Medicare Hospital Readmissions Among Minority Populations

2007 – 2013 Trends and Disparities

Data Highlight | Winter 2015

Objective: Descriptive analysis of 30-day, all-cause overall inpatient hospital readmission rates from 2007 to 2013 and trends in the rates among minority populations.

Population: Medicare Fee-For-Service (FFS) beneficiaries with at least one acute inpatient index admission with full FFS Part A and B coverage. Beneficiaries are considered fully covered when they are enrolled in both Part A and B for the entire year or until death and are not enrolled in Part C at any time during the year.

Methods: Using the Centers for Medicare and Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW) Readmissions files from 2007 to 2013 created for CMS to monitor readmission rates in a standardized way, the index claim indicator was used to determine whether the stay is an index admission and the readmit indicator was used to determine whether the stay had a subsequent readmission. Each inpatient acute care hospital stay is classified as an index admission, a readmission or both on the Readmissions files. Index admissions are stays with a discharge date that falls within the calendar year except those where the patient left against medical advice or died during the stay. Readmissions are stays that occurred within 30 days of the discharge date of an earlier index admission. The readmission rate is the number of readmissions divided by the number of index admissions.

Overall Rates: From 2007 through 2011, the number of 30-day, all-cause readmissions for Medicare's fee-for-service (FFS) beneficiaries remained stable at approximately 19 percent. In 2012, the readmission rate fell to 18.6%, a decrease of 9.79% in readmission stays from 2007, with 197,371 fewer readmissions. The preliminary findings in 2013 are more dramatic, as the readmission rate fell to 18.1%, a decrease of 16.87% in readmission stays from 2007, with 340,096 fewer readmissions. The decline in absolute number of readmission stays did not result in lower readmission rates because of a similar decline in index admissions. In 2013, there were 9.2 million index admissions which is 11.7% lower than 2007. The readmission rates are relatively stable over the period 2007 to 2013 as shown in Table 1.

Table 1. National 30-Day, All-Cause FFS Readmission Rates, Number of Index Admissions and Readmissions and Percent of Change - 2007 through 2013

	2007	2008	2009	2010	2011	2012	2013	Change from 2007 to 2013
FFS Readmission Rate	**19.2%**	**19.3%**	**19.4%**	**19.2%**	**19.1%**	**18.6%**	**18.1%**	1.1%
Number of Index Admissions	10,517,057	10,336,312	10,111,773	10,141,974	10,077,311	9,759,371	9,284,180	11.72%
Number of Readmissions	2,016,475	1,994,734	1,961,408	1,951,877	1,926,693	1,819,104	1,676,379	16.87%
Source: CMS OMH Analysis								

Trends by Racial Group: The rate of readmissions among each racial group remained relatively stable from 2007 through 2011. In 2012 and 2013, consistent with the overall lower national rate, the readmission rates in each racial group declined as depicted in Chart 1 and Table 2.

Chart 1. 30-Day, All-Cause FFS Readmission Rates – National and by Race - 2007 through 2013
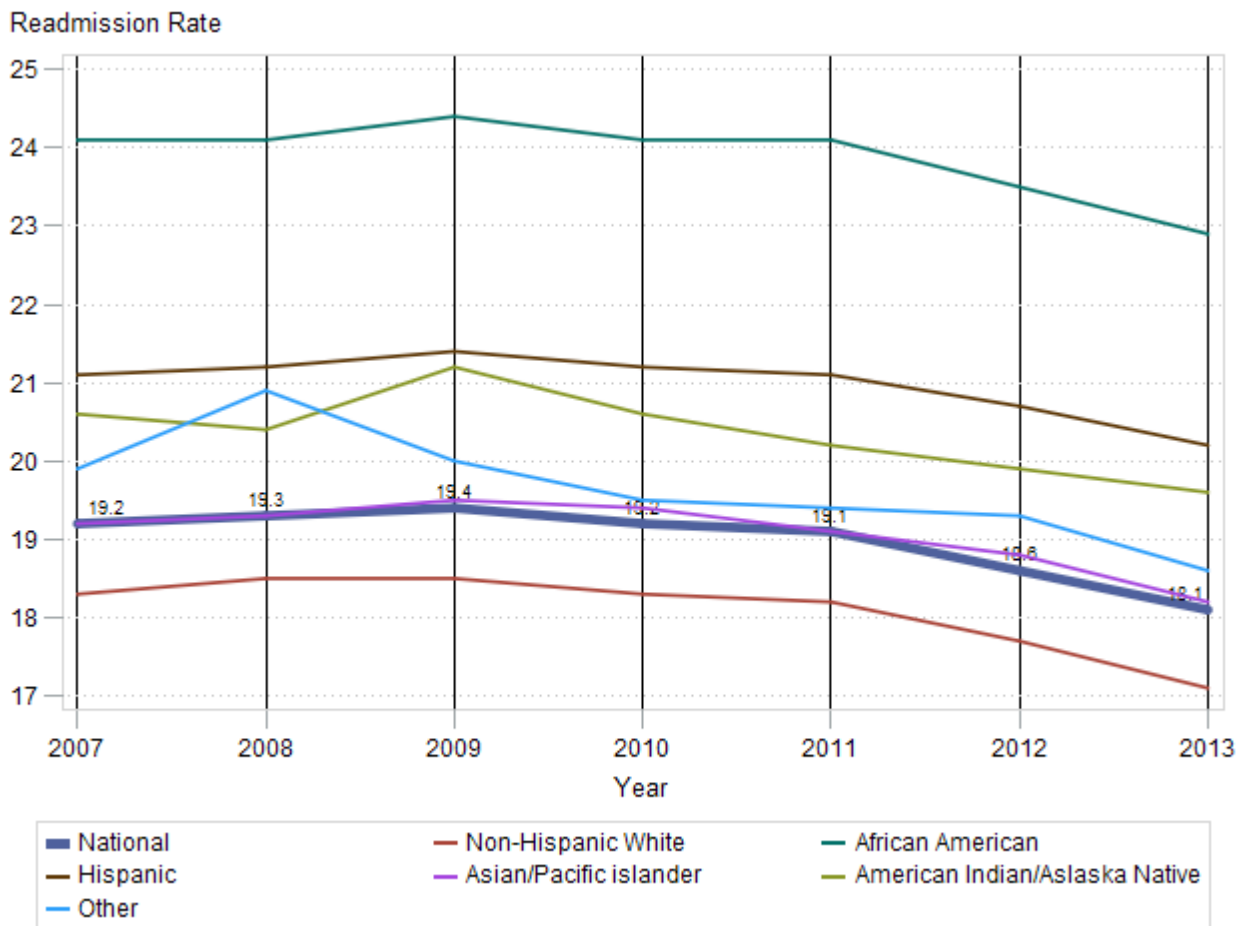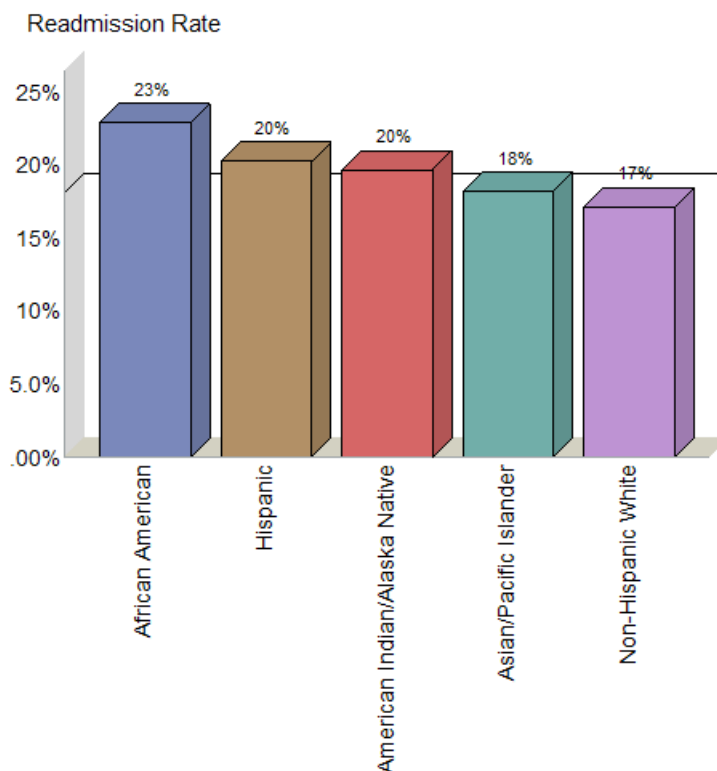
Table 2. National 30-Day, All Cause Fee-for-Service Readmission Rates by Race – 2007 through 2013

	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)
National	**19.2**	**19.3%**	**19.4%**	**19.2%**	**19.1%**	**18.6%**	**18.1%**
Non-Hispanic White	18.3	18.5	18.5	18.3	18.2	17.7	17.1
African American	24.1	24.1	24.4	24.1	24.1	23.5	22.9
Hispanic	21.1	21.2	21.4	21.2	21.1	20.7	20.2
Asian / Pacific Islander	19.2	19.3	19.5	19.4	19.1	18.8	18.2
American Indian /Alaska Native	20.6	20.4	21.2	20.6	20.2	19.9	19.6
Other	19.9	20.9	20.0	19.5	19.4	19.3	18.6
Source: CMS OMH Analysis							

Racial Groups – All racial groups, except Non-Hispanic White, have readmission rates above the national average as shown on Chart 2. Consistently, from 2007 through 2013, African American beneficiaries have the highest readmission rate of all racial groups. In 2013, the readmission rate for African Americans was 22.9%, followed by Hispanics with a rate of 20.2% and American Indians/Alaskan Natives at 19.6%. Asian/Pacific Islanders had a rate very close to the national average at 18.2%. Only Non-Hispanic Whites had a rate below the national average (17.1%).

Chart 2. Readmission Rates by Race – 2013

Hospital Referral Regions - In 2013, there were 101 Hospital Referral Regions with readmission rates that exceeded the national rate of 18.1%. Table 3 contains the top five with rates at 21.9% or more.

Table 3. Top 5 Hospital Referral Regions with Highest Readmission Rates – 2013

Hospital Referral Region	Readmissions	Admissions	Readmission Rate
IL - Chicago	21072	87245	24.2%
FL - Miami	16176	70182	23.0%
NY - Bronx	5745	25403	22.6%
MI - Detroit	18637	83091	22.4%
NY - Manhattan	26051	118974	21.9%
Source: CMS OMH Analysis			

Racial Groups – Of the Top 5 Hospital Referral Regions with the Highest Readmission Rates in 2013, African Americans have the highest rates in all regions in racial groups with significant volume as shown in Table 4.

Table 4. Top 5 Hospital Referral Regions with Highest Readmission Rates by Race – 2013

Hospital Referral Region	Racial Group	Readmissions	Admissions	Readmission Rate
IL - Chicago	Unknown	35	188	18.6%
IL - Chicago	Non-Hispanic White	5897	30318	19.5%
IL - Chicago	African American	11845	42594	27.8%
IL - Chicago	Other	120	549	21.9%
IL - Chicago	Asian/Pacific Islander	397	1886	21.0%
IL - Chicago	Hispanic	2764	11653	23.7%
IL - Chicago	American Indian/Alaska Native	14	57	24.6%
FL - Miami	Unknown	53	199	26.6%
FL - Miami	Non-Hispanic White	4842	22943	21.1%
FL - Miami	African American	2911	9837	29.6%
FL - Miami	Other	73	313	23.3%
FL - Miami	Asian/Pacific Islander	146	560	26.1%
FL - Miami	Hispanic	8130	36263	22.4%
FL - Miami	American Indian/Alaska Native	21	67	31.3%
NY - Bronx	Unknown	49	155	31.6%
NY - Bronx	Non-Hispanic White	1500	7333	20.5%
NY - Bronx	African American	2154	8785	24.5%
NY - Bronx	Other	38	235	16.2%
NY - Bronx	Asian/Pacific Islander	99	477	20.8%
NY - Bronx	Hispanic	1901	8382	22.7%
NY - Bronx	American Indian/Alaska Native	*	*	11.1%
MI - Detroit	Unknown	30	207	14.5%
MI - Detroit	Non-Hispanic White	9145	45221	20.2%
MI - Detroit	African American	8955	35386	25.3%
MI - Detroit	Other	81	425	19.1%

MI - Detroit	Asian/Pacific Islander	136	598	22.7%
MI - Detroit	Hispanic	268	1182	22.7%
MI - Detroit	American Indian/Alaska Native	22	72	30.6%
NY - Manhattan	Unknown	215	981	21.9%
NY - Manhattan	Non-Hispanic White	13615	67738	20.1%
NY - Manhattan	African American	6646	25350	26.2%
NY - Manhattan	Other	506	2283	22.2%
NY - Manhattan	Asian/Pacific Islander	986	5166	19.1%
NY - Manhattan	Hispanic	4064	17362	23.4%
NY - Manhattan	American Indian/Alaska Native	19	94	20.2%
Source: CMS OMH Analysis				
* Cell sizes too small to report				

Number of Readmissions in the Medicare Beneficiary Population – In 2013, the majority of hospital readmissions occurred among Non-Hispanic white beneficiaries at 74.3%. 15.9% were African American beneficiaries, followed by Hispanic beneficiaries at 6.6%. Chart 3 depicts the percentage of readmissions by racial group. Chart 4 shows the general population of Medicare beneficiaries by racial group. Although African Americans comprise only 10% of the overall beneficiary population, they represent almost 16% of total hospital readmissions. Other racial groups are reversed, representing larger beneficiary populations with lower percentages of hospital readmissions.

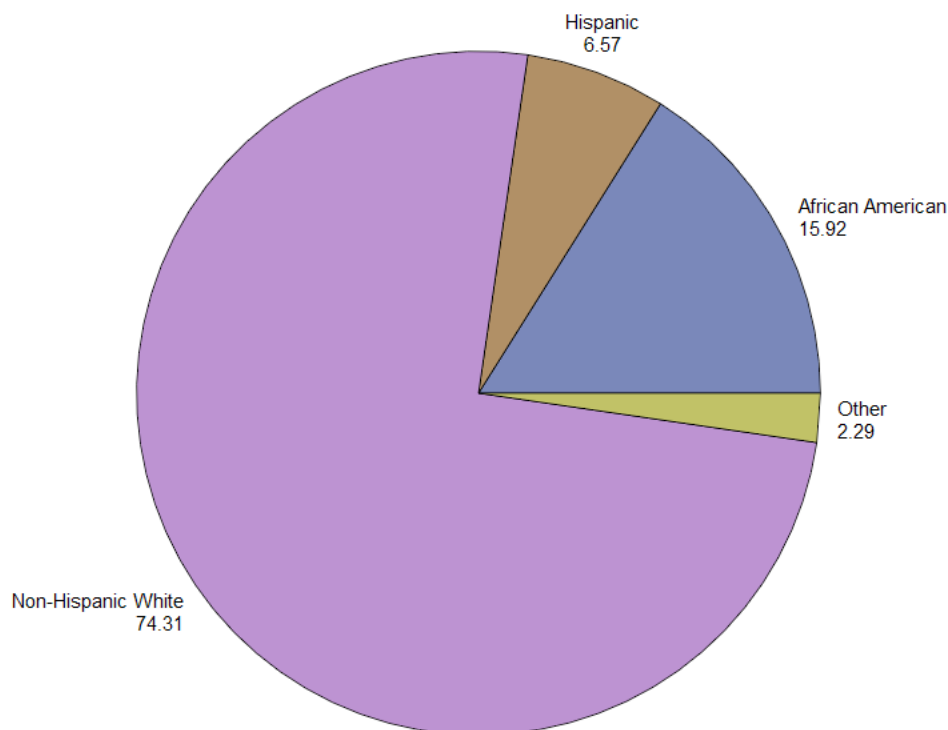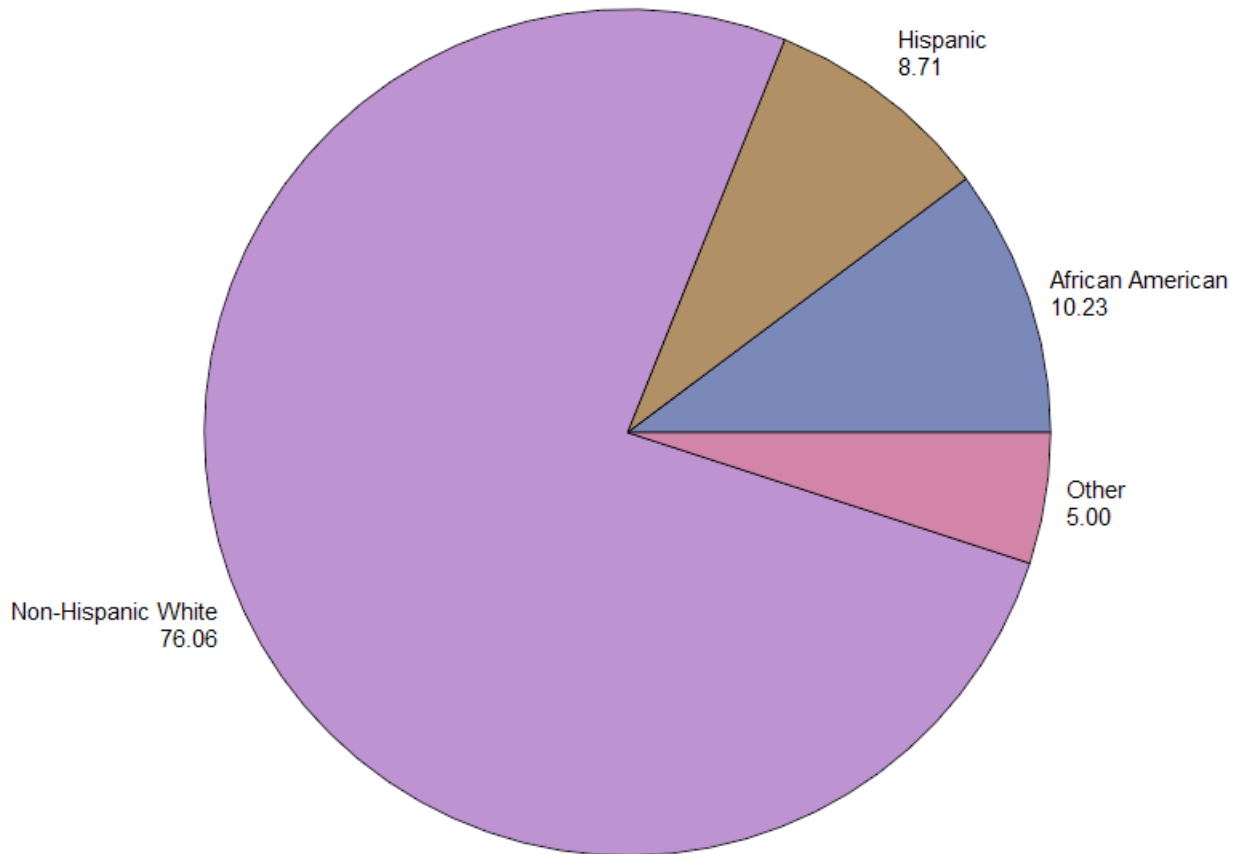## Chart 3. Percentage of Readmissions by Race – 2013

Chart 4. Percentage of Beneficiaries by Race – 2013

Hispanic
8.71

African American
10.23

Other
5.00

Non-Hispanic White
76.06

Categories of Readmissions – Beginning on October 1, 2012, CMS Inpatient Prospective Payment System (IPPS) was changed to reduce payments to hospitals with excess readmissions under the Hospital Readmission Reduction program. Excess readmissions are measured as a ratio, dividing a hospital's number of "predicted" 30-day readmissions for heart attack, heart failure, and pneumonia by the number that would be "expected", based on an average hospital with similar patients. Hospitals with excess readmissions are penalized with a payment adjustment.

Shown below in Table 5 is the number of readmissions by racial group for each measure adopted in the FY 2012 IPPS final rule, acute myocardial infarction, heart failure and pneumonia based on ICD-9 diagnosis codes on the claim. African Americans have a disproportionate share of readmissions, representing a higher percentage of readmissions for each condition (13.3%, 16.4%, and 12.8% respectively), than their overall representation of the Medicare population (10.2%). Other racial groups do not show this same trend.
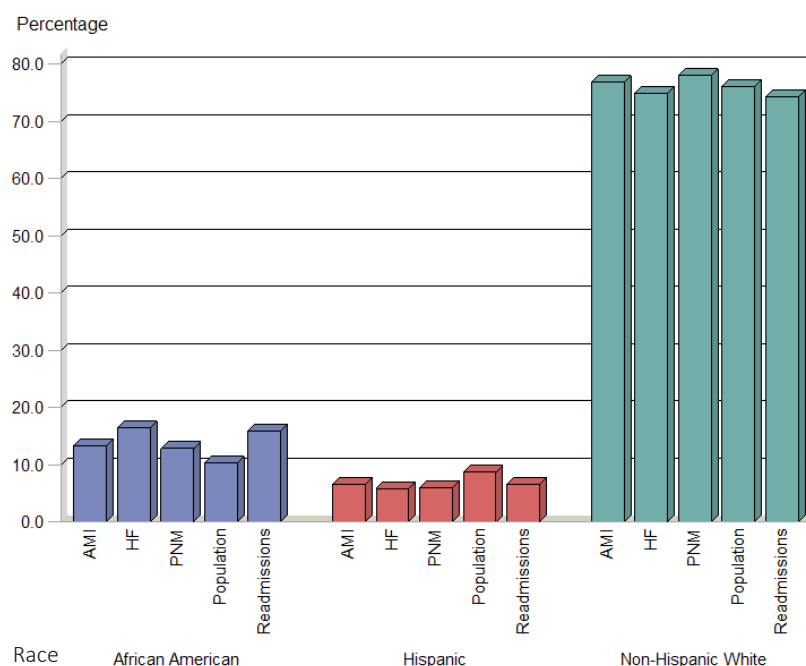
Table 5. Hospital Readmissions for Acute Myocardial Infarction, Heart Failure, and Pneumonia by Race – 2013

Hospital Readmissions for Selected Conditions by Race - Cohort ICD-9-CM Codes by Measure						
	Acute Myocardial Infarction		Heart Failure		Pneumonia	
Beneficiary RTI Race Code	Frequency	Percent	Frequency	Percent	Frequency	Percent
Unknown	116	0.2	1279	0.2	641	0.3
Non-Hispanic White	39900	76.7	425951	74.9	189356	77.9
African American	6912	13.3	93102	16.4	31100	12.8
Other	331	0.6	3076	0.5	1336	0.5
Asian/Pacific Islander	1047	2.0	8431	1.5	4260	1.8
Hispanic	3370	6.5	33147	5.8	14533	6
American Indian/Alaska Native	336	0.6	3502	0.6	1703	0.7
Total	**52012**	**99.9**	**568488**	**99.9**	**242929**	**100**
Source: CMS OMH Analysis						

For the most part, as depicted in Chart 5 below, hospital readmissions for acute myocardial infarction, heart failure and pneumonia comport with the overall percentage of readmissions by racial category. For African Americans, the percentage of readmissions for acute myocardial infarction (13.3%) and pneumonia (12.8%) are below the overall percentage of readmissions (15.9%), while readmissions for heart failure are higher (16.4%). For pneumonia, the percentage of white beneficiaries readmitted (77.9%) is above the overall percentage of readmissions (74.3%), as are readmissions for acute myocardial infarction (76.7%). For Hispanic beneficiaries, the percentage of readmissions for all three conditions, acute myocardial infarction (6.5%), heart failure (5.8%) and pneumonia (6%) are comparable to the percentage of readmissions they represent (6.5%).

Chart 5. Percentage of Acute Myocardial Infarction, Heart Failure, Pneumonia, Readmissions, and Beneficiaries by Race – 2013

Conclusion: This paper highlights disparities in hospital readmission rates. This analysis indicates that readmission rates for Medicare FFS beneficiaries remained stable from 2007 to 2011, with decreasing rates beginning in 2012. The preliminary 2013 rates are markedly lower. Within the FFS population, readmission rates during this period were noticeably higher than the national rate for beneficiaries that were minorities with the exception of Asian/Pacific Islanders.

African Americans have the highest rates of readmission among the Hospital Referral Regions with the 5 highest overall readmission rates which are Chicago IL, Miami FL, Bronx NY, Detroit MI, and Manhattan NY.

For African Americans, the percentage of readmissions overall (15.9%) and for acute myocardial infarction (13.3%), heart failure (16.4%) and pneumonia (12.8%) are higher than the percentage of beneficiaries they represent (10.2%). The opposite is true for Hispanic and white beneficiaries where they represent more of the overall population (8.7% and 76% respectively) than readmissions (6.6% and 74.3%).

Readmissions continue to be an area of focus by health care policymakers. The Affordable Care Act contains numerous provisions aimed at reducing readmission rates and eliminating health disparities. Further research is needed to study trends and results of policy changes.