

Q&A: Why arrhythmias are still detected too late (and what should change)

Arrhythmias often go undetected until patients present with more serious complications, despite having identifiable risk factors that signal risk earlier.¹ About 90% of U.S. adults meet the criteria for cardiovascular-kidney-metabolic (CKM) syndrome, a newly defined condition that reflects the combined impact of heart disease, kidney disease, type 2 diabetes, and obesity.² In practice, that overlap can make it harder to tell when a symptom actually signals an underlying arrhythmia. The traditional pathway for diagnosing arrhythmias often relies on referral from primary care to cardiology.³ Detection may happen later in the care pathway, even for patients who show clear signals earlier in primary care.

Advisory Board recently spoke with Brent Wright, DrPH, RN, MBA, who serves as the Vice President of Global Value, Access, and Population Health at iRhythm Technologies. He started his career as a PICU nurse and now focuses on how earlier detection can improve outcomes while lowering total cost of care. In this Q&A, he discusses where arrhythmia detection breaks down, why gaps persist across the care pathway, and what health systems can do to identify patients earlier.

How does your background in population health shape how you think about arrhythmia detection?

I tend to think about population health in two different ways. There are programs that focus primarily on collecting data and returning it to physicians, and there are programs that use the data to drive changes in care that improve outcomes. You still see that divide in health systems today, where some teams emphasize data collection and reporting, while others focus on implementing programs that actually move the needle.

Arrhythmias don't usually sit at the center of those programs. Most population health efforts are built around conditions like heart failure, diabetes, COPD, or chronic kidney disease. What we spend a lot of time doing is connecting arrhythmias to those conditions and showing that they aren't separate from them. Arrhythmias are part of the same risk profile, and they directly affect both outcomes and cost within populations that systems are already managing.

That perspective changes how you approach detection. Instead of looking for arrhythmias in isolation, you start looking for them within high-risk groups that are already being targeted. That is where we think there is a lot of opportunity to identify patients earlier.

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| Where are the biggest gaps in arrhythmia detection?

The biggest gap from a care setting perspective is in primary care. Primary care hasn't traditionally been involved in ambulatory cardiac monitoring, so what happens is a patient presents with symptoms and is referred to cardiology.³ That referral can take 6 to 18 weeks depending on the market, and patients don't always follow through.

From a population perspective, CKM syndrome patients are one of the most underdiagnosed groups. These patients have overlapping conditions like obesity, diabetes, and chronic kidney disease, and the symptoms of those conditions often look very similar to arrhythmias. Fatigue or dizziness might be attributed to diabetes or another condition instead of being investigated further.

It becomes even more complicated when you consider that diabetic patients are about 25% less likely to experience symptoms with atrial fibrillation.⁴ That means you have symptom overlap on one hand and, in some cases, limited symptom presentation on the other. Those two dynamics together make it much easier to miss the diagnosis.

| Why do arrhythmias demand more attention today?

The short answer is that the patient population is sicker. If you look at CKM syndrome, about 90% of U.S. adults have at least one risk factor.⁵ In that environment, arrhythmias are not just a cardiac issue. They have systemic effects. They can change perfusion, affect how well the heart is functioning, and worsen other conditions like chronic kidney disease or heart failure.⁶⁻⁸ As patient conditions could become more complex, arrhythmias become more consequential. Identifying them earlier may influence outcomes across multiple conditions, not just cardiovascular care.^{9,10}

| What is the financial impact of delayed or missed detection?

The largest cost drivers show up in the emergency department and inpatient setting, because that is where many of these patients ultimately get diagnosed with an arrhythmia.¹¹ When you compare early detection to late diagnosis, the cost difference is significant. A monitor might range from \$300 to \$400, while an inpatient hospitalization can range from \$20,000 to \$25,000.^{12,13} However, health systems are not always reimbursed for that full duration.¹⁴ What this creates is a situation where delayed diagnosis is not just more expensive but also more disruptive operationally. It can tie up inpatient capacity and contributes to the broader access challenges systems are already dealing with.

How should leaders think about the cost of detection versus the cost of inaction?

I don't think leaders always see the full cost of inaction. It is easy to look at a hospitalization and see the reimbursement associated with it, but that doesn't capture what happens after discharge or the downstream events that could have been prevented. If you take a step back, earlier detection almost always results in lower cost and better outcomes, which are key drivers of performance under risk-based payment models.^{10,15,16} With arrhythmias, identifying a patient earlier allows you to intervene sooner and reduce the likelihood of more serious events like stroke, myocardial infarction, or heart failure progression. That makes this not just a clinical decision, but a strategic one for the organization.

What operational barriers prevent earlier detection?

A lot of it comes down to access. Primary care and specialty care are both overburdened.¹⁷ When the average primary care visit is about 18 minutes, there is limited opportunity to go beyond the primary issue the patient came in for.¹⁸ In that setting, providers focus on the most immediate concern, which is understandable. The challenge is that it leaves less room to identify secondary risks like arrhythmias, especially when those symptoms overlap with other conditions. Addressing this likely requires creating a system that supports earlier identification in a way that fits within the realities of clinical practice.

What changes do health systems see when arrhythmia detection moves earlier in the care pathway?

When you move ambulatory cardiac monitoring earlier, you have fewer inappropriate referrals coming from primary care, and you have patients coming into cardiology with a known arrhythmia diagnosis. That allows cardiologists to work more at the top of their license and not spend their time doing differential diagnosis for anxiety or something else that may have driven that patient into cardiology in the first place.

I also think it allows primary care to work more at the top of its license. Primary care can start ruling things in or out without requiring specialty oversight for every single patient. If you look at our national data, about 36% of patients have what we consider a clinically actionable arrhythmia.¹⁹ If every patient with symptoms was sent to cardiology without that earlier step, that gives you an answer that about 64% of patients probably did not need to go to cardiology at all. The opportunity is really understanding your patient population at the primary care level, sending the right patients on to specialty care, and then moving them back into primary care when that makes sense, which lowers the cost across that total continuum.

What do leaders misunderstand about arrhythmia detection, and where are the biggest strategic gaps?

I don't think most health system leaders really have a strategy for arrhythmia detection today. If you look at conditions like diabetes or heart failure, there are programs built specifically around those populations. There are clear goals around lowering A1C, preventing exacerbations, or managing fluid overload. Arrhythmias, on the other hand, are often treated more like a byproduct without a true strategy around how to identify those patients earlier or which populations to go after.

To me, one of the clearest signs of that gap is in the guidelines. If you look across the major guidelines, they provide extensive guidance on treating atrial fibrillation, but far less guidance on when screening should occur.^{20,21} That tells you where the system sits today. We know what to do with patients once they are diagnosed, but much less attention has gone toward when we should be looking for arrhythmias in the first place. I think that is the longer process we are trying to support, which is helping organizations see that arrhythmias affect more than just arrhythmias themselves. They affect the patient's other comorbid conditions, their long-term outcomes, and the total cost of care.^{22,23}

If leaders want to improve arrhythmia detection over the next few years, what capabilities and support systems should they prioritize?

I think one of the biggest things they should be thinking about is clinical decision support, especially as AI keeps moving so quickly. The ability to search an entire EHR dataset in minutes and identify patients who are at risk is a big shift. I am a nurse, and I have done chart reviews before. They are painful. They take a long time, and they are not an efficient way to identify high-risk patients. I think AI has the potential to make clinical decision support much more meaningful by helping surface patients who should be prioritized for cardiac monitoring or who are not on the right therapy.

At the same time, I don't think AI should ever take the autonomy away from the physician. I don't want to go to a hospital and find out everything was decided by AI. It should be an assistive tool that improves clinical vigilance, not something that takes over. Beyond that, I think the most practical priority is supporting primary care and enabling primary care to do more. That could mean billing structures that support ambulatory cardiac monitoring, EHR pathways that make it easier to move patients through the system, or tools that help identify who should be monitored. The challenge is that primary care is already overloaded, so the answer is not just asking them to do more. It is giving them the support to do more without increasing burden.

What is the most important takeaway for health system leaders?

A missed or delayed diagnosis is incredibly expensive, both financially and to the patient. Monitoring patients to rule an arrhythmia in or out is relatively inexpensive. This is not a rare, high-cost test. We are talking about something that is pretty low-cost compared with what happens downstream if a patient is not diagnosed.

You can have a lot of non-diagnostic monitors and still be very cost effective if you prevent even one hospitalization. That is especially true in value-based care. Even at a 30% to 50% diagnostic yield, the economics can still work if you are reducing emergency department visits, hospitalizations, or major adverse cardiovascular events like stroke, myocardial infarction, or progression to heart failure.

I also think it's important that people understand this is not just a financial issue. An undiagnosed arrhythmia can create real disruption in a patient's life, and depending on the arrhythmia, it can lead to very severe outcomes. That is why I would call this low-hanging fruit for health systems and especially for value-based care organizations. It is a relatively inexpensive way to improve patient outcomes while also lowering long-term cost of care.

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