



How emergency departments can drive better outpatient care for atrial fibrillation and stroke

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Today's hospital emergency departments (EDs) face formidable challenges as they strive to deliver high-quality care to more and more patients. A shortage of newly trained physicians, nurses, and support staff, and high burnout rates among existing staff, are making it increasingly difficult to maintain staffing levels at those needed to meet patient demand.

Without changes to care delivery, they could even diminish the quality of care. Patients are also presenting in the ED with ever-more complex medical conditions and comorbidities that require specialized care coordination with other healthcare professionals and providers, while limited bed availability frequently leads to ED overcrowding.

Overcrowding in today's EDs is not uncommon – a situation further compounded by the growing number of patients who visit the ED for non-urgent or non-emergency conditions that could be better treated in ambulatory care settings. Fortunately, recent advancements in connected care are on our side to help, with solutions such as ambulatory cardiac monitoring powered by AI helping to address the challenges.

Let's start by looking at one of the most common cardiac conditions resulting in ED admission and readmission – atrial fibrillation (AF).¹ According to one study, AF patients discharged from an ED have a 2.7 times greater risk of AF re-presentation, stroke or death one-year post-discharge.² However, over half of those who have post-discharge AF will be asymptomatic or only mildly symptomatic, at a severity level that could be treated by non-emergency interventions, such as prescription medications like anticoagulant drugs to prevent unnecessary ED revisits. A cost-effective means of identifying AF and other arrhythmias, while keeping patients connected to their care teams for quick diagnosis and timely intervention, could therefore help to reduce ED (re)admissions.

Post-discharge ambulatory cardiac monitoring – improving patient outcomes, reducing readmissions

Connected ambulatory monitoring services, such as Philips Mobile Cardiac Telemetry – MCOT, can help to detect clinically significant arrhythmias and extend oversight to several weeks via unobtrusive, easily applied wearable devices. Timely notifications based on device data can help to reduce time to diagnosis and enable proactive intervention. This can offer peace of mind to patients, help to reduce costs, and support care providers in identifying appropriate next steps, as well as avoiding the patient discomfort of invasive ILR implantation procedures.

Wearable ambulatory monitoring devices also allow suspected AF patients presenting in the ED to be connected to a care team in the hospital's electrophysiology or cardiology department for diagnosis and treatment, improving workflows and shortening the length of stay in the ED. Preliminary results of a prospective, multi-center observational study published in the American College of Cardiology found that coordinating care between the ED and electrophysiology department significantly reduced the time to treatment for atrial fibrillation in the form of interventions such as AF ablation, or the administering of antiarrhythmic drugs and oral anticoagulants.³ The study also concluded that the observed reduction in the length of hospital stay, and fewer readmissions had the potential to reduce the cost of care for both patients and healthcare systems.

The link between AF and stroke

AF results in a five-fold increase in a patient's risk of experiencing a stroke⁴, and in the U.S. alone is estimated to be responsible for more than 70 thousand ischemic strokes each year – around 10% of the total.^{4,5} The early detection and treatment of AF, therefore, has the potential to make a significant impact on the incidence of stroke. But it also has the potential to improve patient outcomes for those who present in the ED with a stroke, because monitoring these patients for AF and treating it in a timely way can reduce their risk of a second stroke.

A recent study investigated the prediction of AF in ED patients with cryptogenic stroke (cerebral ischemia of obscure or unknown origin) subsequently monitored with a 30-day ambulatory monitoring device, identified 4.6 times more patients with AF compared to a care pathway that relied only on implantable loop recorder (ILR) implantation, as well as reducing secondary stroke risk. The study also demonstrated that initial monitoring using the MCOT patch achieved around eight times lower costs, reducing the total cost per patient with detected AF by USD 198,909 compared to monitoring with ILR only.⁶ By reducing the time between diagnosis and treatment for AF, widespread use of wearable rather than implantable devices could improve patient outcomes, reduce costs, and avoid the discomfort of invasive ILR implantation procedures.

New care pathways ease ED workflows and accelerate discharge

The availability of easily administered, connected cardiac ambulatory monitoring has the potential to enable new and more effective standards of care for a range of conditions. For example, patients with mild cardiac

symptoms and non-urgent comorbidities such as high blood pressure could be discharged relatively quickly after a tele-consult between the ED physician and a cardiologist, with a recommendation that the patient undergoes outpatient cardiac monitoring. Patients with serious cardiac symptoms could be placed under observation, receive a face-to-face assessment by a resident cardiologist, and be discharged with a recommendation for outpatient monitoring once they are stable.

As a recent article in EP Lab Digest stated “Emergency physicians are in a unique position to play a key role in enabling an outpatient plan for eligible patients presenting with AF. The ED serves as a key access point to reshape the care of patients with AF by offering early interventions that would ultimately help reduce avoidable hospitalizations and alleviate the tremendous burden that AF places on the U.S. healthcare system.”

Ambulatory monitoring is helping transition cardiac care from the hospital to the most appropriate and cost-effective setting, improving care coordination, accelerating patient workflows and patient throughput, helping to reduce care costs, and positively impacting patient outcomes. And when it comes to the logistics of monitoring, the latest wearable devices have one big advantage over today's ILR implantation. The ease with which they can be applied to the skin means that they can be applied at the point of care or mailed to the home for easy self-application. Either way, they offer a simple, cost-effective means of monitoring patients in their homes to provide better outcomes for patients and health systems.

And as virtually every patient will tell you, home is by far the best place they want to be.

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