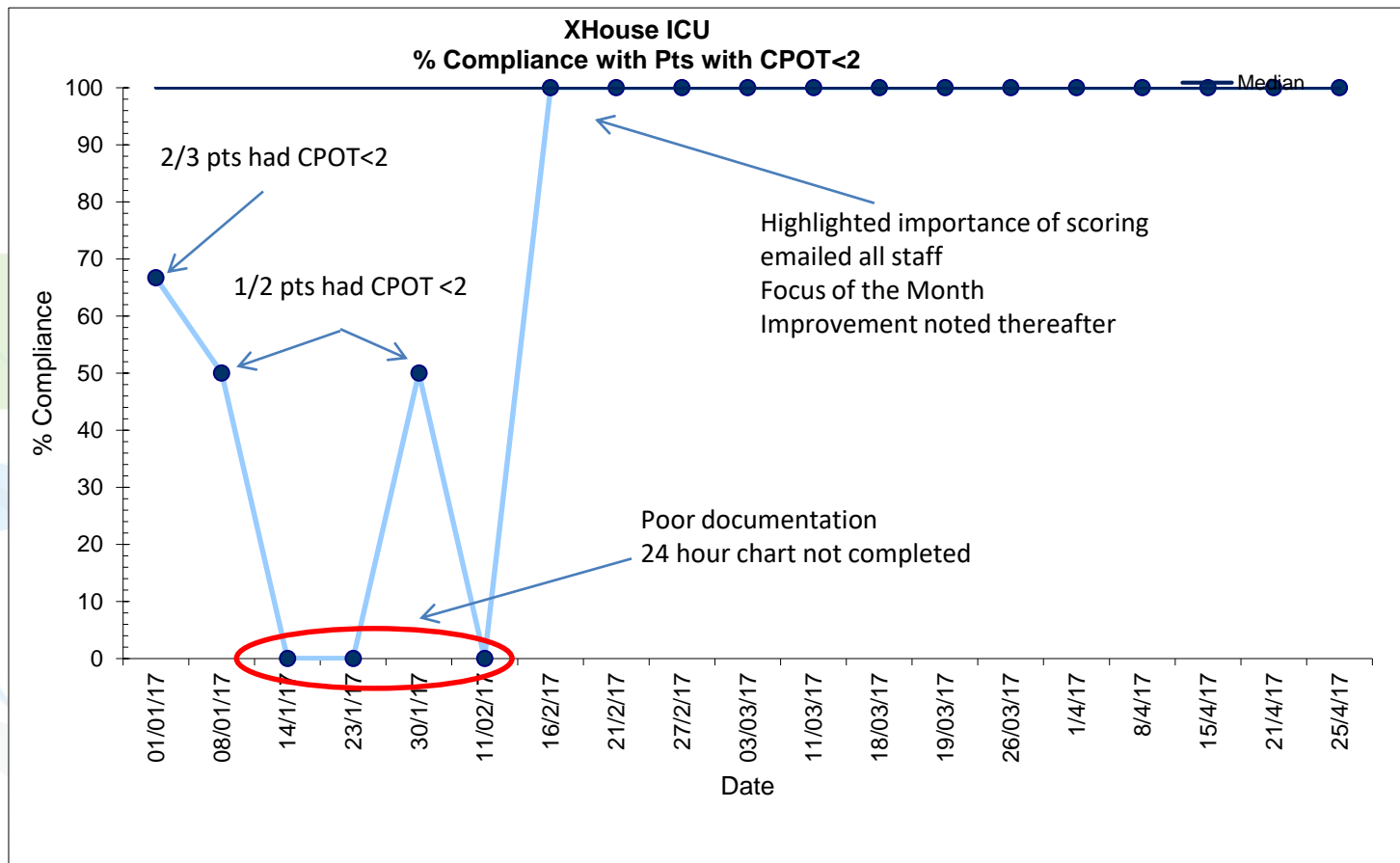2 hourly scoring

Baseline Data
4 Hourly

Baseline data (with the exception of a couple of blips!)
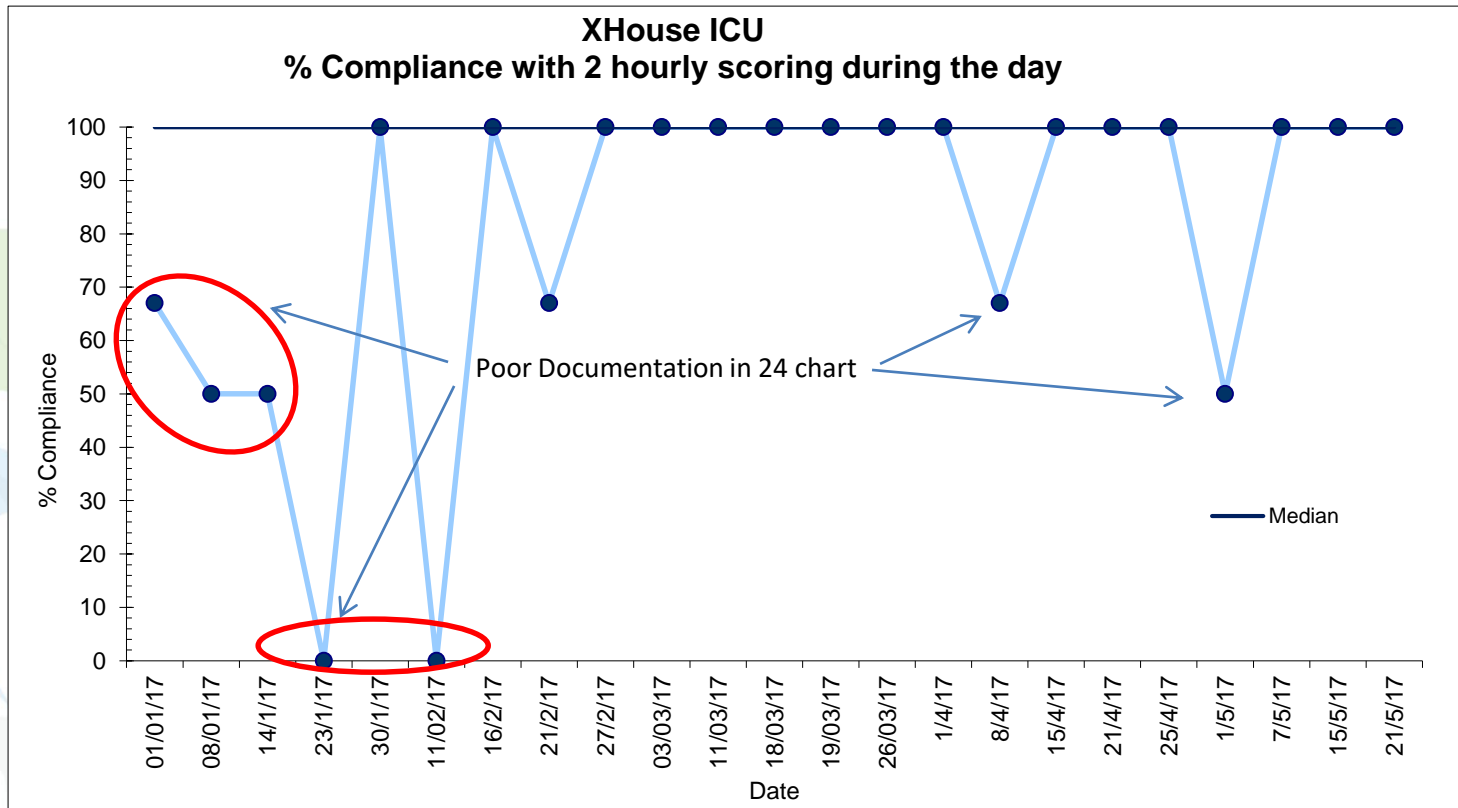Again showed excellent compliance with initial 4 hourly scoring

Sustainability
CPOT<2

XHouse ICU
% Compliance with Pts with CPOT<2

- 2/3 pts had CPOT<2
- 1/2 pts had CPOT <2
- Highlighted importance of scoring emailed all staff Focus of the Month Improvement noted thereafter
- Poor documentation 24 hour chart not completed

Demonstrating sustainability
Embedded into practice
Stopped Collecting data

Sustainability
2 Hourly Scores

XHouse ICU
% Compliance with 2 hourly scoring during the day

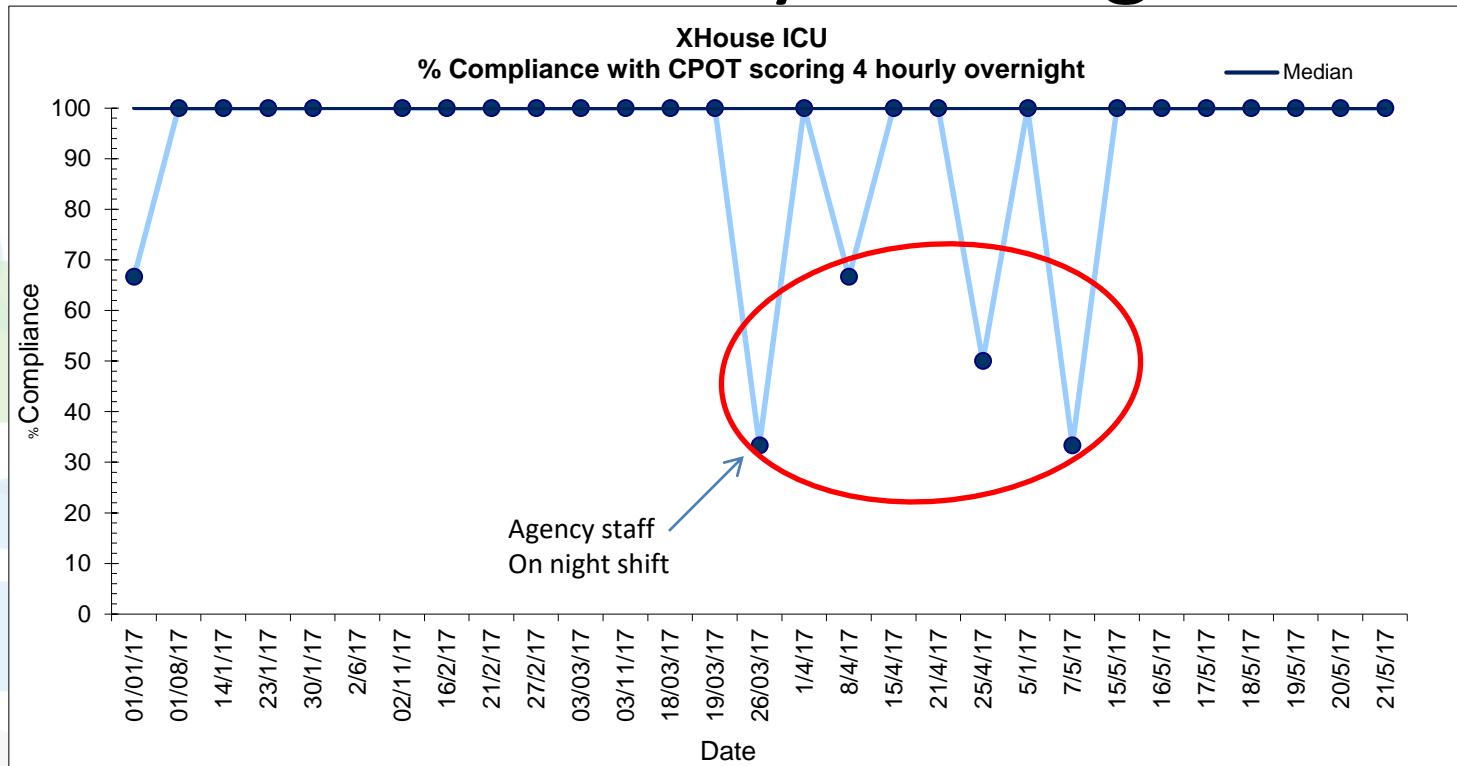Poor Documentation in 24 chart

Median

% Compliance

Date

Beginning to show some dips in compliance beginning of the year
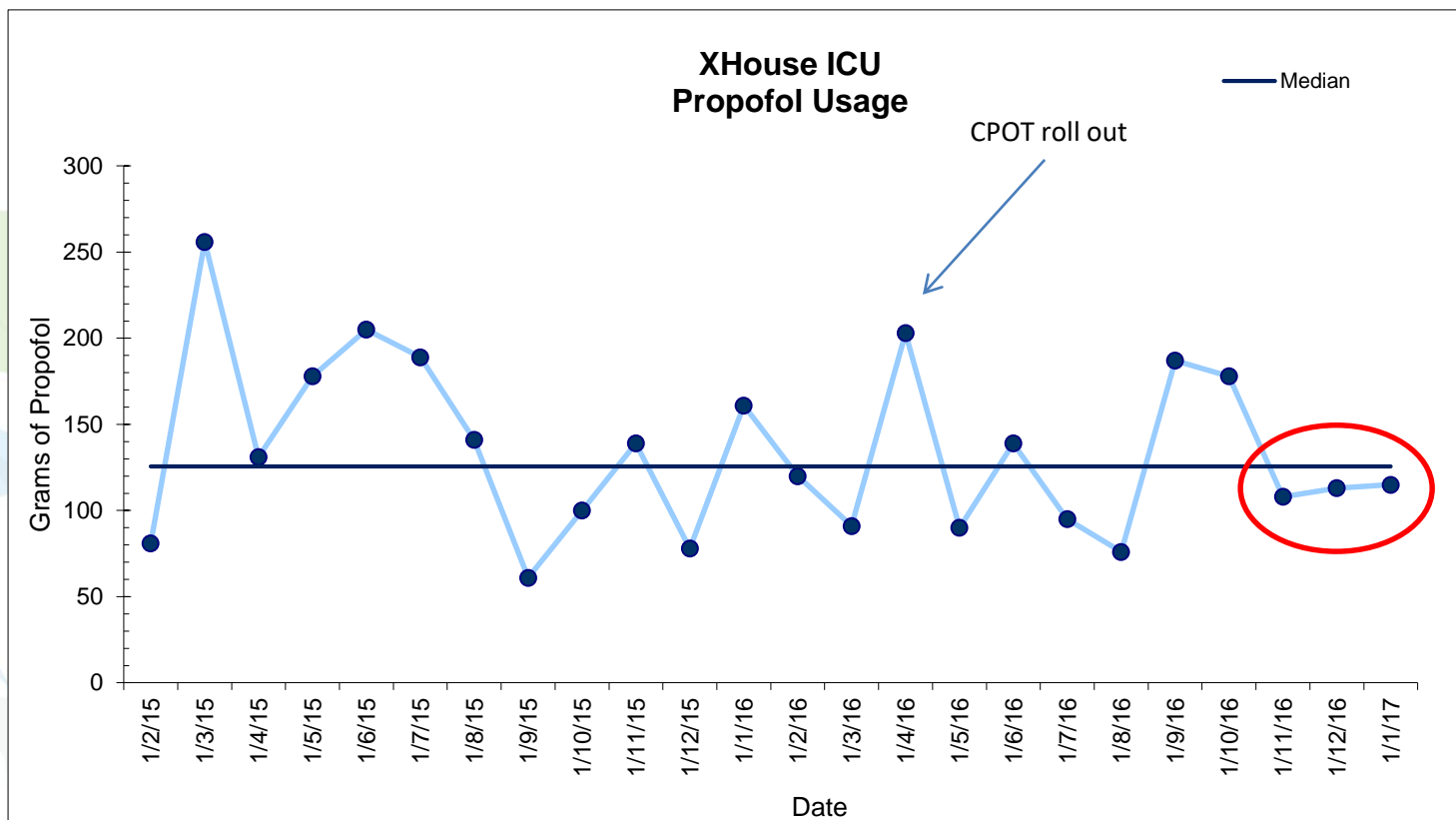? Winter Crisis
Increased use of agency staff

Sustainability
4 Hourly Scoring

Possible reasons for slippage?
A lot of ongoing Improvement activity

Balancing Measure

XHouse ICU Propofol Usage

Data only available up until Jan 17
Unsustained Improvement noted

Challenges Along the Way…..

- Winter bed crisis
- Increased patient workload
- New staff turn over
- Increased usage of Agency Staff
- Increased Improvement work – 'big ask of staff'
- Resistance to change
- Pain v's Delirium

Life's challenges are not supposed to worry you

they are supposed to help you discover who you are
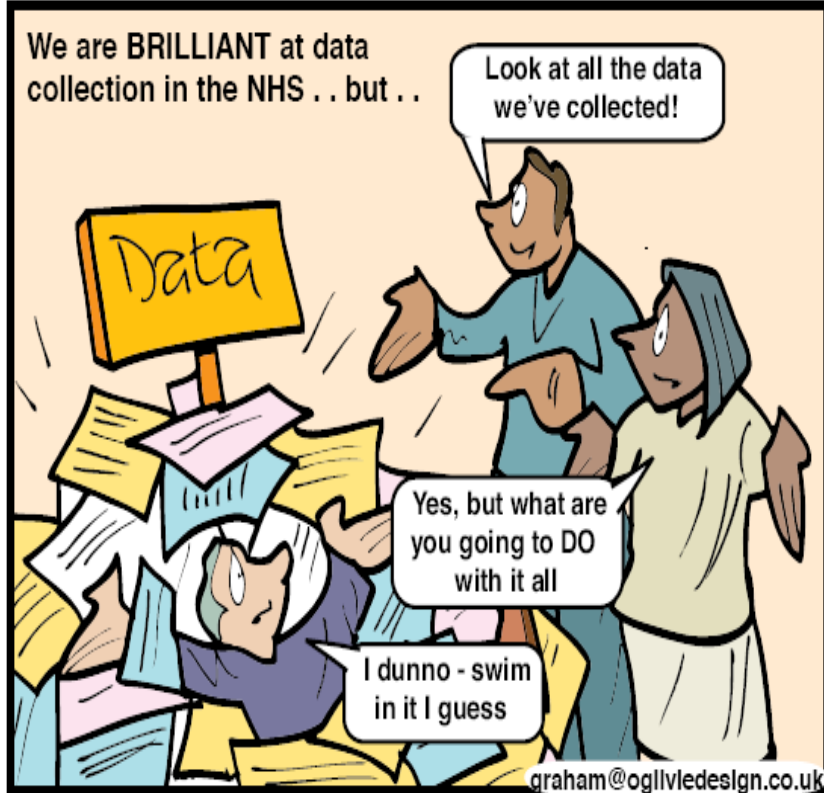
and how far you can go

Next steps ......

- New Evidence:
- Frequency of scoring
- CPOT<1
- Revisit criteria
- Continue with data collection
- Occupied Bed days

Closing Thoughts

> *"Change is possible if we have the desire and commitment to make it happen."*

Mohandas Gandhi

Any Questions?