

Integrating Ultrasound in High-Volume Delivery Wards: Challenges and Strategies

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Introduction

To evaluate the barriers to and propose strategies for integrating ultrasound into routine practice in a high-volume delivery ward with over 13,000 deliveries annually.

Methods

We conducted a prospective interventional study in a tertiary-level delivery ward that manages over 13,000 births each year. The study included obstetrics and gynecology residents from postgraduate years one through five, representing a range of clinical experience levels.

A structured ultrasound training protocol was developed in collaboration with maternal-fetal medicine specialists. The intervention comprised a two-hour theoretical workshop that addressed the indications for labor ward ultrasound, principles of transabdominal and trans-perineal approaches, and interpretation of key findings such as fetal head position, station, and angle of progression.

This was followed by a two-hour hands-on practical session using live models and simulation, led by experienced faculty who provided direct feedback and guidance.

Residents completed an anonymous pre- and post-intervention questionnaire that assessed their confidence on a seven-point Likert scale

Conclusion

Even with structured training interventions that improve provider knowledge and confidence, integrating routine intrapartum ultrasound into high-volume delivery wards remains challenging. While residents valued enhanced education and reported greater comfort with both transabdominal and trans-perineal techniques, they emphasized the need to balance workflow efficiency, emergent care priorities, and patient flow demands. These findings underscore the importance of developing context-specific, feasible strategies to maximize the benefits of intrapartum ultrasound in optimizing maternal and fetal outcomes in high-demand obstetric settings.



Do you use TAS in the DR?



How confident are you in identifying OA?



Likert scale questionnaire

- 1 not confident at all
- 2 slightly confident
- 3 somehow confident
- 4 neutral
- 5 confident
- 6 rather confident
- 7 extremely confident

Residents’ Experience Before Intervention

•**Limited exposure & low confidence** in labor ward ultrasound use

•**Median confidence scores:**

- Fetal head position (transabdominal): **2 (IQR 2–3)**
- Angle of progression (trans-perineal): **1 (IQR 1–2)**

•**Usage pattern:** occasional, mainly in suspected malposition or arrest disorders

•**Barriers cited:**

- Lack of formal training
- Minimal hands-on exposure
- Time pressures during high-volume shifts
- Uncertainty about technique/interpretation

After Training Program

•**Marked improvement in confidence:**

- Fetal head position: **5 (IQR 4–6)**
- Angle of progression: **4 (IQR 3–5)**

•Residents valued:

- Hands-on practice
- Personalized feedback (clarified technique & interpretation)