

Leading Causes of Hospitalization Across Racial Groups, NIS: 2016-2021

Abigail Chae, BS, Savitha Senthilkumar, Hibah Syed, BS, Alice Lee, BA, Purnima Mudnal, PhD, Lester Andrew Uy, BS, Armaan Jamal, BS, Gloria Kim, MD, Robert Huang, MD, Latha Palaniappan, MD, MS, Malathi Srinivasan, MD, Neil Kamdar, PhD, Nitya Rajeshuni, MD, MS

Background

- 35-40% of US healthcare quality measures state Whites receive a **higher level of healthcare** than minorities
- Black individuals are **30% more likely** to die of cardiovascular disease than White individuals
- Gap:** Hospitalization causes by race (differences in genetics and lifestyle)

Research Question:

What are the leading causes of adult hospitalizations (2016-2022) across racial groups?

Methods

Participants

- National Inpatient Sample Dataset (NIS)**
- Ages** 18-80 years of age
- Years** 2012-2022
- Race:** White, Black, Hispanic, Asian or Pacific Islander, Native American, Other
- Sex:** Male and Female
- Primary payer type:** Private insurance, Medicare, Medicaid, Self-pay, No cost
- Hospital Encounter:** Unit of Observation

ICD Codes

- The International Classification of Diseases, Ninth and Tenth Revision, Clinical Modification
 - ICD-9-CM Codes:** 2012-2015
 - ICD-10-CM Codes:** 2015-2022
- Characters & numbers arranged to specify diseases
- Codes were pulled for each condition to determine causes of hospitalization
- Revisis**
 - Platform for data analysis

Results

Figure 1. Overall Top 5 Leading Causes of Hospitalization Across Racial Groups

White (N = 55,250,296)		Black (N = 13,953,814)		Hispanic (N = 10,110,646)		Asian or Pacific Islander (N = 2,307,026)		Native American (N = 605,061)	
Condition	Frequency (%)	Condition	Frequency (%)	Condition	Frequency (%)	Condition	Frequency (%)	Condition	Frequency (%)
Septicemia	2,997,336 (5.4%)	Septicemia	704,067 (5.1%)	Septicemia	571,782 (5.7%)	Septicemia	133,175 (5.8%)	Septicemia	41,636 (6.8%)
Osteoarthritis	1,854,224 (3.4%)	Hypertension	691,399 (5.0%)	Hypertension	315,294 (3.1%)	Hypertension	69,208 (3.0%)	Hypertension	17,464 (2.9%)
Infections	1,342,308 (2.4%)	Renal Failure	518,034 (3.7%)	Infections	232,239 (2.3%)	Cerebrovascular Disease	56,843 (2.5%)	Infections	16,742 (2.8%)
Hypertension	1,327,974 (2.4%)	Cerebrovascular Disease	336,423 (2.4%)	Renal Failure	221,024 (2.2%)	Renal Failure	48,500 (2.1%)	Renal Failure	15,106 (2.5%)
Renal Failure	1,195,753 (2.2%)	Schizophrenia	314,931 (2.2%)	Hepatobiliary	184,404 (1.8%)	AMI	40,799 (1.8%)	Osteoarthritis	12,794 (2.1%)

Figure 2. Overall Top 5 Leading Causes of Hospitalization 2016-2019

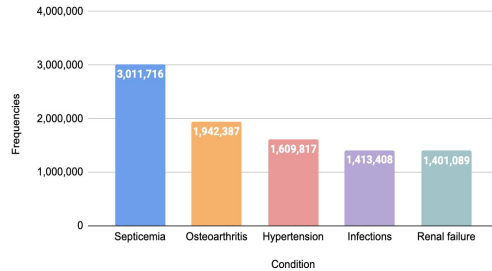
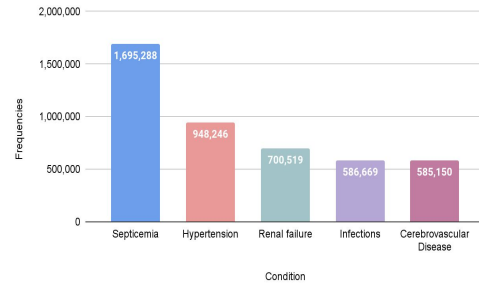


Figure 3. Overall Top 5 Leading Causes of Hospitalization 2020-2021



Discussion

- Overall leading cause of hospitalization is **Septicemia** in both 2016-2019 and 2020-2021, **dropping in frequency between the time periods**
- Osteoarthritis** and **Hypertension** were the overall second leading causes of hospitalization in 2016-2019 and 2020-2021
- Among all racial groups, **Septicemia** is the leading cause of hospitalization
- Among White individuals, **Osteoarthritis** is the second leading cause of hospitalization
- Hypertension** is the second leading cause of hospitalization for Black, Hispanic, Asian, Native American, and Other individuals

Future Directions:

- Create more culturally sensitive healthcare
- Educate individuals about their potential risks for certain illnesses

Next Steps

- Expand study period to 2012-2021 by incorporating ICD-9-CM Codes
- Incorporate more demographic variables (age, sex, hospitalization status, etc.)
- Account for population and sampling weights to better generalize findings

