

## BACKGROUND AND RATIONALE

Clinical observations (obs), which include the measuring and documenting of vital signs, are essential tasks performed by medical staff to make crucial decisions on patient care. Baseline data from East Lancashire Hospitals NHS Trust (ELHT), revealed deficiencies in regularity, variability and wastes in observation-taking. This theoretical quality improvement project (QIP) through the application of the Plan-Do-Study-Act (PDSA) cycle will analyse the clinical observation procedure and implement changes to reduce wastes and increase time efficiency in medical wards.

**Rationale:** Baseline data clearly indicated irregularities in performing and documenting clinical observations. There was additional concern over the variability in time taken to do observations. These concerns were raised to the monthly Deteriorating Patient Steering Group at ELHT which designated the need for a system improvement plan that involves:

- A review of the e-obs system to ensure that it supports staff to calculate and escalate NEWS scores to alert physicians.
- Development of compliance reports to monitor delayed documentation missed obs, and retrospective documentation of obs (Swales et. al, 2022).

This QIP was devised to evaluate the barriers to efficient observation-taking at ELHT and take steps to overcome barriers and improve efficiency.

**Aim:** Reduce the overall time taken to perform and record observations by two minutes from the current average time of five and a half minutes by 30 June 2023.

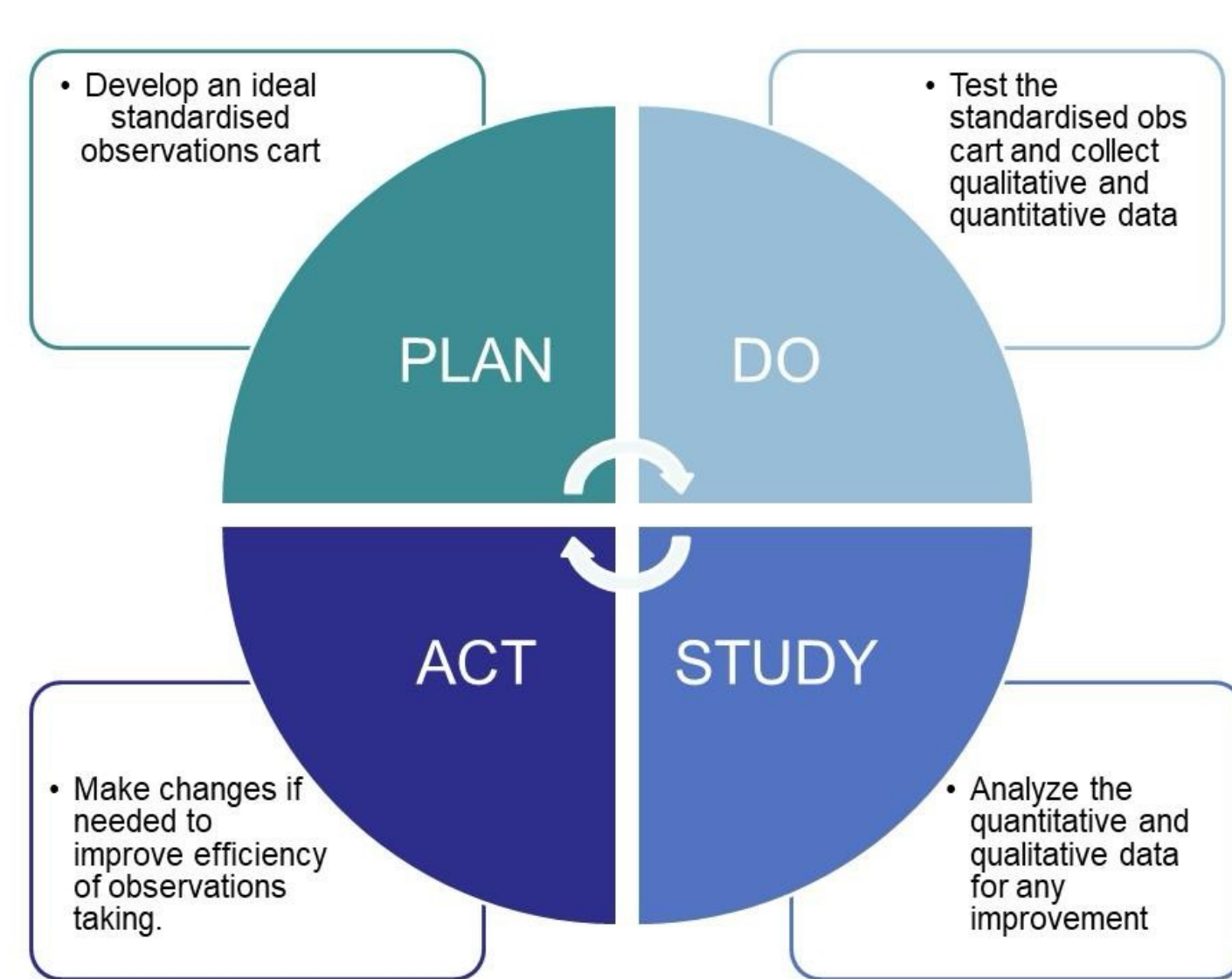
**Methods:** This theoretical QIP involved collection of baseline data from three medical wards, measuring the time for a set of observations as well as wastes identified during the process. Quality improvement tools were employed in discussions with stakeholders to perform a root cause analysis, identify drivers and propose change ideas. A standardized observation chart (SOC) was chosen to be introduced and tested on three medical wards in June 2023 with collection of subsequent qualitative and quantitative data and repetition of the PDSA cycle.

**Conclusions:** Although no results were obtained from this theoretical QIP, potential positive outcomes in the form of a reduction of time of observation-taking and improved efficiency are anticipated. Additional PDSAs should be undertaken to measure long-term efficacy and widespread implementation of the change idea.

## PDSA CYCLE

- **Plan:** An SOC was designed in discussion with stakeholders, to overcome equipment barriers and will be implemented in three medical wards. An SOC will reduce observation-taking duration by two minutes, improving efficiency and increasing the number of patients receiving timely and complete observations.
- **Do:** Test the SOC on three medical wards for four weeks and collect quantitative and qualitative data on the time it takes to collect observations, comparing with the baseline data.
- **Study:** Analyse the data collected to determine an improvement in the time efficiency of observation-taking and identify any wastes. Compare the new monthly data with the baseline data from the Improvement Hub and determine a reduction in missed or delayed observations.
- **Act:**
  - **Adopt:** If the intervention was found to be successful, it can be embedded, spread, and sustained on different wards.
  - **Adapt:** Reflecting on the data collected, make changes if needed to improve the effectiveness of the SOC.
  - **Discard:** If the intervention was not successful, discard changes that were not improving efficiency, make corrections to SOC, and re-test in a repeated PDSA cycle.

Figure 7: Diagram of the PDSA cycle that guided the scope of this QIP.



## BASELINE DATA

A previous quality improvement project (QIP) at East Lancashire Hospitals NHS Trust (ELHT) demonstrated a need for improvement in both the frequency and duration of observation-taking. The baseline data provided by the ELHT Improvement Hub is shown on Figure 1. An average of 114,806 clinical observations were collected monthly between October 2021 to September 2022 (Figure 1). However, approximately 40% were delayed and 18% were missed from the data provided (Figure 1).

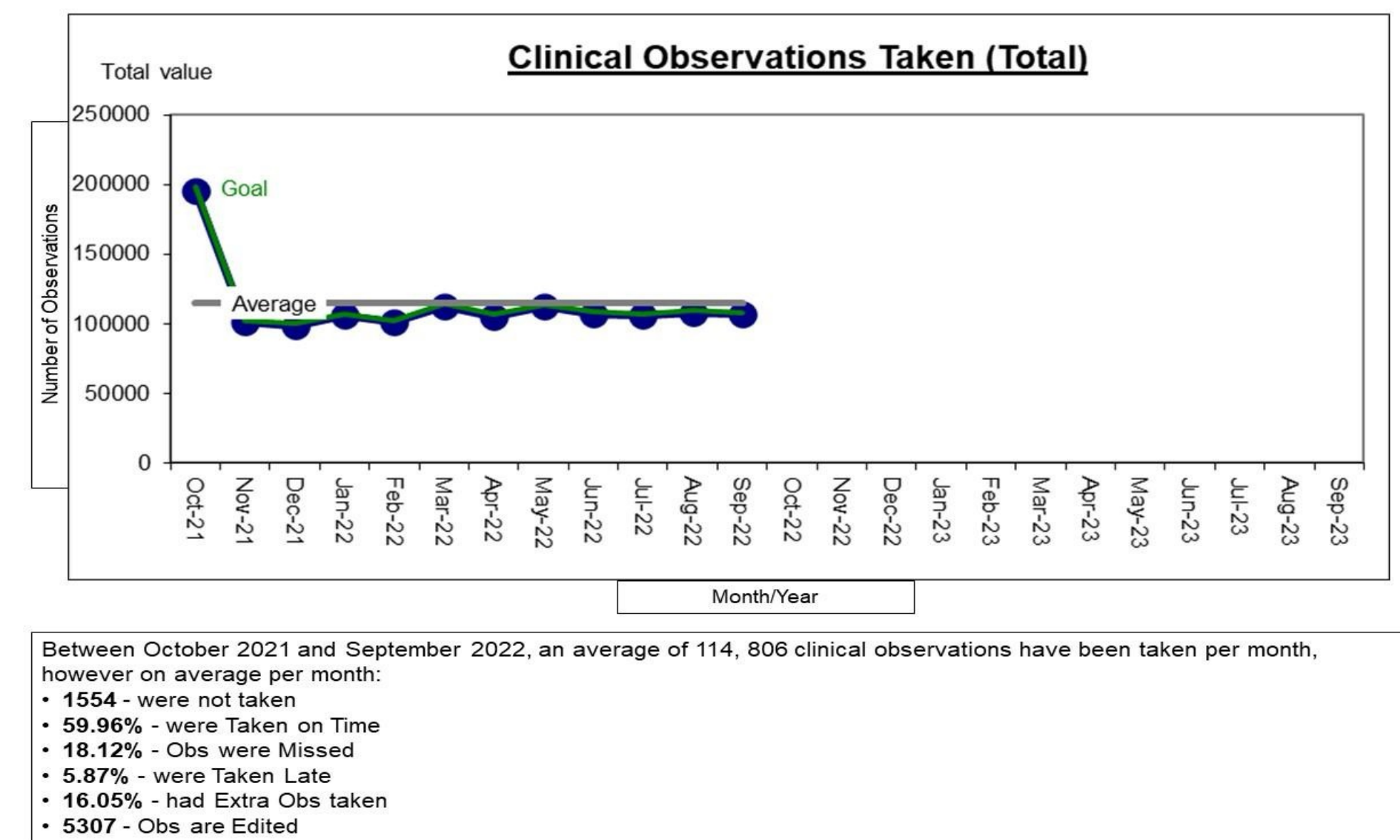


Figure 1: Baseline data of observations taken from October 2021 to September 2022.

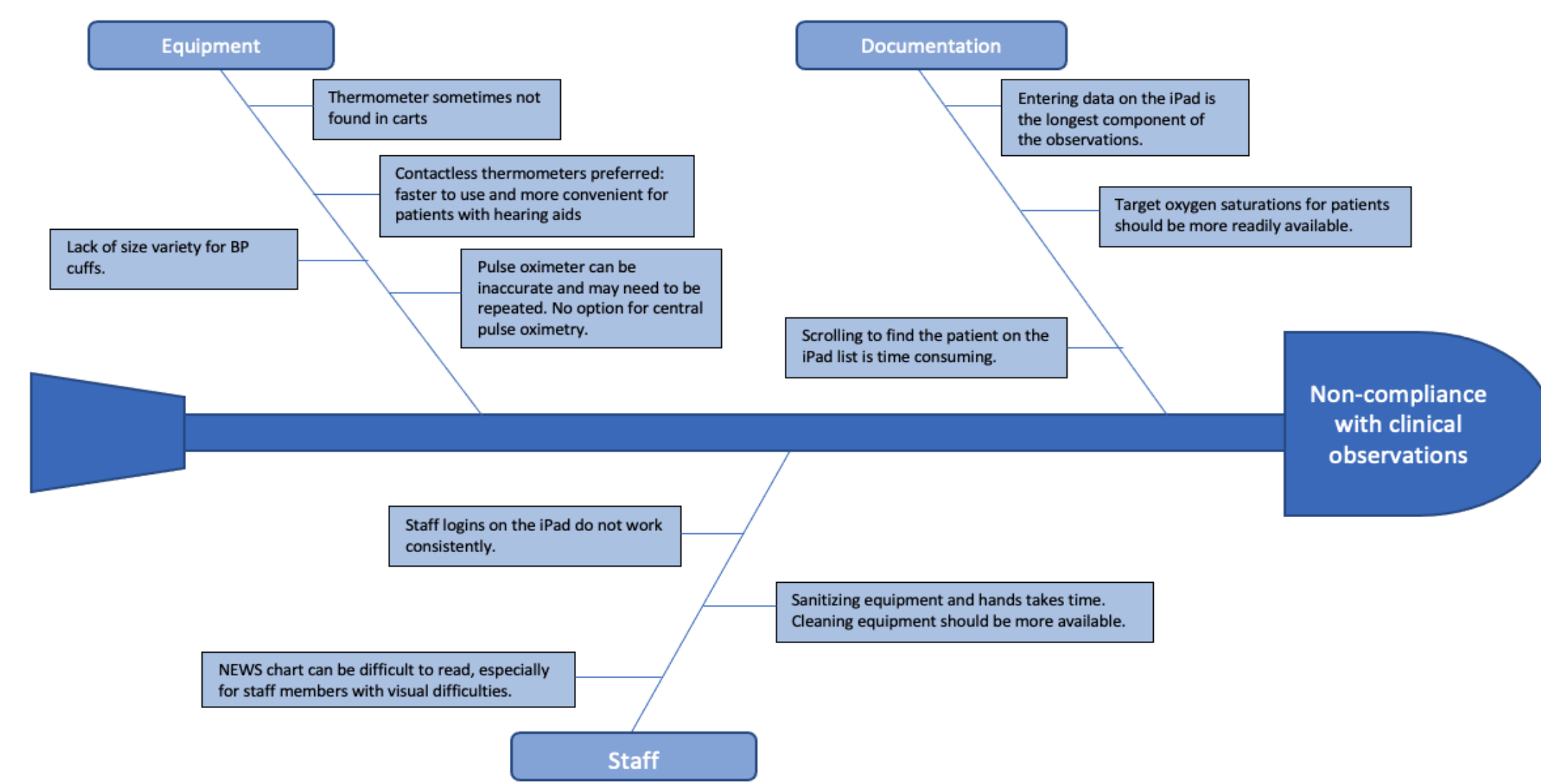


Figure 3: Fishbone diagram for root cause analysis of the qualitative data collected from the Gemba

Additional baseline data was collected by a medical student using Gemba boards from medical wards D1, C8, and C9 at Royal Blackburn Teaching Hospital on 13 January 2023. A total of 17 observations were collected.

- Quantitative data measured the time taken to complete clinical observations from all patients in a bay with documentation in the electronic NEWS chart.
- Qualitative data identified any wastes contributing to time loss during the observation-taking process along with informal interviews of the staff collecting the observations.

The recorded times for the observations on each of the wards were averaged and depicted as a bar graph on Figure 2. Factors such as equipment errors, lack of equipment, log-in difficulties, and difficult patients contributed to the time variance of the averages.

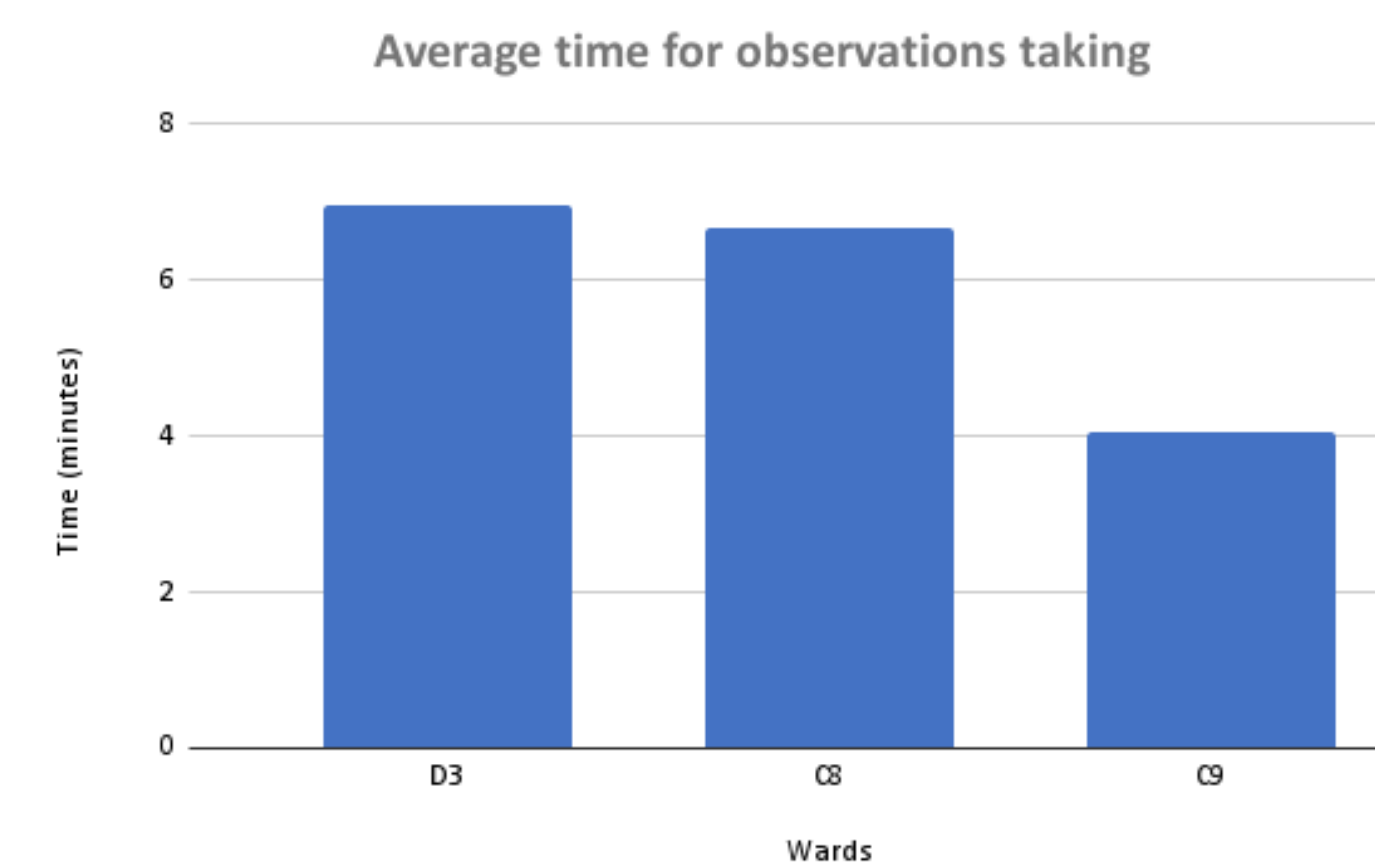


Figure 2: Time averages for each of the three wards recorded

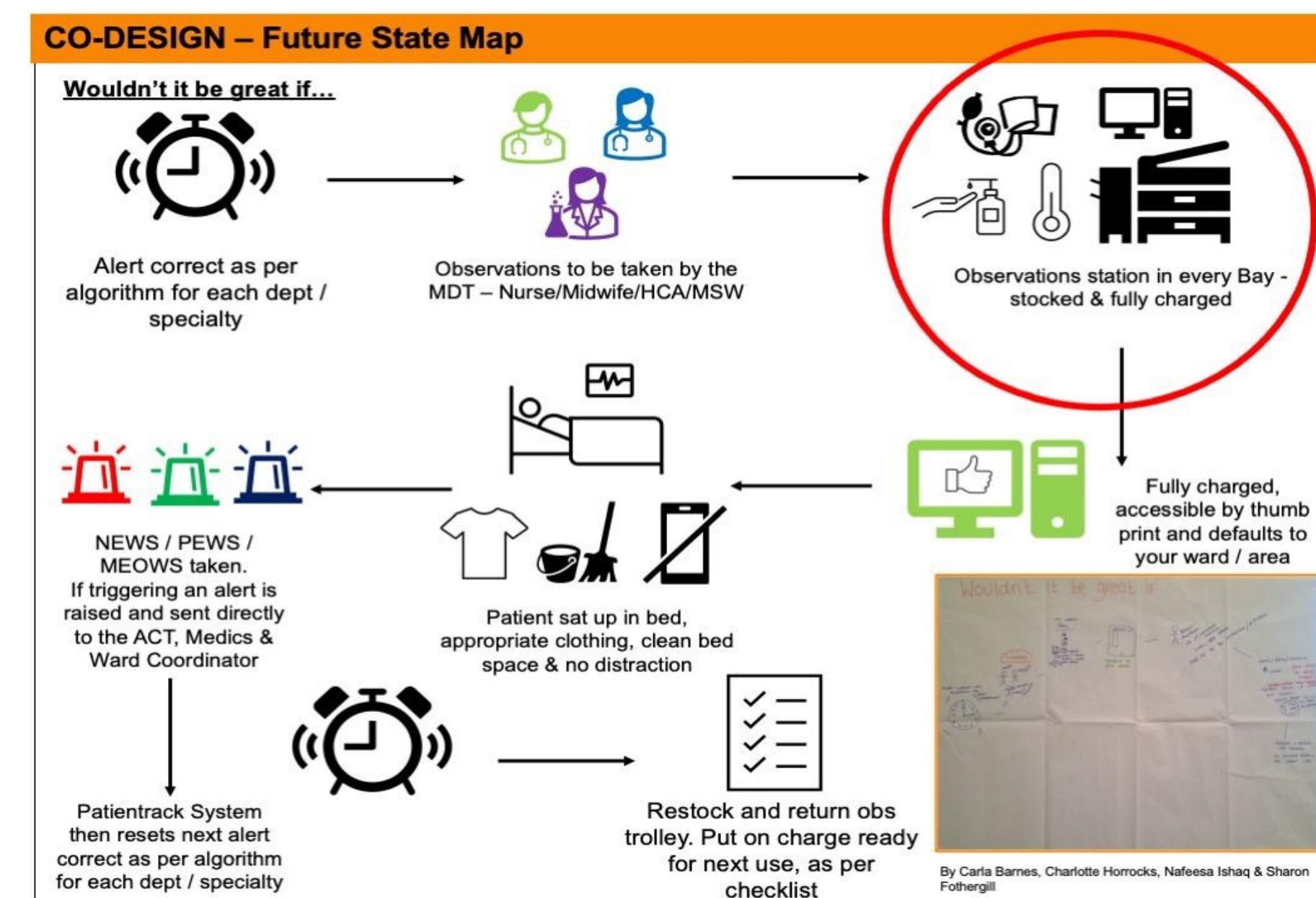


Figure 4: Future State Map showing the area of focus for this quality improvement project

## PROJECTED PROCESS MAP FOR THE SOC

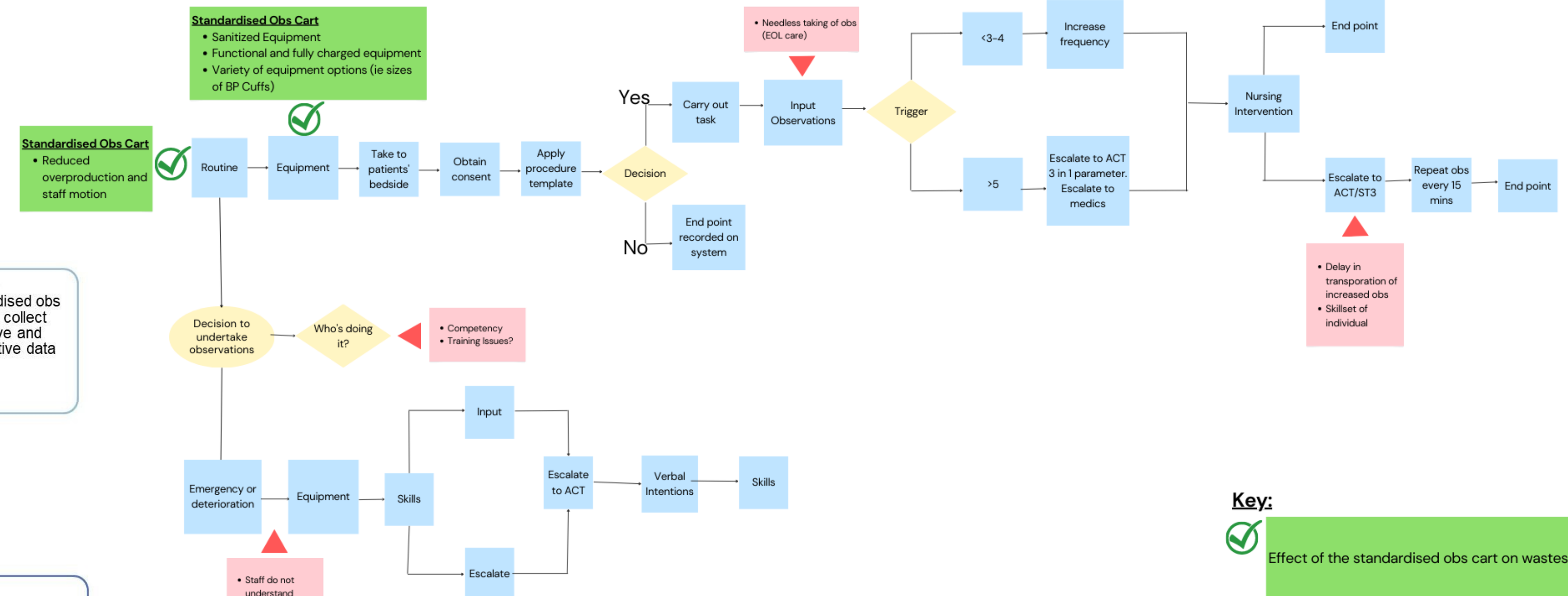


Figure 7: Process map of taking clinical obs once the SOC is implemented

## STAKEHOLDERS

The ELHT improvement hub, organized an A3 document to outline the project and facilitated meetings. Members of the acute care team supervised the project and scheduled monthly meetings. Nurses, midwives, healthcare assistants, and allied health professionals formed the bulk of the improvement group and provided an understanding of the pros and cons of current observation-taking and proposed change ideas that were voted on. Medical students shadowed ward staff taking a set of observations, collecting qualitative data on wastes identified during the process. The stakeholders involved in this project are shown on the stakeholder matrix (Figure 5).

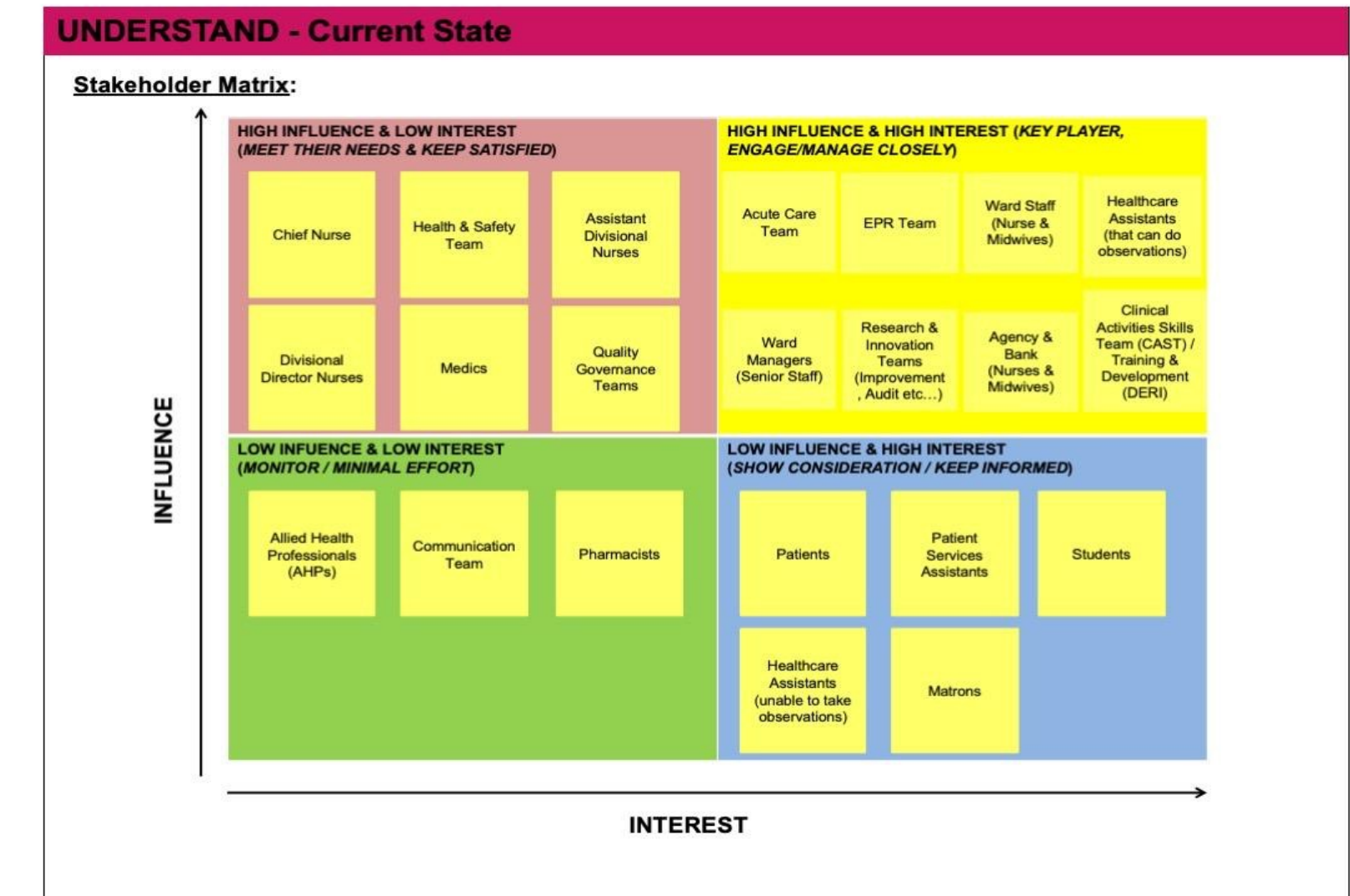


Figure 5: Stakeholder Matrix of the stakeholders in the QIP

## CHANGE IDEAS

The various change ideas and their drivers were organised into a driver diagram, illustrated in Figure 6.

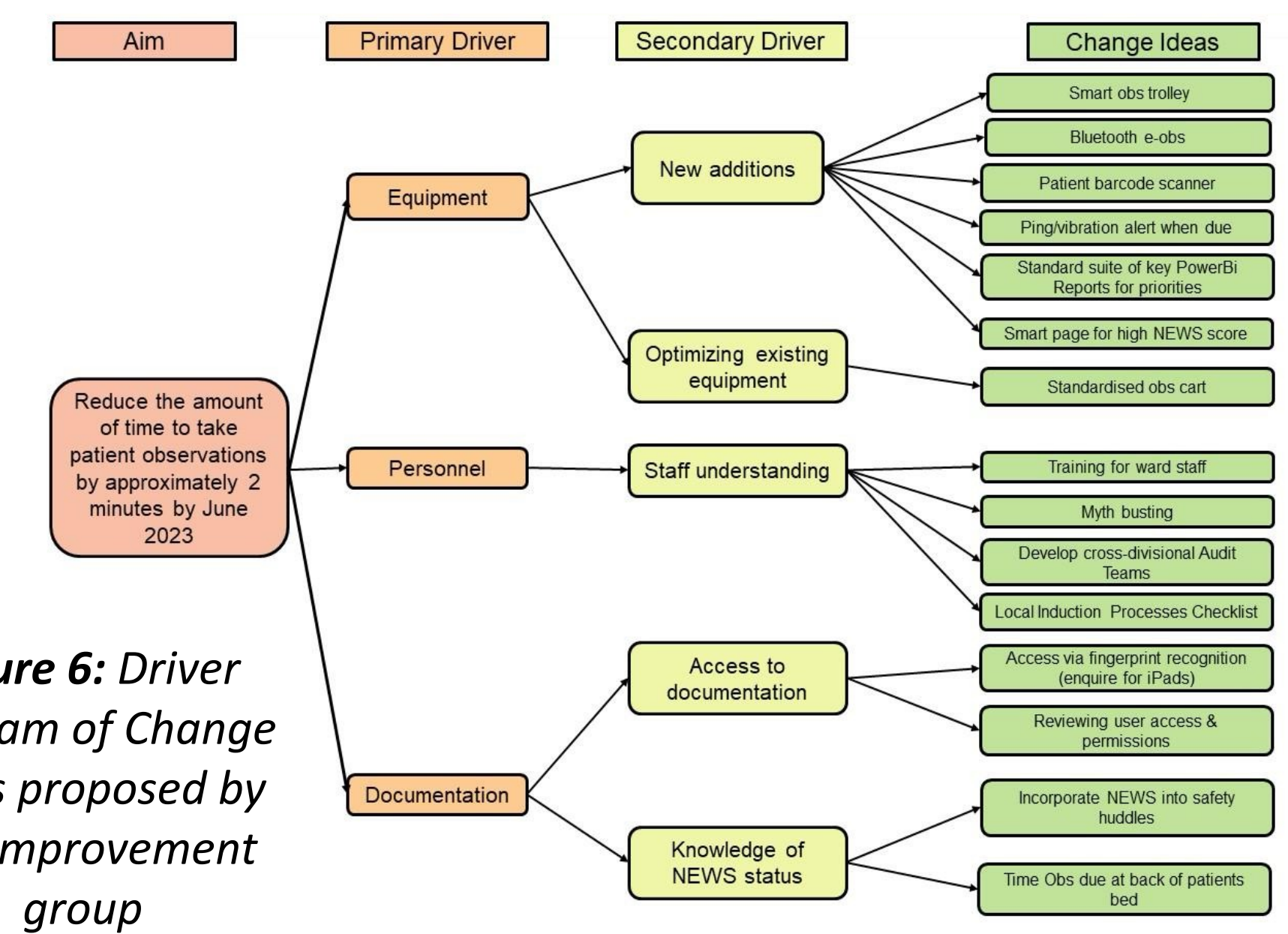


Figure 6: Driver diagram of Change ideas proposed by the improvement group

Of the interventions discussed in the co-design phase, the “quick wins” of myth-busting and the **standardised observations cart (SOC)** were voted on by the group to be taken forward into the test and adapt phase. The SOC involves optimizing existing resources to have functional equipment on the cart such as fully charged blood pressure machines, sanitation aids, and functioning thermometers and pulse oximeters.

The SOC was chosen as one of the interventions due to wastes identified from the baseline qualitative data collection such as missing or dysfunctional equipment (thermometers), an uncharged machine and lack of sanitation aids. By creating a SOC with optimized, functional, and available equipment, the wastes of transportation, excessive motion, inventory, and overprocessing will be reduced, hence reducing the variability in time.

## PROJECTED RESULTS

As the change idea has yet to be implemented and tested, no results are present for this QIP. Once the SOC has been implemented and tested, the data collected should be analysed to determine the success of the change idea. If the change idea is successful there would be an expected reduction in the time taken to conduct and record a set of clinical observations with uniformity across wards. Overprocessing and staff motion for the gathering of equipment is also expected to be reduced with the SOC.

## REFERENCES

- East Lancashire Hospitals NHS Trust. (2021). CP37 V1.5 Clinical Observation Policy.
- Swales, J., Aston, L., Dean, P., & Molyneux, J. (2022). Quality Improvement Project 2645 Improving Clinical Observations at ELHT (pp. 1–16). Improvement Hub, East Lancashire Hospitals NHS Trust.