Cutting Straight to the Heart: A pandemic lays bare the inequity of heart disease in America

A Report from the National Forum for Heart Disease & Stroke Prevention

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Cardiovascular health and disparities: causes and consequences of COVID-19

COVID-19 has laid bare the costs to society and communities of inadequate attention to cardiometabolic health and health inequity. Because people with poor cardiometabolic health are most vulnerable to COVID-19, this neglect has led to many avoidable deaths, much severe illness, and huge economic costs, as well as even greater disparities than before. These newly compounded burdens fall heavily on disadvantaged groups in our society who already suffer disproportionately. ***Why?***

Pre-existing heart disease and cardiovascular risk are strongly associated with severe illness from COVID-19, often leading to hospitalization and death. Serious heart conditions – including heart failure, coronary artery disease, cardiomyopathies, obesity, type 2 diabetes mellitus, and hypertension – are listed as major risk factors for severe illness from COVID-19 by the Centers for Disease Control and Prevention (CDC).[2] For example, half of patients hospitalized with COVID-19 had hypertension and half were obese, in a study reported by CDC.[3]

COVID-19 infection can also cause damage to the heart. Magnetic resonance imaging (MRI) performed after COVID-19 infection found a high rate (78%) of myocardial (heart muscle) abnormalities that showed inflammation and infiltration of the heart muscle by the novel coronavirus.[4,5] These findings suggest long-term serious cardiovascular consequences of COVID-19 infection and significant long-term costs. Notably, deaths from heart disease in the U.S. increased by 4.2% from March 1 through August 1 this year compared to the same period in 2019, more than triple the average annual rate of change for recent years.[6, 7]

Minority populations are especially vulnerable to these risks and consequences of COVID-19. Non-Hispanic (NH) Blacks or African Americans, Hispanics, and NH American Indians or Alaskan Natives have more than 2 ½ times the case rates and 4 ½ times the hospitalizations rates of NH Whites. And NH Blacks/ African Americans have twice the COVID-19 death rate of NH Whites.[8]

Disturbing trends in cardiovascular risk for COVID-19 and its complications: Inadequate response

Blood pressure control among adults with hypertension increased from 31.8% to 53.8% from 1999-2000 to 2013-2014; it declined dramatically to 43.7% in 2017-2018.[1]

Currently, control rates are significantly lower in NH Blacks/ African Americans (41.5%), NH Asians (41.1%), and Hispanics (40.5%) than in NH Whites (48.2%).[1] Control rates are also much lower in those without medical insurance (24.2% vs 49.0%) or a usual health care facility (26.5% vs.48.4%). These findings illustrate powerfully the racial and ethnic disparities in health in our society, now compounded in their impact on individuals, families, and communities by the depravations of COVID-19.

Ominously, the U.S. Surgeon General Jerome M. Adams has warned that, because of COVID-19, "We should expect health disparities to worsen. It's why we need to act on hypertension control right now."[9]

Obesity, which is both a disease and a risk factor for other diseases, increased among adolescents between 1999-2000 and 2017-2018, primarily in NH Blacks and Mexican Americans. Both obesity (BMI >30 kg/m2) and extreme obesity (>40 kg/m^2) have increased in adults, most rapidly in Mexican American men.[10]

Influenza may exacerbate both COVID-19 illness and cardiovascular events. The risk of having a heart attack is six times higher within a week of confirmed flu infection, according to a 2018 study.[11]

Neglected cardiovascular health and diseases cost lives and dollars

With the COVID-19 pandemic ongoing, the costs to treat its victims cannot be totaled. However, the costs of cardiovascular diseases that are exacerbating COVID-19 illness are known.

Cardiovascular disease (CVD) costs states huge sums. Hypertension increases Medicaid expenditures by $312 per beneficiary.[12] It is estimated that 17.2%-27.4% of Medicaid enrollees aged 18-64 years have hypertension.[13] For a state such as Ohio, with 3 million Medicaid beneficiaries[14], if 20% have hypertension, it increases the state's Medicaid costs by $187.2 million.

Communities face economic cost burdens from cardiometabolic disease. A recent report found the incremental medical cost of hypertension is $201.2 million in metropolitan Buffalo and $349.2 million in metropolitan Nashville.[15] Lost productivity adds to the community burden.

CVD costs employers, too. An employee with CVD costs her/his employer on average 56 hours of lost productivity annually and an additional $1,100 in higher insurance premiums compared to an employee without CVD.[16] The higher costs and productivity losses affect an employer's competitiveness in addition to profits.

What actions can we take to reduce the burden of cardiovascular risk and disease, COVID-19, and health inequities now and in the future?

Many people express a strong desire to return to a pre-pandemic "normal." We need not to revert to an imagined "normal" in which preventable cardiovascular risk and disease and unacceptable health inequities were inadequately addressed. Instead, National Forum members must engage substantially with others in leading the nation forward to a true normal. We must acknowledge and help the nation recognize that our relative neglect has significantly exacerbated COVID-19's health and economic impact especially on vulnerable groups in our society. Improving cardiovascular health and health equity for all will make our communities more resilient and our nation stronger. Effective leadership, community engagement, and widespread participation are essential to realize the future we need to achieve.

In the setting of the pandemic, we must urgently prioritize actions that will help **rapidly** reduce risk factors for severe COVID-19 and heart attacks and strokes. These include:

1. **Flu vaccination.** Influenza contributes to cardiovascular morbidity and mortality particularly in individuals with preexisting CVD. Flu vaccination lowers the risk.[17]
2. **Treating hypertension with an algorithmic medication approach,** combined with lifestyle modification. High levels of blood pressure control can be achieved relatively quickly in this manner.[18]
3. **Emphasize adherence to medications** in people with cardiovascular disease.
4. **Increase access to tailored interventions delivered by pharmacists.** The Community Preventive Services Task Force (CPSTF) found that such care increases medication adherence and it is cost-effective for cardiovascular disease prevention.[19]

Beyond these immediate measures, we will work to mobilize action across our society to truly achieve these longstanding aims

1. **Engage a broad set of stakeholders in collaborations to address social determinants of health (SDOH)** such as access to healthy food, housing, smoke-free environments, and safe places for physical activity.
2. **Incentivize healthcare providers to ascertain patients' SDOH vital signs and connect patients to community services they need.** Health systems who do these things have helped patients improve their health and reduce emergency room visits and healthcare spending.[20]
3. **Use policy to make healthy life choices easier for people.** For example, Healthy Kids Meal policies make it easier for parents to encourage their children to make healthy food and beverage choices. Increasing access to active routes to everyday destinations result in increased physical activity.[21]

Answer the Surgeon General's Call to Action to Control Hypertension

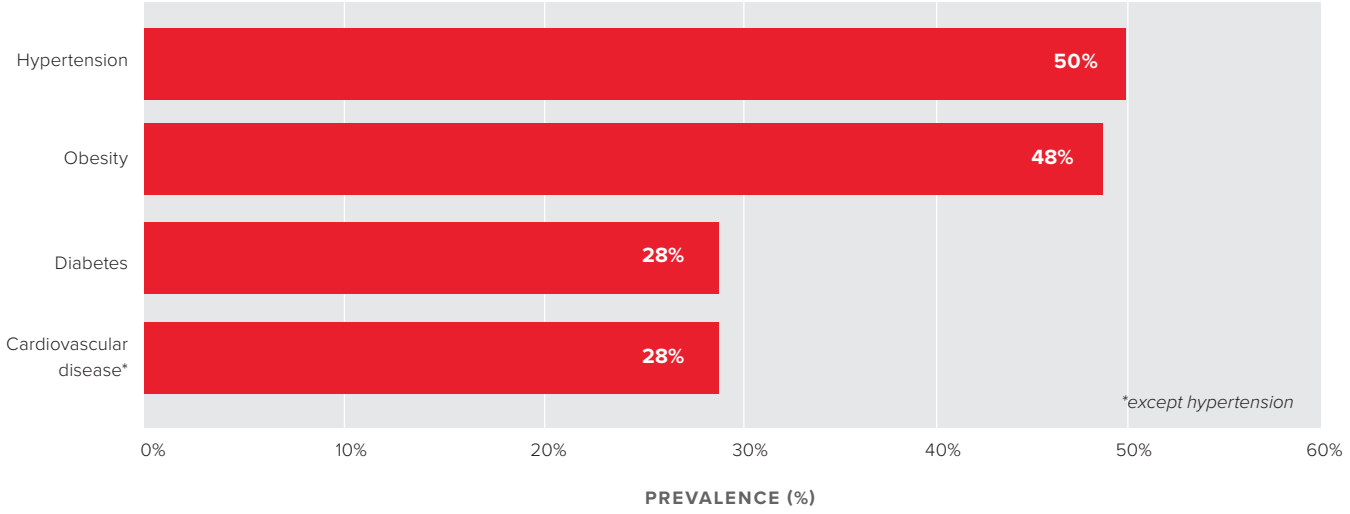
a. Increase the numbers of people with medical insurance and regular healthcare.

b. Use evidence-based strategies to increase the percentage of people who see their healthcare provider at least annually. Such strategies include reduced out of pocket costs and patient reminder systems.

c. Increase the use of team-based care. The CPSTF found that team-based care improves outcomes for people with cardiovascular disease and diabetes.[22, 23]

d. Increase access to Self-Measured Blood Pressure (SMBP) therapy. SMBP improves blood pressure control.[24, 25] Insurers and health plans should vigorously promote the use of SMBP to increase hypertension control.

Prevalence of Underlying Conditions among COVID-Associated Hospitalizations[3]



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