Estimating Total Excess Hospital Charges Due to Race and Ethnicity in Connecticut

Connecticut Department of Public Health

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Introduction

Health disparities are the avoidable differences in health outcomes, and disease or other adverse conditions, such as unequal access to quality health care, that exist among specific population groups as a result of cumulative social disadvantage.[i] This issue brief focuses on racial and ethnic disparities in Connecticut hospitalizations and the associated cost using the 2012 Acute Care Hospital Inpatient Database. The Agency for Healthcare Research and Quality (AHRQ) estimates that eliminating racial and ethnic disparities would prevent approximately one million hospitalizations nationally that are associated with $6.7 billion in health care costs yearly.[ii]

KEY POINTS:

- **The estimated total excess in hospital charges due to racial and ethnic disparities in Connecticut was $88 million in 2012.**
- **To avoid excess hospital charges, all residents must have equal access to wellness resources.**

This summary describes an analysis conducted to quantify the disparity in hospital charges among non-Hispanic Black or African American and Hispanic or Latino Connecticut residents compared with non-Hispanic White residents. In addition, this summary provides examples of how the Department of Public Health (DPH) and its partners work to address health disparities and promote health equity.

Analysis

For this analysis, a general linear regression model estimated the excess hospital charges among the racial and ethnic groups while controlling for patient characteristics related to increased hospital charges, including socioeconomic factors, length of hospitalization, primary payer, and diagnostic category. The 2012 Acute Care Hospital Inpatient Discharge Database (HIDD) of the Connecticut Office of Health Care Access (OHCA) was the data source for race, ethnicity, hospital charges, length of hospitalization, primary payer, and diagnostic category. Since HIDD does not include socioeconomic data, the 2008-2012 American Community Survey of the United States Census Bureau was the source of educational attainment, unemployment, and median household income data for Connecticut's Zip Code Tabulation Areas (ZCTAs). The ZCTAs functioned as the links between HIDD data and the socioeconomic data.

SAS 9.4 (SAS Institute Inc., Cary, NC, USA) was used to fit the general linear regression model. The parameter estimates of the model approximated the change or difference in mean hospital charges of the non-Hispanic Black or African American residents and the Hispanic or Latino residents compared to the non-Hispanic White residents. Each group's parameter estimate was multiplied by the respective group's total number of hospital discharges (from HIDD) to calculate the total excess charges for the racial and ethnic groups. Summing the excess charges of non-Hispanic Black or African American and Hispanic or Latino residents yielded the total excess charges due to racial and ethnic disparities in 2012.

Excess hospital costs were estimated by multiplying the excess charges by the Hospital Ratio of Cost to Charge (RCC). Connecticut's Office of Health Care Access publishes each year's RCC. The RCC is the ratio of total operating expense to the total of gross patient charges plus other operating revenue. The RCC in 2012 was 0.36.

Results

After controlling for all study variables, the mean hospital charges for White Connecticut residents were $1,490 lower than that of Black or African American residents and $1,017 lower than that of Hispanic or Latino residents. The total excess charges among Black or African American residents compared with White residents was approximately $57.1 million. Similarly, the total excess charges among Hispanic or Latino residents compared with White residents was approximately $30.9 million. Therefore, the estimated total excess charges due to racial and ethnic disparities in 2012 was $88 million.

After applying the RCC to the charges, the excess costs were estimated to be $20.6 million for Black or African American residents, $11.1 million for Hispanic or Latino residents, and $31.7 million overall.

In a previous analysis, the estimated total excess hospital charges for Blacks or African Americans and Hispanics or Latinos relative to Whites were $633 and $107 million, respectively.[iii] A likely explanation as to why the estimates of the current analysis are lower than those of the previous analysis is that the current analysis aimed to isolate the effect of race and ethnicity on charges by controlling for socioeconomic factors, length of hospitalization, payer, diagnostic category and other variables.

Conclusion

It is well known that many hospitalizations due to chronic diseases like asthma and diabetes can be avoided with accessible, appropriate, and timely primary care services. Beyond primary care services, and possibly more impactful, is ensuring widespread access to wellness resources that can prevent the onset of chronic diseases in the first place. All people should have the opportunity to make the choices that allow them to live long, healthy lives, regardless of their income, education or ethnic background. In order for this opportunity to exist, all people must have equal access to a "grid of resources" that promote wellness.[iv] This grid includes resources such as healthy food, safe places for physical activity, quality health services, and community- and clinical-based programs that support prevention, self-management and control of diseases. Currently, access to this grid of wellness resources functions much like a power grid through which electricity flows in an uneven or patchy way. Expanding and repairing the grid so that wellness resources are equally available to all of Connecticut's residents can prevent excess hospital costs among racial and ethnic groups and other population groups facing health disparities, and enable all residents to attain their full health potential. The following lists examples of evidence-based programs and practices implemented by DPH and its partners to promote access to wellness resources and prevent excess hospitalizations and costs.

- DPH, in partnership with local health departments, offers persons with asthma a no-cost home environmental assessment to identify triggers and provide disease management education.
- DPH offers all Connecticut residents access to the Tobacco Quitline, 1-800-QUIT NOW, including free Nicotine Replacement Therapy and services in various languages.
- DPH is helping more people to be aware of their risk for potentially heritable conditions like diabetes, breast cancer, and hypercholesterolemia through promoting tools and evidence-based guidelines for

the collection of family health history. People who know their family health history can take steps to reduce their risks for developing complications from chronic diseases.

- DPH partners with healthcare organizations to offer free breast and cervical cancer screenings to eligible low-income, uninsured or poorly insured women.
- DPH partners with local health departments, community-based organizations, and community health centers to increase the number of diabetes self-management programs in the state and the number of participants in these programs.
- DPH partners with the University of Connecticut, School of Pharmacy to promote and establish Medication Therapy Management programs in community pharmacies, focusing on assisting patients to adhere to medications for hypertension and diabetes.
- DPH partners with the Connecticut Coalition for Oral Health and others to educate the public of the cavity preventing benefits of community water fluoridation, which is accessible regardless of age, race, ethnicity, or access to dental care. Left untreated, tooth decay and its related consequences have been associated with many chronic diseases.
- DPH partners with local health departments, community partners and corner stores to increase the amount of healthier food options available in the corner stores.
- DPH and Connecticut State Department of Education partner to provide professional development for administrators and staff on creating a healthy environment for children which prevents obesity through implementation of nationally recommended policies and best practices.

Resources and Links

- To access the web pages of DPH's chronic disease programs, visit www.ct.gov/dph/chronicdisease.
- For more information on health equity, including presentations, policies, and a toolkit, visit www.ct.gov/dph/healthequity.

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[iv] FrameWorks Institute. A Quick Guide to Using Resource Grid as a Metaphor for the Social Determinants of Health. *Framing Wellness in Alberta* [February 29, 2016]. FrameWorks Academy Specialized Sponsored Courses: [Available from: http://frameworksacademy.org/].