



Avoidable Hospitalizations in Pennsylvania

In 2003, potentially avoidable hospitalizations accounted for 10 percent of all hospital admissions for people under age 65 in Pennsylvania and incurred \$2.8 billion in hospital charges.

Timely and effective primary care may reduce the likelihood of hospitalization for certain conditions including pneumonia, diabetes, asthma, and hypertension – often referred to as ambulatory care-sensitive conditions. Because early intervention in the outpatient setting can frequently prevent complications or more severe disease, hospitalizations for these conditions may be “preventable.”

This research brief focuses on a set of sixteen conditions which may, in the absence of appropriate outpatient care, lead to potentially avoidable hospitalizations.¹ It is based on Prevention Quality Indicators (PQIs), a software tool distributed by the Agency for Healthcare Research and Quality (AHRQ). PQIs use hospital administrative data to highlight potential quality concerns, identify areas that need further study and investigation, and track changes over time. PQIs are not a measure of hospital quality, but rather one measure of outpatient and other health care that is of interest to comprehensive health care delivery systems. AHRQ uses the PQIs as part of the National Healthcare Quality Report.

Although factors outside the direct control of the health care system – such as poor environmental conditions or lack of patient adherence to treatment recommendations – can result in a hospital admission, the rate of hospitalizations for ambulatory care-sensitive conditions in Pennsylvania reveals impor-

tant information about the quality of outpatient care as well as the use and availability of preventive services. Ultimately, high numbers of hospitalizations for these conditions may indicate problems with access to primary health care services or deficiencies in outpatient management and follow-up.

In 2003, there were 109,169 potentially preventable hospitalizations in Pennsylvania.

- These hospital admissions accounted for 558,406 hospital days representing 13 percent of the total days for all hospitalizations.
- More than \$2.8 billion in hospital charges were associated with these hospitalizations. This represents 11 percent of the total charges for all hospital admissions in 2003.

The three most frequent conditions – bacterial pneumonia, congestive heart failure, and adult asthma – combined account for more than 42,000 hospitalizations and almost \$1 billion in hospital charges.

- Hospitalizations for low birth weight incurred the highest total charges – accounting for more than \$710 million in charges and more than 143,000 hospital days.
- The hospitalization rate for pediatric asthma was almost double that for adult asthma.

¹ This research brief reflects acute care hospitalizations for people in Pennsylvania as collected by the Pennsylvania Health Care Cost Containment Council (PHC4). The conditions included in this analysis were defined by the Agency for Healthcare Research and Quality.

Table 1. Preventable Hospitalizations¹ in 2003 – Admission Rates in Pennsylvania (per 100,000)

Condition	Rate	# of Hospitalizations	Total Days Hospitalized	Total Charges
Bacterial Pneumonia	175.12	18,324	80,698	\$384,049,703
Congestive Heart Failure	167.33	12,772	64,908	\$394,069,848
Adult Asthma	151.20	11,541	40,986	\$193,070,608
Low Birth Weight ^a	6.62	9,372	143,369	\$713,415,985
Chronic Obstructive Pulmonary Disease	117.88	8,998	42,598	\$210,101,032
Dehydration	84.40	8,831	25,596	\$104,644,008
Pediatric Asthma	280.81	7,949	16,813	\$85,553,762
Urinary Tract Infection	73.10	7,649	28,446	\$132,306,639
Diabetes Long-Term Complications	84.99	6,487	42,710	\$233,663,877
Diabetes Short-Term Complications	57.51	4,390	17,417	\$99,014,774
Pediatric Gastroenteritis	87.15	2,467	4,774	\$16,098,324
Hypertension	31.48	2,403	6,298	\$40,563,840
Angina without any Procedure	30.63	2,338	4,346	\$29,182,400
Perforated Appendix ^b	28.09	2,215	11,854	\$66,542,989
Lower Extremity Amputation with Diabetes	27.45	2,095	23,657	\$128,844,850
Uncontrolled Diabetes	17.53	1,338	3,936	\$15,162,556
TOTAL		109,169	558,406	\$2,846,285,195

^a The hospitalization rate for Low Birth Weight is calculated using the number of hospitalizations with a diagnosis of low birth weight (less than 2500 grams) per 100 births.

^b The hospitalization rate for Perforated Appendix is calculated using the number of hospital admissions per 100 patients discharged with a diagnosis of appendicitis.

¹ For pediatric conditions, the hospitalization rates include patients ages 0 through 17 years. For the adult conditions, the hospitalization rates include all patients ages 18-64 years. Transfers from another institution, non-PA residents, and obstetric hospitalizations (except in the Low Birth Weight condition) were excluded.

Diabetes was associated with more than 14,000 potentially avoidable hospitalizations in 2003.

- Of the four diabetes-related measures studied, hospitalizations for the long-term complications of diabetes (i.e., renal, eye, neurological, or circulatory complications) were the most common.
- From 1995 to 2003, the hospitalization rate for long-term complications of diabetes increased by 39 percent and for short-term complications by 31 percent.
- The hospitalization rate for uncontrolled diabetes has decreased by 30 percent from 1995 to 2003.

Overall, the number of preventable hospitalizations increased 4.1 percent between 1995 and 2003.

- Hospitalization rates have increased significantly over the past eight years for congestive heart failure (+17%), low-birth weight (+6%), hypertension (+23%), and long-term and short-term complications of diabetes (+39% and +31% respectively). The increase in the rates of hospitalizations between 1995 and 2003 for these five conditions resulted in additional charges of nearly \$195 million.
- In contrast, significant decreases in hospitalization rates have occurred for angina (-72%), perforated appendix (-5%), and uncontrolled diabetes (-30%). The decrease in the rates of hospitalizations between 1995 and 2003 for these three conditions resulted in a decrease in charges of nearly \$84 million.

Figure 1: Increases in Preventable Hospitalizations in Pennsylvania, 1995 to 2003

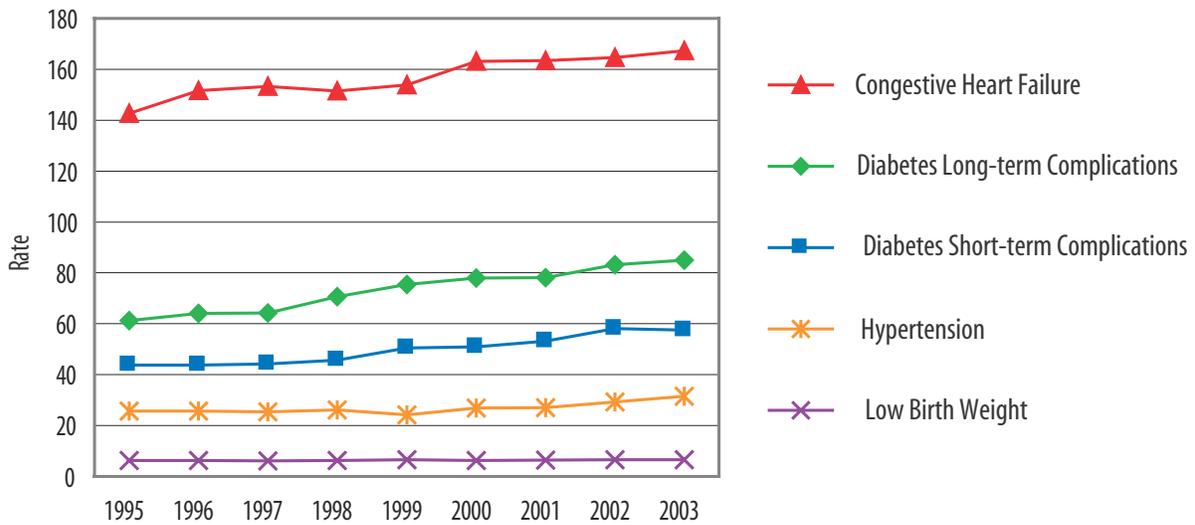
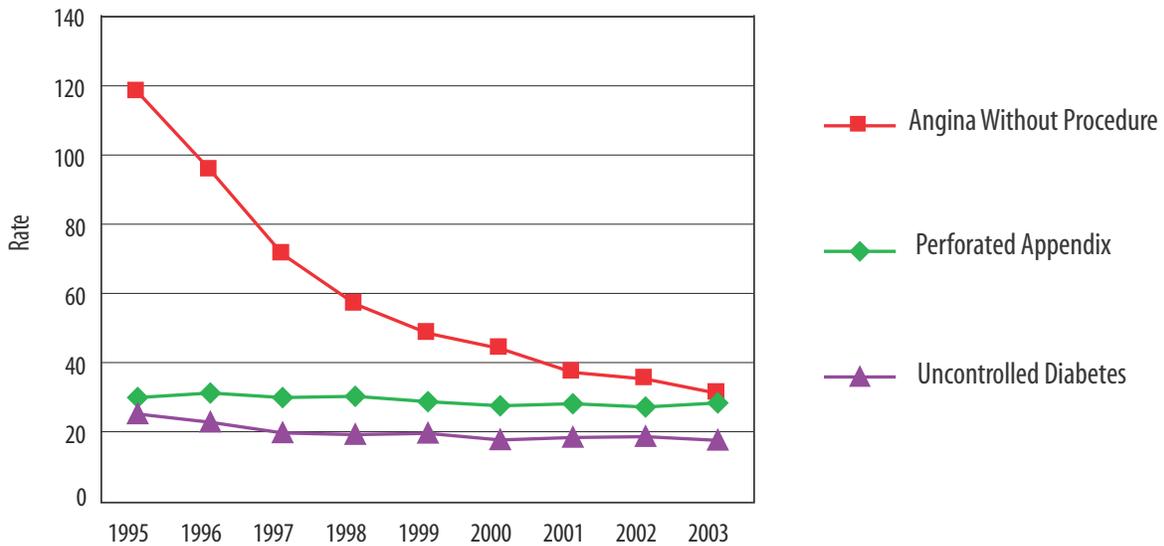


Figure 2: Decreases in Preventable Hospitalizations in Pennsylvania, 1995 to 2003



Potentially avoidable hospitalizations in Pennsylvania are numerous and costly. Because these hospitalizations can contribute substantially to the overall economic impact of treating ambulatory care-sensitive conditions, cost savings can be achieved by acting to treat these conditions on an outpatient basis rather than in the inpatient setting. For example, if preventable hospitalizations for the

sixteen conditions included here were to decrease by 10 percent, the “savings” in hospital charges would be more than \$280 million. By monitoring the rates of preventable hospitalizations in Pennsylvania over time, stakeholders across the Commonwealth can evaluate trends in ambulatory care and use the information to implement appropriate, high-quality preventive services.

References

AHRQ Quality Indicators - Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions. Rockville, MD: Agency for Healthcare Research and Quality. Revision 3 (January 9, 2004). AHRQ Pub. No. 02-R0203.

Billings J, Zeitel L, Lukomnik J, et al (1993). Impact of socioeconomic status on hospital use in New York City. *Health Affairs*, Spring: 162-173.

Billings J, Anderson G, Newman L (1996). Recent findings on preventable hospitalizations. *Health Affairs*, Fall: 239-249.

Bindman A, Grumbach K, Osmond D, Komaromy M, Vranizan K, Lurie N, and Billings J (1995). Preventable hospitalizations and access to health care. *The Journal of the American Medical Association*, 274(4): 305-311.

DeLia, D (2003). Distributional issues in the analysis of preventable hospitalizations. *Health Services Research*, 38(6): 1761-1779.

Web Resources

<http://www.qualityindicators.ahrq.gov/data/hcup/prevqi.htm>



The Pennsylvania Health Care Cost Containment Council (PHC4) periodically releases *Research Briefs* on health care topics relevant to public policy interest.

PHC4 is an independent state agency created to collect, analyze, and disseminate information designed to improve the quality and restrain the cost of health care.

For more information, contact us at 717-232-6787 or visit our Web site at www.phc4.org.