

Patient and Physician Perceptions of a Hypercholesterolemia Safety-Net Program

Teresa N. Harrison, SM; Matt Zhou, BS; Hui Zhou, PhD, MS; Hananeh Derakhshan, PhD; Mona Zia, MPH; Michael H. Kanter, MD; Ronald D. Scott, MD; Tracy M. Imley, MD; Mark A. Sanders, MD; Royann Timmins, RN; Kristi Reynolds, PhD, MPH; and Matthew T. Mefford, PhD

ABSTRACT

Objectives: To understand the perceptions of patients and primary care physicians as well as barriers to and facilitators of engaging with a safety-net program for patients with hypercholesterolemia.

Study Design: A cross-sectional telephone survey of patients and qualitative interviews with PCPs.

Methods: Patients' reasons for adherence or nonadherence to statins and completion of laboratory tests and their perceptions of the safety-net program were ascertained. PCPs were asked to describe their familiarity with the safety-net program and perceived patient barriers to filling a new statin prescription and completing laboratory tests.

Results: Among 59 participating patients, 86% did and 14% did not fill their statin. Patients reported statin adherence because their doctor prescribed it (100%), to lower cholesterol (94%), and to prevent a heart attack/stroke (51%). Reasons for nonadherence included wanting to try lifestyle modification (63%), general medication concerns (50%), and fear of adverse events (38%). Among patients filling their prescription, 94% completed a follow-up lipid panel. Among 14 PCPs interviewed, 8 were aware of the safety-net program. PCPs cited in-basket volume and lack of an automated reminder system as common barriers to following up with patients with high low-density lipoprotein cholesterol levels. PCPs perceived (1) patients' fear of statins and (2) forgetfulness as the main reasons for not filling their prescriptions and not completing lipid panels, respectively. PCPs suggested that more frequent patient and provider reminders could improve prescription fills and laboratory test completions.

Conclusions: Interventions focused on improving patients' knowledge of statins and educating PCPs about outreach programs may facilitate patient-provider communication and improve statin adherence.

ELEVATED LOW-DENSITY lipoprotein cholesterol (LDL-C) is a primary cause of atherosclerotic cardiovascular disease (ASCVD).¹ The prevalence of ASCVD among adults 21 years and older in the US was estimated to be 10% in 2019, with another 3% of adults at very high risk of ASCVD.² Adults at high risk of ASCVD include those with severe hypercholesterolemia (ie, LDL-C \geq 190 mg/dL),^{3,4} which is associated with premature outcomes such as acute myocardial infarction.⁵ Statins have been shown to be effective at lowering LDL-C and reducing risk of ASCVD, as evidenced by results of several large randomized clinical trials.^{6,7} The American College of Cardiology/American Heart Association guideline for managing cholesterol recommends high-intensity statins for patients with LDL-C of at least 190 mg/dL.¹ However, high-intensity statins in particular have been greatly underutilized for patients with ASCVD and severe hypercholesterolemia in real-world clinical practice.⁸⁻¹¹

In April 2019, Kaiser Permanente Southern California (KPSC) implemented a patient outreach initiative as part of the KPSC SureNet Complete Care Support Program,¹² which facilitates orders for high-intensity statin prescriptions and lipid panels for adults with an LDL-C of at least 190 mg/dL with the goal of lowering their cholesterol levels.¹³ Our prior study evaluating the impact of this program found that high-intensity statin order rates improved modestly, with larger relative increases observed in patient prescription fills and laboratory test completions after compared with before program implementation.¹³ The objective of the current study was to assess perceptions among patients and primary care physicians (PCPs) of the KPSC High LDL-C Statin Start SureNet program as well as barriers to and facilitators of engagement with the program.

METHODS

SURENET PROGRAM

The KPSC High LDL-C Statin Start SureNet program uses algorithms to scan electronic health records (EHRs) on a monthly basis to identify adults with a recent LDL-C laboratory result of at least 190 mg/dL and no evidence of a statin fill within the prior 6 months. Care managers send messages through EHRs to patients' PCPs requesting approval of a pending high-intensity

statin order (rosuvastatin 20 mg or atorvastatin 40 mg) and future lipid panel. After orders are approved, letters are sent notifying patients to fill their statin medication and complete their follow-up lipid panel.

STUDY SETTING

The source of the patient population included adults enrolled in KPSC, an integrated health care delivery system with more than 4.6 million members across Southern California. KPSC membership is diverse and representative of the region.^{14,15} Members' receipt of outpatient, inpatient, laboratory, and pharmacy services is tracked in an EHR system. Services performed outside KPSC are systematically tracked through submitted billing claims.

PATIENT SURVEYS

To avoid potential recall bias, 412 patients who were enrolled in the SureNet program between November 2020 and February 2022 were sampled. The 37 patients who did not fill their statin prescription were matched 10:1 to 375 patients who did fill their prescription. We excluded 54 patients whose preferred language was not English because the surveys were not conducted in other languages, and 35 who were not KPSC members on the date these exclusion criteria were applied. The final sample included 323 patients: 27 who did not fill and 296 who did fill their statin prescription. The goal was to complete 50 surveys.

During July and August 2022, trained research staff contacted all patients who did not fill their statin prescription and then contacted the remaining eligible patients on a rolling basis, with a maximum of 4 call attempts per patient over a 2-week period. Research staff used a telephone survey to ascertain reasons for primary adherence or nonadherence to statins, reasons for laboratory test completion or noncompletion, and perceptions of the SureNet program (**eAppendix 1** [eAppendices available at ajmc.com]). Interviewers read a series of statements derived from the published literature^{16,17} and asked patients to indicate whether each response applied to them (yes/no). In addition, patients reported their level of understanding written medical information and reading of prescription instructions, ranging from "very easy" to "very difficult." Open-ended responses were recorded verbatim. Patient demographic characteristics and LDL-C measurements were obtained from EHRs using the date closest to the outreach letter.

PCP INTERVIEWS

Providers who approved prescription and laboratory orders for at least 1 patient in the SureNet program from 2021 to 2022 were eligible. We had an initial goal of

Among the PCPs interviewed, most were familiar with the goal of the SureNet program; however, they lacked detailed knowledge about it. Physicians most often perceived that (1) fear of statins driven by a lack of understanding about the benefits and risks and (2) forgetfulness were barriers to patients filling their statin prescriptions and completing follow-up laboratory tests, respectively. Although PCPs also noted cost as a patient barrier to initiating a high-intensity statin, this was not a barrier mentioned by patients, which suggests a potential disconnect between the 2 groups about the affordability of this medication class.

completing 30 interviews or stopping recruitment at the point of data saturation.¹⁸

Research staff electronically sent letters of invitation to a random sample of 140 eligible PCPs, with a reminder email sent once a week for 3 weeks to those who did not respond. The interview guide was developed in part based on our previous work assessing provider and patient factors contributing to care gaps.¹⁹ Interviewers asked PCPs to describe their familiarity with the SureNet program, perceived patient barriers to filling a new statin prescription and completing follow-up laboratory tests, and challenges and suggested improvements to treating patients with very high LDL-C (**eAppendix 2**). Interviews were conducted via telephone, digitally recorded, and transcribed.

ANALYSIS

For patient surveys, means and SDs, or proportions, were calculated for demographic characteristics, LDL-C, and redemption of statin prescriptions. Descriptive analyses were conducted by reporting survey response frequencies.

For PCP interviews, rapid analysis was used to code responses and develop themes.²⁰ The primary coder (T.N.H.) created a priori structural codes and developed a codebook for the questions from the PCP interview guide. After initial structural codes were developed, 3 transcripts were randomly selected for team coding. During the initial coding phase, the primary and secondary (M.T.M.) coders independently noted any text resulting in new emergent codes. The coders discussed the applicability of the initial structural codes, shared emergent codes, determined the extent of divergence/convergence between code sets, and resolved discrepancies in the coding approach. As a final step, both coders developed a hierarchical summary of key domains and themes. The study protocol was approved by the KPSC Institutional Review Board, and verbal consent was obtained prior to each survey and interview.

RESULTS

PATIENT SURVEYS

Demographic and clinical characteristics of the 59 patients who responded to the survey are presented in **Table 1**. The mean age among all survey respondents was 44 years, and 68% were female. Nearly half were Hispanic, and the majority had at least a high school diploma and an annual household income of \$80,000 or more. The mean (SD) LDL-C level prior to and closest to the outreach contact date was 202 (12) mg/dL. Among survey respondents, 86% (n=51) did and 14% (n=8) did not pick up their statin prescription. Patients reported picking up the statin because their doctor prescribed it (100%), to lower their cholesterol (94%), and to prevent a heart attack/stroke (51%) (**Figure 1**). Commonly reported reasons for not picking up the statin included wanting to try lifestyle modification (63%), general concerns about the medication (50%), and thinking it was not needed (50%) (**Figure 1**). Other reasons included fear of adverse events (38%), not understanding why their PCP prescribed the medication (25%), not understanding the purpose of the medication (13%), or feeling as though they were taking too many medications (13%). Additionally, 10% indicated they were taking over-the-counter or nonprescription products, including dietary supplements or herbs, to lower their cholesterol. Among patients filling their prescription, 94% completed their lipid panel. Patients reported completing the laboratory tests because their doctor told them to (71%), because they thought it was important for their health (70%), and to see if their cholesterol had changed (58%) (**Figure 2**). Overall, 64% were aware that they could go to any KP facility to get their laboratory work completed without an appointment.

Among all patients, 86% and 100% reported understanding written health information and prescription

TABLE 1. Demographic Characteristics of Survey Respondents (n = 59)

Characteristic	Mean (SD) or n (%)
Age in years, ^a mean (SD)	43.8 (9.0)
Female, ^a n (%)	40 (67.8)
Race/ethnicity, ^a n (%)	
Asian	4 (6.8)
Black	5 (8.5)
Hispanic	27 (45.8)
White	19 (32.2)
Other	4 (6.8)
Neighborhood education (≥high school education), ^b n (%)	59 (62.9)
Household income, ^b n (%)	
≤\$34,999	1 (1.7)
\$35,000-\$49,999	6 (10.2)
\$50,000-\$64,999	7 (11.9)
\$65,000-\$79,999	10 (16.9)
≥\$80,000	35 (59.3)
Most recent LDL-C in mg/dL, ^a mean (SD)	202 (12)

LDL-C, low-density lipoprotein cholesterol.

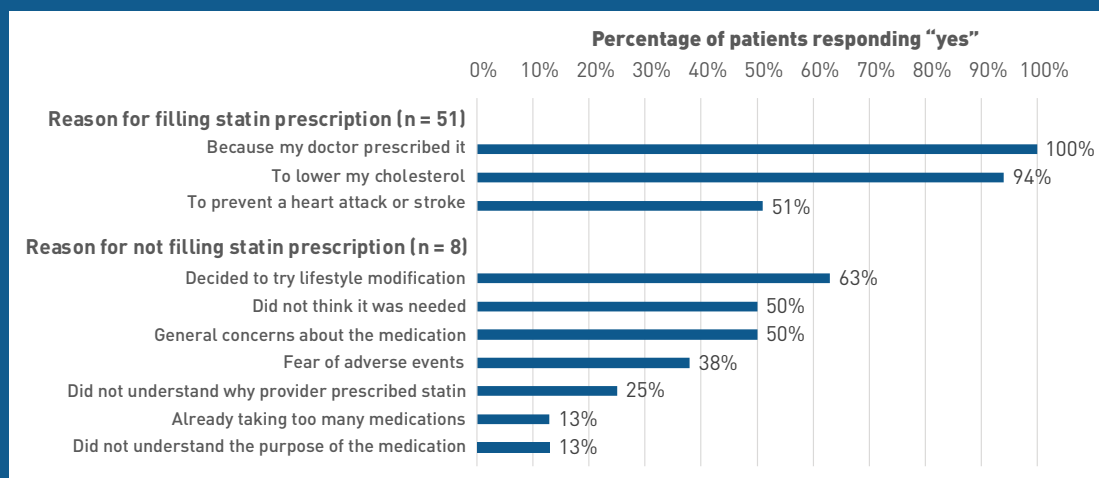
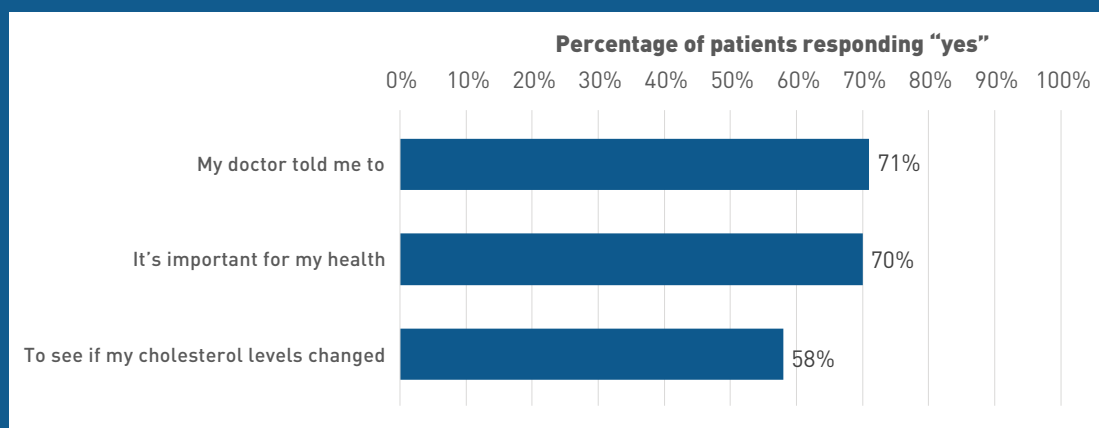
^aData obtained from Kaiser Permanente Southern California Research Data Warehouse sources.

^bData are based on US Census 2016-2018 data geocoded at the block level.

bottle instructions, respectively. Overall, 7% of patients did not recall being told by their doctor that they had very high cholesterol based on their recent bloodwork, with 1 of these patients not picking up the statin because they did not think it was needed. Although only 22% of patients recalled receiving an outreach letter, 51% preferred this contact method. Other outreach preferences included text messaging (83%), email (63%), and voicemail (58%).

PCP INTERVIEWS

We completed semistructured telephone interviews with 14 PCPs. Eight of the PCPs were aware of a KPSC program that sends messages to physicians about patients with elevated LDL-C; however, most were unable to correctly describe the workflow (eg, who sends the alert to the PCP, how patients are notified, and next steps in the outreach process). Two PCPs were well-versed in the details of the program and described each step in the outreach process. Only the 2 PCPs familiar with the SureNet program were asked why they declined to sign a statin order placed by the SureNet program staff; they cited a contraindication

FIGURE 1. Patient Self-Reported Reasons for Filling and Not Filling a Statin Prescription**FIGURE 2.** Patient Self-Reported Reasons for Completing Follow-Up LDL-C Laboratory Test

LDL-C, low-density lipoprotein cholesterol.

(eg, allergy, elevated liver function tests) or that the patient had previously refused the medication.

A high volume of messages and test results in their EHR in-basket was the PCPs' most cited barrier to following up with patients with very high LDL-C. The time needed to manage high volume in-baskets or multiple in-baskets can result in PCPs overlooking test results or deferring follow-up until a patient has an appointment. An additional barrier noted by a few PCPs was the lack of an automated reminder system notifying them when their patients do not fill their statin prescription. Illustrative quotes can be found in [Table 2](#).

Most PCPs perceived that a general fear of statins was a barrier to patients with high LDL-C filling a new statin prescription. Moreover, most PCPs also believed patients' concerns are driven by a lack of understanding about the need for statins to reduce the long-term risks of ASCVD and patients' misconceptions about the long-term effects of statins. A few PCPs noted the importance of educating patients about the benefits of statins as preventive medicine and the safety profile of the medication class. Fear of adverse events, such as myalgias, was also commonly cited as a patient barrier to filling a new statin prescription. Cost was mentioned by 2 PCPs

TABLE 2. Primary Care Physician Perceptions and Barriers to and Facilitators of Engagement in High LDL-C Outreach

Thematic category	Illustrative quotations from PCP interviews
Familiarity with the high LDL-C outreach program	<p>Incorrectly described the program workflow:</p> <ul style="list-style-type: none"> • “Untreated LDLs...so that’s about the extent...I know about it.” [PCP No. 67028] • “My understanding is that those patients with elevated cholesterol will kind of be pulled out of the medical record and then be outreached by a nurse or pharmacist...to basically discuss the need for a statin, or a message will be sent to me to ask me if I’ve had this discussion with the patient or if I have an upcoming appointment.” [PCP No. 62628] • “I believe there’s a message that somehow comes through HealthConnect regarding certain patients with an LDL above [threshold], and they try to initiate, I think, a statin. It’s vague because I haven’t really paid close attention to it, but I do remember things popping up here and there. We have so many SureNets that, you know, it gets kind of confusing.” [PCP No. 67374]
Barriers to following up with patients with very high LDL-C	<p>In-basket message overload:</p> <ul style="list-style-type: none"> • “The volume and time to manage in-basket for mine or someone else’s... the results can definitely be missed.” [PCP No. 56145] • “I don’t really have time to check in on the patients to see if they picked up their statin.” [PCP No. 68231] • “Any lab I get, that’s probably at least 3 minutes just to type up that phrase, email it to them, and then follow up by email. If they [have] really high [LDL-C], I tend to leave it as a postponed message to make sure they got the message and that they’ve read it. If they haven’t read it, then I have my nurse call them to make a telephone appointment. Or if I know they’re coming up in the clinic, I’ll see them in the clinic and talk about it.” [PCP No. 69772] <p>Lack of an automated reminder system for PCPs:</p> <ul style="list-style-type: none"> • “I won’t know about [an unfilled medication] until I see the patient or until I get a pharmacy message saying, ‘By the way, your patient is not refilling [despite pharmacist reminding them].’” [PCP No. 65878] • “The people who are not [adherent] are the ones who I have a difficult time with because I don’t automatically have a reminder to myself to find a [nonadherent] patient.” [PCP No. 64056]
Perceived patient barriers to filling new statin prescription	<p>General fear of statins:</p> <ul style="list-style-type: none"> • “Their biases against, you know, medications or specifically statins. [They ask] what may be the benefit of the medication. ‘Why are you recommending it specifically for me? How will it help me? What are the possible risks of this medication?...Do I have to take this forever?’ ” [PCP No. 64188] • “Somehow statins have bad names on the street or...they feel like it’s going to hurt their liver or cause memory loss. These are 2 things I hear a lot.” [PCP No. 65878] • “The ones [who] are reticent to take medication are also very often the ones that have [adverse events]. They’ll have myalgias to multiple different statins, and then I’ve had some of these patients that I followed for 10 years and they actually have a cardiac event and...they can suddenly take 80 mg of Lipitor [atorvastatin] with no real problems.” [PCP No. 62628] <p>Medication cost:</p> <ul style="list-style-type: none"> • “[With] young people, it’s always cost, because even a \$5 co-pay can be difficult when you’re making minimum wage.” [PCP No. 65133] • “Cost. I think it’s something that I’m always thinking about again because I take care of...some lower-income patients. They’re already kind of living paycheck to paycheck so I’m going to ask him to start taking a medicine [he’s] going to have to buy every 3 months.” [PCP No. 56145]

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TABLE 2. (Continued) Primary Care Physician Perceptions and Barriers to and Facilitators of Engagement in High LDL-C Outreach

Thematic category	Illustrative quotations from PCP interviews
Barriers to patients completing follow-up lipid panels	<p>Forgetfulness:</p> <ul style="list-style-type: none"> • “Trying to remember to do any kind of monitoring blood tests is a challenge as well.” [PCP No. 67028] • “I don’t know if they get reminders on KP.org, and not all of them are [on] KP.org, so if they have missing labs that were due, they would not know unless somebody calls them.” [PCP No. 65878] <p>Knowledge of laboratory hours and walk-in availability:</p> <ul style="list-style-type: none"> • “I think it’s an issue [where] some patients, [when] labs are ordered...they’ll send me an email and say, ‘Are labs ordered and what are the hours for the labs? [Do] you know where I can get it? Do I need an appointment?’ Those subsequent questions are asked through email, usually.” [PCP No. 69287]
Suggestions for improvement	<p>Automated patient reminders:</p> <ul style="list-style-type: none"> • “If...something was ordered and they don’t pick it up, is there some sort of mechanism to follow up on a statin not being picked up within a certain amount of time? Some sort of missed lab for a new statin start...some kind of reminder system to those patients....” [PCP No. 64188] • “But for the patients who forget for whatever reason or have other barriers like cost or transportation in getting their medications or lab results, I think the reminders are probably going to be most helpful for me. If I had to do every reminder for all of my patients...I really would not be able to finish my work because it’s just, it’s already too much.” [PCP No. 64056] <p>Case management:</p> <ul style="list-style-type: none"> • “If there [were] a second touchpoint a couple weeks later, that may help because sometimes they will talk to a friend or a family member who says, ‘Oh, no, don’t take that statin’ or, you know, there’s apathy about...filling it. And so, they just don’t end up doing it. So that second touchpoint by a non-MD may help increase the number of patients who actually follow through and fill that first prescription.” [PCP No. 65554] • “It’d be nice if we had pharmacists or care managers who were trained by our lipidologist to kind of talk about [statins and high LDL-C] and actually be able to reach out to these patients and say, you know, this is what’s going on. Here’s the pros. Here’s the cons. Here’s what to expect.” [PCP No. 67028] • “If someone hasn’t had a lab for about a year, it’ll be nice to have that ordered. But then I worry that, you know, it’s just going to be the lipid and possibly an ALT [alanine aminotransferase] and not a [hemoglobin] A_{1c} because this person happens to have diabetes as well. So more of a coordinated effort, that would be nice.” [PCP No. 67374]

LDL-C, low-density lipoprotein cholesterol; PCP, primary care physician.

as a perceived barrier to filling a new statin prescription for some patients. They described these patient populations as younger and lower income and, presumably, not eligible for medical assistance.

The most reported reason PCPs perceived that patients with high LDL-C do not complete follow-up lipid panels was forgetfulness, particularly in the absence of a reminder via email, text, or telephone call. In addition, PCPs commonly reported that missed laboratory tests often resulted from patients not being familiar with laboratory hours or the misperception that an appointment is needed for a laboratory test. Two PCPs

mentioned that high laboratory co-pays might keep patients from completing follow-up lipid panels, especially if the laboratory test is required every few months.

Although only 2 of the 14 PCPs were explicitly familiar with the SureNet program, all were asked about suggestions for improving the management of high LDL-C. Sending patients automated reminders via text, telephone, or email to fill their statin prescription and complete lipid panels was the most cited suggestion. A few PCPs noted that a reminder system for follow-up

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lipid panels is a particularly notable unmet need because patients are unable to view laboratory orders in the online patient portal (KP.org) and thus are likely to forget about a future order.

A less commonly mentioned suggestion was to implement a case management program. The PCPs perceived that such a program would improve patients' knowledge, address patients' concerns, and provide more coordinated care. For example, nonphysician providers would follow up with patients to educate them about their condition and discuss the medication's safety profile, which could encourage filling a new statin prescription. Another perceived benefit of a case management program would be batched laboratory orders for patients with comorbid conditions so that multiple tests could be completed during 1 laboratory visit.

DISCUSSION

In our study, the majority of patients reported picking up their statin as instructed in the outreach letter because their PCP prescribed it, to lower their cholesterol, or to prevent a cardiovascular event. Reasons for not picking up the statin included a preference for lifestyle modification, general concerns about statins, and the perception that it was not needed. Most patients also completed their lipid panel, with comparable reasons for completion and noncompletion as described for filling a statin prescription.

Among the PCPs interviewed, most were familiar with the goal of the SureNet program; however, they lacked detailed knowledge about it. Physicians most often perceived that (1) fear of statins driven by a lack of understanding about the benefits and risks and (2) forgetfulness were barriers to patients filling their statin prescriptions or completing follow-up laboratory tests, respectively. Although PCPs also noted cost as a patient barrier to initiating a high-intensity statin, this was not a barrier mentioned by patients, which suggests a potential disconnect between the 2 groups about the affordability of this medication class. To improve the management of patients with high LDL-C, PCPs suggested sending patients automated reminders to fill their statin prescription and to complete lipid panels. Allowing patients to view laboratory orders on the patient portal and providing an interpretation of the laboratory result with the automated reminders may prompt clinicians to discuss the risk-benefit profile of statins and patients to initiate therapy and complete follow-up laboratory tests.²¹ A few PCPs stated that a case management program would provide additional support

to following up with nonadherent patients, improve patients' knowledge, address patients' concerns, and provide more coordinated care.

The current study findings align with prior evaluations of patient barriers to filling statin prescriptions.^{17,22-25} An analysis of 10 focus group discussions among 61 adults with primary statin nonadherence found that patients primarily avoided statins because they wanted to use treatment alternatives such as dietary supplements and lifestyle modification, had a fear of adverse events, and did not perceive the need for a statin.²⁴ The study additionally reported patient resistance to taking medications and inadequate provider communication as minor themes related to primary statin nonadherence. A study of 5693 adults recommended for statin therapy in the Patient and Provider Assessment of Lipid Management registry reported similar barriers to initiating a statin and consistent statin use.²² A survey of 45 health care providers at 21 mainly rural health centers found 60% of the respondents perceived that patients believe the "drawbacks outweigh benefits of statins," and 47% cited "not enough time with patients to provide proper education about their medical condition and medication." Open-ended responses included patients' preference for lifestyle changes over medication as a barrier to statin initiation.²⁵ Despite the recommendation of statin treatment for patients at high risk of CVD,¹ the perception that lifestyle modification alone is effective persists as a barrier to effective cholesterol management. Healthy lifestyle is the cornerstone of all ASCVD risk reduction; however, a combination of treatment and lifestyle management is necessary to sufficiently reduce LDL-C levels in patients with LDL-C of at least 190 mg/dL. Negative media attention about adverse events associated with statins is also likely to influence patients' misperceptions. Our current study findings, together with those of previous studies, suggest that better patient education regarding the risks and benefits of statin therapy may improve statin uptake and possibly follow-up laboratory completion.

Although most PCPs in our study were unfamiliar with the content and processes of the High LDL-C Statin Start SureNet program, they noted that having a discussion with their patients about the need for a high-intensity statin was key to determining willingness to initiate the medication. Limited knowledge among PCPs about the program and the lack of patients' knowledge about statin therapy may have accounted for the previously reported finding of less-than-optimal improvement in high-intensity statin

prescriptions after program implementation.¹³ These findings suggest that better physician education about the SureNet program may promote physician engagement and improve patient outcomes.

Our prior analysis of outcomes related to the SureNet program suggests the program's implementation was successful in improving prescription orders, patient medication fills, and follow-up laboratory test completions, in addition to lowering patients' LDL-C levels.¹³ Given the automated, passive monitoring of the program with the EHR and minimal intrusion on everyday PCP practice, we conclude that this program would likely be accepted by PCPs and patients in other settings. The SureNet program requires being able to access data on laboratory values and statin prescriptions, which should be available in many other delivery systems. Similar safety-net programs are under development in other health care systems, including a colorectal cancer ambulatory safety-net collaborative.²⁶

STRENGTHS AND LIMITATIONS

Strengths of the current study include interviews with patients and PCPs from a large, integrated health care delivery system. By including both stakeholder groups, we were able to capture more inclusive suggestions about how to improve the SureNet program. Additionally, the semi-qualitative methodology provides supplemental detail to our quantitative findings.¹³ The setting of an integrated health care delivery system allowed for capture of medication fills and other granular data elements in the EHR that may be unavailable in other health care systems or independent primary care settings. We acknowledge a few limitations. First, patients who responded to the survey might have a more favorable view of their KPSC health care experiences. Second, recall bias is a potential limitation, as there could have been a substantial time lag between when patients received outreach and when surveys were conducted. To minimize this bias, we sampled from the most recently outreached patients. Third, the small patient sample size did not allow for meaningful statistical comparisons. Fourth, surveys were conducted only in English, which may have limited representativeness. Patients who do not speak English may have a higher potential for communication barriers with providers and are likely to yield a high benefit from this automated outreach program. Although out of scope for the current study, future research examining perceptions of the program in these individuals is warranted. The PCPs who were willing to be interviewed may have more favorable views of KPSC, which may not be representative of all PCP perspectives; however, they were sampled to saturation.

CONCLUSIONS

Findings from our study suggest the need for additional interventions to improve patients' knowledge of the benefits and safety profile of statins and thus minimize their nonadherence. In addition, educating PCPs about existing outreach programs may facilitate patient-provider communication and potentially reduce patients' misperceptions about statin therapy. ▀

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Author Affiliations: Department of Research & Evaluation, Southern California Permanente Medical Group (TNH, MZ, HZ, HD, MZi, MHK, KR, MTM), Pasadena, CA; Department of Health Systems Science (HZ, MHK, KR) and Department of Clinical Science (MHK), Kaiser Permanente Bernard J. Tyson School of Medicine (MAS), Pasadena, CA; Kaiser Permanente West Los Angeles Medical Center (RDS), Los Angeles, CA; Quality and Clinical Analysis, Southern California Permanente Medical Group (TMI), Pasadena, CA; Regional SureNet, Complete Care Support Programs, Southern California Permanente Medical Group (RT), Pasadena, CA.

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Send Correspondence to: Matthew T. Mefford, PhD, Kaiser Permanente Southern California, 100 S Los Robles Ave, 2nd Floor, Pasadena, CA 91101. Email: matthew.t.mefford@kp.org.

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eAppendix 1: Patient Survey

1. Do you recall being told by your doctor that your cholesterol was very high based on your most recent bloodwork?	Yes/No/Don't know
2. Have you picked up the prescribed medication from a Kaiser Permanente pharmacy?	Yes/No/Don't know
3. Have you picked up the medication from a different pharmacy?	Yes/No/Don't know
4. Would you share with me why you chose not to pick up the medication from a KP pharmacy?	Open-ended
5. Is there a particular reason why you filled the prescription? <ul style="list-style-type: none"> • To prevent a heart attack or stroke • Because my doctor prescribed it • To lower my cholesterol 	Yes/No/Don't know
6. [Was the] reason for not filling the statin prescription: <ul style="list-style-type: none"> • Due to a change in health insurance or drug benefits • Due to fear of side effects • Due to inconvenient/complex dosing regimen • Because paying for the medication was a financial hardship for me • Due to general concerns about taking the medication • Due to fear of drug interactions • Because I did not think it was needed • Because I did not think it would work for me/be effective for my condition • Because I did not think condition was life-threatening • Because I did not understand the purpose of the prescription medication • Because I did not understand why my provider prescribed the medication for me • Because I decided to try lifestyle modification instead of taking prescription medications • Because I felt like I already take too many medications • Because I forgot 	Yes/No/Don't know
7. Are there any other reasons that you did not pick up the medication from the pharmacy?	Open-ended
8. Are you currently taking any over the counter or non-prescription products, including dietary supplements or herbs to lower your cholesterol?	Yes/No/Don't know
9. What types of over the counter or non-prescription products do you take to lower your cholesterol? <ul style="list-style-type: none"> • Fish oil supplements (omega-3 fatty acids) • Fiber supplements • Niacin • Herbal supplements • Other 	Select all that apply

10. When you get written information at a doctor's office, would you say that it is:	Very easy/Somewhat easy/Somewhat difficult/Very difficult to understand
11. When you read the instructions on a prescription bottle, would you say that it is:	Very easy/Somewhat easy/Somewhat difficult/Very difficult to understand
12. Do you recall getting a letter from Kaiser Permanente and/or your physician about your high LDL-cholesterol?	Yes/No/Don't know
13. Is a letter the best way for Kaiser Permanente to get patients to fill a medication?	Yes/No/Don't know
14. What other ways would you prefer to be notified to fill a medication? <ul style="list-style-type: none"> • Email • Text message • Telephone call/voicemail • Other 	Select all that apply
15. Do you think it's important for Kaiser Permanente to have a program like SureNet?	Yes/No/Don't know
16. Does knowing about the SureNet program affect the way you think about Kaiser Permanente?	Yes/No/Don't know
17. Did you complete your cholesterol lab test at a KP facility?	Yes/No/Don't know
18. Why did you choose to complete your cholesterol lab test? <ul style="list-style-type: none"> • To see if my cholesterol levels changed • Because it's important for my health • Because my doctor told me to • Other 	Select all that apply
19. What are some reasons that you did not complete your cholesterol lab test? <ul style="list-style-type: none"> • It was not convenient (e.g., facility hours, long wait times) • I did not think it was important/Didn't understand the importance • I wanted to discuss with my doctor first • Forgot (lack of reminders) • Competing priorities • Co-pays or other costs • Fear of result • Other 	Select all that apply
20. Are you aware that when you need to get a cholesterol lab test done, you can go to a lab facility at any KP medical center without an appointment to get the test completed?	Yes/No

21. Is a letter the best way for KP to get patients to re-check their cholesterol levels?	Yes/No/Don't know
22. What other ways would you prefer to be notified to re-check your cholesterol levels? <ul style="list-style-type: none">• Email• Text message• Telephone call/voicemail• Other	Select all that apply

eAppendix 2: Primary Care Physician Interview Guide

1. Are you familiar with the High-LDL-C statin start SureNet program operating in our region? *(If no, skip to Q.4)*

Probes:

- Based on your knowledge, how does the High LDL-C statin start SureNet program work?
- If not mentioned:
 - How does the program alert you when it has flagged a patient with high LDL-C?
 - How does it notify the patient? What happens during this process?
 - What do you think about this process for notifying providers? Patients?
- When you receive an alert for a patient with high LDL-C, what is your role/next step?

2. What are common reasons you might decline signing an order from the High LDL-C statin start SureNet program?

Probes:

- The patient previously declined to take statin medication.
- The patient is pregnant or intends to get pregnant in the next few months.
- The patient's ASCVD risk score is low ($\leq 7.5\%$).
- The patient had a recent lab with LDL-C < 190 ml/dL.

3. In your opinion, is the High LDL-C statin start SureNet program helpful in your practice? Has it been a hindrance or burden in any way?

Probes:

- How successful has the program been in getting your patients with LDL ≥ 190 to fill their statin?
- To complete a follow-up cholesterol lab test?
- How much do you rely on this process to manage follow-up cholesterol lab tests for patients?
- How could the program be more effective?

4. What are common barriers or challenges you encounter to following-up on patients with very high LDL-cholesterol?

Possible probes:

- In Basket volume
- How EHR reports results to physicians
- Knowing when patients don't fill a prescription/get a follow-up lab
- Lack of assistance managing lab test results
- Role clarity (e.g., if the PCP did not order a follow-up lab is it their responsibility)

5. What do you think are the common barriers to patients filling their new statin prescription?

6. What do you think are the common barriers to patients getting their follow-up lipid panel?
7. Do you have any final suggestions for improving the management of new statin prescriptions and follow-up labs overall, or suggested priorities for new Safety Nets related to very high cholesterol or follow-up labs?