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Stroke Prevention Strategy: Cholesterol Management
September 2022

Implementation of Quality Improvement Initiatives to Improve Diabetes
and Hypertension

Quality
Insights

Table of Contents

Purpose of Module

Quality Insights, as an active participant in the [Delaware Division of Public Health's Quality Improvement in Hypertension and Uncontrolled Diabetes Project](#), designed this module to support and supplement practice quality improvement efforts related to cardiovascular health and cholesterol management.

Sections are highlighted by the **"3 A's" – Awareness, Assessment, and Action** – and include many tools and resources found in the module as well as the [Quality Insights website](#).

Note: Guidelines referenced in this module are provided in brief, summary format. Full recommendations should be reviewed in the original publication(s) and utilized with physician/clinician judgment, with consideration given to a patient's unique needs and circumstances.

Introduction

Cardiovascular (CV) health remains a top public health priority with heart disease and stroke maintaining their stature as the #1 and #5 leading causes of death in the United States. According to the [American Heart Association (AHA)](#), approximately 38 percent of adults in America have high cholesterol (total cholesterol ≥ 200 mg/dL). Quality Insights provides on-site and virtual assistance to practices aiming to improve CV health in their patient population.

Quality Insights supports the [Million Hearts® initiative](#), an initiative co-led by the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare & Medicaid Services (CMS). [Million Hearts® 2027](#) aims to prevent one million CV events over the next five years through a 20 percent improvement in key indicators. Practices and providers are encouraged to collaborate with us to improve CV health through increased awareness and action.

Another initiative promoted by Quality Insights is [Healthy People 2030](#), the fifth iteration of national public health priorities created by the U.S. Department of Health and Human Services' Office of Disease Prevention and Health Promotion in 1980. As a [Healthy People 2030 Champion](#), Quality Insights will work toward achieving Healthy People 2030's vision, a society in which all people can achieve their full potential for health and well-being across the lifespan. Healthy People 2030 has a number of heart disease and stroke objectives, of which [reducing cholesterol in adults](#) is one.

Million Hearts® Resources for Health Care Providers:
- [COVID-19 and Cardiovascular Disease Partner Toolkit](#): Access resources approved by CDC's Division for Heart Disease and Stroke Prevention to encourage individuals to continue seeking cardiovascular care.
- [Millions Hearts® Action Guides](#): Access evidence-based strategies for improving CV health.
- Connect with other health care professionals on the [Million Hearts® LinkedIn Showcase page](#).
- Subscribe to the [Million Hearts® e-Update newsletter](#) for all the latest Million Hearts® news and activities.

Awareness: Updates in Evidence-Based Guidelines

Guidelines At-A-Glance

The 2018 Guideline on the Management of Blood Cholesterol, published in the journal *Circulation*, is a full revision of the 2013 American College of Cardiology (ACC)/American Heart Association (AHA) Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. It provides current cholesterol-lowering recommendations, including lifestyle interventions, statin and non-statin regimens, risk assessment tools, and management of specific patient populations.

A Guidelines Made Simple summary is also available and highlights key messages as abbreviated below:

	Top Ten Take-Home Messages to Reduce Risk of Atherosclerotic Cardiovascular Disease (ASCVD) through Cholesterol Management
1	In all individuals, emphasize heart-healthy lifestyle across the life-course.
2	In patients with clinical ASCVD, reduce low-density lipoprotein cholesterol (LDL-C) with high-intensity statin therapy or maximally tolerated statin therapy.
3	In very high-risk ASCVD patients, use an LDL-C threshold of 70 mg/dL to consider the addition of non-statins to statin therapy.
4	In patients with severe primary hypercholesterolemia (LDL-C level $\geq$ 190 mg/dL), without calculating 10-year ASCVD risk, begin high-intensity statin therapy without calculating 10-year ASCVD risk.
5	In patients 40-75 years of age with diabetes mellitus and LDL-C $\geq$ 70 mg/dL, start moderate-intensity statin therapy without calculating 10-year ASCVD risk.
6	In adults 40-75 years of age evaluated for primary ASCVD prevention, have a clinician-patient risk discussion before starting statin therapy.
7	In adults 40-75 years of age without diabetes mellitus and with LDL-C levels >= 70 mg/dL, at a 10-year ASCVD risk of $\geq$ 7.5 percent, start a moderate-intensity statin if a discussion of treatment options favors statin therapy.
8	In adults 40 to 75 years of age without diabetes mellitus and 10-year risk of 7.5 percent to 19.9 percent (intermediate risk), risk-enhancing factors favor initiation of statin therapy (see #7).
9	In adults 40 to 75 years of age without diabetes mellitus and with LDL-C levels $\geq$ 70 mg/dL at a 10-year ASCVD risk of $\geq$ 7.5 percent to 19.9 percent, if a decision about statin therapy is uncertain, consider measuring CAC.
10	Assess adherence and percentage response to LDL-C-lowering medications and lifestyle changes with repeat lipid measurement 4 to 12 weeks after statin initiation or dose adjustment, repeated every 3 to 12 months, as needed.

In August 2022 the U.S. Preventive Services Task Force (USPSTF) released a [recommendation](#) regarding statin use. A [Clinician Summary](#) is also available. These recommendations apply to adults 40 years of age or older who do not already have CVD or signs or symptoms of CVD, and should not be used for adults with a LDL-C > 190 mg/dL or known familial hypercholesterolemia.

Population	Recommendation	Grade
Adults aged 40 to 75 years who have 1 or more cardiovascular risk factors and an estimated 10-year cardiovascular disease (CVD) risk of 10% or greater	The USPSTF recommends that clinicians prescribe a statin for the primary prevention of CVD for adults aged 40 to 75 years who have 1 or more CVD risk factors (ie, dyslipidemia, diabetes, hypertension, or smoking) and an estimated 10-year risk of a cardiovascular event of 10% or greater.	B
Adults aged 40 to 75 years who have 1 or more cardiovascular risk factors and an estimated 10-year CVD risk of 7.5% to less than 10%	The USPSTF recommends that clinicians selectively offer a statin for the primary prevention of CVD for adults aged 40 to 75 years who have 1 or more CVD risk factors (ie, dyslipidemia, diabetes, hypertension, or smoking) and an estimated 10-year risk of a cardiovascular event of 7.5% to less than 10%. The likelihood of benefit is smaller in this group than in persons with a 10-year risk of 10% or greater.	C
Adults 76 years or older	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of initiating a statin for the primary prevention of CVD events and mortality in adults 76 years or older.	I

Note:
B: The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.means it has at least a moderate net benefit.

C: The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.

I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Source: [U.S. Preventive Services Task Force](#)

Early Prevention is Key for Children & Adolescents

> ### Be Alert Early
>
> Take a "Lifespan" approach to lower heart disease risk, stroke and other major problems. If there's a family history, it's reasonable to test children as young as two.
>
> *Source: [AHA](#)*

A scientific statement, *[Cardiovascular Risk Reduction in High-Risk Pediatric Patients](#)*, released by the AHA in 2019, cites an estimated **6 percent of all youth 2 to 19 years old (equating to >4,000,000 children and adolescents) are afflicted with severe obesity in the United States**. Unlike moderate (class I) obesity or overweight, rates of severe obesity have increased over the past decade.

The report, in addition to the challenges of the COVID-19 pandemic, highlights that **children and adolescents may be at higher risk for cardiovascular disease**. A 2020 study published in *[Journal of the American College of Cardiology](#)* examined the association of late adolescent or young adult cardiovascular health (CVH) with premature cardiovascular disease and mortality. The study concluded that **high CVH at age 18 to 30 years was strongly associated with low rates of incident premature CVD and mortality over > 30 years of follow-up, overall and in all sociodemographic subgroups**. Primary prevention of atherosclerotic cardiovascular disease (ASCVD) over the lifespan requires attention to prevention or management of ASCVD risk factors beginning early in life.

AHA Guidelines On-The-Go Mobile App

Download this app to stay up-to-date on CVH guidelines no matter where you are. Actionable at the point of care, users will be able to retrieve relevant pieces of content while also having access to additional support detail and evidence.

- [Download for iPhone/iOS](#) or [Android](#)

Risk-Enhancing Factors for Atherosclerosis

The guideline states that although LDL-C is a primary cause of atherosclerosis, other contributing risk factors exist. The major risk factors include cigarette smoking, hypertension, dysglycemia, and other lipoprotein abnormalities. Because atherosclerosis progresses with advancing age, a person's age also counts as a risk factor. Additionally, the guideline adds factors like family history (see details on [Familial Hypercholesterolemia](#)) and ethnicity, as well as certain health conditions such as metabolic syndrome, chronic kidney disease, chronic inflammatory conditions, premature menopause, preeclampsia, and high lipid biomarkers. Review this [article](#) for guidance on discussing atherosclerosis risk with your patients.

Genetics Matter

Some populations are more prone to certain medical conditions and could have racial and/or ethnic features that could influence risk. Tools used for risk assessment are not always able to provide accurate information about all populations or individuals.

Source: [AHA](#)

According to the [AHA's Heart Disease and Stroke Statistics – 2022 Update](#), smoking appears to have a multiplicative effect with the other major risk factors for CHD: high serum levels of lipids, untreated hypertension, and diabetes. If current smoking trends continue, 5.6 million U.S. children will die of smoking prematurely during adulthood. Electronic cigarettes are now the most commonly used tobacco product among adolescents, with this age group's use increasing sharply from 1.5 percent to 19.6 percent between 2011 and 2020. Recent [evidence](#) notes that non-tobacco oral nicotine products are the second most prevalent nicotine product used by adolescents. When compared to those who continue to smoke, the earlier in life that a smoker stops smoking, the more years of life that are gained. The [US Preventive Services Task Force](#) suggests that clinicians focus on interventions to prevent the initiation of tobacco use in children and adolescents as more research is needed to identify interventions to help those who have already begun smoking.

Awareness Resources for Providers:

- [ACC Comparison Tool: 2013-2018](#):Review side-by-side comparison of guideline recommendations.
- [ACC Cholesterol Guideline Hub](#): Access resources to help put the guidelines into practice.
- [AHA Cholesterol Management Guide for Health Care Professionals](#): A convenient guide designed to assist professionals in addressing, diagnosing, and managing their patients' cholesterol.
- *Journal of the American Medical Association* Research Letter (August 2021): [Changes in Body Mass Index Among Children and Adolescents During the COVID-19 Pandemic](#)
- [ADA Cardiovascular Disease and Risk Management: Standards of Medical Care in Diabetes-2021](#) - Access for more information on CV risk management in patients with diabetes and hypertension.

Monitoring Cholesterol Levels in Adults

The AHA recommends all adults aged 20 or older should have their cholesterol (and other traditional risk factors) checked every four to six years as long as their risk remains low. After age 40, the 10-year risk of having heart attack or stroke should be calculated (see page 7). People with CVD, and those at elevated risk, may need their cholesterol and other risk factors assessed more often.

Monitor
People over 20 who don't have CVD should have a risk assessment every 4-6 years.
Source: AHA

The guideline outlines these values as acceptable, borderline, and high measurements for adults. All values are in mg/dL (milligrams per deciliter):

Rating	Total Cholesterol	HDL Cholesterol	LDL Cholesterol	Triglycerides
Good	Less than 200	Ideal is 60 or higher; 40 or higher for men and 50 or higher for women is acceptable	Less than 100; below 70 if coronary artery disease is present	Less than 149
Borderline	200–239	N/A	130–159	150–199
High	240 or higher	N/A	160 or higher; 190 considered very high	200 or higher; 500 considered very high
Low	N/A	less than 40	N/A	N/A

Monitoring Cholesterol Levels in Children & Adolescents

Children who are physically active, have a healthy diet, aren't overweight, and don't have a family history of high cholesterol are at a lower risk for having high cholesterol. However, abnormal lipid levels are relatively common in children and adolescents. Among youth 6 to 19 years of age, the prevalence of ideal total cholesterol levels in 2015 to 2016 was 71.4 percent, with the remainder having borderline levels.

The 2018 guideline prioritizes the identification of children, adolescents, and young adults with familial hypercholesterolemia, as well as estimation of lifetime risk and promotion of lifestyle risk reduction. In children and adolescents without cardiovascular risk factors or family history of early CVD, it may be reasonable to measure a fasting lipid profile or non-fasting non-HDL cholesterol once between the ages of 9 and 11 years, and again between the ages of 17 and 21 years, to detect moderate to severe lipid abnormalities. Screening is advised beginning at age 2 years if a family history is suggestive of either early CVD or significant primary hypercholesterolemia.

The table below includes the guideline-recommended cholesterol levels for children. All values are in mg/dL (milligrams per deciliter).

Rating	Total Cholesterol	HDL Cholesterol	LDL Cholesterol	Triglycerides
Good	170 or less	Greater than 45	Less than 110	Less than 75 in children 0–9; less than 90 in children 10–19
Borderline	170–199	40-45	110–129	75-99 in children 0–9; 90–129 in children 10–19
High	200 or higher	n/a	130 or higher	100 or more in children 0–9; 130 or more in children 10–19
Low	N/A	Less than 40	N/A	N/A

ASCVD Risk Assessment

The use of quantitative 10-year risk assessment, based on measurement of traditional ASCVD risk factors and with use of a validated risk prediction tool, is an important first step in considering treatment options for primary prevention. The Agency for Healthcare Research and Quality produced a guide, *Integrating Cardiovascular Disease Risk Calculators into Primary Care*, to assist practices with overcoming existing barriers to implementation.

The ASCVD Risk Estimator Plus, intended and validated for use in patients aged between 40-79, is currently recommended for assessing a patient's 10-year CVD risk or lifetime risk estimation in younger adults to inform intensity of statin dosing. The tool is available by app from both the ACC and AHA, or by accessing the online version. A patient-facing risk calculator is also available from AHA.

Coronary Artery Calcium (CAC) Score

Among patient's ≥40 years with an uncertain risk status, calculating the coronary artery calcium (CAC) score is recommended to help with prevention and/or treatment decision-making. This non-invasive CT scan of the heart calculates risk of developing coronary artery disease (CAD) by measuring the amount of calcified plaque in the coronary arteries. Selected examples of candidates for CAC measurement who might benefit from knowing they have a 0 CAC score are listed on page 15 of the 2018 Guidelines Made Simple.

Assessment Resources for Providers:
- AHA Clinician Pocket Guides for Primary Prevention and Secondary Prevention
- 2019 AHA/ACC Special Report: Use of Risk Assessment Tools to Guide Decision-Making in the Primary Prevention of Atherosclerotic Cardiovascular Disease
- 2020 AHA *Circulation: Cardiovascular Imaging* research article: Predictive Value of Coronary Artery Calcium Score Categories for Coronary Events Versus Strokes: Impact of Sex and Race

Action

Recommendations for living a healthy lifestyle, comprised of eating a nutrient-dense diet and incorporating regular physical activity, remain a focal point of the 2018 AHA/ACC cholesterol guidelines as well as the [2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease](#).

The CDC recommends the following evidence-based lifestyle change programs as appropriate choices for referral of adults with high blood cholesterol:
- [Weight Watchers (WW)](#)
- [Taking Off Pounds Sensibly (TOPS)](#)

Tired of advising patients to eat an apple a day?

Tell them to switch to an avocado!

Researchers found that eating an avocado a day slightly decreased total cholesterol and LDL cholesterol. Diet quality improved without weight gain.

Source: [JAHA](#)

The following lifestyle modification resources and referral recommendations are included in the 2018 guideline as part of the [Checklist for Clinician-Patient Shared Decision-Making for Initiating Therapy](#).
- [AHA Life's Essential 8™](#): This is the update to Life's Simple 7™ that provides easy instructions on how to eat healthy, increase physical activity, stop nicotine exposure, control cholesterol, reduce blood sugar, manage blood pressure, and more.
- [ACC CardioSmart® Patient Fact Sheets: High Cholesterol](#) and [Healthy Living Resources](#)
- [National Lipid Association (NLA) Patient Tear Sheets](#)
- [Preventive Cardiovascular Nursing Association (PCNA) Heart Healthy Toolbox](#)
- Referral to [cardiac rehab](#), [registered dietician,](#) and/or [smoking cessation program](#)

[The University of Delaware Cooperative Extension programs](#) are designed to help individuals make healthy food choices and lead a physically active lifestyle. Visit the [University of Delaware's Nutrition & Wellness Event website,](#) and view their event calendar to locate no-cost programs available to patients on a rotating schedule.

[Healthy Delaware](#) recognizes that the path to preventing chronic disease starts with little choices. Its patient-facing [Healthy Living website](#) offers a variety of tips and tools to eat better, increase physical activity, avoid stress, and promote regular checkups and screenings.

Assessment Resources for Providers:
- [ACC 2018 Key Points to Remember on the Use of Risk Assessment Tools to Guide Decision Making](#)
- [ACC Cholesterol Guideline Tool: Overview of Primary & Secondary Prevention](#)
- [Cholesterol, LDL, HDL, and Triglycerides in Children and Adolescents](#)
- [AHA Check. Change. Control™ Cholesterol Podcast Series](#)

Statin & Non-Statin Therapy

In addition to lifestyle interventions, statins continue to be the cornerstone of therapy for lipid management. High-intensity, moderate-intensity, and low-intensity statin therapies lower LDL-C levels by ≥50 percent, 30 to 49 percent, and <30 percent, respectively. Recommended statin regimens for each intensity level include:

- **High-Intensity Therapy**: 80mg atorvastatin (40mg: down titration if intolerable to 80mg) and 20mg rosuvastatin (40mg)
- **Moderate-Intensity Therapy**: 10mg atorvastatin (20mg) and 10mg rosuvastatin (5mg) and 20mg to 40mg simvastatin or 40mg pravastatin (80mg) and 40mg lovastatin (80mg) and 80mg fluvastatin XL and 40mg fluvastatin BID and pitavastatin
- **Low-Intensity Therapy**: 10mg simvastatin or 10mg to 20mg pravastatin and 20mg lovastatin and 20mg to 40mg fluvastatin.

In very high-risk ASCVD, use an LDL-C threshold of 70 mg/dL (1.8 mmol/L) to consider addition of non-statins to statins.

Keep Monitoring

People aged 40-75 are most likely to need medicine. Among the many factors that could further increase risk:

- Family history of heart disease and stroke
- High triglycerides
- Metabolic syndrome
- Chronic kidney disease
- Chronic inflammatory conditions, such as rheumatoid arthritis, psoriasis, or HIV
- History of pre-eclampsia or early menopause
- Ethnicity   *Source: AHA*

It is reasonable to add ezetimibe to maximally tolerated statin therapy when the LDL-C level remains ≥70 mg/dL (≥1.8 mmol/L). In patients at very high risk whose LDL-C level remains ≥70 mg/dL on maximally tolerated statin and ezetimibe therapy, adding a PCSK9 inhibitor is reasonable, although the long-term safety (>3 years) is uncertain and cost-effectiveness is low at mid-2018 prices.

Clinicians are recommended to assess for medication adherence and efficacy at 4 to 12 weeks using a fasting lipid test. Retests for adherence and efficacy should then occur at every three to twelve months, depending on the patient.

Shared Decision-Making and Statin Choice

Mayo Clinic's Statin Choice Decision Aid is another recommended, evidence-based, shared decision-making tool regarding statin choice intervention. This tool is designed to assist providers in determining individualized estimation of risks and benefits with and without statins. Learn more about the Statin Choice Decision Aid and how it can be integrated into a standard practice workflow by viewing the demo video presentation and accessing the Statin Choice Toolkit.

National Forum has also created guides, available in English and Spanish, to assist providers and patients with engaging in shared decision-making. Topics include: ASCVD; statin treatment planning; statins and other cholesterol-lowering therapy; and Familial Hypercholesterolemia. The approach recommended by National Forum is the SHARED approach: **S**eek your patient's participation; **H**elp your patient explore and compare treatment options; **A**ssess your patient's values and preferences; **R**each a decision with your patient; **E**valuate your patient's decision; and **D**ecide which resources can support the patient.

Leveraging the Care Team to Address Barriers in Statin Adherence

A 2019 article featured in *U.S. Pharmacist* cites nonadherence to statin therapy as a pervasive issue that can lead to poor health outcomes, including cardiovascular disease-related emergency department visits, health care costs, and mortality. A comprehensive care team approach, rooted in understanding the causes behind patient nonadherence and being willing to work with a nonadherent patient, may improve future adherence or adherence with other caregivers.

Predictors of Statin Nonadherence	Predictors of Statin Adherence
- Muscle-related effects - Cognitive or memory problems - New-onset diabetes - Adults age 50 years or younger and age 70 years or older - Female - African Americans or Hispanic patients - Low income patients - Low health literacy - Patients without coronary heart disease (CHD) - Financial barriers, including copays	- Middle age - Male - White ethnicity - Higher income - Cardiovascular disease - Comorbidities - Follow-up monitoring - Cardiologist care

The following chart from a 2021 article in *U.S. Pharmacist* offers a summary of existing adherence-enhancing strategies health care teams can utilize in their efforts to improve statin adherence.

Initial Active Measures for Improvement of Patient-Adherence Outcomes	
Recommended Measure	**Action to Facilitate Improved Adherence**
Provide a rationale for treatment	- Identify/support patient's specific reasons for treatment & lifestyle changes - Address misperceptions of CVD risk - Reinforce the medical benefits of treatment
Use motivational interviewing strategies	- Seek patient's view on taking medication and making lifestyle changes - Express acceptance and support for patient's difficulties and successes - Affirm patient's freedom to choose the best course of action - Provide research-based evidence of success in accomplishing treatment adherence

Recommended Measure	Action to Facilitate Improved Adherence
Identify and address general barriers to adherence	• Assess suspected cognitive impairment or psychopathology using questions regarding mood, coping, sleep, and appetite disturbance • Collaborate with caregivers to assess treatment motivation by asking patient why they want to undergo treatment and encouraging patient to voice personal and medical reasons for treatment • Assess functional illiteracy by asking patient to recall comprehension • Clarify and tailor explanation based on the need for further understanding
Collaborate on the treatment plan	• Incorporate health beliefs and concerns into treatment plan by allowing patient to come to the best-information decision for himself or herself
Identify and address specific barriers to implementation	• Collaborate with family/caregivers and patient to formulate a change • Address financial and functional barriers to treatment and barrier beliefs regarding medications or lifestyle changes • Confirm agreement and patient understanding by asking patient to describe schedule and specific directions for taking medications • Define the lifestyle treatment goal and method for achieving it
Encourage patient to obtain social support for treatment	• Discuss with patient how to locate support groups in which other patients are making similar changes (this is helpful in reinforcing positive health motivations and behaviors)
Set up frequent follow-ups	• Utilize information on past medication fills to identify patients at risk for nonadherence so that time constraints and limited resources can be addressed • Increase touchpoints (phone, messages) with at-risk patients to answer questions, monitor and address cessation of treatment, and reinforce motivation for continuing engagement in medical treatment or lifestyle change.
Consider supplementation	• Share evidence-based literature with the patient: 1) In 2 small cohort studies, >90% of patients previously intolerant of statins and with low baseline vitamin D levels were able to adhere to statins one year after vitamin D supplementation. 2) Vitamin D supplementation as adjunct therapy for patients on long-term statins merits further investigation, but it may play a role (supplementation theoretically may lead to reduction in statin-induced myopathy) and should be discussed with both physician and patient.
Consider possibility of medication intolerance	• Ask clarifying questions to determine the cause and work with physician to rechallenge with the same or a different statin or a lower dose, and if that fails, initiate a trial of intermittent nondaily dosing. • Know the medication's potency, hydrophilicity, and elimination half-life (see Table 4 in link), which can help determine the best option.

Pharmacy-Based Interventions for Lifestyle Change

Another option for improving statin adherence is medication therapy management (MTM). The Community Preventive Services Task Force (CPSTF) conducted a systematic review of economic evidence from 38 studies on CVD management and CVD prevention, finding that tailored pharmacy-based interventions to increase medication adherence are cost-effective for CVD prevention. Interventions delivered by pharmacists in community and health system pharmacies increased the proportion of patients who reported taking medications as prescribed. When used for CVD management, MTM can lead to a favorable return on investment as averted health care costs exceed implementation costs.

The **Delaware Pharmacists Society** (DPS) offers no-cost MTM to patients living with CVD. If your patients could benefit from a pharmacist consult, they can send their name and phone number to DPS via email and be connected to this service. Learn more about their MTM program here.

Quality Insights also offers MTM and is looking for practices to partner with a **Quality Insights' Pharmacist** to provide no-cost MTM (approximately a $75 value per session) for up to 150 Medicaid patients living with hypertension and/or diabetes. Review our flyer for contact information and to learn more about partnering with Quality Insights for these services.

Care Team and Medication Adherence Resources for Providers
- ACC LDL-C Manager App: A free app that guides clinicians through one continuous lipid-lowering process by linking three tools – the ASCVD Risk Estimator, Statin Intolerance app, and the Lipid-Lowering Therapy Pathway tool – all based on up-to-date ACC clinical policy.
- The Adherence Estimator®: A patient-centered tool designed to help care teams gauge a patient's likelihood of adhering to newly prescribed oral medication for certain chronic, asymptomatic conditions.
- National Association of Community Health Centers (NACHC) Statin Therapy for High-Risk Patients Provider Training Package
- Million Hearts® Protocol Library: Offers a variety of evidence-based protocols for cholesterol management, tobacco cessation, and hypertension treatment that can be utilized in the outpatient setting.
- **Quality Insights Care Team Tools:**
  - Care Team Interventions to Implement American Heart Association CVD Primary Prevention Guidelines
  - White Paper: Team Up for Quality Care: The Role of Primary Care Teams in Prevention of Cardiovascular Disease
  - 2021 Care Team Practice Module
  - 2022 Medication Adherence Practice Module
  - Medication Adherence Office Protocol

Social Determinants of Health: Statin Considerations for Underserved Populations

Health disparities, as defined by the CDC, are "differences in health outcomes and their causes among groups of people." By addressing social determinants of health (SDOH), health disparities can be reduced. Health care disparity in statin prescribing and statin use persists. According to CV projections published in the *Journal of the American College of Cardiology*, "large future increases in CV risk factors and CV disease prevalence are projected, disproportionately affecting racial and ethnic minorities." Utilizing data from 1999 to 2017, Anwaar et al. (2022) examined the prevalence of statin use, among statin-eligible US adults, in relation to SDOH. Participants were grouped by number of SDOH: zero, one, two, or more than two. Prevalence of statin use declined with increasing numbers of SDOH.

A 2019 study published in the *Journal of the American Heart Association* documented that although statins are recommended with a high level of evidence for four primary prevention benefit groups (clinical ASCVD, severe hypercholesterolemia, diabetes mellitus in adults, and those with an ASCVD 10-year risk of ≥ 7.5 percent), prescribing disparities still exist. The effects of race on statin prescribing for primary prevention with high ASCVD risk were evaluated from 2013 to 2018 in a large academic health system and concluded that blacks are less like to be prescribed a statin in the diabetes mellitus and ASCVD >7.5 percent groups compared with whites. Blacks <60 years of age were less likely to be prescribed statins compared with those 60 to 69 and 70 to 79 years of age. **Improved efforts for primary prevention of ASCVD with tailored interventions targeting patients with multiple vulnerabilities are needed to optimize statin utilization.**

Did You Know?

Education is one of the strongest determinants of heart disease and this may be in part due to less access to care in those with lower education attainment.

Learn more about the global correlation between socioeconomic status and a person's susceptibility to heart attacks and strokes in this 2019 cohort study published in *The Lancet: Global Health*.

Published in August 2022, *Trends in Lipid Concentrations and Lipid Control Among US Adults, 2007-2018* found the following:
- Among adults receiving statin therapy, age-adjusted lipid control rates did not significantly change.
- Black, Mexican American, other Hispanic, and White adults experienced significant improvements in total cholesterol, but no significant change was observed for Asian adults.
- When compared to White adults, rates of lipid control while taking statins were significantly lower among Black adults and other Hispanic adults.
- Across all racial and ethnic groups, only Mexican Americans experienced a significant improvement in age-adjusted lipid control.
- In 2015 to 2018, age-adjusted rates of lipid control were significantly lower for women than for men.

This study highlighted an improvement in mean cholesterol concentrations among US adults from 2007 to 2018 while also confirming a number of disparities in cholesterol control and lipid control rates.

When identifying patients who have elevated cholesterol levels, providers and clinical staff can help underserved populations prevent progression by:

- Assessing social determinants of health by collecting and analyzing race, ethnicity, and preferred language data (using the PRAPARE tool) with the goal of integrating services to meet identified needs of patients.
- Utilizing ICD-10-CM codes ("Z codes") to link SDOH and diagnoses/problem lists.
- Making efforts to partner and support community champions who specifically target underserved populations in their geographic areas.
- Providing educational materials developed in multiple languages and at appropriate health literacy levels.

Ready to Learn More?
In May 2022, Quality Insights released our newly updated Social Determinants of Health Practice Module. It provides a framework for identifying social needs in the clinical setting and how the health care team can work together to reduce SDOH in Delaware communities. This updated module includes new statistics and expanded content for:

- Leveraging data to address SDOH
- Identifying social needs via screening tools, including utilization of the PRAPARE tool
- Implementing standardized, closed-loop workflows
- Getting started with connecting patients to local assistance resources
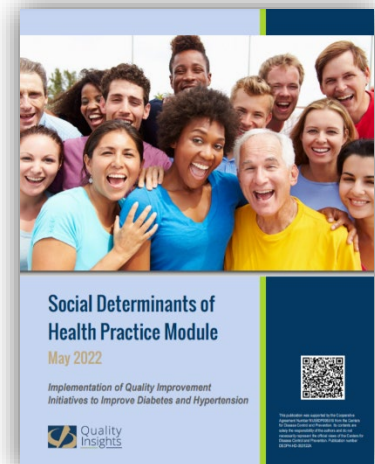
The Electronic Health Record (EHR) & You: Three Tips for Streamlined Cholesterol Management

In the limited amount of face-to-face time providers have with their patients, the ability to directly focus on their needs, instead of a screen, is critical. Below are three key ways you can utilize your EHR to improve overall cholesterol management without losing valuable interaction time.

1. **Mind Your Measures**
   While it can be challenging to keep up with the quality measure landscape, collecting, analyzing and sharing cholesterol management measure data can assist you in raising awareness of opportunities for improvement, measuring progress of implemented workflows and strengthening care coordination. If you aren't sure where to start, click here to learn more

about CMS 347/MIPS438: Statin Therapy for the Prevention and Treatment of Cardiovascular Disease.

2. **Document Referrals in Structured Data Fields**

   You may already be in the habit of regularly referring your patients to evidence-based lifestyle change programs that can decrease cholesterol levels. By ensuring referrals are entered into structured data fields, you can readily account for who and how many patients are being referred, what types of programs are most often utilized, and run reports to ensure feedback reports are obtained from referral partners.

3. **Utilize EHR Alerts**

   Most EHRs have the capacity to provide clinical reminders (also known as Clinical Decision Support or CDS), a type of alert triggered by a parameter such as time and data, high/low threshold, or clinical indication such as the need to check a patient's cholesterol levels. Using these reminders can be especially helpful in high-volume practice settings where it can be challenging to readily identify or remember important health maintenance information.

While a meta-analysis published in *BMC Medical Informatics and Decision Making* confirmed that CDS tools, when used in cardiovascular disease, have a positive effect on patient outcomes, physician practice performance, treatment improvement, and patient adherence to medication and diet, CDS tools are also primarily linked to clinician burden and alert fatigue.

Users and developers can decrease clinician burden if they can improve alert relevance, garner end-user feedback, customize alerts for the clinician, measure outcomes and metrics, and continuously optimize, according to a study published in the *Yearbook of Medical Informatics*.

Learn more in this *EHR Intelligence* article, 5 Ways to Improve CDS Tools, Minimize Clinician Burden.

Patient Education Toolkit for Cholesterol Management

Education Theme	Tools	Title	Description
Cholesterol Management	American Heart Association	My Cholesterol Guide: Take Action. Live Healthy!	Free guide designed to help patients understand & manage cholesterol
	American Heart Association	Downloadable Patient Education Resources	Access fact sheets, videos, and other interactive resources
	American Heart Association	Life's Essential 8: How to Control Cholesterol	Patient-facing one-page handout
	Foundation of the National Lipid Association	Lipid and Blood Pressure Management Video Education Lab	Offers free, patient-facing education videos on a variety of heart healthy topics
	Medline Plus	Cholesterol – Multiple Languages	Offers resources in Chinese, French, Hindi, Japanese, Korean, Nepali, Russian, Somali, Spanish, and Vietnamese
	Mended Hearts and National Lipid Association	Beyond the Numbers – A Lipid Control Webinar Series	Recorded webinar series designed for patients.
	National Forum for Heart Disease & Stroke Prevention	SHARED Decision-Making Guides	Guides include talking points, fillable treatment plan, and education to aid in shared decision-making
	National Forum for Heart Disease & Stroke Prevention	Counter Cholesterol™ Resources	Access infographics, fact sheets, and videos
	Preventive Cardiovascular Nurses Association	Tools and Handouts for Your Patients	Topics included statin and non-statin therapies, fact sheets, and a healthy lifestyle booklet
Familial Hypercholesterolemia (FH)	American College of Cardiology	Familial Hypercholesterolemia Infographic	Infographic reviewing definition, signs, and treatment
	FH Foundation	What is Familial Hypercholesterolemia	Patient-facing resources and guidance on finding a FH specialist
	Foundation of the National Lipid Association	Definition of FH	Patient-facing fact sheet defining FH
Heart Disease and Women	Foundation of the National Lipid Association	Reduce Your Risk for Heart Disease Infographic	Available in English and Spanish
	National Forum for Heart Disease & Stroke Prevention	How Important Is Mom's Heart Health?	Patient-facing education website available at countercholesterol.org

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Heart Healthy Lifestyle	American Heart Association	Heart-Check Certified Product List	Downloadable food and beverage list updated monthly
	American Heart Association	Tips and Resources for Supporting Physical Activity in Patients	Table 4 of a 2021 AHA Scientific Statement. Includes talking points, simple ideas, online resources, and community resources.
	Foundation of the National Lipid Association	Shopping List for Heart Healthy Eating on a Budget	Downloadable shopping list available in English and Spanish
	Health.gov	Move Your Way® Campaign Materials	Includes fact sheets, posters, videos, and interactive tools for a variety of demographics
	Million Hearts®	Recipes for a Heart-Healthy Lifestyle	Access a variety of healthy eating resources, recipes, and meal planning information
	National Heart, Lung, and Blood Institute	Heart-Healthy Living Publications	Downloadable handouts covering nutrition labels, DASH eating plan, and fitness
	U.S. Department of Agriculture	MyPlate: Healthy Eating on a Budget	Budget-friendly and healthy meal planning resources
Non-statin Therapies	American College of Cardiology	Beyond Statins: Other LDL-C Lowering Treatments	Includes information about ezetimibe and PCSK9 inhibitors.
	American Heart Association	What Are Cholesterol-Lowering Medications?	Available in English and Spanish
Statin Therapy	American College of Cardiology	Straight Talk About Statins	Addresses common concerns and questions related to statin therapy
	CDC and Million Hearts	How Do Statins Prevent Heart Attacks and Strokes?	Short, animated video explains the importance of statins and how they work
	Million Hearts	The Scoop on Statins: What Do You Need to Know?	Provides answers to frequently asked questions about statins
	National Lipid Association	Diabetes Mellitus, Heart Disease, and Statins	Describes the relationship between diabetes and heart disease
	National Association of Community Health Centers	How Do Statins Prevent Heart Attacks and Strokes	Includes links to patient education animation and infographic, available in English and Spanish
	National Association of Community Health Centers	Statins and Lifestyle: Patient Education Infographic	Available in English and Spanish

Awards

🏆 The Million Hearts® Hypertension Control Champions are clinicians and practices that have successfully completed the annual Million Hearts Hypertension Control Challenge. Eligibility requirements include the treatment of a minimum of 500 adult patients annually and demonstrated excellence in hypertension control with a control rate of ≥80% among their hypertensive patients. Control is defined as having a blood pressure that is <140 mmHg systolic and <90 mmHg diastolic. Clinicians, practices, and health systems that have previously been recognized as champions retain that designation and are not eligible to apply again. Complete rules can be found on the Million Hearts® website. Practice Transformation Specialists are able to assist qualifying practices with the submission process. New Pennsylvania and Delaware champions who are active Quality Insights partners are recognized on our website.

🏆 The AHA/AMA Target: BP™ Recognition Program provides an opportunity for physician practices and health systems that treat hypertension to be recognized for achieving blood pressure control rates ≥ 70 percent. Participants can also be recognized for their commitment to accurate BP measurement, demonstrated by the implementation of evidence-based BP activities. Target: BP™ has various levels of recognition and a number of benefits.

🏆 With Quality Insight's Hypertension Hall of Fame award, project participants are recognized for their excellent work in successfully managing hypertension. Practices that achieve blood pressure control (<140/90) with ≥ 70 percent of their hypertensive patients are highlighted on Quality Insight's website.

🏆 Through Quality Insight's Cardiovascular Disease Prevention Champion award, project participants are recognized for their outstanding work in successfully managing patients with elevated cholesterol in the prevention of cardiovascular disease via statin therapy. Awardees are highlighted on Quality Insight's website.

Contact Quality Insights

Would your staff and patients benefit from additional cholesterol management training and educational resources? We invite you to take advantage of the **no-cost assistance** available from Quality Insights to elevate your practice's quality improvement efforts related to cardiovascular health and cholesterol management. Please email Ashley Biscardi or call **1.800.642.8686, Ext. 137** for more details.

Visit the Quality Insights website to access our online resource library and practice module archive for additional guidance and tools related to hypertension and diabetes prevention and management.