



Ultrasound-assisted central neuraxial blockade in obstetrics: Challenges and a QI initiative

A DGH experience (5809837)

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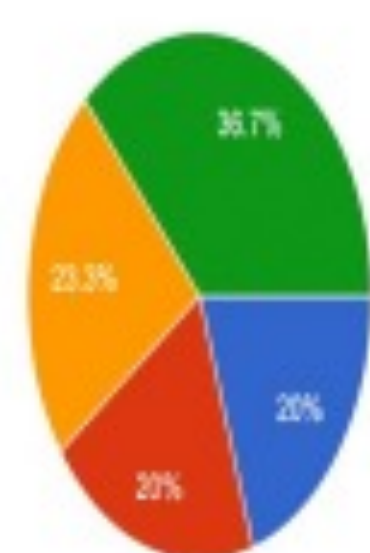
INTRODUCTION

- Central neuraxial blocks (CNBs) are fundamental in obstetric anaesthesia practice
- NICE 2008- Use of pre-procedural ultrasound (US) recommended before neuraxial block
- Proposed benefits-
 - Improve first pass success
 - Accurate recognition of intervertebral space
 - Accurate estimation of depth to epidural space
 - Improve epidural efficacy
 - Reduce complication rate
- OAA national survey 2021
 - 69% of obstetric anaesthetists perform US-assisted CNBs only in specific circumstances
 - 40% do not use ultrasound at all due to lack of training or lack of confidence to the technique

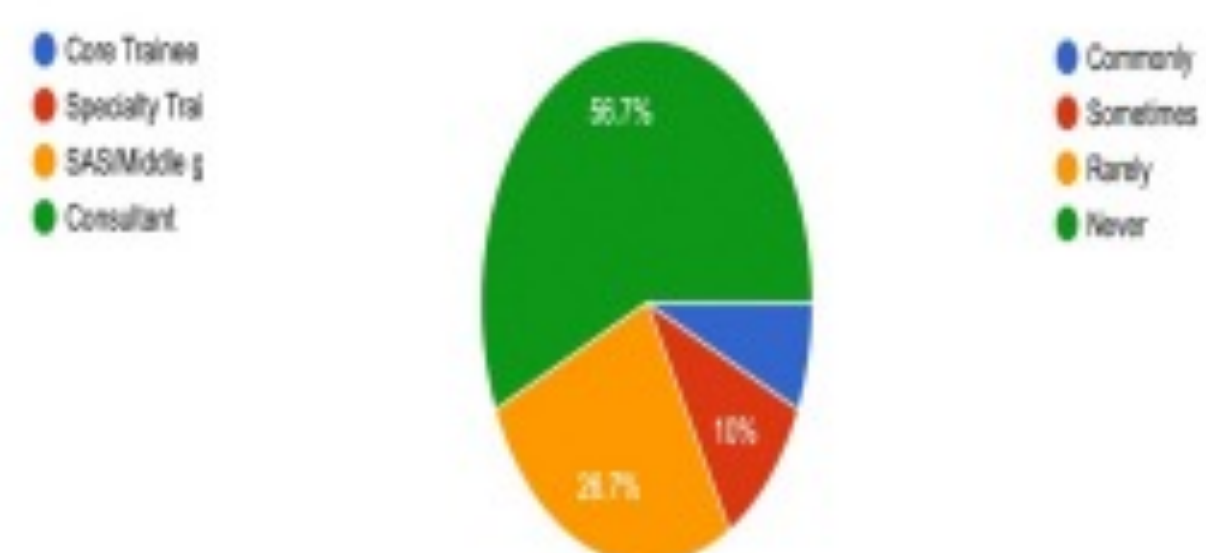
METHOD

- Baseline audit- Online questionnaire to all obstetric anaesthetists
- Duration- September 2022 to January 2023
- Aim-
 - Assess the compliance of US-assisted CNBs
 - Proceed with targeted upskilling program

What is your current role in anaesthetics?
30 responses

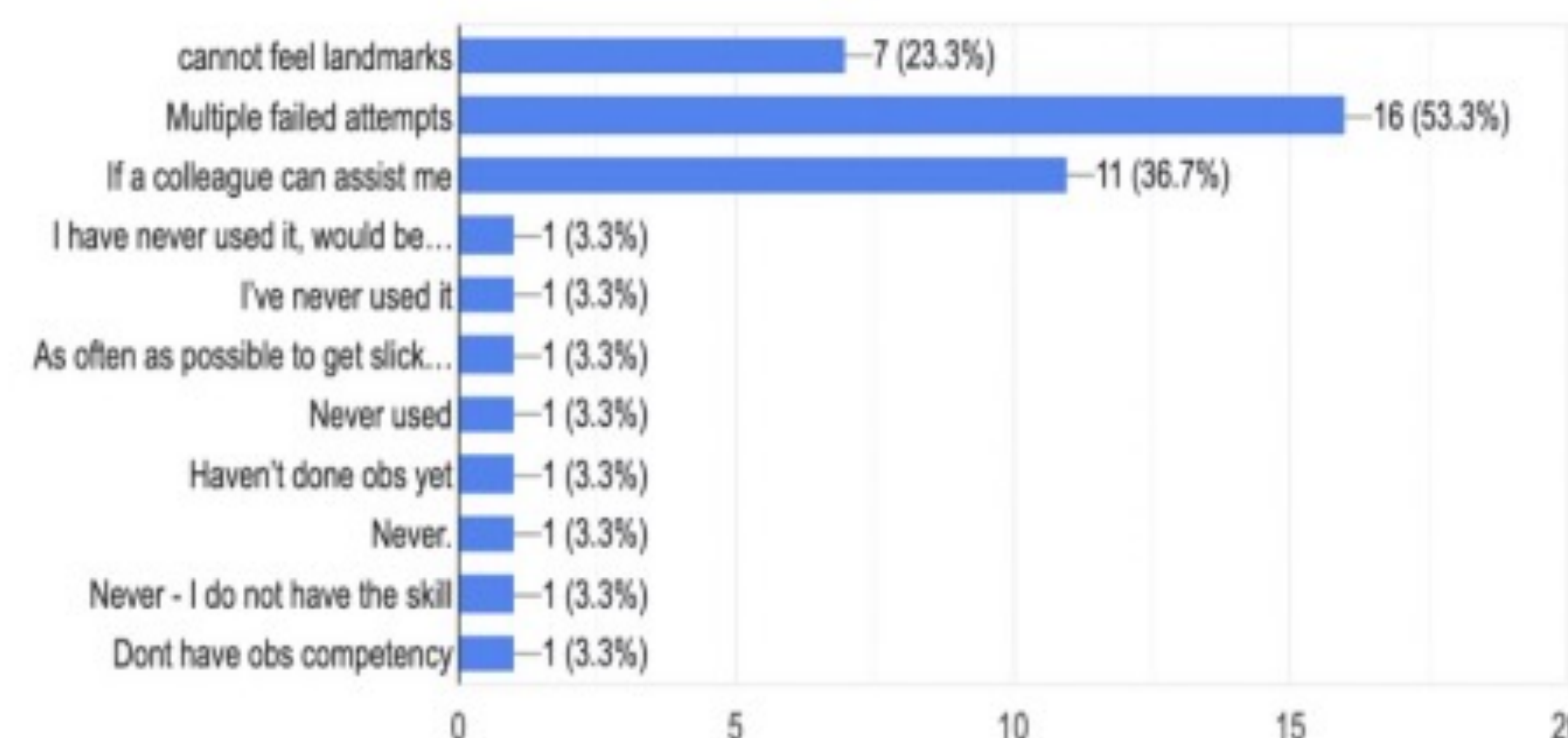


How often do you use ultrasound (US) for central neuraxial blockade (CNB) in obstetrics?
30 responses

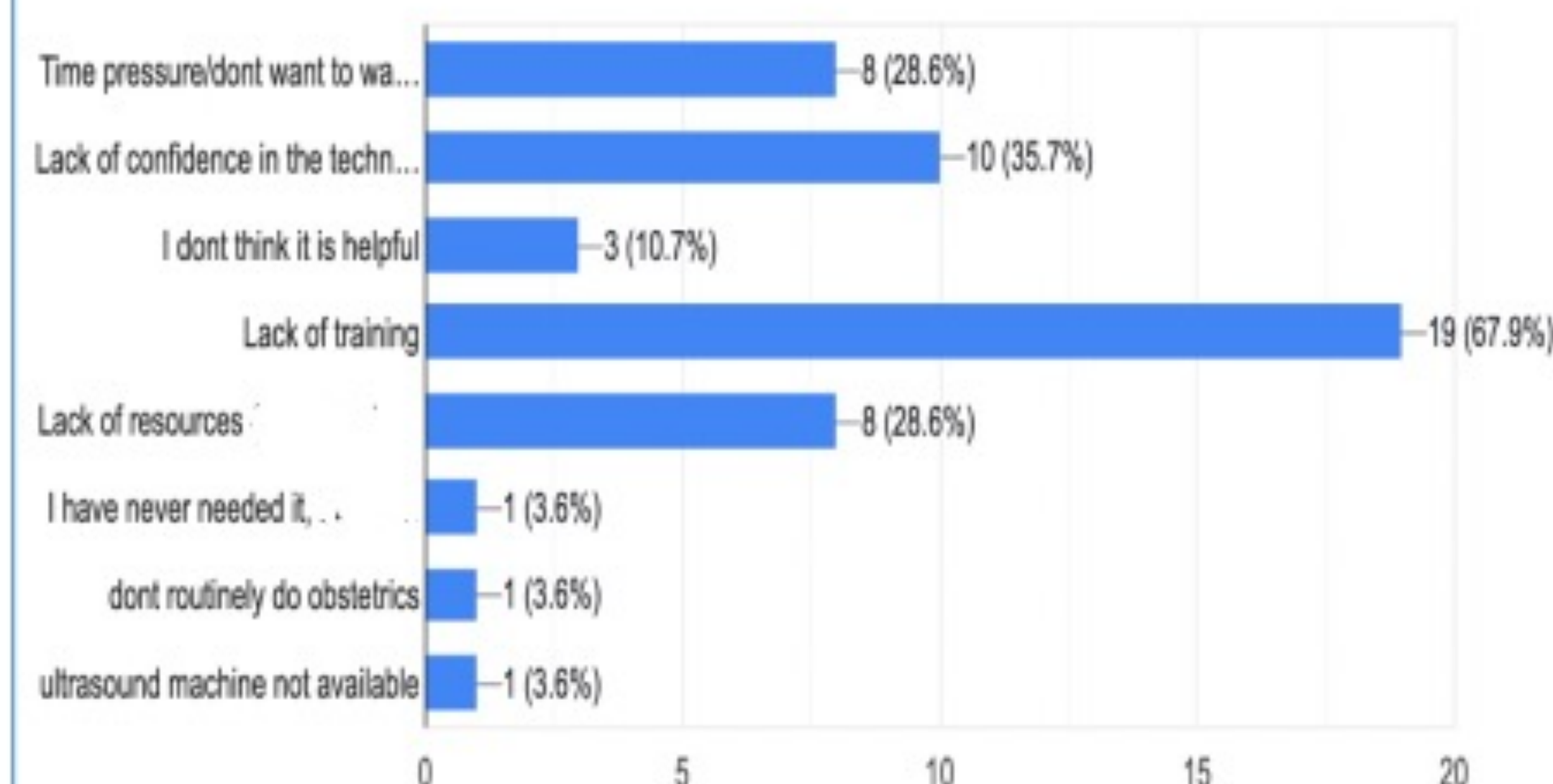


RESULTS

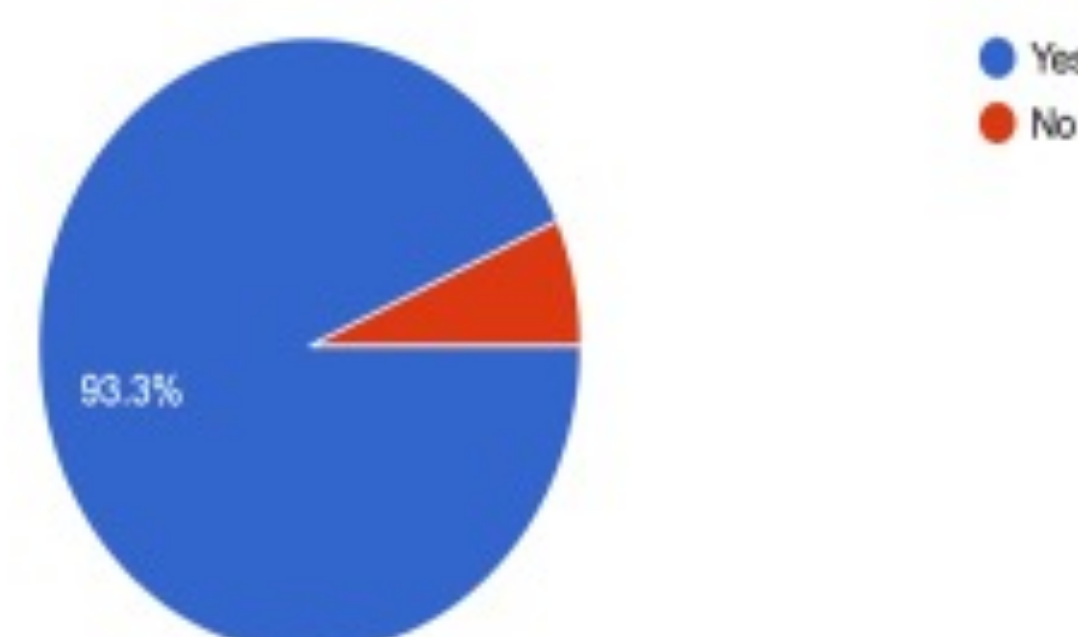
What circumstances make you use US guided CNB? (can select multiple options)
30 responses



If you never use US guided CNB, what are the reasons? (can select multiple options)
28 responses



Would you like to attend a training session for US guided CNB?
30 responses



IMPLEMENTATION

- Guest lecture by invited international speaker
 - Oral presentation sessions on neuraxial scanning*
 - Regular hands-on scanning sessions on live models*
 - Real time scanning sessions in the clinical setting*
 - Introduction of artificial intelligence assisted hand-held device (Accuro)
- *Sessions were mentored by departmental clinical fellows in regional anaesthesia

OUTCOME

- Outcome audit- Real time online questionnaire in the clinical setting

Identification of midline

Yes: 20
No: 0
Not sure: 0



Correct interspinous space

Yes: 20
No: 0
Not sure: 0



Correct depth of the target space

Yes: 18
No: 2
Not aimed: 0



Correct needle trajectory

Yes: 19
No: 1
Not aimed: 0



CONCLUSION

- 95% of anaesthetic trainees were successfully trained
- Usage was diffuse into all the clinical areas relevant to obstetric anaesthetic practice for parturient with a wider range of BMIs
- 95% with first needle pass success rate of the initial procedure at the clinical setting
- High satisfaction scoring of performer and assistant compared to landmark technique

DISCUSSION

- Dramatic improvement is noted within the department with a positive cultural shift
- Trainees are now deemed competent to proceed independently
- Audit facilitated the department to purchase a hand-held scanning device
- Next stage is to set up regular upskilling sessions "Sonoclub" led by clinical fellows in regional anaesthesia to continue service improvement

REFERENCE

- NICE guidance on ultrasound-guided catheterisation of the epidural space published under interventional procedures guidance. 2008
- H Harb, S Armstrong. An obstetric anaesthetists' association survey of the use of ultrasound scanning to assist with central neuraxial blocks in obstetric anaesthesia; volume 47-Suppl 1, June 2022