

Prescribing of key heart failure medications improved with tailored digital alerts

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Doctors who received customized electronic health record (EHR) alerts for specific patients were 2.5 times as likely to prescribe mineralocorticoid receptor antagonists (MRAs), a guideline-

recommended class of heart failure medication, compared with doctors who did not receive such alerts, according to research being presented at the American College of Cardiology's Annual Scientific Session Together With the World Congress of Cardiology.

MRAs are effective in slowing the progression of heart failure and are recommended for most patients who have heart failure with reduced [ejection fraction](#) (HFrEF, also known as systolic heart failure), a condition in which the muscle of the heart's [left ventricle](#) becomes too weak to pump blood effectively. These drugs, which include spironolactone and eplerenone, block a hormone that affects how the body manages water and salts. However, previous studies suggest that up to two-thirds of patients who could benefit from MRAs are not prescribed these drugs and that underutilization of recommended medications is a major contributor to [heart failure](#) hospitalizations.

The new findings suggest that carefully tailored alerts or messages delivered via EHR systems can be an effective way to increase the use of recommended medications, according to researchers.

"This shows the power of electronic tools and reminders to dramatically improve care across a wide population of patients," said Amrita Mukhopadhyay, MD, cardiologist and clinical investigator at NYU Grossman School of Medicine in New York City and the study's lead author. "These tools have great potential to improve prescribing and improve care, especially where we know that care gaps exist."

The study assessed two separate tools designed to encourage doctors to prescribe MRAs for patients with HFrEF. The first was an alert delivered via the EHR system during a patient visit. This alert provided key data points necessary for prescribing MRA medications for the patient the clinician was currently seeing. The second tool was a short monthly inbox message encouraging doctors to review the records of

multiple MRA-eligible patients at once.

Researchers randomly divided 180 cardiologists within a large health system into three groups of 60. One group was assigned to receive EHR alerts, another was assigned to receive monthly inbox messages and the rest did not receive either intervention. Over a period of six months, participating doctors saw 2,100 patients who were eligible for MRAs but had not previously been prescribed an MRA drug.

By the end of the study, nearly 30% of patients seen by doctors who received the EHR alert, nearly 16% of those seen by doctors receiving the inbox messages and nearly 12% of those seen by doctors who received neither intervention had been prescribed MRA therapy. The results showed that receiving the EHR alert increased the likelihood of prescribing MRA therapy by 2.5 times, while receiving the inbox message increased that likelihood by 1.5 times, compared with receiving no intervention.

The researchers attributed the success of the EHR alerts to the fact that they were carefully targeted to the specific situations in which they would be most useful. They were only sent to cardiologists—the doctors most likely to prescribe MRAs—and they only appeared during visits with patients who were eligible for MRA therapy, excluding patients whose health history or other medications made them unlikely to benefit from MRAs.

Before the study, researchers also performed qualitative testing and interviews to ensure the alerts and messages were communicated clearly and provided only relevant, necessary information to avoid confusion or "alert fatigue" in which people begin ignoring alerts that are irrelevant or too frequent.

"We designed this alert to be very selective—people are only sent this

alert regarding patients who could really benefit from the therapy," Mukhopadhyay said. "Because there are also drawbacks of alerts or messages, it is really important to continue to do studies and look at what is effective for a specific scenario."

Since most EHRs have some sort of alert functionality, Mukhopadhyay said this type of intervention should be feasible for most health care systems to implement, although the specific format and optimal deployment strategy may vary from system to system.

One caveat is that the study only tracked whether MRAs were prescribed, not whether patients filled the prescriptions or took the medications. However, researchers said that increasing prescribing practices to reflect medical guidelines is a critical first step toward increasing the adoption of these therapies.

The researchers plan to continue studying the sustainability of the alert over time.

This study was simultaneously published online in the *Journal of the American College of Cardiology* at the time of presentation.

More information: Mukhopadhyay presented the study, "Building Electronic Tools to Enhance and Reinforce Cardiovascular Recommendations For Heart Failure (BETTER CARE-HF): A Pragmatic, Cluster-randomized Trial Comparing Two Ambulatory Clinical Decision Support Tools," on Sunday, March 5, in the Great Hall.

Provided by American College of Cardiology

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