Expanding healthcare access:

The imperative for new care pathways

PHILIPS

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Expanding healthcare access

Executive summary

Improving health equity through expanded access to cardiac care isn't merely a matter of patient convenience – it's a strategic imperative for health systems seeking to improve outcomes, optimize resource utilization and sustain operational efficiency. Delays in care delivery exacerbate disease acuity, increase reliance on high-cost, over-utilized emergency and inpatient services that are stretched beyond their limits, and displace other patients in need of timely and critical interventions. This misalignment contributes to rising healthcare expenditures, disrupts care continuity and places undue strain on system capacity and frontline staff.

While barriers to cardiac care vary across health systems, common systemic contributors include the overutilization of telemetry beds, a shortage of cardiovascular specialists and nurses, emergency department congestion, prolonged hospital stays and fragmented coordination between primary care providers and cardiology services. These inefficiencies not only impede throughput but also reduce the quality and consistency of care delivered across the patient journey.

Central to resolving these challenges is the establishment of enterprise-wide cardiac workflows – standardized, scalable care pathways that are embedded within the operational fabric of the health system. These workflows facilitate coordination from hospital to home and ensure that patients receive the appropriate level of monitoring and intervention at the right time and in the most appropriate setting.

Looking ahead, we envision an evolution toward personalized, data-driven cardiac care models in which clinical decisions are guided by insights into a health system's capacity and condition-specific monitoring protocols. This transformation in how, when and where cardiac care is delivered has the potential to reduce care variability, promote equity, alleviate the burden on clinicians and mitigate avoidable hospital utilization. As a result, health systems will be better equipped to manage demand, and ultimately deliver more timely, effective care to the patients who need it most.

Expanding healthcare access

This paper outlines the four areas in which hospitals need to focus their efforts to design and implement enterprise-wide cardiac workflows that place patients at the center of care:

1. Make actionable data available wherever care happens

To design cardiac care pathways that truly center on the patient, health systems must ensure that actionable, data is accessible across all care settings, from primary care clinics and emergency departments (EDs) to cath labs and post-acute and home environments. Interoperability between electrocardiographic (ECG) management systems, EMRs and third-party applications is essential to enabling timely risk stratification, early intervention and seamless transitions of care. Making data available wherever care happens not only supports clinical accuracy, but also helps patients receive the right level of care at the right time, regardless of where they enter the system. We contend that for data to drive meaningful action, it must meet three essential criteria: It must be transparent in its origins and methodology, easily accessible to those who need it, and, above all, built on a foundation of reliable, quality information.

2. Create an environment for cross-disciplinary collaboration

Progressing toward enterprise-wide cardiac care pathways requires the adoption of a cross-disciplinary, integrated approach that bridges traditional silos in service delivery. Central to this transformation is the incorporation of timely cardiac ambulatory monitoring and the utilization of interoperable data systems that facilitate information exchange across care settings. Such an approach has the potential to enhance diagnostic precision, expedite interventions and improve both short- and long-term patient outcomes. A key enabler of this model is the seamless integration of ECG data acquired in inpatient settings, such as through hospital-based electrocardiograms (EKGs), with data collected in ambulatory or home-based environments via wearable or ambulatory monitoring technologies. This level of coordination demands an enterprise-wide digital infrastructure that supports interoperability, data standardization and user-friendly access to synthesized patient information at the point of care.

3. Follow a Start, Build, Scale framework

Adopting a structured change model, such as a Start, Build, Scale framework, can help health systems implement new care pathways with agility and sustainability. In the Start phase, organizations should identify high-impact, low-complexity areas where care gaps or delays are most problematic (telemetry overuse, ED overcrowding). The Build phase focuses on implementing new workflows on a small scale and using operational data to refine protocols and ensure they are clinically and operationally meeting their goals. Finally, the Scale phase allows for broader adoption across departments or sites, supported by standardization and a scalable infrastructure.

4. Adopt a forward-thinking, flexible strategy

A forward-thinking strategy requires a health system's ability to integrate and adapt to the evolving external ecosystem of digital health innovations. To stay ahead of emerging technologies, such as wearable biosensors, remote monitoring devices and AI-driven capabilities, hospitals must partner with organizations that embrace an open, vendor-neutral approach. This flexibility enables seamless integration of best-in-class tools from third-party innovators, rather than being locked into proprietary systems that limit choice. This strategy must also embrace AI in order to proactively identify patients at risk for adverse cardiac events and making patient data reports actionable. Beyond individual care, embracing AI can also drive population-level insights by using it to analyze operational and clinical data to reveal patterns in patient flow, resource utilization and care demand.

Expanding healthcare access

The need for new cardiac care pathways

Healthcare systems are grappling with a range of challenges that compromise their ability to deliver timely, equitable access to cardiac care: unprecedented pressure from rising patient demand, razor-thin operating margins, capacity constraints and staffing shortages. The need to rethink how and where cardiac care is delivered has never been more pressing. It's clear that traditional, hospital-centric models are struggling to meet the needs of patients and clinicians alike. To address these challenges, health systems must adopt new care pathways that expand patient monitoring and diagnostics into the home to create more efficient, patient-centered care and ultimately increase capacity for the patients who need it most.

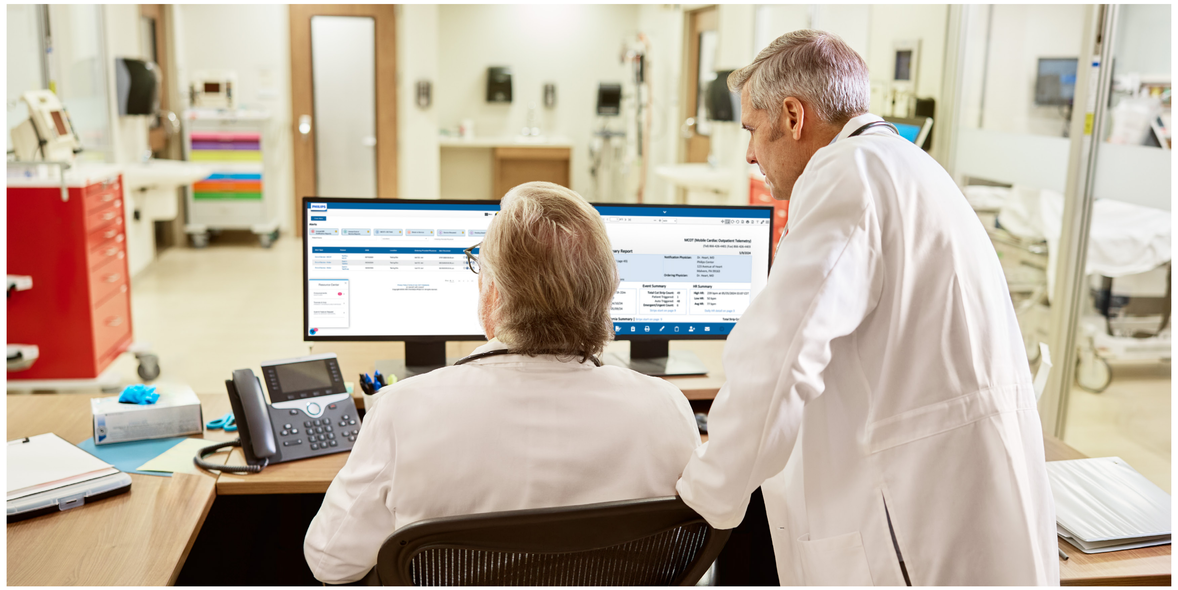
Rising patient demand

An aging population, increasing prevalence of chronic and complex conditions like atrial fibrillation (AFib), coronary artery disease and structural heart defects, and a dramatic rise in cardiovascular disease[1] create a rising tide of demand and multiple hospital stays. This places immense pressure on hospitals to manage a high volume of complex patients and free up beds for those who need them.

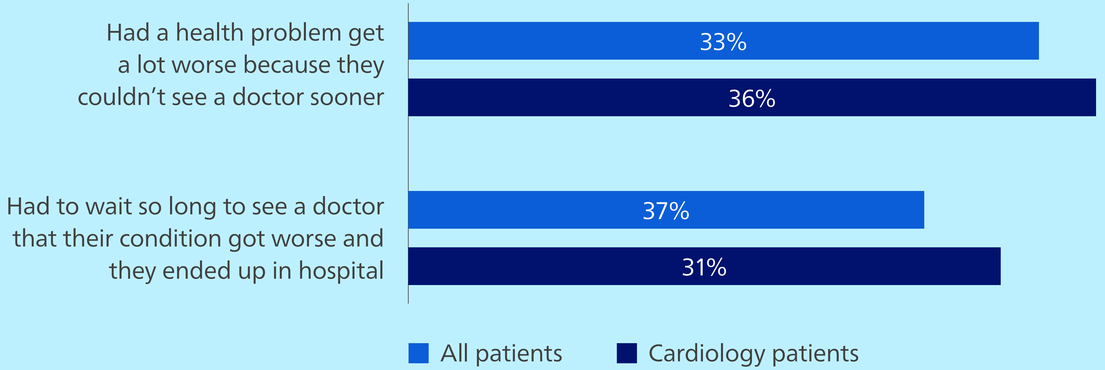
Long wait times

Patients face lengthy delays for diagnostic tests, which creates frustration and exacerbates conditions that require urgent treatment. This not only impacts patient outcomes but also strains healthcare systems in the long term by increasing the need for emergency interventions.

The 2025 Future Health Index report – a global survey of almost of more than 1,900 healthcare professionals and more than 16,000 patients across 16 countries – found that patients in need of heart care are especially impacted by delays in care. They're not only significantly more likely to have to wait to see a specialist but also wait an average of 20% longer for an appointment than other patients.[2] These wait times help explain why cardiology patients are much



Wait times lead to worsening health, especially for cardiology patients



more likely to report worsening health or hospital admission due to delays in care.

Overcrowded EDs and overuse of telemetry

A key link between these issues is the strain on health system capacity resulting from overcrowded EDs and the overuse of telemetry beds. When EDs are overwhelmed, patients with cardiac concerns often experience delays in evaluation, which can compromise outcomes and intensify downstream care needs. At the same time, the use of telemetry beyond what's necessary limits bed availability for higher-acuity patients and contributes to unnecessary, costly inpatient stays. This confluence of delayed triage, inefficient bed management and fragmented monitoring protocols creates bottlenecks that impede timely access to treatment and compromises both operational flow and clinical effectiveness.

Staff shortages

Staffing shortages further compound these challenges. As demand for cardiovascular care continues to rise, health systems face a gap between patient needs and available staff, particularly in rural and underserved areas. A recent study published in the *Journal of the American College of Cardiology* shows that nearly half of all counties in the United States don't have a single practicing cardiologist[3], and most of these are rural areas where risk factors such as smoking, diabetes, obesity and high blood pressure are prevalent. Without the ability to closely monitor patients after discharge or initial triage, subtle signs of deterioration may go unnoticed, resulting in higher readmission rates and avoidable adverse events.

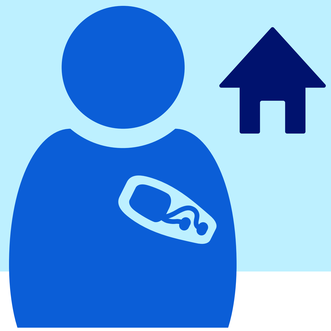
Evolving patient expectations

Patients want to be treated where they are, and easily. They expect more digitalized, personalized experiences that save them time and eliminate friction in their care journey. Redesigning cardiac care pathways in a way that revolves around them can help ensure that patients are active participants in their care.

This includes empowering patients with digital tools to help manage their health from home to prevent illness and allow them to be monitored from home while recuperating. A 2021 NIH study found that at-home care patients had a 26% lower risk of readmission. The same study found patients recovering at home had less depression and lower anxiety scores than people receiving in-hospital care.[4]

Patients recovering at home have a **26%** lower risk of readmission.

It's time to be smarter with clinicians' and patients' time and to think outside of the hospital-centric care model.



Putting heart care in motion: Drivers of new care models

Health systems must rethink care delivery by shifting away from traditional, hospital-centric care models and by embracing patient-centered ways to monitor and manage patients outside of the hospital. Innovations in home-based cardiac monitoring, AI-powered data analytics and remote services are pivotal in transforming these models and offer significant opportunities to address the mounting pressures on healthcare systems.

Home-based monitoring

As technology becomes more advanced and algorithm- and AI-driven solutions expand clinical capabilities, the lack of staff to manage the additional work can diminish their potential. This can require using independent diagnostic testing facilities (IDTFs) to monitor patients with a suspected cardiac problem. Providers across the globe are taking note of how this kind of monitoring is transforming the way that a variety of heart conditions are diagnosed. For example, in the United States, more than 1.3 million* patients are being monitored with Philips cardiac ambulatory monitoring services, highlighting the role that meaningful, high-quality data collected outside the hospital plays in improving the care pathway for patients with heart conditions.

Once a patient is recovering from a chronic condition, such as heart failure, they need to be connected to providers to monitor their condition, ideally from home. We predict that health systems will increasingly turn to virtual care in the form of third-party-run clinical services with remote monitoring capabilities, engagement tools and personalized health coaches to help manage these patients. An example is Philips Ambulatory Virtual Care, a professional service that provides ongoing ambulatory patient monitoring for several weeks to months during recovery and co-morbidity management. In this way, highly trained, third-party clinical teams help oversee patients and support their in-hospital colleagues remotely,

AI and advanced algorithms

Healthcare leaders are turning to AI to make sense of the deluge of data that home monitoring can produce when combined with inpatient data, such as EKGs captured during hospital and clinic visits. According to the *2025 Future Health Index report*, more than three in four healthcare professionals report losing clinical time due to incomplete or inaccessible patient data, with a third losing over 45 minutes per shift.[5]

77%
of healthcare professionals have lost clinical time due to issues with incomplete or inaccessible patient data[5]

This highlights the importance of AI and digital technologies to simplify data management and lessen the effect of frustrating inefficiencies.

Healthcare professionals expect that AI will allow their departments to expand capacity, serve more patients, get patients to the right care faster and reduce wait times.

* Data on file 2025

How healthcare professionals say AI can positively impact their department

Patient access and experience

Fragmented data

Hospitals and healthcare systems use a significant amount of data from EMR software to patient scheduling, systems management to AI technologies. These systems often lack seamless communication capabilities, making coordinating the fragmentation of data a challenge. Other issues to overcome are the varying quality of the data (noise vs. signal in all these systems), as well as clinical expectations. For example, an ED doctor may want to rule out conditions before discharging the patient to home, while a cardiologist may need a high positive predictive value to admit in a patient to surgery.

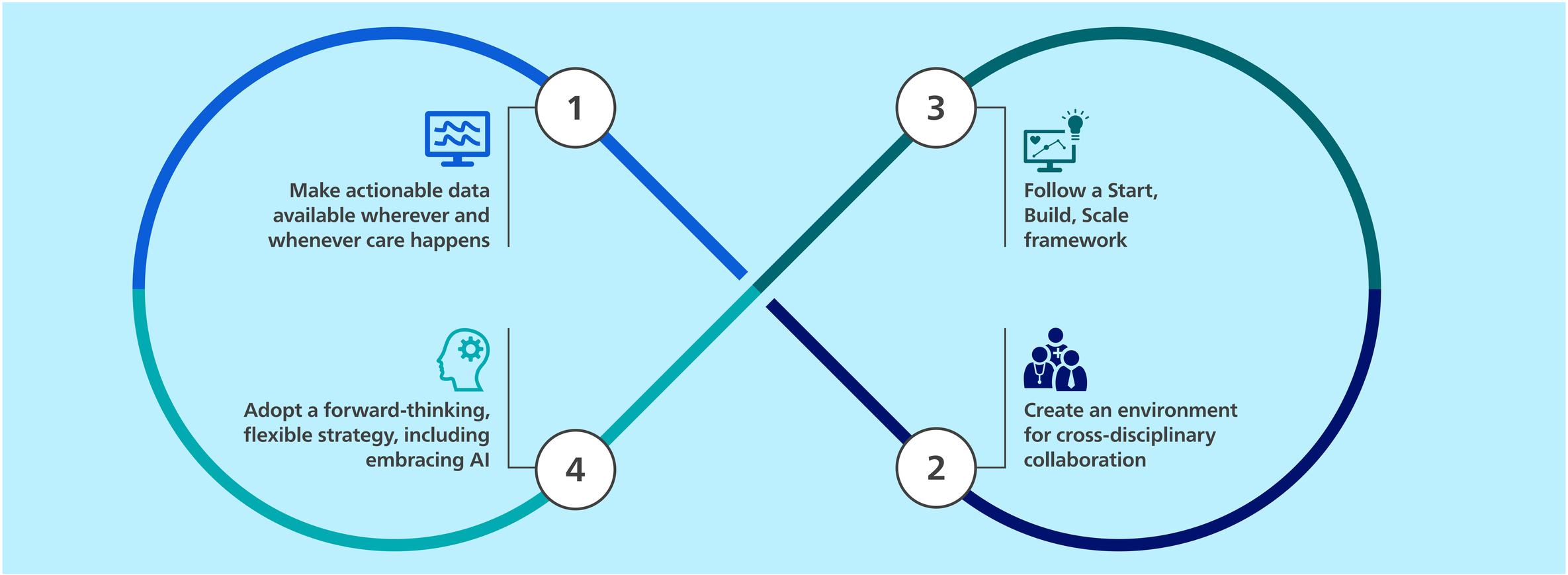
New possibilities: care pathways in action

The development of new smart cardiac care pathways may take multiple forms, ranging from condition-specific initiatives, such as standardized monitoring and treatment protocols for AFib or stroke, to system-wide strategies aimed at establishing centers of excellence. Alternatively, care pathway design may be driven by operational objectives, such as reducing the overutilization of telemetry beds, alleviating ED congestion or enabling earlier discharge through the integration of cardiac ambulatory monitoring services. Similarly, pathways focused on minimizing hospital readmissions may incorporate ambulatory virtual care models, thereby extending clinical oversight beyond the inpatient setting and promoting continuity of care. Regardless of the entry point, such pathways must be aligned with both clinical priorities and institutional performance goals and Key Performance Indicator (KPI) to achieve meaningful, scalable impact across the health system.

Let's take a closer look at how an early discharge program can work. EDs across the country are challenged with maintaining quality care through staff shortages, overcrowding, longer wait times and shortages of critical beds. To better manage ED patient workflow and potentially reduce inpatient stays, appropriately selected patients can be discharged home with outpatient arrhythmia monitoring using mobile cardiac telemetry. As a result, patients can be efficiently triaged to the appropriate care setting. During a time when EDs face longer wait times and overcrowding, the ripple effects of early discharge programs like this make more space available at the hospital to triage appropriately and give emergency care to patients who need it.

Extending health systems' reach: **Four critical steps**

As we envision it, extending care through a health ecosystem requires health systems to focus their efforts on these domains:



1 Make data available wherever care happens

As healthcare becomes more and more distributed across care settings, connecting data across settings and data sources will become even more important. This requires a new playbook that will focus on the following areas:

- **Data quality and reliability**
- **Data accessibility**
- **Data transparency**

Data quality and reliability

To empower clinicians with the best possible information to make decisions, they need anytime, anywhere access to their patients' ECG history. The ultimate goal is to provide clear, contextual and actionable insights, but this can only be achieved if the underlying data is reliable, consistent and well-organized.

Acquiring digital patient data is no longer a significant challenge on its own. There are well-established solutions that address the concerns about increased amounts of data leading to increased workload and the lack of workflow integration that can cripple cardiology practices. However, harmonizing this data from multiple sources is an obstacle due to the volume of data readily available and it not being manageable. The challenge arises when trying to integrate data from clinic visits and hospitals with home-generated data into a cohesive, unified record that is accessible and actionable. It's important to ensure that this data is relevant, consistent and complete in order to give clinicians a full picture of a patient's health. Without this, key insights may be missed, leading to inaccurate assessments and delayed interventions.

Organizing data for clinicians

Data needs to be organized and synthesized so that it is presented in a meaningful, actionable way. Simply collecting data from various sources is not enough; it needs to be structured in a way that enables clinicians to quickly understand and act on the insights it provides.

Single-vendor solution vs. multi-vendor integration

To address data quality and reliability challenges, some healthcare organizations turn to single-vendor solutions that provide both data-generating devices (medical-grade wearables) and analytics platforms to manage and analyze the data. The advantage of single-vendor solutions is that they ensure data completeness and accessibility within the platform.

Data accessibility

Today, the real challenge lies in ensuring that the data is accessible in ways that support clinical decision-making. This is especially critical when dealing with ECG data, which can often be overwhelming without the right tools to process and organize it.

Strategies to ensure data accessibility

- **Synthesize data using AI and advanced algorithms:** ECG data is often voluminous, requiring significant time to read and interpret. AI and advanced algorithms can play a transformative role by extracting key insights from this data and presenting it in a way that is consolidated, structured and easy to navigate. An example is thoughtfully organized dashboards that can help clinicians quickly understand and interpret data trends. These dashboards can present critical insights, allowing clinicians to interpret the data with minimal effort.

- **Integration with the EMR for seamless data access:** One of the most critical components of data accessibility is ensuring that the data is available where clinicians are already working: in their EMR. EMR integration ensures that all relevant data, whether it comes from wearables, monitoring devices or ECG machines, is all accessible from a common portal, maintaining a consistent workflow.

- **Interoperability across systems and modalities:** As healthcare systems continue to incorporate multiple technologies and devices, interoperability becomes a key factor in ensuring data accessibility. ECGs, Holter monitors, stress tests and other cardiac monitoring devices may operate on separate platforms, which can create data silos. To turn this data into actionable insights, these devices need to interface seamlessly with a hospital's existing IT infrastructure and be managed on a vendor-agnostic platform. Philips IntelliSpace ECG Management System is a good example of a platform that allows for ECGs from other devices to be consolidated, analyzed and integrated into reports.

Data transparency

Healthcare administrators are turning to digital solutions like AI and generative AI to mine vast informatics datasets for insights that can help mitigate staff shortages and improve the precision of diagnoses, accelerating treatment plans. Clinicians must be able to trust these AI-driven insights. This requires making data transparent and interpretable. AI vendors need to deliver transparency in several ways. One is providing information about the data used to train the model and performance metrics. Another is presenting complete data in useful ways, including preconfigured dashboards, so clinicians and administrators can understand how data works and so they can mine it themselves. Transparent access to all data will allow administrators to expand programs that address challenges such as length of stay and capacity across their enterprise.

The impact of data transparency

We believe that health systems need – and deserve – full access to their data

Clinical data:
specific measurements from devices and diagnostic-level data

Operational data:
who the patient is and details about their touchpoints with the health system

Deep scientific data:
appropriate measurement is captured and available for use in research, which can be useful in population health efforts

2

Create an environment for cross-disciplinary collaboration

The need for cross-disciplinary integration arises from the inherent fragmentation of varying care pathways. As patients move across various providers and care settings, each operating with distinct documentation systems, diagnostic protocols and clinical workflows, continuity of care is often compromised. This lack of coordination results in inefficient communication, delayed diagnosis and extended time to treatment.

Optimizing cardiac care means empowering primary care to play a more decisive role in the front end of the patient journey. By equipping primary care providers with tools to prescribe cardiac ambulatory monitoring, health systems can improve triage accuracy, reduce avoidable ED utilization and streamline specialty referrals. This approach enables primary care to rule in or rule out cardiology needs early, ensuring that when referrals do occur, they're clinically justified and supported by pre-collected cardiac data. For health system leaders, this translates into better capacity management, lower operational strain on EDs and more equitable access to timely cardiac care. It's a strategic shift that not only can improve patients' experience and outcomes, but that also aligns with broader enterprise goals around efficiency.

Creating a new pathway

Health systems can create care pathways or EMR integrations that allow primary care physicians to prescribe cardiac ambulatory monitoring themselves and send appropriate patients to specialists. They can also adopt interoperable data management systems that support collaborative diagnostics and decision-making. Such systems allow primary care providers, specialists and other clinicians to access and contribute to a unified patient record. By presenting clinicians with comprehensive clinical data at the point of care – including prior inpatient ECG monitoring data from home – decisions can be made faster and with greater confidence. Moreover, a shared data environment encourages multidisciplinary input, enabling a more holistic assessment of the patient's needs and reducing the siloed approaches that currently characterize much of clinical practice.

The integration of interoperable data systems into clinical workflows can support this goal by enabling ECG data sharing across disciplines and settings. This not only reduces redundancy and delays but also fosters a more coordinated and patient-centered model of care.

One scenario

Missed windows of cardiac ambulatory monitoring become especially alarming when it comes to managing patients with AFib, the world's most common cardiac arrhythmia. AFib significantly increases the risk for several severe conditions like stroke, dementia and heart failure, but often goes undetected until it develops into an emergency because of its lack of noticeable symptoms. Imagine a different scenario in which a patient wears a cardiac ambulatory monitor right after their primary care visit. In preparing for the patient's first visit, the cardiologist already has access to the patient's cardiac data from the home monitoring device to rule in or rule out their need to visit a cardiologist. By the time the patient arrives for the cardiology appointment, the cardiologist has already reviewed the data and may have insights into any arrhythmia history. The cardiologist can make a diagnosis immediately or proceed with the next step in the care plan.

At this point, the primary care physician and cardiologist have already collaborated, sharing the data and discussing the patient's status. The care team, including any other specialists or ancillary care providers, can view the same patient data, ensuring continuity of care and reducing the likelihood of duplicated tests or miscommunication.

This type of care collaboration can set the stage for best practices in other areas as well, particularly with chronic conditions, complex cardiac care needs and second-opinion cases.

The impact: efficiency, collaboration and improved outcomes

Faster diagnoses:

By having access to key data ahead of the appointment, the cardiologist can make a diagnosis or adjust treatment more quickly, minimizing delays in care.

Improved decision-making:

The continuous data flow allows both the primary care and cardiologist to make more informed, evidence-based decisions. The insights gained from home monitoring can help prevent unnecessary procedures or hospitalizations.

Improved patient experience:

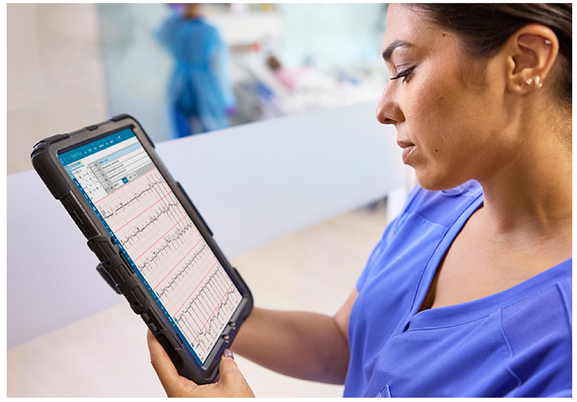
Patients don’t have to endure long wait times between appointments. The process feels more streamlined and connected, and the patient may feel more confident in their care and result in better outcomes.

Increased efficiency:

By addressing issues proactively and collaborating, the need for multiple follow-up appointments, unnecessary hospitalizations or duplicate tests can be reduced, ultimately leading to better utilization of healthcare resources to save time and cost.

3 Follow a Start, Build, Scale framework

Once hospitals define their objectives around new at-home care models, the next step is ensuring they can successfully deliver on their goals. This requires alignment across clinical, operational and technological teams. A modular approach – building flexible, scalable and adaptable solutions based on the needs of both patients and clinicians – can help health systems progressively achieve their goals. Here's how this can unfold.



Start scenario: Laying the foundation with simplicity

Hospitals can begin by focusing on fewer devices, services and vendors to simplify integration and reduce complexity. The initial benefit of this approach is fewer interfaces, reducing training requirements and enabling staff to become proficient with consistent workflows. This simplification is particularly important as hospitals look ahead to a future-state workflows in which the healthcare team moves to where the patient is, rather than move the patient between rooms.

Similarly, the user experience is central to the successful integration of any new technology into clinical workflows. Whether it's for clinicians or patients, ease of use is paramount.

- **Patient-centric experience:** From the patient's perspective, the experience must not be cumbersome. The goal is to create a seamless experience for both clinicians and patients, helping reduce anxiety, improve engagement and foster long-term adherence to care plans.

Key steps:

01 Workflow consultation

- Work with a trusted vendor to conduct a consultation to review current workflows and identify opportunities for better use of existing technologies.

02 Small-scale implementation

- Start with a small-scale launch to help the team get familiar with the technology, identify early challenges and adjust workflows.
- Choose a use case, such as discharging appropriately selected patients with a suspected arrythmia from the ED with cardiac ambulatory monitoring, such as mobile cardiac telemetry.
- Set clear milestones for success, such as improving care coordination or reducing the time from patient discharge to follow-up.

03 Clinical stakeholder buy-in

- Gaining executive buy-in is crucial. Ensuring that clinical leaders – especially cardiologists and electrophysiologists – are on board will have the greatest impact on success.
- Clearly communicate the value of the initiative, focusing on how technology can enhance patient care and reduce staff burden.

04 Standardization

- Standardize on a limited set of medical-grade wearables and diagnostic services to simplify training and integration efforts.
- Measure both positive and negative outcomes to assess the impact of standardization on clinical workflow and patient outcomes.
- Focus on workflow optimization. Even without integrating the full ecosystem, initial improvements in workflow can create noticeable efficiencies.

Build scenario:
Expanding and refining

In the second scenario, once a basic platform is in place, trust has been built and initial outcomes are measured, the focus shifts to expanding the scope of the model while continuing to refine the workflow and technology integration. The goal is to build on the foundation established in the first scenario, incorporating feedback from the launch to scale adoption.

Key steps:

01 Platform expansion
- Hospitals should look at how to expand beyond the initial use case (their pilot program in the ED, for example) to include other areas like cath lab discharges or post-operative care. This can be done by extending the same technology to these areas, ensuring that systems integrate seamlessly.

02 Growing capabilities
- As the initial implementation becomes stable, hospitals can gradually build the internal capabilities to manage their own technology and workflows.
- Start by standardizing workflows within one or two departments and then gradually integrate these practices into other clinical settings.

03 Stakeholder collaboration
- Continuously engage the right stakeholders from IT, clinical teams and operational leadership to fine-tune the process.
- Work closely with clinical teams, especially those in charge of ED and cardiology, to get their buy-in and refine workflows.

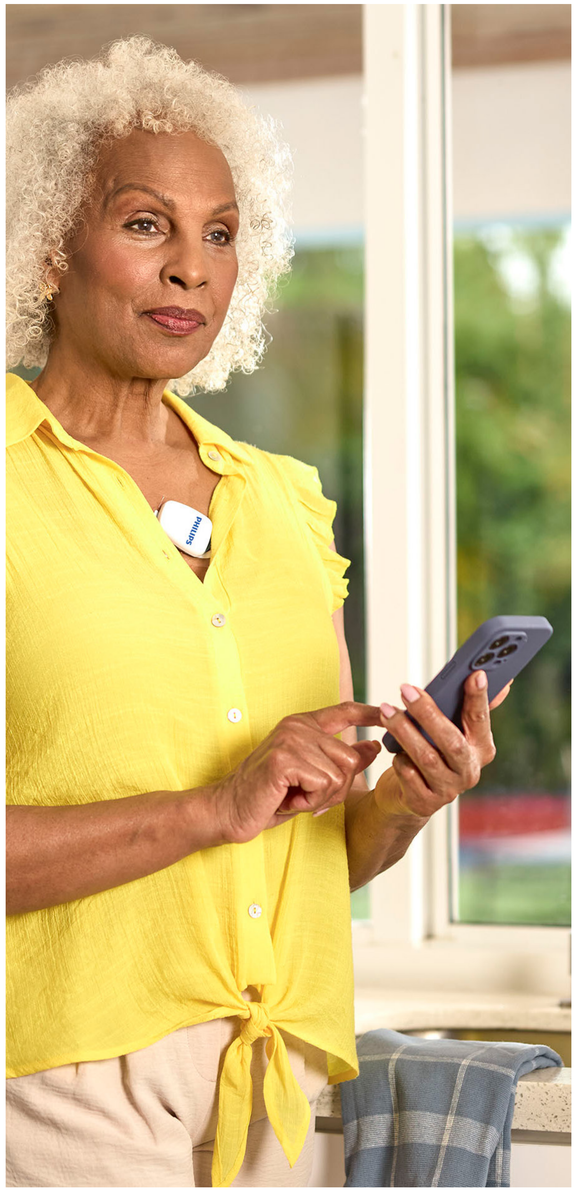
04 Continuous improvement
- Maintain launches with small teams or specific patient populations, such as post-discharge heart failure patients.
- Set KPIs upfront to measure progress. Examples are reduced readmission rates, improved patient satisfaction and reduced length of stay.

05 Timely discharge pathways
- Focus on specific care pathways such as timely discharge or care transitions. Define KPIs early on to assess the success of these pathways, allowing for continuous improvements.

Scale scenario:
Scaling and optimizing

In the Scale scenario, hospitals are operating with a comprehensive view of patient care and outcomes. The goal is to stay ahead of market demands, ensuring that they are prepared for the future of healthcare and are optimizing the value from their cardiac ambulatory monitoring and virtual care initiatives.

For example, a forward-thinking health system, with the vision to open 40 hospitals by 2035, has collaborated with Philips to help its leaders think through the systemic changes needed to support their growth and long-term sustainability. The task includes designing new care pathways, including the necessary infrastructure, to scale care pathways across multiple sites, departments and specialties. A goal is to forecast the care pathways that can incorporate predictive care, AI and other innovations that will allow them to stay ahead of the curve.



Key steps:

01

Data integration

- Use advanced analytics and algorithms to gain insights into patient outcomes over time. For example, retrospective analytics can help identify patients at risk of readmission or complications, enabling proactive intervention.

02

Enterprise insights

- Move toward an enterprise-wide approach that brings together various patient touchpoints, such as the ED, outpatient care and home care to generate actionable insights at a population level.
- This can include analyzing patterns across all patients entering the ED, whether or not they were discharged with a monitor, and looking at long-term clinical outcomes to assess the effectiveness of various remote monitoring devices.

03

Personalized pathways

- Use predictive analytics to identify risks and to personalize care pathways for patients. For instance, integrating predictive models could help identify which patients will most likely benefit from certain interventions or whether a specific intervention would reduce the need for further care.

04

Enterprise-wide scaling

- Once the initial launch is successful and workflows are refined, the program can be scaled enterprise-wide. A scalable platform ensures that multiple departments, sites and specialties can benefit from hospital-to-home pathways or early discharge programs and the accompanying workflows.

4

Adopt a forward-thinking, flexible strategy, including embracing AI

The exponential growth of data generated across the cardiac care continuum, from inpatient encounters, wearable technologies and clinical information systems, has opened new avenues for health systems to transition from reactive care toward predictive, preventive and data-informed models. By harnessing this expanding volume of data, healthcare organizations are increasingly positioned to anticipate clinical needs, stratify risk and proactively intervene.

To realize this potential, health systems can adopt advanced analytics and AI capabilities. A foundational step involves the implementation of cardiovascular informatics platforms that leverage AI to synthesize data across domains and to generate patient-specific and population-wide insights. These platforms generate information that support evidence-based decision-making at both the administrative and clinical levels. It's important to note that platforms are fixed or "locked" AI models, which are resistant to AI drift and maintain consistent algorithmic behavior, ensuring the reliability and of generated reports.

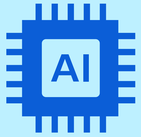
In parallel, the integration of open AI architectures within the Philips platform enables health systems to deploy custom-developed AI solutions or integrate third-party applications, creating a unified yet flexible ecosystem for continuous innovation. The incorporation of wearable diagnostic devices into this framework further enhances timely patient monitoring and allows for longitudinal data capture outside of traditional care settings.

As the field continues to evolve, the convergence of AI, wearable technology and enterprise-scale informatics will redefine the future of cardiovascular care. The section below outlines key emerging trends and how healthcare organizations can leverage them to remain at the forefront of innovation in a rapidly shifting landscape.

AI use in predicting cardiac events

Academic institutions are beginning to use AI-powered predictive models not just to diagnose current heart conditions but to predict future cardiac events. For example, even if a patient's mobile cardiac telemetry or Holter monitor shows normal results, AI could be able to analyze the data and may predict that the patient is at higher risk of developing conditions such as AFib in the coming days. These predictive models enable the creation of preventive care pathways that can detect potential issues at an early stage, before they require hospitalization. This ultimately leads to better patient outcomes and lower costs across the system.

Current efforts:



Using AI to predict risk:

Health systems are exploring the use of AI to predict cardiac events before they happen. This is especially important for conditions like AFib, where an AI-based learning model can flag patients at risk for sustained ventricular tachycardia during a two-week period when compared to actual ambulatory ECG patient data.[6]

Holistic data analysis:

By using AI to process data from multiple sources (such as 12-lead ECGs, continuous heart rate monitoring and Holter data), it will be possible to develop predictive models that give clinicians actionable insights for preventive care.

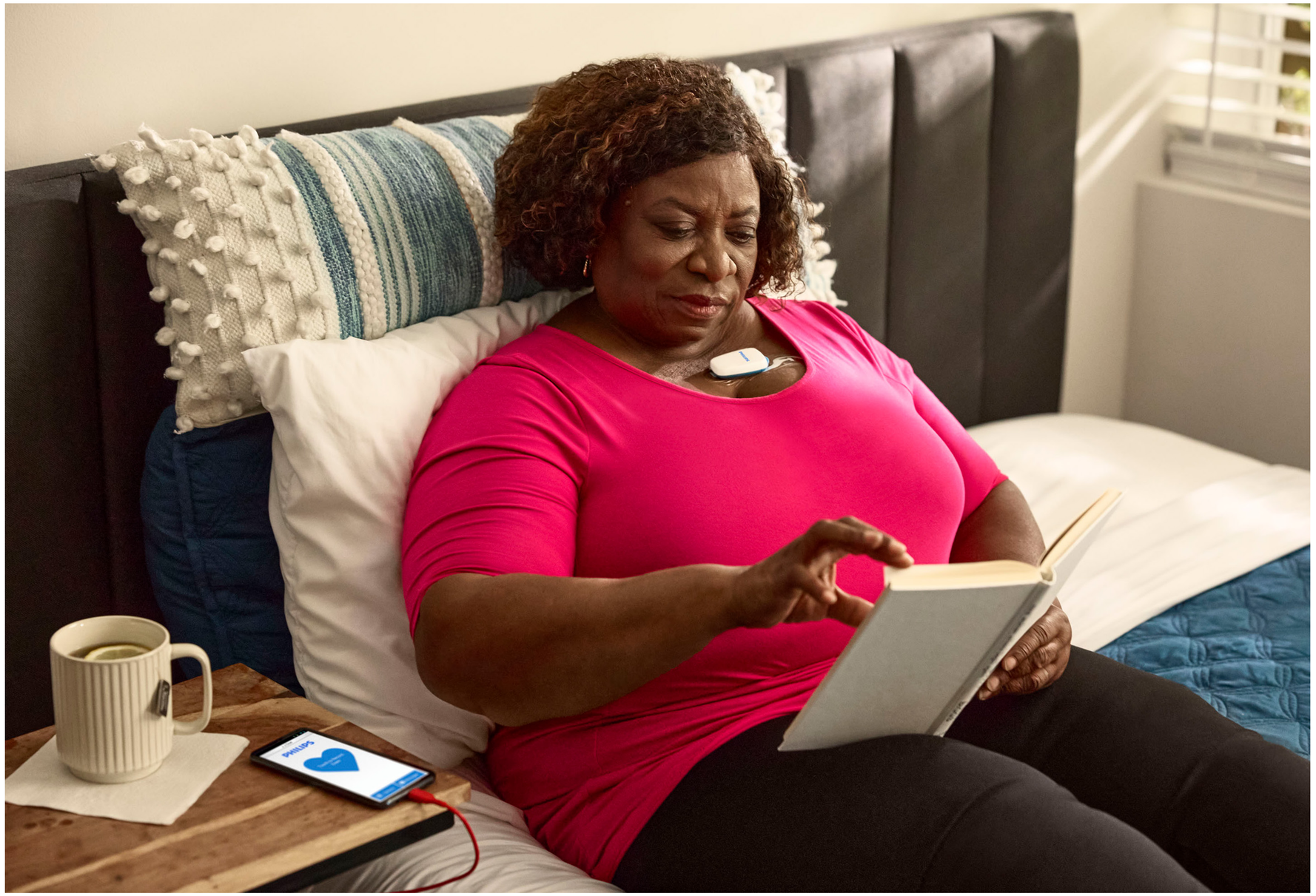
Conclusion: Preparing for a future that's not hospital-centric

Expanding access to cardiac care is a vital strategy for promoting health equity. This approach aligns with another evolution in care delivery – the future of healthcare is not hospital-centric, but patient-centric. We need to reimagine how we identify, manage and monitor patients, especially those with chronic cardiac conditions, outside of the hospital setting. By integrating home monitoring, AI-driven diagnostics and remote care into everyday workflows, health systems can start to create enterprise-wide cardiac care pathways that optimize bed utilization, reduce costs and deliver better outcomes for patients, all while addressing the growing demand.

For this transformation to succeed, health systems will need to partner with technology providers to build and implement solutions that are flexible, scalable and adaptable to future care pathways that incorporate advancements in AI and at-home monitoring. In doing so, they can create a healthcare system that is not only more efficient and sustainable but also more equitable, ensuring that patients receive the care they need when and where they need it most.

Standardization serves as the critical enabler of this transformation, ensuring that data from disparate sources can be meaningfully integrated, interpreted and applied in clinical and operational contexts. By establishing consistent protocols and interoperable frameworks, health systems are better positioned to harness predictive analytics, AI and emerging technologies to deliver scalable, proactive and patient-centered cardiac care.

Philips offers a fully integrated, end-to-end solution that supports patient care inside and outside of hospital. Our goal is to help you provide care across care settings – from hospital to home and beyond, to give you the power to deliver diagnostics that enable intervention and treatment at the right place at the right time. Our cardiac monitoring solutions, data management platform and virtual care services work together to help administrators find new care pathways and manage pressing challenges that affect their ability to widen access to care. Together, we're moving care to where it needs to be.



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