

Neurological monitoring of neuraxial blocks on our Delivery Suite: Are we meeting national recommendations?

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Introduction

Neuraxial analgesia in labour and anaesthesia for obstetric interventions is the mainstay of anaesthetic work on the delivery suite. Serious neurological impairment after obstetric neuraxial block is rare, but early detection is crucial to avoid permanent injury.

National safety guidelines from NICE and the Obstetric Anaesthetists Association (OAA) provide recommendations for the monitoring and assessment of obstetric neuraxial block; requiring multi-disciplinary training and engagement.

Methods

We retrospectively assessed 60 Obstetric case notes of parturients who had received neuraxial analgesia/anaesthesia in 2020 for documentation of the guideline recommendations:

- Hourly sensory and motor block monitoring during labour analgesia;
- Women being informed of the expected time for resolution of their neuraxial block;
- Straight leg raise (SLR) screening 4hrs post local anaesthetic administration.

Our compliance with these aspects of the national safety guidelines was 0%.

We prioritized interventions, incorporating the recommendations, in the following areas:

- Updating the Epidural in Labour Trust guideline with step-by-step guidance on neurological monitoring;
- Designing a new double-sided epidural labour analgesia observation chart with areas for sensory level and motor score documentation; alongside a dermatomal diagram/Bromage score for reference (Fig 1);
- Creating ‘Post Regional Anaesthesia Advice’ stickers for use following theatre interventions; including patient specific timings for the expected resolution of neuraxial block (Fig 2).

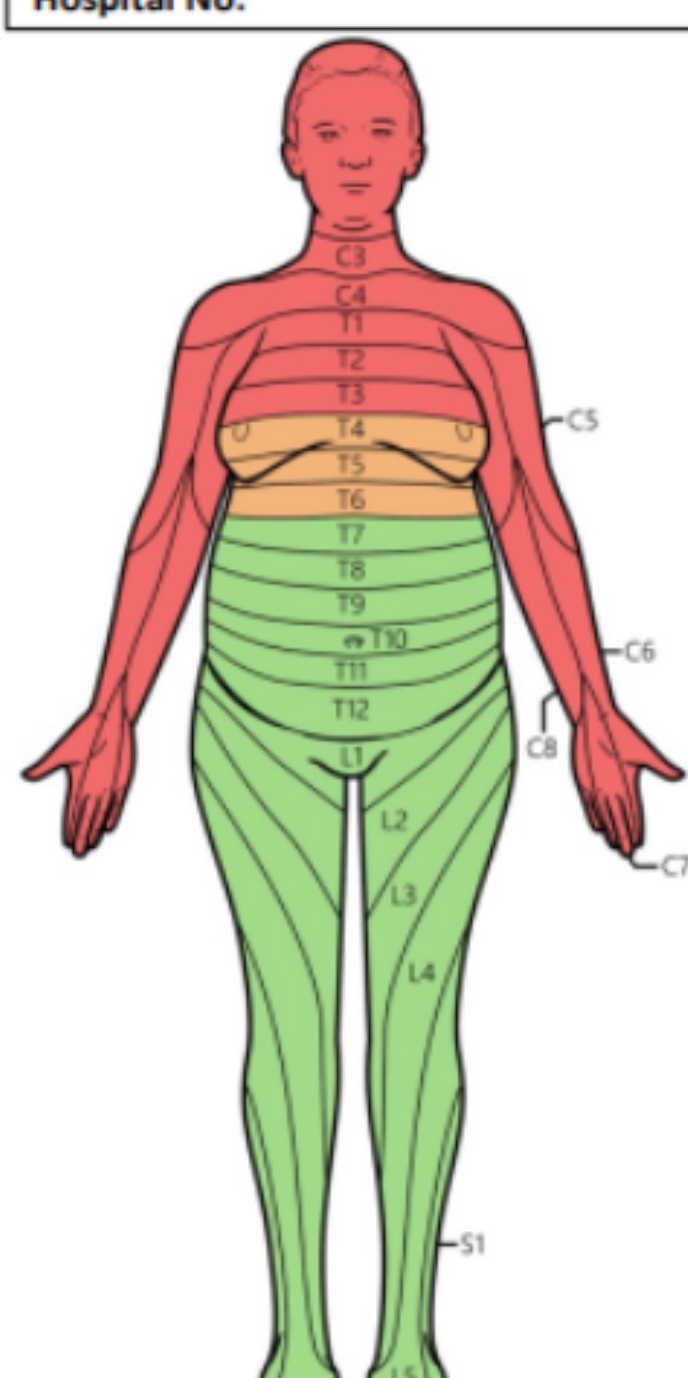
Results

We retrospectively re-audited 60 cases in September 2023, after the interventions had been in place for 5 months. The results are displayed in Figure 3, compared with our results from the initial 2020 audit.

Figure 1

Epidural Analgesia in Labour Observation Chart														
Date:	Time:													
BP	mmHg	200												
HR		180												
		160												
		140												
		120												
		100												
		80												
		60												
		40												
Pain score (0-10)														
Upper limit sensory level R/L		/	/	/	/	/	/	/	/	/	/	/	/	/
Lower limit sensory level R/L		/	/	/	/	/	/	/	/	/	/	/	/	/
Motor Score														
Total (ml) epidural local anaesthetic given														
Events		Document any other local anaesthetic below (eg. Pudendal blocks, skin infiltration) with drug name, dose and time:										Epidural Catheter Removal ☐ I confirm that the epidural catheter was removed intact ☐ Patient informed of expected time of return of bilateral straight leg raise at: _____ (approx. 4h after last epidural local anaesthetic dose) Date: _____ Time: _____ Name: _____		
A:														
B:														
C:														

Patient Name: _____
Hospital No: _____



Bromage Motor Score
1 Unable to move feet/knees
2 Able to move feet only
3 Just able to flex knees
4 Full movement

References

- National Institute for Health and Care Excellence. Clinical guideline [CG190]: Intrapartum care for healthy women and babies, 2014 (revised 201) London: NICE, 2017 <https://www.nice.org.uk/guidance/cg190> (accessed 21/12/2023)
- Yentis SM, Lucas DN, Brigante L et al. Safety guideline: neurological monitoring associated with obstetric neuraxial block 2020. Anaesthesia. 2020; 7: 913-919.

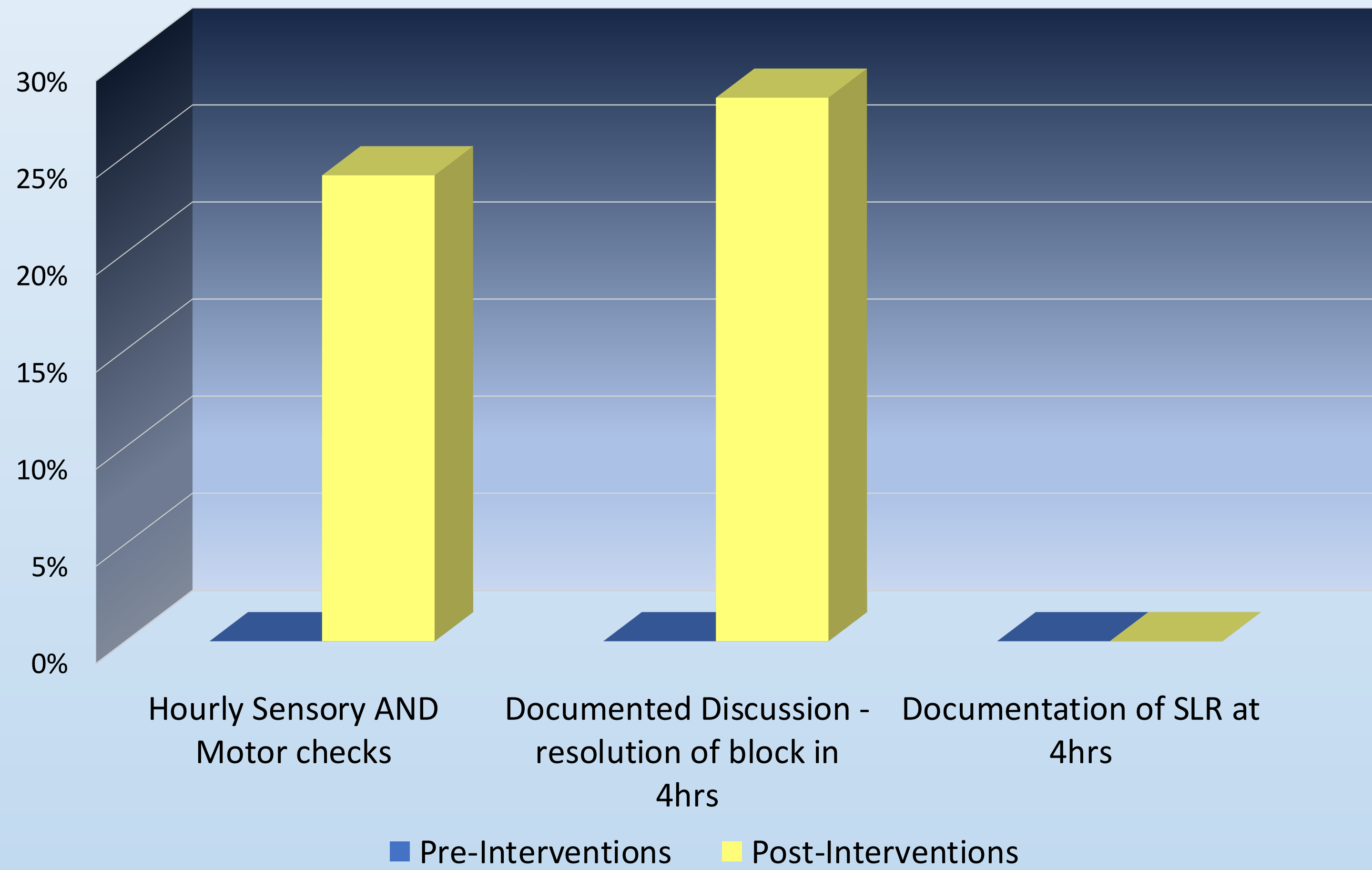


Figure 3

Conclusions

There has been an improvement in our compliance with national guidelines [1,2] in the 5 months since introduction. We are aiming for 100% compliance across the 3 areas on monitoring.

Since the recent re-audit, we have introduced a ‘Guide for Monitoring Labour Analgesia’ booklet for each room on Delivery Suite, containing an example completed epidural chart; a step by step guide to monitoring, as well as a troubleshooting infographic; available for use in real-time by the multi-disciplinary team. We plan to develop a patient wristband for SLR screening at personalised times to check on block resolution for timely escalation if required.

We plan to re-audit in another 6 months to determine if the above interventions are improving our compliance towards our 100% target.

Figure 2

Post Regional Anaesthesia Advice

Expected return of bilateral straight leg raise at: _____

(4h post spinal/last epidural local anaesthetic dose)

Patient informed of expected time for return of leg function:☐

Epidural: N/A:☐ Catheter removed and intact at: _____

Epidural insitu and can be removed after: _____

Thromboembolic Risk Score: _____

Dalteparin: Not required:☐ Can be given after: _____

Notes:

- Anaesthetist-led delivery of block check training for midwives: at time of epidural insertion; at preceptorship courses; and an online e-learning pack for Midwives (including a video tutorial).