Population Characteristics and Preventable Hospitalizations in Harris County: 2004

Lee YF, Swint JM

Houston Health Services Research Collaborative, Division of Management, Policy and Community Health, University of Texas School of Public Health

The University of Texas School of Public Health

Introduction

Access to health care is a serious problem in Harris County where the reported uninsurance rate is over 30%. The Agency for Healthcare Research and Quality (AHRQ) suggests using preventable hospitalizations as indicators of access to care to help examine the access to primary care problem.

The literature suggests that individual characteristics, including elder age, being an African American / Hispanic, lower level of education, lower income, self-rated poor health are associated with higher rates of preventable hospitalizations.

What are Preventable Hospitalizations?

Preventable hospitalizations are ambulatory-care sensitive conditions for which appropriate and timely outpatient care can potentially prevent the need for hospitalization. They are sometimes referred to as avoidable hospitalizations, or ambulatory-care sensitive hospitalizations. Preventable hospitalizations are defined differently in the literature based on different choices of ICD-9-CM diagnosis codes. Prevention Quality Indicators (PQIs) are used in this project.

What are PQIs?

Prevention Quality Indicators, defined by AHRQ (version 3.1), include a set of 14 indicators which are used with hospital discharge data to identify ambulatory care sensitive conditions that can be treated effectively on an outpatient basis. Each indicator is technically defined, based on ICD-9-CM codes.

Objective

The objective of this study is to describe the characteristics of the population hospitalized for preventable admissions in Harris County at 2004

Data Collection and Analysis

The data are collected from two datasets--Census 2000 and the Texas Hospital Inpatient Discharge Public Use Data File 2004. The calculation of preventable hospitalizations is based on the Guide to Prevention Quality Indicators (version 3.1) and the data are analyzed with SAS (version 9.1)

Results

There were 43,427 preventable hospitalizations in Harris County in 2004. Female contribute to over 60% of all preventable hospital admissions after the exclusion of low birth weight neonates.

Noon-elderly adults accounted for about 46% of all preventable hospitalizations. However, the non-elderly population accounted for 90% of preventable admissions for both diabetes short-term and perforated appendix .

The uninsured accounted for only 13% of all preventable hospitalizations. Among these preventable hospitalizations for the uninsured, 30% of them are Hispanic.

	Age 18-64	Age 65 and plus	Total Preventable Hospital Admissions
Female	10,602 (27%)	13,279 (34%)	23,881
Male	7,667 (19%)	7,783 (20%)	15,450
Total Preventable Hospital Admissions	18,269	21,062	39,331 (100%)

Note: low birth weight admissions (4,096) is not included

	Hispanic	Non-Hispanic	Total Preventable Hospital Admissions
Insured	5,213 (12%)	32,410 (75%)	37,623
Uninsured	2,118 (5%)	3,628 (8%)	5,746
Total Preventable Hospital Admissions	7,331	36,038	43,427(100%)

Whites contributed more than 50% of all preventable hospitalizations, followed by blacks (27%). About 17% of admissions are categorized as other races and missing. Twenty-one % of Medicare Part A admissions were preventable and 10% of the uninsured admissions were preventable. The uninsured admission is defined as primary payment source or as self-pay or indigent care.

	Black	White	American Indian/ Asian Pacific Islander	Other/ Missing	Total
Preventable Hospital Admissions	11,865 (27%)	22,926 (53%)	1,455 (3%)	7,361 (17%)	43,427 (100%)

	Self-pay/ Indigent care	PPO	Blue Cross/ Blue Shield	HMO	Medicare Part A	Medicaid	Other	Total
Non-preventable admissions	57,558	58,837	21,558	40,852	82,493	85,913	27,733	374,944
Preventable admissions	5,751	4,071	1,617	2,917	22,011	4,355	2,465	43,187
Total	63,309	62,908	23,175	43,769	104,504	90,268	30,198	418,131

Note: The total preventable admissions do not include admissions with missing first payment sources

Among all preventable hospitalization categories, congestive heart failure had the highest number of admissions (24%), followed by bacterial pneumonia (16%) and urinary tract infection ((12%) . In terms of hospital days, low birth weight neonate admissions accounted for greatest length of stay(72,217 days, 24%) with an average length of stay of 17.6 days, followed by congestive heart failure (63,872 days, 21%) with an average length of stay of 6.2 days.

Type of Preventable Hospitalization	Admissions	Total LOS	Mean LOS
Diabetes Short-Term Complications	1,341	6,179	4.6
Perforated Appendix	689	4,250	6.2
Diabetes Long-Term Complications	3,371	25,672	7.6
Chronic Obstructive Pulmonary Disease	4,133	25,444	6.2
Hypertension	1,740	6,093	3.5
Congestive Heart Failure	10,262	63,872	6.2
Low Birth Weight	4,096	72,217	17.6
Dehydration	2,401	11,796	4.9
Bacterial Pneumonia	6,850	45,604	6.7
Urinary Tract Infection	5,018	28,244	5.6
Angina Admission without Procedure	646	1,593	2.5
Uncontrolled Diabetes Admissions	439	1,957	4.5
Adult Asthma admissions	2,035	8,736	4.3
Lower-extremity Amputation among Diabetes Patients	1,035	12,918	12.3
All	43,427	306,806	7.1

Discussion

Contrary to literature suggesting that the elderly account for more preventable hospital admissions, we found that the non-elderly accounted for 90% of diabetes short-term complications and perforated appendix admissions. In addition we found that the uninsured accounted for more than 35% of preventable admissions for both diabetes short-term complications and for perforated appendix admissions. It seems that non-elder adults and insurance status may be associated with higher rates of preventable hospitalization. This will be analyzed in the multivariate model.

In addition, the Hispanic population accounted for 17% of all preventable hospital admissions and more than 35% of preventable admissions for perforate appendix and for low-birth weight neonates. We would like to examine whether the Hispanic population is associated with higher rates of admission for these two preventable conditions.

Selected References

1. Department of Health and Human Services and Agency for Health Research and Quality, *Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions*. 2007: http://www.qualityindicators.ahrq.gov.
2. Department of Health and Human Services and Agency for Health Research and Quality, *Prevention Quality Indicators: Technical Specifications (Version 3.1)*. 2007: http://www.qualityindicators.ahrq.gov.