The Twin Pandemics

Since it began in December 2019, the COVID-19 pandemic has caused more than 700,000 deaths in the United States and more than 4.8 million worldwide. Concurrently, the decades-long cardiovascular disease (CVD) pandemic caused more than 858,000 U.S. deaths in 2020 – 698,000 from heart disease and 160,000 from stroke.

The global tally in 2019 (the most recent data available – pre-COVID 19) was 15.7 million deaths – 9.1 million from coronary heart disease and 6.6 million from stroke.

The national and global impact of each pandemic alone is staggering. It is even greater for members of certain populations. The marked disparities in infection, serious illness, hospitalization, and death from COVID-19 for Hispanic and for non-Hispanic (NH) Black persons have been widely reported. The COVID-19 death rate is more than twice as high in Hispanic and in NH Black people as well as in NH American Indian / Alaskan Native people than in the other race-ethnicity groups (Figure 1).

Similarly marked disparities are seen in the percent change in the number of deaths from heart disease and stroke from 2019 to 2020 for Hispanic and NH Black people relative to the average percent change from 2011-2019 (Figures 2 and 3).

The COVID-19 and CVD pandemics have collided during the past 2 years, triggering a chain reaction that has greatly amplified the racial/ethnic disparities and health inequities that already existed. How has this come about?

1. **The risk of serious COVID-19 disease with hospitalization and/or death is higher with pre-existing cardiac conditions including heart disease (coronary artery disease, heart failure, and cardiomyopathies), and cardiovascular risk factors including diabetes, overweight and obesity, smoking, hypertension, and cerebrovascular disease.**

2. **COVID-19 is associated with increases in heart disease due to the direct impact of COVID-19 on the heart.** Hospitalized COVID-19 patients frequently have elevations of blood troponin levels, a marker of myocardial injury that is associated with increased risk of acute coronary syndrome and myocardial infarction that results from systemic inflammation. Other cardiovascular manifestations of COVID-19 include thrombotic events (pulmonary embolism, deep vein thrombosis, and stroke) and myocarditis (inflammation of the cardiac muscle).

3. **COVID-19 surges result in more serious outcomes including death because of the limited capacity of medical care systems to take care of serious illness, to maintain preventive services, and to provide timely health care generally.** For example, COVID-19-related restrictions may result in lower utilization of routine medical care as well as reduced adherence to prevention and treatment modalities.

4. **In addition, Post-Acute COVID-19 Syndrome (PACS), known popularly as ‘Long COVID’, includes cardiovascular harms.** It is estimated to affect 10% of individuals who become symptomatic with COVID-19. Cardiovascular manifestations include chest pain or tightness, other symptoms of coronary heart disease, palpitations, dizziness, increase resting heart rate, myocarditis, arrhythmias (e.g., atrial fibrillation and flutter), pericarditis, and deconditioning.

5. **COVID-19, CVD, and health inequity:** The socioeconomic determinants of health play significant roles in creating disparities in both the COVID-19 and CVD pandemics. For example, crowded living and jobs conditions contribute to the spread of COVID-19 as well as its serious consequences including heart disease. Lack of access to healthy food and safe places for physical activity are also factors. We know that physical inactivity substantially increases the risk of heart disease; recent research findings show it is also related to the development of serious COVID-19 illness. Physical inactivity contributes to the development of obesity, another risk factor for both heart disease and serious COVID-19 disease. Recent US studies have shown that the pandemic has been associated with significant weight gain in both children and adults. Access to preventive medical and medical treatment has been impacted by barriers to high-quality insurance and by COVID-19 surges, causing both patients to fear going to a medical facility and inadequate capacity of medical facilities to treat serious cases of COVID-19 and CVD.

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**FIGURE 1:**
Annualized age-adjusted death rate (per 100,000) from COVID-19 by race-ethnicity, United States. March 2020 – September 2021

- **Hispanic:** 183.7
- **NH American Indian/Alaskan Native:** 173.3
- **NH Black:** 154.8
- **NH White:** 80.5
- **NH Asian/Pacific Islander:** 72.0

*Rates estimated using provisional 2000 mortality data* and July 1, 2020 estimated population data. **Age-adjustment using standardized 2000 U.S Census adjustment weights.**
Provisional data for 2020 show the serious impact associated with the COVID-19 pandemic on heart disease and mortality:

• An increase in the age-adjusted mortality rate from 161.5 to 168.2 per 100,000 persons (4.1%) between 2019 and 2020. This was the largest of the three increases since 1968.

• A 5.9% jump (n=39,079) in the number of deaths between 2019 and 2020, also the largest increase since 1968.

While these findings in themselves are cause for concern, the stark race-ethnicity differences raise the urgency to eliminate disparities. NH Black and Hispanic individuals had much higher increases between 2019 and 2020 in numbers of heart disease deaths (14.1% and 16.3%, respectively) than white individuals (3.1%) and the other major race/ethnicity groups (Figure 2). Black people have by far the highest age-adjusted rate of heart disease of all the major race-ethnicity groups.

For stroke, the provisional mortality data for 2020 are similar:

• An increase in the age-adjusted mortality rate from 37.0 to 38.8 per 100,000 persons (4.9%) between 2019 and 2020 after several years of reasonably stable levels.

These factors have contributed to a population-wide increase in heart disease and stroke mortality in 2020 compared with previous years that is especially striking in Hispanic and in non-Hispanic black persons.

Provisional data for 2020 show the serious impact associated with the COVID-19 pandemic on heart disease and mortality:

• A 7% increase (n=10,539) in the number of deaths between 2019 and 2020, also the largest increase since 1968.

As for heart disease, Black and Hispanic individuals had notably greater increases between 2019 and 2020 in stroke mortality (11.4% and 12.5%, respectively) than did NH white people (4.9%) and the other race-ethnicity groups (Figure 3). Hispanic and non-Hispanic black people have high rates of serious COVID-19 including death due to higher rates of some of the risk factors noted above, lower vaccination rates, and greater challenges with the socioeconomic determinants of health. The double-digit percentage increase in the numbers of heart disease and stroke deaths, coincident with the disparities in the COVID-19 pandemic shown earlier in these two race-ethnicity groups is shocking and need to be addressed with urgency.

The collision of the COVID-19 and cardiovascular disease pandemics (Figure 4) demands action. COVID-19 is worsening the cardiovascular disease pandemic, and cardiovascular conditions continue to intensify the COVID-19 pandemic. These intertwined processes victimize people of all races, especially Hispanic and non-Hispanic Black people.

a. Disseminate the message that cardiovascular disease prevention is COVID-19 prevention and COVID-19 prevention is cardiovascular disease prevention. CVD and COVID-19 share many risk factors. These include diabetes, overweight/obesity, smoking, physical inactivity, and hypertension. The National Forum is issuing this report and call to action; will spread this message through its communications channels; and is providing such messaging to mayors who can amplify it in their communities.
b. **Walk your way to lower COVID-19 risk.** Encourage and empower people to be more physically active. The association of the pandemic with weight gain and of physical inactivity with serious COVID-19 illness and cardiovascular disease raises the importance of movement. Promote adherence to the guideline of at least 150 minutes a week of moderate-intensity activities for adults. Mayors around the U.S. use the Move with the Mayor™ platform to involve people across their communities in physical activity. The National Forum will continuously update Move with the Mayor™ programming and messaging.

c. **Maximize the COVID-19 vaccination rate in all people.** Setting the initial age criterion for vaccination, and now for booster immunization, at age 65 and above unintentionally contributed to disparities in the burden of COVID-19. Given that the vaccine prevents most COVID-19 deaths, this age cutoff prioritizes the early vaccination and associated protection from death due to COVID-19 of a much greater proportion of white people than Hispanic or Non-Hispanic Black people, because 85% of COVID-19 deaths in whites occur at age 65 and above, while only 68% of such deaths for Non-Hispanic Blacks and 62% for Hispanics occur at this age. Conversely, only the 15% of deaths that occur under age 65 in white people are left unprevented, while the corresponding proportions of deaths below age 65 left unprevented are 32% for NH Blacks and 38% for Hispanics. If the age threshold were reduced to 55 and above, rather than 65, this disparity would be greatly reduced. The alarming race/ethnic-specific data on COVID-19 mortality shown here argue strongly for concerted efforts to vaccinate ALL Non-Hispanic Black or Hispanics, regardless of age. The National Forum is mobilizing mayors and military leaders to raise receptivity to COVID-19 vaccination in all populations.

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CDC mortality data reported on October 13, 2021 used for Figures 1-3. References available upon request.