Improved management of patients with high LDL-C through electronic health record-directed algorithms for guideline-concordant high-intensity statin prescribing

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Despite their effectiveness in reducing low-density lipoprotein-cholesterol (LDL-C) and cardiovascular disease risk, while also being recommended as treatment by national cholesterol guidelines, high-intensity statins are underutilized among adults with LDL-C ≥ 190 mg/dL. The Kaiser Permanente SureNet program uses electronic surveillance to identify patients with gaps in care related to health screening and treatments, including statin prescribing. Kaiser Permanente Southern California (KPSC), an integrated healthcare delivery system with over 4.8 million members, implemented a safety initiative in April 2019. That initiative, the High LDL-C Statin Start SureNet program, uses algorithms to scan electronic health records in order to identify adults with a recent LDL-C lab result ≥190 mg/dL and no evidence of any statin fill within the prior 2-6 months. High-intensity statin orders and lipid panel testing are automatically generated for primary care provider approval. Care managers then alert patients' primary care providers of pending orders for their approval. Following approval, letters are sent to patients notifying them to retrieve their statin medication and to complete a follow-up lab.

In collaboration with leadership from the KPSC SureNet program, including clinical laboratory medicine, pharmacy, cholesterol/CVD risk management clinical leaders, and scientists in the Department of Research & Evaluation, a pre/post study was conducted to determine if the SureNet program improved statin initiation and lab completions. Implementation of the SureNet program improved the receipt of high-intensity statin orders by 36%, while also increasing the likelihood that patients would fill the statin orders (32% relative increase in prescription pick-up). Importantly, patients were also more likely to complete follow-up cholesterol testing (41% relative improvement), and 21% more likely to lower their LDL-C. Noteworthy is that clinicians also found the program was beneficial, while not substantially increasing their workload, even suggesting to increase education/awareness of the program to improve impact. Finally, patient surveys found having electronic outreach about medications and labs was useful and suggested increasing the frequency of reminders to improve effectiveness.

Overall, the SureNet program was able to improve prescription orders, fills, subsequent laboratory follow-up, and lower LDL-C. Optimizing both physician adherence to treatment guidelines and patient adherence to the program can successfully lower LDL-C levels, improving wellness.

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