

The Work-As-Imagined vs. Work-As-Done: Evaluation of Locally Adapted Regional Anaesthetic Alert Bracelets

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Introduction

Neurological complications following regional anaesthesia are rare but potentially devastating. Guidelines advise robust systems be in place to monitor recovery after neuraxial blockade and to escalate concerns¹.

Regional anaesthetic alert bracelets (RAAB) are a simple intervention designed to facilitate the early identification of neurological complications following neuraxial blockade². They act as a reminder to staff to check for neurological resolution, by checking straight leg raise (SLR), 4 hours after the last dose of spinal or epidural medication. RAAB also support women to self advocate if they have concerns regarding their recovery.

At our tertiary obstetric unit, we introduced a modified RAAB, with a QR code to enable access to a relevant multilingual information leaflet (Fig 1.). After a comprehensive education drive of theatre and midwifery staff the RAABs were introduced. A year later, we conducted an audit to identify gaps between the intended (work-as-imagined) and actual (work-as-done) use of the bracelets.

Method

Time period: 4 days during November - December 2024
Patient survey: Snapshot face-to-face survey of all post natal women who had received spinal/epidural. Excluded if not at bedside during data collection or refusal to participate
Staff survey: Online form emailed to all delivery suite and postnatal midwifery staff.
Sample size: 57 patients. 31 midwives.
The audit was registered with the local audit department.

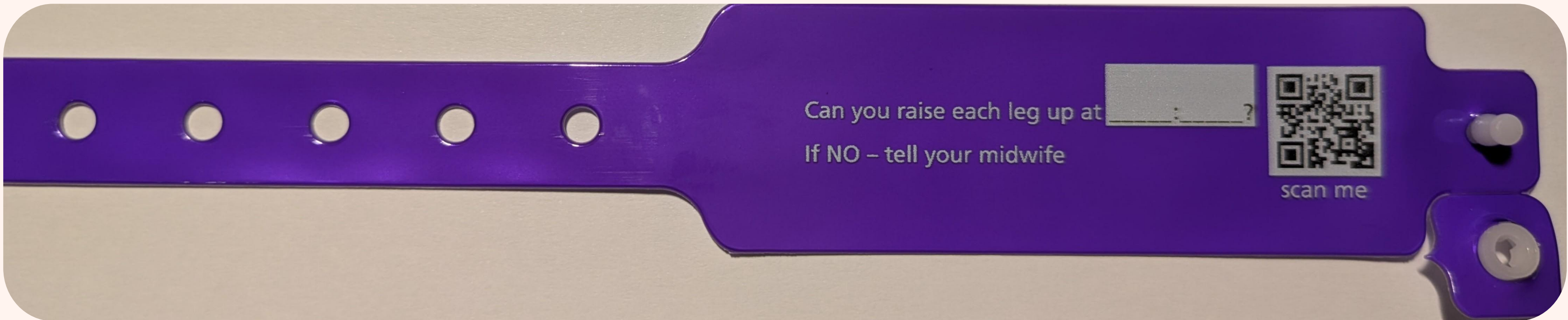


Figure 1. Regional Anaesthetic Alert Bracelet as used in St. Mary's Obstetric Hospital

Discussion

- Issues:**
- Significant discrepancy between set standards and actual practice
 - Less than half of women understood the purpose of RAAB
 - No surveyed women scanned the QR code
 - 87% of women were still wearing RAAB after 12 hours, despite full neurological recovery.

- Staff feedback:**
- Staff had good understanding of purpose and planned use of RAAB
 - Problems with the RAAB were identified (Table 1.)
 - Staff were unable to remove RAAB, as do not routinely carry scissors
 - Apathy towards RAAB due to management of delayed SLR was often to ‘watch and wait’ for resolution.

- Future plans:**
- Ensure education of women. RAAB to be explained by anaesthetists at time of procedure **and** midwives when epidural medication stopped
 - Posters for women on wards to further reinforce purpose of QR code on RAAB.
 - Implement solutions for practical problems (Table 1.)
 - Plans to re-audit after implementation of solutions to assess for change.

Work-As-Imagined

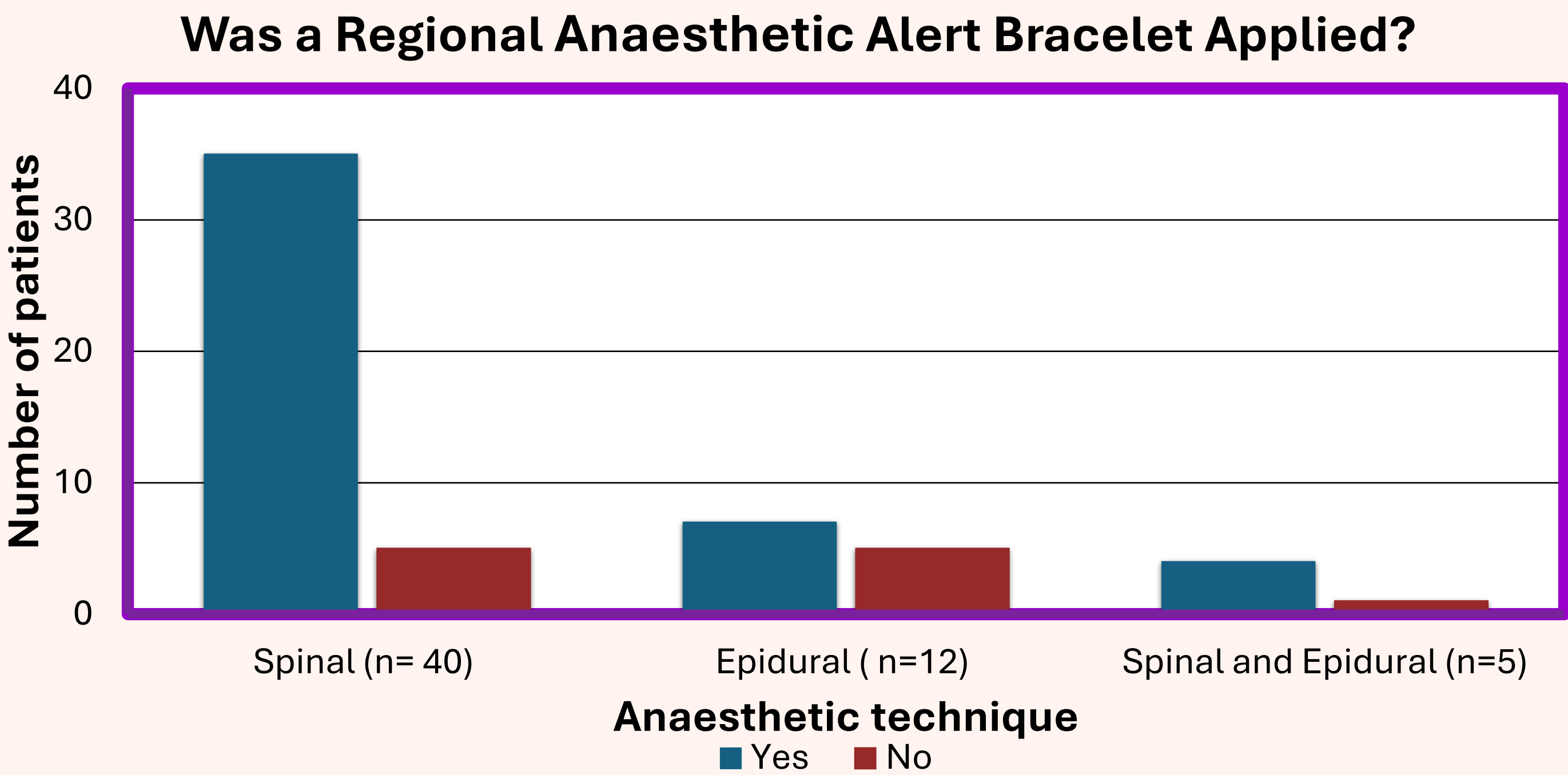
Vs

Work-As-Done

After performing a neuraxial procedure, the anaesthetist should apply the RAAB, explaining its importance to the patient and signposting the QR code for further information. 4 hours after the last dose of local anaesthetic, the woman should be asked to SLR. If unable, this should be immediately escalated to the duty anaesthetist for further assessment. Once the woman can SLR, the bracelet should be removed. This ensures the RAAB can act as an alert to the postnatal staff that any woman wearing a purple bracelet has not been assessed for neurological recovery.

- 100% of midwives knew the intended purpose of RAAB, 87% knew criteria for removal of RAAB.
- 81% of women (46/57) received a RAAB after neuraxial anaesthesia/analgesia.
- 48% of these women (22/46) understood its purpose.
- No patients scanned the QR code
- 13% had RAAB removed <12hours post last medication administration

Standard 1: 100% of patients who have had a spinal or epidural needle inserted should have a Regional Anaesthetic Alert Bracelet applied.	46/57 (81%)
Standard 2: RAAB should be removed 4-6 hours after spinal insertion or last epidural drug	6/46 13%



Time From Last Medication to Removal of Bracelet

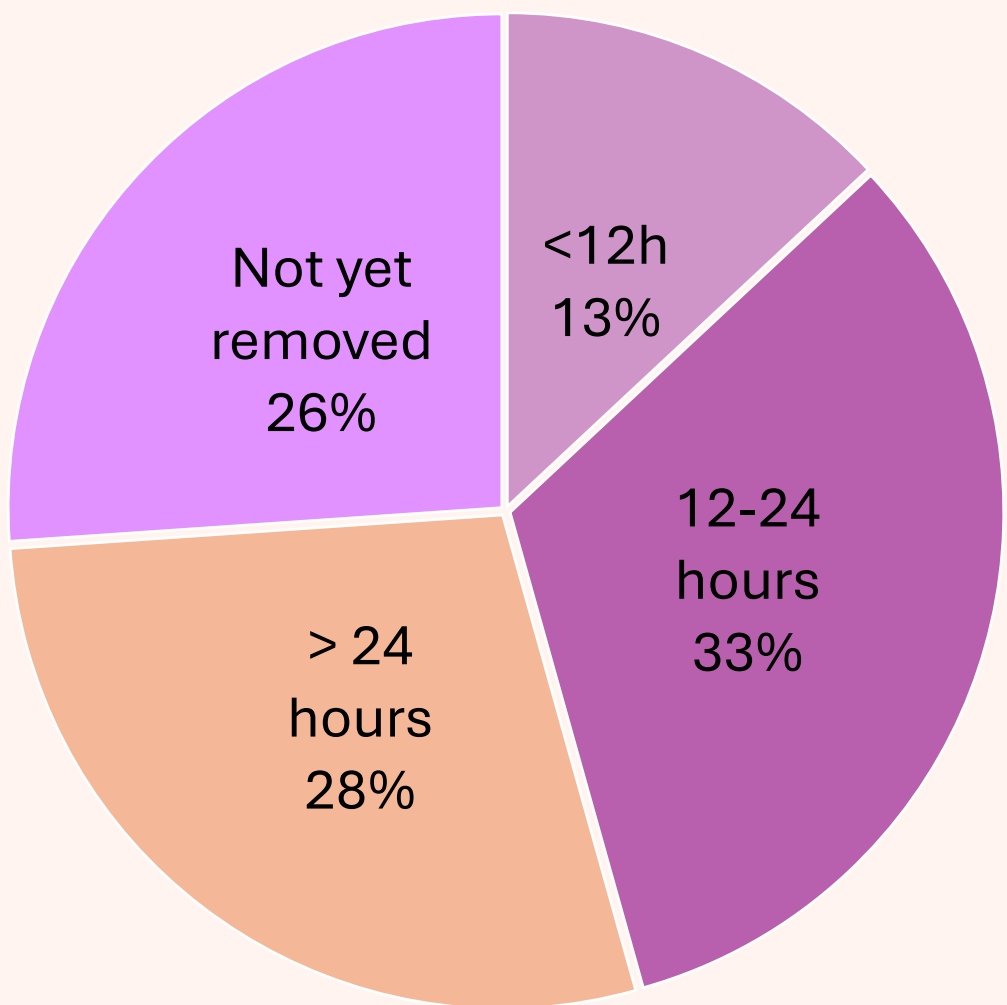


Figure 3. Time of removal of RAAB after last dose of spinal/epidural medication

Problem identified	Solution implemented
QR code obscured by wrist strap making it difficult to scan.	Redesign of wristband to make QR code more prominent.
Patients unaware of the purpose of the RAAB	Further staff education and re-writing SOP to include bracelet use.
Bracelet made of thick plastic requiring scissors to remove, which midwives don't routinely carry.	Change of bracelet to a material that can be torn.

Table 1. Barriers identified and the resultant change implemented

References

- 1) Yentis S.M, Lucas D.N, Brigante L, et al. Safety guideline: neurological monitoring associated with obstetric neuraxial block 2020. Association of Anaesthetists. 2020. doi:10.1111/anae.14993
- 2) Pitcher A, Farrant M, Mathers R, Hall T, Wicker J. EP047 Regional anaesthetic alert bracelet project: Identifying neurological damage early through patient empowerment. Regional Anaesthesia and Pain Medicine 2023;48:A65-A66.<https://doi.org/10.1136/rapm-2023-ESRA.109>