

# Efforts to curb hospital readmissions take center stage

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Strategies aimed at reducing the number of patients with heart failure and other cardiovascular conditions who find themselves back in the hospital after discharge were identified in six new studies presented at the American College of Cardiology's 63rd Annual Scientific Session.

One out of five Medicare [patients](#) with [heart failure](#) is readmitted to the hospital within just one month of discharge, a fact that is not only bad news for patients who would most likely prefer to avoid another hospital stay, but it also places intense economic pressures on hospitals and the health care system as a whole, especially amid new federally imposed reimbursement cuts related to readmissions.

"It is important to patients that they be able to remain at home after they are discharged," said Mary Norine Walsh, M.D., FACC, medical director of the Heart Failure and Cardiac Transplant Program at St. Vincent's Heart Center of Indiana and chair of the American College of Cardiology Care Transition Leadership Group. "But the real driving force for hospitals to reduce readmissions has come with the Affordable Care Act ruling that financially penalizes hospitals for unnecessary readmissions within 30 days after hospital discharge for key diagnoses, including heart failure."

Hospitals are projected to lose billions in reimbursement dollars for higher than average 30-day all-cause readmissions. Heart failure affects 6.5 million American adults and it is on the rise. It is the leading cause of hospitalization among people aged 65 and older.

The American College of Cardiology has been championing quality improvement efforts to help clinicians and hospitals lower readmissions rates through participation in its Hospital to Home Quality Initiative and Patient Navigator Program. For more and more hospitals and health systems, strategies that help prevent readmissions for any cause are a needed support tool. Research has shown that patient education about heart failure, including what to do when faced with worsening symptoms, and early follow-up (within seven days of discharge) work.

"Finding innovative ways to identify patients who are more likely to be readmitted post-discharge – while they are still under our care in the hospital – can help clinicians deliver more targeted strategies for these high risk patients," Walsh said.

### **Six studies were highlighted in a press conference moderated by Walsh today at the ACC's 63rd Annual Scientific Session:**

#### **Starting Patients on an ACE inhibitor or ARB Prior to Discharge Cuts 30-Day Readmissions**

In a retrospective study of 1,348 hospitalized Medicare beneficiaries with [acute heart failure](#) and an ejection fraction of less than 45 percent, researchers at the University of Alabama at Birmingham found that patients who were started on an angiotensin converting enzyme inhibitor (ACE inhibitor) or angiotensin receptor blockers (ARB) prior to discharge had significantly lower 30-day all-cause readmission, 30-day heart failure readmission and 30-day all-cause mortality compared with those who were not offered these drugs.

24 percent of patients who did not receive these drugs were readmitted within 30 days of hospital discharge for any cause compared with 18

percent of those who were started on these medications. The rate of 30-day heart failure readmissions was nearly halved – with 14 percent of those who did not receive an ACE inhibitor or ARB being readmitted compared to just 7 percent of those who did. Senior study author Ali Ahmed, M.D., M.P.H., said the results demonstrate that the use of evidence-based guideline-recommended therapy for patients without contraindications could significantly lower the risk of 30-day all-cause readmissions, "an important contemporary outcome with financial implications for hospitals."

## **Study of 2.5 Million Identifies Patients Most Likely to Return to the Hospital**

Researchers at Western Michigan School of Medicine identified more than 2.5 million admissions for chronic heart failure at hospitals nationwide with a total 30-day readmission rate of nearly 25 percent. The analysis offers new insight into demographic [risk factors](#) that may make certain patients more likely to be readmitted to the hospital within 30 days of discharge. Young males and patients covered under Medicaid were associated with higher readmission rates with heart failure as a primary cause, while older patients and women were associated with higher readmission rates from other causes. Researchers conclude that strategies to reduce readmissions should focus on [chronic heart failure](#) in patients who are young, male and covered by Medicaid and on managing other risk factors, such as infection, kidney injury and other issues, for older patients and women.

Lead study author Sourabh Aggarwal, M.D., said this is the largest study to date looking at heart failure readmissions for specific susceptible populations. Researchers were unable to account for the potential contribution of other comorbidities to readmission.

## **Automated Tool Predicts Individual's 30-Day Risk of Readmission**

A risk stratification formula that uses information already collected as part of patients' electronic medical record can predict the risk of 30-day readmissions and may allow for earlier intervention for high-risk patients, according to researchers.

The tool, called the Providence Vulnerability Index, was developed and validated by researchers at Providence Health and Services, a large health system operating in five western states. Researchers studied records of 30,252 patients with heart failure admitted to seven hospitals across four states between October 2012 and September 2013.

The index included and assigned points to personal variables such as medical history including other comorbidities, number of hospitalizations within the past 90 days, substance abuse and psychiatric disorders. The index ranges from a score of one (very low risk) to six (very high risk), which correlates with a 4 to 39 percent predicted risk of 30-day readmission.

Lead author Alicia M. Ross, M.D., said "we believe that the use of this model will allow us to provide early interventions prior to discharge, tailored to a patient's risk for readmission." She also said this tool is complementary to others, explaining its strength is its use of data obtained at admission in a standard EMR and its ability to allow clinicians to easily identify those variables that are driving an individual's risk.

## **Simple Test to Screen for Cognitive Impairment May Also Predict 30-Day Readmission and Death**

Patients who performed poorly on a simple, three-minute memory and executive functioning test had worse post-discharge outcomes than those who performed well. Heart failure patients who were cognitively impaired were also two times more likely to be rehospitalized or die. This is the first study to evaluate the "Mini-Cog" test, which involves asking a patient to memorize three unrelated words, draw a clock as a distractor and recall the three words. The test is scored from zero to five based on a composite performance of these tasks, with a score of less than or equal to two indicating a high likelihood of cognitive impairment.

In this single-center prospective study of 720 patients, researchers at Cleveland Clinic found that nearly one in four patients hospitalized for heart failure who completed the Mini-Cog assessment had a high-likelihood of cognitive impairment. Patients with a high likelihood of cognitive impairment had a higher rate of 30-day all-cause readmissions or death compared with those with a low likelihood of cognitive impairment (47 percent compared to 22 percent).

Data showed that the destination of discharge modified the relation between patients' performance on the Mini-Cog and outcomes. Those who were discharged to a facility like a nursing home had a longer time to readmission or death compared with patients who returned home. Lead author Eiran Gorodeski, M.D., said this may mean that "routine interventions such as heart failure education may be less relevant in patients with cognitive impairment, while decisions regarding type of community-based care delivery may be more important."

Earlier studies have shown cognitive deficits are common in patients with heart failure, and that these patients have poorer adherence to treatment, are less able to perform activities of daily living and have worse self-care overall. While published guidelines recommend screening for [cognitive impairment](#) in this population, Gorodeski said

they do not identify how. "We believe that practitioners caring for patients hospitalized with heart failure should incorporate the Mini-Cog testing into their routine clinical care, especially prior to hospital discharge."

## **Smartphone-Based App Helps Patients Stay Out of the Hospital Post-PCI**

Patients who used an online/smartphone-based program to track and participate in their recovery in addition to participating in cardiac rehabilitation had greater improvements in cardiovascular risk factors and were less likely to be readmitted to the hospital within 90 days of discharge compared with those who underwent cardiac rehab alone. In fact, patients using the app were 40 percent less likely to be readmitted to the hospital – with only 20 percent returning to the hospital compared to 60 percent of those in the control group. Patients using the app-based intervention also had significantly greater reductions in body weight and blood pressure compared to controls.

In this small study, 44 patients at Mayo Clinic who were hospitalized after having a stent placed following a heart attack were divided into two groups – one which received cardiac rehab alone and the other cardiac rehab plus a virtual personal health assistant. The 25 patients using the online program were asked to monitor and record their own blood pressure, weight, cholesterol and blood sugar levels, minutes of physical activity as well as dietary habits at baseline and daily throughout the study. They were also encouraged to undertake certain educational tasks, which instructed them on guideline-based lifestyle changes to support their heart health. Changes in risk factors and re-hospitalizations/visits to the emergency department were assessed after three months.

Senior author Amir Lerman, M.D., said the data provide evidence that

this program can augment usual cardiac rehabilitation to improve risk factors and reduce the health care burden of repeat cardiovascular events. Additional research will look at the means by which this intervention was successful in reducing rehospitalizations, whether through improved surrogate markers of cardiovascular disease, additional education, increased connectivity to the health system or other factors. Patients received no external or monetary award for using the self-directed online program.

## **Performance Improvement Initiative Boosts Timely Follow Up After Discharge**

Early follow-up after hospitalization for heart failure – within seven days of discharge – has been linked to a lower likelihood of being readmitted. The trick is getting patients to schedule and keep these outpatient appointments. A new study found that implementing a coordinated, heart failure performance improvement initiative in an integrated delivery system may significantly improve the rate of scheduling and following through with these post-discharge visits.

At Kaiser Permanente of Georgia, 273 [heart failure patients](#) who were discharged after this program was formally rolled out were compared against 224 patients who received hospital care before the program was instituted. The post-initiative group was 65 percent more likely than the pre-initiative group to have a scheduled follow-up appointment within seven days (78.4 percent compared to 47.5 percent) and 34 percent more likely within 14 days (94.3 percent compared to 70.2 percent) of discharge. Similarly, there was an increase in the rate of appointments completed within seven and 14 days – 33.5 percent of the pre-initiative group were seen within seven days compared with 60.8 percent of the post-initiative group; only half of patients in the pre-initiative group were seen within 14 days compared with 80.6 percent of those after the



performance improvement effort was in place.

This initiative engaged inpatient and outpatient care delivery teams across this integrated health system. A heart failure discharge planner was created, which captured patient information, diagnosis, core measures including medications and ejection fraction, inpatient education, discharge weight, patient barriers and lastly the outpatient follow-up appointment within seven days.

"To improve the outcome measure of 30-day all-cause readmission rates post-[hospital discharge](#), we must first improve the various processes affecting the care of the patient," said Ali Rahimi, M.D., lead author of the study. "This includes a coordinated multi-disciplinary team effort along the continuum of inpatient to outpatient care. An integrated health care system may allow for more effective implementation of such performance improvement initiatives."

Provided by American College of Cardiology

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