



## Hospital-acquired Infections in Pennsylvania

# Numbers Rise As Data Submission Improves, Additional Insurance Payments Could Total \$613.7 Million

**T**his report is the third in a series of research briefs covering the issue of hospital-acquired infections (HAIs) in Pennsylvania. Pennsylvania is one of a small number of states mandated to collect infection data and was the first state to report infection data (July 2005). This report covers the following topics:

- Updated number of HAIs reported for the first nine months of 2005;
- Insurance payment data – PHC4 is now collecting and reporting actual third party payment data in addition to hospital charge data. The payment data is for the commercial carriers only—Medicare and Medicaid payment data is not available at this time. The payment data is for Calendar Year 2004 (2005 is not yet available).
- Compliance progress – The reported 2005 data shows significant improvements in HAI data submission by Pennsylvania hospitals.

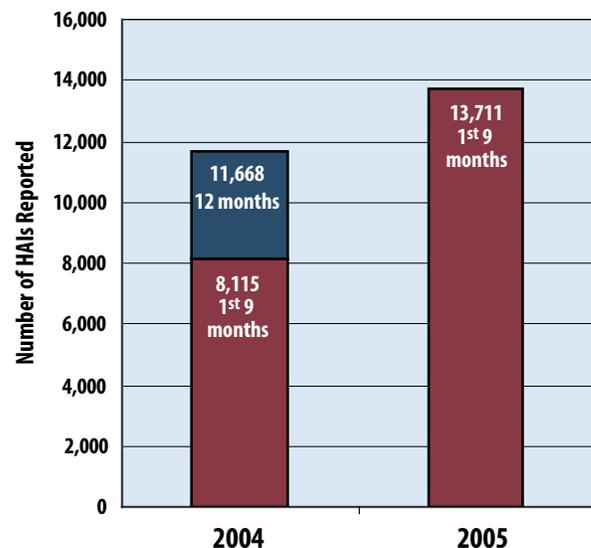
### Key Findings

- During the first nine months of 2005, hospitals identified 13,711 HAIs, compared to 11,668 for 12 months of 2004. (Figure 1) *This increase most likely reflects improvements in hospitals' submission of data, as well as the expansion of data collection requirements for surgical site infections.*
- The average commercial insurance payment for hospitalizations involving a hospital-acquired infection in 2004 was \$60,678, compared to \$8,078 for hospitalizations without a hospital-acquired infection.
- Based on additional payments for the 1,119 HAI cases from commercial health insurers in 2004, the additional total payments from *all* payors for the 11,668 HAI cases in 2004 can be estimated at \$613.7 million.

### Problem is larger than initially estimated.

For the first nine months of 2005, Pennsylvania hospitals confirmed and reported 13,711 HAIs – a rate of 11.5 HAIs per 1,000 admissions. During the same period, 13.0 percent died, compared to 2.4 percent without HAIs. The average length

**Figure 1**  
Number of Hospital-acquired Infections Reported  
January 1, 2004 through September 30, 2005



of stay for patients with HAIs was 21.1 days, while those without HAIs averaged 4.5 days. The average hospital charge for patients with HAIs was \$197,717, compared to \$31,617 for those patients without HAIs.

For the first nine months of 2005, the hospitalizations in which these infections occurred were associated with approximately 1,456 additional deaths, 227,000 additional hospital days, and \$2.3 billion in additional hospital charges—assuming that these HAIs could have been prevented and that patients who contracted them would have had similar mortality rates, lengths of stay, and hospital charges as those who did not contract such infections. (Table 1) These additional deaths, hospital days, and hospital charges are associated with the *hospital stay* in which these infections occurred and are not necessarily solely attributable to the hospital-acquired infection.

**Table 1**

**Hospital admissions in which these hospital-acquired infections occurred were associated with an additional:**

	2004: 12 months	2005: First 9 months
In-hospital deaths	1,510	1,456
Hospital days	205,000	227,000
Hospital charges	\$2 billion	\$2.3 billion

## Insurance payment data

In addition to hospital charge data, PHC4 is now able to report commercial insurance payment data. The payment data in this report covers hospital admissions in 2004; 2005 data is not yet available, nor is data available for admissions paid for by Medicare and Medicaid.

In 2004, commercial health insurers paid for 1,119 of the 11,668 total HAI cases reported by Pennsylvania hospitals. The average payment for these cases was \$60,678, seven and a half times the amount paid for those patients without an HAI (\$8,078), and a difference of \$52,600 per patient.

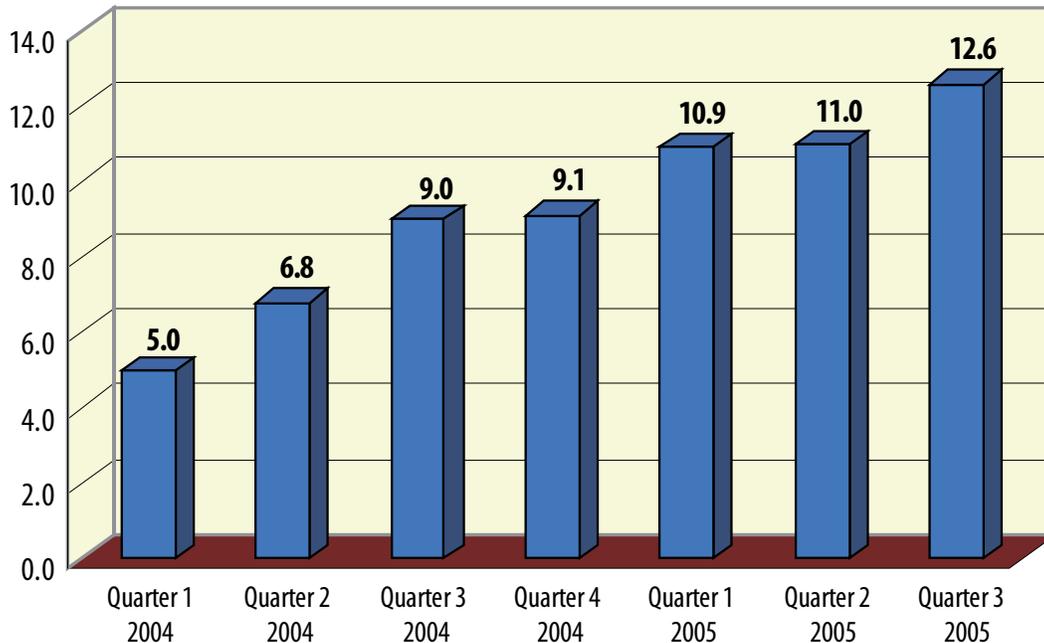
The additional payments for just those 1,119 patients total \$58.8 million. Since Medicare and Medicaid data is not available, an all-payor total can only be estimated by applying the additional average commercial insurance payment figure to all payors. Using that extrapolation, the total additional payments for the 11,668 HAI cases in 2004 can be estimated at \$613.7 million. A more precise figure will not be known until all payor data becomes available.

**Commercial insurers paid an average of \$52,600 more for patients with a hospital-acquired infection.**

**Table 2**  
**Hospital Admissions Covered by Commercial Insurers, 2004**

Type of Infection	Number	Average Payment	Average Length of Stay in Days	Percent Died
Surgical site	262	\$23,979	9.3	0.8
Urinary tract	388	\$42,316	18.1	5.7
Pneumonia	123	\$112,712	32.1	30.1
Bloodstream	249	\$79,596	28.4	17.7
Multiple infections	97	\$118,704	33.6	15.5
Any of the above infections	1,119	\$60,678	21.2	10.7
Patients without any of the above infections	288,444	\$ 8,078	3.4	0.7

**Figure 2**  
**Rate of Hospital-acquired Infections Per 1,000 Admissions**  
**Quarter 1, 2004 through Quarter 3, 2005**



### Data submission improving

Since the inception of the required HAI reporting process in January of 2004, many hospitals have been working hard to more fully report the occurrence of HAIs in their institutions as part of their commitment to high quality care and improved patient safety in Pennsylvania. The last 21 months have shown consistent improvement in data submission as can be seen in Figure 2.

However, data submission disparities among hospitals exist, and there is still potential under-reporting occurring among hospitals across the Commonwealth, based on PHC4's evaluation of hospital characteristics, historical admission patterns and comparisons among similar hospitals.

Beginning January 1, 2004, hospitals were required to submit data on four types of hospital-acquired infections to PHC4:

1. Surgical site infections for orthopedic surgery, neurosurgery, and surgery related to the circulatory system
2. All device-related infections for
  - Indwelling catheter-associated urinary tract infection
  - Ventilator-associated pneumonia
  - Central line-associated bloodstream infection

Beginning July 1, 2005, hospitals were required to submit data on seven additional categories of surgical site infections. The added categories were for surgeries related to the following body systems:

- Endocrine system
- Gastrointestinal system
- Genitourinary system
- Reproductive system
- Respiratory system
- Skin and soft tissue
- Miscellaneous

**As of January 1, 2006, hospitals are required to submit data on all hospital-acquired infections to PHC4.**

The Pennsylvania Health Care Cost Containment Council's (PHC4's) landmark report on the number of hospital-acquired infections experienced in Pennsylvania hospitals in 2004 focused on 1,562,600 admissions to 173 general acute care hospitals. This update provides hospital-acquired infection information for the 1,194,637 admissions to general acute care hospitals during the first three quarters of 2005 and compares hospital data submission efforts for these two time periods.



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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.