

ADOPTION OF AI IN PRENATAL MEDICINE: OPPORTUNITIES AND BARRIERS

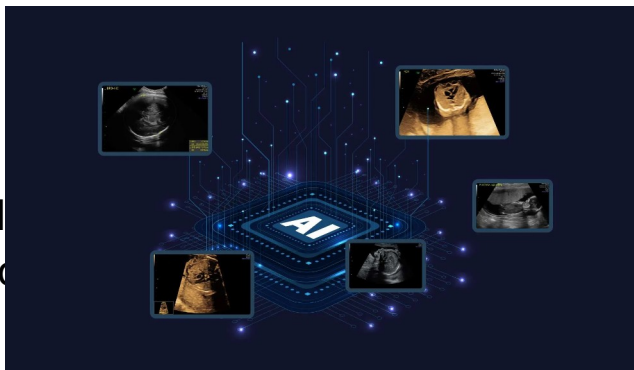
Niel Brown
Director of U.S. Operations at Sonio

INTRODUCTION

AI is increasingly being used in prenatal medicine, particularly in ultrasound imaging and diagnosis.

It helps:

- Streamline workflows
- Supports medical training, and
- Provides data-driven insights for decision-making



While its adoption offers many advantages, challenges such as trust, regulatory concerns, and data reliability remain key considerations.

OVERVIEW

AI-powered algorithms are being developed to **assist in real-time ultrasound image acquisition**, improving reproducibility and diagnostic confidence. Studies indicate that **AI can help identify fetal abnormalities**

such as:

- Congenital heart defects
- Neural tube defects
- Growth restrictions earlier and with higher precision than traditional methods ([PMC10179567](#))

AI-powered tools assist doctors in capturing clearer images and making faster decisions. Studies show AI detects conditions like congenital heart defects and growth issues earlier than traditional methods ([PMC10179567](#)).

AI is **already used in prenatal care** and studies have shown that **AI can enhance diagnostic accuracy** in maternal-fetal medicine.



Opportunities of AI in Prenatal Ultrasound

Boosting Efficiency in Prenatal Ultrasound

AI can **increase workflow efficiencies**, especially in the **auto-generation of ultrasound reports**. By quickly analyzing ultrasound images and processing measurements, an ultrasound report can be generated automatically, **without the need for manual intervention**. Practitioners can also receive **instant feedback on exam and image quality**, meaning any suboptimal images can be retaken immediately, which increases the quality and the completeness of the exam.

Enhancing Patient Care with AI Ultrasound

The utilization of AI in ultrasound can drive efficiency, quality, and accuracy. All of which help to improve the patient experience and drives better patient outcomes.

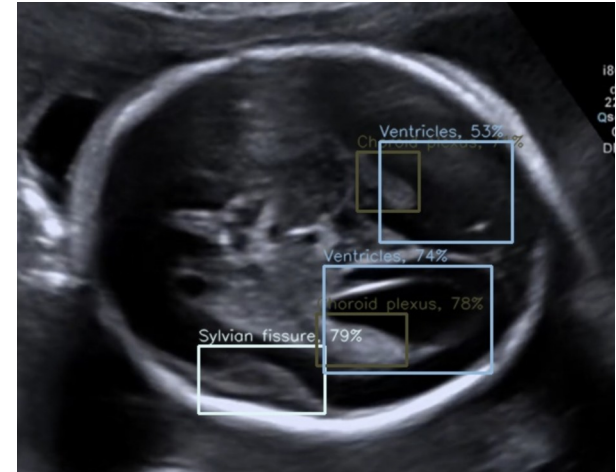


Opportunities of AI in Prenatal Ultrasound

Enriching Diagnostic Accuracy with AI

AI can improve the **detection of fetal conditions** like fetal growth restrictions, congenital defects, and placental issues. By identifying subtle anomalies in ultrasound images, AI can **reduce missed pathology and help prevent misdiagnosis**.

For instance, AI models have shown high accuracy in detecting fetal ventriculomegaly, a brain development issue. Early detection could help doctors plan better interventions, improving outcomes ([MDPI](#)).



AI as a Training and Support Tool

AI can also help train medical professionals by providing **real-time feedback and set protocol standardization**. It guides sonographers in capturing complete and high-quality scans. AI-based decision-support tools assist in interpreting results, reducing human error. Virtual assistants and simulations further help train clinicians, increasing confidence in prenatal diagnostics.



Barriers to AI Adoption in Prenatal Ultrasound

Despite its advantages, AI adoption in prenatal ultrasound faces hurdles.

Trust and Data Reliability Issues

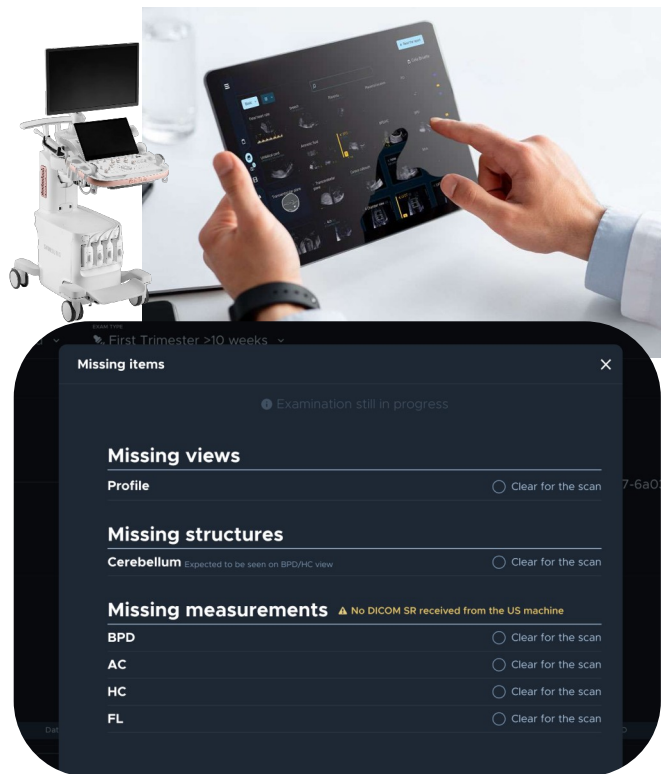
Some doctors and sonographers hesitate to trust AI-generated diagnoses. They worry about errors and biases in AI models. AI must be trained on diverse datasets to work across different patient populations. If data is not representative, AI predictions may be flawed, lowering confidence in the technology.

While AI offers useful insights, human oversight is essential. Studies show that AI works best as an aid rather than a replacement for human interpretation ([PMC11432922](#)).

Job Security vs. AI as an Assistant

Some healthcare professionals fear AI will replace them. However, AI is designed to assist, not replace, human expertise. It takes over repetitive tasks, allowing doctors to focus on complex cases and patient care.

A 2016 [White House report on AI](#) found that AI-assisted radiology reduced error rates from 7.5% (AI alone) and 3.5% (human alone) to just 0.5% when both worked together. This same approach can enhance prenatal ultrasound accuracy and efficiency.



Barriers to AI Adoption in Prenatal Ultrasound

Regulatory and Ethical Concerns

AI-based medical tools must meet strict regulatory standards before widespread use. Approval takes time and requires extensive testing. Ethical concerns about data privacy and patient consent must also be addressed.

Data Security and Privacy Concerns

With the increased use of digital communication in healthcare, ensuring the security and privacy of patient data is paramount. Healthcare providers must invest in robust cybersecurity measures to protect sensitive information from breaches, which can undermine patient trust and the overall effectiveness of telehealth services.



Conclusion: The Future of AI in Prenatal Ultrasound

AI is poised to revolutionize prenatal ultrasound by improving efficiency, enhancing diagnostic accuracy, and supporting clinical decision-making

- Challenges related to
 - Data Diversity
 - Regulatory Approval
 - Physician and Sonographer Acceptance, must be addressed to fully integrate AI into routine prenatal care.

Overcoming these barriers will pave the way for AI to become a trusted and indispensable tool in maternal-fetal medicine.

- **Ultrasound reporting software is at the forefront of AI-driven prenatal medicine**
 - Know what workflows the AI impacts and who it impacts
 - By leveraging AI, improve capture imaging planes and quality, auto-generate structured reports, and optimize workflows, leading to improved patient outcomes.
 - Enhances efficiency, ensures quality control and standardization, and facilitates regulatory compliance





Q&A Session

Feel free to join in and provide any questions/comments/insights!

ICE IMAGING
CONFERENCE
& EXPO
SAN ANTONIO 
Texas