DATABOOK

Preventable Hospitalizations in Connecticut: *A Current Assessment of Access to Community Health Services*

2004 - 2008

OFFICE of
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Preventable Hospitalizations in Connecticut: A Current Assessment of Access to Community Health Services, 2004-2008

"Preventable hospitalizations" are instances of inpatient hospital care for health conditions or illnesses typically treated or managed outside of the hospital.[1] These include chronic conditions such as diabetes and asthma or acute episodes of illnesses like bacterial pneumonia or urinary tract infections. These conditions are considered "preventable" because timely and effective primary care and medical management of these conditions have been clinically demonstrated to reduce the need for hospitalization.[2]

Although preventable hospitalizations are instances of inpatient care, they provide insight into the quality of the healthcare system *outside* of the hospital because timely primary care generally "prevents" most people with these conditions from becoming so severely ill that they require hospital care. Of course, general health status, adherence to treatment recommendations and other environmental conditions can predispose individual patients to hospitalization. However, at the community and state level, preventable hospitalizations provide a valid starting point for assessing the quality of primary health care services in the community.

As a screening tool, preventable hospitalizations help identify possible gaps in the primary care system, disparities in access to primary care and community health resource needs. They also suggest areas of potential cost savings by identifying instances of inpatient acute care that may be reduced through primary care, case management and outreach.

Preventable hospitalizations methodology

For this publication, the Office of Health Care Access (OHCA) utilized the Quality Indicators (QI) software tool developed under the auspices of the U.S. Department of Health and Human Services Agency for Healthcare Research and Quality (AHRQ).[3] As part of the QI project, an AHRQ-sponsored team of clinical researchers identified and statistically validated a set of health conditions for which effective primary care significantly reduced the incidence of

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Prevention Quality Indicators (PQIs)

AHRQ's preventive care Quality Indicators to include five Pediatric area-level Quality Indicators and 14 Adult Prevention Quality Indicators. Hospitalizations for these conditions have been shown to significantly decrease with access to high-quality primary care and proper disease management.

Pediatric Quality Indicators

- Asthma
- Diabetes, short-term complications
- Gastroenteritis
- Perforated appendix
- Urinary tract infection

Adult Quality Indicators

- Angina without an in-hospital therapeutic procedure
- Asthma
- Bacterial pneumonia
- Chronic obstructive pulmonary disease
- Congestive heart failure
- Dehydration
- Diabetes, long-term complications
- Diabetes, short-term complications
- Diabetes-related lower extremity amputation
- Diabetes, uncontrolled
- Hypertension
- Low birth weight newborns
- Perforated appendix
- Urinary tract infection

hospitalization. These conditions are referred to as Ambulatory Care Sensitive Conditions (ACSCs). Two QI modules, Prevention Quality Indicators (PQIs) for adults and Pediatric Quality Indicators (PDIs) for children, identify instances of ACSC (preventable) hospitalizations. They also generate per capita population rates of the incidence of preventable hospitalizations among all residents and for selected subgroups. Use of the QI tool provides researchers with a standardized approach for studying preventable hospitalizations which facilitates comparisons across communities as well as over time.

For the purposes of this publication, PQI refers to both adult and pediatric preventable hospitalizations. The reference year is calendar year. Previous hospitalization refers to a prior hospitalization at the same hospital.

AHRQ periodically updates the QI tool and since the publication of OHCA's 2008 preventable hospitalizations databook, the tool has undergone a number of revisions.[4] In order to report consistent results over the last five years to reflect these most recent changes, this databook includes data from 2004 through 2008 and utilized Version 4.0, the most recent version, of the QI tool.

Structure of the Preventable Hospitalization Databook

The *Preventable Hospitalizations Databook* is intended as a reference document providing extensive, though not exhaustive, information. It is organized to allow the reader to quickly find relevant information. The first section presents overall trends in preventable hospitalization volume and patient days. The next section focuses on preventable hospitalization charges and insurers. The third section examines PQI hospitalizations characteristics such as volume by hospital, previous admission, admission source, discharge status and multiple hospitalizations for the same PQI condition. Together, they suggest that many PQI hospitalizations required extensive acute and other health services. Demographic characteristics of PQI hospitalizations are presented in the fourth section. The final section presents PQI data for subgroups based on age, race and type of insurance. This highlights differences in disease prevalence, use of the emergency department, the need for health care services following discharge from the hospital and multiple hospitalizations for the same PQI condition.

Significant findings

- In 2008, there were over 47,000 "preventable hospitalizations" of Connecticut residents (i.e., hospitalizations for a PQI condition), with over 255,000 total patient days and associated total charges of nearly $1.2 billion.

- Preventable hospitalizations accounted for 11% of all hospitalizations and hospital charges and 13% of patient days.

- From 2004 through 2008, the number of preventable hospitalizations dropped by 1%. Decreased hospitalizations for bacterial pneumonia and dehydration accounted for nearly two-thirds of the decline. Significant increases in hospitalizations for urinary tract infections and Chronic Obstructive Pulmonary Disease (COPD) almost offset the decline.

- Compared with the United States on a per capita basis, Connecticut residents experienced fewer preventable hospitalizations. In 2004, the last year for which national rates were available, Connecticut had lower hospitalization rates for 17 of 19 PQI conditions. The exceptions were the state's slightly higher rates for bacterial pneumonia, and low birth weight newborns. Connecticut also had a lower overall rate of PQI hospitalizations for adults.

- Within Connecticut in 2008, New Haven county had the highest per capita rates for 12 of the 19 PQI conditions. New Haven county also had higher statewide average rates for all 19 PQI conditions.

- Preventable hospitalization patients tended to require extensive health care resources, both within the hospital and following discharge. Most had been previously hospitalized (69%). They were largely admitted through the Emergency Department (82%) and nearly half received additional care after discharge (26% transferred to another health care facility and 22% required home health services).

- In 2008, eleven percent of all preventable hospitalization patients had multiple hospitalizations for the same PQI condition (e.g., 21% of adults hospitalized for congestive heart failure had multiple congestive heart failure-related hospitalizations).

- Senior citizens accounted for 58% of preventable hospitalizations, nearly all covered by Medicare.

- Between 2004 and 2008 while PQI hospitalizations declined, Hispanics (33%), uninsured (23%) Medicaid enrollees (6%), and working age adults (6%) experienced the largest growth of preventable hospitalizations.

- In comparison with non-Hispanic Whites, Blacks or Hispanics had higher per capita rates for 14 PQI conditions, meaning they were at greater risk for preventable hospitalizations. Blacks had particularly high rates of hypertension, asthma and diabetes. Hispanics had high incidences of adult asthma, long and short-term complications of diabetes, pediatric urinary tract infection and gastroenteritis. Whites had the highest per capita rates for bacterial pneumonia, chronic obstructive pulmonary disease (COPD), dehydration and adult urinary tract infection in the state.

Connecticut's incidence of preventable hospitalizations was lower than U.S.

From 2004 through 2007, PQI hospitalizations grew slightly by (1%) but dropped by 2% in 2008; the net effect was a statistically significant 1% decline over the five year period. Decreases in hospitalizations for bacterial pneumonia and dehydration accounted for nearly two-thirds of the total decline. Compared to the U.S., Connecticut's PQI rates were lower for 17 of 19 PQI conditions and the overall adult PQI rate, meaning Connecticut residents were less likely to be hospitalized for these conditions. Exceptions were bacterial pneumonia and low birth weight newborns.

Table 1: PQI hospitalizations and rates, 2008

Quality Indicator	Hospitalizations	Change in hospitalizations, 2004 - 2008	2008 Rate (per 100,000 people)[4]	2004 Rate (per 100,000 people)[4]	CT 2004 rates compared to U.S. 2004 rates[5]
Pediatric Quality Indicators (Ages 0 - 17)					
Asthma	967	-14%	133	148	-18%
Diabetes short-term complications	101	10%	18	16	-45%
Gastroenteritis	622	-38%	78	122	-33%
Perforated appendix[1]	233	26%	24	19	-39%
Urinary tract infection	320	-9%	40	43	-19%
Overall pediatric PQI rate	---	---	---	---	---
Adult Quality Indicators (Ages 18+)					
Angina without a procedure[2]	442	-47%	16	31	-32%
Asthma	3,461	20%	127	108	-10%
Bacterial pneumonia	9,075	-19%	333	421	1%
Chronic obstructive pulmonary disease	4,880	15%	179	160	-31%
Congestive heart failure	10,007	-3%	363	388	-21%
Dehydration	2,659	-20%	98	125	-2%
Diabetes - long-term complications	2,988	5%	110	107	-16%
Diabetes - short-term complications	1,326	17%	49	43	-21%
Diabetes - lower extremity amputation	866	-15%	32	38	-3%
Diabetes - uncontrolled	289	50%	11	7	-69%
Hypertension	1,075	59%	39	26	-48%
Low birth weight newborns[1]	2,604	-2%	7	7	12%
Perforated appendix[1]	761	2%	24	26	-14%
Urinary tract infection	5,239	45%	192	136	-23%
Overall adult PQI rate	---	---	1,526	1,566	-17%
Totals[3]	47,345	-1%	---	---	---

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.

[1]Condition-specific rates — populations are those who had appendicitis and all births. These rates are per 100 appendicitis hospitalizations or 100 births. Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

[2]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

[3]Reported total 2008 hospitalizations are not the summed total hospitalizations of all of the individual PQI conditions. Several patients had more than one PQI condition during a hospital stay and therefore their hospitalizations are counted in the individual totals of multiple PQI conditions. 2008 overall total hospitalizations are presented here without any double counting of patients.

[4]Rates calculated by dividing the number of PQI hospitalizations by the appropriate population and multiplying by 100,000. The exceptions were pediatric and adult perforated appendix and low birth weight newborn rates, which are per 100 appendicitis hospitalizations or births. These observed rates were then risk adjusted by age and gender.

[5]Comparison of 2004 observed Connecticut and U.S. rates, the most recent rates available (*AHRQ Comparative PQI Data and Comparative PDI Data,*

Total PQI patient days and average hospital stays declined, 2004 - 2008

Between 2004 and 2008, total PQI patient days fell by 7% in tandem with a 1% decline in the number of hospitalizations. In contrast, total patient days for all hospitalizations regardless of diagnosis increased 2%, due largely to an equivalent increase in patient volume. As a result, PQI hospitalizations' share of total patient days dropped slightly from 14% to 13%.

Declining average hospital stays for 16 of the 19 PQIs suggest that hospitals became more efficient in treating these conditions. The exceptions were pediatric perforated appendix, congestive heart failure and hypertension. Angina, dehydration and diabetes - lower extremity amputation had the sharpest declines in total patients days due to a combination of shorter hospitalizations and reduced patient volume.

Table 2: PQI patient days, 2008

Quality Indicator	Total hospital days	Change in total hospital days, 2004 - 2008	Average hospital stay	Change in average hospital stay, 2004 - 2008
Pediatric Quality Indicators (Ages 0 - 17)				
Asthma	2,294	-21%	2.1	-9%
Diabetes short-term complications	202	-11%	2.2	-19%
Gastroenteritis	1,794	-41%	1.8	-5%
Perforated appendix	955	38%	5.2	9%
Urinary tract infection	926	-15%	2.6	-6%
Adult Quality Indicators (Ages 18+)				
Angina without a procedure[1]	1,630	-51%	2.0	-9%
Asthma	11,882	15%	4.1	-4%
Bacterial pneumonia	66,531	-25%	6.0	-8%
Chronic obstructive pulmonary disease	22,161	10%	5.2	-4%
Congestive heart failure	55,071	-2%	5.4	1%
Dehydration	15,155	-33%	4.6	-17%
Diabetes - long-term complications	21,372	-11%	7.5	-15%
Diabetes - short-term complications	4,404	12%	3.9	-4%
Diabetes - lower extremity amputation	12,800	-30%	12.6	-19%
Diabetes - uncontrolled	689	44%	3.6	-4%
Hypertension	1,985	64%	2.9	4%
Low birth weight newborns[2]	40,135	-3%	15.0	-1%
Perforated appendix	4,308	-4%	5.8	-6%
Urinary tract infection	17,012	37%	4.7	-5%
Totals[3]	255,550	-7%	---	---

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospital days of Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges and their patient days.

[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

[3]Reported total 2008 patient days are not the summed total patient days of all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their total patient days are counted in the individual totals of multiple PQI conditions. 2008 overall total patient days (column 2) are presented without any double counting of total patient days.

Average and total charges for nearly all PQI hospitalizations increased, 2004 - 2008

While PQI hospitalizations and total patient days decreased by 1% and 7% respectively, since 2004, charges grew by 34% from $867.5 million to over $1 billion. This was still lower than the growth in charges for all hospitalizations (46%). Congestive heart failure, low birth weight newborns, adult urinary tract infections, COPD, adult asthma, and diabetes long-term complications accounted for nearly 85% of the increase in PQI total charges. Bacterial pneumonia, low birth weight newborns and congestive heart failure, cumulatively accounted for over one-half of PQI total charges. In 2008, low birth weight newborns had the highest average charge ($70,837) per stay. Average charge for normal newborns in the same year was $3,747.

Average charges for all PQI conditions increased, even though average hospital stays fell for nearly all conditions. Average charges doubled for pediatric gastroenteritis, perforated appendix and urinary tract infection and diabetes - uncontrolled.

Table 3: PQI total and average charges, 2008

Quality Indicator	Total charges	Change in total charges, 2004 - 2008	Average charge	Change in average charge
Pediatric Quality Indicators (Ages 0 - 17)				
Asthma	$9,241,393	24%	$9,557	43%
Diabetes short-term complications	$1,187,858	57%	$11,761	43%
Gastroenteritis	$4,493,061	-5%	$7,224	53%
Perforated appendix	$7,856,073	94%	$33,717	54%
Urinary tract infection	$3,079,419	39%	$9,623	53%
Adult Quality Indicators (Ages 18+)				
Angina without a procedure[1]	$6,023,004	-30%	$13,627	31%
Asthma	$57,329,513	67%	$16,569	39%
Bacterial pneumonia	$219,600,096	6%	$24,204	31%
Chronic obstructive pulmonary disease	$101,186,159	51%	$20,739	31%
Congestive heart failure	$248,751,318	35%	$24,868	39%
Dehydration	$44,980,579	9%	$16,916	36%
Diabetes - long-term complications	$91,818,885	33%	$30,739	26%
Diabetes - short-term complications	$25,004,882	61%	$18,857	38%
Diabetes - lower extremity amputation	$44,198,095	1%	$51,037	18%
Diabetes - uncontrolled	$4,582,362	134%	$15,856	57%
Hypertension	$17,812,562	129%	$16,570	44%
Low birth weight newborns[2]	$183,964,519	43%	$70,837	46%
Perforated appendix	$24,641,404	44%	$32,380	41%
Urinary tract infection	$93,084,985	96%	$17,768	35%
Totals[3]	$1,158,881,731	34%	---	---

Source: CT Office of Health Care Access I=Acute Care Hospital Inpatient Discharge Database
Reporting hospital charges of Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.
Due to discounts and other factors, payments differ from charges. In 2008, the ratio of charges to payments was 40%, meaning that total payments were 40 cents for every dollar of charges.
[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges and their total charges.
[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.
[3]In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Reported total 2008 charges are not the summed total charges of all of the individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their total charges are counted in the individual totals of multiple PQI conditions. Overall total charges are presented without any double counting of total charges.

Medicare was the largest primary insurer of PQI charges, 2008

Table 4: Primary Insurer's PQI total charges and discharges, 2008

Payer	Total charges	Change in total charges, 04-08	PQI Hospitalizations	Share of payer's hospitalizations with a PQI
Medicare/ other federal	$690,528,879	30%	29,714	17%
Private	$256,969,935	30%	9,657	6%
Medicaid	$193,358,633	51%	6,912	9%
Uninsured[1]	$18,024,284	43%	1,062	10%
Total	$1,158,881,731	34%	47,345	11%

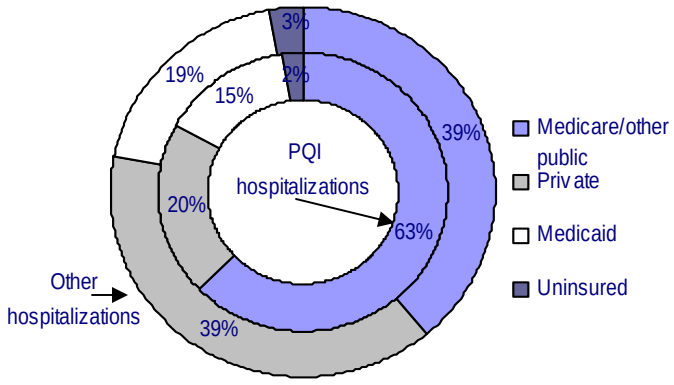
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Reporting hospital charges of Connecticut residents admitted to Connecticut acute care hospitals with a PQI.
Due to discounts and other factors, actual payments are significantly lower than charges. In 2008, the ratio of charges to payments was 40 percent, meaning that payments were 40 cents for every dollar of charges.
[1]Uninsured hospitalizations include all those for which no third party payer was responsible for charges.

Medicare was the largest primary insurer for PQI hospitalizations with about $0.7 billion in total charges and almost 30,000 hospitalizations. Nearly one in five Medicare hospitalizations had a PQI condition.

Between 2004 and 2008, Medicaid PQI charges grew by over 50%. Low birth weight newborns accounted for over two-fifth of this growth with a total increase of nearly $30 million.

PQI hospitalizations were largely Medicare patients, 2008

Figure 1: Primary insurer's share of PQI and other hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Compared to other types of hospitalizations, PQI hospitalizations were disproportionately Medicare patients (63% versus 39%). Conversely, private coverage patients were significantly underrepresented among PQI hospitalizations (20% versus 39%). This skewed PQI payer mix is reflective of the preponderance of elderly among PQI patients.

From 2004 to 2008, the number of private coverage and Medicare PQI hospitalizations declined (-5% and –2%, respectively), while uninsured and Medicaid hospitalizations increased (23% and 6%, respectively).

Primary insurers' share of hospitalizations varied by PQI, 2008

Medicare was the largest primary insurer for 11 of the 19 PQIs. It covered at least three-quarters of all hospitalizations for bacterial pneumonia, COPD, congestive heart failure, dehydration and urinary tract infections.

Medicaid and private insurers accounted for nearly all pediatric PQI hospitalizations and low birth weight newborns. Medicaid was also a significant payer for adult asthma and short-term complications diabetes while private insurers were for perforated appendix, angina, asthma, diabetes (short and long-term) and hypertension.

While the uninsured were only 2% of all PQI hospitalizations, they constituted a larger share of diabetes (short-term complications and uncontrolled), perforated appendix, hypertension and adult asthma hospitalizations.

Table 5: Primary insurer's share of hospitalizations by PQI, 2008

Quality Indicator	Medicare/ other federal	Private	Medicaid	Uninsured[2]	Total
Pediatric Quality Indicators (Ages 0 - 17)					
Asthma	0%	45%	**53%**	2%	100%
Diabetes short-term complications	2%	56%	**39%**	3%	100%
Gastroenteritis	1%	**53%**	44%	1%	100%
Perforated appendix	0%	**68%**	30%	2%	100%
Urinary tract infection	1%	**53%**	44%	2%	100%
Adult Quality Indicators (Ages 18+)					
Angina without a procedure	**42%**	42%	11%	5%	100%
Asthma	**42%**	24%	29%	5%	100%
Bacterial pneumonia	**73%**	17%	9%	2%	100%
Chronic obstructive pulmonary disease	**78%**	13%	8%	1%	100%
Congestive heart failure	**85%**	9%	6%	1%	100%
Dehydration	**73%**	19%	6%	1%	100%
Diabetes - long-term complications	**60%**	21%	17%	2%	100%
Diabetes - short-term complications	25%	30%	**37%**	9%	100%
Diabetes - lower extremity amputation	**63%**	22%	14%	1%	100%
Diabetes - uncontrolled	**43%**	20%	28%	9%	100%
Hypertension	**47%**	28%	18%	7%	100%
Low birth weight newborns[1]	1%	**56%**	43%	1%	100%
Perforated appendix	24%	**57%**	11%	8%	100%
Urinary tract infection	**78%**	12%	8%	2%	100%
Totals	71%	16%	11%	2%	100%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Bold blue numbers indicate the largest payer for each PQI.

Reporting primary payer's share of Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.

[1]Low birth weight newborns are grouped with the adult PQIs because low birth weight is related to the mother's prenatal care.

[2]Uninsured hospitalizations include all those for which no third party payer is responsible for charges.

PQI volume by hospital, 2008

PQI patients accounted for 11% of all hospital discharges. For many of Connecticut's smaller community hospitals, they represented an even larger share of patient volume: Johnson (20%), MidState (17%), Bristol (16%) and Windham (15%).

Table 6: Prevention Quality Indicator (PQI) hospitalizations by hospital, 2008

Hospital	PQI Hospitalizations	Share of all PQI Hospitalizations	Change in PQI volume, 2004 - 2008	PQIs as a share of all hospitalizations
Bridgeport	2,303	5%	9%	12%
Bristol	1,239	3%	-11%	16%
Central Connecticut	3,090	6%	2%	15%
Charlotte Hungerford	660	1%	-30%	11%
CT Children's Medical Center	438	1%	-12%	8%
Danbury	2,192	4%	14%	11%
Day Kimball	769	2%	-16%	14%
Greenwich	1,312	3%	20%	10%
Griffin	928	2%	-15%	12%
Hartford	3,700	8%	22%	9%
John Dempsey	1,078	2%	1%	11%
Johnson	783	2%	17%	20%
Lawrence and Memorial	1,825	4%	-5%	13%
Manchester	854	2%	-23%	10%
Middlesex	1,646	3%	21%	12%
MidState	1,631	3%	11%	17%
Milford	628	1%	-30%	13%
New Milford	375	1%	-15%	12%
Norwalk	1,716	4%	-1%	11%
Rockville	496	1%	-27%	14%
Saint Francis	2,824	6%	-4%	9%
Saint Mary's	1,592	3%	-15%	12%
Saint Raphael	3,228	7%	4%	13%
Saint Vincent's	2,539	5%	3%	12%
Sharon	352	1%	-22%	13%
Stamford	1,374	3%	-26%	9%
Waterbury	1,423	3%	-32%	10%
William W. Backus	1,660	3%	3%	14%
Windham	828	2%	-6%	15%
Yale-New Haven	5,369	11%	20%	10%
Total	48,852	100%	-1%	11%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Table includes both Connecticut and out of state residents admitted to Connecticut hospitals with a PQI condition.

PQI hospitalizations varied by hospital type, 2008

PQI hospitalizations' share of all total hospital volume and even the characteristics of PQI patients varied by hospital type.[5] Large urban hospitals accounted for over one-third of all PQI hospitalizations, smaller than their share of all hospitalizations. PQI hospitalizations were a more limited share of their total volume compared to smaller hospitals (e.g., 10% versus 13% for small community hospitals), although they experienced the largest PQI growth (10%) since 2004. Large urban hospitals treated the majority of pediatric, minority and Medicaid PQI hospitalizations.

Medium urban hospitals treated the largest share of PQI hospitalizations, including significant portions of children, Medicaid and minority patients.

Small urban and small community hospitals treated a larger share of PQI patients than their share of all hospitalizations and PQIs were a larger share of their overall volume. Their PQI patients were typically elderly non-Hispanic whites with Medicare. Since 2004, small community hospitals experienced a 6% decline in the number of PQI hospitalizations, a significant drop in an important portion of their total hospital volume (13%).

Table 7: PQI hospitalization characteristics by hospital type, 2008

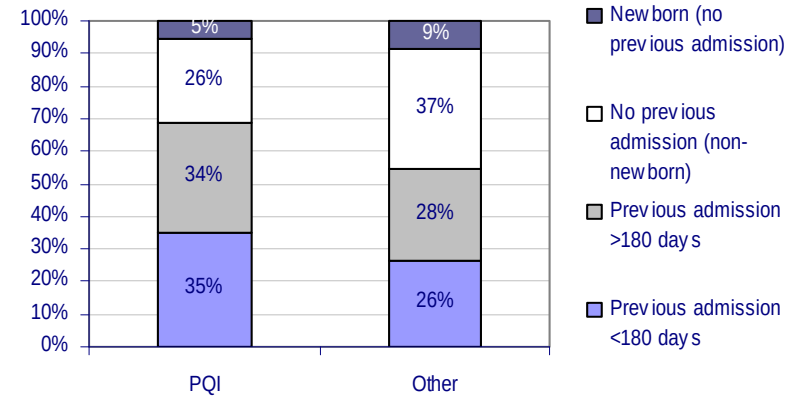
PQI Characteristic	Large Urban	Medium Urban	Small Urban	Small Community	All Hospitals
PQIs as a share of all hospitalizations	10%	12%	14%	13%	11%
PQI volume change (04-08)	10%	-1%	-30%	-6%	-1%
Share of:					
All hospitalizations	41%	37%	4%	18%	100%
All PQI hospitalizations	37%	38%	5%	20%	100%
All Pediatric PQI hospitalizations	54%	33%	1%	11%	100%
Minority PQI hospitalizations	52%	33%	5%	10%	100%
Medicaid PQI hospitalizations	52%	33%	2%	13%	100%
Share of PQI hospitalizations that are:					
Senior Citizens	51%	62%	70%	63%	58%
Medicare	56%	65%	73%	67%	62%
Medicaid	20%	12%	5%	10%	14%
Non-Hispanic white	61%	76%	72%	87%	72%
Average age of PQI patients	57	64	70	66	63

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Table figures derived from all volume of Connecticut and out of state residents admitted to Connecticut hospitals with a PQI condition.

Previous hospitalization of PQI patients for any cause, 2004 - 2008

PQI patients were more likely to have had previous hospitalizations, 2008

Figure 2: Previous hospital admission of PQI and other hospitalizations, 2008



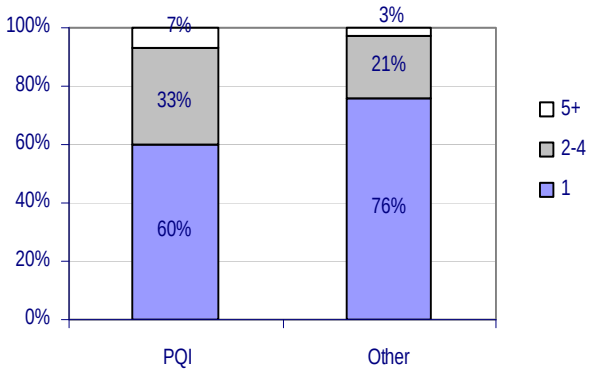
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

PQI patients were more likely than others to have been previously hospitalized (at the same hospital) prior to their current hospital stay. Thirty-five percent had been hospitalized within six months prior to their current PQI hospitalization, while for 34% it had been six or more months since their last hospitalization.

PQI patients' prior hospitalizations may not have been for a PQI condition. However, the greater use of hospital care suggests that many PQI patients may be more severely or chronically ill than others.

PQI patients had more hospitalizations than others, 2004 - 2008

Figure 3: Total hospitalizations of PQI and other patients, 2006 - 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

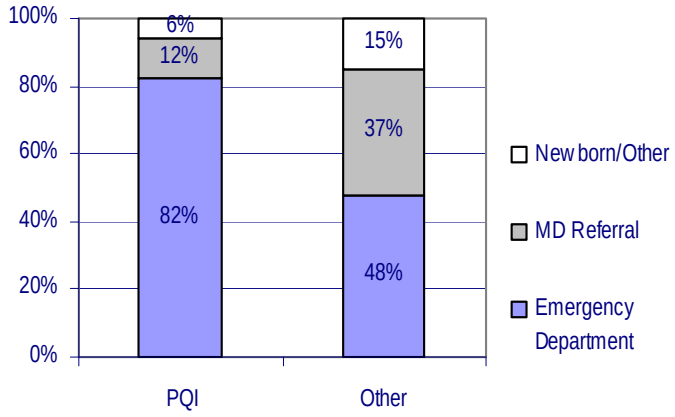
Over the last three years, 40% of PQI patients had more than one hospitalization (at the same hospital), far above the share for other patients (24%). One-third were hospitalized between two and four times, while 7% had five or more hospitalizations.

On average, PQI patients were readmitted almost 1.5 times more often than all other patients (2.4 versus 1.7, excluding newborns).

Most PQI patients utilized the emergency department, 2008

Four of every five PQI patients were admitted to the hospital through the Emergency Department, 2008

Figure 4: Admission source of PQI and other hospitalizations, 2008



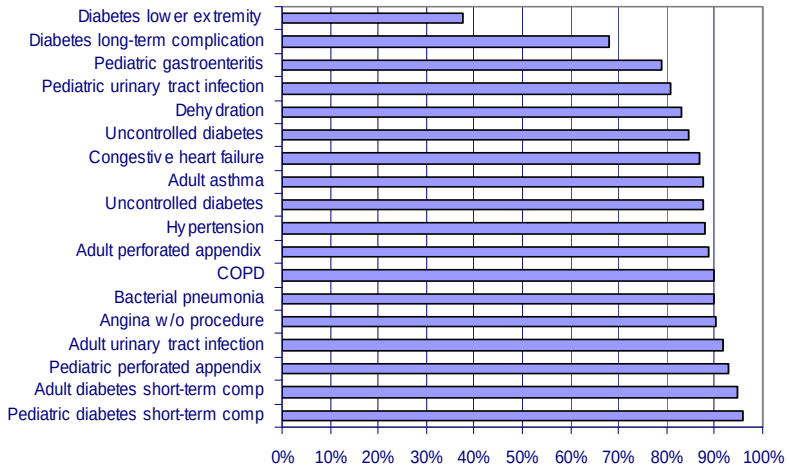
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Nearly all PQI hospitalizations began in the emergency department (ED), significantly higher than other types of patients (82% versus 48%). Since 2004, the volume of PQI hospitalizations admitted through the ED increased by 2%.

Approximately one of every five hospitalizations that originated in the ED had a related PQI hospitalization.

Emergency Department admissions varied by PQI, 2008

Figure 5: Share of PQI hospitalizations admitted through the Emergency Department, 2008



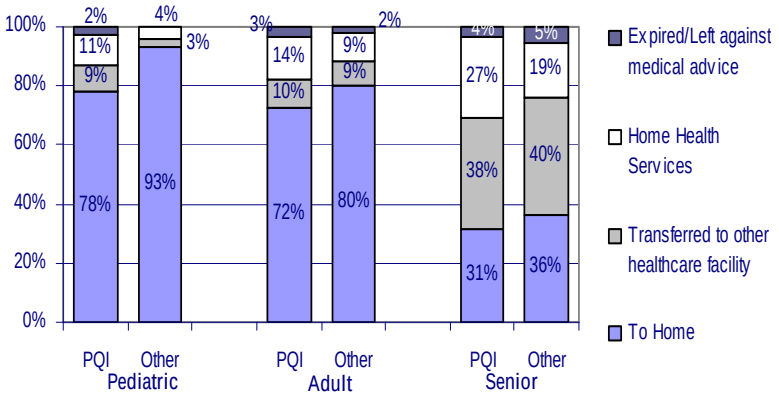
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Among PQI hospitalizations, adults and children with short-term diabetic complications, (96%), children with a perforated appendix (93%) and adults with a urinary tract infection (92%) were the most likely to have originated in the emergency department. With the exception of lower extremity amputation hospitalizations (37%), all other PQI conditions had high rates of emergency department admission: 15 of the 18 were above 80% and five were above 90% (excluding newborns).

After leaving the hospital, many PQI patients required additional health care services, 2008

Regardless of age, PQI patients received more health care services after being discharged, 2008

Figure 6: Discharge status of PQI and other hospitalizations, 2008



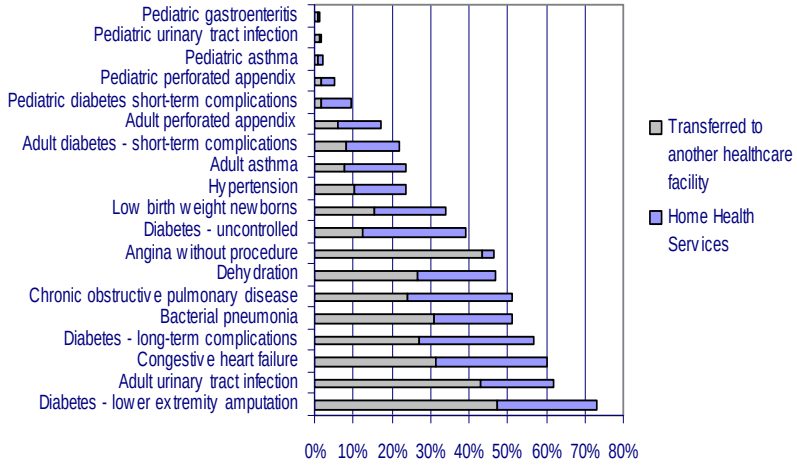
Pediatric (0-17), adult (18-64) and senior (65+)

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Pediatric, working age adult and senior PQI patients were more likely than other types of patients to use additional health care services following discharge from the hospital. In particular, seniors received further services, as 34% were transferred to skilled nursing facilities, 4% to other health care facilities and 27% received home health care services.

The use of additional health care services following discharge varied by PQI, 2008

Figure 7: Share of PQI hospitalizations that required further services after discharge, 2008



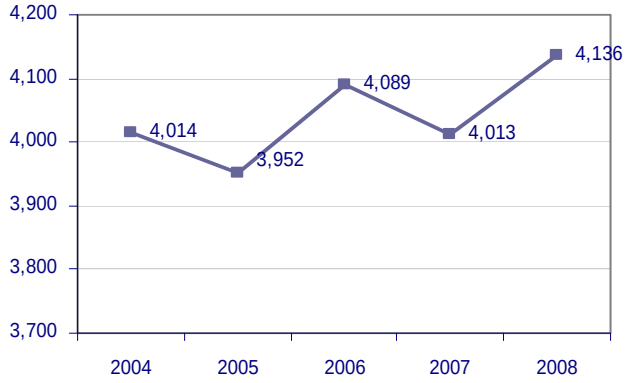
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

PQI conditions with the highest use of health care services following discharge included diabetic lower extremity amputations (80%), adult urinary tract infections (62%) and congestive heart failure (60%) and Pediatric PQI hospitalizations were the least likely to require care following discharge from the hospital.

Patients with multiple hospitalizations for the same PQI condition within the same year, 2004 - 2008

The number of PQI patients with multiple hospitalizations for the same PQI condition within the same year increased slightly, 2004 - 2008

Figure 8: Patients with multiple admissions for the same PQI condition in the same year, 2004 - 2008

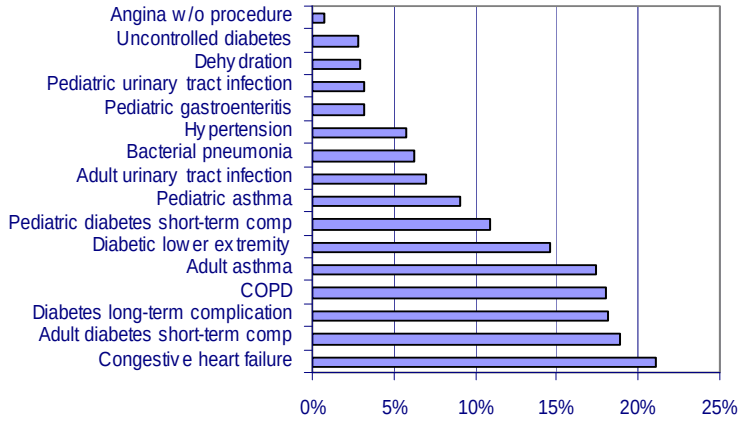


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

By 2008, the number of patients who had multiple hospitalizations (at the same hospital) for the same PQI condition had risen by 3% compared to 2004.

Incidence of multiple hospitalizations varied by PQI condition, 2008

Figure 9: Share of PQI patients with multiple admissions for the same PQI condition in the same year, 2008



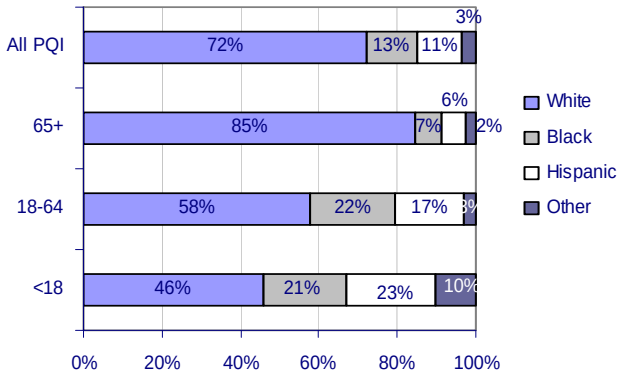
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

In 2008, 11% of all PQI patients had multiple hospitalizations (at the same hospital) for the same condition. Patients with congestive heart failure (21%), adult diabetes short-term complication (19%), diabetes long-term complications (18%) and COPD (17%) were the most likely to require multiple hospitalizations for these conditions. Those with angina without a procedure (1%), uncontrolled diabetes (3%) and dehydration (3%) had the lowest incidence of multiple hospitalizations.

Race of PQI hospitalizations, 2004 - 2008

Race of PQI hospitalizations varied by age, 2008

Figure 10: Race and age of PQI hospitalizations, 2008

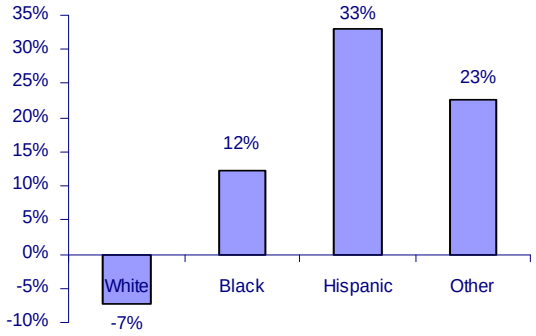


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Nearly three-quarters of all PQI hospitalizations were non-Hispanic whites. In large part, this was because most PQI hospitalizations were elderly (58%) and nearly all elderly PQI patients were non-Hispanic whites (85%).[6] *However, minorities constituted a larger share of younger PQI hospitalizations. They were 42% of working age adults (ages 18-64) and 54% of all children.*

PQI hospitalizations for minorities grew, 2004 - 2008

Figure 11: PQI hospitalization growth by race, 2004 - 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Between 2004 and 2008, overall, PQI hospitalizations dropped by 1% while those for minorities increased.

PQI hospitalizations for Hispanics grew by one-third, with the largest increases among adults ages 40 to 64 and 85 or older.

PQI hospitalizations for Blacks increased by 12%, driven principally by increases among those ages 40 to 64 and 85 or over.

During this period, the number of PQI hospitalizations for non-Hispanic whites fell nearly 2,725 (-7%).[7]

Blacks and Hispanics had highest PQI rates, 2008

Blacks, Hispanics and non-Hispanic Whites had higher hospitalization rates for several PQIs, meaning they were more likely to be hospitalized for these conditions. Blacks were at least twice as likely as all Connecticut residents to be hospitalized for asthma (pediatric and adult), hypertension and all of the diabetes conditions.

Hispanics were at particularly high risk for all pediatric conditions except perforated appendix as well as adult asthma, uncontrolled diabetes and diabetes with short-term complications conditions.

Non-Hispanic whites' rates were lower than (or equal to) statewide rates for all pediatric PQI conditions. Whites had higher risk for angina without a procedure, adult perforated appendix and conditions more common among the elderly, such as bacterial pneumonia, COPD, congestive heart failure and urinary tract infections.

Table 8: PQI rates by race, 2008 (per 100,000 population)

Quality Indicator	Black	Hispanic	White	CT
Pediatric Quality Indicators (Ages 0 - 17)				
Asthma	391	238	65	133
Diabetes short-term complications	30	31	13	18
Gastroenteritis	89	129	61	78
Perforated appendix[1]	35	21	24	24
Urinary tract infection	27	71	30	40
Overall pediatric PQI rate	- - -	- - -	- - -	- - -
Adult Quality Indicators (Ages 18+)				
Angina without a procedure	16	12	17	16
Asthma	319	337	81	127
Bacterial pneumonia	319	287	346	333
Chronic obstructive pulmonary disease	131	124	198	179
Congestive heart failure	461	256	375	363
Dehydration	101	59	104	98
Diabetes - long-term complications	281	156	87	110
Diabetes - short-term complications	158	90	32	49
Diabetes - lower extremity amputation	83	37	26	32
Diabetes - uncontrolled	38	19	7	11
Hypertension	150	50	26	39
Low birth weight newborns[1]	11	7	6	7
Perforated appendix[1]	27	17	26	24
Urinary tract infection	168	160	201	192
Overall adult PQI rate	2,171	1,560	1,484	1,526

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Bold blue numbers indicate rates above state averages presented in the last column.

Rate (per 100,000 people): Rate calculation according to AHRQ guidelines. For each PQI, the number of hospital discharges was divided by the appropriate population figure and then multiplied by 100,000. These observed rates were then risk adjusted by gender and age. Age is significantly related to PQI hospitalization and non-Hispanic whites (14%) have a higher share of elderly than Blacks (9%) or Hispanics (4%). Risk adjustment facilitates comparison between the races by adjusting for these disparities.

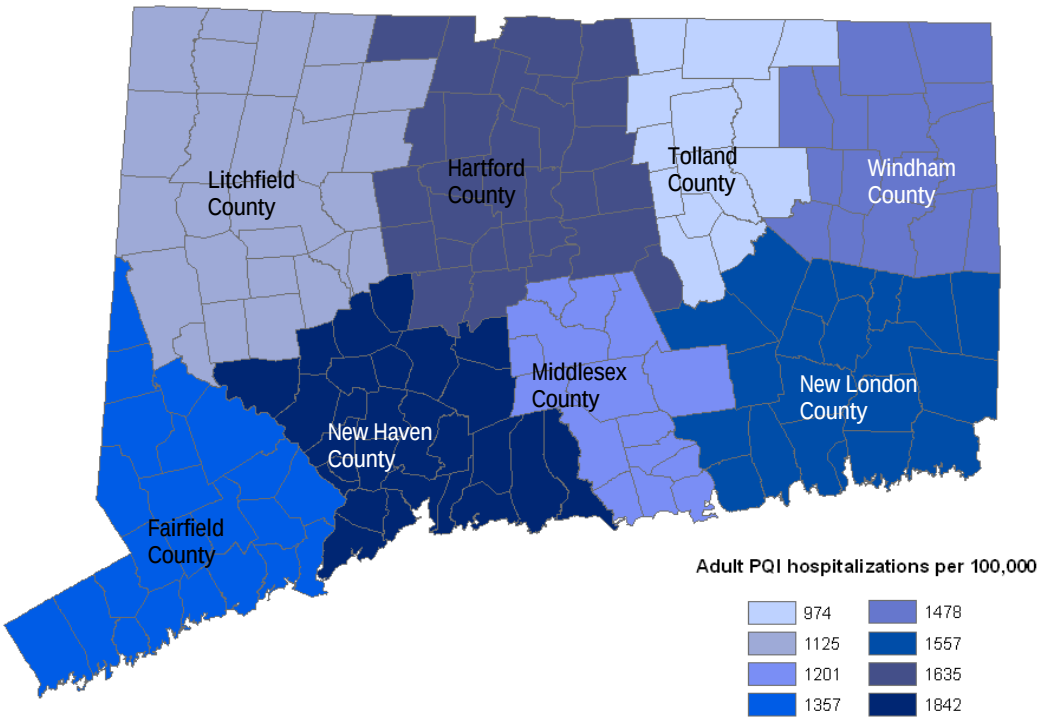
[1]Condition specific rates – populations were those who had appendicitis and all births. These rates are per 100 appendicitis hospitalizations and 100 births. Low birth weight newborns are grouped with the adult PQIs because low birth weight is related to the mother's prenatal care.

White and Black are non-Hispanic. Rates for other racial groups are not presented because their small number of PQIs hospitalizations affects the reliability of their rates.

Overall adult PQI hospitalization county rate, 2008

New Haven (1,842), Hartford (1,635) and New London (1,557) counties' overall adult PQI hospitalization rates were higher than Connecticut's (1,526). Tolland (974) and Litchfield (1,125) counties had the lowest rates.

Map 1: New Haven and Hartford counties had highest adult PQI hospitalization rates, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

PQI county rates, 2008

Compared to Connecticut, New Haven county had higher rates for 17 of the 19 PQI conditions as well as the overall adult PQI rate, meaning it had more per capita hospitalizations for these conditions.[8] *Among counties, New Haven county had the highest rates for 12 PQIs, with particularly higher incidences of pediatric and adult asthma, pediatric gastroenteritis and diabetes long- and short- term complications.*

Hartford county rates largely mirrored state averages for all pediatric PQIs, with ten higher rates for adult conditions. It also had the highest incidence of low birth weight newborns. Windham county had six conditions with higher than statewide average rates, with the highest incidences of gastroenteritis, pediatric perforated appendix and urinary tract infection, angina, adult asthma and COPD. Fairfield county, Connecticut's largest, had only four PQI rates higher than the state average. New London (4), Middlesex (3), Litchfield (2) and Tolland (1) had few PQI rates greater than the state averages.

Table 9: PQI rates by county, 2008 (rates per 100,000 population)

Quality Indicator	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham	CT
Pediatric Quality Indicators (Ages 0 - 17)									
Asthma	103	114	54	60	256	71	42	105	133
Diabetes short-term complications	19	13	14	8	26	10	24	17	18
Gastroenteritis	84	44	72	49	122	72	31	79	78
Perforated appendix[1]	22	24	12	36	24	24	23	39	24
Urinary tract infection	41	31	42	20	56	34	10	64	40
Overall pediatric PQI rate	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Adult Quality Indicators (Ages 18+)									
Angina without a procedure	13	12	12	9	20	29	8	49	16
Asthma	100	148	61	65	169	115	65	172	127
Bacterial pneumonia	284	368	236	296	393	355	259	266	333
Chronic obstructive pulmonary disease	144	163	174	187	203	252	110	306	179
Congestive heart failure	345	386	286	269	421	371	245	296	363
Dehydration	98	101	99	57	116	73	55	97	98
Diabetes - long-term complications	104	110	77	74	149	88	69	77	110
Diabetes - short-term complications	46	52	34	24	63	41	27	42	49
Diabetes - lower extremity amputation	27	36	27	18	42	29	17	14	32
Diabetes - uncontrolled	10	11	7	8	14	11	2	9	11
Hypertension	39	39	17	21	56	37	12	32	39
Low birth weight newborns[1]	6	8	6	5	7	6	7	6	7
Perforated appendix[1]	22	25	24	26	26	20	16	21	24
Urinary tract infection	167	234	114	183	223	174	118	129	192
Overall adult PQI rate	1,357	1,635	1,125	1,201	1,842	1,557	974	1,478	1,526

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Bold blue numbers indicate rates above state averages presented in the last column.

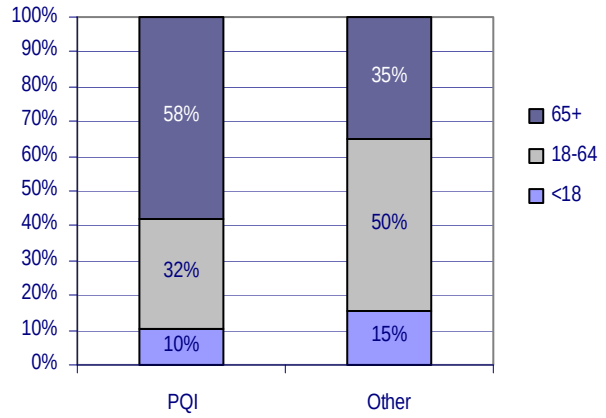
[1]Condition specific rates – populations were all births and those who had appendicitis. These rates are per 100 births and 100 appendicitis discharges. Low birth weight newborns are grouped with the adult PQIs because as a quality indicator low birth weight is related to the mother's prenatal care.

Due to their lower volume of hospitalizations, some caution should be taken in interpreting the rates from the smaller counties. Additional caution is also necessary for low volume PQIs.

Age of PQI hospitalizations, 2004 - 2008

Senior citizens accounted for over half of all PQI hospitalizations, 2008

Figure 12: Age of PQI and other hospitalizations, 2008



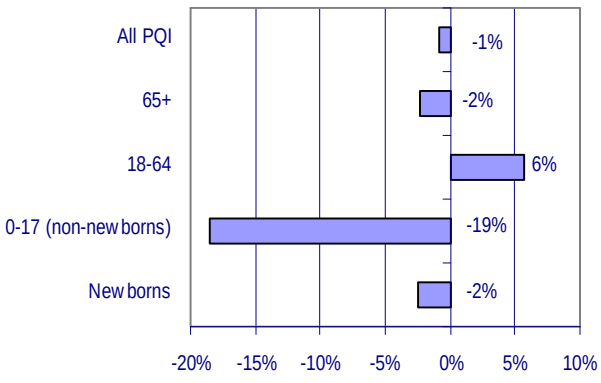
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Senior citizens accounted for 58% of all PQI hospitalizations, significantly higher than their share of all other types of hospitalizations (35%). Conversely, working age adults (32%) and children (10%) were smaller shares of PQI hospitalizations than other types of hospitalizations (50% and 15%, respectively).

Eighteen percent of all senior citizens in the hospital had a PQI condition. The share of all hospitalized working age adults and children with a PQI were each 8%.

Children, low birth weight newborns and seniors experienced the largest decline, 2004 - 2008

Figure 13: Change in PQI hospitalizations by age, 2004 - 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

From 2004 through 2008, children (-19%), low birth weight newborns (-2%) and seniors (-2%) experienced the largest decrease in PQI hospitalizations.

The 6% growth in PQI hospitalizations for adults ages 18 to 64 was offset by the decline in PQI hospitalizations of children, newborn and seniors.

Low birth weight newborns, 2000 - 2008

In 2008, there were about 2,600 low birth weight newborns with total charges of nearly $184 million. Since 2004, the number of low birth weight newborns decreased 2% while other newborns declined 5%. The average low birth weight newborn had total charges of about $71,000 with a hospital stay of 15 days, well above that for a normal newborn ($3,740 with a stay of about two and a half days). Nearly 7% of all newborns were low birth weight (less than 2,500 grams). After leaving the hospital, nearly two-thirds of all low birth weight newborns were discharged to home while 19% received home health care services and 15% were transferred to other health care facilities.

Private insurers and Medicaid were the primary payers for nearly all low birth weight newborns. Minorities accounted for over one-half all low birth weight newborns, slightly higher than their share of all births (45%).

Table 10: Low birth weight newborn volume, 2008

Statistic	Volume statistic	Change, 2004 - 2008
Volume		
Hospitalizations	2,604	-2%
Total charges[1]	$183,961,591	42%
Average charge	$70,863	46%
Total patient days	39,122	-3%
Average hospital stay (days)	15	-1%
Share of Low Birth Weight Newborns		
Disposition after hospitalization		
To home	61%	10%
Transferred to other facility	15%	-1%
Home health services	19%	-29%
Expired	4%	-6%
Primary insurer		
Private	56%	-10%
Medicaid	43%	12%
Uninsured	1%	-30%
Medicare/other federal	1%	-30%
Race		
White	47%	-15%
Black	21%	12%
Hispanic	20%	16%
Other	11%	9%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Reporting CT resident newborns with birth weight less than 2500 grams.
[1]In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Due to discounts and other factors, payments differ from charges. The ratio of payment to charge was 0.39.

Pediatric PQI hospitalizations (under age 18 and excluding low birth weight newborns), 2008

In 2008, there were over 2,200 pediatric PQI hospitalizations, representing about 10% of all non-newborn pediatric hospitalizations. Since 2004, they have decreased 19%. Gastroenteritis (38%) and asthma (14%) accounted for most pediatric PQI hospitalization growth.

In comparison to all PQI hospitalizations, fewer pediatric PQI hospitalizations required additional health care services at another facility or home (3% versus 48%). In addition, fewer pediatric PQI patients had multiple hospitalizations for the same PQI in 2008 (6% versus 11%). Nearly one in ten children with diabetes had multiple diabetes-related hospitalizations in 2008.

Table 11: Pediatric PQI volume, 2008

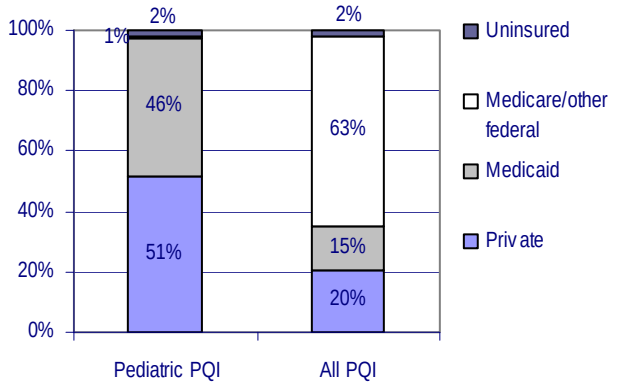
Quality Indicator	Hospitaliza-tions	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Asthma	967	1,854	$9,241,393	88%	2%	8%
Diabetes short-term complications	101	183	$1,187,858	96%	10%	9%
Gastroenteritis	622	1,087	$4,493,061	79%	1%	3%
Perforated appendix	233	1,318	$7,856,073	93%	6%	---
Urinary tract infection	320	802	$3,079,419	81%	2%	3%
Totals[1]	2,243	5,244	$25,857,804	85%	3%	6%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Reporting hospitalizations of Connecticut non-newborn children ages 0 to 17 admitted to Connecticut acute care hospitals with a PQI condition.
Emergency Department Admissions: Share of hospitalizations for a PQI condition that were admitted to the hospital through the emergency department.
Transferred to other institution/or discharged to home health care: Share of hospitalizations for a PQI condition who were transferred to another health care facility for additional treatment or those discharged to home health care services.
Multiple admissions for same PQI: Share of PQI patients with multiple admissions for the same PQI in 2008.
[1]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. Fiscal year 2008 overall totals are presented without any double counting of these patients.
In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Due to discounts and other factors, payments differ from charges. The statewide ratio of payment to charge was 0.39.

Demographic characteristics of pediatric PQI hospitalizations, 2008

Private insurers and Medicaid covered most pediatric PQI hospitalizations, 2008

Figure 14: Primary insurer for pediatric and all PQI hospitalizations, 2008



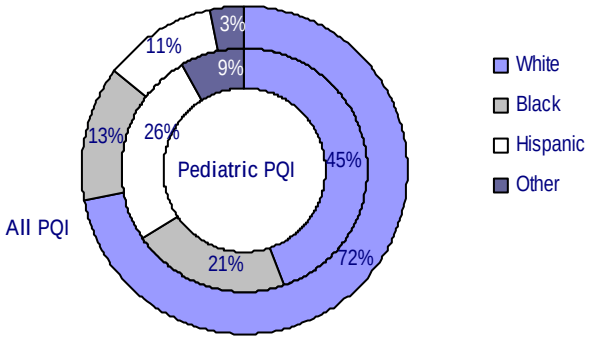
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Private insurers and Medicaid covered most pediatric PQIs, with each accounting for about half. Their shares of pediatric PQI hospitalizations were significantly larger than for all PQI hospitalizations.

Compared to 2004, the number of uninsured and Medicaid-covered pediatric PQI hospitalizations declined by over one-half. This may be the result of the SCHIP (low income children not qualified for Medicaid) expansions of Medicaid and medical, mental and dental care provided by school-based health centers located within or on school grounds.

Over half of all pediatric PQI hospitalizations were minorities, 2008

Figure 15: Race of pediatric and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Twice as many pediatric PQI hospitalizations were minorities than among all PQI hospitalizations (55% versus 27%). From 2004 through 2008,Non-Hispanic white pediatric PQI hospitalizations declined more rapidly than minority ones (28% versus 9%).

Working age PQI hospitalizations (ages 18 - 64), 2008

In 2008, there were almost 15,000 PQI hospitalizations for people ages 18 to 64 with more than $317 million in total charges. For this age group, PQI hospitalizations constituted 8% of all hospitalizations. Bacterial pneumonia, asthma, COPD, congestive heart failure, diabetes long-term complications and urinary tract infections accounted for three-quarters of their PQI hospitalizations. For working age adults, PQI hospitalization increased at a higher rate than for other types of hospitalizations (6% versus 2%), with asthma alone accounting for almost one-half of this growth.

Nearly nine in ten of all PQI hospitalizations for this age group originated in the emergency department (86%). About one-quarter required additional care at another facility or home and 11% of patients had multiple hospitalizations (at the same hospital) for the same PQI condition in 2008.

Table 12: Working age PQI volume, 2008

Quality Indicator	Hospitaliza-tions	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Angina without a procedure[1]	261	456	$3,602,100	91%	44%	0%
Asthma	2,401	8,604	$37,037,000	88%	12%	15%
Bacterial pneumonia	2,805	13,466	$64,191,000	89%	23%	5%
Chronic obstructive pulmonary disease	1,339	6,233	$26,235,000	88%	29%	16%
Congestive heart failure	1,758	8,691	$45,743,000	87%	33%	19%
Dehydration	790	2,639	$12,008,000	75%	22%	4%
Diabetes - long-term complications	1,563	10,299	$49,752,000	69%	44%	19%
Diabetes - short-term complications	1,173	4,009	$20,628,000	95%	16%	14%
Diabetes - lower extremity amputation	402	4,179	$20,249,000	46%	62%	13%
Diabetes - uncontrolled	200	677	$3,266,400	84%	26%	3%
Hypertension	614	1,687	$9,867,800	87%	8%	6%
Perforated appendix	595	2,810	$17,224,000	90%	10%	---
Urinary tract infection	1,322	5,309	$22,385,000	89%	25%	6%
Totals[2]	14,929	66,029	$317,230,000	86%	24%	11%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Connecticut residents ages 18 to 64 admitted to Connecticut acute care hospitals with a PQI condition.

Emergency Department Admissions: Share of hospitalizations for a PQI condition that were admitted to the hospital through the emergency department.

Transferred to other institution/or discharged to home health care: Share of hospitalizations for a PQI condition who were transferred to another health care facility for additional treatment or those discharged to home health care services.

Multiple admissions for same PQI: Share of PQI patients with multiple admissions for the same PQI in 2008.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

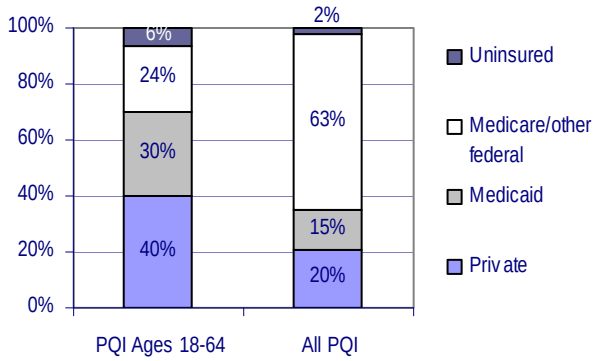
[2]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. Fiscal year 2008 overall totals are presented without any double counting of these patients.

In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Due to discounts and other factors, payments differ from charges. The ratio of payment to charge was 0.39 and varied by primary insurer

Characteristics of working age (ages 18 - 64) PQI hospitalizations, 2008

Private insurers were the largest source of coverage for working age PQI hospitalizations, 2008

Figure 16: Primary insurer for working age (18-64) and all PQI hospitalizaions, 2008

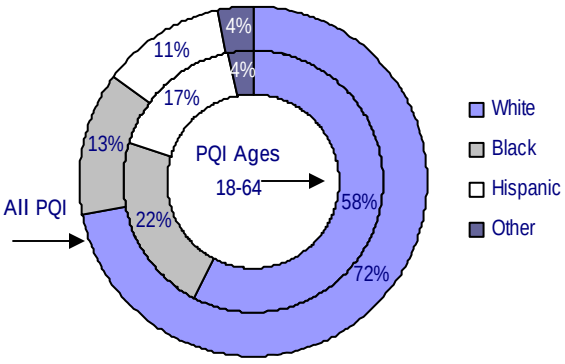


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Private insurers' share of working age PQI hospitalizations was twice that for all PQI hospitalizations (40% versus 20%). Working age PQI hospitalizations were more likely to be uninsured (6%) than all PQI hospitalizations (2%), children (2%) and senior citizens (0.3%). Among working age PQI hospitalizations, the highest share of uninsured were those ages 18 to 29 (13%) and 30 to 39 (8%). In Connecticut, young adults (19-29) are the most likely to be uninsured.[9]

Forty percent of working age PQI hospitalizations were minorities, 2008

Figure 17: Race of working age (18-64) and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Minorities were a larger share of working age PQI hospitalizations (42%) than their shares of all PQI hospitalizations (28%), all hospitalizations for people age 18 to 64 (34%), and even Connecticut's residents in this age group (15%).

Since 2004, the number of minority working age PQI hospitalizations increased by 21%, while it fell by 3% for non-Hispanic whites.

Senior citizen PQI hospitalizations (Ages 65+), 2008

In 2008, there were nearly 27,600 senior citizen PQI hospitalizations with total charges of $631 million and almost 146,000 hospital days. Congestive heart failure, bacterial pneumonia, urinary tract infections and COPD accounted for 80% of these hospitalizations.

Since 2004, the number of PQI hospitalizations among senior citizens decreased by 2%, in contrast with the growth of other types of hospitalizations for this age group (7%). A 22% decline in bacterial pneumonia hospitalizations accounted for over one-half of the decline in total PQI hospitalization senior citizens. During this period, urinary tract infection and hypertension hospitalizations also increased by half.

Nearly all PQI hospitalizations for those 65 and older originated in the emergency department (88%) and 11% of whom had multiple hospitalizations for the same PQI condition. Following discharge, nearly two-thirds required additional care at another health care facility (38%) or at home (27%).

Table 13: Senior Citizen PQI volume, 2008

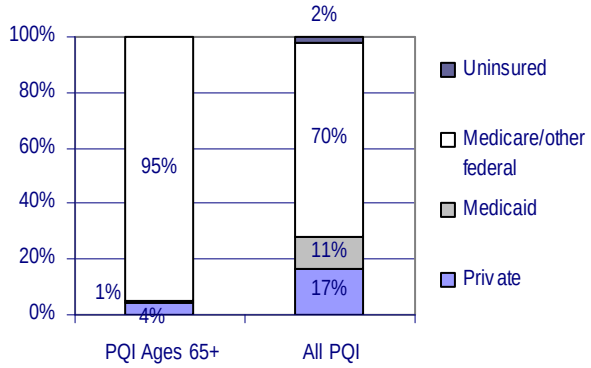
Quality Indicator	Hospitaliza-tions	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Angina without a procedure[1]	181	384	$2,420,900	88%	48%	1%
Asthma	1,060	5,180	$20,292,000	86%	50%	10%
Bacterial pneumonia	6,270	36,566	$155,410,000	90%	64%	6%
Chronic obstructive pulmonary disease	3,541	18,168	$74,952,000	90%	60%	15%
Congestive heart failure	8,237	45,231	$202,340,000	87%	66%	19%
Dehydration	1,869	7,510	$32,972,000	87%	58%	2%
Diabetes - long-term complications	1,425	8,843	$42,067,000	68%	72%	11%
Diabetes - short-term complications	153	940	$4,376,600	95%	67%	6%
Diabetes - lower extremity amputation	464	4,730	$23,949,000	30%	83%	15%
Diabetes - uncontrolled	89	323	$1,316,000	85%	70%	2%
Hypertension	461	1,609	$7,944,800	89%	45%	5%
Perforated appendix	166	1,308	$7,417,600	84%	46%	---
Urinary tract infection	3,917	18,034	$70,700,000	93%	75%	6%
Totals[2]	27,557	145,989	$631,160,000	88%	65%	11%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database
Reporting hospitalizations of Connecticut residents ages 65+ admitted to Connecticut acute care hospitals with a PQI condition.
Emergency Department Admissions: Share of hospitalizations for a PQI condition that were admitted to the hospital through the emergency department.
Transferred to other institution/or discharged to home health care: Share of hospitalizations for a PQI condition who were transferred to another health care facility for additional treatment or those discharged to home health care services.
Multiple admissions for same PQI: Share of PQI patients with multiple admissions for the same PQI in 2008.
[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.
[2]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. Fiscal year 2008 overall totals are presented without any double counting of these patients.
In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Due to discounts and other factors, payments differ from charges. The statewide Medicare ratio of payment to charges was 0.89.

Demographic characteristics of PQI hospitalizations of senior citizens (age 65+), 2008

Medicare was the primary insurer for nearly all PQI hospitalizations among senior citizens, 2008

Figure 18: Primary insurer for senior citizen and all PQI hospitalizations, 2008

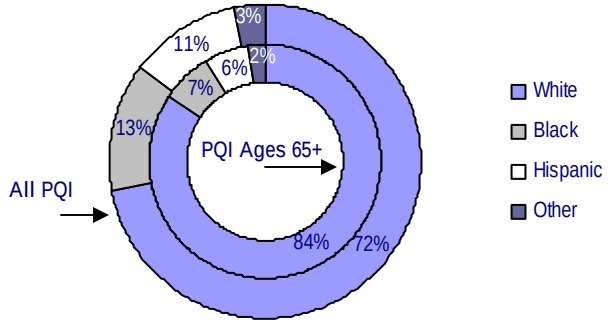


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Medicare was the primary insurer for nearly all PQI hospitalizations for those age 65 and older.

Senior citizen PQI hospitalizations were largely non-Hispanic whites, 2008

Figure 19: Race of senior citizen and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Most senior PQI hospitalizations were non-Hispanic whites (84%),which was consistent with their share of Connecticut's population age 65 and older (93%).

Private coverage PQI hospitalizations, 2008

In 2008, there were approximately 10,000 private coverage PQI hospitalizations with over 53,000 patient days and $257 million in total charges. Since 2004, private coverage PQI hospitalizations fell by 5%. Declining pediatric gastroenteritis, bacterial pneumonia, dehydration and pediatric asthma hospitalizations accounted for most of this decrease.

Compared with all PQI hospitalizations, fewer private coverage PQI hospitalizations originated in the emergency department (69% versus 82%) or required additional health care services at another facility or home (20% versus 48%).[10] In addition, fewer had multiple admissions for the same PQI in 2008 (8% versus 11%).

Table 14: Private coverage PQI volume, 2008

Quality Indicator	Hospitalizations	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Pediatric Quality Indicators (Ages 0 - 17)						
Asthma	435	795	$4,007,300	84%	1%	9%
Diabetes short-term complications	57	99	$690,670	98%	7%	8%
Gastroenteritis	332	560	$2,353,500	73%	2%	3%
Perforated appendix	159	823	$4,868,000	93%	5%	---
Urinary tract infection	171	411	$1,695,500	81%	2%	4%
Adult Quality Indicators (Ages 18+)						
Angina without a procedure[1]	186	283	$2,333,800	89%	51%	0%
Asthma	844	3,170	$12,784,000	85%	6%	11%
Bacterial pneumonia	1,506	6,879	$31,951,000	84%	19%	4%
Chronic obstructive pulmonary disease	613	2,806	$12,201,000	85%	24%	12%
Congestive heart failure	868	3,956	$19,911,000	80%	29%	15%
Dehydration	517	1,601	$7,515,100	72%	16%	4%
Diabetes - long-term complications	632	3,804	$19,212,000	59%	44%	16%
Diabetes - short-term complications	394	1,301	$6,667,600	92%	16%	8%
Diabetes - lower extremity amputation	194	1,649	$8,682,200	38%	60%	12%
Diabetes - uncontrolled	59	195	$1,175,000	81%	24%	0%
Hypertension	304	699	$4,374,500	86%	5%	3%
Low birth weight newborns[2]	1,447	20,808	$101,110,000	---	31%	---
Perforated appendix	432	1,882	$11,334,000	88%	9%	---
Urinary tract infection	648	2,454	$10,574,000	86%	20%	4%
Totals[3]	9,656	52,902	$256,960,000	69%	20%	8%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Connecticut residents with private coverage admitted to Connecticut acute care hospitals with a PQI condition.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

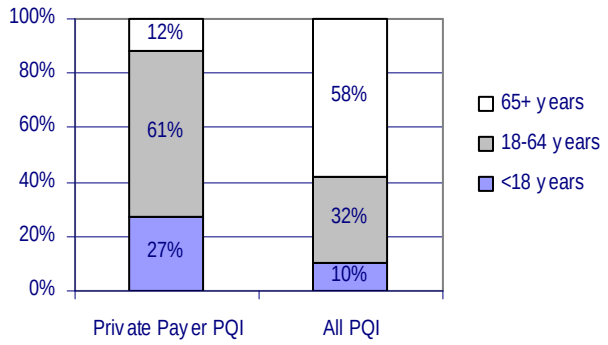
[3]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. Fiscal year 2008 overall totals are presented here without any double counting of these patients.

In 2008, the statewide ratio of cost to charges was .40, meaning that total costs were 40 cents for every dollar of charges. Due to discounts and other factors, payments differ from charges. The statewide non-government (excluding uninsured) ratio of payment to charges was 1.13.

Demographic characteristics of private coverage PQI hospitalizations, 2008

Working age adults were the majority of private coverage PQI hospitalizations, 2008

Figure 20: Age of private coverage and all PQI hospitalizations, 2008



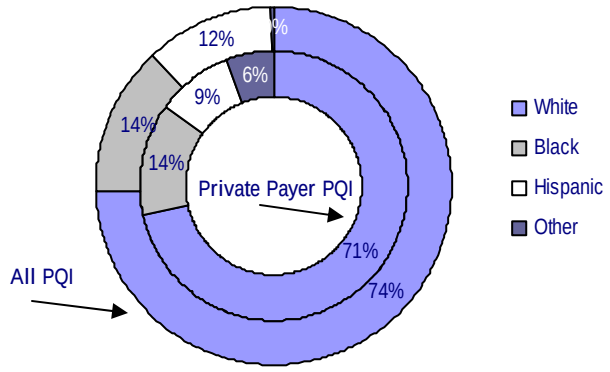
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

The majority of all private coverage PQI hospitalizations were working age adults or children, unlike all PQI hospitalizations which were predominantly senior citizens (58%). The average age of private coverage PQI hospitalizations (40) was younger than for all PQI hospitalizations (62).

Since 2004, the number of private coverage working age adults and pediatric PQI hospitalizations fell –4% and –13% respectively, while senior citizen hospitalizations increased by 10%.[11]

Nearly three quarters of all private coverage PQI hospitalizations were non-Hispanic whites, 2008

Figure 21: Race of private coverage and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Private coverage PQI hospitalizations were racially almost identical to all PQI hospitalizations, as almost three-quarters were non-Hispanic whites. However, from 2004 through 2008, their hospitalizations declined (-13%) while private payer minority PQI hospitalizations grew (24%).

Medicaid PQI hospitalizations, 2008

In 2008, there were almost 7,000 Medicaid PQI hospitalizations, with over 41,000 patient days and $193 million in total charges. From 2004 through 2008, Medicaid PQI hospitalizations, along with their total charges and patient days expanded faster than for all PQI hospitalizations.[12] Low birth weight newborns accounted for nearly half of the increase in Medicaid PQI total charges and patient days and was the second largest factor in the growth of hospitalizations, adult asthma was the first. Compared to other PQI hospitalizations, fewer Medicaid patients were admitted to the hospital through the emergency department (75% versus 83%) and received home health services or additional health care at another facility 24% versus 52%).[13] However, a slightly larger share had multiple hospitalizations for the same PQI condition in 2008 (12% versus 11%). Multiple hospitalizations were most common among congestive heart failure, COPD, long- and short-term complications diabetes and adult asthma.

Table 15: Medicaid PQI Volume, 2008

Quality Indicator	Hospitaliza-tions	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Pediatric Quality Indicators (Ages 0 - 17)						
Asthma	510	983	$5,057,000	91%	3%	8%
Diabetes short-term complications	39	72	$437,780	92%	15%	9%
Gastroenteritis	275	468	$2,038,800	86%	1%	4%
Perforated appendix	69	463	$2,857,200	91%	6%	---
Urinary tract infection	141	367	$1,342,500	81%	2%	1%
Adult Quality Indicators (Ages 18+)						
Angina without a procedure[1]	49	97	$825,050	100%	22%	2%
Asthma	1,014	3,270	$15,579,000	89%	13%	18%
Bacterial pneumonia	790	3,674	$17,671,000	92%	24%	7%
Chronic obstructive pulmonary disease	401	1,894	$7,761,500	91%	34%	22%
Congestive heart failure	558	2,901	$15,038,000	89%	37%	23%
Dehydration	162	570	$2,535,300	83%	29%	5%
Diabetes - long-term complications	509	3,641	$15,941,000	81%	40%	19%
Diabetes - short-term complications	489	1,590	$8,363,500	96%	13%	19%
Diabetes - lower extremity amputation	121	1,677	$7,149,000	61%	60%	8%
Diabetes - uncontrolled	82	248	$1,116,900	88%	22%	6%
Hypertension	191	625	$3,495,700	88%	8%	7%
Low birth weight newborns[2]	1,108	17,624	$81,436,000	---	40%	---
Perforated appendix	80	406	$2,601,100	94%	10%	---
Urinary tract infection	412	1,739	$7,261,700	91%	28%	6%
Totals[3]	6,912	41,188	$193,360,000	75%	24%	12%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Connecticut residents with Medicaid coverage admitted to Connecticut acute care hospitals with a PQI condition.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

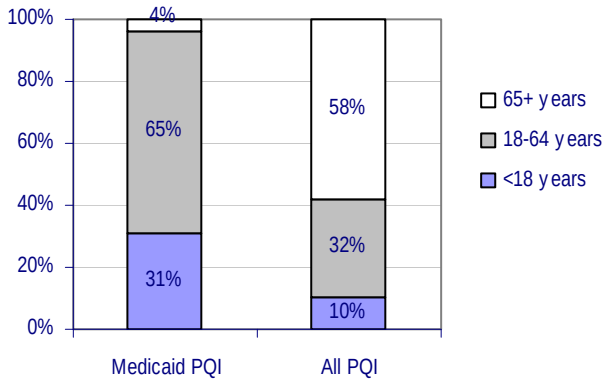
[3]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQIs conditions. Fiscal year 2008 overall totals are presented here without any double counting of these patients.

Due to discounts and other factors, payments differ from charges. In 2008, the ratio of Medicaid payment to charges was 29%, meaning that total payments were 29 cents for every dollar of charges. The statewide ratio of cost to charges was 0.40.

Demographic characteristics of Medicaid PQI hospitalizations, 2008

Medicaid PQI hospitalizations were younger than all PQI hospitalizations, 2008

Figure 22: Age of Medicaid and all PQI hospitalizations, 2008



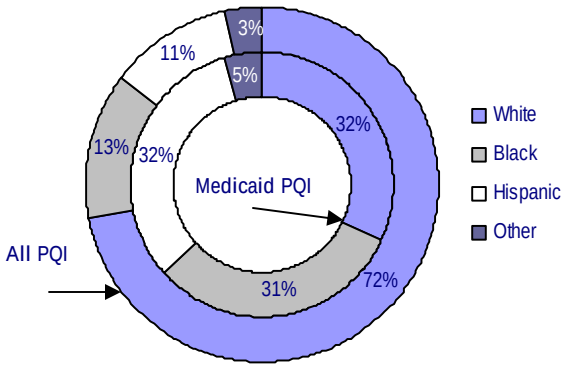
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Medicaid predominantly serves low-income children and their parents and consequently younger people were a larger share of Medicaid PQI hospitalizations than for all PQI hospitalizations.

Among PQI hospitalizations, Medicaid had the youngest average age (33) compared to private insurers (40), uninsured (42) and Medicare (78).

Two-thirds of Medicaid PQI hospitalizations were minorities, 2008

Figure 23: Race of Medicaid and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Two-thirds of Medicaid PQI hospitalizations were minorities, a much larger share than among all PQI hospitalizations (28%). Since 2004, minority Medicaid PQI hospitalizations grew while Non-Hispanic white PQIs declined (9% versus –1%).

Uninsured PQI hospitalizations, 2008

In 2008, there were over 1,000 uninsured PQI hospitalizations with total charges of about $18 million. Adult asthma, bacterial pneumonia, congestive heart failure, diabetes short-term complications and urinary tract infections accounted for 62% of all uninsured PQI hospitalizations. Although the number of uninsured PQI hospitalizations was 23% higher in 2008 than in 2004, the majority of this increase occurred between 2004 and 2005. Since that time there has been a 4% net increase in the number of uninsured PQI hospitalizations due to a 3% decline in the last year.

Most uninsured PQI hospitalizations were admitted through the emergency department. Few uninsured received additional services at another health care facility or home and fewer had multiple hospitalizations for the same PQI condition (8% versus 11% for all PQI patients).

Table 16: Uninsured PQI Volume, 2008

Quality Indicator	Hospitalizations	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Pediatric Quality Indicators (Ages 0 - 17)						
Asthma	19	27	$160,490	95%	5%	0%
Diabetes - short-term complications	<6	<6	<6	100%	0%	<6
Gastroenteritis	9	19	$68,925	78%	0%	<6
Perforated appendix	<6	26	$116,760	100%	25%	---
Urinary tract infection	<6	7	$24,031	80%	0%	<6
Adult Quality Indicators (Ages 18+)						
Angina without a procedure[1]	20	30	$256,320	95%	35%	0%
Asthma	159	381	$1,788,300	96%	3%	10%
Bacterial pneumonia	167	681	$2,889,200	93%	10%	1%
Chronic obstructive pulmonary disease	62	235	$851,110	98%	3%	13%
Congestive heart failure	116	542	$2,664,000	97%	14%	11%
Dehydration	30	59	$354,130	77%	10%	4%
Diabetes - long-term complications	54	313	$1,331,000	93%	15%	8%
Diabetes - short-term complications	116	375	$1,829,000	96%	9%	9%
Diabetes - lower extremity amputation	9	129	$630,560	89%	44%	14%
Diabetes - uncontrolled	25	73	$298,310	96%	8%	0%
Hypertension	75	171	$1,124,700	91%	0%	5%
Low birth weight newborns[2]	33	165	$563,230	0%	15%	---
Perforated appendix	63	338	$1,911,500	97%	2%	---
Urinary tract infection	98	351	$1,427,300	95%	4%	3%
Totals[3]	1,062	3,857	$18,024,000	91%	8%	7%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition and for whom no third party payer was responsible for hospital charges.

Fewer than six observations cannot be released, per OHCA regulations.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

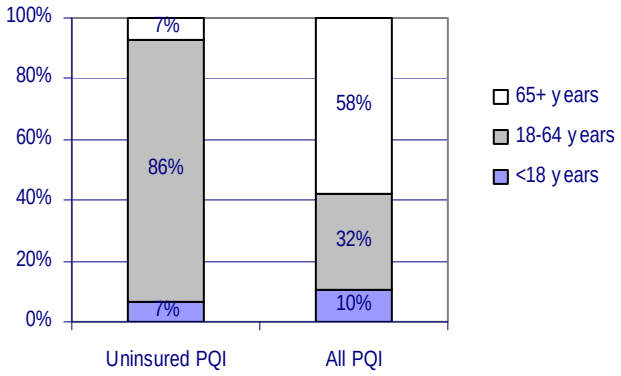
[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

[3]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. 2008 overall totals are presented here without any double counting of these patients. In 2008, the statewide ratio of cost to charges was 0.40, meaning that total costs were 40 cents for every dollar of charges. The statewide uninsured ratio of payment to charges was 0.13.

Demographic characteristics of uninsured PQI hospitalizations, 2008

Uninsured PQI patients were largely working age adults, 2008

Figure 24: Age of uninsured and all PQI hospitalizations, 2008

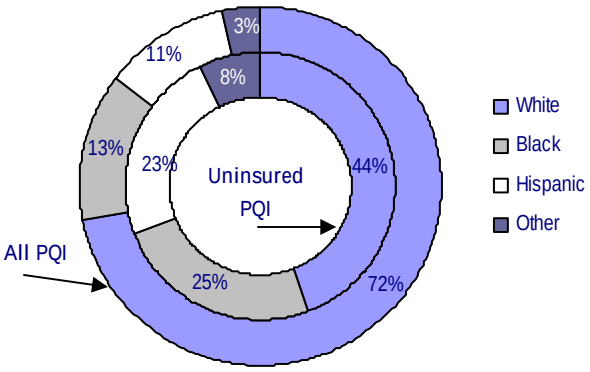


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Distinct from all PQI hospitalizations, working age adults accounted for over four of every five uninsured hospitalizations. The preponderance of working age adults among uninsured PQI hospitalizations was consistent with their overall share of Connecticut's uninsured (87%).[14]

The majority of uninsured PQI hospitalizations were minorities, 2008

Figure 25: Race of uninsured and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Twice as many uninsured PQI hospitalizations were minorities as compared to all PQI hospitalizations (56% versus 27%). Over the last five years, uninsured minority PQI volume increased by nearly one-third, outpacing whites (11%).

Hispanic PQI hospitalizations, 2008

In 2008, there were almost 5,400 Hispanic PQI hospitalizations with nearly 30,000 patient days and total charges of $138 million. Since 2004, Hispanic PQI hospitalizations increased 33%, with the largest volume increases in adult asthma, COPD, urinary tract infections, congestive heart failure and bacterial pneumonia conditions.

Compared with all PQI hospitalizations, fewer Hispanic PQI hospitalizations were admitted through the emergency department (78% versus 82%). Also, fewer Hispanic PQI hospitalizations resulted in health care services at another facility or at home than for all PQI hospitalizations (35% versus 48%). However, they did have slightly more multiple hospitalizations for the same PQI condition during 2008 (12% versus 11%).

Table 17: Hispanic PQI Volume, 2008

Quality Indicator	Hospitalizations	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Pediatric Quality Indicators (Ages 0 - 17)						
Asthma	262	514	$2,508,800	87%	2%	9%
Diabetes short-term complications	25	44	$295,490	92%	16%	17%
Gastroenteritis	158	281	$1,166,200	83%	2%	1%
Perforated appendix	45	237	$1,439,000	96%	0%	---
Urinary tract infection	87	193	$715,440	79%	1%	4%
Adult Quality Indicators (Ages 18+)						
Angina without a procedure[1]	33	57	$574,680	97%	27%	3%
Asthma	906	3,412	$14,254,000	85%	24%	17%
Bacterial pneumonia	771	4,155	$19,680,000	89%	36%	6%
Chronic obstructive pulmonary disease	334	1,761	$7,464,300	89%	55%	16%
Congestive heart failure	694	3,679	$17,287,000	86%	60%	24%
Dehydration	158	517	$2,308,000	82%	35%	4%
Diabetes - long-term complications	419	2,681	$12,670,000	75%	55%	18%
Diabetes - short-term complications	241	761	$4,099,500	95%	17%	18%
Diabetes - lower extremity amputation	100	1,017	$4,792,500	42%	69%	17%
Diabetes - uncontrolled	51	168	$740,010	94%	39%	2%
Hypertension	134	371	$2,018,800	89%	18%	6%
Low birth weight newborns[2]	526	8,305	$39,250,000	---	39%	---
Perforated appendix	93	459	$2,852,300	95%	10%	---
Urinary tract infection	429	1,703	$7,141,500	90%	41%	5%
Totals[3]	5,395	29,587	$137,740,000	78%	35%	12%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of Hispanic Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

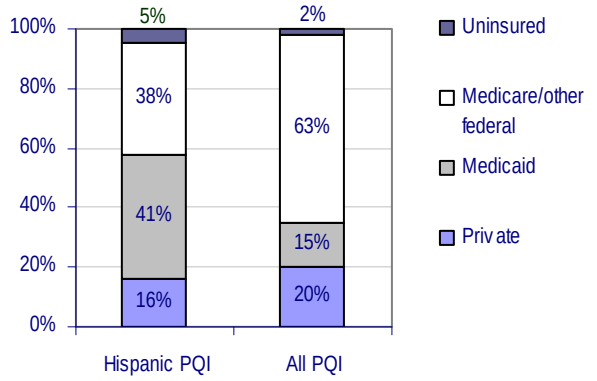
[2]Low birth weight newborns are grouped with the adult PQI conditions because low birth weight is related to the mother's prenatal care.

[3]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQI conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. 2008 overall totals are presented without any double counting of these patients. In 2008, the statewide ratio of cost to charges was 0.40, meaning that total costs were 40 cents for every dollar of charges. The statewide ratio of payment to charges was 0.39 and varied by insurer.

Demographic characteristics of Hispanic PQI hospitalizations, 2008

Hispanic PQI hospitalizations more likely to be Medicaid-covered and uninsured, 2008

Figure 26: Primary insurer for Hispanic and all PQI hospitalizations, 2008

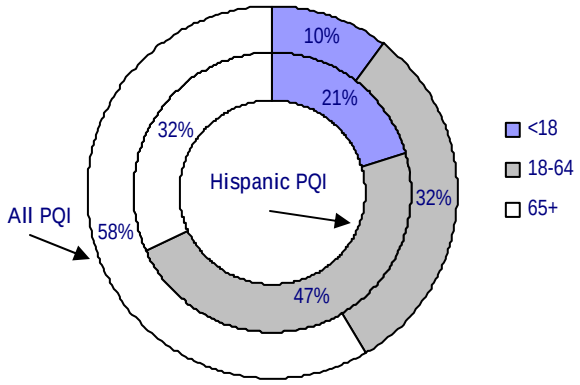


Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Hispanic PQI hospitalizations were nearly three times as likely as all PQI hospitalizations to be covered by Medicaid and more than twice as likely to have been uninsured. Hispanics were more than half as likely as all PQIs to have Medicare.

Hispanic PQI hospitalizations tended to be younger than other PQI hospitalizations, 2008

Figure 27: Age of Hispanic and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Fewer than one-third of all Hispanic PQI hospitalizations were age 65 or older, far less than that for all PQI hospitalizations (58%). This was consistent with Connecticut's Hispanic population, as only 4% were age 65 or older.

The average age of Hispanic PQI hospitalizations was 47 compared to 65 for non-Hispanics.

Black PQI hospitalizations, 2008

In 2008, there were over 6,000 black PQI hospitalizations with over 36,000 patient days and $183 million in total charges. From 2004 through 2008, black PQI hospitalizations increased 11%, with the largest volume increases in hypertension, adult asthma, urinary tract infection and COPD conditions

Fewer PQI hospitalizations for Blacks resulted in health care services at another facility or at home than for all PQI hospitalizations (36% versus 48%). Slightly more black PQI patients had multiple hospitalizations during the year for the same PQI condition than for all PQI patients (13% versus 11%).

Table 18: Black PQI Volume, 2008

Quality Indicator	Hospitaliza-tions	Patient Days	Charges	Emergency Department Admission	Transferred to other institution/or discharged to home healthcare	Multiple admissions for same PQI
Pediatric Quality Indicators (Ages 0 - 17)						
Asthma	321	597	$3,267,200	90%	2%	12%
Diabetes short-term complications	19	39	$248,870	100%	21%	12%
Gastroenteritis	80	136	$603,070	83%	0%	7%
Perforated appendix	23	169	$1,005,800	96%	9%	---
Urinary tract infection	24	102	$386,840	96%	4%	0%
Adult Quality Indicators (Ages 18+)						
Angina without a procedure[1]	38	83	$762,870	95%	16%	0%
Asthma	751	2,492	$11,712,000	95%	18%	20%
Bacterial pneumonia	752	3,893	$18,755,000	94%	36%	5%
Chronic obstructive pulmonary disease	309	1,605	$8,260,300	93%	47%	20%
Congestive heart failure	1,109	6,256	$32,233,000	92%	49%	21%
Dehydration	237	841	$4,175,500	89%	38%	3%
Diabetes - long-term complications	663	4,145	$20,359,000	73%	53%	19%
Diabetes - short-term complications	372	1,480	$7,256,700	98%	27%	12%
Diabetes - lower extremity amputation	196	2,139	$10,970,000	43%	75%	24%
Diabetes - uncontrolled	89	326	$1,393,400	85%	34%	5%
Hypertension	353	1,164	$6,502,500	93%	18%	7%
Low birth weight newborns[2]	557	9,971	$53,075,000	0%	37%	---
Perforated appendix	47	302	$1,704,500	98%	11%	---
Urinary tract infection	396	1,862	$8,169,100	97%	51%	7%
Totals[3]	6,208	36,178	$183,380,000	82%	36%	13%

Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

Reporting hospitalizations of black Connecticut residents admitted to Connecticut acute care hospitals with a PQI condition.

[1]Changing coding practices contributed to the precipitous decline in the number of angina discharges.

[2]Low birth weight newborns are grouped with the adult PQI conditions because as a quality indicator low birth weight is related to the mother's prenatal care.

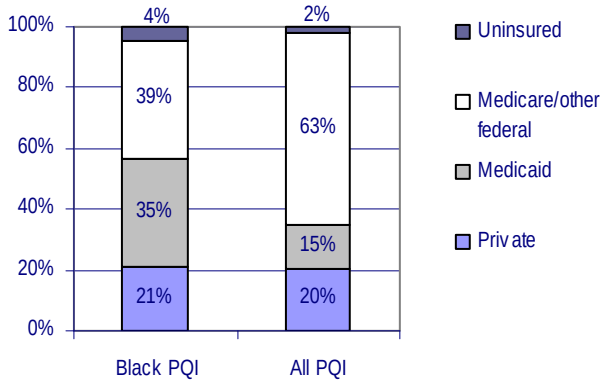
[3]Reported total 2008 hospitalizations, charges, and patient days are not the summed total for all individual PQIs conditions. Several patients had more than one PQI during a hospital stay and therefore their hospitalizations, charges and patient days are counted in the individual totals of multiple PQI conditions. Fiscal year 2008 overall totals are presented without any double counting of these patients.

Due to discounts and other factors, actual payments are significantly lower than charges. In 2008, the ratio of cost to charges 0.40, meaning that total costs were 40 cents for every dollar of charges. Statewide ratio of payment to charges was 0.39 and varies by insurer.

Demographic characteristics of black PQI hospitalizations, 2008

Medicare was the largest insurer for Black PQI hospitalizations, 2008

Figure 28: Primary insurer for Black and all PQI hospitalizations, 2008



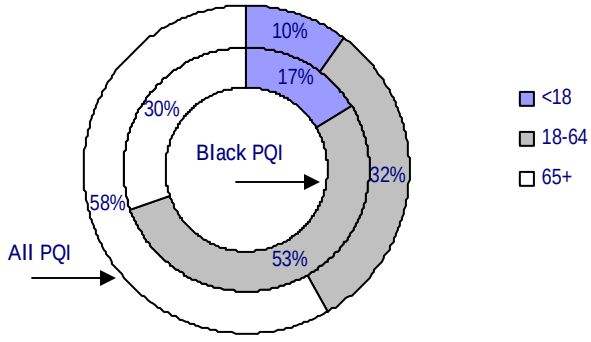
Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

While Medicare was the largest source of coverage for black PQI hospitalizations, its share was smaller than among all PQI hospitalizations (39% versus 63%). Blacks were nearly twice as likely to be covered by Medicaid as well as to be uninsured.

Since 2004, black Medicaid PQI hospitalizations grew by 12%.

Most Black PQI hospitalizations were ages 18 to 64, 2008

Figure 29: Age of Black and all PQI hospitalizations, 2008



Source: CT Office of Health Care Access Acute Care Hospital Inpatient Discharge Database

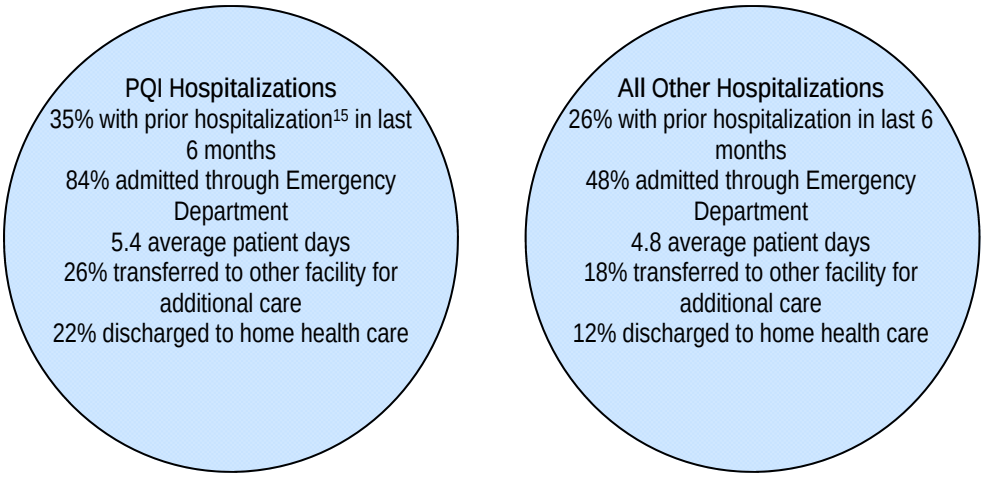
Slightly more than half of Black PQI hospitalizations were between ages 18 and 64. The share of seniors among black PQI hospitalizations (30%) was nearly half that for all PQI hospitalizations (58%).

Summary

OHCA utilized the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QI) tool to examine "preventable" hospitalizations. This includes a set of 19 health conditions considered preventable because timely and effective primary care and medical management of these conditions have been clinically demonstrated to reduce the need for hospitalization. In comparison with the U.S., Connecticut had lower hospitalization rates for 17 of these 19 conditions. In 2008, there were over 47,000 preventable hospitalizations, that is, instances of inpatient hospital care for chronic health conditions or acute episodes of illnesses typically treated outside of the hospital. Preventable hospitalizations accounted for one of every nine hospital patients and one of every five patients admitted to the hospital through the emergency department. Between 2004 and 2008, the number of preventable hospitalizations declined by 406 (-1%) but their total charges increased from $867 million to nearly $1.2 billion (34%).

PQI patients as a group required extensive health care services in the hospital and following discharge, particularly in comparison with other hospitalizations (Illustration 1). Thirty-five percent of PQI patients had been previously hospitalized[15], compared to 26% of other hospitalizations. Nearly all PQI hospitalizations were admitted through the emergency department while less than half of other hospitalizations began there. On average, PQI hospitalizations lasted nearly a day longer than others. Following discharge from the hospital, PQI patients were more likely to receive additional health care services at either another facility (26% versus 18%) or at home (22% versus 12%). A key factor in PQI patients' heavier use of health care services may have been its higher share of senior citizens (58% versus 35%), a group with a higher likelihood of having multiple health problems.

Illustration 1: Comparison of PQI hospitalizations and other types, 2008



Preventable hospitalizations provide a good starting point for examining the health care system, particularly outside of the hospital. They are designed to illuminate possible gaps in the primary health care system, community health needs and barriers to primary care. For example, minorities and New Haven county residents had higher per capita incidences of preventable hospitalizations. Senior citizen PQI patients required considerable acute care and outpatient health services as almost 80% had been previously hospitalized and two-thirds required additional services after leaving the hospital. OHCA continues to provide data on these issues to state and local officials, providers and others attempting to address improved access to primary care, along with increased case management, outreach and patient education.

For questions regarding OHCA's PQI research or data requests please contact Kaila Riggott (860) 418-7037 or kaila.riggott@ct.gov.

TECHNICAL NOTES

This study updates a prior OHCA report (*Preventable Hospitalizations in Connecticut: An Updated Assessment of Access to Community Health Services, FYs 2000 - 2006)* published in April 2008. Both projects implemented a methodology developed by the U.S. Department of Health and Human Services Agency for Health Research and Quality (AHRQ). AHRQ developed the Quality Indicators (QI) tool as part of a broader effort to promote public health research by providing clinically validated and standardized methods that can be applied to the administrative hospital data that most states now collect.

Quality indicators were first developed in 2001 by a panel of clinicians and researchers from the University of California-San Francisco and Stanford University sponsored by AHRQ. Through their review of the clinical literature and analysis of national hospital data, they identified 16 Ambulatory Care Sensitive Conditions (ACSCs) for which effective and timely primary care significantly reduced the likelihood of hospitalization. AHRQ has made software publicly available that processes administrative hospital data, identifying hospitalizations for these 16 ACSCs. The software also generates observed (discharges per the relevant population), risk adjusted (based on race and age) and smoothed (rates shrunk to national averages) population rates. OHCA's 2005 preventable hospitalization report utilized this methodology (AHRQ Prevention Quality Indicators tool version 2.1).

After OHCA published its 2005 report, AHRQ made significant changes to its QI tool. Specifically, it created a pediatric module with five conditions to address the "differential epidemiology of child health care relative to adult health care."[16] This change results in 19 area level prevention quality indicator conditions. AHRQ made substantive coding changes for some of these conditions, modified its rate calculations and added overall pediatric and adult PQI rates. OHCA's 2008 preventable hospitalization report utilized this methodology (AHRQ Prevention Quality Indicators tool version 3.1).

Since the publication of OHCA's 2008 report, AHRQ has made additional changes to its QI tool.[17] Some of the substantive changes AHRQ made include coding changes for some of the 19 the conditions and adding new data elements as part of the implementation of the National Uniform Billing Committee UB-04 and Centers for Medicare and Medicaid Services Medicare Severity Diagnosis Related Group (CMS MS-DRGs). This preventable hospitalization report utilizes version 4.0 of the AHRQ Prevention Quality Indicators tool. As at the time of this publication, AHRQ had not included the ability to estimate overall pediatric PQI rates.

In order to report consistent results over time that reflect these most recent changes, OHCA included in this report the last three years of data from the years covered in its 2008 preventable hospitalization report (2004 - 2006) as well as two recent years of data (2007 and 2008). In addition, OHCA switched from hospital fiscal year (October 1 to September 30) to calendar year reporting.

ENDNOTES

[1]Agency for Healthcare Research and Quality, *AHRQ Quality Indicators—Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions Version 3.1*, March 12, 2007.

[2]Other factors outside the direct control of the health care system such as poor environmental conditions or lack of patient adherence to treatment recommendations, comorbidities, patient age and physiology and general health status can result in hospitalization. Therefore, individual hospitalizations may not have been truly "preventable." However, analyses of national samples of PQI patients show a statistically significant relationship between timely and effective primary care and a significant reduction in hospitalizations for these conditions.

[3]Agency for Healthcare Research and Quality, *AHRQ Quality Indicators—Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions Version 3.1*, March 12, 2007; *AHRQ Quality Indicators—Prevention Quality Indicators: Technical Specifications, version 4.0*, June 30, 2009; AHRQ QI *Windows Application Documentation, version 4.0, June 2009*; *Pediatric Quality Indicators Technical Specifications version 4.0*, June 30, 2009.

[4]*Preventable Hospitalizations in Connecticut: An Updated Assessment of Access to Community Health Services, FYs 2000 - 2006*, April 2008.For QI changes see Agency for Healthcare Research and Quality *Prevention Quality Indicators (PQIs) Log of Revisions to PQI Documentation and Software*; June 30, 2009, *ICD-9-CM Coding Updates to Version 4.0*, June 30, 2009; and *Pediatric Quality Indicators (PedQIs) Log of Revisions to PedQI Documentation and Software*, June 30, 2009.

[5]Hospital Type defined by OHCA based upon number of beds and location: Large Urban (Bridgeport, CT Children's Medical Center, Hartford, St. Francis, St. Raphael, and Yale), Medium Urban (Danbury, John Dempsey, Lawrence and Memorial, Middlesex, New Britain, Norwalk, St. Mary's St. Vincent's, Stamford, and Waterbury), Small Urban (Bristol, Charlotte Hungerford, Day Kimball, Greenwich, Griffin, Manchester, MidState, Backus, and Windham) and Small Community (Bradley, Johnson, Milford, New Milford, Rockville and Sharon).

[6]According to U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement 2009, 93% of Connecticut's population age 65 and older are non-Hispanic whites. The share of elderly varies by race as 14% of non-Hispanic whites are ages 65 and older, but only 9% of Blacks, and 4% of Hispanics.

[7]While total non-Hispanic white PQI volume fell, the volume of whites age 85+ increased by 18% or 497 additional PQI hospitalizations.

[8] The most recent U.S PQI rates available are for 2004 and were developed with version 3.1 of the QI tool. Utilizing the same version of the tool, the following counties had higher 2004 observed PQI rates than the U.S.: Fairfield (dehydration); Hartford (adult asthma, bacterial pneumonia, dehydration, low birth weight newborns and perforated appendix); Middlesex (adult overall PQI rate); New Haven (pediatric and adult asthma, pediatric gastroenteritis, pediatric overall PQI rate, bacterial pneumonia, dehydration, diabetes long term complications, diabetes related lower extremity amputations and low birth weight newborns); New London (adult asthma and bacterial pneumonia); and Windham (bacterial pneumonia, COPD and dehydration). See OHCA April 2008 publication, *Preventable Hospitalizations in Connecticut: An Updated Assessment of Access to Community Health Services—FYs 2000-2006.*

[9] *U.S Census Bureau 2009 Current Population Survey, Annual Social and Economic Supplement 2009* estimates that 18% of Connecticut residents ages 19 to 29 were uninsured compared to 10% for all residents.

[10]Private payers' lower overall share of emergency department admissions was in large part due to a significant portion (15%) of their PQI hospitalizations comprising of low birth weight newborns.

[11]Diabetes long-term complications, COPD and urinary tract infections accounted for nearly all of this growth.

[12]Reporting Medicaid PQI and all PQI hospitalizations: Patient Volume (6% and –1%), Total charges (51% and 34%) and Patient Days (4% and –7%). Medicaid PQI increases tracked the overall growth in all Medicaid hospitalizations (patient volume 13%, charges 40% and patient days 11%).

[13]Medicaid PQI hospitalization's lower share of emergency department admissions was in largely due to its significant share of low birth weight newborns (16%).

[14] U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement 2009.

[15]At same hospital.

[16]Agency for Healthcare Research and Quality, *Pediatric Quality Indicators Overview*, February 2008.

[17]See note 4.

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