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New York State All Payer Prevention Quality Indicator (PQI) Rates, 2009-2012

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Introduction

This statistical report provides a summary of observed rates for the Agency of Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs) for all payer hospital inpatient discharges in New York for the time period 2009 through 2012.

Prevention Quality Indicators (PQIs) are a set of measures that can be used to identify quality of care for ambulatory care sensitive conditions. Hospitalization can potentially be prevented for patients with ambulatory care sensitive conditions that receive good outpatient care. Additionally, early clinical intervention for these conditions can prevent complications or more severe disease. These indicators serve as a starting point to assess the quality of health care related services in a community, by identifying areas with poor access to care, or where specific disease intervention needs to be improved.

Methods

The unit of analysis is an inpatient discharge record from an Article 28 (acute care) New York State hospital between January 1, 2009 and December 31, 2012 as reported to the Statewide Planning and Research Cooperative System (SPARCS). SPARCS is a comprehensive data reporting system established in 1979 as a result of cooperation between the health care industry and government. SPARCS currently collects patient level detail on patient characteristics, diagnoses, treatments, services, and charges for every hospital discharge, ambulatory surgery patient, and emergency department admission in New York State.

PQI Methodology

PQIs were assigned using AHRQ Quality Indicators software version 4.5 for all four years of data. There are 13 PQIs in total and three composite indicators. In this report we analyzed twelve of the fourteen AHRQ PQIs (excluded PQI 2-Perforated Appendix and PQI 9-Low birth weight) and all 3 AHRQ composite indicators. PQI is defined primarily by a set of diagnosis codes. For some PQIs, procedure codes are also used in the

Highlights

- Statewide individual PQI rates decreased from 2009 to 2012, except for PQI 1, Diabetes Short-Term Complication Admissions, which increased.
- New York City had the highest overall PQI composite rate for each of the 4 years compared to the other regions in the state, while the Northern Metro region consistently had the lowest rate.
- For each of the four years, the Central New York region had the highest acute PQI composite rate and the Northern Metro region consistently had the lowest rate.
- New York City had the highest chronic PQI composite rate for each of the 4 years, whereas the Northern Metro region consistently had the lowest rate.

definition. A PQI is assigned to a discharge if the primary diagnosis code and/or procedure code matches the PQI definition.

The numerator for each PQI is defined by a set of inclusion or exclusion rules that differ for each PQI. All PQI measures exclude discharges for people under the age of 18, transfers from another hospital or health care facility, MDC 14 (pregnancy), or with missing information for age, gender, quarter, year, principal diagnosis, or county. Several PQIs have further exclusion criteria beyond these global exclusions, such as cardiac procedures and immunocompromised diagnoses. The PQI numerator is made up of the count of discharges that meet a PQI definition. For further information see the PQI specifications at http://qualityindicators.ahrq.gov/modules/pqi_resources.aspx.

The denominator for each PQI is made up of the population aged 18 years and older in the geographic region of interest. Population counts were determined using proprietary Claritas population data files. Claritas reports population demographics on several geographic levels; for this analysis we used only the county and zip code levels. To determine the denominator for the region level, we summed the population for each county in a defined region. The regions are defined in Table 1.

PQI rates were calculated for each year and for each PQI. The rates presented are the numerator divided by the denominator multiplied by 100,000.

Findings

PQI rates by zip code and county for years 2009-2012 are available on Health Data NY (https://health.data.ny.gov/). Health Data NY is an open data portal that provides health care providers, researchers, academics, and the general public with access to valuable health data. The data site allows users to download and analyze data in a variety of formats, create visualizations of the data and review metadata.

PQI Rates 2009-2012 for New York State, per 100,000 Population

Table 2 presents observed PQI rates for each PQI for NYS from 2009 through 2012. The observed rates are reported per 100,000 population. When looking at individual PQI measures, most measures decreased over the four years. However, PQI 1 (Diabetes Short-Term Complications Admission) shows an increase in observed rate over the four year period.

PQI 90 2009-2012 by region, per 100,000 population

Chart 1 presents AHRQ PQI Overall composite (PQI 90) by region in NYS from 2009 to 2012. The overall composite shows a decreasing trend for most of the regions across the 4 years, although in the Long Island, Northern Metro, and Western Rochester regions the PQI rates fluctuate over the 4 year period. NYC region has the highest rates, while Northern Metro region has the lowest rates.

PQI 91 2009-2012 by region, per 100,000 population

Chart 2 presents AHRQ PQI Acute composite (PQI 91) by region in NYS from 2009 to 2012. The acute composite PQI is made up of PQIs 10, 11 and 12. The acute composite shows a decreasing trend across some of the regions over the 4 years. In the Central, Long Island, Northern Metro, and Western Rochester regions the PQI rates fluctuate over the 4 year period, however Central region has the highest PQI rate compared to the other regions for each year. Again, Northern Metro region has the lowest rates.

PQI 92 2009-2012 by region, per 100,000 population

Chart 3 presents AHRQ PQI Chronic composite (PQI 92) by region in NYS from 2009 to 2012. The chronic composite is made up of PQIs 1,3,5,7,8,13,14,15,16. The chronic composite shows a decreasing trend across a majority of the regions over the 4 years, except for the Northern Metro and Western Rochester regions where the PQI rates

fluctuate over the 4 year period. When comparing regions, NYC has the highest rate for chronic PQIs, and Northern Metro has the lowest PQI rates.

Conclusions

Overall, from 2009 to 2012, the majority of AHRQ individual PQI rates decreased in New York State. During the same time period the AHRQ composite PQI rates decreased for most regions in the state. However, the observed rate of diabetes short-term complication admissions (PQI 1) rose from 2009 to 2012, which may reflect a need for improved preventative care for diabetics in NYS.

The New York City (NYC) region was consistently higher than the rest of the regions in PQI 90, the composite rate of all PQIs. However, when broken down into acute (PQI 91) and chronic (PQI 92) PQIs, the New York City region had a low rate for acute PQIs and a high rate of chronic PQIs. This indicates that improved access to care or specific disease interventions for residents of the NYC region with chronic conditions could prevent hospitalizations for residents with chronic conditions.

Tables and Charts

Table 1. Region Definitions

Region	Counties
Central	Broome, Cayuga, Chenango, Cortland, Herkimer, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, St. Lawrence, Tioga, Tompkins
Long Island	Nassau, Suffolk
New York City (NYC)	Bronx, Kings, New York, Queens, Richmond
Northeastern	Albany, Clinton, Columbia, Delaware, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Ostego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren, Washington
Northern Metro	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester
Western - Buffalo	Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming
Western - Rochester	Chemung, Livingston, Monroe, Ontario, Schuyler, Seneca, Steuben, Wayne, Yates

Table 2. Statewide PQI Rates 2009-2012, per 100,000 Population

Individual PQIs	2009	2010	2011	2012
PQI 1 Diabetes Short-Term Complications Admission	56.28	56.38	59.63	62.43
PQI 3 Diabetes Long-Term Complications Admission	146.35	144.93	145.79	136.36
PQI 5 Chronic Obstructive Pulmonary Disease (COPD)or Asthma in Older Adults Admission	572.74	535.01	536.15	510.78
PQI 7 Hypertension Admission	78.56	76.95	75.82	74.37
PQI 8 Heart Failure Admission	379.88	344.3	330.78	318.04
PQI 10 Dehydration Admission	137.49	125.5	122.49	114.7
PQI 11 Bacterial Pneumonia Admission	284.88	248.65	259.73	235.84
PQI 12 Urinary Tract Infection Admission	175.79	175.38	172.01	166.16
PQI 13 Angina Without Procedure Admission	32.71	27.08	23.25	20.73
PQI 14 Uncontrolled Diabetes Admission	36.9	31.18	27.93	26.07
PQI 15 Asthma in Younger Adults Admission	95.39	74.43	73.81	72.49
PQI 16 Lower-Extremity Amputation among Patients with Diabetes	14.69	14.04	14.43	14.53
Composite PQIs				
PQI 90 Overall Composite	1,724.09	1,595.09	1,583.77	1,503.75
PQI 91 Acute Composite	598.17	549.54	554.23	516.7
PQI 92 Chronic Composite	1,125.96	1,045.58	1,029.56	987.11

Chart 1. PQI 90 Overall Composite 2009-2012 by region, per 100,000 population

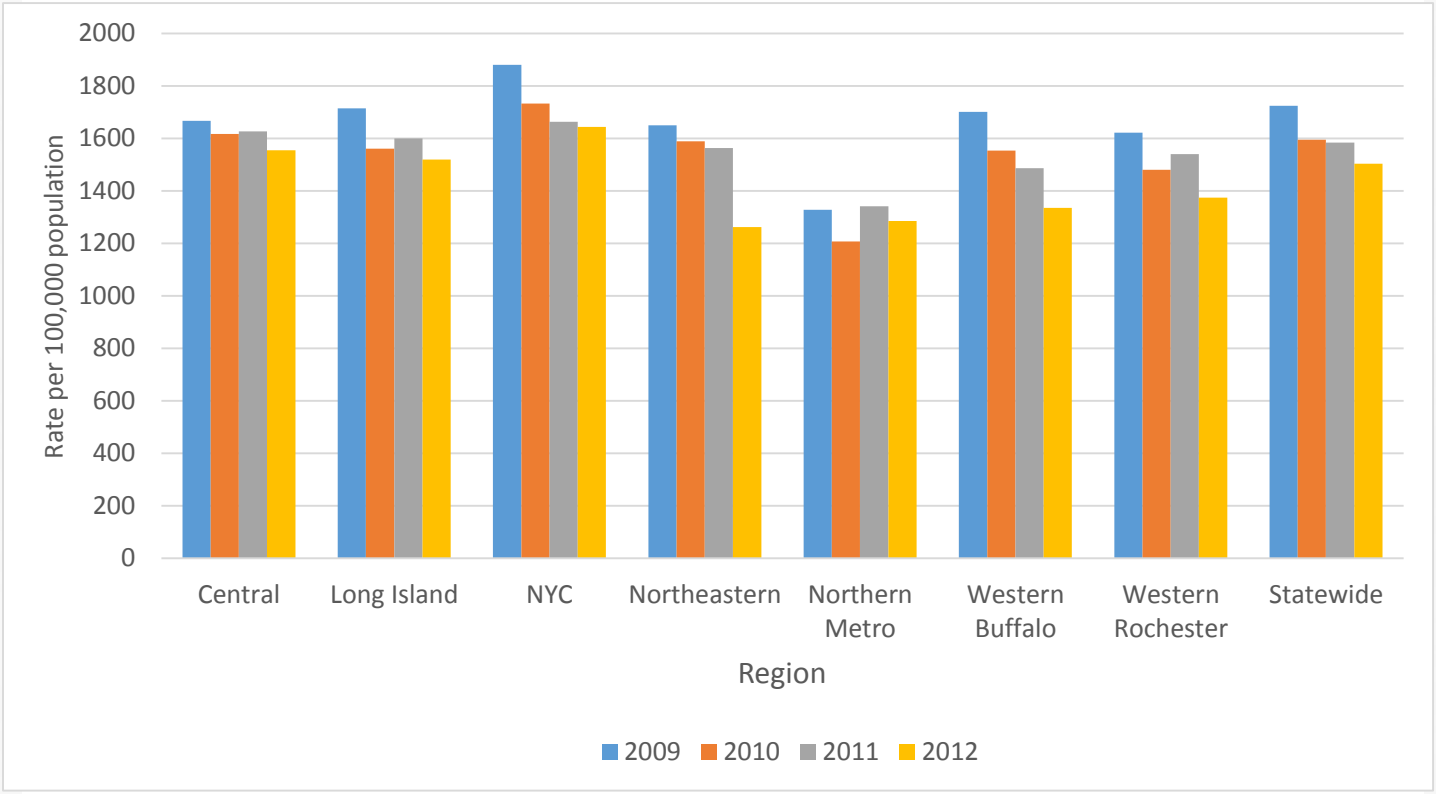


Chart 2 PQI 91 Acute Composite 2009-2012 by region, per 100,000 population

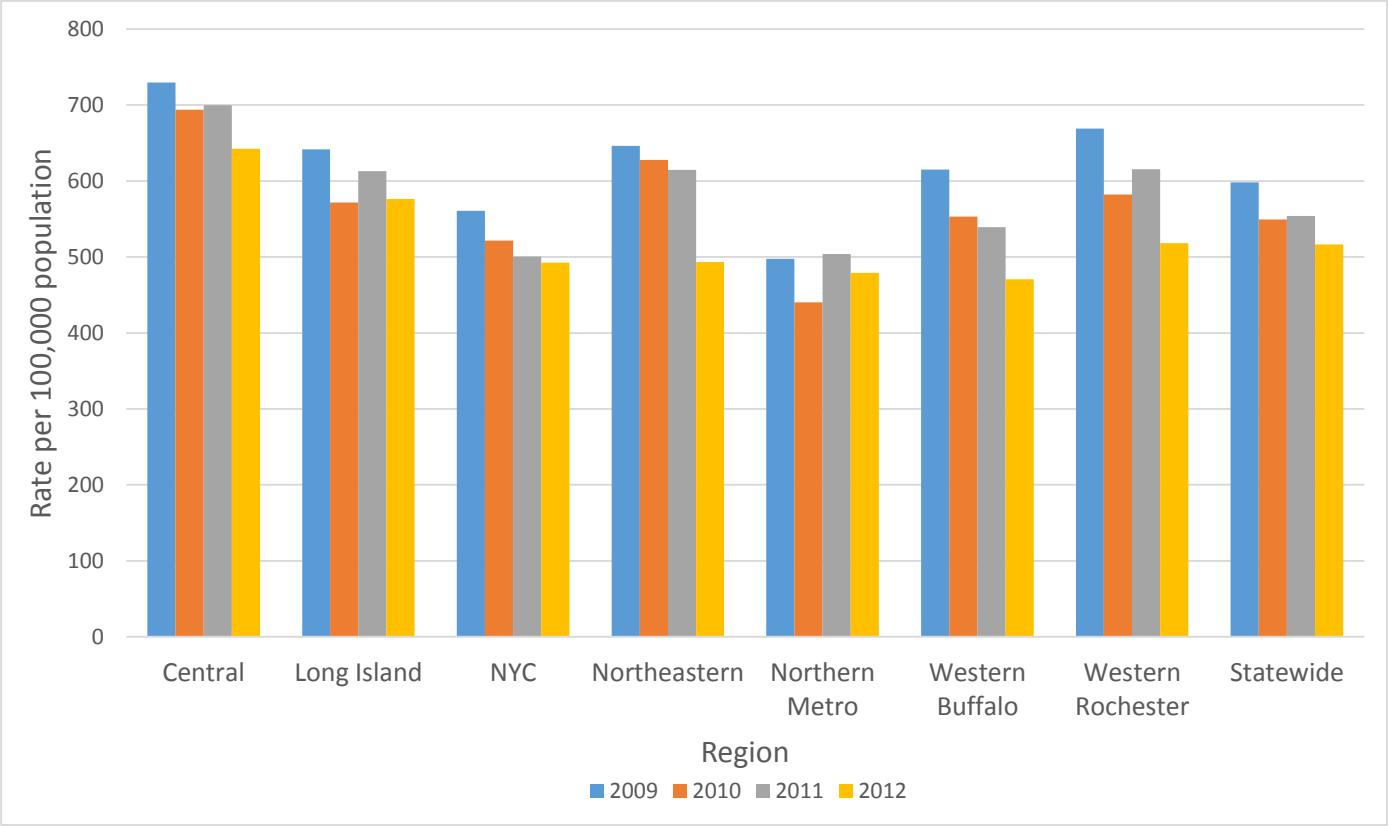
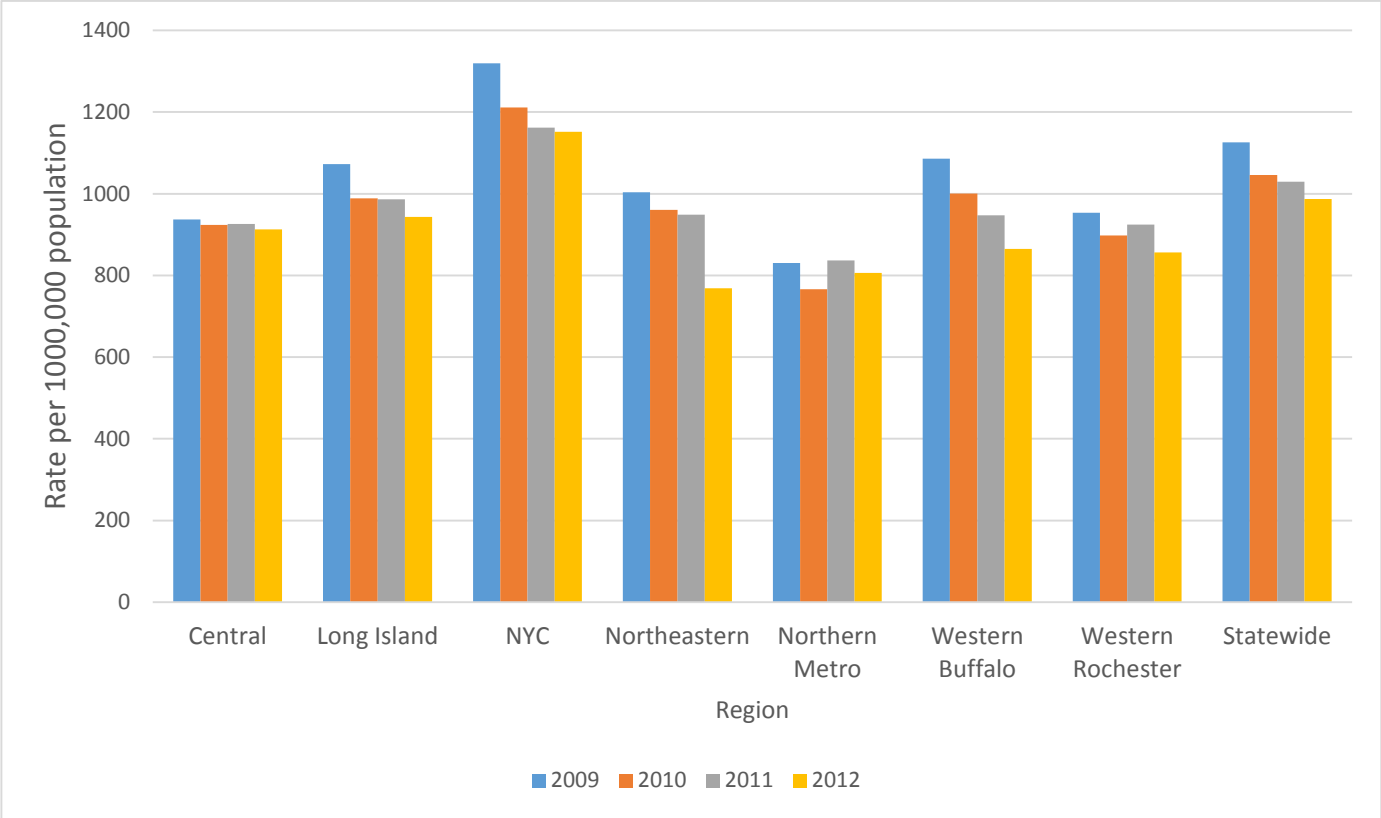


Chart 3. PQI 92 Chronic Composite 2009-2012 by region, per 100,000 population



Contact Information

We welcome questions, comments and feedback on this Statistical Brief.

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