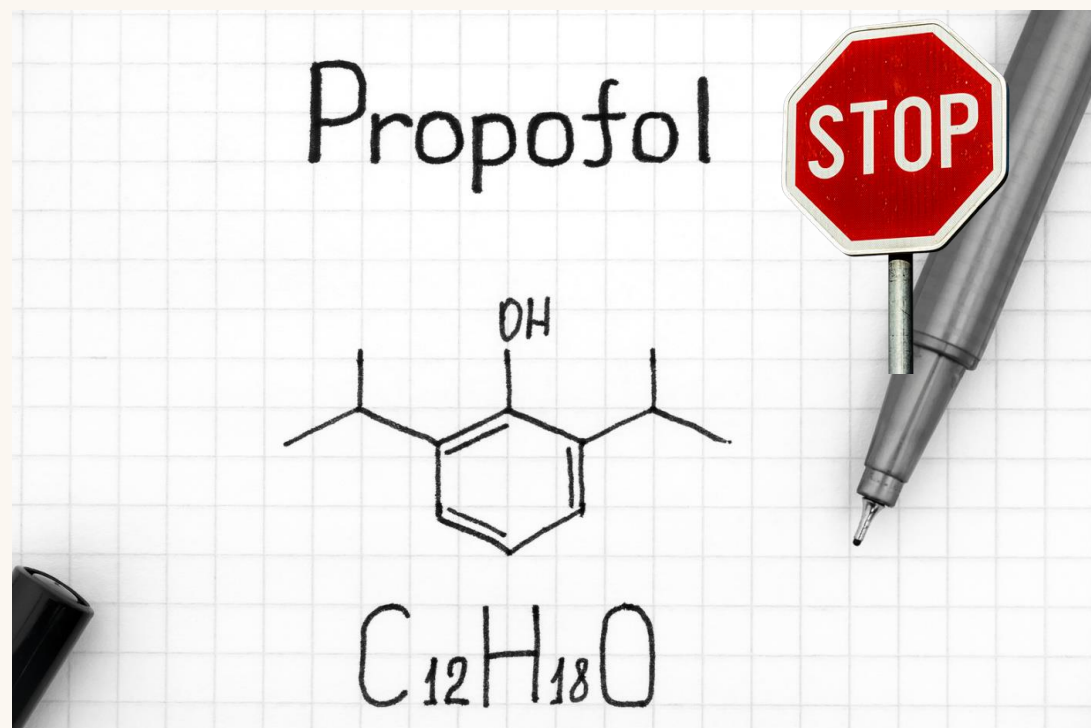




“Wake me up before you go go”

Improving performance with daily  
sedation holds on ventilated patients

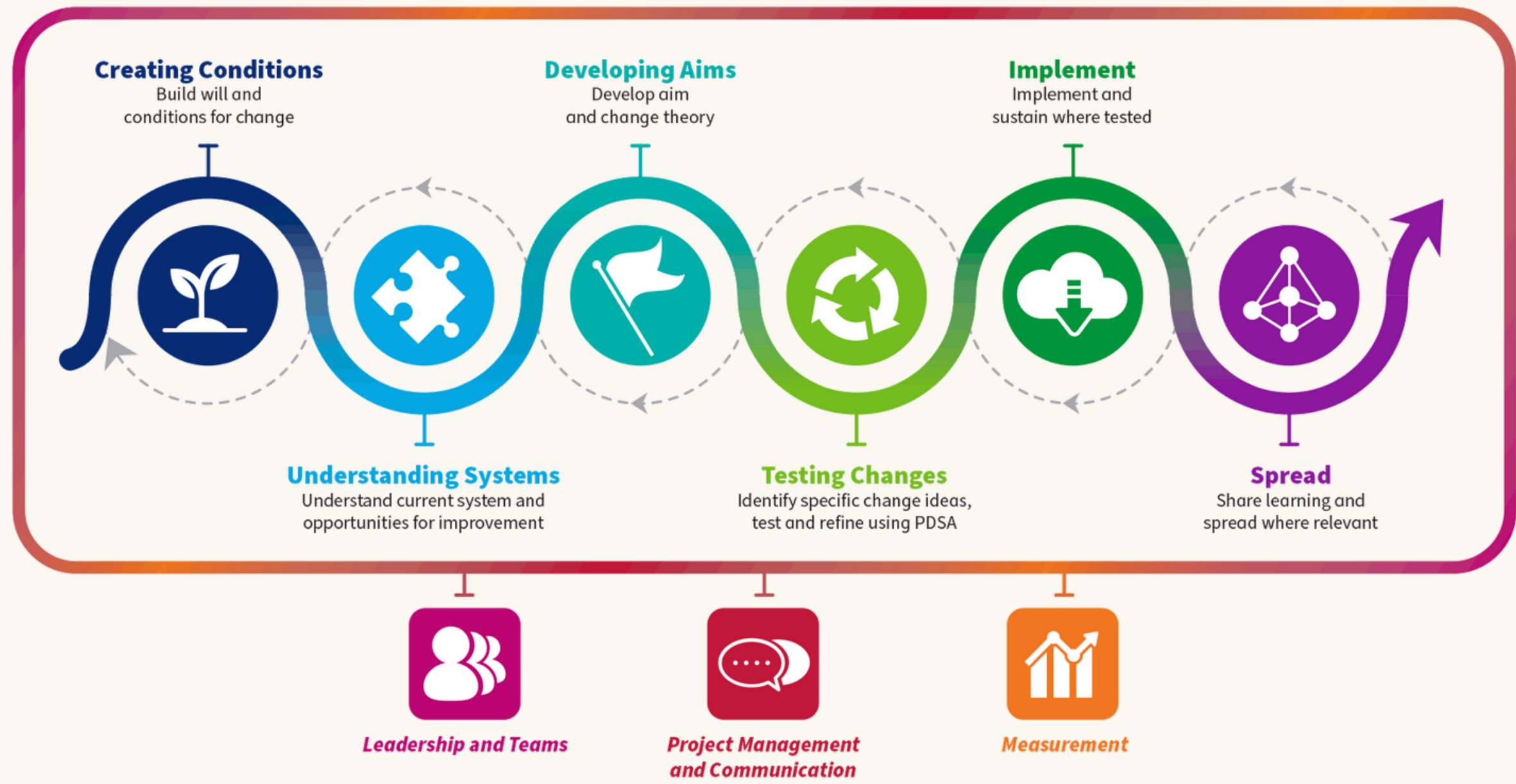


Lynsey Russell SCN ITU – NHS Borders  
Scottish Quality & Safety Fellow  
RCN Scotland Nurse of the Year 2024

# Project

1. Creating conditions
2. Understanding systems
3. Developing Aims
4. Testing Changes
5. Implement
6. Spread

## Quality Improvement Journey

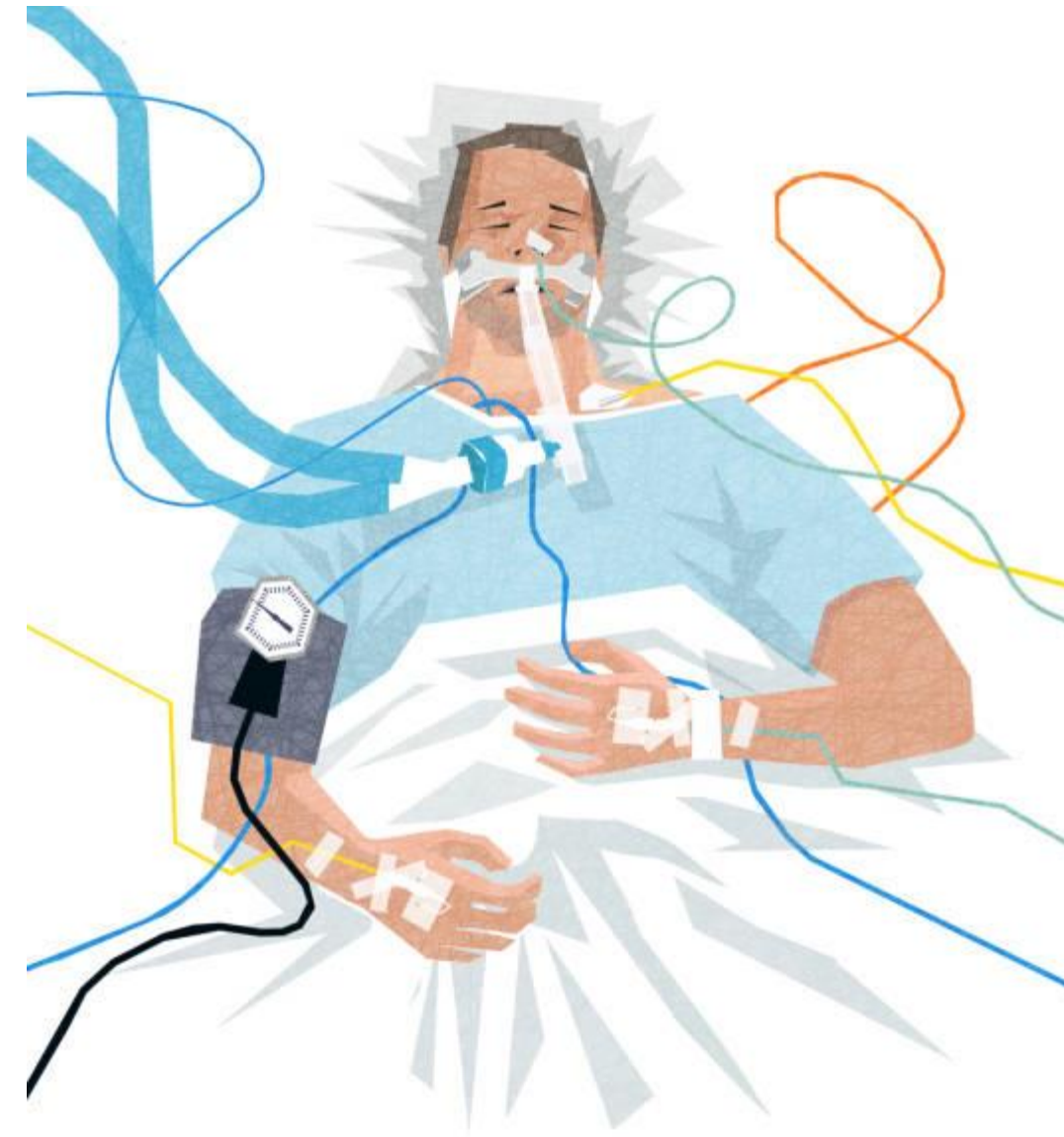




**Creating  
Conditions**

# Background

- Deep sedation has significant adverse effects
- Recent data shows multiple benefits of daily sedation holds
- Our ICU had no set sedation hold criteria
- Establish improvement team
- Emphasise **WHY** the change is needed



# Research and Improvement studies

Open access

Research

## BMJ Open Challenges and barriers to optimising sedation in intensive care: a qualitative study in eight Scottish intensive care units

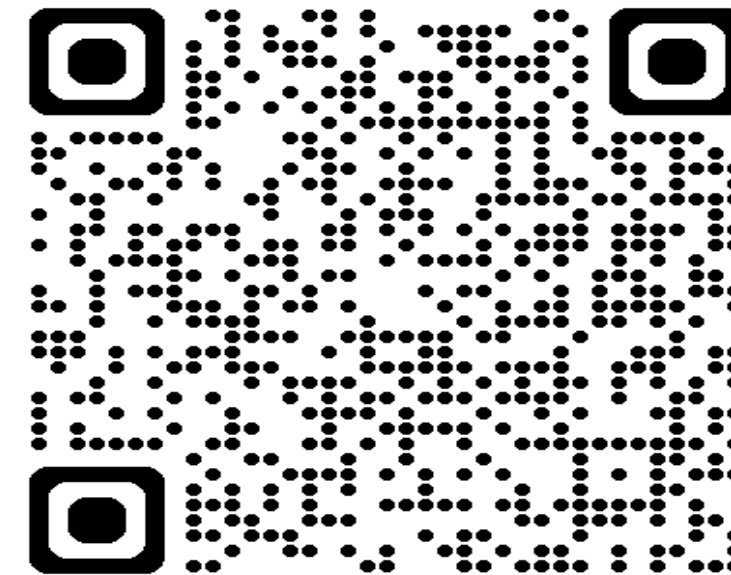
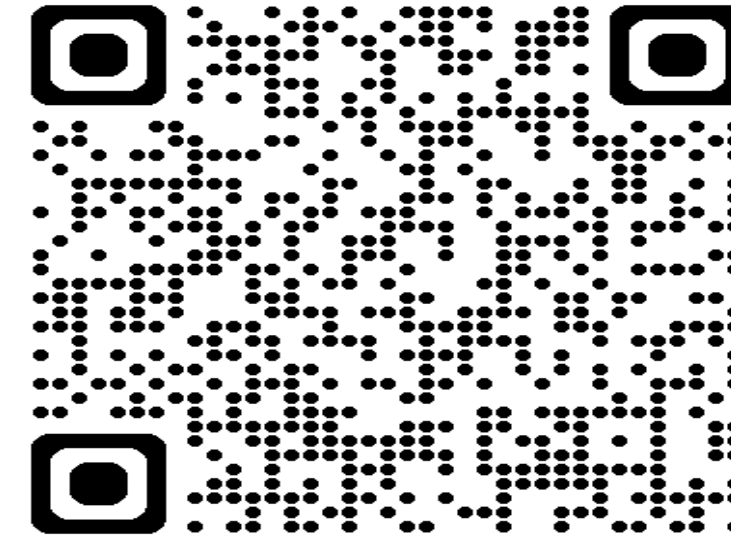
Kalliopi Kydonaki,<sup>1</sup> Janet Hanley,<sup>1</sup> Guro Huby,<sup>2</sup> Jean Antonelli,<sup>3</sup> Timothy Simon Walsh,<sup>3</sup> on behalf of the Development and Evaluation of Strategies to Improve Sedation practice in intensive care (DESIST) study investigators

Open access

BMJ Quality Improvement report

## BMJ Open Quality Quality improvement project aimed at improving the reliability of spontaneous awakening trials in a district general intensive care unit

Donna Ferraioli, Laura Ferguson, Martin Carberry





# Start with **WHY?**

**ASSESS  
NEUROLOGICAL  
STATUS**

**REDUCE VAP &  
VENTILATOR  
DAYS**

**AIM FOR RASS  
0 to -1**

**REDUCE ICU  
WEAKNESS**

**REDUCE  
DELIRIUM**

**REDUCE LOS**

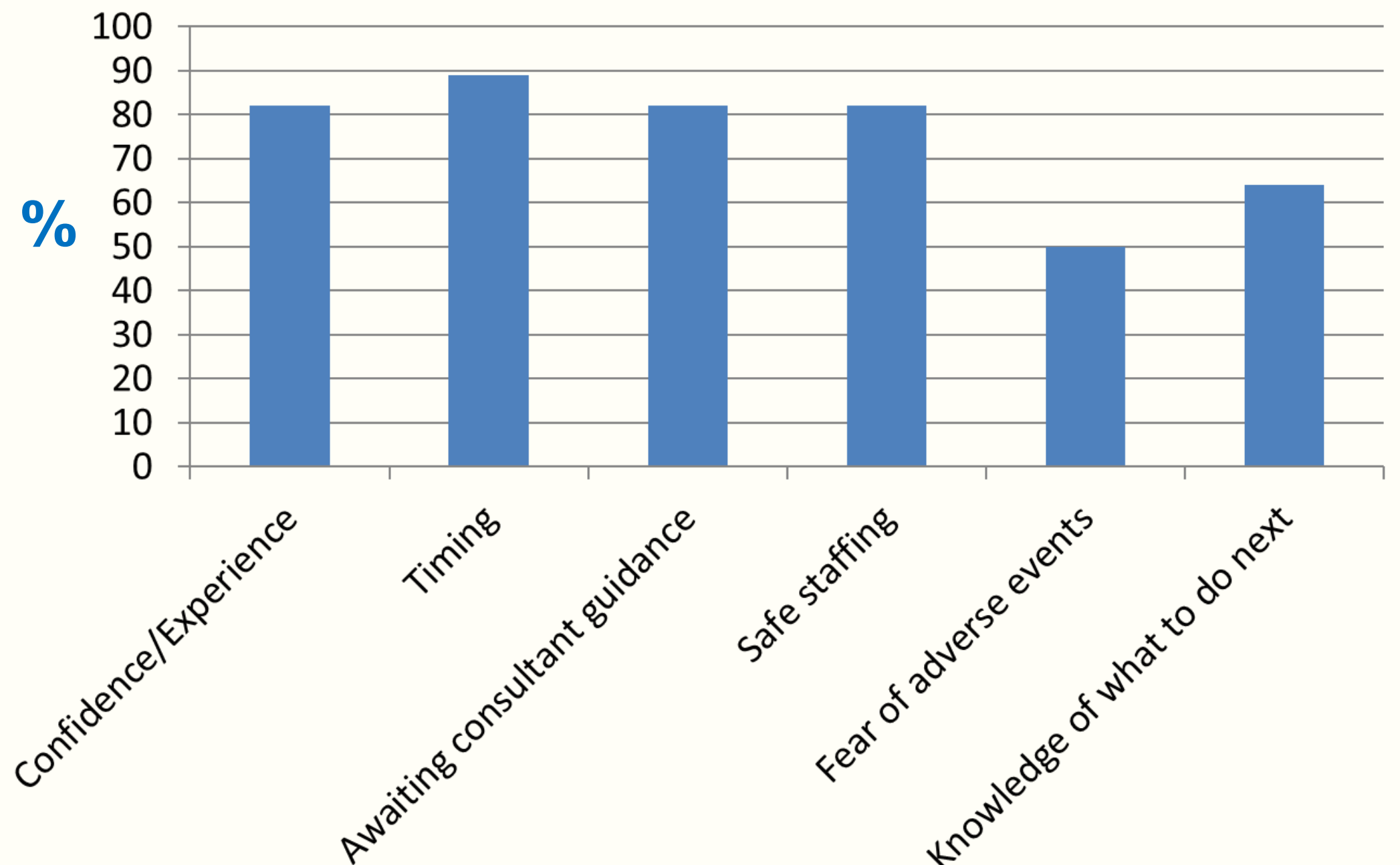


# Understanding our system

- 1 Staff survey on constraints
- 2 Retrospective data collection from 60 patient case notes to establish baseline data **46%**



What are the main constraints in performing daily sedation holds?



**Aim**  
In order to achieve this Aim...

**Primary Driver**  
We need to ensure...

**Secondary Driver**  
Which requires...

**Change Ideas**  
Ideas to ensure this happens...

Increase compliance with daily sedation holds to 95% by October 2023

Safe staffing levels

Maintaining nationally recommended critical care nurse to patient ratio's

- Ensure nurse establishment accurate
- Adequate skill mix on shift

Understanding of rationale for change

Providing evidence based knowledge and education to staff

- Regular 5 minute teaching sessions
- Education board displaying evidence for change

Appropriately trained and skilled staff

- Training, experience & confidence
- Strict criteria for performing sedation hold autonomously

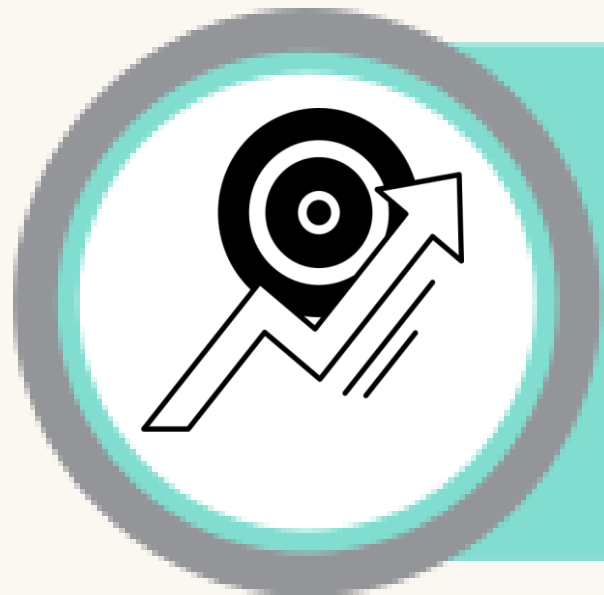
- Training via National competency framework
- Development of sedation hold protocol

Change in ward culture

- Empowerment and involvement of staff
- Shift from medical decision making to nurse led

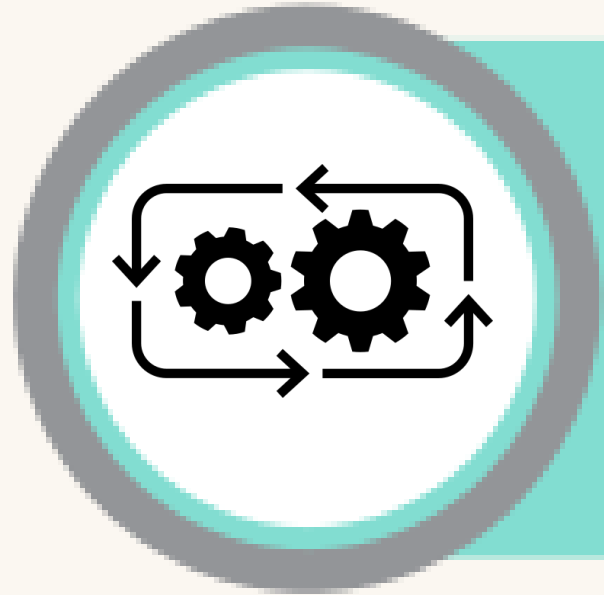
- Embedding QI into daily practice
- Protocol & check box on 24 hour monitoring chart





## Outcome

% of ventilator days that patient has eligible sedation hold



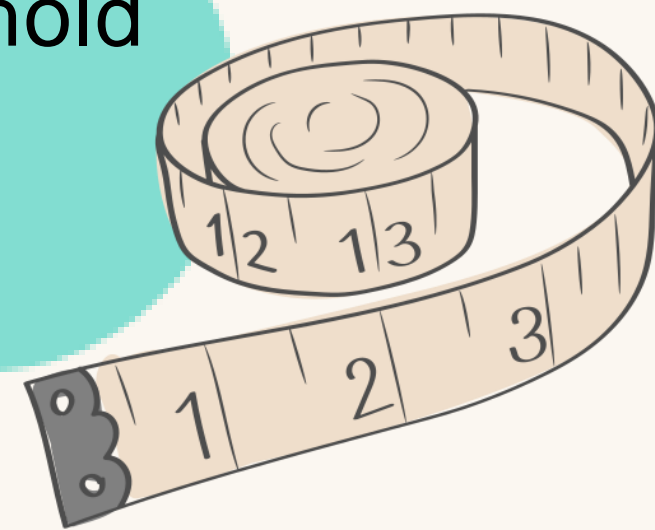
## Process

- % staff compliance with nurse led protocol
- Documentation of sedation hold



## Balancing

- Adverse events reported during sedation hold
- Impact on nursing workload
- Inappropriate use of protocol







Testing Changes

# PDSA 1 - Education

## QUALITY IMPROVEMENT BOARD

### Sedation hold QI Project



### Project Aim

↑ Compliance with nurse led sedation holds to 90% by July 2023



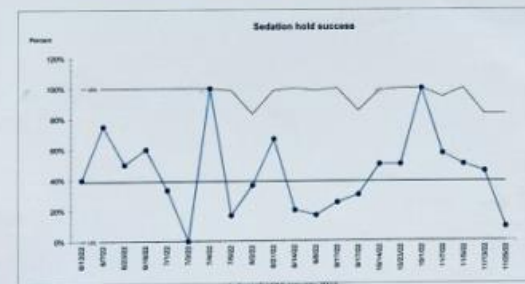
### WHY?



- Assess neurological status
- Aim for RASS 0 to -1
- Reduce incidence of delirium
- Reduce incidence of ICU weakness
- Reduce length of ventilation days
- Reduce length of stay

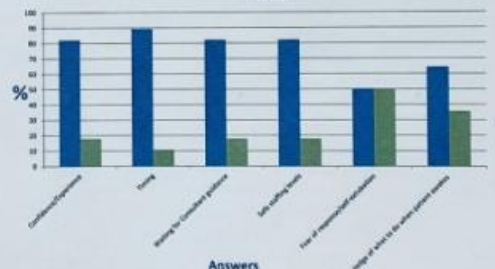
### Baseline Data

40% Compliance with daily sedation holds 21 patients from June – November 2022



### Questionnaire Responses

What do you think are the main constraints in performing sedation holds?

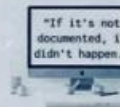


All ventilated patients require a daily sedation hold unless exclusions apply



Sedation & Weaning	
Sedation hold (circle)	Yes <input type="radio"/> No <input type="radio"/>
Not appropriate – why?	Paralysed & Proned
Ready to wean (circle)	Yes <input type="radio"/> No <input type="radio"/>
Not appropriate – why?	Paralysed & Proned

Ensure box on 24 hour chart is filled in appropriately – if exclusion say why



- Paralysed/proned patient
- Head injury – medical review 24-48 hours
- Difficult airway/airway obstruction
- Patient – ventilator asynchrony (difficult to ventilate patient)
- FiO2 > 60% - consult medical staff
- Spinal injury – review after 24-48 hours
- Fulminant Hepatic Failure
- Treatment withdrawal/End of life care
- CVS instability – discuss with NIC or Medical team

### FOLLOW THESE STEPS!

1. Stop Propofol (or reduce to 0.1mls/hr in case need for bolus)
2. Keep opiate running and ensure analgesic requirements adequate
3. Continue to hold sedation until the patient obeys commands or RASS -1
4. If after 1 hour patient remains RASS -2 to -5 then discuss with NIC or medical staff about stopping opiate infusion
5. Aim for spontaneous breathing PSV/CPAP
6. If patient becomes agitated/distressed or CVS unstable RESTART sedation at HALF the previous rate and titrate as required

### Failure Criteria

Restart sedation at HALF previous rate and titrate if patient displays any of below



A Nurse – Led sedation hold protocol will be implemented using the PDSA cycle

All input/feedback welcome 😊





# PDSA 2 - Protocol

## NURSE LED SEDATION HOLD PROTOCOL

Implement

L.Russell Version 1.0 February 2023



### Nurse Led Sedation Hold Protocol

Sedation is used in the Intensive Care Unit to improve patient comfort, decrease anxiety, permit mechanical ventilation and facilitate interventions. Evidence suggests that deep sedation of ICU patients has significant adverse effects with guidelines advising that unless absolutely necessary it should be avoided.

Excessive sedation can be avoided with the use of planned sedation holds, and by titrating sedation to the optimum level of patient comfort.



#### Exclusions

- Paralysed/Proned
- Head injury – medical review 24-48 hours
- Difficult airway/airway obstruction
- Patient/ventilator asynchrony (difficult to ventilate patient)
- FiO2 > 60% - consult medical staff
- Spinal injury – medical review 24-48 hours
- Fulminant hepatic failure
- Treatment withdrawal/End of life care
- CVS instability – discuss with NIC or medical team

#### Directions for Weaning

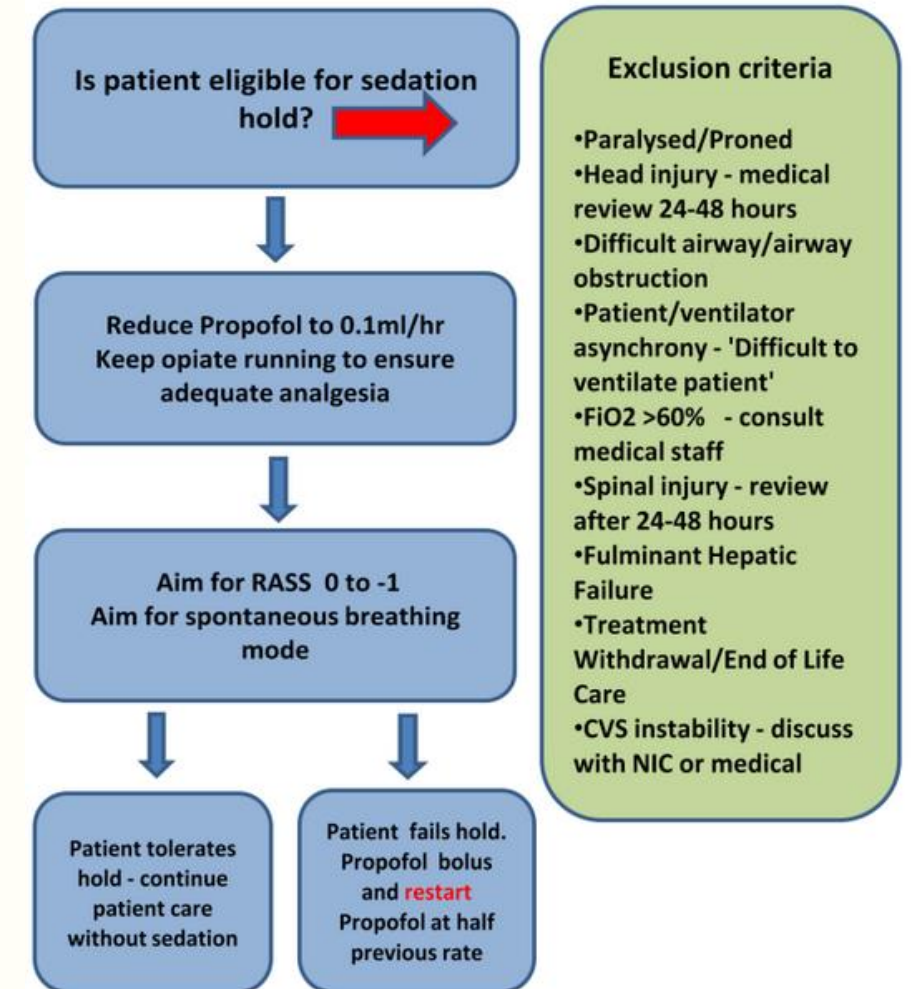
- Reduce mandatory breaths by half and assess after 5 minutes
- If patient breathes sufficiently change to SPN-CPAP with a Pressure Support (PS) of 10cm H2O
- If RR <25 and TV within patient targeted parameters then reduce PS by 2cm H2O every 2 hours
- Consider reducing FiO2 if SaO2 above patient target
- When FiO2 <50% consider reducing PEEP (unless already at 5cm H2O)

**Consult Medical Staff if unsure**

#### Procedure for stopping sedation:

1. Stop Propofol – reduce to 0.1mls/hr in case of need for emergency bolus
2. Keep opiate running and ensure analgesic requirements are met
3. Continue to hold sedation until the patient obeys commands or RASS 0 to -1 is recorded
4. If after 1 hour the patient remains RASS -2 to -5 then discuss with NIC or medical staff about stopping opiate infusion
5. Aim for spontaneous breathing mode PSV/CPAP and weaning – see below
6. If patient becomes agitated/distressed and displays any failure criteria (see overleaf) administer small bolus and **RESTART** sedation at **HALF** the previous rate and titrate as required

## FLOWCHART



#### Exclusion criteria

- Paralysed/Proned
- Head injury - medical review 24-48 hours
- Difficult airway/airway obstruction
- Patient/ventilator asynchrony - 'Difficult to ventilate patient'
- FiO2 >60% - consult medical staff
- Spinal injury - review after 24-48 hours
- Fulminant Hepatic Failure
- Treatment Withdrawal/End of Life Care
- CVS instability - discuss with NIC or medical

#### Failure criteria

- Sustained anxiety/agitation
- Respiratory rate >35/min or <8/min for 5 minutes
- Oxygen saturation <88%
- Respiratory distress
- Acute cardiac arrhythmia

# Failure Criteria

**Sustained  
anxiety/agitation**

**Respiratory rate  
> 35/min or  
< 8/min**

**Oxygen  
saturation <88%**

**Respiratory  
distress**

**Acute cardiac  
arrhythmia**

Restart sedation at **HALF** previous rate



**Project Management  
and Communication**

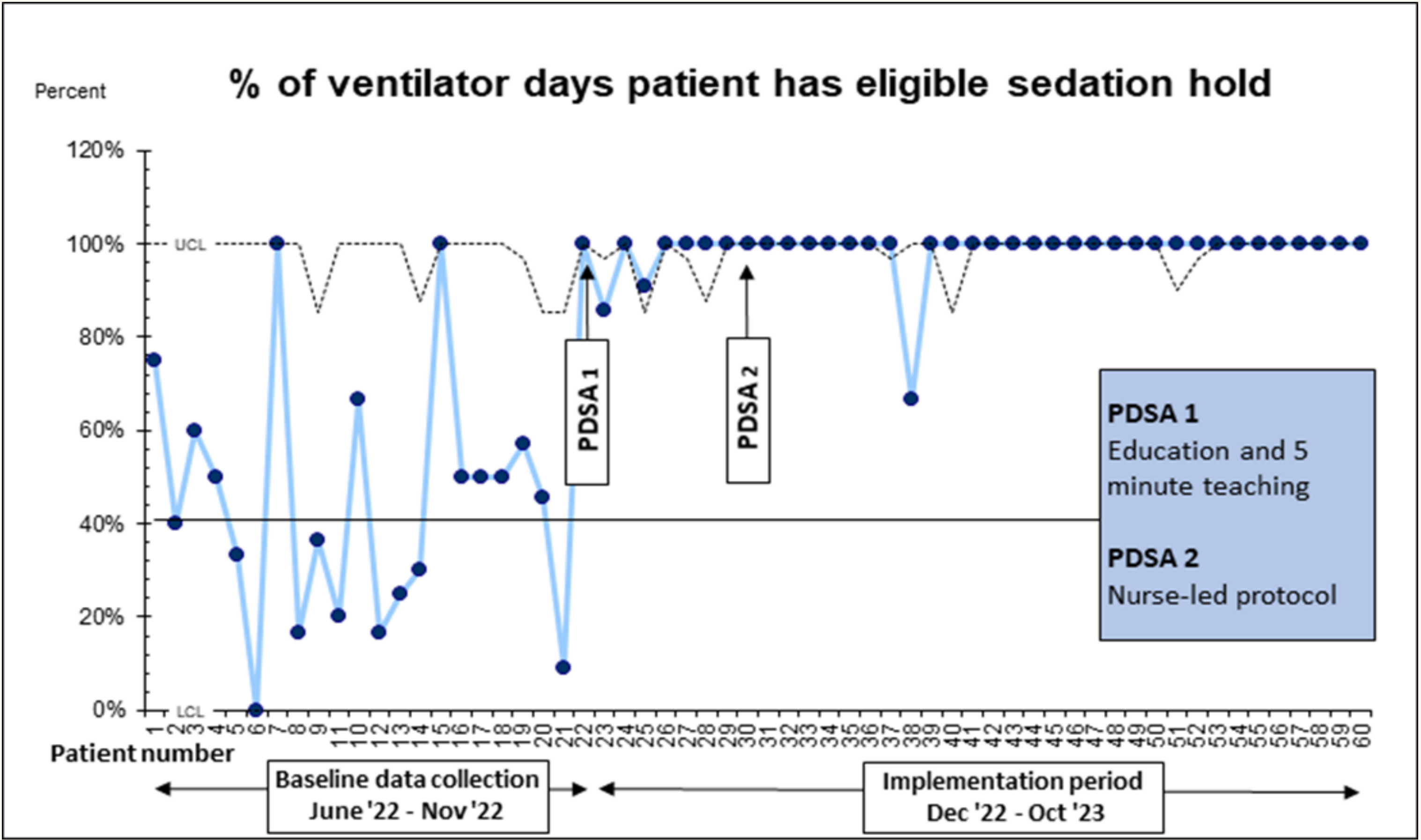
- Clear communication
- Effective planning
- Learning lessons





Testing  
Changes

# Results

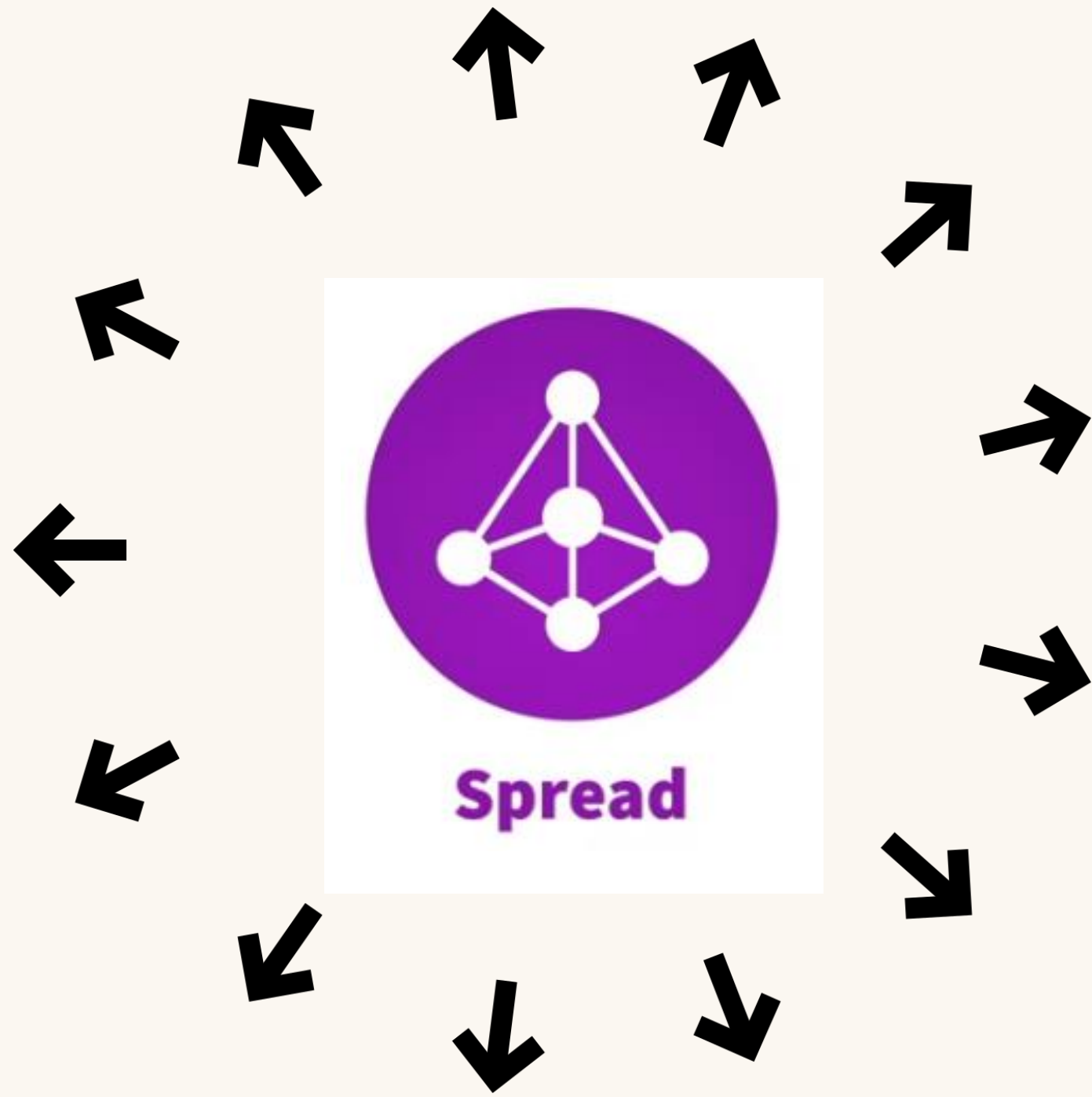


# Results and Key Learning

- Communication and staff engagement pivotal for implementing change
- Improved from 46% baseline to 100%
- Qualitative and quantitative are equally effective
- Culture change daunting
- No adverse events occurred during sedation holds
- Protocol and check box ensures sustainability



Sedation & Weaning	
Sedation hold (circle)	Yes <input type="radio"/> No <input checked="" type="radio"/>
Not appropriate – why? <b>Paralysed &amp; Proned</b>	
Ready to wean (circle)	Yes <input type="radio"/> No <input checked="" type="radio"/>
Not appropriate – why? <b>ARDS &amp; O2 &gt;70%</b>	





Any Questions?