

# Look before you leap: A quality improvement project introducing ultrasound for difficult IV access to an FY1 doctor's toolkit

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## Background

Obtaining IV access is an essential component of a Foundation Year 1 (FY1) doctor's skillset. When encountering difficult IV access, if unable to use ultrasound (US), the next step is senior escalation. This can cause delays in time-sensitive medications and blood tests for patients and poses an additional burden on seniors. Our trust does not currently formally teach FY1s US-guided IV access; our quality improvement project (QIP) aims to change this.



**SMART goal:** To increase FY1 doctors' confidence in attempting ultrasound-guided access by at least 5 points on a Likert scale rating confidence from 1 to 10.

## Exploring the problem: key results from cycle 1 survey

- 50% (n=14) of FY1s are contacted once a day or more by ward staff for IV access.
- 82.10% (n=23) said it is mostly or always for time-sensitive medications or bloods.
- 67.90% (n=19) currently escalate to seniors/anaesthetics/IV nurses once a week or more often.
- **85.70% (n=24) have never attempted US-guided access.**
- **Average confidence level in US-guided access was 2/10.**
- 100% (n=28) believe ultrasound teaching would benefit their clinical practice and improve patient care.

## PDSA cycles: Implementing change

We carried out three PDSA cycles as part of our QIP, running between January 2024 and March 2024, as shown here.

“Would really value ultrasound training as this would massively improve my competence as a doctor.”

“Great lesson and great tutors, can't wait to apply what I learned today, highly recommend this to be part of regular FY1 induction training.”

“Thanks, so useful and should be essential part of F1 training.”

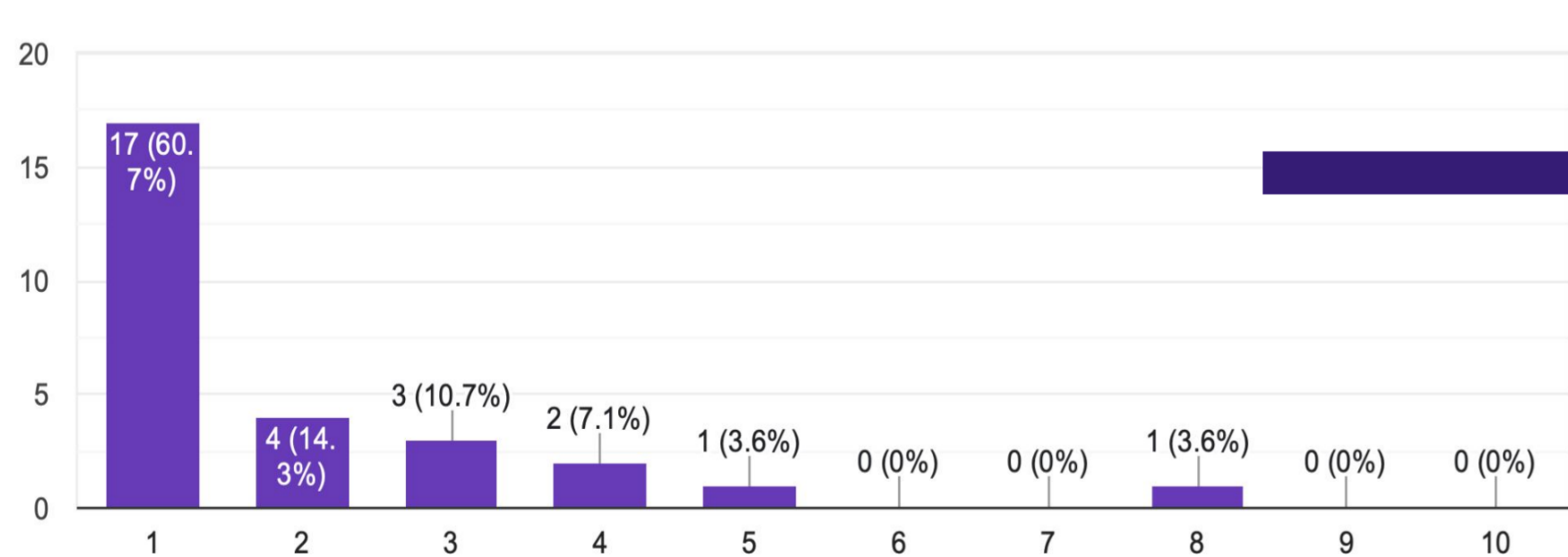
## Results



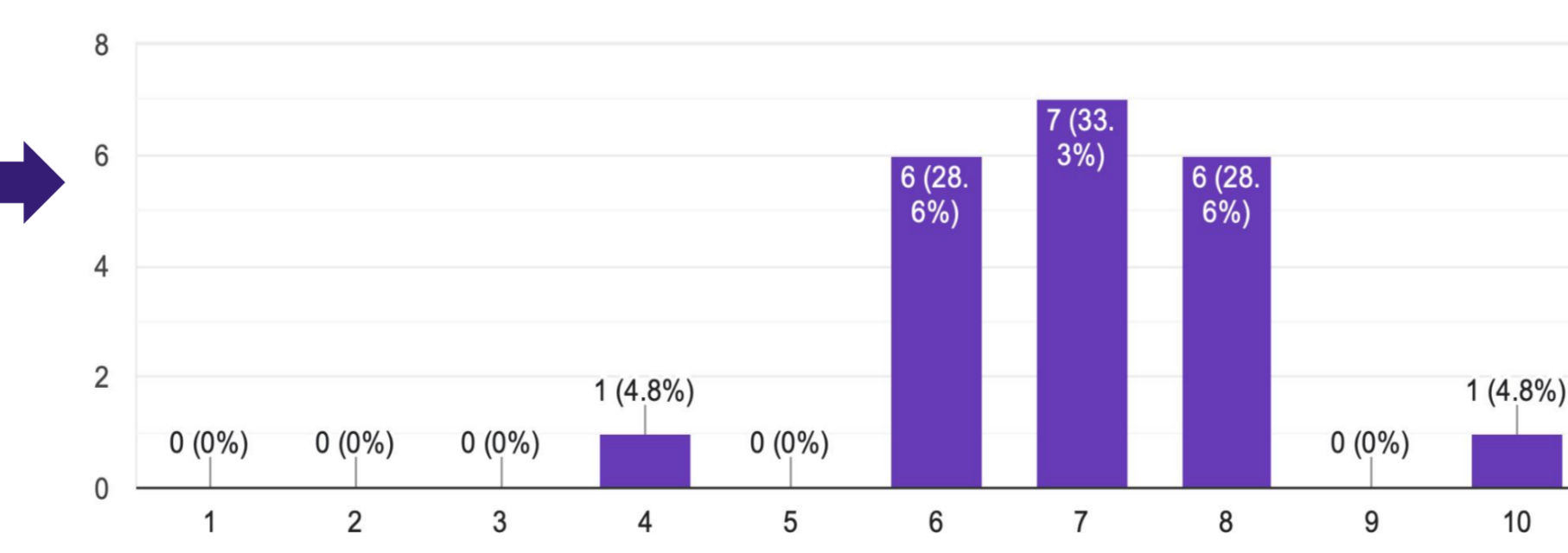
Average confidence of FY1s in attempting US-guided access was:  
7/10 post-session as compared to 2/10 pre-session (5 point increase).

- 42.90% (n=9) attendees had never had ultrasound teaching before our session.
- After our session, 76.20% (n=16) of attendees were happy to attempt US-guided access on patients under supervision, with 23.80% (n=5) happy to attempt independently - our session did clarify this skill should be performed under supervision until deemed competent do so independently by a senior.
- 95.20% (n=20) would have found it useful to have had this training during FY1 induction.
- After our session, 100% (n=21) of respondents knew where to find at least one US machine, up from 57.40% (n=16) pre-session.

How confident do you feel in doing ultrasound guided cannulas/bloods?  
28 responses



After today's session, how confident do you feel in doing ultrasound guided cannulas/bloods?  
21 responses



## Conclusion: Next steps

- We shared these findings with the senior medical education team, proposing 'act' goals from PDSA cycle 3
- Our training session will now be held during mandatory FY1 induction week for the next cohort
- Additional refresher sessions will be offered on a sign-up basis at the start of FY1 rotation changes
- Dr Saraf will continue to assess the value of these sessions and work on any learning points that arise during her FY2 medical education rotation next year, with continued support from anaesthetic and medical SpRs
- Sustainability will be ensured by adding a "skills representative" role to our local FY1 leadership roles - they will then be responsible for organising the sessions next year

