



MEDAXIOM
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STREAMLINING AMBULATORY CARDIAC MONITORING:

A CASE STUDY ON PACEMATE REMOTE MONITORING

APRIL 2024



CASE STUDY

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INTRODUCTION

In the rapidly evolving healthcare sector, ambulatory monitoring devices continue to revolutionize heart rhythm care by providing reliable, detailed, and short- and long-term data trends for analysis. At the intersection of affordability and reliability, these advanced diagnostic tools offer a proactive solution for at-risk individuals to manage their conditions outside of the clinic or hospital. This transformative shift in medical practice reflects a move toward more dynamic and responsive care as the early detection of crucial physiological changes enables timely warnings and facilitates prompt intervention when necessary.¹

The healthcare landscape has embraced terms like remote healthcare, virtual care, mobile health, and e-health, encompassing a range of solutions made possible by ambulatory monitoring devices. These wearable, patch-type devices are bridging the gap in diverse populations subject to health inequities. They facilitate virtual and remote healthcare services while enabling the collection and analysis of high-quality data that support personalized healthcare delivery models.²

PaceMate® is a comprehensive platform solution engineered to efficiently manage and analyze data from various implantable, ambulatory and consumer wearable cardiac devices, including pacemakers, implantable cardiac monitors, implantable cardioverter-defibrillators (ICDs), cardiac resynchronization therapy (CRT) devices, ambulatory monitors (i.e., short- and long-term Holter monitors, event recorders and mobile cardiovascular telemetry [MCT]) and consumer wearable devices. PaceMate's primary objective is to simplify and enhance the monitoring process of these devices, enabling healthcare providers to track patient data easily, effectively and quickly to address emergent issues. The PaceMateLIVE® solution automatically gathers data transmitted from patients' cardiac devices and uses advanced algorithms to interpret data and deliver actionable insights to healthcare providers.

Furthermore, PaceMate is equipped with additional functionalities such as compliance tracking, automated billing and claims creation, and seamless real-time integration with electronic health records (EHRs).

PaceMate's role is indicative of the broader trend in healthcare towards embracing interoperability to elevate the standard of patient monitoring and overall care delivery.

PaceMate integrates with all EHRs, including EPIC, Cerner and athenahealth.

A comprehensive remote monitoring healthcare system is fundamentally composed of three primary components, each integral to its effective functioning:

1. Device (implantable, ambulatory and consumer wearable)
2. Network and Communications Interface
3. Remote Cloud Analytics Platform



A CASE STUDY

Ascension Medical Group St. Vincent's Riverside, located in Jacksonville, FL, is recognized for its comprehensive and patient-centered approach to cardiac care, preventive care, diagnostics and advanced surgical procedures for coronary artery disease, heart rhythm disorders, heart failure and structural heart conditions. This program distinguishes itself through innovative technology and treatments.

This case study spotlights Ascension Jacksonville's successful implementation of an ambulatory pathway for remote monitoring within [PaceMateLIVE](#). This case study, based on interviews with key stakeholders, explores the strategic decisions, challenges and innovative thought process behind this initiative. It examines the impact on patient care, care team workflows and overall healthcare efficiencies. The collaborative efforts between Ascension Jacksonville and PaceMate underscore the importance of partnerships in advancing healthcare technology. The resulting document serves as a valuable resource for other healthcare providers looking to implement similar digital health solutions, offering practical insights and proven strategies for enhancing patient care through technology.

Problem:

Ascension Jacksonville is a high-volume provider of ambulatory cardiac monitoring for the diagnosis of arrhythmia-related symptoms, ongoing surveillance and risk stratification. Ascension Jacksonville utilizes multiple ambulatory cardiac monitoring vendors necessitating the need to manage the service via multiple, disparate websites. The practice needed a solution to centrally aggregate ambulatory cardiac monitoring data to a single platform, prioritize alert notifications across multiple vendors, and centrally bill for services.

Proposed Solution:

Integrate upstream ambulatory cardiac monitoring data with therapeutic implantable device results to obtain a comprehensive and longitudinal view of the patient.

Objectives

1. Employ an ambulatory cardiac monitoring, a vendor-agnostic platform that aggregates cardiac implantable electronic devices (CIED) and ambulatory cardiac monitoring findings from disparate systems onto one platform.
2. Involve key stakeholders in set-up and execution.
3. Design a streamlined workflow and determine alert priorities and notification parameters with an ambulatory cardiac monitoring vendor.
4. Improve clinical and operational efficiencies.
5. Enhance revenue capture.

Implementation

Interviews with key personnel at Ascension Jacksonville provided a step-by-step understanding of how PaceMate's ambulatory cardiac monitoring solution was implemented. This included details on planning stages, technology integration, staff training and the initial rollout.

- ✓ **Identify the Driving Force:** Understanding the gaps to be addressed is important in determining the right platform for an organization. The team recognized the need to move away from manual processes, improve communications, capture ambulatory discrete data, and increase charge capture.
- ✓ **Identify Key Stakeholders:** Successful implementation of any new program is best achieved by first identifying operational and clinical leaders as champions. Once champions are identified, a multidisciplinary team should be organized to support a successful program rollout.

Key Representatives at Ascension Jacksonville Included:

- Physician Champion
- Cardiovascular Service Line (CVSL) Administrator
- Electrophysiology Remote Monitoring Care Team (RN, MA, Device Tech)
- Information Technology (IT)
- Finance
- Cardiology Clinic Leadership

During the interview with Ascension Jacksonville's Cardiovascular Administration, Service Line Regional Vice President Margaret Pate shared the program's experience implementing the PaceMate solution at Ascension Jacksonville. Their journey began during the challenging time of May 2020, just two months into the COVID-19 pandemic. "The dedication and commitment of the PaceMate team played a pivotal role in the smooth transition," said Pate.

Initially, Ascension Jacksonville integrated PaceMate CIED remote monitoring platform. "The onboarding process was impressively seamless," said Pate. "EHR system integration is typically a complex process; however, PaceMate's expertise was evident, making the integration with their athenahealth EHR feel like 'plug and play.' The alignment between PaceMate and athenahealth EHR was remarkably seamless."

Following the successful onboarding of the CIED component, Ascension Jacksonville shifted focus to ambulatory cardiac monitoring integration. The process was straightforward, enabling them to transition swiftly to the training phase. Considering the constraints posed by the pandemic, most of the training was conducted remotely. The training process was efficient, taking approximately 15 minutes per clinician. This efficiency in training was not just a testament to the system's simplicity but also to the clinicians' adaptability and quick learning capabilities.

Overall, the implementation of PaceMate at Ascension Jacksonville, especially during such a tumultuous period, was evidence of the resilience and dedication of both teams. The commitment ensured an efficient transition and rapid utilization, setting a new standard in patient care for its cardiovascular department.

Highlights of PaceMate

- EHR integration reduces clicks and the need to search EHR for medications and diagnoses.
- PaceMate streamlines cardiac ambulatory monitoring review through centralized integration into a single Cardiac Device Monitoring Solution.
- PaceMate templated notes (PaceMate Auto Script) enable a simplified approach to documentation.
- Removal of transcription and typed notes reduces documentation time and improves clinical accuracy

Practice Pearls of Wisdom

During the implementation, challenges were identified that required a collaborative approach to ensure success. Among these were technology adoption, data integration and new workflow adjustments. The solutions and strategies Ascension Jacksonville employed to overcome these challenges are identified below:

- While providers can individualize or change alert criteria, care should be taken to standardize criteria to avoid variation across providers, which may lead to confusion of non-provider clinicians.
- When onboarding, consider who and what roles may require access to more than one location of care. For example, Ascension Jacksonville Triage nurses require access to all practice locations.
- Ensure practice or program can handle increased volumes for downstream procedures.
- Alert prioritization and notification parameters should align with practice policies.
- Include the clinical team during planning to ensure a successful program launch.
- Define KPIs early to build dashboards with data necessary to your organization and start collecting at the beginning of the program to track projects and improve processes.

Impact Assessment

Interviews with healthcare providers and administrators helped assess the impact of integrating ambulatory cardiac monitoring into PaceMateLIVE. This included improvements in patient outcomes, changes in staff efficiency, increased charge capture and revenue, and the overall effectiveness of the technology in a real-world healthcare setting.

Efficiency

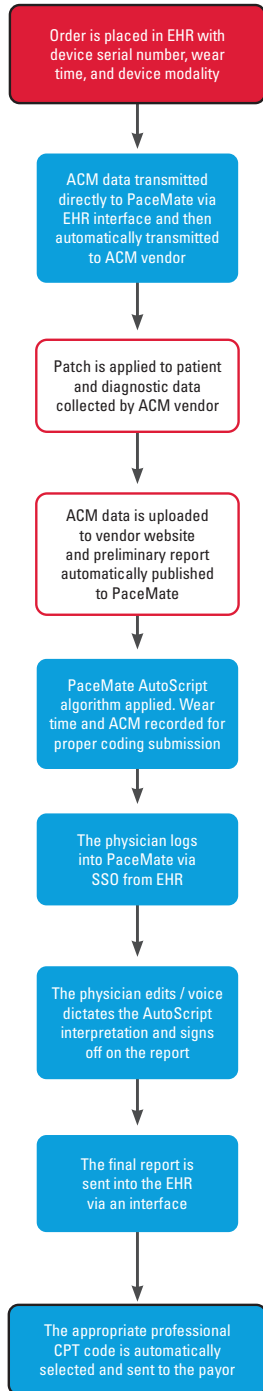
Value stream analysis comparing pre-PaceMate ambulatory cardiac monitoring with post-PaceMate integration identified a significant efficiency improvement resulting from the replacement of manual and disparate tasks with automated processes fueled by interoperability between ambulatory remote monitoring vendors, PaceMate and the EHR. Specifically impactful was a reduction in manual processes from 10 to one and the elimination of redundant (three or more) login processes resulting in one manual process, one login and six automated processes.

*“PaceMate is the **ONLY PLATFORM THAT INTEGRATES WEARABLE TECHNOLOGIES;** this is a huge benefit as you no longer have to access two separate platforms.”*

– **Saumil Oza, MD, FACC,**
cardiac electrophysiologist and chief of Cardiology at Ascension Jacksonville

AMBULATORY CARDIAC MONITORING (ACM) MANAGEMENT

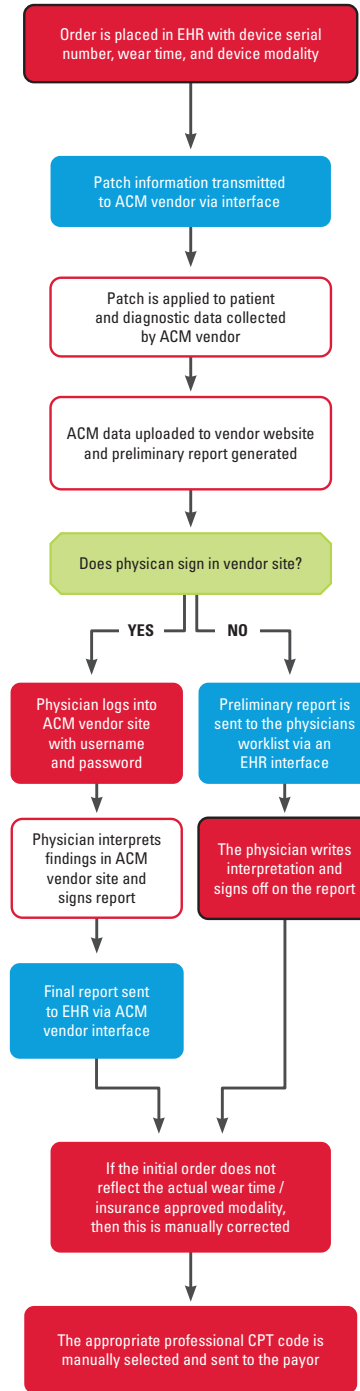
Integrated ACM Workflow With PaceMate



Summary

Manual processes = 1
 Number of additional logins = 0
 Locations work is completed = 1
 Automated Processes = 6

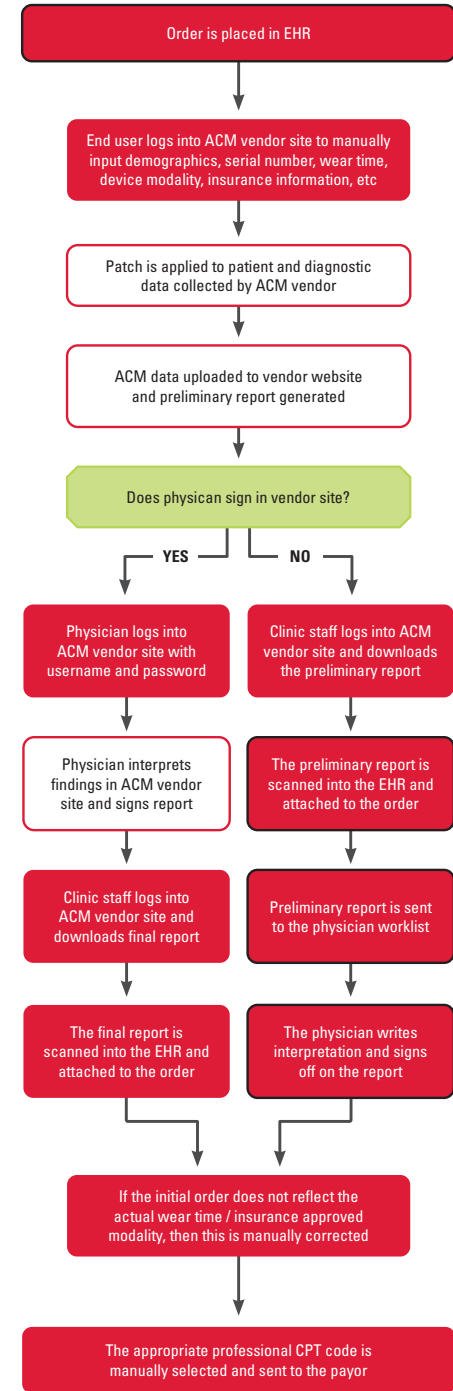
Integrated ACM Workflow



Summary

Manual processes = 5
 Number of additional logins = 1
 Locations work is completed = 2
 Automated Processes = 3

Standard ACM Workflow



Summary

Manual processes = 10
 Number of additional logins = 3*
 Locations work is completed = 2
 Automated Processes = 0

Financial

Integrating ambulatory cardiac monitoring data into PaceMate is not at all resource intensive.

Resources required included pre-implementation planning with impacted departments, such as integration planning with IT, coding compliance review and care team training. Benefits of integrating ambulatory cardiac monitoring into PaceMate include streamlined clinic operations, optimized result capture, enhanced resource allocation and accurate billing assurance. Billing for ambulatory monitoring can be fraught with error and lead to denials, primarily due to unexpected changes in monitoring duration or monitoring modality. PaceMate's automated wear time analysis mitigates this concern.

Revenue Capture

With the implementation of the PaceMate solution into the ambulatory monitoring workflow, Ascension Jacksonville closely observed its impact on both relative value unit (RVU) and revenue growth within the organization. It is well understood that a sizable portion of revenue associated with ambulatory patch management is typically dominated by independent diagnostic testing facilities. This reality has made managing the task of revenue capture a demanding one.

While acknowledging integrating a Cardiology Device Management System like PaceMate is not an all-encompassing solution for boosting revenue, the organization has observed a significant contribution to RVU growth. This growth in RVUs is crucial because it reflects the value of physicians' work effort. PaceMate has assured proper RVU capture enabling physicians to be fairly rewarded for their expertise and hard work.

Integrating PaceMate with the ambulatory vendors has proven instrumental in significantly reducing denials stemming from changes in monitoring modality due to payer coverage. The utilization of PaceMate effectively bridges the gap between the

actual time of patch utilization and the billing process, contributing to a smoother and more accurate financial workflow. This transformative integration serves as a testament to the positive impact on billing denials, aligning with the overarching goal of minimizing obstacles in the reimbursement process.

The implementation of PaceMate is more than just a technological upgrade; it is a step towards aligning the economic aspects of service with the exceptional care physicians provide. By facilitating more efficient patient management and streamlined workflows, PaceMate indirectly but effectively supported revenue growth. That alignment benefited the healthcare professionals and enhanced the overall efficiency and effectiveness of patient care in the Ascension Jacksonville CVSL.

Productivity

A crucial aspect MedAxiom examined was the surge in staff productivity, particularly linked to the reduction in lag time in charge capture before and after the implementation of PaceMate. In the pre-PaceMate era, the reliance was on legacy software for managing ambulatory devices. This entailed a labor-intensive process taking about four minutes per result review, primarily centered around billing tasks. With PaceMate, the transition to automatic data flow from the vendor and direct integration of charges into the EHR and billing system is transformative. Ascension Jacksonville, with a substantial patient load (~ 8000 patients/year) using ambulatory cardiac monitoring patches, witnessed remarkable time savings.

At Ascension Jacksonville, the implementation has been comprehensive, with 100% of the sites adopting PaceMate. Reduced frustration with tedious processes contributed to team satisfaction and a decline in staff turnover. This widespread adoption emphasizes the significance and success of PaceMate's integration across the Ascension Jacksonville organization.

*“Extrapolating the four minutes per patch across the patient population amounted to **ALMOST 543 HOURS OF TIME SAVINGS** or **APPROXIMATELY 0.26 FTE TIME SAVINGS**. The elimination of the need to train medical assistants in ambulatory data capture allows Ascension Jacksonville to redirect their efforts toward clinical activities.”*

—Margaret Pate,

Ascension Jacksonville's regional vice president of Cardiovascular Administration, Service Line

“WITH PACEMATE, THE TRANSITION TO AUTOMATIC DATA FLOW FROM THE VENDOR AND DIRECT INTEGRATION OF CHARGES INTO THE EHR AND BILLING SYSTEM IS TRANSFORMATIVE.

Ascension Jacksonville, with a substantial patient load (~ 8000 patients/year) using ambulatory cardiac monitoring patches, witnessed **REMARKABLE TIME SAVINGS.**”

Turnaround Times

A pivotal aspect under scrutiny is the turnaround time and whether the direct integration of reports and data from ambulatory patch vendors to PaceMate contributed to enhanced efficiency in both billing and report reading times. The affirmation from doctors at Ascension Jacksonville was that the direct integration of ambulatory cardiac monitoring data has created efficiencies and time-savings when reviewing and interpreting reports. This provides Ascension Jacksonville peace of mind and confidence that reports are not being lost.

Ascension Jacksonville Team Experience

- ✓ Satisfaction with the ability to centrally manage CIED and ambulatory patients. Reports are immediately available in EHR post physician signature, which improves continuity of care to all care team members.
- ✓ PaceMate allows care team members to directly communicate within the platform, facilitating prompt action to decrease delays in care.
- ✓ Reports are easy to read and accurate, making it easier for non-cardiology providers to understand and act accordingly.
- ✓ Reports can be read and signed in 50% of the time they typically take.

“What we are so happy about is that we can **CHOOSE WHICH AMBULATORY VENDOR WE WANT TO WORK WITH.** PaceMate provides integration with all the major ambulatory patch vendors, which **GIVES CHOICE AND CONTRACTING POWER FOR US.** We are not beholden to one company which is so important.”

– **Margaret Pate,**

Ascension Jacksonville’s regional vice president
of Cardiovascular Administration, Service Line

CONCLUSION

Integrating ambulatory cardiac monitoring devices into a centralized remote monitoring solution marks a transformative shift in practice management, offering detailed data analysis for reliable diagnostics. This advancement enables proactive solutions for advancing clinical, operational and financial improvements.

Ascension Jacksonville's successful implementation of a pathway for ambulatory cardiac monitoring, in collaboration with PaceMate, exemplifies the real-world impact of such technology. The financial aspect underscores the importance of informed decision-making for improved patient care and economic sustainability. The fundamental components of a remote monitoring system emphasize the integral role of aggregating implantable devices, ambulatory cardiac monitoring, consumer wearable devices along with network and communication interfaces, and remote cloud analytics platforms. The Ascension Jacksonville case study highlights PaceMate's platform efficacy in managing and analyzing data from various cardiac monitoring devices, contributing to efficient monitoring processes and improved patient outcomes.

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ABOUT MEDAXIOM MedAxiom, an ACC Company, is the cardiovascular community's premier source for organizational performance solutions. MedAxiom is transforming cardiovascular care by combining the knowledge and power of hundreds of cardiovascular organization members, thousands of administrators, clinicians and coders and dozens of industry partners. Through the delivery of proprietary tools, smart data and proven strategies, MedAxiom helps cardiovascular organizations achieve the Quadruple Aim of better outcomes, lower costs, improved patient experience and improved clinician experience.

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[MedAxiom.com](https://www.MedAxiom.com)



ABOUT PACEMATE Recognized as a Top 100 Healthcare Technology Company by Healthcare Technology Report, PaceMate offers the most comprehensive remote cardiac monitoring solution in the industry. PaceMateLIVE® is the only clinical dashboard with user-friendly integrations for all implantable cardiac devices, ambulatory monitors, consumer electrocardiograms, and heart failure products. PaceMate's Auto-Triage™ prioritizes patients based on clinician-customized standards—not device alerts—resulting in substantial reduction in alert burden. With the most live connections through EHR-partnered integrations across Epic, Cerner and athenahealth, PaceMate offers a true, vetted and validated industry-leading solution for interoperability: ensuring bi-directional data transfer for more accurate reporting, streamlined workflows, and one-click billing. PaceMate's software-only, concierge on-demand, and full-service offerings deliver a flexible, customized solution to your cardiac practice.

Learn more at
[PaceMate.com](https://www.PaceMate.com)