

Tool to engage patients with chest pain in care decisions shows benefits

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Patients visiting a hospital emergency department with chest pain who engaged with their physician in shared decision-making using a tool called Chest Pain Choice showed improved knowledge of their health status and follow-up care options compared with patients who received standard counseling from a physician without the use of this decision aid, according to research presented at the American College of Cardiology's 65th Annual Scientific Session.

Chest Pain Choice is the first patient-oriented tool designed to facilitate shared decision-making between physicians and patients in the context of [chest pain](#), a complaint that accounts for about eight million [emergency department](#) visits and 20 percent of all hospital admissions each year in the United States. In addition to improving patient knowledge, the study's primary outcome, the decision aid substantially improved [patient engagement](#) and reduced the use of stress tests with no adverse effects on safety.

"From a human rights perspective, patients have made it clear that one way they interpret the idea of 'care with dignity' is being involved in their health care decisions," said Erik Hess, M.D., an emergency medicine physician and health services researcher at Mayo Clinic and the study's lead author. "This trial shows that doing so can have a beneficial effect on patient knowledge, as well as other outcomes such as patient engagement and, sometimes, appropriate utilization of testing. I would recommend that this intervention be adopted more widely."

The trial, which involved 899 patients visiting six emergency departments in five states, expanded upon a promising earlier pilot study conducted at Mayo Clinic, where the Chest Pain Choice tool was developed. The tool consists of a one-page printable information sheet that provides user-friendly descriptions and graphics depicting a patient's specific risk profile—for example, a pictogram to help patients visualize what it means to have a 2 percent risk of having a heart attack in the next 45 days—and their health management options. Based on a patient's initial test results and medical history, health care providers select the appropriate information sheet for a given patient and then use it to facilitate a dialogue with the patient and work together to determine the appropriate next steps.

"The tool itself doesn't recommend a specific management decision—it just makes transparent what the options are," Hess said. "By setting out all the options, the tool enables patients to participate in their care decisions to the degree that they wish."

When a patient visits the emergency department complaining of chest pain, a blood test can quickly determine whether a heart attack is underway. But in patients who are not experiencing a heart attack—which accounts for more than 90 percent of those who come to the emergency department with chest pain—further testing may be needed to determine whether the patient faces an increased risk of a [heart attack](#) or other serious heart problem in the near future. Chest Pain Choice was designed to help these patients.

The appropriate follow-up care for each patient depends on risk factors such as health conditions, family history and initial test results. Higher-risk patients may benefit from staying at the hospital overnight and undergoing intensive cardiovascular testing, while lower-risk patients may need to simply follow up with their primary care physicians for ongoing health management.

In part, the Chest Pain Choice intervention was developed as a way to reduce unnecessary testing and hospital admissions.

"Even low-risk patients are often admitted to the hospital and given more advanced cardiac testing," Hess said. "Over-testing of low-risk patients frequently results in false positive test results, which leads to unnecessary intensive and invasive testing, such as coronary angiography and repeat stress testing. This over-testing has been estimated to waste \$3-10 billion annually."

In the trial, half of patients were randomly assigned to receive a physician discussion facilitated with Chest Pain Choice, while the other half received a standard physician consultation. Patients receiving Chest Pain Choice showed increased knowledge about their risk and options, answering 53 percent of questions on a questionnaire correctly, compared with 44.6 percent in the control arm. Patients receiving the decision aid were about twice as engaged in the decision-making process, as evaluated by an objective analysis of videotaped patient-physician interactions.

Patients were also asked to reflect on the experience of discussing their care with their physician and the degree to which they felt conflicted or uninformed about their options. Patients receiving Chest Pain Choice reported significantly better experiences in both measures, with 68.9 percent stating they would recommend the way that they and their physician had shared information and 43.6 percent feeling conflicted, compared with 61.2 percent and 46.4 percent, respectively, in the control arm.

"What we heard from our patients and patient advisory group when designing the tool is what they fear the most is not knowing what's going on or why they're getting various tests," Hess said. "When that happens, your imagination often blows the problem out of proportion and

increases fear and anxiety. I think this tool helps patients better connect with their physician and calibrates their degree of anxiety to their objective level of risk—and in this way they are more knowledgeable of what's going on and can feel more in control."

Chest Pain Choice was associated with no major adverse cardiovascular events and led to a significantly lower proportion of patients receiving a stress test, performed in 37.4 percent of patients receiving the decision aid and 46.3 percent in the control arm, suggesting the intervention was successful in reducing unnecessary testing.

When physicians engaged with their [patients](#) in shared decision-making using Chest Pain Choice, the length of the consultation was 1.3 minutes longer on average. A limitation of the trial is that it did not assess whether increased consultation length alone had benefits apart from the use of the decision tool itself. Further research would be needed to address that question.

Provided by American College of Cardiology

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