SCIENCE-IN-BRIEF

TURNING SCIENCE INTO ACTION

Individualized Risk Messaging for Cardiovascular Disease Prevention

The following is a synopsis of "Electronic Health Record-Based Patient Identification and Individualized Mailed Outreach for Primary Cardiovascular Disease Prevention: A Cluster Randomized Trial," published online ahead of print in the *Journal of General Internal Medicine.*

What is already known on this topic?

Cardiovascular disease (CVD) is the leading cause of death among adults in the United States. Having high cholesterol, particularly high levels of low-density lipoprotein (LDL) cholesterol, is a major risk factor for CVD. LDL cholesterol—commonly known as "bad" cholesterol—is often treated with statins, which are medications that lower cholesterol.

Evaluating patients' risk for CVD helps determine which individuals may benefit from preventive treatments such as statins. However, because CVD risk assessment is not often performed in a primary care setting, some patients at high risk for CVD may not receive comprehensive CVD preventive care. Some evidence shows that identifying candidates for risk reducing interventions by calculating CVD risk may lead to more treatment by physicians and may increase patients' intent to begin treatment.

What is added by this document?

Using electronic health records (EHRs) from primary care physicians, the researchers identified patients who had increased CVD risk according to the Framingham Risk Score (an estimate of 10-year CVD risk). Patients in the study also had unhealthy LDL cholesterol levels and were not taking statins. Patients in the intervention group received individualized risk reduction messages in the mail. These messages used written and graphic formats to present the estimated risk reduction that a patient could achieve through treatment with statins. Patients with uncontrolled high blood pressure or those who smoked also received information about the benefits of modifying those risk factors for CVD. The messages encouraged patients to discuss risk-lowering options with their primary care physicians. The control group received standard care and no additional risk reduction information.

The researchers found that patients in the intervention group were twice as likely to receive a statin prescription (11.9% vs. 6.0%) during the 9-month study period. However, these patients did not achieve the primary intended outcome during that time frame: repeated measurements of LDL cholesterol levels at least 30 mg/dL below baseline. After 18 months, the intervention group patients did show a significant decrease in LDL cholesterol levels compared to the control group.

What are the applications for these findings?

This study shows that an individualized messaging intervention can be applied to an entire clinical population by identifying at-risk patients through EHRs and employing risk messaging designed to:

- Increase a patient's sense of susceptibility to CVD;
- Provide information from a trusted source (i.e., primary care physician) about health behaviors (e.g., taking medication) that a patient can adopt to lower CVD risk; and
- Promote the patient's belief that taking action to lower risk is feasible (i.e., increased self-efficacy).

What are the implications for public health practice?

Low-cost efforts—like this one—that develop individualized CVD risk messages derived from EHR data and disseminate them to at-risk patients can result in more prescriptions for statins and other cholesterol medications. Future interventions should consider placing more emphasis on CVD risk over a longer time period (as opposed to the 10-year Framingham Risk Score); combining CVD risk reduction with other physician-directed interventions, such as reminders, performance audits and feedback, or financial incentives; and providing patients with repeated CVD risk assessments and subsequent individualized risk messages and treatment recommendations..

Resources

Centers for Disease Control and Prevention
Fast Stats: Leading Causes of Death
www.cdc.gov/nchs/fastats/lcod.htm

High Cholesterol: Understanding Your Risks
www.cdc.gov/cholesterol

American Heart Association
Cholesterol
www.heart.org/HEARTORG/Conditions/Cholesterol/Cholesterol_UCM_001089_SubHomePage.jsp

Framingham Heart Study
Risk Score Profiles
www.framinghamheartstudy.org/risk/index.html

Citation

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