

## STATISTICAL BRIEF #41

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### HIV Hospitalizations in 1998 and 2005

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#### Introduction

Increased access to expensive new drug therapies for persons with HIV infection has decreased the morbidity and mortality for HIV.<sup>1</sup> Over the past decade, the proportion of HIV costs attributable to drugs has risen from 10 percent to more than 40 percent among persons with HIV infection, and the cost of drug therapy is now between \$10,000 and \$15,000 per year.<sup>2,3,4</sup> The importance of drug therapy is evidenced by the drop in the number of HIV deaths in the United States after the diffusion of drug therapies that include a protease inhibitor or a non-nucleoside reverse transcriptase inhibitors and at least one nucleoside reverse transcriptase inhibitor (referred to as highly active antiretroviral therapy or HAART).<sup>5</sup> In December 1995, the first protease inhibitor was approved and several other protease inhibitors were approved in early 1996.<sup>6</sup> In June 1996, the first non-nucleoside reverse transcriptase inhibitor was approved. In 1995, there were 51,117 persons in the United States who died from AIDS, and, after the diffusion of protease inhibitors and non-nucleoside reverse transcriptase inhibitors in 1996, the number of persons who died from AIDS fell to 22,245 in 1997.<sup>7</sup> While this was an enormous initial decline in mortality, little is known about the longer term impact of HAART on HIV hospitalizations.

<sup>1</sup> Palella, F. J., Delaney K.M, Moorman A.C., Loveless M. O, Fuhrer J. F., Satten G. A, Aschman D. J., and S. D. Holmberg, and the HIV Outpatient Study Investigators. Declining Morbidity and Mortality Among Patients with Advanced Human Immunodeficiency Virus Infection *The New England Journal of Medicine*, vol. 338, no. 13, March 26, 1998, pp. 853-860.

<sup>2</sup> Hellinger, F. J. "The Lifetime Cost of Treating a Person with HIV" *JAMA*, vol. 270, no. 4, July 28, 1993, pp. 474-478.

<sup>3</sup> Bozzette, S. A., Berry S. H., Duan N., Frankel M. R., Leibowitz A. A., Lefkowitz D., Emmons C., Senterfitt J. W., Berk M. L., Morton S. C., and M. F. Shapiro. "The Care of HIV-Infected Adults in the United States" *NEJM*, vol. 339, no. 26, Dec. 24, 1998, pp. 1897-1904.

<sup>4</sup> Bozzette S., Geoffrey J., McCaffrey D. F. et al. "Expenditures for the Care of HIV-Infected Patients in the Era of Highly Active Antiretroviral Therapy" *The New England Journal of Medicine*, vol. 344, no. 11, March 15, 2001, pp. 817-823.

<sup>5</sup> Aldridge, C., Davis, D., and A. Doyle, National ADAP Monitoring Project: Interim Technical Report, supported by a grant from The Henry J. Kaiser Family Foundation, Menlo Park, California, April 2002.

<sup>6</sup> Moore R.D. and R.E. Chaisson, "Costs to Medicaid of Advancing Immunosuppression in an Urban HIV-Infected Patient Population in Maryland", *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, vol. 14, no. 3, 1997, pp. 223-231.

<sup>7</sup> US Centers for Disease Control and Prevention, HIV/AIDS Surveillance Report: US HIV and AIDS Cases Reported through June 2001, vol. 13 no. 1, 2001.

#### Highlights

- Hospitalizations with a principal HIV diagnosis decreased by 21 percent from 93,870 in 1998 to 74,604 in 2005. Cases with a principal HIV diagnosis accounted for 31 percent of HIV-related hospitalizations in 2005.
- Hospitalizations with principal or secondary HIV diagnosis decreased by 64 percent for infants, but increased by 56 percent for the elderly and 61 percent for near-elderly (55–64).
- The inpatient death rate for hospitalizations with principal or secondary HIV diagnosis declined by 22 percent from 1998 to 2005.
- Hospitalizations with principal or secondary HIV diagnosis covered by Medicare increased by 16 percent, but declined by 18 percent for Medicaid. Private insurance HIV hospitalizations declined by 26 percent, while charity care HIV cases increased by 44 percent.
- Pneumonia, mental disorders and skin infections were the most common principal diagnoses for hospitalizations with a secondary HIV diagnosis.
- In 2005, 15 percent of HIV hospitalizations were diagnosed with candidiasis and 6 percent with pneumocystis carinii pneumonia (PCP).
- Between 1998 and 2005, complications from HIV generally declined. Hospitalizations with cytomegaloviral diseases declined by 56 percent, pulmonary tuberculosis by 47 percent, mycobacterial diseases by 37 percent and toxoplasmosis by 37 percent. However, weight loss increased by 91 percent.
- Between 1998 and 2005, drug abuse among hospitalized HIV patients declined by 19 percent and alcohol abuse declined by 16 percent. However, depression increased by 56 percent and psychosis by 12 percent.

This Statistical Brief examines the long run trend in HIV hospitalizations between 1998 and 2005 after the introduction of HAART, using data from the Healthcare Cost and Utilization Project (HCUP). First, national estimates of HIV discharges and hospital costs are provided for 1998 and 2005. HIV-related hospital stays are analyzed by age, gender and payer. Second, we examined the top ten principal diagnoses for HIV hospital stays between 1998 and 2005. Third, the inpatient death rate of HIV hospitalizations and HIV-associated complications are examined. All differences between estimates in the text are statistically significant at the 0.05 level or better, unless otherwise noted.

## Findings

### *HIV Discharges by age, sex, payer, and HIV cost*

Table 1 estimates nationwide HIV-related discharges in 1998 and 2005. In 2005, there were 240,461 hospital inpatient discharges with either a principal or secondary HIV diagnosis. Compared to 1998, hospitalizations with any HIV diagnosis decreased by 11 percent. More specifically, there were 74,604 inpatient hospital stays with a principal HIV diagnosis in 2005, accounting for 31 percent of HIV-related hospitalization. Hospital stays with a principal HIV diagnosis decreased by 21 percent. However, in Figure 1, we see that hospital stays with a secondary HIV diagnosis declined between 1998 and 2001 by about 15 percent, but then increased thereafter. As a result, between 1998 and 2005, hospital stays with a secondary HIV diagnosis had declined by only 5 percent.

As shown in Table 1, in 1998, 43 percent of HIV hospital stays were among patients aged 35–44 and 28 percent were among younger adults aged 18–34. In 2005, however, 36 percent of all HIV hospitalizations were for patients aged 35–44 and young adults aged 18–34 accounted for 20 percent of all HIV hospital stays. Among the groups with decreased HIV hospitalizations, infant HIV hospital stays decreased the most, by 64 percent from 1998 to 2005. HIV hospital stays among children aged 2–17 dropped 41 percent. However, the number of hospital discharges increased among patients aged 45 and over. The largest increase was 61 percent for the near-elderly (aged 55–64). HIV hospitalizations increased by 56 percent for the elderly and by 43 percent for patients aged 45–54.

More men had HIV hospitalizations compared with women in 1998 and 2005. Men accounted for 68 percent of all HIV hospital stays in 2005. There were 162,517 hospital stays for men and 77,854 hospital stays for women in 2005. HIV discharges declined for both sexes from 1998 to 2005, with a steeper decline among females.

Medicaid and Medicare reimbursed the majority of HIV hospitalizations over the time period. In 2005, 43 percent of HIV hospitalizations were paid by Medicaid and 28 percent by Medicare. Private insurance covered 16 percent of HIV hospital stays and self-pay patients covered 10 percent. HIV hospital stays covered by Medicaid, private insurance, and self-pay declined by 18 percent, 26 percent and 2 percent respectively. However, charity care coverage of HIV hospital stays increased by 44 percent. Moreover, hospitalizations covered by Medicare increased by 16 percent.

Costs in 1998 are inflation-adjusted to 2005 dollars<sup>8</sup>. The average cost per stay increased by 16 percent from \$11,465 in 1998 to \$13,290 in 2005. National HIV hospitalization costs in 2005 totaled \$3.2 billion, an increase of only 4 percent since 1998.

### *Principal diagnosis for HIV hospitalizations*

Table 2 presents the top ten principal diagnoses for HIV hospitalization in 1998 and 2005. These ten principal diagnoses accounted for 61 percent of all HIV hospital stays in 1998 and 54 percent in 2005. Among all HIV hospital stays, HIV as a principal diagnosis accounted for 35 percent in 1998 and 31 percent in 2005. Among hospital stays with HIV as a secondary diagnosis, pneumonia was the most common principal diagnosis, accounting for 7 percent of all HIV hospitalizations in 1998 and 5 percent in 2005. HIV hospital stays with substance-related mental disorders as a principal diagnosis dropped in ranking compared to 1998, but remained in the top 5 principal diagnoses. Skin infections and schizophrenia, however, accounted for more HIV hospital stays as a principal diagnosis in 2005

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<sup>8</sup> Costs are adjusted for economy-wide inflation using the U.S. Bureau of Economic Analysis Gross Domestic Product Price Index.

compared to 1998. Other conditions such as affective disorders, alcohol-related mental disorders, complications of device, and pancreatic disorders were among the top ten principal diagnoses in both years. In addition, there were more principal diagnoses with nonspecific chest pain in 2005 compared to 1998.

#### *Death rate, clinical conditions and mental disorders among HIV inpatient stays*

Table 3 presents outcomes of HIV hospitalizations and examines HIV-associated complications and mental health conditions among HIV inpatients.

The average length of HIV-related hospital stays declined from 7.4 days in 1998 to 6.9 days in 2005. Between 1998 and 2005, the death rate of HIV inpatients declined 22 percent from 4.9 percent to 3.8 percent. In 1998, 13,141 HIV patients died (based on all-listed diagnoses) while 9,109 patients died during HIV-related hospitalizations in 2005. Men had a higher death rate than women in both years, but the death rate among men declined more compared to women.

It is known that HIV-infected people have increased risks of infections and cancers as their immune systems are weakened by HIV. In Table 3, we reported major HIV-associated complications which usually do not occur in people who have a normal immune system. These conditions are among the 1993 AIDS surveillance case definition by the Centers for Disease Control and Prevention (CDC).<sup>9</sup>

Among the complications, candidiasis and pneumocystis carinii pneumonia (PCP) were the more common complications associated with HIV hospital stays. In 2005, 15 percent of HIV hospitalizations were associated with candidiasis and 6 percent with PCP. 1.7 percent of HIV patients were infected with cytomegaloviral diseases and 1.7 percent with mycobacterial diseases, while 1.5 percent had a diagnosis of Kaposi's sarcoma.

Between 1998 and 2005, complications related to HIV infection generally declined. Cytomegaloviral diseases declined by 56 percent, pulmonary tuberculosis by 47 percent, mycobacterial diseases by 37 percent and toxoplasmosis by 37 percent. Besides these HIV-associated complications, we also examined weight loss, which is a major symptom among seriously ill HIV patients. As shown in Table 3, weight loss occurred in less than 1 percent of HIV inpatient stays, but HIV hospital stays with weight loss increased by 91 percent between 1998 and 2005.

In 2005, 26 percent of HIV hospitalizations involved drug abuse as a co-existing condition. Alcohol abuse, psychosis and depression occurred among 13 percent, 13 percent, and 10 percent of HIV hospitalizations, respectively in 2005. Between 1998 and 2005, alcohol abuse among HIV patients declined by 16 percent and drug abuse declined by 19 percent. However, depression increased by 56 percent and psychosis increased by 12 percent.

## **Data Source**

The estimates in this Statistical Brief are based upon data from the HCUP 1998 and 2005 Nationwide Inpatient Sample (NIS).

## **Definitions**

### *Diagnoses, ICD-9-CM, and Clinical Classifications Software (CCS)*

The principal diagnosis is that condition established after study to be chiefly responsible for the patient's admission to the hospital. Secondary diagnoses are concomitant conditions that coexist at the time of admission or that develop during the stay. All-listed diagnoses include the principal diagnosis plus these additional secondary conditions.

ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification, which assigns numeric codes to diagnoses. There are about 12,000 ICD-9-CM diagnosis codes.

CCS categorizes ICD-9-CM diagnoses into 260 clinically meaningful categories.<sup>10</sup> This "clinical grouper" makes it easier to quickly understand patterns of diagnoses and procedures.

<sup>9</sup> <http://www.cdc.gov/MMWR/preview/MMWRhtml/00018871.htm>

<sup>10</sup> HCUP CCS. Healthcare Cost and Utilization Project (HCUP). August 2006. U.S. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp](http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp)

We identified HIV-related hospitalizations with CCS diagnosis category 5 (HIV infection).

We used the following ICD-9-CM diagnosis codes for HIV-associated complications and weight loss:

078.5 Cytomegaloviral disease  
031 Diseases due to other mycobacteria  
031.1 Cutaneous  
031.2 Disseminated  
031.8 Other specified mycobacterial diseases  
031.9 Unspecified diseases due to mycobacteria  
130 Toxoplasmosis  
130.1 Conjunctivitis due to toxoplasmosis  
130.2 Chorioretinitis due to toxoplasmosis  
130.3 Myocarditis due to toxoplasmosis  
130.4 Pneumonitis due to toxoplasmosis  
130.5 Hepatitis due to toxoplasmosis  
130.7 Toxoplasmosis of other specified sites  
130.8 Multisystemic disseminated toxoplasmosis  
130.9 Toxoplasmosis, unspecified  
136.3 Pneumocystosis  
011 Pulmonary tuberculosis (with range 011.0-011.9)  
112 Candidiasis (with range 112.0-112.9)  
176 Kaposi's sarcoma (with range 176.0-176.9)  
V12.61 Pneumonia (recurrent)  
783.2 Abnormal loss of weight and underweight  
783.21 Loss of weight  
783.22 Underweight

We used the following ICD-9-CM diagnosis codes for mental disorders:

– alcohol-related mental disorders:

291.0, 291.1, 291.2, 291.3, 291.5, 291.8, 291.81, 291.89, 291.9, 303.00, 303.01, 303.02, 303.03, 303.90, 303.91, 303.92, 303.93, 305.00, 305.01, 305.02, and 305.03

– drug-related mental disorders:

292.0, 292.82, 292.83, 292.84, 292.89, 292.9, 304.00, 304.01, 304.02, 304.03, 304.10, 304.11, 304.12, 304.13, 304.20, 304.21, 304.22, 304.23, 304.30, 304.31, 304.32, 304.33, 304.40, 304.41, 304.42, 304.43, 304.50, 304.51, 304.52, 304.53, 304.60, 304.61, 304.62, 304.63, 304.70, 304.71, 304.72, 304.73, 304.80, 304.81, 304.82, 304.83, 304.90, 304.91, 304.92, 304.93, 305.20, 305.21, 305.22, 305.23, 305.30, 305.31, 305.32, 305.33, 305.40, 305.41, 305.42, 305.43, 305.50, 305.51, 305.52, 305.53, 305.60, 305.61, 305.62, 305.63, 305.70, 305.71, 305.72, 305.73, 305.80, 305.81, 305.82, 305.83, 305.90, 305.91, 305.92, 305.93, 648.30, 648.31, 648.32, 648.33, and 648.34

– psychosis:

295.00, 295.01, 295.02, 295.03, 295.04, 295.05, 295.10, 295.11, 295.12, 295.13, 295.14, 295.15, 295.20, 295.21, 295.22, 295.23, 295.24, 295.25, 295.30, 295.31, 295.32, 295.33, 295.34, 295.35, 295.40, 295.41, 295.42,

295.43, 295.44, 295.45, 295.50, 295.51, 295.52, 295.53, 295.54, 295.55, 295.60, 295.61, 295.62, 295.63, 295.64, 295.65, 295.70, 295.71, 295.72, 295.73, 295.74, 295.75, 295.80, 295.81, 295.82, 295.83, 295.84, 295.85, 295.90, 295.91, 295.92, 295.93, 295.94, 295.95, 296.00, 296.01, 296.02, 296.03, 296.04, 296.05, 296.06, 296.10, 296.11, 296.12, 296.13, 296.14, 296.15, 296.16, 296.20, 296.21, 296.22, 296.23, 296.24, 296.25, 296.26, 296.30, 296.31, 296.32, 296.33, 296.34, 296.35, 296.36, 296.40, 296.41, 296.42, 296.43, 296.44, 296.45, 296.46, 296.50, 296.51, 296.52, 296.53, 296.54, 296.55, 296.56, 296.60, 296.61, 296.62, 296.63, 296.64, 296.65, 296.66, 296.7, 296.80, 296.81, 296.82, 296.89, 296.90, 296.99, 297.0, 297.1, 297.2, 297.3, 297.8, 297.9, 298.0, 298.1, 298.2, 298.3, 298.4, 298.8, 298.9, 299.10, and 299.11

– depression:

300.4, 301.12, 309.0, 309.1, 311, 290.13, and E950.

### *Types of hospitals included in HCUP*

HCUP is based on data from community hospitals, defined as short-term, non-Federal, general and other hospitals, excluding hospital units of other institutions (e.g., prisons). HCUP data include OB-GYN, ENT, orthopedic, cancer, pediatric, public, and academic medical hospitals. They exclude long-term care, rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals, but these types of discharges are included if they are from community hospitals.

### *Unit of analysis*

The unit of analysis is the hospital discharge (i.e., the hospital stay), not a person or patient. This means that a person who is admitted to the hospital multiple times in one year will be counted each time as a separate "discharge" from the hospital.

### *Costs and charges*

Total hospital charges were converted to costs using HCUP cost-to-charge ratios based on hospital accounting reports from the Centers for Medicare and Medicaid Services (CMS).<sup>11</sup> Costs will tend to reflect the actual costs of production, while charges represent what the hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used because detailed charges are not available across all HCUP states. Hospital charges reflect the amount the hospital charged for the entire hospital stay and does not include professional (physician) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundred.

### *Payer*

Payer is the expected payer for the hospital stay. To make coding uniform across all HCUP data sources, payer combines detailed categories into more general groups:

- Medicare includes fee-for-service and managed care Medicare patients.
- Medicaid includes fee-for-service and managed care Medicaid patients. Patients covered by the State Children's Health Insurance Program (SCHIP) may be included here. Because most state data do not identify SCHIP patients specifically, it is not possible to present this information separately.
- Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
- Other includes Worker's Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government and non-government programs.
- Self-pay indicates the patient was responsible for the hospital bill with no third-party coverage.
- No charge is assumed to be charity care.

When more than one payer is listed for a hospital discharge, the first-listed payer is used.

<sup>11</sup> HCUP Cost-to-Charge Ratio Files (CCR). Healthcare Cost and Utilization Project (HCUP). 2001–2003. U.S. Agency for Healthcare Research and Quality, Rockville, MD. [www.hcup-us.ahrq.gov/db/state/costtocharge.jsp](http://www.hcup-us.ahrq.gov/db/state/costtocharge.jsp).

## About HCUP

HCUP is a family of powerful health care databases, software tools, and products for advancing research. Sponsored by the Agency for Healthcare Research and Quality (AHRQ), HCUP includes the largest all-payer encounter-level collection of longitudinal health care data (inpatient, ambulatory surgery, and emergency department) in the United States, beginning in 1988. HCUP is a Federal-State-Industry Partnership that brings together the data collection efforts of many organizations—such as State data organizations, hospital associations, private data organizations, and the Federal government—to create a national information resource.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

**Arizona** Department of Health Services  
**Arkansas** Department of Health & Human Services  
**California** Office of Statewide Health Planning & Development  
**Colorado** Health & Hospital Association  
**Connecticut** Integrated Health Information (Chime, Inc.)  
**Florida** Agency for Health Care Administration  
**Georgia** GHA: An Association of Hospitals & Health Systems  
**Hawaii** Health Information Corporation  
**Illinois** Health Care Cost Containment Council and Department of Public Health  
**Indiana** Hospital & Health Association  
**Iowa** Hospital Association  
**Kansas** Hospital Association  
**Kentucky** Cabinet for Health and Family Services  
**Maryland** Health Services Cost Review Commission  
**Massachusetts** Division of Health Care Finance and Policy  
**Michigan** Health & Hospital Association  
**Minnesota** Hospital Association  
**Missouri** Hospital Industry Data Institute  
**Nebraska** Hospital Association  
**Nevada** Division of Health Care Financing and Policy, Department of Human Resources  
**New Hampshire** Department of Health & Human Services  
**New Jersey** Department of Health & Senior Services  
**New York** State Department of Health  
**North Carolina** Department of Health and Human Services  
**Ohio** Hospital Association  
**Oklahoma** Health Care Information Center for Health Statistics  
**Oregon** Association of Hospitals and Health Systems  
**Rhode Island** Department of Health  
**South Carolina** State Budget & Control Board  
**South Dakota** Association of Healthcare Organizations  
**Tennessee** Hospital Association  
**Texas** Department of State Health Services  
**Utah** Department of Health  
**Vermont** Association of Hospitals and Health Systems  
**Virginia** Health Information  
**Washington** State Department of Health  
**West Virginia** Health Care Authority  
**Wisconsin** Department of Health & Family Services

## About the NIS

The HCUP Nationwide Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, non-rehabilitation hospitals). The NIS is a sample of hospitals and includes all patients from each hospital, regardless of payer. It is drawn from a sampling frame that contains hospitals comprising about 90 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at both the national

and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use.

## About HCUPnet

HCUPnet is an online query system that offers instant access to the largest set of all-payer health care databases that are publicly available. HCUPnet has an easy step-by-step query system, allowing for tables and graphs to be generated on national and regional statistics, as well as trends for community hospitals in the U.S. HCUPnet generates statistics using data from HCUP's Nationwide Inpatient Sample (NIS), the Kids' Inpatient Database (KID), the State Inpatient Databases (SID) and the State Emergency Department Databases (SEDD).

## For More Information

For more information about HCUP, visit [www.hcup-us.ahrq.gov](http://www.hcup-us.ahrq.gov).

For additional HCUP statistics, visit HCUPnet, our interactive query system at [www.hcup.ahrq.gov](http://www.hcup.ahrq.gov).

For information on other hospitalizations in the U.S., download *HCUP Facts and Figures: Statistics on Hospital-based Care in the United States in 2005*, located at <http://www.hcup-us.ahrq.gov/reports.jsp>.

For a detailed description of HCUP, more information on the design of the NIS, and methods to calculate estimates, please refer to the following publications:

Steiner, C., Elixhauser, A., Schnaier, J. The Healthcare Cost and Utilization Project: An Overview. *Effective Clinical Practice* 5(3):143–51, 2002.

*Design of the HCUP Nationwide Inpatient Sample, 2005*. Online. June 13, 2007. U.S. Agency for Healthcare Research and Quality.

[http://www.hcup-us.ahrq.gov/db/nation/nis/reports/NIS\\_2005\\_Design\\_Report.pdf](http://www.hcup-us.ahrq.gov/db/nation/nis/reports/NIS_2005_Design_Report.pdf)

Houchens, R., Elixhauser, A. *Final Report on Calculating Nationwide Inpatient Sample (NIS) Variances, 2001*. HCUP Methods Series Report #2003-2. Online. June 2005 (revised June 6, 2005). U.S. Agency for Healthcare Research and Quality.

<http://www.hcup-us.ahrq.gov/reports/CalculatingNISVariances200106092005.pdf>

Houchens RL, Elixhauser A. *Using the HCUP Nationwide Inpatient Sample to Estimate Trends. (Updated for 1988-2004)*. HCUP Methods Series Report #2006-05 Online. August 18, 2006. U.S. Agency for Healthcare Research and Quality.

[http://www.hcup-us.ahrq.gov/reports/2006\\_05\\_NISTrendsReport\\_1988-2004.pdf](http://www.hcup-us.ahrq.gov/reports/2006_05_NISTrendsReport_1988-2004.pdf)

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other HCUP data and tools, and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at [hcp@ahrq.gov](mailto:hcp@ahrq.gov) or send a letter to the address below:

Irene Fraser, Ph.D., Director  
Center for Delivery, Organization, and Markets  
Agency for Healthcare Research and Quality  
540 Gaither Road  
Rockville, MD 20850

**Table 1: National Estimates of HIV Discharges in 1998 and 2005**

	<b>1998</b>	<b>2005</b>	<b>Percent Change</b>
Number of Discharges	269,248	240,461	-11
Principal HIV	93,870 (35%)	74,604 (31%)	-21
Secondary HIV	175,378 (65%)	165,857 (69%)	-5
<i>By Age</i>			
<=1	1,083 (0.4%)	393 (0.2%)	-64
2-17	3,852 (1.43%)	2,284 (1.0%)	-41
18-34	76,481 (28.4%)	47,072 (19.6%)	-38
35-44	116,349 (43.2%)	85,545 (35.6%)	-26
45-54	53,384 (19.8%)	76,249 (31.7%)	43
55-64	13,968 (5.2%)	22,473 (9.4%)	61
>=65	4,100 (1.5%)	6,380 (2.7%)	56
<i>By Sex</i>			
Female	90,517 (34%)	77,854 (32%)	-14
Male	178,649 (66%)	162,517 (68%)	-9
<i>By Payer</i>			
Medicare	57,877 (22%)	67,236 (28%)	16
Medicaid	124,197 (46%)	102,389 (43%)	-18
Private Insurance	52,034 (19%)	38,633 (16%)	-26
Self-pay	23,736 (9%)	23,290 (10%)	-2
No Charge	2,066 (1%)	2,967 (1%)	44
Mean Cost Per Stay	\$11,465	\$13,290	16
Total Hospital Costs (millions)	\$3,086	\$3,195	4

Note: Costs are in 2005 dollars. Percentages in parentheses are the within-group distribution.



**Table 2: Principal Diagnosis for HIV Hospitalizations in 1998 and 2005**

<b>Principal Diagnosis 1998</b>	<b>Discharge Number</b>	<b>Principal Diagnosis 2005</b>	<b>Discharge Number</b>
HIV	93,870 (35%)	HIV	74,604 (31%)
Pneumonia	18,420 (7%)	Pneumonia	11,571 (5%)
Substance-related mental disorders	13,123 (5%)	Affective disorders	9,538 (4%)
Affective disorders	10,832 (4%)	Skin and subcutaneous tissue infections	7,780 (3%)
Skin and subcutaneous tissue infections	5,499 (2%)	Substance-related mental disorders	7,347 (3%)
Alcohol-related mental disorders	5,351 (2%)	Alcohol-related mental disorders	4,792 (2%)
Schizophrenia and related disorders	4,345 (2%)	Schizophrenia and related disorders	4,652 (2%)
Pancreatic disorders (not diabetes)	4,098 (2%)	Complication of device, implant, or graft	3,839 (2%)
Complication of device, implant, or graft	3,922 (2%)	Pancreatic disorders (not diabetes)	3,513 (2%)
Septicemia (except in labor)	3,499 (1%)	Nonspecific chest pain	3,318 (1%)

Note: Percentages in parentheses are the within-year distribution of diagnoses. Principal diagnoses are identified using the Clinical Classifications Software (CCS). The CCS categorizes ICD-9-CM diagnoses into 260 clinically meaningful categories.

**Table 3: Outcomes for HIV Inpatient Stays in 1998 and 2005**

	1998	2005	Percent Change
Mean Length of Stay (Days)	7.4	6.9	-6**
<i>Inpatient Death Rate</i>	4.9%	3.8%	-22**
Female Death Rate	3.9%	3.3%	-14**
Male Death Rate	5.4%	4.0%	-26**
<i>Clinical Conditions</i>			
Cytomegaloviral Diseases	9,125 (3.4%)	4,036 (1.7%)	-56**
Mycobacterial Diseases	6,580 (2.4%)	4,175 (1.7%)	-37**
Toxoplasmosis	4,142 (1.5%)	2,602 (1.1%)	-37**
Pneumocystis Carinii Pneumonia	20,037 (7.4%)	14,582 (6.1%)	-27**
Pulmonary Tuberculosis	524 (0.2%)	277 (0.1%)	-47
Candidiasis	42,581 (16%)	34,966 (15%)	-18**
Kaposi's Sarcoma	4,868 (1.8%)	3,577 (1.5%)	-27*
Recurrent Pneumonia	--	166 (0.1%)	--
Weight Loss	1,081 (0.4%)	2,062 (0.9%)	91**
<i>Mental Disorders</i>			
Drug-related Mental Disorders	75,872 (28.2%)	61,694 (25.7%)	-19**
Alcohol-related Mental Disorders	35,849 (13.3%)	29,974 (12.5%)	-16*
Psychosis	27,396 (10.2%)	30,731 (12.8%)	12**
Depression	14,880 (5.5%)	23,163 (9.6%)	56**

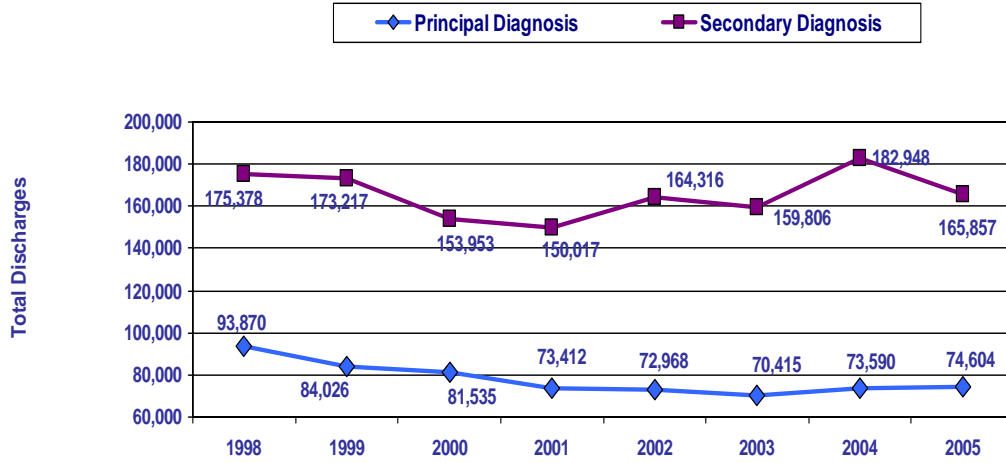
Note: The distribution percentages for specific conditions may add up to more than 100 percent since a patient may have more than one condition. Percent changes are based on unrounded numbers.

\*\*Statistically different from zero at the 95 percent level.

\*Statistically different from zero at the 90 percent level.



Figure 1. HIV Hospitalizations from 1998 to 2005



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1998–2005.