

Portable Ultrasound Devices for Obstetrical or Prenatal Assessment in Rural or Remote Settings: A Review

Context

It is routine practice for pregnant women to undergo ultrasound scanning. This imaging technology is preferred for assessing fetal development, as it uses sound waves rather than radiation, and is non-invasive. Ultrasound may help to earlier identify and manage complications like ectopic pregnancy and placenta previa. Patients in rural and remote areas may have limited access to imaging diagnostics such as ultrasound devices. Portable ultrasounds may enhance on- or near-site access in these locations.

Technology

Ultrasounds use high-frequency sound waves to develop images of organs and structures inside the body. In obstetrical and prenatal assessment, they can be used to confirm pregnancy, monitor fetal growth, and evaluate pregnancy-related complications. Portable ultrasounds are mobile, lightweight, and can be brought closer to the patient than traditional ultrasound scanners. In rural and remote areas, it may be challenging to access the necessary expertise to operate and interpret ultrasound scans. A “remote virtual mentor” can support the use of a portable ultrasound. A remote virtual mentor is an expert who communicates from a remote location with the person performing the ultrasound.

Issue

A review of the clinical evidence on the diagnostic accuracy of portable ultrasound devices, and on the effect of a remote virtual mentor on the diagnostic

accuracy of these devices, will help to inform decisions regarding the use of these technologies in obstetrical and prenatal assessments in rural and remote areas.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Key Messages

For obstetric and prenatal assessments in rural or remote areas:

- No evidence was found on the diagnostic accuracy of portable ultrasound devices.
- No evidence was found on the effect of a remote virtual mentor on the diagnostic accuracy of portable ultrasound devices.

Results

The literature search identified 203 citations, with no additional articles identified from other sources. After screening the abstracts, no studies were included in this review.

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