

Transforming Patient Monitoring

Untether patient monitoring from the bedside to improve efficiency and safety.

Digital health solutions have the power to revolutionize patient monitoring and improve healthcare outcomes, particularly in high-acuity settings where timely decisions are critical. Adopting mobile monitoring systems can lead to faster decision-making, improved patient safety, and enhanced clinician capabilities. However, successful implementation requires careful planning, especially in bridging the gap between clinicians and IT.

This whitepaper explores the disruptive nature of paper-based processes in acute care and ED settings and how digital solutions can enhance efficiency and patient safety. It emphasizes the value of continuous mobile patient monitoring and its benefits to patient outcomes, hospital efficiency, and nursing satisfaction.

Healthcare's Digital Transformation

Over the past decade, the healthcare system has undergone widespread digital transformation to reduce manual processes and improve the quality and effectiveness of patient care. A growing body of literature illustrates that investments in digital health lead to enhancements in patient safety and improvements in the health of individuals and populations.

Despite the hype surrounding digital transformation in healthcare, the process has not always aligned with the pace of adoption. Even affordable digital initiatives face challenges in gaining traction as healthcare organizations attempt to reconcile the cost of these technologies with their perceived value.

Overcoming these challenges — change management, procurement, return on investment, and adoption — is essential to unlocking the potential of digital health solutions. Starting small can be the best approach. One small but powerful digital initiative can address real-world challenges facing hospitals, clinicians, and patients: mobile access to patient monitoring data.

Digital health solutions have the potential to revolutionize patient monitoring and transform healthcare outcomes. Continuous patient monitoring is crucial in healthcare, particularly in high-acuity settings such as ICUs and EDs, where seconds and minutes determine patient outcomes. While adopting mobile monitoring systems can speed up the time to decision and enhance patient safety, their successful implementation requires careful planning, especially in bridging the gap between clinicians and IT.

One small but powerful digital initiative can address real-world challenges facing hospitals, clinicians and patients: mobile access to patient monitoring data.



Dangers of Disruption

Critical care practice requires quick decision-making in high-risk situations, primarily guided by recognition of disease patterns and timely intervention.

Implementing a mobile continuous monitoring and response system significantly improves patient outcomes, hospital efficiency, and nursing satisfaction. The technology allows for early detection and treatment of patient deterioration, reducing the need for urgent interventions, decreasing the length of ICU stays, and enhancing clinician decision-making capabilities.

Mobile technology can effectively transform healthcare delivery, making it more effective and efficient. However, paper-based processes remain a staple of acute care delivery. For example, cardiologists must wait for nurses to print, cut, copy, label, scan, and upload electrocardiograms (ECGs) rhythm strips to the electronic health record (EHR) before they can view, acknowledge, and approve cardiac rhythm strips. This can lead to delays in the availability of results and timely action.

"For the monitoring technician, printing, annotating, and receiving approval for ECGs is disruptive because it diverts attention from patient care and the task of communicating crucial information to clinical staff," says Eric Brill, Senior Vice President of Clinical Solutions at AirStrip.

Moreover, this process occurs within a hectic, fast-paced environment, which a growing body of literature indicates interferes with crucial tasks and compromises patient safety.

"Non-digital tasks tend to consume more time, diverting attention away from the patient. Filtering out the noise is essential to improve productivity and effectiveness," Brill adds.

Clearly, the persistence of paper-based processes in acute settings contributes to delays, disrupts patient care, and places added burdens on the shoulders of clinicians. What's needed is a mobile solution that enables new levels of efficiency and patient safety.



Value of Mobile Telemetry Data

PROVIDES VALUABLE PATIENT CONTEXT: The documentation, which includes the patient's activity, symptoms, and blood pressure alongside the waveform strip, offers invaluable context about a patient's tolerance to the arrhythmia and activity. This can guide medication adjustment or other interventions.

SUPPORTS CONSISTENT MONITORING: Guidelines require documentation of a patient's waveform strip on admission, transfer to a monitored unit, and every eight hours. Additional documentation is needed for significant changes in the patient's rhythm or hemodynamic status, further promoting regular monitoring and quick response.

AIDS COMPREHENSIVE PATIENT ASSESSMENT: Thorough documentation of significant arrhythmias, including events before and during the arrhythmia, vital signs, and interventions, forms a comprehensive assessment, which is crucial for consulting cardiologists and other healthcare providers to guide the patient's care.

FACILITATES ACCESSIBILITY AND COLLABORATION: The waveform strip should be accessible to all healthcare providers. This universal access ensures that everyone involved in the patient's care is working with the same data, promoting effective collaboration and a shared understanding of the patient's status.

FUTURE-PROOFS CARE DELIVERY: As electronic health record systems evolve, methods to save waveforms vary. Some systems integrate seamlessly with electrocardiographic monitors, allowing the electronic transfer of waveforms into the health record. This digital approach improves efficiency, reduces the risk of lost or misplaced data, and better positions healthcare systems for future technological advancements.

ENSURES DATA ACCURACY: Regardless of the method of recording, healthcare providers must verify the accuracy of all computer-generated labels of arrhythmias and waveform strips. This ensures that the data driving decisions and interventions are accurate, supporting the highest standard of care.

Source: American Heart Association

Understanding the Value

Experts agree that mobile technology to connect telemetry monitoring with clinicians can significantly reduce the time to first contact and completion, enhancing the efficiency of care.

"Without the right systems in place, clinicians are constantly hunting for information," AirStrip Chief Commercial Officer Rory Nellis warns. "They move between the nurse's station, patient rooms, and other locations throughout the hospital to gather the necessary information to make decisions. This cycle repeats itself. When the data is available in near real-time on mobile devices and the web, clinicians have the data they need to make the right decisions at the right time."

Despite the clear evidence, hospitals are still slow to implement mobile patient monitoring capabilities, concerned with the financial cost and change management.

"There are clear benefits of digitizing manual processes. ECGs are sent to the physician's mobile device, eliminating the traditional paper-based system. This process enhancement enables physicians to view diagnostic-quality ECGs in near real-time, diagnose life-threatening conditions, and speed up time to treatment," says Nellis.

According to Nellis, success is based on seamless integration with bedside patient monitoring source systems which requires a robust medical device integration library. "Mobile solutions must integrate with all major patient monitoring systems, such as GE, Philips, and others. This integration provides clinicians with a single point of interaction with various systems, allowing them to monitor continuously," Nellis maintains. The process can be complex, but there are innovative technology companies that have experience interfacing with source systems, thus taking the burden off the hospital. The best approach is to select a vendor that invests time to understand existing workflows and systems, provides clearly defined specifications based on experience with similar integrations, and collaborates with source systems on behalf of the hospital to ensure the specifications are met.

A mobile solution that integrates with various patient monitoring systems and is supported by an experienced technology partner can streamline workflows and improve patient care. By collaborating with the right partner, hospitals can navigate the complexity of implementation and ensure successful integration with existing systems, ultimately benefiting clinicians and patients.

Keys to a Successful Implementation

The failure rate for transformation is significantly high. One in three meets with success. To avoid failure in implementing a mobile telemetry data solution, hospitals need the right combination of people, process, and technology.

"There is a substantial amount of work required to bridge the gap between clinical and IT aspects at present," Brill argues. "The challenge lies in building a seamless clinical experience while integrating disparate systems and addressing workflows that have been developed, often as workarounds by resourceful clinicians."

Understanding the IT dependencies is crucial for delivering a clinical experience that makes a difference. Unfortunately, there is a significant scarcity of subject matter expertise within the industry to fully grasp these dependencies. Success depends on recognizing the value of clinical perspectives early in the process and establishing a strong relationship between IT and clinical.

"If we don't prioritize this, we won't achieve the desired levels of adoption, and the project will not be as successful as it could be," Brill continues. "For me, nothing is more important than ensuring that the clinical experience is improved for everyone involved. Is their future state, after the changes, better than the current one? If it is, we will naturally achieve adoption."

FIVE RIGHTS

RIGHT PEOPLE: Clinicians adopt and utilize the technology

RIGHT TECHNOLOGY: Vendor-agnostic technology to collect and visualize data

RIGHT DATA: Clinically relevant diagnostic data to improve outcomes

RIGHT TIME: Data available in near real time to enable fast decision making

RIGHT WORKFLOWS: Efficient workflows to have the most impact

KEY STAGES OF IMPLEMENTATION

ASSESSMENT: The assessment phase includes understanding the current workflow processes and system usage of clinicians. A thorough assessment provides a foundation to position the new workflows and keep high-level hospital administrators informed about the operational realities of their institutions.

WORKFLOW DESIGN: Once the current state is assessed, the team collaborates with charge nurses and other frontline staff who understand the specifics of each hospital unit. Their input is crucial in developing effective new workflows.

PLANNING AND TESTING: After workflow design, the plan for implementing these workflows is laid out. It includes extensive user acceptance testing or clinical simulations. These simulations provide a practical look at how the workflows of clinicians will change and what the experience will be like.

PRESENTING AND FEEDBACK: The newly designed workflows and changes are presented early on in the process, even before the design freeze and go-live. This step is often overlooked but crucial in getting early feedback and buy-in from clinicians.

POST-INSTALLATION EVALUATION: After installing the mobile telemetry technology, it's important to evaluate its performance. While perfection is unlikely from the get-go, this evaluation after 30, 60, and 90 days allows for necessary adjustments to ensure the tool is working as intended.

The implementation process of the mobile telemetry technology is a meticulous one, emphasizing collaboration between clinical, IT, and subject matter experts.



Conclusion

Digital transformation in healthcare holds great potential to improve patient care and outcomes. However, adopting mobile solutions faces challenges, including the persistence of paper-based processes and concerns about costs and change management.

Implementing a mobile solution for telemetry data can significantly enhance efficiency and patient safety. Collaboration between clinical, IT, and subject matter experts is crucial to successfully bridge the gap between clinical and IT aspects and ensure a seamless clinical experience. Careful assessment, workflow design, planning, testing, feedback, and post-installation evaluation are key stages in implementing telemetry tools effectively.

By prioritizing the clinical experience and fostering strong relationships between IT and clinical teams, healthcare organizations can achieve successful digital transformations and improve healthcare delivery.

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; get STEMI notifications almost immediately to reduce door-to-balloon time; and monitor mom and baby remotely with instant 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.