Cardiovascular Health

Managing, Treating and Preventing Cardiovascular Disease

Quality Improvement Organizations
Sharing Knowledge. Improving Health Care.
CENTERS FOR MEDICARE & MEDICAID SERVICES

SUPERIOR HEALTH
Quality Alliance

SUPERIOR HEALTH QUALITY ALLIANCE

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INTRODUCTION

About Us

The Superior Health Quality Alliance (Superior Health) is a coalition of eight health-care organizations established in 2018. The alliance covers six states in the Midwest region: Minnesota, Wisconsin, Michigan, Illinois, North Dakota and South Dakota. The alliance aims to align with the national CMS (Centers for Medicare & Medicaid Services) Quality Strategy and improve the quality of health and health care for various stakeholders, including consumers, patients, clinicians, organizations and communities.

Our Goal

To provide partners with a one resource compilation "playbook" for managing, treating and preventing cardiovascular disease and potentially a cardiovascular event. One of our key initiatives are improving cardiovascular health by developing and providing a specific and strategic educational resource to health care providers. We invite you to review the playbook and join us in the efforts to make a difference in your patient's cardiovascular health.

The Superior Health, with CMS, aims to enhance patients' outcomes by:

- Improve diagnosis of hypertension and control for Medicare beneficiaries.
- Improve cardiac rehabilitation participation for outpatient Medicare beneficiaries who experienced a Medicare coverable cardiac event.

Target Audience

The intended audience for this playbook is health care providers, including clinic managers, quality directors, nurse practitioners (NPs), physician assistants (PAs), MDs, nurses, coders, social workers, care coordinators, case managers, community health workers/promotors/navigators.

Disclaimer

The information provided in this resource guide is intended for general reference purposes only. While we make every effort to ensure the accuracy and reliability of the materials and links included, please be aware of the following:

- Annual Review: We conduct an annual review of the materials and links to verify their relevance and reliability. However, due to the dynamic nature of content on the internet, changes may occur between reviews.
- Subject to Change: Information, websites and resources are subject to updates, modifications, or discontinuation without notice. We recommend verifying any critical information independently.
- User Responsibility: Users are responsible for independently assessing the suitability and accuracy of the materials provided and links based on their specific needs and circumstances. The information provided here pertains specifically to individuals with hypertension who are not pregnant.
- Sources: U.S. Preventive Services Task Force (USPSTF), American Heart Association (AHA) and American College of Cardiology guidelines are followed in this playbook.
- The quality measures do not reflect the current guidelines used by USPTF.
- Last reviewed on October 30, 2024.

SECTION 1

Hypertension (HTN)

Introduction

Hypertension, commonly known as high blood pressure (BP), is a chronic medical condition. Hypertension occurs when a patient has repeatedly high BP measurements over time and in various settings. Increased BP predicts an increased risk of cardiovascular disease. The threshold used to define hypertension vs normal blood pressure is 130/80. Hypertension affects millions of people worldwide and is a significant risk factor for cardiovascular diseases including, but not limited to, heart attacks (myocardial infarction) and strokes.

Definition

BP is typically recorded as two numbers, written as a ratio for example: 117/76. The BP is stated as "117 over 76" millimeters of mercury.

- Systolic: The top number, the higher of the two numbers, measures the pressure in the arteries when the heart beats (when the heart muscle contracts).
- Diastolic: The bottom number, the lower of the two numbers, measures the pressure in the arteries when the heart is resting between heart beats.

Assessment

All adults should be screened for hypertension. Risk factors include older age, Black race, family history, excess weight and obesity, lifestyle habits (lack of physical activity, stress and tobacco use) and dietary factors (diet high in fat or sodium, diet low in potassium, or excessive alcohol intake).

Screening

Initial screening for hypertension should be performed with clinic or office blood pressure measurement (OBPM). OBPM is most commonly performed using a manual or automatic blood pressure device. OBPM is typically measured at the brachial artery (upper arm) with the patient most commonly in a seated position after five minutes of rest.

Ambulatory blood pressure monitoring (ABPM) and self-measured blood pressure (SMBP) monitoring with validated and accurate devices should be used outside of a clinical setting to confirm a diagnosis of hypertension. ABPM involves wearing a programmed device that automatically takes BP measurements over the course of a day. SMBP involves patients measuring their own BP at home with a validated BP device.

Note Another term for self-measured blood pressure (SMBP) monitoring is home blood pressure monitoring (HBPM).*

Screening Intervals

Annual screening for hypertension in patients 40 years or older and for patients at increased risk for hypertension should be measured. Screening less frequently (3 to 5 years) is appropriate for adults aged 18 to 39 years not at increased risk for hypertension and with prior normal BP readings.

Source: Hypertension Adult Screening - Handout

BP Ranges

This chart shows the systolic and diastolic ranges for normal, elevated and severity of high BP.

BP Category	Systolic	and/or	Diastolic
Normal	Less than 120	and	Less than 80
Elevated	120-129	and	Less than 80
High BP (Hypertension) Stage 1	130-139	or	80-89
High BP (Hypertension) Stage 2	140 or higher	or	90 or higher
Hypertensive Crisis (consult your doctor immediately)	Higher than 180	and/or	Higher than 120

Source: American Heart Association - Website

Diagnosis

Considering a diagnosis of hypertension, measure BP in both arms, unless contraindicated:

- If the difference in readings between arms is more than 15 millimeters of mercury (mmHg), repeat the measurements.
- If the difference in readings between arms remains more than 15 mmHg on the second measurement, measure subsequent BPs in the arm with the higher reading.

If BP measured in the clinic is 140/90 mmHg or higher:

- Take a second measurement during the clinical encounter.
- If the second measurement is significantly different from the first, take a third measurement.
- Record the lower of the last two measurements as the clinic blood pressure.

If clinic BP is between 140/90 mmHg and 160/120 mmHg, offer amulatory blood pressure monitoring (ABPM) to confirm the diagnosis of hypertension.

If ABPM is not appropriate or the patient is unable to tolerate it, offer home blood pressure monitoring (HBPM) to confirm the diagnosis of hypertension.

When using ABPM to confirm a diagnosis of hypertension, ensure that at least two measurements per hour are taken during the patient's usual waking hours. Use the average value of at least 14 measurements taken during the patient's waking hours to confirm a diagnosis of hypertension.

When using HBPM to confirm a diagnosis of hypertension:

- Two consecutive measurements, taken at least one minute apart and with the patient seated and
- BP is recorded twice daily, ideally in the morning and evening and
- BP recording continues for at least four days, ideally for seven days.

Discard the measurements taken on the first day and use the average value of all the remaining measurements to confirm a diagnosis of hypertension.

Confirm diagnosis of hypertension in patient with a:

- Clinic blood pressure of 140/90 mmHg or higher and
- ABPM daytime average or HBPM average of 135/85 mmHg or higher.

If hypertension is not diagnosed, measure the patient's clinic BP at least every five years subsequently.

Content source: Hypertension in adults: diagnosis and management - NCBI Bookshelf - Website

Treatment and Monitoring

The treatment and monitoring of hypertension are critical components in managing cardiovascular health. Hypertension can be managed through patient-centered care, lifestyle changes and medication.

Treatment often begins with lifestyle modifications, such as adopting a heart-healthy diet, increasing physical activity, reducing sodium intake and managing stress. When these measures are insufficient, a variety of medications may be prescribed to help lower blood pressure.

Regular BP checks are essential. Monitoring involves regular BP checks, either through SMBP at home or ABPM, which records BP at regular intervals over 24 hours. This ongoing vigilance helps to ensure that BP levels are controlled and reduces the risk of complications associated with hypertension, such as stroke and heart disease.

Hypertension Medications

Medications used to treat high BP fall into several classes, each working in different ways to lower BP. It's important for individuals to work with their health care professionals to find the safest and most effective medication. The following is a list of medication classes used to lower BP:

- Diuretics (water pills): increase urination, reducing sodium and fluid content.
- Beta blockers: lower heart rate, decreasing BP.
- Angiotensin-converting enzyme (ACE) inhibitors: widen blood vessels, aiding blood flow.
- Angiotensin II Receptor Blockers (ARBs): relax blood vessels.
- Calcium channel blockers: reduce calcium entry into heart muscles, controlling blood pressure.
- Alpha blockers: relax artery and vein muscles.
- Renin inhibitors: inhibit angiotensin production, which constricts blood vessels.

Resources

Types of Blood Pressure Medication - Website

IMPLEMENTING A SELF-MEASURED BLOOD PRESSURE (SMBP) PROGRAM

SMBP monitoring refers to the regular measurement of BP by a patient at their home or elsewhere outside the clinical setting. SMBP enables physicians to better diagnose and manage hypertension — and helps patients to take an active role in the process. Key takeaways of an SMBP program are:

- Strong scientific evidence shows that SMBP monitoring programs, plus clinical support, help patients with hypertension lower their blood pressure.
- SMBP can also be used to confirm a suspected diagnosis of hypertension based on BP measurements obtained in an office setting.
- Identify at least one provider and one care team member to serve as champions; these individuals will help to train staff.
- Develop SMBP program processes and workflows that involve a variety of staff roles. Staff training of roles is crucial.
- When identifying patients who are likely to benefit from a SMBP program, remember patients are more likely to remain engaged when clinic staff discuss program requirements with the patient and ensure they have the capacity to participate.
- Use only blood pressure devices that have been validated for clinical accuracy for your SMBP program.

SMBP Resources

- Self-Measured Blood Pressure Monitoring (SMBP) Implementation Toolkit - Website
- What to Know before Taking Your Own Blood Pressure - Website
- Tools and Resources for Patients - Website
- SMBP Training Video - Website with Video

Scope of Practice – Resources

- **Medical assistant (MA)**
  - Medical Assistants Scope of Practice Clarified - Website
  - Scope of Practice for Medical Assistants (by State) - Website
  - The Legal Scope of Practice for Medical Assistants in Michigan - Website
  - Scope of Practice|Wisconsin Society of Medical Assistants - Website
- **Community health worker (CHW)**
  - Community Health Worker Scope of Practice (Final) - Website

Scope of Practice – Resources (continued)

- **Registered nurse (RN)**
  - Michigan Legislature - Section 333.17221 - Website
  - Scope of Practice / Minnesota Board of Nursing - Website
  - Standards of Practive for RNs and LPNs - Website
- **Pharmacist**
  - Scope of Practice - Website
  - Provider Status FAQ - Handout

Hypertension Provider Resources

- Frontline Forces Proper Technique for Blood Pressure Measurement, Superior Health Quality Alliance - Website
- Healthy People 2030 Framework - Healthy People 2030 - Website
- Obesity-Associated Hypertension - Website
- Hypertension Management Program (HMP) Toolkit - Website
- Scaling and Spreading an Intervention for Hypertension Control: An Approach to Address Disparities - Website
- High Blood Pressure Communications Toolkit | High Blood Pressure - Website

Hypertension Patient Education

- How to Manage Blood Pressure - Website
- Know Your Risk Factors - Website
- What is High Blood Pressure Medication? - Website
- Home Blood Pressure Monitoring - Website
- Making decisions using NICE guidelines - Website
- Tools and resources | Hypertension in adults: diagnosis and management - Website
- Blood Pressure Toolkit - Website

SECTION 2

Aspirin Use and Cholesterol Management

ASPIRIN

Introduction

- Disclaimer: In this playbook, we discuss aspirin/acetylsalicylic acid (ASA) as part of primary and secondary prevention. While not part of this playbook, ASA is used as a treatment in acute cases of stroke and myocardial infarction (MI).
- Aspirin reduces platelet aggregation and thrombus formation.
- Decisions regarding ASA use should be based on clinical judgment and long-term antiplatelet strategy when identifying patient(s) who may benefit from aspirin therapy.

Primary Prevention

- Daily low-dose aspirin therapy (75-100 mg orally daily) may be recommended for the primary prevention of MI or stroke for:
  - Select adults, 40 to 70* years of age, who are at higher risk for atherosclerotic cardiovascular disease (ASCVD) but not at increased bleeding risk.
  - Select adults younger than 60 and who have diabetes and at least one other heart disease risk factor, such as smoking or high BP.
- *USPSTF recommends against initiating the use of low-dose aspirin in most cases for patients over 60 years of age for primary prevention of ASCVD.

Secondary Prevention

- Because aspirin inhibits platelet aggregation, thereby reducing the risk for recurrent arterial thrombosis, aspirin may be a therapy used in secondary prevention of cardiovascular disease (CVD).
- The advent of newer and more potent antiplatelet drugs, such as the P2Y inhibitors (e.g. Plavix), have expanded antithrombotic options for secondary prevention beyond aspirin.
- Daily low-dose aspirin therapy may be recommended for the secondary prevention of MI or stroke for patients:
  - With ASCVD
  - With existing heart problems, including a history of:
    - MI
    - Stroke
    - Angioplasty
    - Percutaneous coronary intervention (PCI)
    - Coronary artery bypass surgery (CABG)
  - Decisions should be based on clinician judgment and long-term antiplatelet strategy.

Identifying Appropriate Candidates for Aspirin Therapy

- Patient risk assessment
  - History of cardiovascular events
  - Risk factors
    - Falls
    - Alcohol use
  - Drug interactions
  - Family and social history
- Balancing benefits and risks
  - Bleeding risks
  - Allergic reactions
- Patient Education
  - Encourage active patient and caregiver involvement in the decision process (shared decision-making).
  - Communicate the benefits and risks to patients.
  - Address patient concerns and questions.

Aspirin Resources

- Aspirin in the Modern Era of Cardiovascular Disease Prevention - Website
- The Role of Aspirin in the Prevention of Cardiovascular Disease - Website
- New USPSTF Recommendation on Aspirin in CVD: No For Primary Prevention, Yes For Secondary Prevention - Website
- Daily aspirin therapy: Understand the benefits and risks - Website
- Back to Baseline and Beyond: Partnering with Patients Using Motivational Interviewing - Website with Video

CHOLESTEROL

- Risk factors for elevated cholesterol that patients can control include dietary choices, physical activity, maintaining a healthy weight, tobacco cessation, limiting alcohol intake and stress management .
- Statin medications are used to lower low-density Lipoprotein (LDL) cholesterol by slowing liver production of and increasing removal of cholesterol from blood.
- Patient education and shared decision-making are important components in helping patients manage their cholesterol.

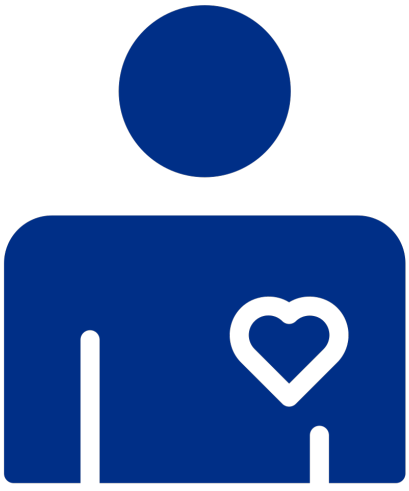
What is Cholesterol and Why It's Important to Pay Attention to It

Cholesterol is a type of fat essential for building cells and producing hormones. It plays a crucial role in cell membrane structure, hormone production, bile acid synthesis and vitamin D synthesis. However, maintaining balanced cholesterol levels is vital for cardiovascular health. High levels of LDL cholesterol, or "bad" cholesterol, can lead to atherosclerosis and heart disease, while high-density lipoprotein (HDL) cholesterol, or "good" cholesterol, helps remove excess cholesterol from the bloodstream. To maintain healthy cholesterol levels, it's important to follow a heart-healthy lifestyle, including a balanced diet, regular exercise and avoiding smoking.

Current Guidelines for Cholesterol

Current guidelines for cholesterol testing and follow-ups, based on recommendations from the American Heart Association (AHA), American College of Cardiology (ACC) and National Lipid Association (NLA), may vary slightly based on individual risk factors and medical history. Here's a clear summary:

General Cholesterol Testing Recommendations



Adults 20 years and older:
Cholesterol screening every four to six years as part of cardiovascular risk assessment.

Individuals with risk factors or heart disease:
More frequent cholesterol screenings may be needed.

Lipid Panel Components

- A standard lipid panel includes:
  - Total cholesterol
  - LDL cholesterol
  - HDL cholesterol
  - Triglycerides

Additional tests, like non-HDL cholesterol or apolipoprotein B (apoB), may be recommended for further risk assessment.

Target Cholesterol Levels

LDL cholesterol levels are measured in milligrams per deciliter of blood. The following categories are used to describe LDL cholesterol levels in adults.

- Normal: Below 100 mg/dL
- Near optimal: 100 – 129 mg/dL
- Borderline high: 130 – 159 mg/dL
- High: 160 – 189 mg/dL
- Very high: 190 mg/dL or higher

Your optimal LDL cholesterol level should be around 100 mg/dL or less.

Follow-Up and Monitoring

- **After starting or adjusting lipid-lowering therapy (e.g., statins):** Follow-up testing within 4 to 12 weeks.
- **Once stable:** Periodic follow-up testing, usually annually or biennially, based on risk profile and treatment plan.

Special Populations

- **Individuals with diabetes, chronic kidney disease, or familial hypercholesterolemia:** More frequent monitoring and specific treatment targets.
- **Certain ethnic populations and women:** May require special considerations.

Individualized Plans

Healthcare providers should tailor cholesterol testing and follow-up plans based on each patient's unique risk factors, medical history and treatment response. Patients should consult their healthcare providers for personalized guidance.

For the most current and detailed guidelines, refer to the latest publications by reputable organizations like the American College of Cardiology (ACC) and American Heart Association (AHA) or National Lipid Association (NLA).

Risk Factors

Out of our control: Identifying the non-modifiable risk factors for high cholesterol involves understanding those predominantly influenced by genetics or other fixed aspects:

1. Genetics and family history: Genetic factors, including familial hypercholesterolemia (FH), significantly influence cholesterol levels.
2. Age and gender: Cholesterol levels tend to rise with age. Men typically have higher levels than premenopausal women, but women's LDL cholesterol may increase after menopause.
3. Ethnicity and race: Certain ethnic and racial groups, such as African Americans and Hispanic Americans, have a higher prevalence of high cholesterol.
4. Hormonal changes: Changes during puberty, pregnancy and menopause can affect cholesterol levels.

5. Underlying medical conditions: Conditions like hypothyroidism, chronic kidney disease and liver diseases can contribute to high cholesterol.
6. Genetic lipid disorders: Disorders such as familial combined hyperlipidemia and familial dysbetalipoproteinemia result from genetic mutations affecting lipid metabolism.
7. Genetic variations in lipid pathways: Inherited variations in genes involved in lipid metabolism impact cholesterol regulation.
8. Social drivers of health (SDOH): Factors such as access to resources and living conditions can influence cholesterol levels and cardiovascular risk.

While these factors are beyond individual control, awareness can guide health care providers in assessing and managing cardiovascular risk through regular screenings, lifestyle modifications and targeted interventions.

Within our control: Identifying and managing lifestyle factors is crucial for controlling high cholesterol. Here are key risk factors within individual control:

1. Dietary choices:
   - Limit foods high in saturated fats, trans fats and cholesterol, such as red meat, full-fat dairy, fried foods and processed snacks.
   - Opt for a heart-healthy diet rich in fruits, vegetables, whole grains, lean proteins and healthy fats.
2. Physical activity:
   - Regular exercise can raise HDL ("good") cholesterol and improve overall cardiovascular health.
   - Aim for at least 150 minutes of moderate exercise or 75 minutes of vigorous exercise per week.
3. Maintaining a healthy weight:
   - Being overweight can increase LDL ("bad") cholesterol and decrease HDL cholesterol.
   - Adopt healthy eating habits, monitor portion sizes and aim for gradual, sustainable weight loss through diet and exercise.
4. Tobacco cessation:
   - Smoking damages blood vessels and raises LDL cholesterol.
   - Quitting smoking improves cholesterol levels and heart health.
5. Limiting alcohol intake:
   - Excessive alcohol can raise triglyceride levels and cholesterol.
   - Limit alcohol to up to one drink per day for women and two for men.
6. Stress management:
   - Chronic stress can lead to poor dietary choices and increased cholesterol.
   - Practice stress-reducing techniques like mindfulness, meditation and yoga.

Focusing on these modifiable risk factors can help manage cholesterol levels and reduce cardiovascular risk. Regular cholesterol screenings and consultations with healthcare providers are also essential.

Medications and Usage

Medication list: Various medications help manage high cholesterol, each working differently.

1. Statins:
   - Lower LDL cholesterol by reducing its production in the liver and increasing the liver's ability to remove it from the blood.
2. Bile acid sequestrants:
   - Remove cholesterol by breaking down LDL cholesterol to produce bile acids.
3. Niacin (nicotinic acid):
   - B vitamin that raises HDL cholesterol and lowers total cholesterol, LDL cholesterol and triglycerides.
4. Fibrates:
   - Lower triglycerides by reducing their production in the liver.
5. Injectable medicines (PCSK9 inhibitors):
   - Decrease LDL cholesterol by increasing LDL receptors, used mainly for patients with genetic conditions like familial hypercholesterolemia or severe ASCVD.

Recommendations for Hyperlipidemia

- Statin therapy is guided by a patient's low-density lipoprotein cholesterol (LDL-C) level and their cardiovascular disease (CVD) risk.
- **Lifestyle modification** – All patients with an elevated LDL-C should exercise and adopt a healthy lifestyle. Behavior change methodologies and patient centered care are required to assist the patient in achieving a healthy lifestyle and to meet the patient's health goals.
- **LDL-C ≥190 mg/dL**– Perform a work-up for FH. Whether or not the patient has FH, statin treatment is recommended. A higher-dose statin therapy is recommended.
- **LDL-C 100 to <190 mg/dL** – The indication for a statin therapy is guided by the patient's 10-year estimated CVD risk group.
- **High-risk and very high-risk patients** – Patients with a high or very high CVD risk (>7.5 percent 10-year risk of CVD) and LDL-C in the range of 100 to <190 mg/dL, Statins therapy is recommended. Clinical trials have consistently shown that statin use reduces the risk of major cardiac events.
- **Repeat LDL-C and CVD risk assessment** – Re-assess levels of LDL-C response at four to six weeks after initiating therapy and every 12 months thereafter to assess for compliance and efficacy.
- The goal should be LDL-C is <100 mg/dL. In high-risk patients, if the LDL-C remains above this level, consider increasing the dose of statin and/or dual therapy.

Managing Side Effects

- Adverse effects can vary among the statins. Management options in patients with side effects may be recommended.
- Statin-intolerant patients – If statin is not tolerated, both ezetimibe and bempedoic acid are reasonable effective alternatives to statins.
- Special populations – In patients > 75 years of age, the same approach to guide therapy as patients < 75 years of age.
- Statins are stopped in pregnant patients due to higher potential risk versus benefits.

Primary Prevention

Moderate-intensity statin therapy is generally reasonable for primary prevention of CVD in most patients.

For more detailed guidance on statin use for preventing cardiovascular disease, refer to the United States Preventive Services Taskforce recommendations.

- Recommendation: Statin Use for the Primary Prevention of Cardiovascular Disease in Adults: Preventive Medication | United States Preventive Services Taskforce - Website

Source: Low-density lipoprotein cholesterol-lowering therapy in the primary prevention of cardiovascular disease - Website

Patient Education and Shared Decision-Making

Patient education and shared decision-making are crucial for empowering patients to make informed health choices and actively participate in their treatment.

- **Patient education:** Provides information on cholesterol, its health impact, lifestyle changes and treatment options.
- **Shared decision-making:** Involves collaboration between healthcare providers and patients to make healthcare decisions based on patient preferences, values and goals.

Tools and resources such as educational materials, decision aids and interactive sessions facilitate patient engagement and enhance patient-provider interactions.

Prioritizing these approaches improves treatment adherence and health outcomes.

Recommendations for Change: Lifestyle Modifications for Cholesterol Management

Heart-healthy diet

- Opt for foods low in saturated fats, trans fats and dietary cholesterol.
- Choose lean proteins like poultry, fish, legumes and tofu.
- Eat plenty of fruits, vegetables, whole grains and fiber-rich foods.
- Limit red meat, processed meats, full-fat dairy and fried foods.
- Use healthy fats like olive oil, avocados, nuts and seeds in moderation.

Maintain a healthy weight

- Combine a balanced diet with regular exercise to achieve and maintain a healthy weight.
- Aim for gradual, sustainable weight loss if overweight or obese.

Regular physical activity

- Engage in aerobic exercises (brisk walking, jogging, swimming, cycling) for at least 30 minutes most days.
- Include strength training 2-3 times a week.
- Aim for 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity exercise per week.

Quit tobacco

- Stop using tobacco to improve cholesterol levels and reduce cardiovascular risk.
- Seek support from healthcare professionals, cessation programs, or counseling.

Stress management

- Practice mindfulness, meditation, deep breathing, yoga, or hobbies.
- Prioritize adequate sleep and establish healthy sleep patterns.

Medication adherence and regular check-ups

- Take prescribed cholesterol-lowering medications as directed.
- Schedule regular check-ups and cholesterol screenings.

Making these lifestyle changes can help manage cholesterol levels, reduce heart disease risk and improve overall heart health. Work with your healthcare team to create a personalized plan.

Cholesterol Resources

- American College of Cardiology (ACC) - Website
- American Heart Association (AHA) - Website
- National Cholesterol Education program - Website
- Journals of American College of Cardiology - Website
- Million Hearts - Website
- Cholesterol Clinical Practice Guidelines 2018 - Website
- One in Five People May Inherit Elevated Lp(a) - Website
- Medline - Video
- Cholesterol Levels - Website
- Patient education: High cholesterol and lipid treatment options (Beyond the Basics) - Website
- Stages of Change Model - Rural Health Promotion and Disease Prevention Toolkit - Website
- Recommendation: Statin Use for the Primary Prevention of Cardiovascular Disease in Adults: Preventive Medication | United States Preventive Services Taskforce - Website
- Risk Factors for High Cholesterol - Website

SECTION 3

Tobacco Cessation

Introduction

Tobacco products pose significant risks to heart health. Smoking, in particular, leads to endothelial dysfunction, oxidative stress and increased cardiovascular morbidity and mortality. The harmful chemicals in tobacco smoke circulate in the blood, damaging the heart and blood vessels. Over time, these toxins contribute to the buildup of fats and debris in blood vessels, narrowing them and increasing the risk of heart disease. Quitting smoking is crucial for protecting against cardiovascular issues, even for those with existing heart conditions. Health care providers have a professional obligation to help patients improve their health. This includes addressing tobacco use and helping patients to quit.

- If a patient asks you whether you use tobacco or have used tobacco in the past, be honest.
- Prior to providing tobacco cessation assistance to patients, it is helpful to assess each patient's readiness to quit.
- Change is a process. There are five stages in the overall process of change:
  - **Precontemplation:** not thinking about changing in the next six months.
  - **Contemplation:** considering changing in the next six months, but not in the next 30 days.
  - **Preparation:** ready to change in the next month.
  - **Action:** in the process of change (but implemented the change less than six months ago).
  - **Maintenance:** has fully implemented the change for more than six months.

View the **Superior Health Smoking Cessation: Managing and Treating Tobacco Use Playbook** for information and resources to support.

CARDIAC REHABILITATION

- Cardiac rehabilitation (cardiac rehab) provides a comprehensive, interdisciplinary, team-based approach to care for patients with cardiovascular disease and a qualifying event.
- Cardiac Rehab can reduce the risk of associated mortality and improve cardiovascular function to help individuals optimize their quality of life.
- Evidence suggests that individuals that complete the recommended 36-session cardiac rehabilitation program have a 47% lower risk of death and 31% lower risk of heart attack than those who only attended one session.
- Key benefits of cardiac rehab:
  - Better medication adherence.
  - Improved exercise performance.
  - Improved quality of life.
  - Improved patient mood.
  - Reduced readmissions.
  - Improved quality of care and quality metrics.
- Individuals are more likely to participate in cardiac rehab if providers speak with them face to face to endorse the program.
- Involve primary care providers (PCPs) in the referral process, especially for heart failure and unstable angina patients that may not be hospitalized but still qualify for cardiac rehab. Medicare Part B covers cardiac rehab for individuals with a qualifying event and when eligibility requirements are met.
  - An acute myocardial infarction within the preceding 12 months.
  - Coronary bypass surgery.
  - Current stable angina pectoris.
  - Heart valve replacement or repair.
  - Heart or heart-lung transplant.
  - Percutaneous transluminal coronary angioplasty (PTCA) or coronary stenting.
  - The following are the applicable Current Procedural Technology (CPT) codes for cardiac rehab services:
    - 93797 (Physician or other qualified health care professional services for outpatient cardiac rehabilitation without continuous electrocardiogram (ECG) monitoring (per session)).
    - 93798 (Physician or other qualified care health professional services for outpatient cardiac rehabilitation with continuous ECG monitoring (per session)).

The following are the applicable Health Care Procedure Coding System (HCPCS) codes for intensive cardiac rehabilitation (ICR):

- G0422 (Intensive cardiac rehabilitation; with or without continuous ECG monitoring, with exercise, per hour, per session).
- G0423 (Intensive cardiac rehabilitation; with or without continuous ECG monitoring, without exercise, per hour, per session).

Many people who can benefit from cardiac rehabilitation are not participating in the program.

- Ask and address barriers that may impact the individual's cardiac rehabilitation participation by ensuring the person is screened and referred to services and resources for social drivers of health (SDOH). Common barriers could include transportation, financial, family obligations, cultural traditions and language barriers.
- To eliminate barriers:
  - Identify and draft materials for patients on local transportation programs.
  - Discuss available patient transportation assistance.
  - Consider flexible scheduling by establishing after hours appointment times.
  - Identify hybrid cardiac rehabilitation centers in your area.
  - Consider community exercise programs (contact your local area aging resource center for locations) such as "Silver Sneakers" if there is not a certified cardiac rehab facility available with the understanding that the patient will not be able to bill their insurance.

Cardiac rehab is underutilized with only 29% of patients initiating cardiac rehab sessions. One reason for low participation is an individual's lack of physical access to a cardiac rehab program or limited capacity to serve eligible patients. The American Association of Cardiovascular and Pulmonary Rehabilitation's (AACVPR) online directory serves as a resource of all AACVPR programs across the U.S. for clinicians and patients. Program Directory (aacvpr.org)

Cardiac Rehab Resources

- Cardiac Rehab Program Directory - Website
- Chronic Disease Management Resources: Cardiac Rehabilitation - Website
- Cardiac Rehabilitation Change Package, second edition - Website
- Million Hearts Outpatient Cardiac Rehabilitation Use Surveillance Methodology - Website
- Cardiac Rehab Billing
  - MLN7561577 - Conditions of Coverage for Outpatient Cardiac - Website
  - Article - Billing and Coding: Frequency and Duration for Cardiac Rehabilitation and Intensive Cardiac Rehabilitation (A53775) - Website
- State Resources for Assistance
  - Minnesota Area Agencies on Aging - Website
  - Michigan Area Agencies on Aging - Website
  - Wisconsin Area on Aging and Disability Resources - Website

SECTION 4
Lifestyle and Nutrition

Introduction

Maintaining cardiovascular health involves a combination of lifestyle choices and nutrition. Cardiovascular diseases are one of the main causes of illness and death in the United States, and cardiovascular drugs are the most commonly used medications. Making changes to lifestyle factors such as diet and activity can significantly reduce the development and prevention of cardiovascular disease.

Factors That Can Be Modified	Factors That Cannot Be Modified (Risk Factors)
Lifestyle	Genetic
Diet	Gender
Environment	Family History
Smoking	Age
Weight	
Stress Reduction	

Recommended Changes for Improved Lifestyle

- **Tobacco Cessation:** Tobacco use significantly increases the risk of heart disease. Even secondhand smoke can be harmful.
- **Physical Activity:** Regular physical exercise helps to lower blood pressure and improve physical strength. The aim for exercise should be at least 150 minutes of moderate aerobic exercise, such as brisk walking, along with strength training sessions. Recommendations for exercise include:
  - Aerobic (or "cardio") activity increases the heart rate and benefits your heart by improving cardiorespiratory fitness.
    - Brisk walking (at least 2.5 miles per hour)
    - Water aerobics
    - Dancing (ballroom or social)
    - Gardening
    - Tennis (doubles)
    - Biking slower than 10 miles per hour

- **Healthy Diet:** A heart-healthy diet can help improve cardiovascular health by influencing many aspects of heart health, including blood pressure, inflammation, cholesterol levels and triglycerides. Evidence-based dietary pattern guidance to promote cardiometabolic health includes the following:
  - Adjust energy intake and expenditure to achieve and maintain a healthy body weight.
  - Eat plenty and a variety of fruits and vegetables.
  - Choose whole grain foods and products.
  - Choose healthy sources of protein (mostly plants; regular intake of fish and seafood; low-fat or fat-free dairy products; and if meat or poultry is desired, choose lean cuts and unprocessed forms).
  - Use liquid plant oils rather than tropical oils and partially hydrogenated fats.
  - Minimize added sugars and salt. Encourage patients to keep their dietary sodium intake low, either by reducing or substituting sodium salt, as this can reduce blood pressure.
    - ***Note: Salt substitutes containing potassium chloride should not be used by older patients, with diabetes, pregnant women, kidney disease and patients taking some antihypertensive drugs.
  - Do not offer/use calcium, magnesium or potassium supplements as a method for reducing blood pressure.
  - Caffeine intake should be modified.
  - Limit alcohol.
  - Choose minimally processed foods.
- **Best diets for heart disease**
  - DASH diet: also called the Dietary Approaches to Stop Hypertension eating plan.
  - Mediterranean diet: emphasizes vegetables, fruits, whole grains, beans and legumes and includes low-fat or fat-free dairy products, fish, poultry, certain vegetable oils and nuts. The diet limits added sugars, sugary beverages, sodium, highly processed foods, refined carbohydrates, saturated fats and fatty or processed meats.
- **Weight Management:** Maintain a healthy weight to reduce strain on the heart. The close relationship between excess adipose mass and hypertension is well researched, showing excess adiposity (fat) as the strongest known risk factor for hypertension in males and female of all ages and races. Weight gain is linked to hypertension, cholesterol and increased risk for diabetes.
- **Stress Reduction:** Breaking the connection between chronic stress and heart disease requires learning to deal with stress and managing unhealthy habits. Practice relaxation techniques to manage stress.

- **Adequate sleep:** Sleep plays a critical role in maintaining cardiovascular health. Adults need at least seven hours of sleep each night for optimal health. Insufficient sleep over time can lead to serious health problems and exacerbate existing conditions, including CVD.
  - Blood Pressure: Normal sleep involves a decrease in blood pressure, known as nocturnal dipping. Sleep problems can prevent this natural lowering, keeping blood pressure higher for longer periods, which is a leading risk factor for heart disease and stroke.
  - Sleep Apnea: This condition, where breathing repeatedly stops and starts during sleep, can decrease oxygen levels and increase the risk for many health problems, including high blood pressure, heart attack and stroke.
  - Heart Rhythm: Chronic sleep deprivation can lead to heart rhythm irregularities and stress.
  - Metabolic Impact: Poor sleep patterns can affect metabolism and cause inflammation, which may contribute to the development of CVD over time.
- **Limit alcohol:** Excessive alcohol consumption can harm the heart, so limit your intake.
- **Family history and age:** While you can't change these factors, awareness helps you manage other risks effectively.

Shared Decision-Making for Lifestyle and Nutrition Factors

- **Patient-centered care**
  - Patient-centered care (PCC) is a healthcare approach that ensures the patients values align with clinical decisions. PCC involves viewing patients as active participants in their own care and respecting their autonomy and choices regarding their health. Communication is key in PCC, with healthcare providers offering clear, accessible information and collaboration with patients to develop their treatment plans. This model of care also emphasizes the importance of the patient's experience, aiming to provide comfort, emotional support and alleviation of fear and anxiety. The ultimate goal of PCC is to improve individual health outcomes, enhance patient satisfaction and optimize the efficiency of the healthcare system by aligning care with what is most important to patients.
    - Approaches:
      - Diet and exercise:
        - Ask the patient about diet and exercise patterns. Offer appropriate guidance and written or audiovisual materials to promote lifestyle changes.
      - Alcohol and caffeine:
        - Ask patients about alcohol consumption and encourage a reduced intake if they drink excessively.
        - Ask if the patient drinks excessive caffeine?

- Tobacco cessation:
  - Ask patients about smoking patterns, trends, and inquire if the patient has thought about smoking cessation or stopping smoking entirely.
- Educate and inform patients about local initiatives by, for example, healthcare teams or patient organizations that provide support and promote healthy lifestyle changes.

Provider Resources

- Guidelines and Recommendations for Physical Activity - Website
- How to Prescribe Exercise in Five Steps - Website
- What is Patient Centered Care - Website
- Obesity Associated Hypertension - Website

Patient Education

- Diet and Lifestyle Recommendations - Website
- Heart Health Fact sheets - Website
- Physical Activity Basics - Website
- How Much Physical Activity do you Need? - Website
- 5 ways to de-stress and help your heart - Website

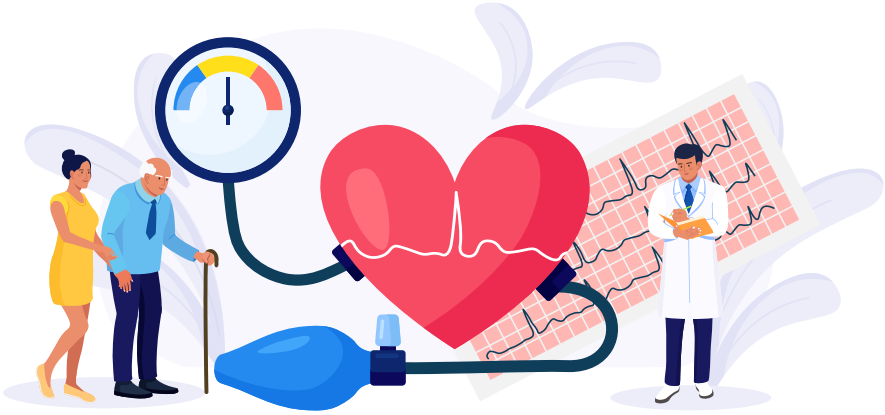
SECTION 5

Cardiovascular Health and Vaccines

Introduction

The relationship between viruses and cardiovascular health may increase inflammation and affect all aspects of the heart functionality. Inflammation could lead to plaque rupture, blood clots and blocked arteries which can cause heart attack or stroke related to COVID-19. A virus may not attack the heart directly but if a patient has pneumonia and has difficulty breathing the heart is strained. Also, a fever caused by infection may lead to heart arrythmias. More than 1.9 patients were infected with COVID-19, the vaccine was associated with a lower risk of heart attacks, stroke and other cardiovascular events. The flu vaccine is associated with a lower risk of stroke. Studies showed the flu vaccine lowered the chance of death of cardiovascular health for 18% of the patients and 25% lowers the chance of death from any cause.

Additional Reasearch



20% of Adults

hospitalized with RSV experience heart attacks and heart failure.

COVID-19 Increases

risks of heart attack by 3-8 times and stroke by 3-7 times.

Risk of Heart Attack

may be six times higher in the week after a flu diagnosis.

Source: What people with heart disease should know about vaccines today - Website

Recommended Vaccines

Patients with heart disease and who have suffered stroke are at higher risk for serious problems or complications from certain vaccine preventable diseases, for example: flu, which can raise the risk for cardiovascular events such as heart attack. Vaccines recommended for all adults.

- *COVID-19 - Website
- *Flu (influenza) - Website
- Tdap or Td - Website
- Pneumococcal vaccine - Website

*Flu and COVID-19 vaccine can be given at the same time.

Additional vaccines may be needed based on age or risk factors.

Recommendations May Include

- Chickenpox vaccine (varicella) – recommended for all adults born in 1980 or later
- Hepatitis B vaccine – recommended for all adults up through 59 years of age and for some adults 60 years of age and older with known risk factors
- HPV vaccine (human papillomavirus) – recommended for all adults up through 26 years of age and for some adults aged 27 through 45 years
- MMR vaccine (measles, mumps and rubella) – recommended for all adults born in 1957 or later
- Shingles vaccine (zoster) – recommended for all adults 50 years of age and older

Source: Recommended Vaccines for Adults - Website

Provider Resources

- Recommended Vaccines for Adults - Website
- Immunizations: Wisconsin Immunization Registry - Website
- Minnesota Immunization Information Connection - Website
- Michigan Immunization Portal - Website

Patient Resources

- Take a short quiz and get a list of vaccines - Website
- Recommended Vaccines for Adults - Website
- What people with heart disease should know about vaccines today - Website

Social Drivers of Health and Cardiovascular Disease

Social Drivers of Health (SDOH) refers to the conditions in which people live, learn, work and play. SDOH play a crucial role in driving disparities related to cardiovascular disease in the United States.

SDOH significantly impacts cardiovascular disease (CVD) risk factors, outcomes and clinical care. SDOH are a multidimensional measure encompassing factors related to where people are born and raised, engage in activities, reside and work, which can significantly influence health outcomes, including CVD. SDOH plays an important role in shaping cardiovascular disease (CVD) outcomes and disparities.

SDOH includes a variety of factors that cross socioeconomic and environmental structures and have impacts on both community and individual health. Factors that exist outside the traditional health care system include:

- **Economic stability:** Income, employment and financial security.
- **Education:** Access to quality education and literacy.
- **Food:** Availability of nutritious food and food security.
- **Neighborhood and physical environment:** Housing, safety and environmental factors, access to green spaces.
- **Health care system:** Access to health services and insurance.
- **Community and social context:** Social support, community engagement and social cohesion.
- **Transportation**

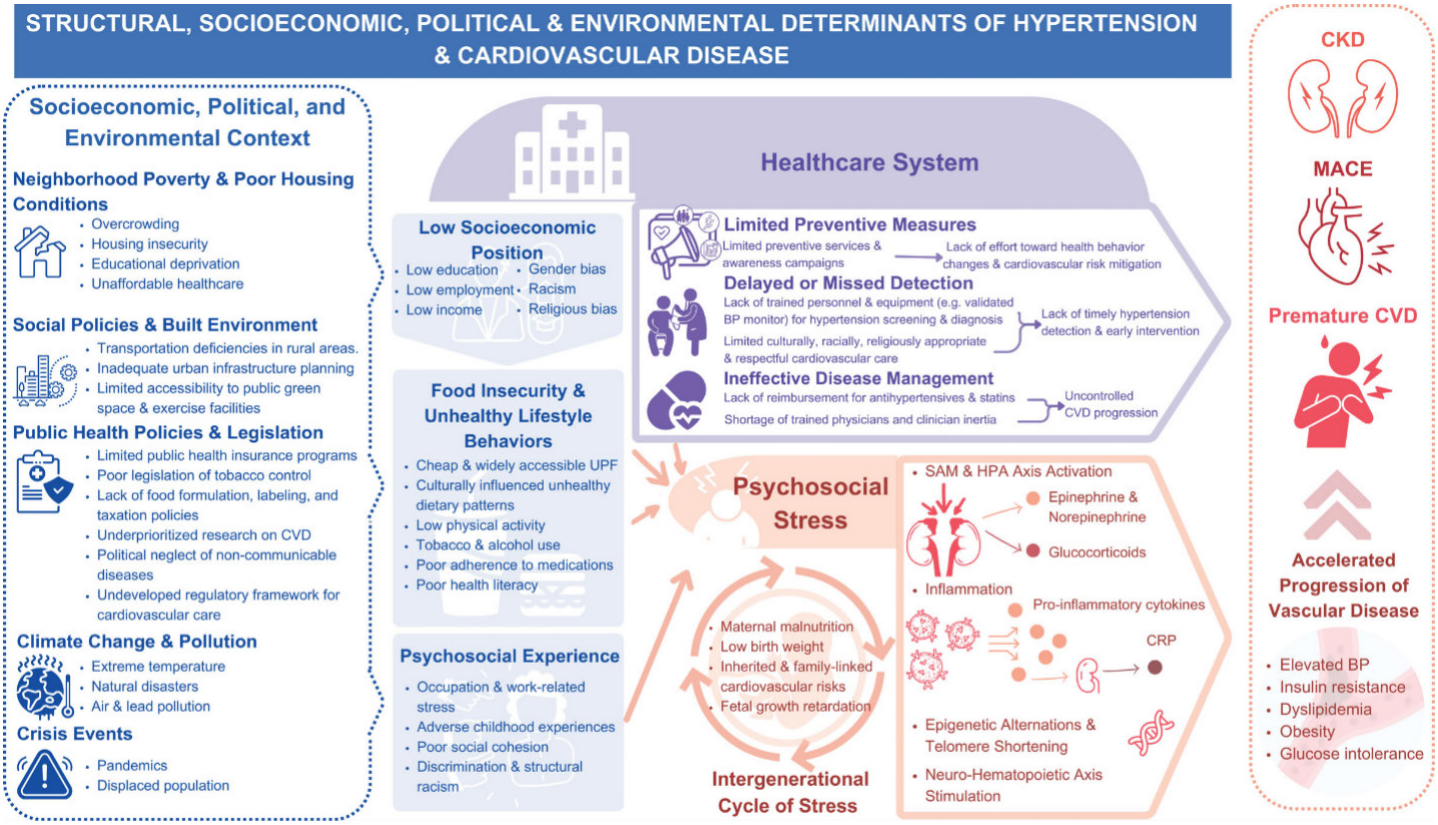
In addition, racial or other forms of disadvantaged minority segregation, structured racism and various psychosocial stressors, may be burdensome on the patient to acquire health care and access to health care across the continuum. These factors shape an individual's health behaviors, fostering unhealthy practices that directly impact stress levels, leading to increased inflammation markers and the possibility of CVD.

Patients with adverse SDOH experience worse CVD outcomes, such as:

- Stroke
- Myocardial infarction (MI-heart attack)
- Coronary heart disease
- Heart failure
- Mortality

Studies have looked at the impact of social drivers of health on anticoagulant use among patients indicate a lower likelihood of receiving an anticoagulant prescription among non-White race compared to White race. In addition, Hypertension is the leading preventable risk factor for global mortality, causing over 10 million deaths annually. Low - and middle-income countries (LMICs) suffer the most, with <20% of individuals achieving adequate BP control and hypertension-related cardiovascular disease (CVD) deaths.

In high-income countries (HICs), BP control is ≈50% with decreasing hypertension-related CVD deaths. Disparities persist among low-income, rural and racial/ethnic minorities. In the United States, Black individuals experience about 4× the hypertension-related CVD mortality than White individuals.

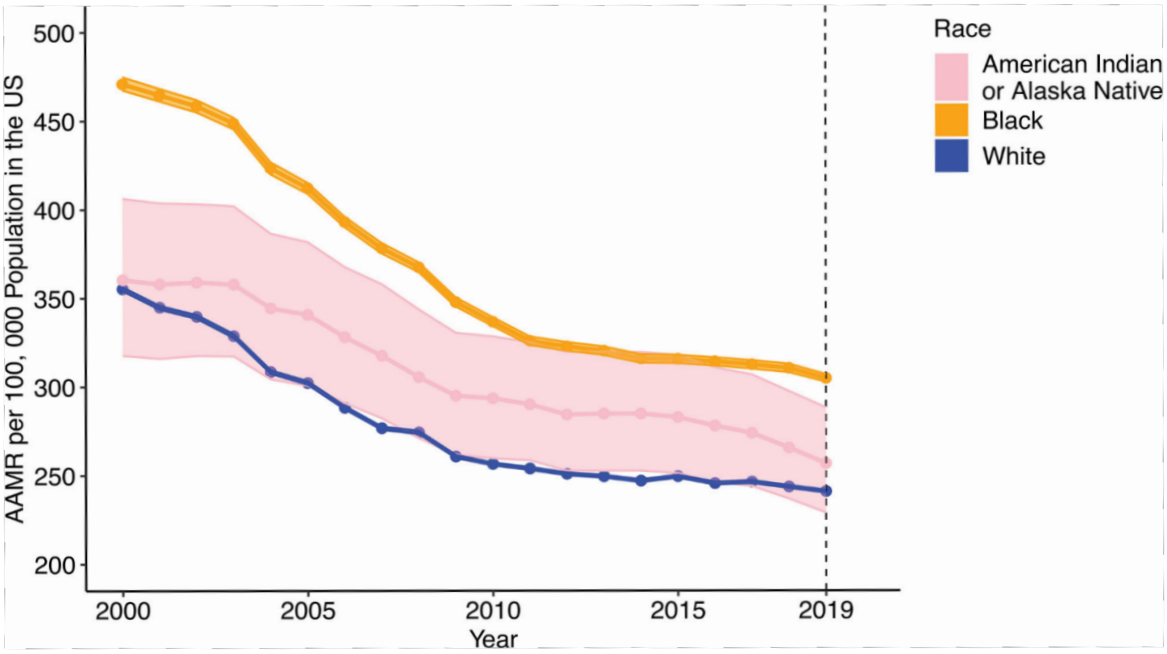


Source: Social Determinants of Health and Disparities in Hypertension and Cardiovascular Diseases | Hypertension (ahajournals.org)

SDOH and Mortality

SDOH are crucial in understanding and addressing cardiovascular health disparities and efforts to improve these determinants can lead to better health outcomes and reduced mortality from CVD. Adverse SDOH are linked to a higher burden of CVD risk factors and poor outcomes such as stroke, myocardial infarction, coronary heart disease, heart failure and mortality.

SDOH cannot be understated related to patient care and outcomes. SDOH influences the burden of CVD. It is critical to highlight SDOH related to CVD requires efforts nationally.



Estimated age-adjusted mortality rates for cardiovascular disease in the United States, This figure displays age-adjusted mortality rates (AAMRs) for cardiovascular disease in the United States from 2000 to 2019. Shaded areas indicate 95% uncertainty intervals.

Source: Social Determinants of Health and Disparities in Hypertension and Cardiovascular Diseases - Review article

Interventions

- The efforts must be coupled with robust community engagement, social financing and strategic partnerships with non-health sector entities, including municipal organizations, faith-based institutions, schools, small businesses and psychosocial support systems. A team-based care approach is an effective strategy and allows clinicians to evaluate the social drivers of health that affect individuals to inform treatment decisions.

Creating environments conducive to healthy behaviors is imperative; such as promoting a nutritious diet and providing accessible green spaces for physical activity and tobacco control measures. In addition, ensuring access through efficient transportation and digital technology are vital components for patient care.

Community support plays a vital role in preventing cardiovascular disease (CVD).

Community health workers (CHWs): CHWs, trusted members of the community, bridge the gap between health care systems and individuals. They provide:

- Culturally appropriate education.
- Social support and informal counseling.
- Connection to services.
- Health screenings (e.g., blood pressure checks).

Reducing risk factors: CHWs engage at-risk populations, helping them understand CVD risks and adopt healthier lifestyles.

Seamless clinic-to-community linkages: CHWs facilitate access to care, especially in underserved communities.

Resources

- Addressing the Social Determinants of Cardiovascular Health for All: Defining the Problem and Creating Solutions - Website
- Social Determinants of Health and Disparities in Hypertension and Cardiovascular Diseases - Website

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