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Insurance status versus hospitalized patient outcomes with pulmonary hypertension: National Hospital Discharge Survey, 2000-2010

Srikanta (Sri) Banerjee, MD, PhD, MPH, CPH, MCHES

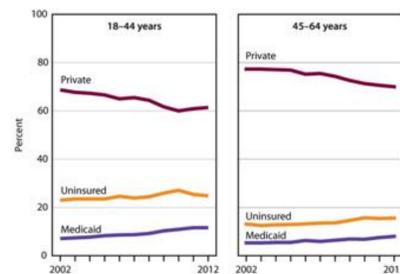
Abstract

Pulmonary Hypertension is a common complication of heart failure or obstructive pulmonary disease. The National Hospital Discharge Survey, the largest national inpatient-based survey, was used for complex samples logistic regression modeling. Findings from this study demonstrated that insurance status had a statistically significant association with hospital related mortality rates.

Relevant Literature

- Pulmonary Hypertension (PH) is listed on hospital records as either primary pulmonary hypertension or pulmonary hypertension secondary to another underlying condition or disease¹.
- In many fields of medicine, insurance status has been demonstrated to be directly correlated with disparities in utilization of medical care, treatment of disease and outcome of treatment^{2,3}.
- As seen in Figure 1, there are many individuals with Medicaid.
- After the Affordable Care Act and Medicaid Expansion, more individuals are covered under this insurance.
- Social determinants of health are important to consider in PH-related mortality

Health insurance coverage among adults aged 18-64



NOTE: The Medicaid category includes the Children's Health Insurance Program (CHIP). Persons with Medicaid or private coverage may have additional types of coverage. SOURCE: CDC/NCHS, Health, United States, 2013, Figure 14. Data from the National Health Interview Survey.

Figure 1: Distribution of healthcare coverage in the United States

Research Question

Does Medicaid and lack of insurance have an association with negative outcomes (i.e. death) as related to pulmonary hypertension?

Procedures/Data Analysis

- The National Hospital Discharge Survey (NHDS) is a population-based survey conducted by the National Center for Health Statistics. This survey includes information on discharges from a sample of non-federal, short-stay hospitals.
- Only hospitals with an average length of stay of fewer than 30 days for all patients, general hospitals, or children's general hospitals are included in the survey.
- All patients diagnosed with pulmonary hypertension from the NHDS, 20 years and older between the years 2000-2010 were included in the analysis.
- A pulmonary hypertension (PH)-related hospitalization was defined as any patient with an ICD-9-CM (416.0 and 416.8) diagnosis of pulmonary hypertension (Primary or Secondary) during admission.
- Patients who either had been uninsured or had Medicaid were compared to patients covered under a variety of commercial insurers, as well as Medicare exclusively.
- Death during hospitalization was regarded as a negative discharge outcome.
- Due to the complex sampling design, sample weights were utilized in order to analyze the data.
- Comparisons were analyzed using Pearson's Chi Square, simple, and multivariable logistic regression to determine the relationship of health coverage and discharge
- SPSS v23.0 was used for analysis.
- All missing variables were excluded.
- Data was available for n=20,504 PH-related hospitalizations which was representative of N=240,401 individuals.

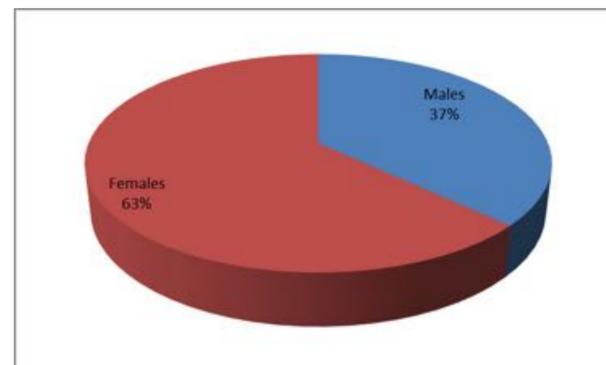


Figure 2: Gender Distribution of Study Participants (N = 20,504).

Findings

Mean age (SE) = 69.6 (0.20)

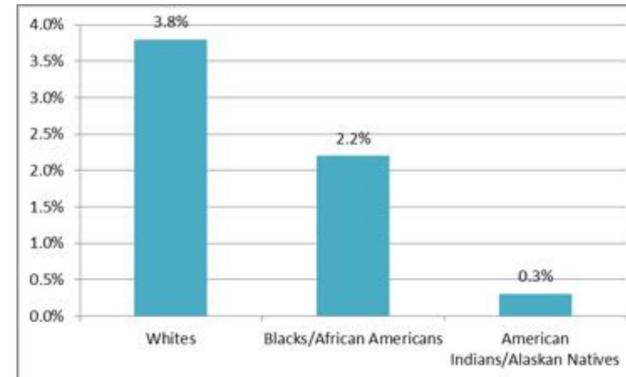


Figure 3: Prevalence of mortality rate in PH patients stratified by race. (p < 0.05)

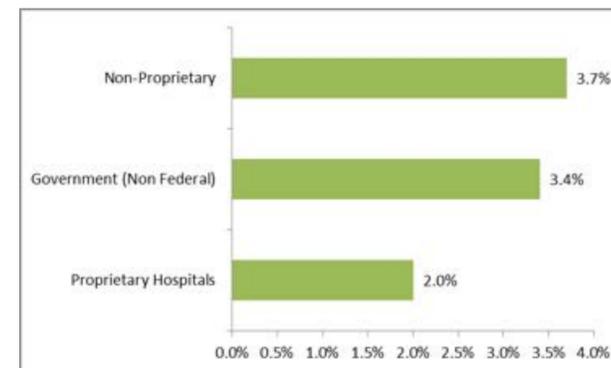


Figure 4: Prevalence of mortality rate in PH patients stratified by hospital ownership. (p < 0.05)

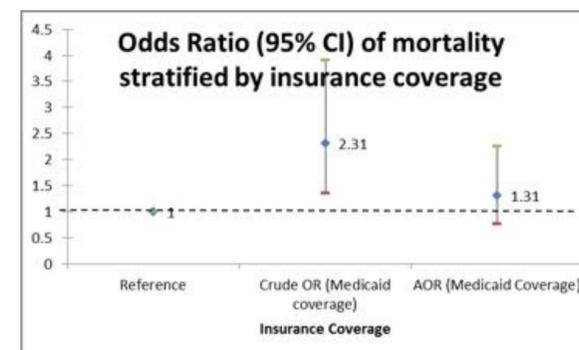


Figure 5: Crude and Adjusted Odds Ratio of mortality in those with pulmonary hypertension stratified by Medicaid coverage/Lack of Insurance (Adjusted for race, gender, age, days of care, and marital status)

Conclusions

- Individuals who are uninsured or have only Medicaid coverage may have a 131% higher chance of mortality than those who have private coverage or other insurances, among those with PH.
- Consequently, more effort needs to be placed in addressing insurance-related disparities associated with PH so that they can avoid negative discharge outcomes.
- Health care professionals need to ensure that individuals with Medicaid also are diagnosed and treated on time so that this can delay the associated complications, and these individuals can suffer less morbidity and mortality.

Limitations

More longitudinal studies need to be conducted to understand the reasons that patients with Medicaid. Additionally, outpatient data must be assessed to find out if there are similar findings.

Social Change Implications

Those individuals with different types of health insurance coverage must receive similar care. Due to the overwhelming (\$5.2 billion) cost of primary PH medications, it is economically more challenging to provide adequate care to those in a lower socioeconomic status (NIH, 2014). More investment must be made to emphasize primary prevention efforts to address cardiovascular disease and pulmonary disease.