

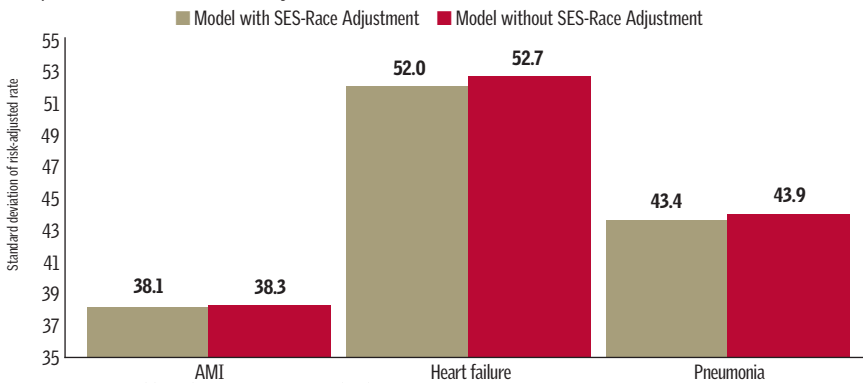
FACTFILE

Community Need and Readmissions

In response to concerns raised by healthcare leaders that the absence of adjustment for socioeconomic status (SES) and race characteristics in patient populations impedes the fair comparison of hospitals on risk-standardized 30-day unplanned readmission rates, Truven Health Analytics™ evaluated the extent to which risk-adjusted readmission rates for acute myocardial infarction, heart failure, and pneumonia are affected by adjustments for community-level SES factors through its Community Need Index (CNI) and patient race. The study shows there is, indeed, a statistically significant effect. For more, visit truvenhealth.com/wp/readmissionpenalties.

IMPACT OF SES AND RACE

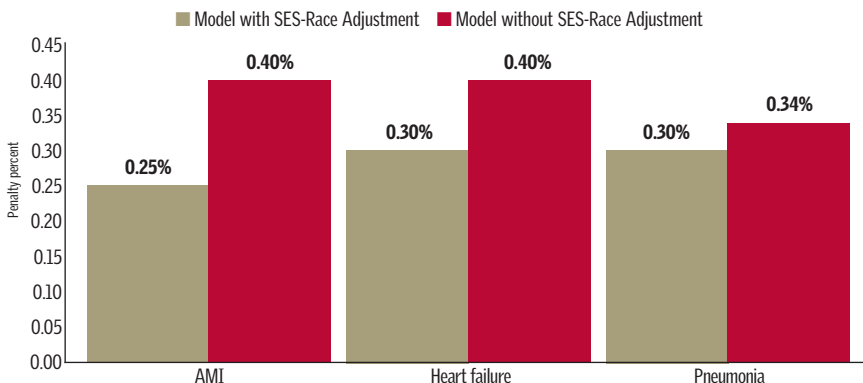
When each clinical cohort readmission rate in the model was adjusted for SES and race factors, the standard deviation on risk-adjusted readmission rates across hospitals declined. While the difference is modest, it does indicate that adding these adjustments into the models results in higher precision in estimating the risk-adjusted readmission rate. In other words, the CNI and race factors do contribute to readmission rates and penalties in a measureable way.



SOURCE: Truven Health Analytics, Community Need Index, 2014.

IMPACT OF SAFETY-NET STATUS

Even after adjusting for safety-net status, hospitals in communities with high levels of CNI and race factors had higher penalties. Across the three clinical cohorts, both safety-net hospitals and non-safety-net hospitals had penalties of 0.25 and higher. If the Centers for Medicare & Medicaid Services' models were to take into account adjustments for CNI and race factors, these hospitals, on average, would pay lower penalties.



SOURCE: Truven Health Analytics, Community Need Index, 2014.

ABOUT THE DATA: Truven Health Analytics and San Francisco-based Dignity Health developed the Community Need Index (CNI) in 2005 specifically to look at the underlying economic and social factors that affect the overall health of a community, including income, cultural/language barriers, education, insurance, and housing. This report used CMS Standard Analytical Files (SAF IP 100%) data from Q3 2009 through Q2 2012 to replicate, to the extent possible, the CMS methodologies for assessing hospital-specific adjusted rates for 30-day, unplanned readmissions for AMI, heart failure, and pneumonia (clinical cohorts). Risk-adjustment information for unplanned, 30-day readmissions was produced for all hospitals. Truven Health researchers analyzed the 2014 hospital readmission rates and penalties for the three CMS diagnosis cohorts as they relate to socioeconomic and race factors. Analysts used the Truven Health proprietary Community Need Index (CNI) and race identification from CMS patient data. Contact Truven Health at info@truvenhealth.com or 800-366-7526.

Poverty by Race and Ethnicity

A person's economic status can have an impact on that person's health and healthcare. This data indicates that 15% of Americans live in poverty, which the U.S. Census Bureau defined as \$18,751 for a family with two adults and one child in 2013. Mississippi had the highest rate at 23%, while Utah had the lowest rate, 8%.

Location	White	Black	Hispanic	Other	Total
United States	10%	27%	24%	14%	15%
Alabama	10%	31%	N/A	N/A	17%
Alaska	9%	N/A	N/A	16%	11%
Arizona	9%	N/A	32%	33%	20%
Arkansas	13%	36%	N/A	N/A	17%
California	11%	29%	20%	10%	15%
Colorado	7%	N/A	23%	N/A	11%
Connecticut	8%	22%	25%	N/A	11%
Delaware	9%	20%	30%	N/A	14%
District of Columbia	5%	36%	N/A	N/A	21%
Florida	10%	24%	22%	N/A	15%
Georgia	10%	25%	27%	N/A	16%
Hawaii	11%	N/A	14%	10%	11%
Idaho	11%	N/A	29%	N/A	13%
Illinois	10%	30%	15%	N/A	13%
Indiana	9%	27%	23%	N/A	12%
Iowa	9%	N/A	25%	15%	11%
Kansas	10%	33%	29%	20%	13%
Kentucky	18%	N/A	N/A	N/A	20%
Louisiana	10%	34%	39%	N/A	19%
Maine	11%	N/A	N/A	N/A	12%
Maryland	8%	14%	16%	N/A	10%
Massachusetts	9%	N/A	34%	N/A	12%
Michigan	11%	34%	28%	11%	15%
Minnesota	9%	46%	26%	17%	12%
Mississippi	11%	40%	N/A	N/A	23%
Missouri	10%	35%	N/A	N/A	14%
Montana	12%	N/A	N/A	39%	15%
Nebraska	8%	N/A	24%	N/A	11%
Nevada	12%	33%	27%	8%	17%
New Hampshire	9%	N/A	N/A	N/A	9%
New Jersey	6%	21%	24%	N/A	11%
New Mexico	9%	N/A	28%	37%	22%
New York	9%	26%	24%	14%	15%
North Carolina	12%	27%	43%	21%	19%
North Dakota	7%	N/A	N/A	24%	10%
Ohio	11%	28%	23%	N/A	14%
Oklahoma	10%	29%	21%	20%	14%
Oregon	13%	N/A	29%	N/A	15%
Pennsylvania	9%	19%	31%	21%	13%
Rhode Island	9%	N/A	33%	N/A	14%
South Carolina	10%	28%	N/A	N/A	16%
South Dakota	7%	N/A	N/A	42%	11%
Tennessee	13%	41%	24%	N/A	18%
Texas	8%	23%	25%	11%	17%
Utah	6%	N/A	26%	N/A	8%
Vermont	9%	N/A	N/A	N/A	9%
Virginia	6%	23%	15%	N/A	11%
Washington	8%	N/A	21%	15%	12%
West Virginia	17%	N/A	N/A	N/A	18%
Wisconsin	7%	39%	32%	N/A	11%
Wyoming	12%	N/A	18%	N/A	12%

NOTES: Kaiser Family Foundation estimates based on the Census Bureau's March 2014 Current Population Survey (CPS: Annual Social and Economic Supplements). N/A indicates estimates with denominators under 100 or with relative standard errors greater than 30%. Persons of Hispanic origin may be of any race; all other racial/ethnic groups are non-Hispanic. Other includes Asian-Americans, Native Hawaiians and Pacific Islanders, American Indians, Aleutians, Eskimos and persons of two or more races.

SOURCE: Kaiser State Health Facts, Poverty Rate by Race/Ethnicity, <http://kff.org/other/state-indicator/poverty-rate-by-raceethnicity/>.

Upcoming Topic:

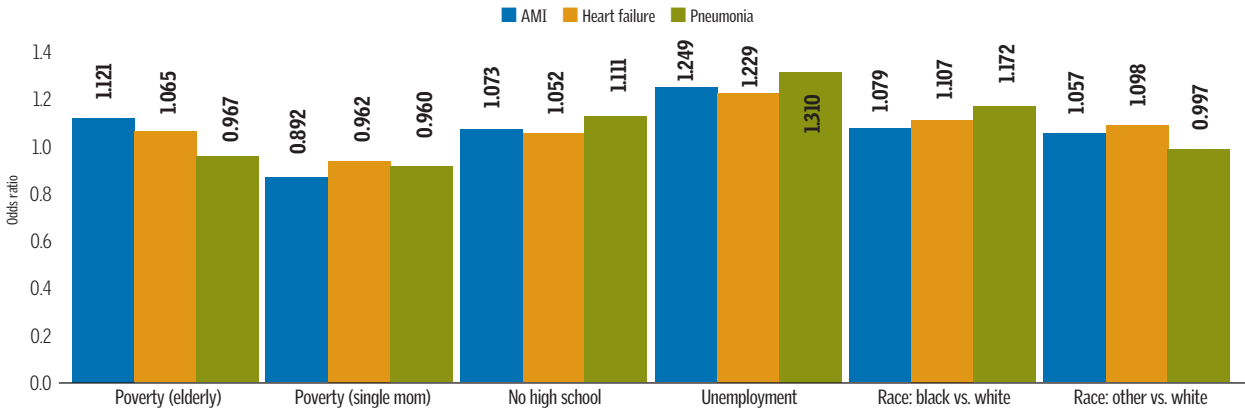
> Variability, Not Volume, a Key Data Challenge

FACT FILE PARTNER:



READMISSIONS ODDS RATIOS BY CNI AND RACE

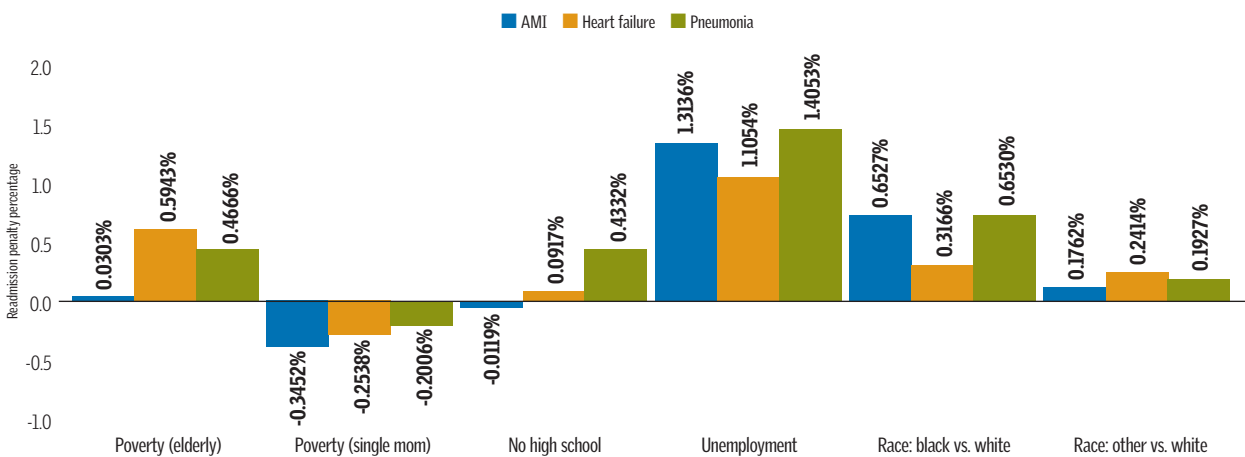
Some, but not all, CNI and race factors were correlated with an increase in the three diagnosis categories' readmissions. While such correlations are evident across all of the evaluated community characteristics, only race and community levels of unemployment and lack of high school education were statistically significant. For each individual community factor, readmission risks were reasonably consistent for all the three clinical cohorts. This indicates, for instance, that high unemployment rates had a fairly equivalent effect on AMI, heart failure, and pneumonia readmissions.



NOTE: An odds ratio below 1.0 indicates a factor would have a protective effect on readmission risk in that clinical cohort. Those above 1.0 indicate an increased likelihood of readmission risk.
 SOURCE: Truven Health Analytics, *Community Need Index*, 2014.

CMS READMISSION PENALTY BY CNI AND RACE

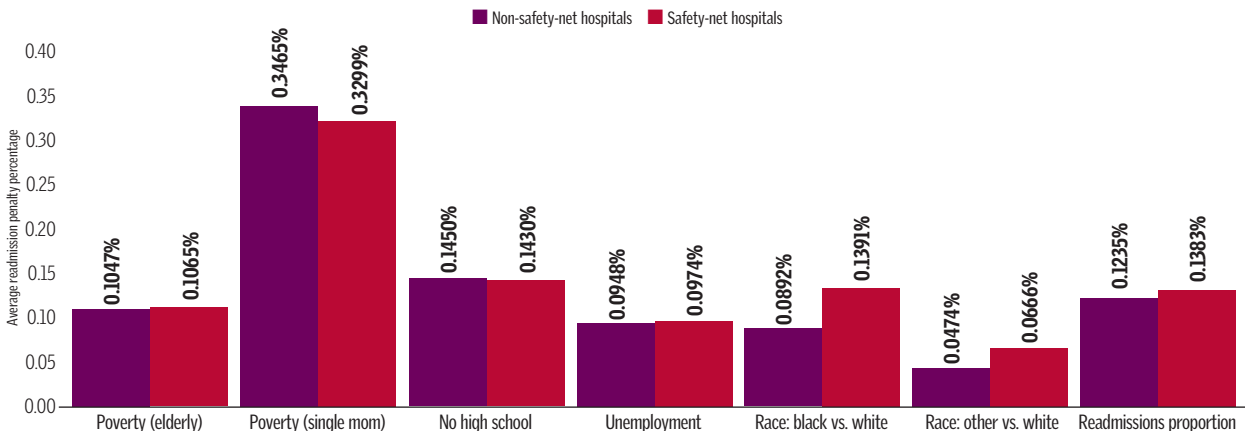
When actual CMS readmission penalty percentages were reviewed, the analysis showed a similar result: Regardless of what socioeconomic or race factor was analyzed, the effect on the three clinical diagnosis cohorts was fairly consistent.



Truven Health Analytics, *Community Need Index*, 2014.

CMS PENALTIES FOR SAFETY-NET, NON-SAFETY-NET HOSPITALS

We see that for most (seven of 10) socioeconomic and race factors, the CMS readmission penalty amounts assessed were higher for safety-net hospitals than for non-safety-net hospitals. This reflects the fact that safety-net hospitals typically deal with patients from disadvantaged communities. The association between safety-net hospitals and increased penalty amount was statistically significant even after adjusting for CNI and race factors.



SOURCE: Truven Health Analytics, *Community Need Index*, 2014.

