Gloucestershire Safety and Quality Improvement Academy

Gloucestershire Hospitals NHS
NHS Foundation Trust

Introduction of Target Oxygen Saturation Wristbands on Ward 8b

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1. Background

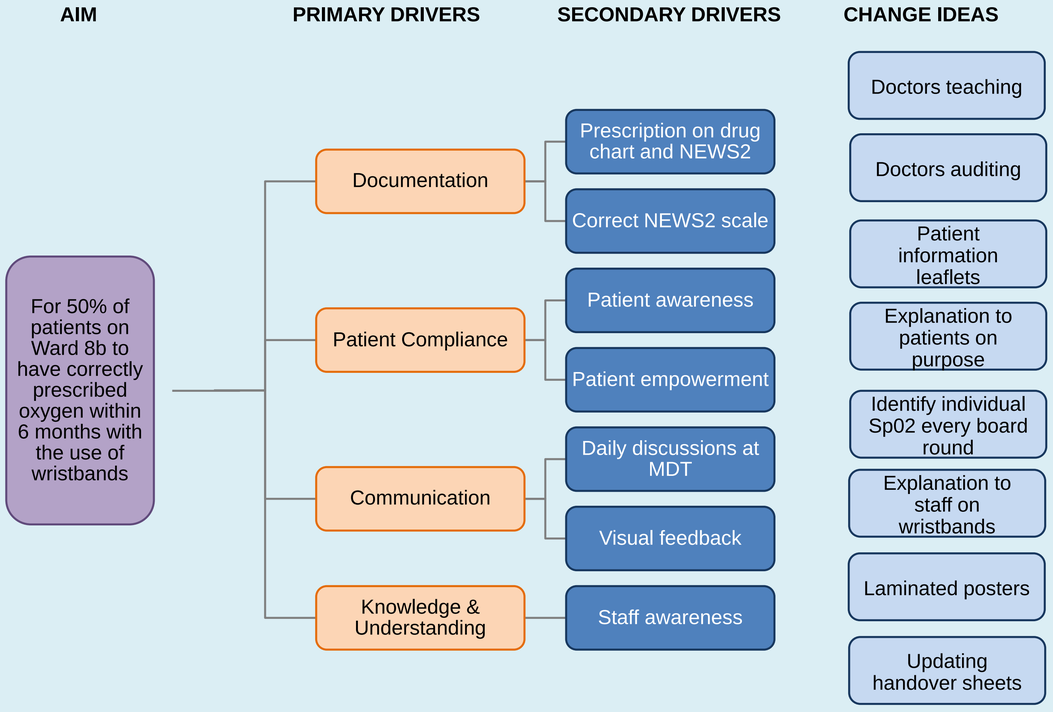
The average person's breathing pattern is driven by the level of carbon dioxide (CO_2) within their blood. However, certain patient groups have chronically elevated levels of CO_2 and are therefore less sensitive to it. As a result their breathing is driven by a lack of Oxygen (O_2), termed "hypoxic drive". When the first group becomes unwell and requires supplementary O_2, they have a target saturation range (SpO_2) of 94-96%. The second group have a lower target SpO_2 range of 88-92%. This is due to their hypoxic drive (low O_2) which would mean that if they are given too much O_2 then their respiratory rate will slow and potentially stop altogether.

As a team we found that oxygen was not being prescribed correctly, impacting the amount of oxygen patients were receiving. Therefore the initiative to improve this issue we decided to implement coloured wristbands stating target oxygen saturations.

2. Aim

For 50% of patients on Ward 8B to have oxygen correctly prescribed and delivered within six months with the use of the wristbands.

3. Driver Diagram:



4. Measures:

Outcome Measures:

1. **How many patients have the correct coloured wristbands**
2. **Number of patients within their target saturation range**

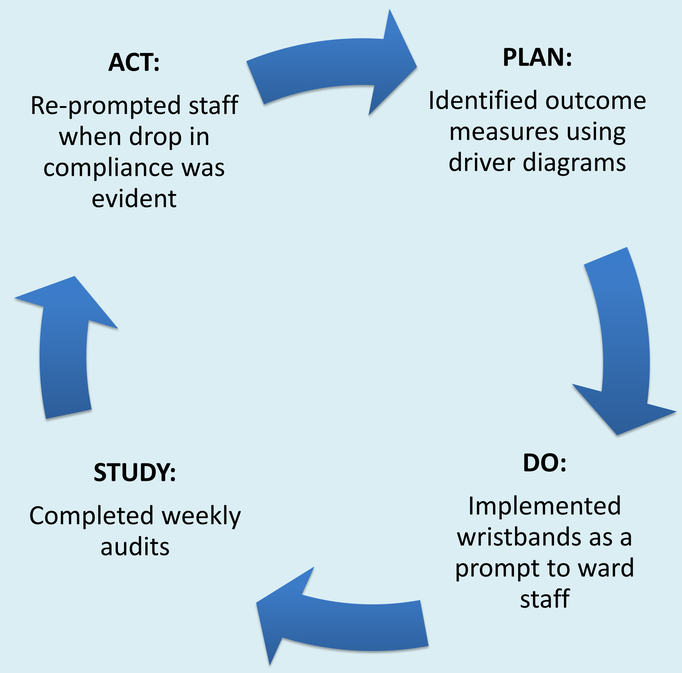
Process Measures:

1. **Oxygen prescription on drug chart**
2. **Oxygen prescription on NEWS2 chart**
3. **Type of oxygen delivery**
4. **Correct scale on NEWS2 chart**

5. Method:

- We collected baseline data on the use of oxygen on the ward, how well it was prescribed and how well the NEWS2 charts were being used. (Fig. 3-6 Pre-Intervention Median Lines).
- We used Driver diagrams, measurement plans and PDSA cycles.
- We then introduced the use of our oxygen saturation wristbands to Ward 8B, using bedside posters, patient leaflets and staff briefings.
- Weekly audits to monitor the use of the wristbands and the impact they had on the prescription of oxygen and the compliance with the NEWS2 charts. (Fig. 3-6)

6. PDSA Cycle:



During our QI project we initially identified our outcome measures that we wanted to affect positive changes upon by completing a driver diagram (Plan). Once our outcome measures were established and our baseline data had been collected we implemented our change idea of using the coloured wristbands as prompts, alongside teaching to the ward staff (Do). Following the implementation of the wristbands we completed weekly audits capturing data in relation to our outcome measures (Study), these outcome measures are outlined in section 4 and the audit results are visible in section 7. In response to the drop in performance at week 9 we carried out further informal teaching sessions at various handovers and made an effort to discuss target oxygen saturations for each patient during boardrounds. This saw a steady improvement in performance.

7. Results:

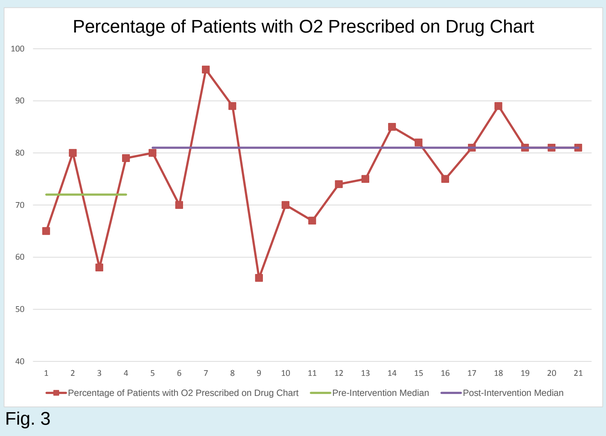


Fig. 3

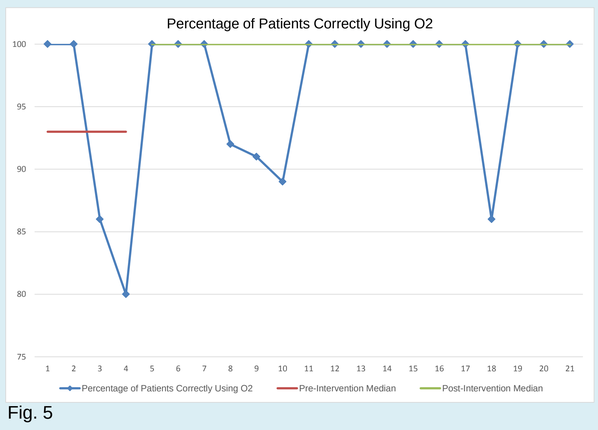


Fig. 5

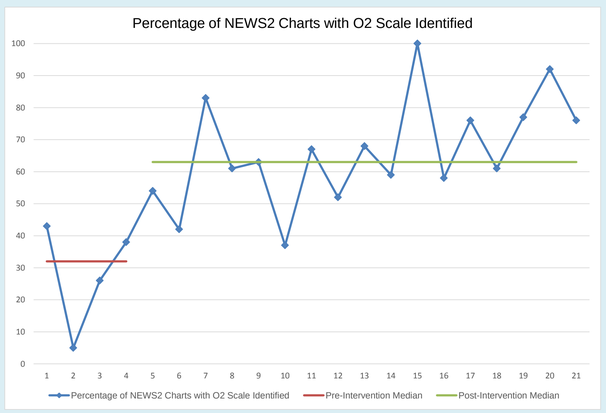


Fig. 4

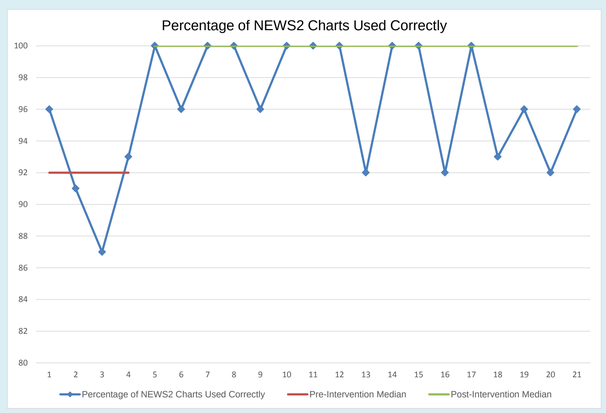


Fig. 6

8. Analysis:

The results above show an improvement in all four areas measured.
The standout plot at week 9 shows a significant decline in all four graphs. Following this, we re-discussed with the whole team (in various staff handovers) the importance of what we were trying to achieve. This led to a renewed effort from all staff and is reflected in the subsequent results.

9. Next Steps:

- To begin engagement with A&E and AMU in GRH
- To discuss with Avening ward in CGH for implementation there and for them to take the lead for further rollout across CGH