

Cholesterol Management Practice Module

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*Improving Hypertension and Diabetes Care
& Prevention Project*



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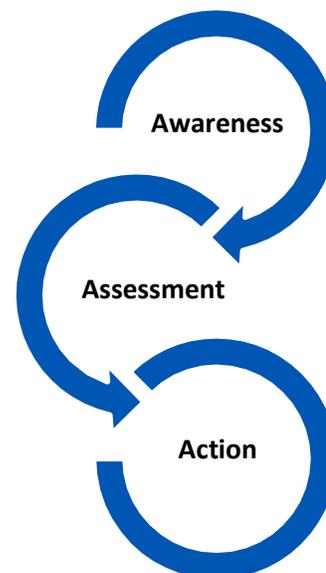
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Purpose of Module

This module provides a high-level overview of evidence-based information related to cardiovascular health and cholesterol management. It was developed to assist your organization's quality improvement efforts. Sections are organized by the "3As" – Awareness, Assessment and Action – and include links to many tools and resources that are also available on Quality Insights' website.

Please Note: Guidelines and recommendations referenced in this module should be used in coordination with physician/clinician judgment and treatment, based on the individual patient's unique needs and circumstances.



Introduction

Quality Insights provides on-site assistance to healthcare providers and systems aiming to improve cardiovascular health in their patient population. This includes supporting the national Million Hearts® initiative.



The national Million Hearts® initiative was launched in 2012 by the Department of Health & Human Services (HHS). The Centers for Disease Control and Prevention (CDC) and Centers for Medicare & Medicaid Services (CMS) co-lead the initiative, along with many other federal and private partners such as the American Heart Association (AHA).

Over the next five years, Million Hearts® is re-doubling its efforts to engage and equip partners and stakeholders nationwide to reach or exceed aggressive goals that will improve cardiovascular (CV) health and care for all Americans.

Aiming to prevent 1 million CV events in five years, Million Hearts® 2022 seeks strong and specific commitments in order to improve CV health for all.

Million Hearts® 2022 Priorities	
Keeping People Healthy	Optimizing Care
Reduce Sodium Intake	Improve ABCS*
Decrease Tobacco Use	Increase Use of Cardiac Rehab
Increase Physical Activity	Engage Patients in Heart-Healthy Behaviors
Improving Outcomes for Priority Populations	
Blacks/African Americans with hypertension	
35- to 64-year-olds	
People who have had a heart attack or stroke	
People with mental and/or substance use disorders	

*Aspirin use when appropriate. Blood pressure control, Cholesterol management, Smoking cessation

Million Hearts® Resources:

- [Million Hearts® Fact Sheet](#) – Overview of framework, priorities and targets
- [Millions Hearts® Action Guides](#) – Access evidence-based strategies for improving cardiovascular health
- [How Can I Be A Partner?](#) – Take action and spread the word about cardiovascular health

Awareness: Updates in Evidence-Based Guidelines

The new [2018 Guideline on the Management of Blood Cholesterol](#), published in November 2018 in the journal [Circulation](#), provides new and consistent evidence-based cholesterol-lowering recommendations, including lifestyle interventions, statin and non-statin regimens, risk assessment scores and calculators, and management of specific patient populations.

The Guideline includes the **Top Ten Take-Home Messages to Reduce Risk of Atherosclerotic Cardiovascular Disease (ASCVD) through Cholesterol Management**, summarized below:

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 \geq 70 mg/dL, at a 10-year ASCVD risk of \geq 7.5%, 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% to 19.9% (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% to 19.9%, 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 addition, the guidelines provide tools for primary and secondary ASCVD prevention (overview) and secondary prevention tools for patients in four defined statin benefit groups:

- Patients with clinical ASCVD
- Patients with primary severe hypercholesterolemia (LDL-C \geq 190 mg/dL)
- Diabetes mellitus in adults
- Primary prevention over the life span

Download the American Heart Association's (AHA) Guidelines on-the-go mobile app and stay up-to-date no matter where you are. The app is available for [iOS](#) and [Android](#).

Early Prevention is Key in 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 kids as young as 2.

Source: AHA

A [scientific report released by the AHA](#) on February 25, 2019 cites an estimated 6% 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 emphasizes that these **children and adolescents may be at higher risk for cardiovascular disease**. Primary prevention of atherosclerotic cardiovascular disease (ASCVD) over the life span requires attention to prevention or management of ASCVD risk factors beginning early in life.

Risk-Enhancing Factors

The updated cholesterol guidelines outline risk-enhancing factors for clinician-patient risk discussions, including family history [see information on [Familial Hypercholesterolemia \(FH\)](#)] and ethnicity, as well as certain health conditions such as metabolic syndrome, chronic kidney disease, chronic inflammatory conditions, premature menopause or pre-eclampsia and high lipid biomarkers.

SHARED DECISION MAKING



The Guidelines Made Simple provides a checklist for clinician-patient shared decision making for initiating therapy.

Awareness Resources for Providers:

- The [AHRQ Clinical Decision Support library](#) provides artifacts that support cholesterol management, including ASCVD risk assessment and statin use.
- [American College of Cardiology \(ACC\) Cholesterol Guideline Hub](#)
- [Top Ten Things to Know](#): Overview of the 2018 Management of Blood Cholesterol Guidelines
- [ACC Comparison Tool: 2013-2018](#): Side-by-side overview of guideline updates

Assessment: Knowing the Numbers, Using the Tools

Monitoring Cholesterol Levels in Adults

The [AHA](#) recommends that all adults have their cholesterol checked every 4 to 6 years, starting at age 20. For those with high cholesterol, more frequent testing is recommended.

According to the 2018 Guideline on the Management of Blood Cholesterol published in the [Journal of the American College of Cardiology \(JACC\)](#), following are the acceptable, borderline and high measurements for adults. All values are in mg/dL (milligrams per deciliter):

MONITOR



People over 20 who don't have cardiovascular disease should have a risk assessment every 4-6 years.

Source: AHA

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 do not have a family history of high cholesterol are at a lower risk for having high cholesterol. Current guidelines recommend that all children have their cholesterol checked between ages 9 and 11, and then again between ages 17 and 21. Kids with higher risk factors, like diabetes or a family history of high cholesterol, should be checked between ages 2 and 8 and again between ages 12 and 16.



The table at the top of the next page includes the recommended cholesterol levels for children according to the *JACC* article referenced above. 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

Risk Assessment

The [ASCVD risk calculator](#), originally presented in the 2013 guidelines as using population-based formulas, [is still recommended for assessing a patient’s 10-year CVD risk](#). A [consumer-facing risk calculator](#) is also available.



Learn more about the calculator. [A video from the American College of Cardiology](#) reviews the development of this tool. **Download the AHA’s Guidelines-on-the-Go mobile app to access the tool. It is also available online.**

Coronary Artery Calcium (CAC) Score

Cardiac scoring, which is also known as heart scan, or calcium score, is a non-invasive CT scan of the heart that calculates one’s risk of developing coronary artery disease (CAD) by measuring the amount of calcified plaque in the coronary arteries. **Among patients ≥ 40 years with an uncertain risk status, calculating the coronary artery calcium (CAC) score is recommended to assist in prevention and/or treatment decision-making.** Patients with a 0 CAC score are defined as having a generally low cardiovascular disease (CVD) risk for the next 10 years and can delay undergoing cholesterol-lowering medication therapy if they do not smoke and have no other high-risk characteristics. Conversely, those with a CAC score of ≥ 100 Agatston units have a 10-year ASCVD risk of $\geq 7.5\%$, which is considered a “widely accepted threshold” for starting statins.

Assessment Resources for Providers:

- [ACC 2018 Key Points: Special Report on Risk Assessment](#)
- [Mayo Clinic Shared Decision Making National Resource Center](#)

Management of Dyslipidemia

The Department of Veterans Affairs (VA) and The Department of Defense (DoD) offer an algorithm to determine treatment recommendations for patients. Based on the results of the algorithm, the VA and DoD list a number of statin, lifestyle, and diet changes that can improve patient outcomes. [This guideline](#) provides useful information on ASCVD criteria, pharmacotherapies available, directions for performing the algorithm, as well as many other topics surrounding dyslipidemia.



Lipid Management in Adults

The Institute for Clinical Systems Improvement (ICSI) published a [health care guideline](#) based on recommendations from two different guidelines from the United States Preventative Services Task Force (USPSTF) and the ACC/AHA.

Action: Improving Health Across the Lifespan

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 $\geq 50\%$, 30% to 49%, and $< 30\%$, 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 the addition of nonstatins to statins. 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 3 to 12 months, depending on the patient.

KEEP MONITORING



People between 40-75 are the 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

Cardiovascular Risk and Dyslipidemia Management

Kaiser Permanente National released a [clinician guideline](#) in September 2017 to assist primary care physicians and other clinicians in the outpatient management of cholesterol for primary and secondary prevention of ASCVD. This resource provides a great deal of information on cholesterol treatment, including recommendations by statin benefit group, algorithms indicating treatment options, as well as specific statin medication information. Non-statin medications and recommendations are also discussed.

Key take away points from the guideline:

- For all adults, encourage a heart-healthy lifestyle to reduce the risk of ASCVD. This includes regular physical activity, weight reduction and maintenance, smoking cessation, and controlling blood pressure and diabetes.
- Focus on treatment of blood cholesterol to reduce ASCVD risk in adults.
- Identify adults most likely to benefit from cholesterol-lowering therapy (i.e., those in the four statin benefit groups).
- Identify and address safety issues related to cholesterol treatment options.

The [Institute for Clinical Systems Improvement: The Lipid Management in Adults algorithm](#) describes the treatment of adults age 20 and older who are dyslipidemic. Clinical highlights of this protocol include initiating a statin with patients who have established ASCVD, establishing lipid goals based on risk level, instructing patients on healthy lifestyle and adjunctive measures, and reinforcing patient adherence with recommended therapy during scheduled follow-up.

Additionally, the [National Association of Chronic Disease Directors](#) offers many webinars, fireside chats, and virtual roundtables surrounding cardiovascular health topics including cholesterol and cholesterol management.

Health Disparities: Statin Considerations for Underserved Populations

A [2017 article published in the Journal of the American Heart Association](#) documented that people with indications for statins and more simultaneously occurring vulnerabilities experience the greatest disparities in statin use. Black women and those without health insurance were at particularly high risk of underutilization. Focused efforts and specific interventions targeting patients with multiple vulnerabilities are needed to optimize statin utilization.

When it is identified that a patient has elevated cholesterol levels, providers and clinical staff can help underserved populations prevent progression by:

- Assessing social context, including potential food insecurity, housing stability and financial barriers.
- Making efforts to partner and support community champions who specifically target underserved populations in their geographic areas.
- Communicate opportunities for self-management support community resources when available.
- Provide educational materials developed in multiple languages and at appropriate literacy levels.



Lifestyle Change Programs

Recommendations for living a healthy lifestyle, comprised of eating a nutrient-dense diet and the inclusion of regular physical activity, remain a focal point of the 2018 AHA/ACC cholesterol guidelines as they were in the previously published versions.

The AHA recommends the following resources and referral sources as potential options to promote lifestyle improvement in your practice:

- Referral to [cardiac rehabilitation](#), [registered dietician](#), and/or
- [Smoking Cessation Programs](#): Listing of national quit lines, online resources and medicines to help patients quit smoking.
- [CardioSmart Patient Fact Sheets](#): Free patient education resources for a variety of cardiovascular conditions.
- [AHA Life's Simple 7](#): Easy-to-follow instructions on how to manage blood pressure, control cholesterol, reduce blood sugar, get active, eat better, lose weight, and stop smoking.
- [National Lipid Association \(NLA\) Patient Tear Sheets](#): Printable patient handouts that cover an array of topics related to lipids and heart health.

The following lifestyle change programs are appropriate referral options for adults with high blood cholesterol:

- [Weight Watchers](#)
- [Supplemental Nutrition and Assistance Program Education \(SNAP-Ed\)](#)
- [Expanded Food and Nutrition Education Program \(EFNEP\)](#)
- [Take Off Pounds Sensibly \(TOPS\)](#)

FOCUS ON LIFESTYLE



Healthy eating and physical activity are proven to lower LDL cholesterol (the "bad" kind).

Source: AHA

Action Resources for Providers:

- [ACC Statin Intolerance App](#): Guides clinicians through the process of managing and treating patients who report muscle symptoms while on statin therapy.
- [CardioSmart Heart Explorer App](#): Provides tools to effectively review and discuss common heart problems and treatment options with patients.
- [PCSK9 Prior Authorization Tool](#): Step-by-step assistance for PCSK9 prior authorizations
- [PCNA Clinicians' Lifestyle Modification Toolbox](#): Resources designed to assist clinicians and healthcare professionals in beginning a conversation with their patients about achieving successful lifestyle changes that promote their lipid health.
- [Lipid.Care CareNavigator](#): Designed to provide evidence-based strategies and best practices for appropriate treatment decision making for high cholesterol patients and activating patients in their care. This activity is accredited for 1.0 hour CME/CE for physicians, nurses, and case managers.

The EHR & You: Three Tips for Improved Cholesterol Management

In the limited amount of face-to-face time providers have with their patients, the ability to directly focus on individual needs, instead of a screen, is critical. Following are three key ways that your EHR can help 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, being aware of cholesterol management measures can assist you in locating opportunities for improvement and/or measuring progress of implemented workflows. Get started by learning more about [CMS 347v3 or ACO-42: 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 will be able to account for who and how many patients are being referred, what types of programs are most often utilized, and identify potential process gaps that may be impacting your patients.

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.

Patient Resources

[AHA My Cholesterol Guide](#): Comprehensive guide including information about cholesterol, facts and myths, understanding risk, medications, treatment plan, and appropriate lifestyle changes.

[Move Your Way Campaign](#): The 2018 Physical Activity Guidelines for Americans provide evidence-based guidance to help Americans at every age maintain or improve their health through physical activity. Visit the link for free tools and patient education resources.



[Healthy Eating on a Budget](#): Find resources on budget-friendly, healthy meal planning, menus and more from [choosemyplate.gov](#).

[Straight Talk about Statins](#): This American College of Cardiology (ACC) patient information addresses common concerns and questions related to statin therapy.

[Beyond Statins: Other LDL Cholesterol-Lowering Treatments](#): This ACC patient information outlines non-statin therapies, including ezetimibe and PCSK9 inhibitors.

[Counter Cholesterol](#): This website provides helpful information for patients, including tips for communicating with their provider, how to get tests ordered, how to manage high cholesterol, as well as links to additional patient resources.