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Ambulatory Care Sensitive Condition Hospitalization Rates in New Mexico, 2015-2017

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Ambulatory Care Sensitive Condition (ACSC) hospitalization rates refer to hospitalizations for several acute and chronic health conditions where inpatient stays may be preventable through timely and effective outpatient treatment. ACSC hospitalization rates are considered important measures of health-care quality and are targeted by quality improvement efforts. ACSC hospitalizations are associated with high financial burden to payers, patients, and society. According to the 2010 National Healthcare Quality Report, ACSC hospitalization costs were $27.1 billion in 2007. Furthermore, a study utilizing Medical Expenditure Panel Survey data (2005–2010) reported that charges for ACSC were four times higher when treated in an inpatient versus outpatient setting. As the healthcare system moves toward achieving better health, better value, and lower costs, ACSC hospitalization rates have become an accountability indicator for quality and lower health-care costs.[1] This report analyzes hospitalization rates in New Mexico for acute and chronic ACSC conditions by the five New Mexico health regions for the years 2015, 2016, and 2017.

Methods

For these analyses, the 2015, 2016, and 2017 New Mexico Hospital Inpatient Discharge Datasets (NM-HIDD) from the NMDOH Epidemiology and Response Division, Health Systems Epidemiology Program for were used. NM-HIDD are statewide datasets that include 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. The Agency for Healthcare Research and Quality (AHRQ) provides a standardized procedure for calculating ACSC hospitalization rates with its Prevention Quality Indicators (PQIs). PQIs were established by AHRQ in 2011.[2] PQIs assume that inpatient hospitalizations for ACSC are potentially preventable and may indicate reduced access to and a lower quality of ambulatory care. ACSC are defined as those "for which good outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or more severe disease."[2,3] Here, ACSC hospitalizations rates were calculated using the standard method based on three PQIs focused on broad composites of potentially preventable hospitalizations: acute, chronic, and overall ACSC hospitalizations.[4] The overall rate is simply the sum of the acute and chronic rates and represents the total ACSC hospitalization rate for New Mexico. Version 5 (October 2015) of the AHRQ PQI 91 and 92 Technical Specifications were used here as Version 5 includes both ICD9-CM/PCS and ICD10-CM/PCS. Both ICD9 and ICD10 codes are required for 2015, since the change to ICD10 occurred on October 1, 2015.

Acute ACSC hospitalizations include admissions with a principal diagnosis of one of the three following conditions: dehydration, bacterial pneumonia, or urinary tract infection. Chronic ACSC hospitalizations include admissions for one of the eight following conditions: diabetes with short term complications, diabetes with long-term complications, chronic obstructive pulmonary disease, hypertension, heart failure without a cardiac procedure, uncontrolled diabetes without complications, asthma, or diabetes with lower-extremity amputation. The analyses here were performed using the Stata™ statistical analysis software package. The rates per 100,000 population are age-specific for ages 18 and older.

Results

The overall 2017 New Mexico ACSC rate (760.9 per 100,000 population) shows improvement from the 2016 rate (809.3) and is also lower that the 2015 rate (783.8).

The acute ACSC rate (297.2 per 100,000 population) decreased from the 2016 rate (371.4), however the 2017 chronic ACSC rate (463.6) increased from 2016 (437.9). The Southeast and Southwest regions showed the highest overall ACSC rates (Figure 1, Table 1). The Southeast region rate declined however, from 1050.8 per 100,000 population in 2015 to 820.4 in 2017. The Southwest region rate also declined from 1123.5 in 2015 to 971.8 in 2017 for the Southwest. The Metro region has remained quite steady over the three years with a rate of 663.9 per 100,000 in 2017. The Northeast region saw a marked increase in its ACSC rate from 2015 to 2017: 588.9 to 776.2 per 100,000. The Northwest region's rate remained very steady with an overall ACSC hospitalization rate in 2017 of 715.5 per 100,000, although the ratio of the chronic rate to the acute rate was greater in 2017 than in the previous two years.

Table 2 provides a more in-depth look at the 2017 results which show the sub-components of the acute and chronic rates. The acute rates are fairly evenly divided between its three sub-components, with bacterial pneumonia being the largest proportion and dehydration being the smallest proportion of the overall acute ACSC hospitalization rate. There is wide variation in the proportions of the sub-components of the chronic ACSC hospital rates, however. The largest sub-component of the chronic rate is heart failure. It represents over 50% of the total chronic rate for all regions except the Northwest. The smallest sub-components of the chronic rate are COPD/asthma in older adults, hypertension, and asthma in younger adults.

Discussion

Considered potentially avoidable, ACSC hospitalizations have been increasingly used to indicate low quality of outpatient primary care.[2] With high-quality, community-based primary care, hospitalization for these illnesses often can be avoided. However, other factors outside the direct control of the health care system such as poor environmental conditions or lack of patient adherence to treatment recommendations can result in hospitalization.[3] The analyses of NM-HIDD 2015-2017 has shown higher ACSC hospitalization rates in the Southeast and Southwest regions compared to the rest of the state. The New Mexico Health Care Workforce Committee 2017 Annual Report shows a deficit of primary care physicians in Luna, Otero, and Lea counties, but either an adequate or surplus number of primary care physicians in the other counties of the Southeast and Southwest regions.[5]

This suggests that the existing healthcare workforce in these two regions has not yet met the needs of the community in addressing preventable hospitalizations due to ambulatory care sensitive conditions. It was also seen that the largest sub-component of the chronic

Table 2. ACSC Hospitalization Rates per 100,000 population by Health Region, NM, 2017

	Metro	Northeast	Northwest	Southeast	Southwest	Total
Dehydration	66.2	60.1	52.5	89.0	121.5	76.7
Bacterial Pneumonia	100.4	153.1	144.9	153.5	182.3	134.3
Urinary Tract Infection	71.4	80.7	56.2	109.0	128.6	86.3
Total Acute	238.0	293.9	253.6	351.5	432.4	297.2
Diabetes Short-Term Complications	62.8	73.2	70.0	69.1	57.6	65.0
Diabetes Long-Term Complications	64.2	87.9	116.5	52.9	85.5	75.3
COPD or Asthma in Older Adults	8.7	9.7	10.3	10.7	7.4	9.1
Hypertension	5.8	3.4	4.8	2.3	12.7	6.1
Heart Failure	238.8	247.2	192.6	279.2	324.6	255.8
Uncontrolled Diabetes	21.7	32.0	29.0	30.1	26.8	26.0
Asthma in Younger Adults	6.9	7.6	7.2	9.7	6.4	7.3
Lower-Ext. Amputation - with Diabetes	16.9	21.4	31.4	14.8	18.4	19.1
Total Chronic	425.9	482.3	461.9	468.9	539.4	463.6

Table 1. ACSC Hospitalization Rates per 100,000 by type, Health Region and Year,

	Acute			Chronic			Total		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Metro	267.3	270.7	238.0	377.3	427.8	425.9	644.6	698.5	663.9
Northeast	332.5	387.5	293.9	256.4	433.5	482.3	588.9	821.0	776.2
Northwest	334.6	329.0	253.6	387.9	396.5	461.9	722.6	725.4	715.5
Southeast	565.9	454.1	351.5	484.8	459.3	468.9	1050.8	913.4	820.4
Southwest	641.1	570.9	432.4	482.4	474.8	539.4	1123.5	1045.7	971.8
Total	390.1	371.4	297.2	393.7	437.9	463.6	783.8	809.3	760.9

ACSC hospitalization rate was heart failure in 2017. Efforts should be focused on examining the factors leading to the high proportion of heart failure hospitalizations across the entire state. The AHRQ PQI measures provide a clear and standardized methodology for calculating ACSC hospitalization rates that can be used to compare health regions and counties within the state to point out possible areas for improvement in outpatient primary care in New Mexico.

References

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3. "Prevention Quality Indicators Overview," Agency for Healthcare Research and Quality, 2018. [Online]. Available: https://www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx.
4. H. G. Skinner, "The effects of multiple chronic

Figure 1. Overall ACSC Hospitalization Rates per 100,000 population by Type and Year, NM, 2015-2017

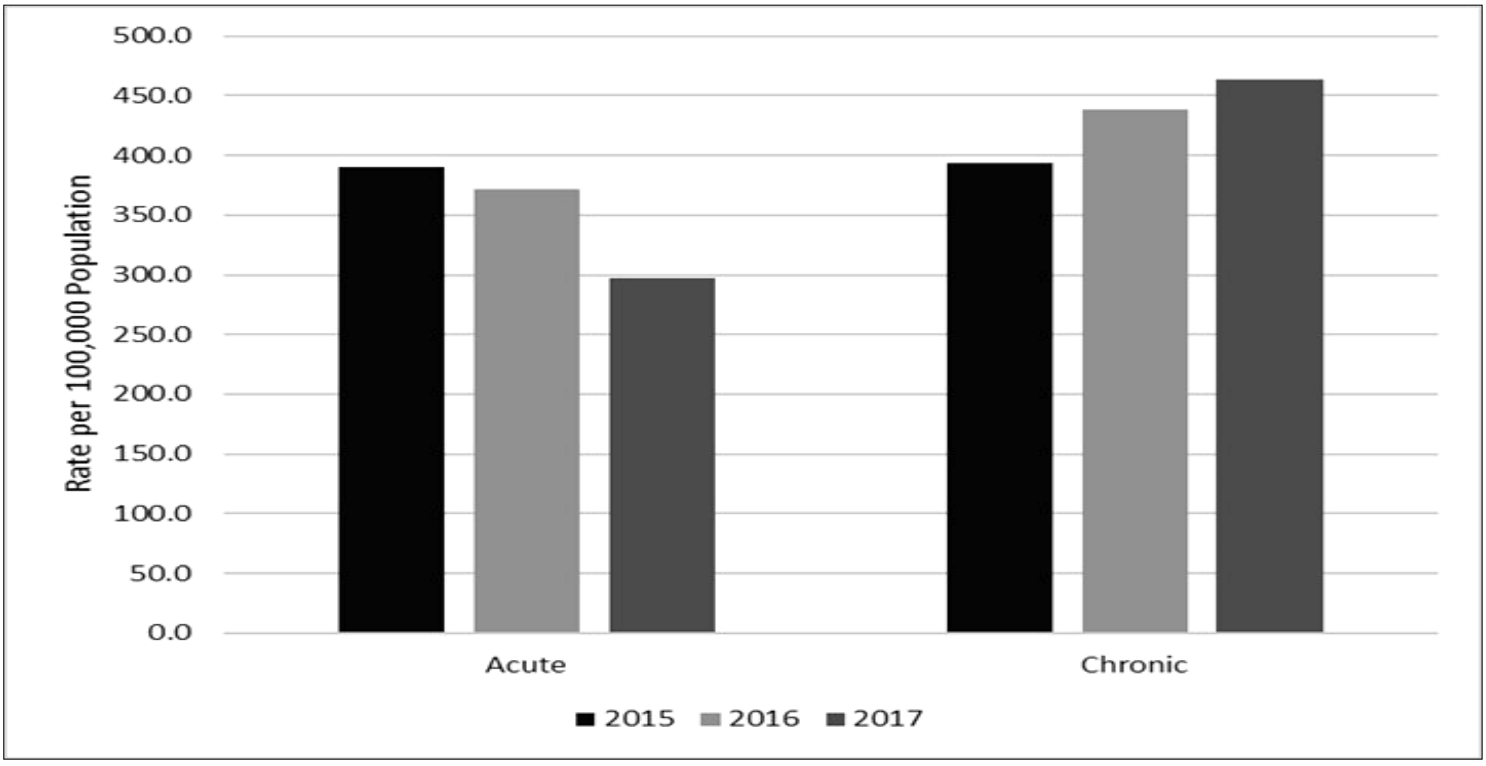

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Figure 2. ACSC Hospitalization Rates per 100,000 population by Health Region and Year NM, 2015-2017