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Ambulatory Care Sensitive Condition Hospitalization Rates in New Mexico

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According to the Health Resources and Services Administration, all but two New Mexico counties have a Health Professional Shortage Area, which is defined as having shortages of primary medical care which may include too few primary care providers, high infant mortality rates, high poverty and/or large elderly population. One indicator of quality primary care services are low rates of ambulatory care sensitive conditions (ACSC). These are conditions for which outpatient care or early interventions can prevent hospitalizations and/or complications[1]. ACSC include, but are not limited to asthma, bacterial pneumonia, dehydration, and congestive heart failure[2]. These conditions commonly impact a large number of people and often result in unnecessary hospitalizations[2,3]. This causes health care costs to rise, which could have been avoided through quality primary care and early interventions[3].

In this analysis, we calculated hospitalization rates by New Mexico health region to determine which region is most burdened by ACSC.

Methods

The New Mexico Hospital Inpatient Discharge Dataset (NM-HIDD) is a statewide dataset that includes all discharges admitted to any non-federal New Mexico hospital (excludes Veteran Affairs and Indian Health Service hospitals) with hospital stays of a minimum of 24 hours in that facility. Up to 18 diagnoses, procedure codes, insurance/payment information, admission and discharge date, and demographic information are included in the NM-HIDD. The 2012 NM-HIDD was used to calculate ACSC age-adjusted rates for each health region and the overall New Mexico age-adjusted rate per 100,000 population. The American Indian/ Alaska Native population was excluded from the calculation of these rates due to the current lack of Indian Health Service data in the NM-HIDD.

The Agency of Healthcare Quality and Research's (AHRQ) Prevention Quality Indicators calculation methods were used for this analysis. Congestive heart failure, chronic obstructive pulmonary disease (COPD), dehydration, angina, asthma (pediatric and adult were combined into one indicator), hypertension, bacterial pneumonia, urinary tract infection (UTI), and diabetes (uncontrolled diabetes and diabetes short-term indicators were combined for this analysis) were chosen for the calculation of rates. In addition, AHRQ's chronic and acute indicators were calculated in this analysis. Diagnosis and procedure codes from the NM -HIDD were utilized to calculate the ACSC indicators, as described by AHRQ. More information regarding inclusion and exclusion criteria can be found through qualityindicators.ahrq.gov.

Results

The Northwest Region had the highest hospitalization rates of diabetes, angina, bacterial pneumonia, dehydration, UTI and congestive heart failure (Table 1). The Southeast Region had the highest rates of asthma and hypertension. The Southwest Region had the highest rate of COPD (112.4 per 100,000 population). The Northwest had the overall highest rate for chronic ACSC (502.6 per 100,000 population) and acute ACSC (701.5 per 100,000 population) (Figure 1). The Metro Region had the lowest rates for acute conditions (215.7 per 100,000 population) and chronic conditions (377.9 per 100,000 population) including bacterial pneumonia (139.7) and UTI (75.8). Congestive heart failure was the biggest contributor to the chronic ACSC rate, due to its high rate in each region. Hypertension was the smallest contributor to the chronic ACSC rate in New Mexico, as this condition has the smallest discharge rate in each region. Similarly, dehydration was the smallest contributor to the acute

ACSC rate, while bacterial pneumonia was the largest contributor.

The rates for the Northwest Region were higher than the New Mexico rates for all conditions. The Southeast Region rates were also higher than the New Mexico rates for all conditions except for COPD (Figure 2). The rates for chronic conditions in the Southeast and Northwest regions were 588.2 and 701.5 per 100,000 population, respectively, whereas the New Mexico rate was 475.9 per 100,000 (Table 1). The rate for the acute conditions in the Southeast Region was 465.0 per 100,000 population and for the Northwest Region was 502.6, compared to the New Mexico rate of 321.8. The highest rate among the chronic conditions for the Northwest Region was for congestive heart failure (276.3) - the New Mexico rate was 153.3. Among other chronic conditions, the asthma hospitalization rate for the Southeast Region (151.4) was about 1.8 times the NM rate (87.1). Among the acute conditions, bacterial pneumonia had the highest rate in the Northwest Region (334.1) - the New Mexico rate was 214.6. UTI was another acute condition with a much higher rate in the Southeast (148.9) and Northwest (163.7) regions - the New Mexico rate was 106.3.

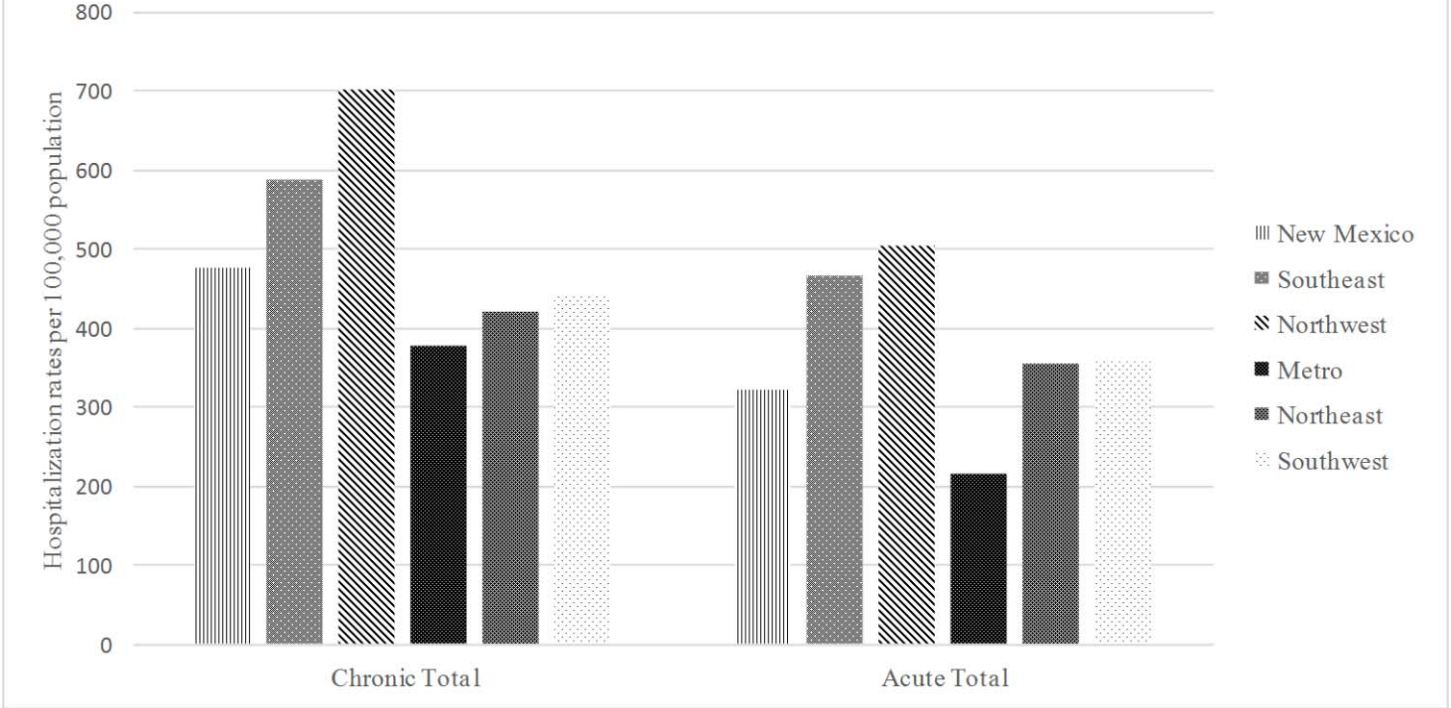
Discussion

High rates of ACSC are an indication of a lack of access, availability or quality of primary care services[2]. Because the Southeast and Northwest regions had the highest ACSC rates in New Mexico, the adequacy of primary care services in these regions should be assessed. Factors such as poor patient education, lack of patient compliance, lack of primary care providers, and poor disease management by primary care providers in addition to socioeconomic factors like income, gender and geographic location may contribute to the substantial rate differences seen in this analysis[3,4].

The high ACSC rates in the Southeast and Northwest regions likely indicate a lack of primary care access in these regions. This is reflected in a gap analysis performed by the New Mexico Health Workforce Committee which indicated a primary care physician shortage in these regions utilizing 2012 physician survey data. Increased staffing in this region is necessary to increase healthcare availability.

Limitations to the NM-HIDD include the lack of New Mexico resident hospitalizations from out of state hospitals and federal hospitals including Veteran Affairs, military and Indian Health Service hospitals. American Indian/Alaskan Natives were not included in this

Figure 1. Chronic and Acute Ambulatory Care Sensitive Conditions Hospitalization Rates by Region, New Mexico, 2012



analysis because Indian Health Service hospitalizations are not currently in the NM-HIDD.

Recommendations

Additional analyses on socioeconomic disparities associated with patients burdened by ACSC would give further insight into the cause for the high rates of these health conditions within the Southeast and Northwest regions compared to the rest of New Mexico. This can be approached by stratifying data by insurance status and race/ethnicity. Review of the clinical records would provide more insight into disease severity by region. Clusters of hospitalizations within the counties of the Southeast and Northwest regions can be identified to determine where quality of primary care is inadequate or primary care is lacking.

The concept of ACSC has been linked with quality of care, but not every hospitalization results from poor quality of care. However, the hospitalization rate related to ACSC can be reduced by patients making informed healthcare decisions. Patients who are suffering from ACSC need to be educated on how to manage their disease, as well as how to comply with their primary care provider's recommendations. Furthermore, the health care system should assure, as much as possible, follow-up visits and phone calls with these patients to ensure understanding of the condition and the proper maintenance of the disease. A number of interventions such as patient education, promoting preventive care, improving medication adherence, and monitoring of symptoms will help reduce avoidable hospitalizations. These interventions will not only reduce the number of hospitalizations due to ACSC, but will decrease the cost of health care in general.

References

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Figure 2. Ambulatory Care Sensitive Conditions Hospitalization Rates For Selected Regions, New Mexico, 2012

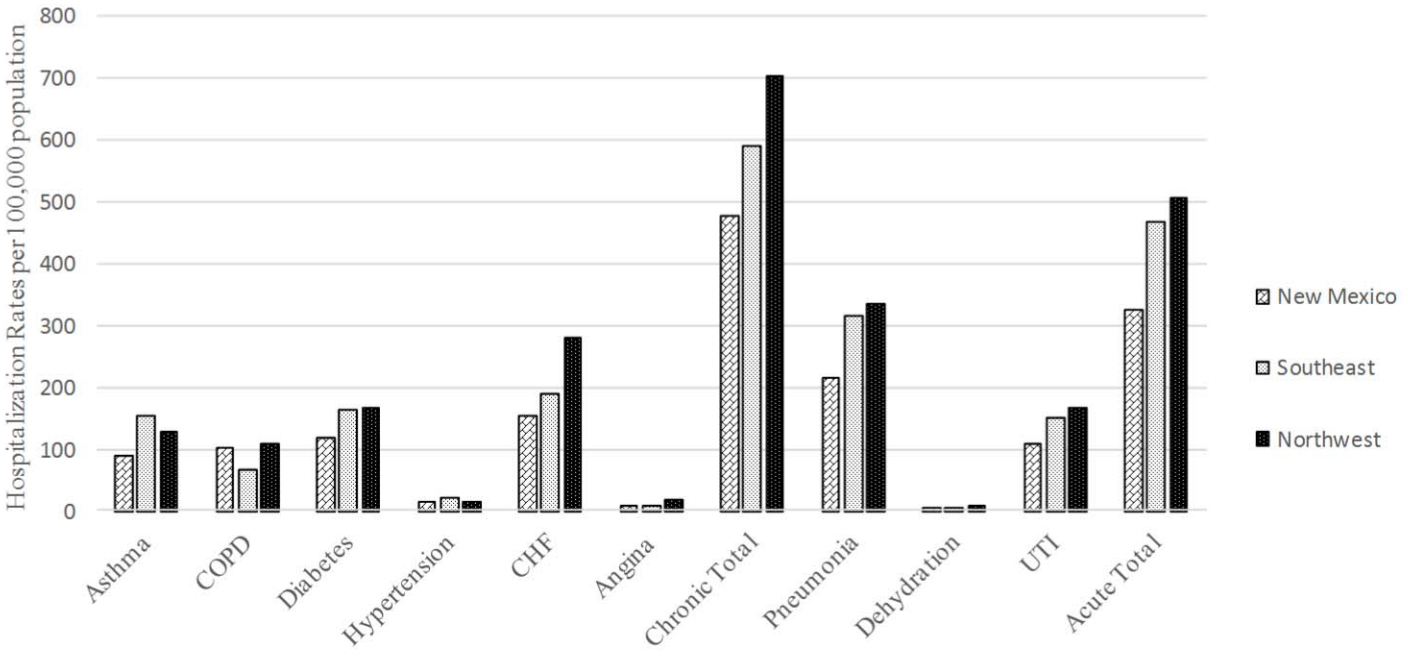

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Table 1. ACSC Hospitalization Rates by Region per 100,000 Population, New Mexico, 2012

Condition	New Mexico Overall	Southeast	Northwest	Metro	Northeast	Southwest
Asthma	87.1	151.4	126.0	71.6	79.4	64.8
COPD	100.5	63.3	106.5	57.6	97.1	112.4
Diabetes	116.4	161.3	164.0	104.9	104.4	110.4
Hypertension	12.0	18.3	12.6	9.1	10.7	7.8
CHF	153.3	186.7	276.3	128.9	123.9	139.7
Angina	6.7	7.2	16.2	5.8	3.7	5.6
Chronic Total	476.0	588.2	701.5	377.9	419.3	440.7
Pneumonia	214.6	314.4	334.1	139.7	247.2	231.7
Dehydration	0.8†	1.7†	4.9†	0.2†	1.5†	0.0
UTI	106.3	148.9	163.7	75.8	104.0	123.5
Acute Total	321.8	465.0	502.6	215.7	352.6	355.2

†Indicates rate may be unstable due to a small number of hospitalizations