



AHA TRANSFORMATION TALKS

STRATEGIES FOR REIMAGINING HEALTH CARE

Leveraging Technology to Cut Heart-Attack Risks

Nothing kills more Americans than heart disease and stroke, according to the Centers for Disease Control and Prevention. More than 877,000 Americans die each year of these diseases.

The diseases also exact a heavy financial price on the nation's health system, costing \$216 billion per year, according to an American Heart Association report in *Circulation*, "Heart disease and stroke statistics — 2018 update" (Benjamin, E.J., Virani, S.S., Callaway, C.W., et al. 2018;137:e67–e492).



Identifying at-risk patients earlier

To help address this situation, some hospitals and health systems are reshaping their approaches to identify at-risk patients earlier and how they are diagnosed and treated. They leverage population health data and artificial intelligence (AI)-powered imaging technology to determine which patients will be at the greatest risk for having coronary artery disease, the most common form of heart disease.

Clinicians use noninvasive computed tomography (CT) angiography scans of the heart and data captured from software algorithms to review millions of annotated lab images and data from clinical trials to analyze the amount and type of plaque buildup in the heart. This information can then be used to refer patients to cardiologists as appropriate.

This more targeted approach allows providers to identify at-risk patients rapidly and, for the first time, enable personalized and preventive treatment. This has the potential to improve clinical outcomes and yield significant cost savings while enabling health systems to identify underserved populations to address care disparities.

AHA TRANSFORMATION TALKS

STRATEGIES FOR REIMAGINING HEALTH CARE

3 emerging standards of care

The following components are vital to emerging standards of care.



Precision medicine

By analyzing the results of a coronary CT angiography (CCTA), care teams can better determine a patient's heart attack risk and develop a preventive care plan such as lifestyle changes or a prescription for FDA-approved statin therapy to reduce heart attack risk.



CCTA screening

Screening for suspected cardiovascular disease using CCTA will identify patients who are at risk of heart attack based on its true cause, atherosclerosis, not based on symptoms, surrogates or sequelae.



Actionable Insights

As the field evolves, it's critical for both patients and noncardiac physicians to understand and interpret what would otherwise be a complicated image. CCTA screens must be accompanied by clear insights into how much plaque has accumulated and whether it can be treated with medication to reduce its risk by conversion to more stable plaque.

Efforts to identify actual and potential disease are also critical to efforts to improve community wellness and education to prevent more serious and expensive complications in the future. Documenting early detection and intervention efforts also can help us move toward payment models that reward improving population health and wellness.

To help your organization transform, visit the AHA Transformation Talks [resources page](#).

Discussion Questions:

1. **Why is heart disease among the most difficult diseases for hospitals and health systems to detect? How are they looking at this issue when managing population health?**
2. **How is technology like AI and CCTA being used to advance the standard of care for identifying and treating cardiovascular disease?**
3. **How does your organization use AI and CCTA to diagnose and manage patient care? What results are you seeing?**