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WHITE PAPER

Improving Obstetric Care with Mobile Monitoring Technology



Introduction

Complications from pregnancy and childbirth put the lives of millions of expectant parents and unborn children at risk each year in the United States. Innovative maternal and fetal mobile monitoring technology may hold the key to avoiding adverse outcomes by enabling more timely and effective clinical interventions.

Traditional obstetric care places an outsize burden on healthcare staff, especially in lower-resource settings where even basic monitoring systems may be lacking. However, mobile monitoring technology allows healthcare organizations to enhance care delivery by providing essential data directly to clinicians, enabling quick, informed decisions.

The technology allows for near real-time monitoring of multiple patients and is invaluable for urgent scenarios and specialist consultations. Selecting the right technology provider is critical for achieving interoperability, standardizing workflows across departments and multiple hospitals, and successfully implementing the technology.

This white paper explores the transformative potential of mobile monitoring technology in addressing these challenges. With near real-time data transmission, vendor neutrality, and scalability, mobile monitoring technology offers healthcare organizations a pathway to enhanced clinical decision-making and streamlined workflows.

Challenges in traditional OB monitoring

The efficient monitoring of maternal and fetal vital signs is crucial to effective obstetric care delivery and positive health outcomes.

Despite advancements in technology and the growth of digital health, current continuous monitoring in pregnancy and childbirth is outdated and lacks integration of maternal and fetal vital signs. Existing systems are complex, expensive, and often not interoperable, burdening clinical staff significantly. Current methods, such as reading paper strips, are often inaccurate and based on limited data. These shortcomings create a gap between technological potential and actual clinical practice, resulting in unreliable monitoring during labor—a critical time for maternal and fetal health. With more than 3.6 million births each year and high mortality risks from complications in the United States, there is an urgent need to bridge this gap and utilize emerging technologies for more reliable, near real-time monitoring.



CONTINUOUS MONITORING IN OBSTETRICS FACES CHALLENGES

Outdated technology: Current continuous monitoring methods have remained largely unchanged for decades, lacking modern advancements.

System complexity and costs: Existing monitoring systems are expensive and complicated, and their lack of interoperability burdens healthcare providers, making it difficult to evaluate maternal and fetal health comprehensively.

Limited early detection: While the potential exists for concurrent tracking of maternal and fetal vital signs, this feature is not widely available in current systems, limiting early detection of distress signs that could lead to timely interventions.

Staff burden: Healthcare staff face a significant workload, which is further aggravated in low-resource settings where even basic monitoring infrastructure may be absent.

Traditional obstetric care involves frequent physical checks by healthcare providers, leading to high foot traffic and inefficiency, especially in larger departments.

“The traditional approach to obstetric care requires countless steps in and out of patient rooms by physicians and nurses to monitor mother and baby,” says Rory Nellis, Chief Commercial Officer at AirStrip. “While nursing stations may offer some data, including waveform information and other clinical metrics, a comprehensive assessment relies on direct patient observation. In larger healthcare facilities with extensive labor and delivery departments, this results in a significant amount of movement on the part of clinicians.”

Managing this level of physical activity becomes increasingly challenging in larger departments, especially in areas where the timely monitoring of waveform data in near real-time is crucial for patient care, where conditions can change rapidly.

“For instance, a clinician might be attending to a laboring mother whose situation intensifies suddenly, requiring immediate attention. Simultaneously, another patient in a different room could experience a rapid decline,” Nellis explains. “Balancing these critical scenarios is challenging, particularly when seconds count. Moving

from room to room to assess patients seriously impedes care in high-stakes environments.”

In her time at the bedside, Haley McSpadden, RN, experienced firsthand the obstacles to effective care due to monitoring limitations.

“In my hospital, the OB unit had only two centralized monitors, making it challenging to simultaneously observe patient waveforms and complete charting tasks at the nursing station. This setup limited our ability to efficiently manage patient care outside of individual rooms,” recalled McSpadden, who now serves as a Clinical Consultant at AirStrip.

“Typically, continuous monitoring of maternal vital signs and fetal heart rates requires both mother and clinician to be tethered to stationary equipment,” she continued. “Clinicians had to physically return to the obstetrical unit to assess and act upon critical information, causing unnecessary delays in patient care and a fragmented view of the mother and baby.”

The current state of monitoring in obstetrics places significant burdens on staff that, in turn, pose risks to maternal and fetal health outcomes. The inefficiencies inherent in the traditional model of obstetric care highlight the pressing need for more timely, accurate, and accessible near real-time monitoring—and emerging technologies offer the promise of bridging the gap between information and action.



Benefits of mobile monitoring in the OB

In obstetrical care, mobile monitoring technology can significantly improve the efficiency and quality of patient care by allowing near real-time access to maternal and fetal waveforms. With the right solution, healthcare organizations can eliminate the need for clinicians to be tethered to stationary equipment, streamline communication among healthcare professionals, and speed up time to decision that leads to better outcomes.

“The primary benefit of mobile monitoring is the efficient delivery of essential information directly to healthcare providers,” says Nellis. “By consolidating critical data into an easy-to-use mobile application, we make it possible for clinicians to monitor multiple patients from their mobile devices. Streamlined access to information, right in the

palm of their hand, significantly enhances efficiency in the care delivery process.”

And that care delivery process hinges on effective coordination, according to McSpadden.

“Efficient communication among clinical teams is not just beneficial but essential. In this high-stakes environment, every second is pivotal. Streamlined access to patient data and seamless inter-clinician communication elevates the standard of care for patients,” she emphasizes.

Using a mobile monitoring technology makes perfect sense, given the nature of clinical workflows and the ubiquity of mobile devices in clinical settings.



Benefits of Mobile Monitoring

- **Fast access:** Enables near real-time access to both maternal and fetal waveforms, improving the quality of care.
- **Untethered clinicians:** Eliminates the need for healthcare providers to be bound to stationary equipment, enhancing mobility and efficiency.
- **Streamlined communication:** Facilitates effective coordination among clinicians, which is crucial in high-stakes environments.
- **Expedited decision-making:** The ease of accessing consolidated data via mobile devices speeds up clinical decision-making processes, reducing delays in care.
- **Expanded visibility:** Allows simultaneous monitoring of multiple patients on a single screen, improving oversight and management.
- **Remote consultation:** Enables offsite specialists to easily consult on patient cases, broadening the scope of expertise available for patient care.
- **Staffing flexibility:** Eases staffing challenges by allowing for more efficient allocation of resources.
- **Extensible beyond facility:** With the right technology, monitoring can extend beyond the physical location of the healthcare facility, offering a more flexible care model.

"Given that healthcare professionals—physicians, nurses, or other team members—often carry their phones, this access facilitates near real-time sharing of critical information. This immediacy negates the need for a fixed workstation, expediting decision-making processes and consequently reducing delays in patient care," McSpadden observes.

Even better, access to maternal and fetal waveform data can widen end-user visibility of an entire patient floor and extend beyond the four walls of the hospital with the right mobile monitoring technology in place.

"In the OB department, the capability for simultaneous monitoring of multiple patients on a single screen from any location is critical," Nellis states. "At the same time, the technology offers invaluable support by enabling offsite specialists to instantly consult on patient cases from any location and device. Taken together, this digital environment not only fosters better patient outcomes through increased efficiency but also eases staffing challenges."

Integrating mobile monitoring technology in obstetrical care significantly raises the standard of healthcare delivery. Near real-time access to vital signs and streamlined communication improve clinical decision-making and care delivery. Moreover, the technology's mobile nature fits seamlessly into existing clinical workflows, offering broader visibility across patient floors and extending capabilities beyond the healthcare facility itself.

Implementing mobile monitoring the right way

While the healthcare industry may be traditionally cautious about adopting new technologies, mobile monitoring technology presents a compelling advancement. It offers increased reliability, streamlined operations, and greater accessibility than conventional methods, thereby reducing risks for providers and patients.

"The slow uptake of mobile monitoring in OB care is due to its novelty and the healthcare industry's general resistance to technological change. However, as the technology proves its value in improving patient care and workflow, adoption will accelerate," McSpadden maintains. "For clinicians, this technology offers an added layer of comfort by allowing continuous visibility into patient status, even when not physically present in the room. Even just being able to see one central event sooner makes all the difference."

Choosing the right technology partner and solution can make all the difference in determining whether a new solution is a useful tool for clinicians rather than an additional concern.

According to Nellis, healthcare organizations should look for two key features. The first is interoperability.

"Selecting the right mobile monitoring technology provider is crucial for achieving interoperability, particularly when standardizing workflows and efficiencies across multiple hospitals," he advises. "The ideal vendor should be flexible enough to integrate seamlessly into existing systems rather than requiring hospitals to adapt to vendor systems."

The second is scalability. Select a technology vendor that offers mobile monitoring solutions that extend beyond obstetrics to include cardiology, the ED, and the ICU.

"A well-chosen partner not only delivers a best-in-class end-user experience but also possesses the scalability to meet the entire organization's needs," Nellis adds. "The platform should not only deliver top-tier efficiency in obstetrics but also be scalable across various care departments and facilities within a large enterprise system seeking to standardize workflows for greater efficiency."





Healthcare organizations looking to implement a mobile monitoring technology solution should seek a strategic partner with a robust implementation strategy and dedicated support during the various phases of the project.

“The implementation of mobile monitoring technology involves several key steps to ensure that both the technology and healthcare staff meet with maximum success,” McSpadden asserts. “Understanding existing workflows is crucial before implementing a mobile monitoring technology. Implementing software in healthcare is not just about its capabilities—it must serve a specific purpose and improve day-to-day operations. If the technology does not ease the workload or improve efficiency, healthcare staff will be less inclined to adopt it.”

Choosing the right strategic technology partner with the appropriate technology and expertise is imperative to ensure that a mobile monitoring solution aligns with clinical workflows and improves efficiency. With careful planning and execution, mobile monitoring technology can overcome traditional resistance to change in the healthcare sector, optimizing patient care and operational workflows across multiple clinical settings, not just the OB department.

Key Features Of A Successful Implementation

- **Site Assessment:** Initial on-site evaluation to understand the unique needs of the healthcare unit or site.
- **Customization:** Tailoring the technology based on the assessment to align with the specific requirements of the unit or site.
- **Setup:** Installation and configuration of the platform on hardware and systems.
- **Education and training:** Providing either on-site or remote training sessions, complete with tip sheets and educational materials, to prepare healthcare staff for using the technology effectively.
- **Go-live support:** Upon launch, technology team members are on-site to offer immediate assistance.

Conclusion

The limitations and inefficiencies of traditional obstetric monitoring systems pose significant challenges to healthcare providers and compromise maternal and fetal outcomes. Mobile monitoring technology emerges as a transformative solution, offering near real-time data access, streamlined communication, and enhanced clinical decision-making. The successful implementation of this technology relies on selecting a vendor that ensures interoperability and scalability. As healthcare organizations recognize the undeniable benefits of mobile monitoring in obstetric care, adoption is likely to accelerate, setting a new standard in patient care and operational efficiency.



AIRSTRIP®

AirStrip Technologies, Inc. is bringing actionable vitals data to clinicians and care teams wherever they are. The AirStrip ONE platform is a vendor-agnostic solution that transforms monitored data into contextually rich information to surface life-saving decisions that must be made quickly. With one-touch access from the web or native mobile apps, clinicians can measure, review, acknowledge, and approve cardiac rhythm strips; view, edit, and confirm near real-time 12-lead EKGs; receive STEMI notifications almost immediately to reduce door-to-balloon time; and monitor mom and baby remotely with near real-time access to maternal and fetal waveforms.

Learn how AirStrip can help your clinicians diagnose earlier than ever before, accelerate life-saving interventions, reduce the cost of care, and save lives. Visit www.airstrip.com to learn more.