

Clinical decision support system reduces cardiovascular risk in patients with serious mental illness

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The study, supported through a cooperative agreement with the National Institutes of Health, appears in the journal *JAMA Network Open*.

"This landmark study is one of the first randomized controlled trials to improve cardiovascular health in a large U.S. population of outpatients with SMI. Primary care practices serving patients with SMI now have a practical tool for addressing a major cause of these patients' premature mortality," said Susan T. Azrin, Ph.D., chief of the Premature Mortality in SMI Research Program at the National Institute of Mental Health.

Cardiovascular disease is a leading cause of death for people diagnosed with SMI—a collective term referring to schizophrenia, schizoaffective disorder, and bipolar disorder. The higher rate of [cardiovascular disease](#) in people with SMI is due in part to higher rates of smoking, obesity, diabetes, and dyslipidemia. In addition, medications sometimes used to treat SMI can increase [cardiometabolic risk](#) because of their effect on weight, insulin resistance, and lipid metabolism.

In this study, researchers led by Rebecca Rossom, M.D., a senior research investigator at HealthPartners Institute in Minneapolis, examined whether using a clinical decision support system to help provide individualized information about cardiovascular [risk](#) could reduce this risk and improve cardiovascular health in [adult patients](#) with SMI.

The study included 76 primary care clinics that were part of three health care systems that provided care to patients in Minnesota, North Dakota, and Wisconsin. Health care sites were randomly assigned to an intervention (42 clinics) or a control (34 clinics) group. Participants at the control and intervention sites included nearly 9,000 patients between the ages of 18 and 75 who were diagnosed with SMI and had at least one cardiovascular risk factor not in a healthy goal range. Clinics in the intervention group used a clinical decision support system to prompt their [health](#) care workers to print out and distribute shared decision-making handouts for patients and clinicians that included individualized information about patients' cardiovascular risk and possible treatment

considerations.

"The patient and clinician printouts were meant to become shared decision-making tools to help patients understand their risks and help clinicians quickly elicit patient preferences for addressing those risks," said Dr. Rossom. "We designed the shared decision-making tools to minimize any disruptions in clinic workflow and give primary care clinicians an overview of a patient's cardiovascular risk and recommended actions at a glance."

The researchers assessed modifiable cardiovascular risk factors during the 12 months following the initial patient visit. They found that patients at intervention sites had an overall 4% lower increase in modifiable cardiovascular risk compared with patients at the control sites. The researchers did not find significant impacts on any single modifiable risk factor. Instead, they found that a combination of changes across risk factors seemed to drive the reduction in total risk.

"While the difference in modifiable [cardiovascular risk](#) due to the intervention may seem small at 4%, it is clinically significant and translates to potentially preventing three heart attacks or strokes for every 1,000 patients with SMI," said Dr. Rossom. "In my medical group alone, we have over 30,000 patients with SMI, so we could prevent as many as 90 heart attacks or strokes with this intervention. On top of that, we do not know the benefits that could be gained from continuing this intervention for longer than the 12 months that we studied it."

Changes in risk factors were most pronounced for those with bipolar disorder, followed by those with schizoaffective disorder, and then those with schizophrenia. While the intervention worked equally well for men and women, it was more effective for younger and middle-aged patients (those 18–29 and 50–59). The intervention was found to benefit patients self-identifying as either Black or white, but not in patients identifying

as Asian, Native American, Hispanic, or those of other/unknown race.

The findings suggest the use of a low-burden clinical decision support system to prompt the use of shared decision-making tools, such as the handouts used in this study, may result in treatment and lifestyle changes that have larger impacts on long-term [cardiovascular health](#) in people with SMI.

More information: Rebecca C. Rossom et al, Effect of Clinical Decision Support on Cardiovascular Risk Among Adults With Bipolar Disorder, Schizoaffective Disorder, or Schizophrenia: A Cluster Randomized Clinical Trial, *JAMA Netw Open* (2022). [DOI: 10.1001/jamanetworkopen.2022.0202](#)

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