

Introduction

Central neuraxial block is a gold standard in obstetric anaesthesia. Vertebral canal haematoma is an extremely rare complication but can have catastrophic consequences (1). Guidelines (2) for obstetric patients recommend screening for post-neuraxial complications with a straight leg raise (SLR) four hours after the last spinal or epidural dose. We developed an IT solution for the electronic patient record (EPR) to remind midwives to test SLR. A pop-up for midwife logins is triggered at four hours by: marking the epidural removed or the spinal time. Subsequently, this shows guidance on SLR assessment, automatic documentation of results and an escalation pathway if any concerns.

Methods

The project was launched in December 2024 with retrospective anonymous data collection. We looked at every neuraxial procedure in obstetrics for the three weeks pre-launch (phase 0) and three post-launch (phase 1). Data collected: indication for neuraxial; if the SLR reminder pop-up was triggered; time of SLR; SLR concerns escalated. Analysis was performed on Excel. We have approval from our Caldicott Guardian and are registered with our Clinical Audit Department.

Results

For 105 patients in phase 0, there was no formal way of documenting a SLR, hence a 0% rate compliance with the national guidelines (2). Of 112 patients in phase 1, 48% had SLR documented. 58% of all patients had the pop-up initiated. Of these, 83% had SLRs documented. 60% of spinals vs 30% of epidurals had the pop-up initiated. Median times in hours to SLR documentation was 8.25 post-spinal and 8.5 post-epidural removal.

Discussion

The project improved CUH’s compliance with guidelines from no SLRs recorded to 48% overall. Promisingly, when our pop-up system was initiated (58%), the compliance with SLR assessment rose to 83%. Fewer epidurals (30%) had the pop-up triggered than spinals (60%). There is room for improvement in encouraging both: midwives to record epidurals removed and anaesthetists to record spinals inserted. We added an auto-ticked SLR order to the ‘post-caesarean section prescribing bundle’ so, if used, would push the initiation of the pop-up to 100% for theatre cases. The theatre cases which didn’t initiate the order included most of the ‘repair of perineal tear’ or ‘instrumental delivery’ cases. Delay to SLR assessment could be reduced by making the pop-up mandatory (with an appropriate skip option in an emergency). A limitation is that free text documentation of SLR is not accounted for in Phases 0 or 1. Future plans: a Phase 2 which educates midwives and anaesthetic staff about initiating the pop-up.

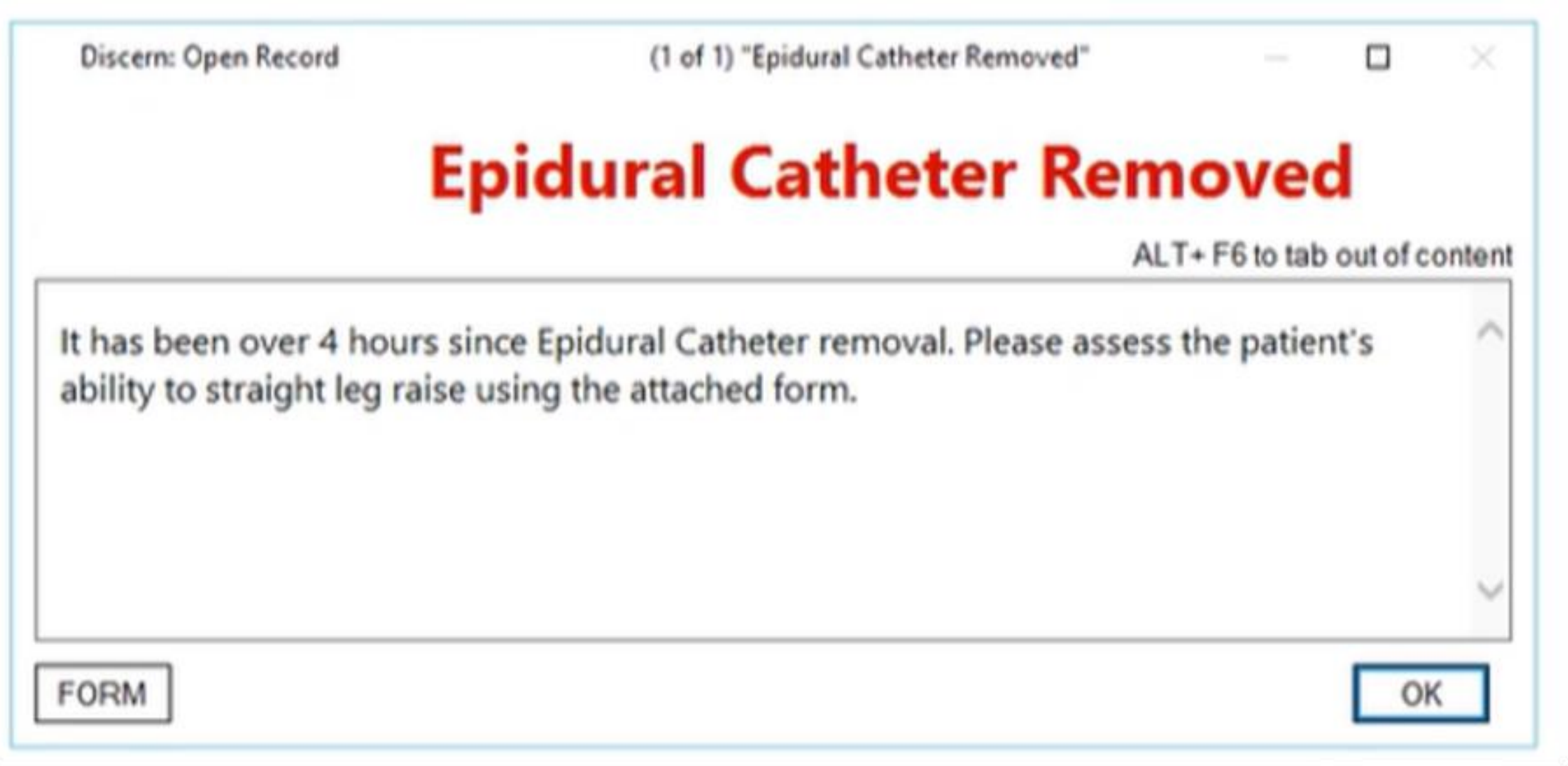


Figure 1. Electronic pop-up reminder on the EPR for midwives to assess a straight leg raise

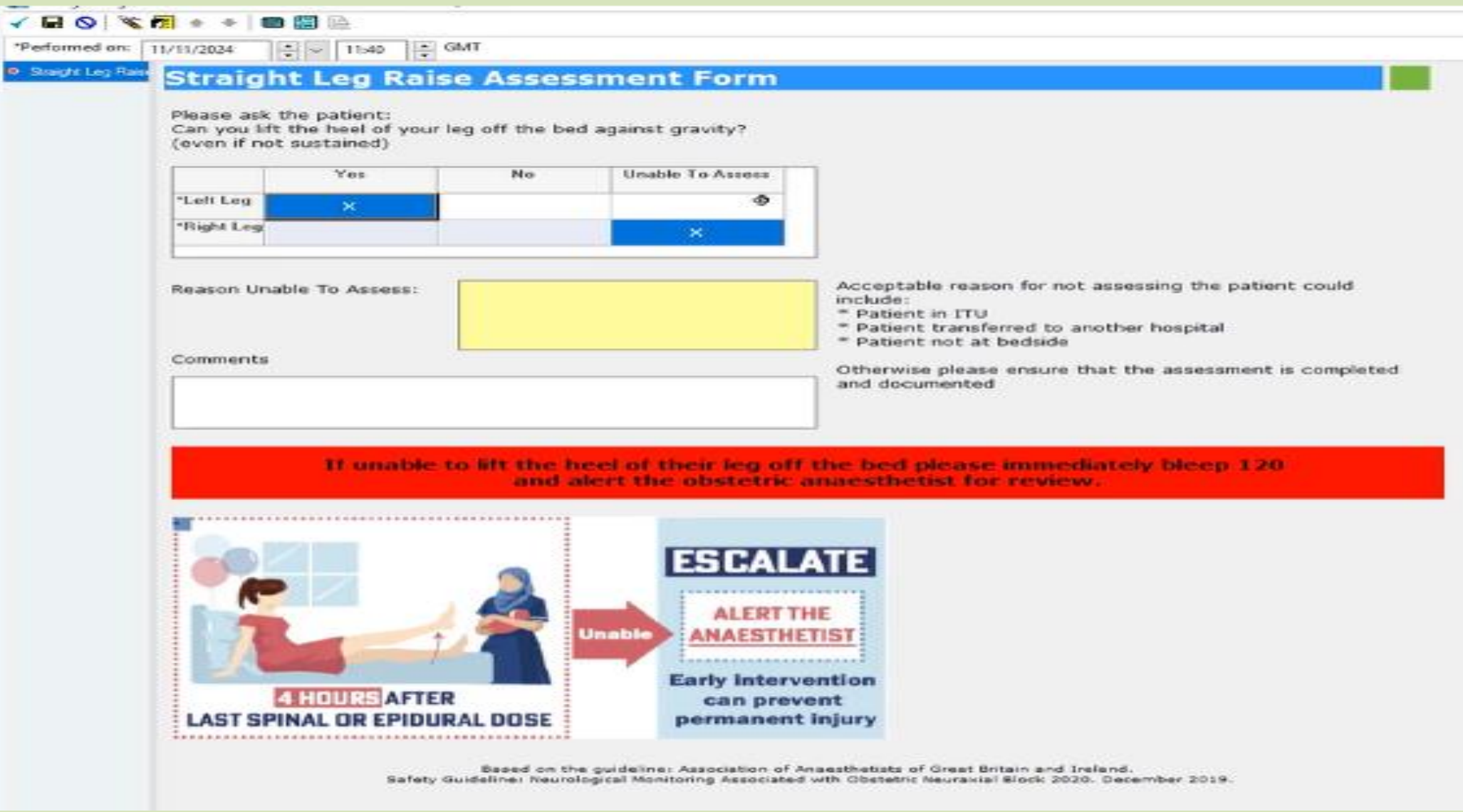
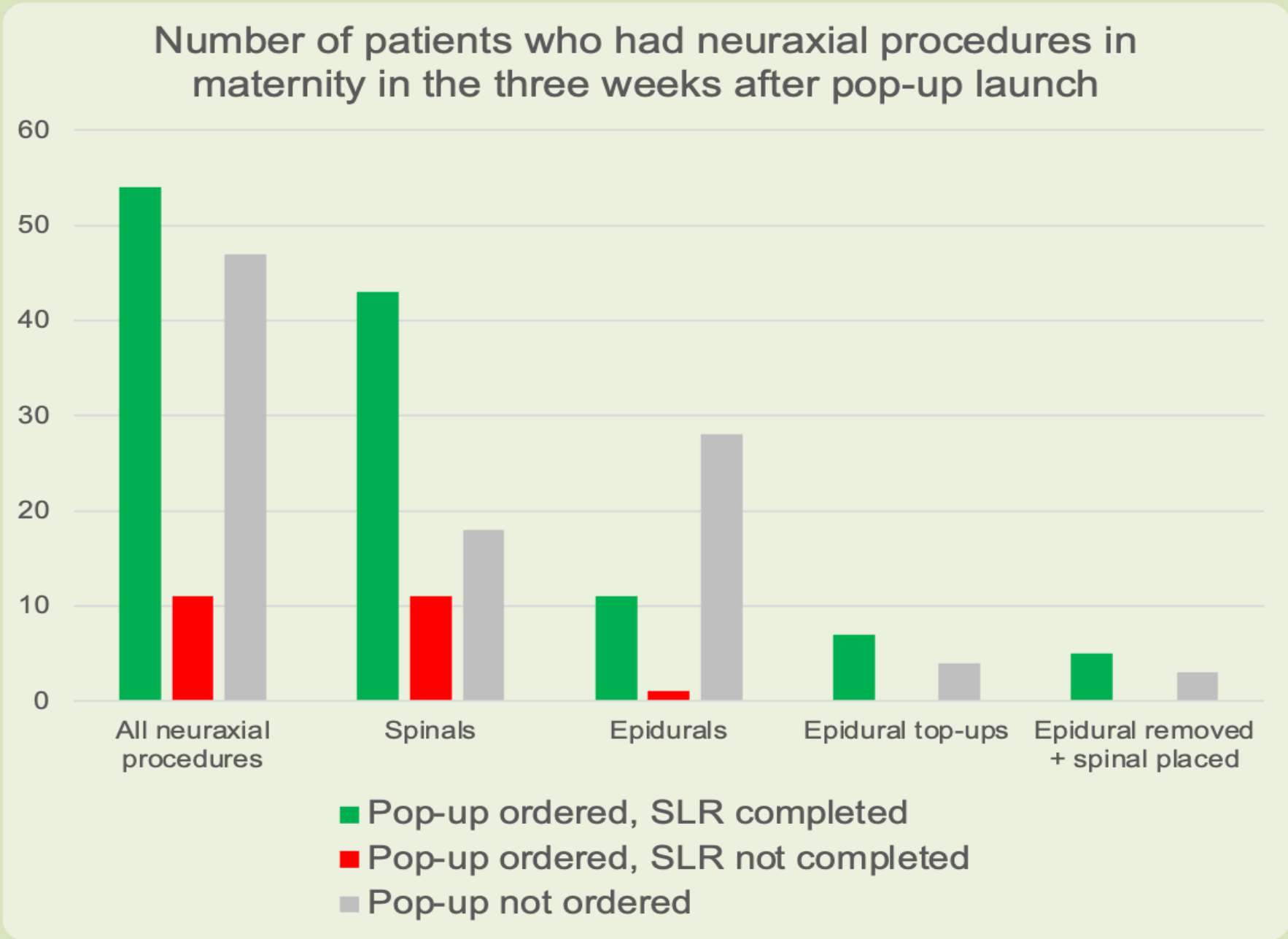


Figure 2. Straight leg assessment form on CERNER electronic patient record (2)



Graph 1. A graph depicting numbers of patients who had neuraxial procedures in maternity, split into ‘all’ and by type of procedure

References:

1. T. Ashken, S. West. Regional anaesthesia in patients at risk of bleeding. BJA Education, 21(3): 84e94 (2021) doi: 10.1016/j.bjae.2020.11.004

2. S. M. Yentis, D. N. Lucas, L. Brigante. Safety guideline: neurological monitoring associated with obstetric neuraxial block 2020. A joint guideline by the Association of Anaesthetists and the Obstetric Anaesthetists’ Association . Anaesthesia 2020 doi:10.1111/anae.14993