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Supplementary appendix

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Appendix

Insight: An implementation framework for introducing obstetric ultrasound in new contexts

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Panel: Implementation framework for obstetric ultrasound

Health system needs

- Ensure an enabling environment: availability of adequate quality equipment, reliable power supply, appropriately trained human resources, safe storage of images, data privacy, maintenance of machines.
- Address referral system challenges: referral costs, transportation; acceptability, appropriate reception and responsiveness at referral site; communication and coordination between the levels of care.
- Create adaptive systems: recognise how contexts, systems, and social structures interact with technologies and adapt over time to ensure acceptance, appropriate implementation, and effectiveness. Support through implementation science.
- Strengthen regulatory approaches: national guidelines that incorporate health system integration and (referral) pathways of care; define ultrasound competence, certification needs and quality assurance; establish financing mechanisms.
- Coordination and collaboration among stakeholders, including (but not limited to) ministries of health, finance,

and higher education, professional bodies, implementers, and communities.

Provider needs

- Design sustainable education programmes through collaboration with national institutes and co-creation based on identified needs.
- Provide comprehensive provider education: technical ultrasound training integrated with understanding on its function within comprehensive clinical assessment, the care cascade, appropriate counselling, and effective communication.

Women-centred care

- Address systemic issues that limit ultrasound accessibility: (digital) illiteracy, inability to pay (including for referral), power (gender) dynamics, and cultural beliefs or traditional norms in relation to technology and obstetric practices.
- Build trust: involve women and men in programme design, address their needs, ensure transparency and appropriate counselling on advantages and disadvantages, consequences, referral possibilities and associated costs.

See also WHO recommendations on ultrasound in pregnancy (available at <https://www.who.int/publications/i/item/9789240046009>).

