

Statistical Brief #10

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New York State Inpatient Hospital Cost Trends, 2009-2012

Audrey Evans, MA, Tatiana Ledneva, MS, Mary Beth Conroy, MPH

Introduction

As health care costs continue to rise and the population ages, policymakers are increasingly concerned about the growing burden of hospital-based medical care expenses to the government, insurers, patients and employers^[1].

Nationally, inpatient hospitalizations affect a large proportion of Americans directly and represent a significant impact to the U.S. economy^[2]. During 2012, national health care expenditures were \$2.8 trillion or \$8,915 per person and accounted for more than 17.2% of the Gross Domestic Product; with hospital spending representing \$882.3 billion^[3]. Overall hospital inpatient costs were \$377.5 billion, representing 36.5 million stays^[4] at an average cost of \$10,400 and length of stay of 4.5 days^[2].

The purpose of this brief is to provide trends of estimated costs for New York State inpatient discharges from Article 28 hospitals for the time period 2009 through 2012. Both aggregate hospital costs and the average cost per hospital discharge are presented overall and by age group, primary payer, All Payer Refined Diagnosis Related Group (APR-DRG) medical or surgical classification, geographical region and patient discharge status.

When interpreting New York State's data, it is important to keep in mind that variations in cost may be attributed to many factors. Some of these include overall volume, teaching hospital status, facility specific attributes, geographic region and quality of care provided. Additionally, costs derived from billing data are based upon a ratio that is submitted by a facility to the state and may not necessarily reflect a final price of the service delivered. Health care facilities determine what they will charge for items and services provided to patients and these charges are the amount the facility bills for an item or service ('charge master'). Many patients are not directly impacted by variations in billing, as insurance covers much of these costs. However, more patients in the future will be subjected to this variation in price as the movement to high-deductible plans and higher cost sharing is happening. Nonetheless, the cost information reported here is useful for overall comparison and cost of care research.

Highlights

- Hospital costs for NYS inpatient hospital discharges increased from 2009 to 2012, as the number of inpatient hospital discharges decreased.
- Costs and discharges steadily decreased for Medicaid.
- NYC had a smaller percentage of the annual total number of discharges, but a larger percentage of the annual total cost; its mean cost per discharge was higher than the rest of NYS.
- The mean and median cost per discharge were 2.4 times higher for surgical discharges than those for medical discharges; these cost estimates increased at the same average rate per year as those for medical discharges.
- Generally, APR-DRGs with the highest total costs were medical, having greater discharge volume and shorter lengths of stay; APR-DRGs with the highest mean cost per discharge were surgical, with few discharges and long lengths of stay.

Methods

Estimates of inpatient costs were calculated using hospital discharge data from the New York State Planning and Research Cooperative System (SPARCS) and Institutional Cost Report (ICR) data. ICR's include data on cost for each facility as well as ratios of Cost to Charges (RCCs). RCCs are certified, calculated and reported by facilities and are subject to external audit. For example, if hospital charge is \$20,000 and the RCC is 50%, the estimated cost is \$10,000. As with charges, cost data are hospital-specific. Cost data presented in this brief was calculated using facility specific 2010 audited RCCs file.

Summary statistics (e.g., N, mean, percentage) and graphics are used to analyze and present estimated cost findings. Rankings for high cost APR-DRGs (where highest cost is 1) and for lower cost APR-DRGs (where lowest cost is 1) were developed based on both total costs – and mean cost per discharge.

Data Sources

Inpatient hospital data, containing charges from which costs are estimated, are from SPARCS inpatient discharges for years 2009-2012. De-identified SPARCS inpatient discharge data containing charges and costs may be found on the New York State (NYS) open data portal – Health Data NY (<https://health.data.ny.gov/>).

Estimates of cost are derived from the Institutional Cost Report (ICR) and SPARCS data. The ICR is a uniform report completed by New York State facilities to report income, expenses, assets, liabilities, and statistics to the Department of Health (DOH). Under DOH regulations, (Part 86-1.2), Article 28 hospitals are required to file financial and statistical data with DOH annually. The data filed is part of the ICR and is received electronically through a secured network. ICR information is provided by the facilities. Hospital Cost Report data may also be found on Health Data NY.

The facility-specific Ratio of Cost to Charges (RCC) is calculated annually. The RCCs are by service (revenue code) derived from the ICRs. Cost data used for this brief are the facility-specific 2010 audited RCCs.

Findings

Overall hospital costs

Table 1 shows the overall utilization and estimated costs of inpatient hospital discharges for 2009-2012. Total cost for all hospital discharges is increasing over time at \$30.43 billion in 2009, \$31.11 billion in 2010, \$32.81 billion in 2011 and \$34.02 billion in 2012 with an average cost per discharge of \$11,418, \$11,865, \$12,694 and \$13,373, respectively. The median cost per discharge was about half that of the mean cost per discharge, indicating a skew toward higher costs. Cost increased over this time period at an average annual rate of 3.78% while the number of discharges has decreased at an average annual rate of 1.54%.

Hospital costs by age group

Table 1 shows utilization and cost trends by age group for 2009-2012. In 2012, newborns and children (<1, 1-17) accounted for 9.42% of the costs (\$3.21 billion) and 14.76% of the discharges, adults (18-44, 45-64) accounted for 49.51% of the costs (\$16.85 billion) and 51.10% of discharges, and senior adults and the elderly (65-79, 80+) accounted for 41.07% of the costs (\$13.97 billion) and 34.13% of the discharges. In general, the percentage of the annual total cost was on par with the percentage of the annual total number of discharges for all age groups.

In 2012, both the mean and median cost per discharge were wide-ranging among the age groups. The mean cost per discharge was 3.7 times higher than the median cost per discharge for newborns (\$6,981 and

\$1,886, respectively). Newborns had the lowest median cost per discharge, falling well below all the age groups.

Mean length of stay in 2012 tended to increase with age, going from 3.97 days for newborns to 6.56 days for the 80+ year old group.

Results for the other years were consistent with 2012.

The average annual percent change for 2009-2012 by age group is presented in [Figure 1](#). Costs increased over this time period in all age groups and these increases varied among the age groups. Increases in newborn costs were the highest with an annual rate at 5.96% and were two times higher than that for the 80+ year old age group (2.95% annually). The number of discharges decreased over this time period in all age groups and these decreases varied among the age groups. Decreases in discharges were the largest in the 1-17 year old group with an average annual rate at -3.86% and were higher than those for the 45-64 year old group (average annual rate was -1.02%). Within all age groups, the average annual percent change for the mean cost per discharge and the median cost per discharge both increased and at about the same rate; this corresponded to increases in costs.

Hospital Costs by Primary Payer, Region, All Patient Refined Diagnostic Related Groups (APR-DRG) Medical/Surgical Classification

[Table 2](#) shows the utilization and cost of inpatient hospital discharges by primary payer, geographical region based on hospital county and discharge type for 2009-2012.

Hospital Costs by Primary Payer

In 2012, Medicare and Medicaid accounted for 52.89% (40.02% and 12.87%, respectively) of the costs (\$13.62 billion and \$4.38 billion, respectively) and 47.37% (33.61% and 13.76%, respectively) of the discharges while the self-pay and other payer groups each accounted for less than 5% of the costs and for less than 5% of the discharges. Private insurance accounted for 41.54% of costs (\$14.13 billion) and 45.99% of the discharges. Overall, the percentage of the annual total cost was proportional to the percentage of the annual total number of discharges for all payer groups.

In 2012, both the mean and median cost per discharge varied among the payer groups, but only slightly. Additionally, the mean cost per discharge was 2.17 times higher than the median cost per discharge for Medicaid (\$12,508 and \$5,774, respectively). Medicare had the highest mean and median cost per discharge (\$15,924 and \$9,213, respectively).

Mean length of stay in 2012 was longest for both Medicare and Medicaid (6.70 and 6.62 days, respectively) and shortest for private insurance (4.43 days).

Results of the other years were consistent with 2012.

The average annual percent change for 2009-2012 by primary payer appear in [Figure 2](#). The average annual percent change for 2009-2012 with respect to both costs and discharges ranged considerably among the payer groups. On the whole, Medicaid costs steadily decreased over this time period; the average annual rate was -2.49%. Costs consistently increased over this time period for the remaining payer groups (highest in other payer group where the average annual rate was 11.31%; lowest in self-pay payer group where the average annual rate was 0.45, mostly because of the decrease in costs from 2009 to 2010). The number of discharges decreased over this time period for all payer groups (highest in Medicaid where the average annual rate was -5.63%) except the other payer group (average annual rate was 6.62%) and Medicare (average annual rate was 0.32%, mostly because of the increase in the number of discharges from 2009 to 2010).

Hospital Costs by Region

In 2012, New York City (NYC) accounted for 55.38% of costs (\$18.84 billion) and 47.22% of the discharges; although having a smaller percentage of the annual total number of discharges, NYC had a larger percentage of the annual total cost. The mean cost per discharge for NYC (\$15,686) was two times higher than its median cost per discharge (\$7,742) and 40% higher than the mean cost per discharge for the Rest of State (ROS) (\$11,304). The mean cost per discharge for ROS was roughly 1.75 times higher than its median cost per discharge (\$6,420).

Mean length of stay was similar for both regions (5.67 days for NYC and 5.39 days for ROS).

Results of the other years were consistent with 2012.

During the time period studied, costs progressively increased (average annual rate for NYC was 3.22% and for ROS was 4.49%), while the number of discharges continually decreased (average annual rate for NYC was -1.60% and for ROS was -1.49%). The median cost per discharge for ROS increased at an average annual rate (7.46%) 1.5 times higher than that for NYC (4.99%).

Hospital Costs by APR-DRG Medical/Surgical Discharge Classification

In 2012, medical APR-DRGs accounted for 76.78% of the discharges but only for 58.23% of the costs (\$19.81 billion). Both the mean and median cost per discharge for surgical APR-DRGs (\$24,056 and \$13,626, respectively) were 2.4 times higher than those for medical APR-DRGs (\$10,142 and \$5,693, respectively).

Mean length of stay in 2012 was similar for both APR-DRG types (6.01 days for surgical and 5.37 days for medical).

Results of the other 3 years were consistent with 2012.

During this time period costs increased (average annual rate for surgical was 3.49%, average annual rate for medical was 4.01%), while the number of discharges decreased (average annual rate for surgical was -2.10%, average annual rate for medical was -1.37%).

Highest Cost Discharges

Table 3A ranks the 10 highest cost APR-DRGs for each year. Total costs and mean costs per discharge were related to the type of APR-DRG, the number of discharges and length of stay.

Total Costs

For all years, the 10 highest cost APR-DRGs based on total cost represented nearly 22% (\$6.63 billion in 2009 to \$7.67 billion in 2012) of annual costs and about 20% of all discharges. The annual percentage of total cost was on par with the percentage of the annual number of discharges.

There were eight APR-DRGs ranked among the highest based on total cost for all four years (2009-2012):

1. Septicemia and Disseminated Infections (always ranked first)
2. Vaginal Delivery (always among the top 5)
3. Schizophrenia (always in top 5)
4. Rehabilitation (always in top 5)
5. Cesarean Delivery
6. Heart Failure
7. Knee Joint Replacement
8. Tracheostomy with Mechanical Ventilation 96+ hours with Extensive Procedure or Extracorporeal Membrane Oxygenation

'Vaginal Delivery' and 'Cesarean Delivery' represented the majority of these discharges (47.76% in 2009 to 45.46% in 2012) and had the lowest mean (\$4,401 in 2009 and \$5,412 in 2012, \$7,199 in 2009 and \$8,897 in 2012, respectively) and median cost per discharge (\$3,908 in 2009 and \$5,067 in 2012, \$6,181 in 2009 and \$7,851 in 2012, respectively).

Mean Costs per Discharge

Surgical APR-DRGs such as transplants (heart and/or lung, liver and/or intestinal, kidney, bone marrow), 'Extensive Third Degree Burns with Skin Graft' and APR-DRGs involving neonates were the APR-DRGs that ranked among the highest based on mean cost per discharge for all four years.

For all years, the 10 highest cost APR-DRGs based on mean cost per discharge accounted for nearly 4% (\$1.27 billion in 2009 to \$1.16 billion in 2012) of annual costs and <0.5% of all discharges.

'Neonate Birth Weight <1500 Grams with a Major Procedure' (always ranked first or second having a mean cost per discharge at \$234,959 in 2009 and \$327,301 in 2012) had a mean length of stay longer (92 days in 2009 and 104 days in 2012) than any of the highest cost APR-DRGs.

'Tracheostomy with Mechanical Ventilation 96+ hours with Extensive Procedure or Extracorporeal Membrane Oxygenation' ranked as the highest cost APR-DRG based on both total cost (\$603.09 million in 2009 to \$635.87 million in 2012) and mean cost per discharge (\$181,799 in 2009 to \$209,511 in 2012) for all four years. It ranked low (7 to 9) and had the fewest discharges among the highest cost APR-DRGs based on total cost and was mid-ranked (4 to 6) with the majority of discharges comprising the highest cost APR-DRG based on mean cost per discharge.

Lowest Cost Discharges

Table 3B ranks the utilization and cost of inpatient hospital discharges for the 10 lowest cost APR-DRGs for each year.

Total Costs

For all years, the 10 lowest cost APR-DRGs based on total cost represented <0.5% (\$27.52 million in 2009 to \$26.45 million in 2012) of annual costs and <0.5% of all discharges.

Based on total cost, there were six APR-DRGs ranked among the less costly for all four years which included:

1. False Labor (always ranked third)
2. Vaginal Delivery with Complicating Procedures Excluding Sterilization &/or Dilation & Curettage
3. Neonate, Transferred <5 Days Old, Not Born Here (always in top 5)
4. Neonate, Transferred <5 Days Old, Born Here (always in top 5)
5. Neonatal Aftercare
6. Principal Diagnosis Invalid As Discharge Diagnosis (always in top 5)

Cost per Discharge

For all years, the 10 lowest cost APR-DRGs based on mean cost per discharge represented nearly 5% (\$1.38 billion in 2009 to \$1.57 billion in 2012) of annual costs and about 17% of all discharges.

Based on mean cost per discharge, there were eight APR-DRGs ranked among the less costly for all four years which included:

1. False Labor (always ranked third)
2. Preterm Labor
3. Vaginal Delivery
4. Neonate Birth Weight>2499 Grams, Normal Newborn or Neonate with Other Problem (always among the top 5)
5. Neonate, Transferred <5 Days Old, Born Here (always in top 5)

6. Abortion without Dilation & Curettage, Aspiration Curettage or Hysterotomy
7. Chest Pain
8. Drug & Alcohol Abuse Or Dependence, Left Against Medical Advice (always in top 5)

Hospital Costs by Discharge Status

Table 4 shows the utilization and cost of inpatient hospital discharges by discharge status for 2009-2012. In 2012, discharges to home or self-care accounted for 48.38% of costs (\$16.46 billion) and 67.96% of all discharges while discharges to a facility with custodial/supportive care account for <1% of costs (\$89.66 million) and <1% of discharges. Discharges to a skilled nursing facility and to a home with health services or home hospice accounted for 35.6% of costs (\$5.59 billion and \$6.52 billion in 2012, respectively) and 22.37% (9.40% and 12.97%, respectively) of the discharges. Discharges resulting in a status of expired accounted for 5.59% of costs (\$1.90 billion) and 2.14% of the discharges. All in all, the percentage of the annual total cost did not exactly appear to fall in line with the percentage of the annual total number of discharges for a group, especially for discharges to home or self-care (the proportion of total annual discharges was larger than of total annual costs) and for discharges to a skilled nursing facility and to a home with health services or home hospice (the proportion of total annual discharges was smaller than of total annual costs.)

In 2012, both the mean cost per discharge and the median cost per discharge varied significantly among the discharge status groups. Moreover, the mean cost per discharge for discharges resulting in a status of expired was the highest cost at \$34,994 and 2.37 times higher than the median cost per discharge (\$14,745). The mean cost per discharge for those discharged to home or self-care (\$9,553) or those who left against medical advice (\$6,156) was far less than that for any other discharge status group.

Mean length of stay in 2012 varied considerably, ranging from 2.86 days for those who left against medical advice to 11.79 days for those who died.

Results of the other three years were consistent with 2012.

The average annual percent change for 2009-2012 by discharge status is displayed in Figure 3. With the exceptions of discharges to a facility with custodial/supportive care and where the patient left against medical advice, costs steadily increased over this time period for the remaining discharge status types (highest for discharges to other facility with an average annual rate of 11.31%; lowest in discharges resulting in a status of expired with an average annual rate of 0.68, mostly because of the decrease in costs from 2009 to 2010). Costs for discharges to a facility with custodial/supportive care fluctuated over time; the average annual rate was -6.63%, given the decrease in costs from 2009 to 2010. Costs for discharges where the patient left against medical advice showed a decrease over this time period as the average annual rate was -0.77%, given the decrease in cost from 2009 to 2010.

With the exceptions of discharges to other facility and to home with health services or home hospice, the number of discharges decreased over this time period for the remaining discharge statuses (average annual rate was -8.93% for discharges to a facility with custodial/supportive care to -0.73% for discharges to a skilled nursing facility). The number of discharges to another facility mostly increased over time; the average annual average rate was 2.34%. The number of discharges to home with health services or home hospice fluctuated during this time resulting in an average annual rate of 0.55%.

Conclusions

Hospital costs for NYS inpatient hospital discharges increased during the time period 2009 to 2012, as the number of inpatient hospital discharges decreased during this time. Increases in the mean and cost per discharge followed suit. With few exceptions, this trend was evident when looking at hospital costs and utilizations by age, primary payer, geographical region, APR-DRG medical/surgical classification and discharge status.

NYS inpatient hospital discharges decreased at an average annual rate of 1.54% while the total costs increased at an average annual rate of 3.78 over the four year period. The mean cost per discharge increased as well from \$11,418 in 2009 to \$13,373 in 2012 with an average annual rate of 5.41%.

Calendar Year 2012 findings by age, primary payer, APR-DRG type, geographical region, and discharge status appeared to be consistent with the prior years.

Children accounted for a fairly small percentage of the costs and discharges, while adults accounted for about half of the costs and half of the discharges. Children 1-17 years old had the highest annual rate of decrease for the number of discharges at -3.86% but yet the highest annual rate of increase for mean cost per discharge at 7.65%. Newborns had the highest increases in costs at an average annual rate of 5.96%, but the lowest median cost per discharge, falling well below all the age groups.

Every year, Medicare accounted for roughly 40% of total annual costs, approximately 33% of total annual discharges and had the highest mean cost per discharge. Costs and discharges steadily decreased for Medicaid (average annual rate 2.49% and 5.63, respectively). Self-pay had one of the highest average annual rate of decrease for the number of discharges (-4.36) and the lowest annual rate of increase for total costs (0.45).

Although having a smaller percentage of the annual total number of discharges, NYC had a larger percentage of the annual total cost and a higher mean cost per discharge than the Rest of State. In this timeframe, costs progressively increased as discharges continually decreased for both regions.

Surgical APR-DRGs represented a smaller proportion of total annual discharges than of total annual costs. While both the mean and median cost per discharge were 2.4 times higher for surgical APR-DRG than for medical APR-DRGs, these cost estimates increased at the same average rate per year as those for medical APR-DRGs. The annual average rate indicates that costs increased as the number of discharges decreased over this time period for both APR-DRG types.

In general, APR-DRGs having the highest total costs were medical, having greater discharge volume and shorter lengths of stay while APR-DRGs having the higher cost mean cost per discharge were surgical, with fewer discharges and longer lengths of stay. 'Septicemia & Disseminated Infections' always ranked first as highest cost APR-DRG based on total costs. 'Vaginal Delivery' and 'Cesarean Delivery' represented the majority of the highest cost APR-DRGs. 'Heart and/or Lung Transplant' and 'Neonate Birth Weight <1500 Grams with Major Procedure' always ranked first or second as the highest cost ADR-DRGs based on mean cost per discharge. 'Neonate Birth Weight <1500 Grams with Major Procedure' also had a mean length of stay longer than any of the highest cost APR-DRGs.

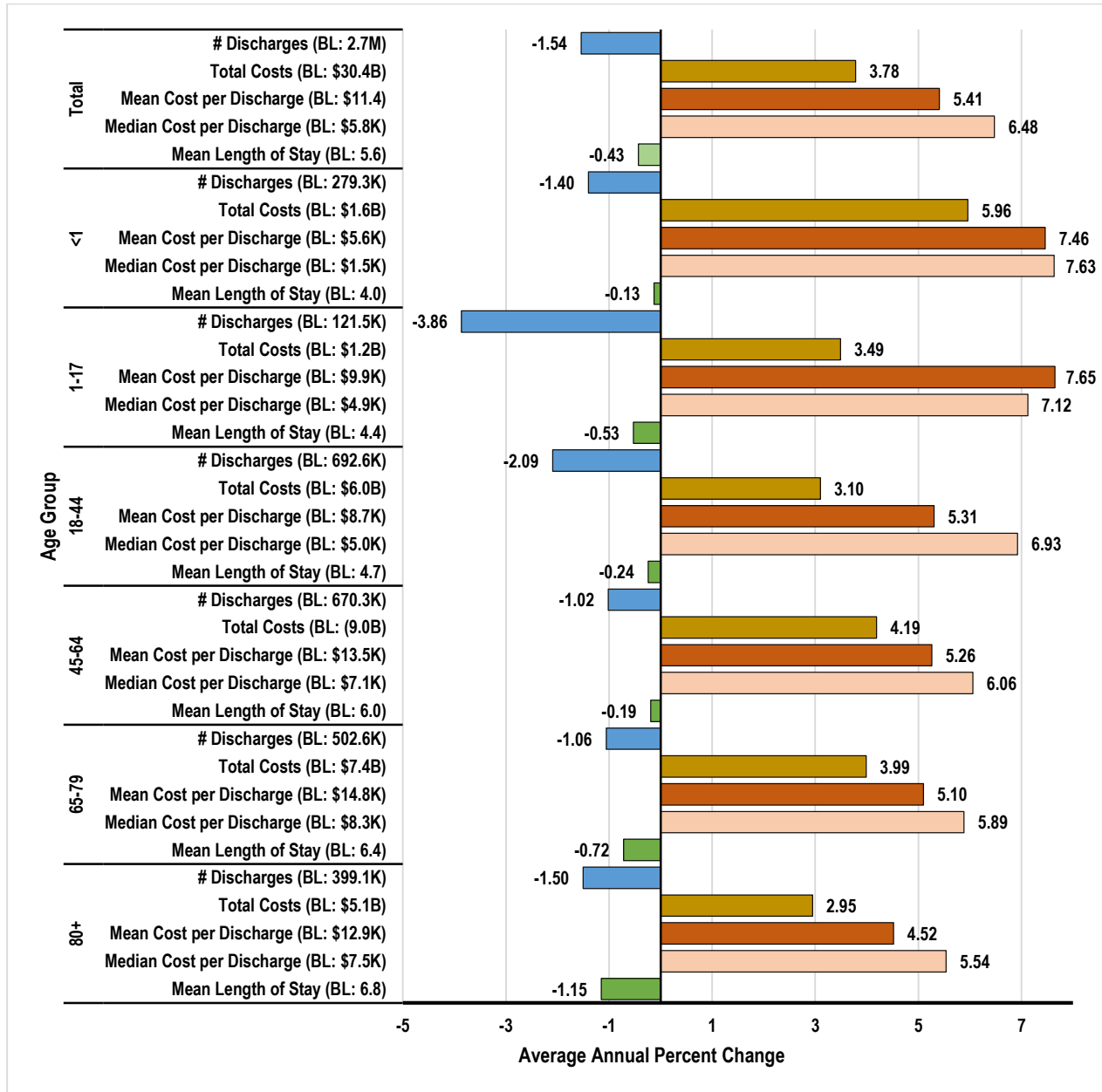
Discharges to a facility with custodial/supportive care had a large annual rate decrease for both total costs (-6.63%) and the number of discharges (-8.93%). The mean cost per discharge vastly varied among discharge status groups. The mean cost per discharge for discharges resulting in a status of expired was always by far, the highest cost while that for discharges where the patient left against medical advice was always considerably less.

Tables and Figures

Table 1: Utilization and Cost of New York State Inpatient Hospital Discharges by Age Group, 2009-2012

Age Group		2009		2010		2011		2012	
			Percent of Annual Total		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total
Total	Discharges (N)	2,665,414	100.0	2,622,133	100.0	2,584,770	100.0	2,543,986	100.0
	Total Costs	\$30,434,699,714	100.0	\$31,112,212,474	100.0	\$32,810,001,277	100.0	\$34,021,379,111	100.0
	Mean Cost/Discharge	\$11,418		\$11,865		\$12,694		\$13,373	
	Median Cost/Discharge	\$5,821		\$6,175		\$6,625		\$7,028	
	Mean Length of Stay	5.59		5.58		5.58		5.52	
<1	Discharges (N)	279,268	10.48	272,963	10.41	268,160	10.37	267,711	10.52
	Total Costs	\$1,570,954,681	5.16	\$1,661,154,953	5.34	\$1,801,454,226	5.49	\$1,868,853,317	5.49
	Mean Cost/Discharge	\$5,625		\$6,086		\$6,718		\$6,981	
	Median Cost/Discharge	\$1,513		\$1,675		\$1,779		\$1,886	
	Mean Length of Stay	3.98		3.97		4.02		3.97	
1-17	Discharges (N)	121,521	4.56	114,390	4.36	111,748	4.32	107,973	4.24
	Total Costs	\$1,206,567,579	3.96	\$1,214,383,556	3.90	\$1,244,966,432	3.79	\$1,337,295,571	3.93
	Mean Cost/Discharge	\$9,929		\$10,616		\$11,141		\$12,385	
	Median Cost/Discharge	\$4,909		\$5,331		\$5,647		\$6,034	
	Mean Length of Stay	4.35		4.36		4.27		4.28	
18-44	Discharges (N)	692,636	25.99	674,204	25.71	659,175	25.50	650,021	25.55
	Total Costs	\$6,036,452,942	19.83	\$6,038,555,871	19.41	\$6,309,381,009	19.23	\$6,615,344,831	19.44
	Mean Cost/Discharge	\$8,715		\$8,957		\$9,572		\$10,177	
	Median Cost/Discharge	\$4,972		\$5,318		\$5,741		\$6,078	
	Mean Length of Stay	4.71		4.74		4.71		4.68	
45-64	Discharges (N)	670,300	25.15	667,784	25.47	663,652	25.68	650,076	25.55
	Total Costs	\$9,044,738,691	29.72	\$9,342,904,065	30.03	\$9,941,983,809	30.30	\$10,230,209,537	30.07
	Mean Cost/Discharge	\$13,494		\$13,991		\$14,981		\$15,737	
	Median Cost/Discharge	\$7,132		\$7,521		\$8,042		\$8,508	
	Mean Length of Stay	6.04		6.04		6.08		6.01	
65-79	Discharges (N)	502,639	18.86	497,249	18.96	487,792	18.87	486,872	19.14
	Total Costs	\$7,444,654,038	24.46	\$7,638,742,723	24.55	\$8,019,328,741	24.44	\$8,371,057,110	24.61
	Mean Cost/Discharge	\$14,811		\$15,362		\$16,440		\$17,194	
	Median Cost/Discharge	\$8,348		\$8,770		\$9,361		\$9,910	
	Mean Length of Stay	6.44		6.36		6.37		6.30	
80+	Discharges (N)	399,050	14.97	395,543	15.08	394,243	15.25	381,333	14.99
	Total Costs	\$5,131,331,782	16.86	\$5,216,471,306	16.77	\$5,492,887,059	16.74	\$5,598,618,745	16.46
	Mean Cost/Discharge	\$12,859		\$13,188		\$13,933		\$14,682	
	Median Cost/Discharge	\$7,481		\$7,808		\$8,288		\$8,794	
	Mean Length of Stay	6.79		6.69		6.63		6.56	

Figure 1: Average Annual Percent Change in Utilization and Cost of New York State Inpatient Hospital Discharges by Age Group, 2009-2012



Average Annual Percent Change = $[(2012 \text{ value}/2009 \text{ value})^{1/3} - 1] \times 100$

BL=Baseline, 2009 Values

Table 2: Utilization and Cost of New York State Inpatient Hospital Discharges by Primary Payer, Region and APR-DRG Type, 2009-2012

		2009		2010		2011		2012	
		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total	
Payer[1]									
Medicare	Discharges (N)	846,828	31.77	866,859	33.06	866,437	33.52	855,014	33.61
	Total Costs	\$11,680,606,665	38.38	\$12,348,651,039	39.69	\$13,155,663,618	40.10	\$13,615,346,192	40.02
	Mean Cost/Discharge	\$13,793		\$14,245		\$15,184		\$15,924	
	Median Cost/Discharge	\$7,779		\$8,170		\$8,715		\$9,213	
	Mean Length of Stay	6.88		6.79		6.75		6.70	
Medicaid	Discharges (N)	416,607	15.63	390,237	14.88	377,918	14.62	350,175	13.76
	Total Costs	\$4,723,475,504	15.52	\$4,541,211,819	14.60	\$4,675,981,384	14.25	\$4,379,883,059	12.87
	Mean Cost/Discharge	\$11,338		\$11,637		\$12,373		\$12,508	
	Median Cost/Discharge	\$4,886		\$5,123		\$5,458		\$5,774	
	Mean Length of Stay	6.70		6.85		6.95		6.62	
Private	Discharges (N)	1,224,152	45.93	1,196,253	45.62	1,175,362	45.47	1,169,913	45.99
	Total Costs	\$12,335,902,459	40.53	\$12,520,816,678	40.24	\$13,232,619,775	40.33	\$14,133,453,229	41.54
	Mean Cost/Discharge	\$10,077		\$10,467		\$11,258		\$12,081	
	Median Cost/Discharge	\$5,136		\$5,442		\$5,850		\$6,178	
	Mean Length of Stay	4.39		4.36		4.36		4.43	
Self-Pay	Discharges (N)	138,376	5.19	126,243	4.81	123,200	4.77	121,066	4.76
	Total Costs	\$1,216,448,420	4.00	\$1,156,087,862	3.72	\$1,171,679,788	3.57	\$1,233,081,687	3.62
	Mean Cost/Discharge	\$8,791		\$9,158		\$9,510		\$10,185	
	Median Cost/Discharge	\$4,942		\$5,163		\$5,612		\$6,055	
	Mean Length of Stay	5.16		5.01		4.90		4.79	
Other	Discharges (N)	39,451	1.48	42,541	1.62	41,853	1.62	47,818	1.88
	Total Costs	\$478,266,665	1.57	\$545,445,076	1.75	\$574,056,712	1.75	\$659,614,944	1.94
	Mean Cost/Discharge	\$12,123		\$12,822		\$13,716		\$13,794	
	Median Cost/Discharge	\$6,517		\$7,168		\$7,789		\$7,714	
	Mean Length of Stay	4.97		5.04		4.97		4.92	
Region[2]									
NYC	Discharges (N)	1,260,821	47.30	1,236,301	47.15	1,205,063	46.62	1,201,169	47.22
	Total Costs	\$17,130,732,353	56.29	\$17,382,007,355	55.87	\$18,075,162,809	55.09	\$18,841,904,080	55.38
	Mean Cost/Discharge	\$13,587		\$14,060		\$14,999		\$15,686	
	Median Cost/Discharge	\$6,690		\$6,965		\$7,403		\$7,742	
	Mean Length of Stay	5.79		5.76		5.76		5.67	
Rest of State	Discharges (N)	1,404,593	52.70	1,385,832	52.85	1,379,707	53.38	1,342,817	52.78
	Total Costs	\$13,303,967,361	43.71	\$13,730,205,119	44.13	\$14,734,838,468	44.91	\$15,179,475,031	44.62
	Mean Cost/Discharge	\$9,472		\$9,908		\$10,680		\$11,304	
	Median Cost/Discharge	\$5,174		\$5,551		\$6,003		\$6,420	
	Mean Length of Stay	5.41		5.41		5.42		5.39	
APR-DRG Type[3]									
Surgical	Discharges (N)	629,415	23.61	619,548	23.63	602,975	23.33	590,675	23.22
	Total Costs	\$12,818,235,226	42.12	\$13,153,999,473	42.28	\$13,815,122,092	42.11	\$14,209,049,993	41.77
	Mean Cost/Discharge	\$20,365		\$21,232		\$22,912		\$24,056	
	Median Cost/Discharge	\$11,277		\$11,982		\$12,769		\$13,626	
	Mean Length of Stay	6.07		6.01		6.00		6.01	

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		2009		2010		2011		2012	
		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total	
Medical	Discharges (N)	2,035,828	76.38	2,002,344	76.36	1,981,719	76.67	1,953,224	76.78
	Total Costs	\$17,607,471,206	57.85	\$17,947,260,201	57.69	\$18,992,965,002	57.89	\$19,810,418,010	58.23
	Mean Cost/Discharge	\$8,649		\$8,963		\$9,584		\$10,142	
	Median Cost/Discharge	\$4,709		\$4,978		\$5,372		\$5,693	
	Mean Length of Stay	5.44		5.44		5.45		5.37	

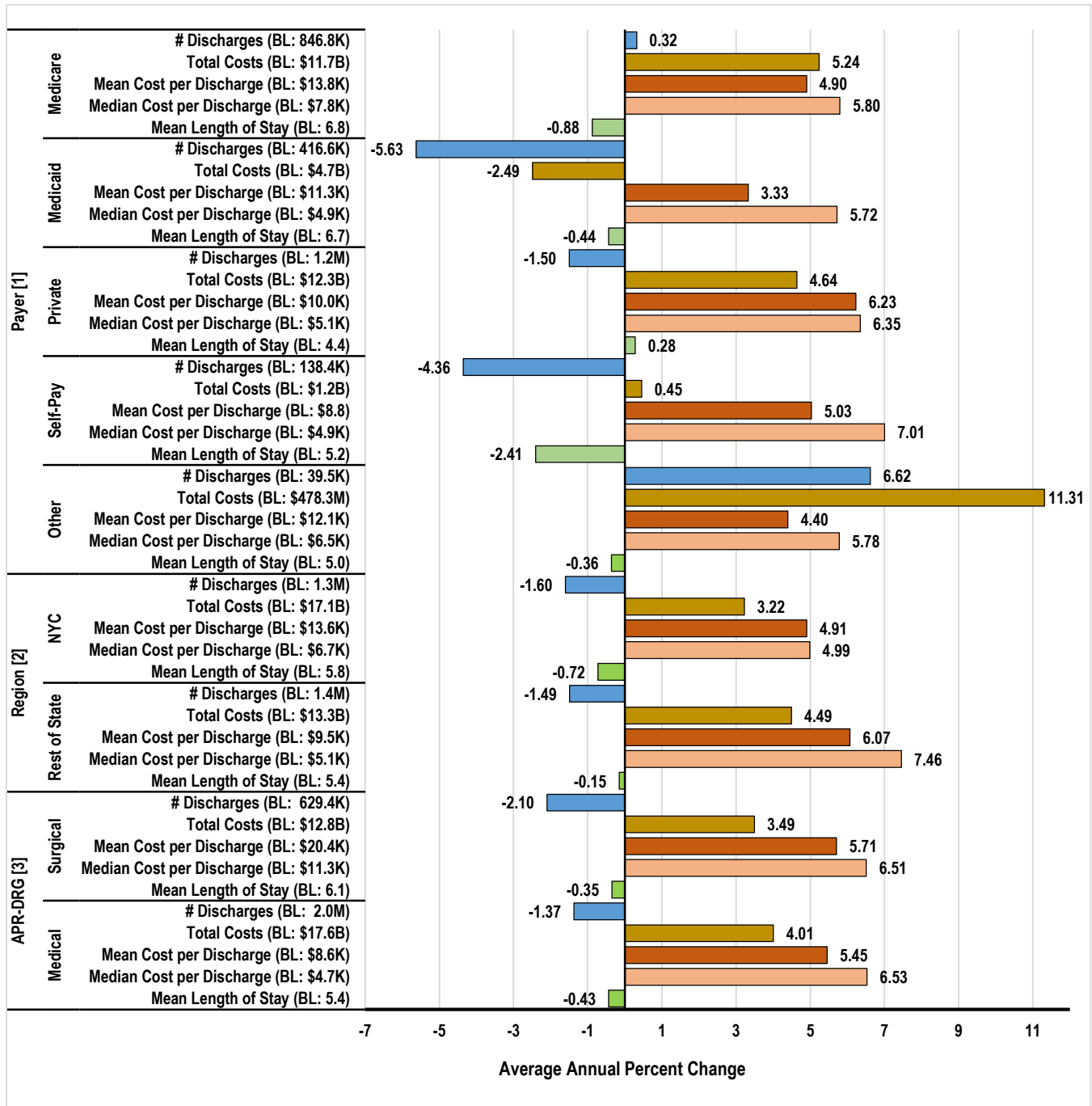
Note: Annual totals are given in Table 1.

[1] Other includes: Worker's Compensation, other federal programs, CHAMPUS, other non-federal programs, point of service, automobile medical, disability, federal employees program, liability medical & TITLE V.

[2] Region is based on hospital county. NYC includes the following counties: Bronx, Kings, Manhattan, Queens, Richmond.

[3] APR-DRG type of 'OTHER', representing <0.01% of discharges and <0.04% of costs, is not displayed.

Figure 2: Average Annual Percent Change in Utilization and Cost of New York State Inpatient Hospital Discharges by Payer, Region and APR-DRG Type, 2009-2012



Average Annual Percent Change = $[(2012 \text{ value}/2009 \text{ value})^{1/3} - 1] \times 100$

BL=Baseline, 2009 Values

[1] Other includes: Worker's Compensation, other federal programs, CHAMPUS, other non-federal programs, point of service, automobile medical, disability, federal employees program, liability medical, and Title V.

[2] Region is based on hospital county. NYC includes the following counties: Bronx, Kings, New York, Queens, Richmond.

[3] APR-DRG type of 'OTHER', representing <0.01% of discharges and <0.04% of costs, is not displayed.

Table 3A: Utilization and Cost of New York State Inpatient Hospital Discharges for the Ten Highest Cost APR-DRGs, 2009-2012

Rank based on:		APR-DRG No. Description	Dis- Charges (N)	Percent of Annual Total	Percent of Annual Total	Cost per Discharge		Length of Stay		
Total Costs	Cost/ Dis- Charge					Mean	Median	Mean	Median	
2009										
		Total for Discharge Year	2,665,414		\$30,434,699,714		\$11,418	\$5,821	5.59	3.00
		Septicemia & Disseminated Infections	47,900	1.80	\$922,464,683	3.03	\$19,258	\$11,277	9.79	7.00
1		720 Schizophrenia	33,728	1.27	\$715,070,938	2.35	\$21,201	\$12,291	22.13	14.00
2		750 Rehabilitation	40,020	1.50	\$707,565,648	2.32	\$17,680	\$13,824	13.87	11.00
3		860 Vaginal Delivery	154,021	5.78	\$677,879,560	2.23	\$4,401	\$3,908	2.41	2.00
4		560 Heart Failure	61,095	2.29	\$661,907,791	2.17	\$10,834	\$6,648	5.90	4.00
5		194 Percutaneous Cardiovascular Procedures W/O Ami	40,115	1.51	\$638,797,797	2.10	\$15,924	\$12,722	2.12	1.00
6		175 Tracheostomy W MV 96+ Hours								
7	4	004 W Extensive Procedure Or Ecmo	3,379	0.13	\$614,297,396	2.02	\$181,799	\$137,104	53.58	43.00
8		540 Cesarean Delivery	83,775	3.14	\$603,091,266	1.98	\$7,199	\$6,181	3.97	4.00
9		005 Tracheostomy W MV 96+ Hours W/O Extensive Procedure	4,408	0.17	\$551,653,774	1.81	\$125,148	\$94,201	44.69	36.00
10		302 Knee Joint Replacement	29,444	1.10	\$537,823,178	1.77	\$18,266	\$14,806	3.96	3.00
	1	002 Heart &/Or Lung Transplant	206	0.01	\$53,651,269	0.18	\$260,443	\$169,568	46.68	26.00
	2	588 Neonate Bwt <1500G W Major Procedure	291	0.01	\$68,372,996	0.22	\$234,959	\$184,975	92.12	90.00
	3	001 Liver Transplant &/Or Intestinal Transplant	431	0.02	\$78,428,174	0.26	\$181,968	\$135,791	23.95	13.00
	5	841 Extensive 3Rd Degree Burns W Skin Graft	59	0.00	\$9,493,644	0.03	\$160,909	\$88,896	49.24	30.00
	6	583 Neonate W Ecmo	27	0.00	\$3,733,162	0.01	\$138,265	\$94,577	27.67	14.00
	7	609 Neonate Bwt 1500-2499G W Major Procedure	226	0.01	\$30,895,495	0.10	\$136,706	\$85,972	50.45	36.00
	8	593 Neonate Birthwt 750-999G W/O Major Procedure	683	0.03	\$91,855,127	0.30	\$134,488	\$115,725	64.17	68.00
	9	003 Bone Marrow Transplant	1,272	0.05	\$167,383,356	0.55	\$131,591	\$92,327	29.08	23.00
	10	440 Kidney Transplant	1,167	0.04	\$150,805,608	0.50	\$129,225	\$82,737	6.96	5.00
		Total for Ranking based on Total Cost [1]	497,885	18.68	\$6,630,552,029	21.79				
		Total for Ranking based on Mean Cost per Discharge [2]	7,741	0.29	\$1,268,916,227	4.17				
2010										
		Total for Discharge Year	2,622,133		\$31,112,212,474		\$11,865	\$6,175	5.58	3.00
		Septicemia & Disseminated Infections	53,025	2.02	\$1,030,398,349	3.31	\$19,432	\$11,430	9.42	7.00
1		720 Vaginal Delivery	152,443	5.81	\$724,984,580	2.33	\$4,756	\$4,369	2.41	2.00
2		560 Schizophrenia	32,885	1.25	\$715,040,069	2.30	\$21,744	\$12,535	22.21	14.00
3		750 Rehabilitation	38,170	1.46	\$714,533,283	2.30	\$18,720	\$14,715	3.62	11.00
4		860 Heart Failure	57,440	2.19	\$647,353,543	2.08	\$11,270	\$6,998	5.88	4.00
5		194 Cesarean Delivery	81,812	3.12	\$630,747,991	2.03	\$7,710	\$6,781	3.95	3.00
6		540 Percutaneous Cardiovascular Procedures W/O Ami	37,696	1.44	\$627,453,278	2.02	\$16,645	\$13,316	2.19	1.00
7		175 Knee Joint Replacement	32,212	1.23	\$610,073,088	1.96	\$18,939	\$15,499	3.88	3.00
8		302 Tracheostomy W MV 96+ Hours								
9	6	004 W Extensive Procedure Or Ecmo	3,202	0.12	\$603,890,432	1.94	\$188,598	\$144,938	56.07	42.00
10		221 Major Small & Large Bowel Procedures	21,634	0.83	\$547,781,582	1.76	\$25,320	\$17,255	10.28	7.00
	1	002 Heart &/Or Lung Transplant	204	0.01	\$59,343,004	0.19	\$290,897	\$200,469	43.19	28.50

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Rank based on:		APR-DRG No. Description	Dis- Charges (N)	Percent of Annual Total	Percent of Annual Total	Cost per Discharge		Length of Stay		
Total Costs	Cost/ Dis- Charge					Mean	Median	Mean	Median	
2	588	Neonate Bwt <1500G W Major Procedure	265	0.01	\$66,951,919	0.22	\$252,649	\$213,939	95.72	95.00
3	583	Neonate W Ecmo	44	0.00	\$9,537,107	0.03	\$216,752	\$157,218	34.70	19.50
4	001	Liver Transplant &/Or Intestinal Transplant	339	0.01	\$70,822,486	0.23	\$208,916	\$164,063	27.91	17.00
5	609	Neonate Bwt 1500-2499G W Major Procedure	213	0.01	\$42,005,888	0.14	\$197,211	\$103,404	61.80	42.00
7	841	Extensive 3Rd Degree Burns W Skin Graft	34	0.00	\$5,215,119	0.02	\$153,386	\$100,409	43.00	32.50
8	630	Neonate Birthwt >2499G W Major Cardiovascular Procedure	226	0.01	\$33,434,711	0.11	\$147,941	\$85,286	30.14	19.00
9	593	Neonate Birthwt 750-999G W/O Major Procedure	622	0.02	\$86,664,186	0.28	\$139,331	\$121,854	63.41	68.00
10	003	Bone Marrow Transplant	1,327	0.05	\$181,648,429	0.58	\$136,887	\$98,054	29.23	24.00
Total for Ranking based on Total Costs [1]			510,519	19.47	\$6,852,256,196	22.02				
Total for Ranking based on Mean Cost per Discharge [2]			6,476	0.25	\$1,159,513,281	3.73				
2011										
Total for Discharge Year			2,584,770		\$32,810,001,277		\$12,694	\$6,625	5.58	3.00
1	720	Septicemia & Disseminated Infections	60,814	2.35	\$1,227,905,420	3.74	\$20,191	\$11,878	9.13	7.00
2	560	Vaginal Delivery	151,570	5.86	\$777,892,721	2.37	\$5,132	\$4,794	2.43	2.00
3	750	Schizophrenia	34,049	1.32	\$758,830,957	2.31	\$22,286	\$13,035	21.64	14.00
4	860	Rehabilitation	37,069	1.43	\$741,024,014	2.26	\$19,990	\$15,520	13.57	11.00
5	302	Knee Joint Replacement	32,670	1.26	\$689,714,338	2.10	\$21,112	\$16,215	3.77	3.00
6	540	Cesarean Delivery	79,678	3.08	\$661,358,086	2.02	\$8,300	\$7,285	3.91	3.00
7	194	Heart Failure	55,291	2.14	\$658,681,408	2.01	\$11,913	\$7,440	5.91	4.00
8	301	Hip Joint Replacement	27,168	1.05	\$627,256,558	1.91	\$23,088	\$18,085	4.60	3.00
9	5	Tracheostomy W MV 96+ Hours W Extensive Procedure Or Ecmo	3,040	0.12	\$592,968,082	1.81	\$195,055	\$146,310	52.21	41.00
10	175	Percutaneous Cardiovascular Procedures W/O Ami	31,327	1.21	\$568,156,491	1.73	\$18,136	\$13,650	2.36	1.00
1	588	Neonate Bwt <1500G W Major Procedure	289	0.01	\$106,324,742	0.32	\$367,906	\$292,352	114.12	106.00
2	583	Neonate W Ecmo	52	0.00	\$14,672,285	0.04	\$282,159	\$175,945	42.60	27.00
3	002	Heart &/Or Lung Transplant	206	0.01	\$57,551,724	0.18	\$279,377	\$177,591	38.07	23.00
4	001	Liver Transplant &/Or Intestinal Transplant	379	0.01	\$81,664,983	0.25	\$215,475	\$145,595	26.16	13.00
6	591	Neonate Birthwt 500-749G W/O Major Procedure	350	0.01	\$65,206,032	0.20	\$186,303	\$156,369	73.79	84.00
7	609	Neonate Bwt 1500-2499G W Major Procedure	174	0.01	\$28,915,485	0.09	\$166,181	\$105,627	54.24	41.00
8	593	Neonate Birthwt 750-999G W/O Major Procedure	673	0.03	\$107,986,488	0.33	\$160,455	\$134,557	67.80	71.00
9	841	Extensive 3Rd Degree Burns W Skin Graft	39	0.00	\$6,112,029	0.02	\$156,719	\$96,831	40.95	28.00
10	630	Neonate Birthwt >2499G W Major Cardiovascular Procedure	223	0.01	\$34,046,689	0.10	\$152,676	\$101,901	31.04	20.00
Total for Ranks based on Total Costs [1]			512,676	19.83	\$7,303,788,076	22.26				
Total for Ranking based on Mean Cost per Discharge [2]			5,425	0.21	\$1,095,448,537	3.34				
2012										
Total for Discharge Year			2,543,986		\$34,021,379,111		\$13,373	\$7,028	5.52	3.00

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Rank based on:		APR-DRG		Dis-Charges (N)	Percent of Annual Total	Total Cost	Percent of Annual Total	Cost per Discharge		Length of Stay	
Total Costs	Cost/Dis-Charge	No.	Description					Mean	Median	Mean	Median
1		720	Septicemia & Disseminated Infections	66,772	2.62	\$1,394,555,156	4.10	\$20,885	\$12,350	8.82	6.00
2		750	Schizophrenia	34,776	1.37	\$822,291,573	2.42	\$23,645	\$13,764	21.70	14.00
3		560	Vaginal Delivery	151,633	5.96	\$820,687,809	2.41	\$5,412	\$5,067	2.42	2.00
4		860	Rehabilitation	35,865	1.41	\$775,649,584	2.28	\$21,627	\$16,785	13.50	11.00
5		540	Cesarean Delivery	79,695	3.13	\$709,026,545	2.08	\$8,897	\$7,851	3.88	3.00
6		194	Heart Failure	53,961	2.12	\$678,945,391	2.00	\$12,582	\$7,802	5.81	4.00
7		302	Knee Joint Replacement	34,228	1.35	\$657,243,015	1.93	\$19,202	\$16,407	3.68	3.00
8	5	004	Tracheostomy W MV 96+ Hours W Extensive Procedure Or Ecmo	3,035	0.12	\$635,865,274	1.87	\$209,511	\$158,646	51.28	41.00
9		301	Hip Joint Replacement	28,179	1.11	\$604,036,454	1.78	\$21,436	\$18,478	4.47	3.00
10		221	Major Small & Large Bowel Procedures	20,695	0.81	\$567,827,565	1.67	\$27,438	\$18,816	9.70	7.00
	1	002	Heart &/Or Lung Transplant	238	0.01	\$78,926,115	0.23	\$331,622	\$192,578	43.07	22.00
	2	588	Neonate Bwt <1500G W Major Procedure	320	0.01	\$104,736,424	0.31	\$327,301	\$247,724	103.9	104.00
	3	583	Neonate W Ecmo	34	0.00	\$10,389,273	0.03	\$305,567	\$205,369	35.85	25.00
	4	001	Liver Transplant &/Or Intestinal Transplant	347	0.01	\$75,567,920	0.22	\$217,775	\$151,696	23.54	14.00
	6	841	Extensive 3Rd Degree Burns W Skin Graft	45	0.00	\$9,258,366	0.03	\$205,741	\$150,448	46.60	33.00
	7	591	Neonate Birthwt 500-749G W/O Major Procedure	388	0.02	\$71,195,972	0.21	\$183,495	\$149,608	69.48	81.50
	8	630	Neonate Birthwt >2499G W Major Cardiovascular Procedure	229	0.01	\$40,524,369	0.12	\$176,962	\$107,260	30.21	19.00
	9	609	Neonate Bwt 1500-2499G W Major Procedure	201	0.01	\$35,548,021	0.10	\$176,856	\$108,467	48.65	34.00
	10	593	Neonate Birthwt 750-999G W/O Major Procedure	592	0.02	\$98,683,660	0.29	\$166,695	\$140,896	68.62	70.00
Total for Ranking based on Total Costs [1]				508,839	20.00	\$7,666,128,365	22.53				
Total for Ranking based on Mean Cost per Discharge [2]				5,429	0.21	\$1,160,695,395	3.41				

[1] Total for Ranking based on Total Cost is calculated only for ranked (1 – 10) APR-DRGs.

[2] Total for Ranking based on Mean Cost per Discharge is calculated only for ranked (1 – 10) APR-DRGs.

Table 3B: Utilization and Cost of New York State Inpatient Hospital Discharges for the Ten Lowest Cost APR-DRGs, 2009-2012

Rank based on:		APR-DRG No. Description	Dis- Charges (N)	Percent of Annual Total	Total Cost	Percent of Annual Total	Cost per Discharge		Length of Stay	
Total Costs	Cost/ Dis- Charge						Mean	Median	Mean	Median
2009										
		Total for Discharge Year	2,665,414		\$30,434,699,714		\$11,418	\$5,821	5.59	3.00
1	9	580 Neonate, Transferred <5 Days Old, Not Born Here	79	0.00	\$364,133	0.00	\$4,609	\$3,778	1.66	1.00
2		955 Principal Diagnosis Invalid As Discharge Diagnosis	49	0.00	\$496,798	0.00	\$10,139	\$1,456	5.53	2.00
3	3	565 False Labor	402	0.02	\$873,539	0.00	\$2,173	\$1,523	1.51	1.00
4	2	581 Neonate, Transferred < 5 Days Old, Born Here	1,646	0.06	\$2,849,540	0.01	\$1,731	1,039	1.32	1.00
5		863 Neonatal Aftercare	159	0.01	\$3,039,354	0.01	\$19,115	\$8,915	16.06	12.00
6		843 Extensive 3Rd Degree Or Full Thickness Burns W/O Skin Graft	258	0.01	\$3,664,136	0.01	\$14,202	\$9,297	6.40	5.00
7		583 Neonate W Ecmo	27	0.00	\$3,733,162	0.01	\$138,265	\$94,577	27.67	14.00
8		542 Vaginal Delivery W Complicating Procedures Exc Sterilization &/Or D&C	655	0.02	\$3,952,862	0.01	\$6,035	\$4,379	2.82	2.00
9		752 Disorders Of Personality & Impulse Control	424	0.02	\$4,189,751	0.01	\$9,881	\$4,732	9.68	5.00
10		006 Pancreas Transplant	43	0.00	\$4,352,876	0.01	\$101,230	\$96,874	10.42	8.00
	1	640 Neonate Birthwt >2499G, Normal Newborn Or Neonate W Other Problem	214,723	8.06	\$360,675,979	1.19	\$1,680	\$1,311	2.48	2.00
	4	564 Abortion W/O D&C, Aspiration Curettage Or Hysterotomy Drug & Alcohol Abuse Or Dependence, Left Against	1,745	0.07	\$6,886,318	0.02	\$3,946	\$2,948	1.75	1.00
	5	770 Medical Advice	17,829	0.67	\$73,621,088	0.24	\$4,129	\$2,281	2.99	2.00
	6	563 Preterm Labor	4,286	0.16	\$17,806,821	0.06	\$4,155	\$2,582	2.77	2.00
	7	560 Vaginal Delivery	154,021	5.78	\$677,879,560	2.23	\$4,401	\$3,908	2.41	2.00
	8	203 Chest Pain	43,170	1.62	\$195,867,270	0.64	\$4,537	\$3,298	1.83	1.00
	10	626 Neonate Bwt 2000-2499G, Normal Newborn Or Neonate W Other Problem	9,494	0.36	\$43,843,969	0.14	\$4,618	\$1,904	4.09	3.00
		Total for Ranks based on Total Costs [1]	3,742	0.14	\$27,516,151	0.09				
		Total for Ranks based on Mean Cost per Discharge [2]	447,395	16.79	\$1,380,668,216	4.54				
2010										
		Total for Discharge Year	2,622,133		\$31,112,212,474		\$11,865	\$6,175	5.58	3.00
1	5	955 Principal Diagnosis Invalid As Discharge Diagnosis	47	0.00	\$184,259	0.00	\$3,920	\$1,463	3.04	2.00
2		580 Neonate, Transferred <5 Days Old, Not Born Here	87	0.00	\$583,302	0.00	\$6,705	\$3,849	1.66	1.00
3	3	565 False Labor	451	0.02	\$1,125,025	0.00	\$2,495	\$1,618	1.68	1.00
4	1	581 Neonate, Transferred < 5 Days Old, Born Here	1,712	0.07	\$3,027,354	0.01	\$1,768	\$1,181	1.34	1.00
5		863 Neonatal Aftercare	160	0.01	\$3,215,292	0.01	\$20,096	\$9,732	16.19	10.00
6		542 Vaginal Delivery W Complicating Procedures Exc Sterilization &/Or D&C	504	0.02	\$3,573,380	0.01	\$7,090	\$4,832	3.19	2.00
7		205 Cardiomyopathy	433	0.02	\$3,776,580	0.01	\$8,722	\$5,807	4.47	3.00
8		752 Disorders Of Personality & Impulse Control	453	0.02	\$4,247,051	0.01	\$9,375	\$5,098	8.70	5.00

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Rank based on:		APR-DRG No. Description	Dis- Charges (N)	Percent of Annual Total	Percent of Annual Total	Total Cost	Cost per Discharge		Length of Stay	
Total Costs	Cost/ Dis- Charge						Mean	Median	Mean	Median
9		843 Extensive 3Rd Degree Or Full Thickness Burns W/O Skin Graft	280	0.01	\$4,335,995	0.01	\$15,486	\$9,403	6.90	4.00
10		006 Pancreas Transplant	42	0.00	\$4,588,779	0.01	\$109,257	\$99,632	12.21	8.00
	2	640 Neonate Birthwt >2499G, Normal Newborn Or Neonate W Other Problem	210,893	8.04	\$390,778,277	1.26	\$1,853	\$1,463	2.47	2.00
	4	770 Drug & Alcohol Abuse Or Dependence, Left Against Medical Advice	17,251	0.66	\$53,967,434	0.17	\$3,128	\$2,337	2.98	2.00
	6	564 Abortion W/O D&C, Aspiration Curettage Or Hysterotomy	1,632	0.06	\$6,763,654	0.02	\$4,144	\$3,249	1.67	1.00
	7	563 Preterm Labor	4,112	0.16	\$18,644,386	0.06	\$4,534	\$2,885	2.79	2.00
	8	203 Chest Pain	39,776	1.52	\$186,538,811	0.60	\$4,690	\$3,363	1.84	1.00
	9	560 Vaginal Delivery	152,443	5.81	\$724,984,580	2.33	\$4,756	\$4,369	2.41	2.00
	10	773 Opioid Abuse & Dependence	22,519	0.86	\$107,541,453	0.35	\$4,776	\$3,902	4.70	4.00
Total for Ranks based on Total Costs [1]			4,169	0.16	\$28,657,018	0.09				
Total for Ranks based on Mean Cost per Discharge [2]			450,836	17.19	\$1,493,555,232	4.80				
2011										
Total for Discharge Year			2,584,770		\$32,810,001,277		\$12,694	\$6,625	5.58	3.00
1	6	955 Principal Diagnosis Invalid As Discharge Diagnosis	33	0.00	\$144,824	0.00	\$4,389	\$2,492	2.48	2.00
2		580 Neonate, Transferred <5 Days Old, Not Born Here	58	0.00	\$412,303	0.00	\$7,109	\$5,093	1.62	1.00
3	3	565 False Labor	466	0.02	\$1,190,186	0.00	\$2,554	\$1,802	1.46	1.00
4		956 Ungroupable	43	0.00	\$1,769,359	0.01	\$41,148	\$1,384	16.56	2.00
5	1	581 Neonate, Transferred < 5 Days Old, Born Here	1,573	0.06	\$2,925,765	0.01	\$1,860	\$1,188	1.32	1.00
6		542 Vaginal Delivery W Complicating Procedures Exc Sterilization &/Or D&C	406	0.02	\$3,352,545	0.01	\$8,257	\$5,641	3.52	2.00
7		843 Extensive 3Rd Degree Or Full Thickness Burns W/O Skin Graft	245	0.01	\$3,654,484	0.01	\$14,916	\$7,636	6.18	4.00
8		205 Cardiomyopathy	406	0.02	\$3,758,903	0.01	\$9,258	\$5,981	3.97	3.00
9		863 Neonatal Aftercare	178	0.01	\$3,795,593	0.01	\$21,324	\$10,753	14.69	10.00
10		752 Disorders Of Personality & Impulse Control	375	0.01	\$3,973,551	0.01	\$10,596	\$5,917	9.63	5.00
	2	640 Neonate Birthwt >2499G, Normal Newborn Or Neonate W Other Problem	206,796	8.00	\$416,778,560	1.27	\$2,015	\$1,538	2.45	2.00
	4	770 Drug & Alcohol Abuse Or Dependence, Left Against Medical Advice	17,069	0.66	\$57,901,825	0.18	\$3,392	\$2,584	3.01	2.00
	5	564 Abortion W/O D&C, Aspiration Curettage Or Hysterotomy	1,680	0.06	\$7,256,918	0.02	\$4,320	\$3,383	1.68	1.00
	7	563 Preterm Labor	3,944	0.15	\$19,964,536	0.06	\$5,062	\$3,242	2.82	2.00
	8	203 Chest Pain	34,684	1.34	\$176,101,563	0.54	\$5,077	\$3,630	1.85	1.00
	9	560 Vaginal Delivery	151,570	5.86	\$777,892,721	2.37	\$5,132	\$4,794	2.43	2.00
	10	774 Cocaine Abuse & Dependence	9,058	0.35	\$47,078,326	0.14	\$5,197	\$3,777	4.43	4.00
Total for Ranks based on Total Costs [1]			3,783	0.15	\$24,977,511	0.08				
Total for Ranks based on Mean Cost per Discharge [2]			426,873	16.51	\$1,507,235,223	4.59				
2012										
Total for Discharge Year			2,543,986		\$34,021,379,111		\$13,373	\$7,028	5.52	3.00

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Rank based on:		APR-DRG		Dis-Charges (N)	Percent of Annual Total	Total Cost	Percent of Annual Total	Cost per Discharge		Length of Stay	
Total Costs	Cost/Dis-Charge	No.	Description					Mean	Median	Mean	Median
1	4	955	Principal Diagnosis Invalid As Discharge Diagnosis Neonate, Transferred <5 Days	44	0.00	\$155,364	0.00	\$3,531	\$1,826	3.00	2.00
2		580	Old, Not Born Here	68	0.00	\$382,634	0.00	\$5,627	\$4,257	1.51	1.00
3	3	565	False Labor	402	0.02	\$1,044,198	0.00	\$2,598	\$1,821	1.41	1.00
4		956	Ungroupable Neonate, Transferred < 5 Days	43	0.00	\$1,755,744	0.01	\$40,831	\$3,294	12.09	2.00
5	1	581	Old, Born Here	1,624	0.06	\$3,383,988	0.01	\$2,084	\$1,405	1.33	1.00
6		006	Pancreas Transplant Disorders Of Personality & Impulse Control	26	0.00	\$3,629,830	0.01	\$139,609	\$128,514	10.73	9.00
7		752	Impulse Control	362	0.01	\$3,668,752	0.01	\$10,135	\$5,657	8.23	5.00
8		863	Neonatal Aftercare	170	0.01	\$3,991,029	0.01	\$23,477	\$15,543	17.59	13.00
9		205	Cardiomyopathy	366	0.01	\$4,143,034	0.01	\$11,320	\$6,848	4.32	3.00
10		542	Vaginal Delivery W Complicating Procedures Exc Sterilization &/Or D&C	446	0.02	\$4,294,890	0.01	\$9,630	\$6,444	3.54	3.00
	2	640	Neonate Birthwt >2499G, Normal Newborn Or Neonate W Other Problem Drug & Alcohol Abuse Or Dependence, Left Against Medical Advice	207,703	8.16	\$453,558,742	1.33	\$2,184	\$1,630	2.44	2.00
	5	770	Abortion W/O D&C, Aspiration	15,453	0.61	\$54,889,459	0.16	\$3,552	\$2,689	2.92	2.00
	6	564	Curettage Or Hysterotomy	1,580	0.06	\$7,100,089	0.02	\$4,494	\$3,561	1.58	1.00
	7	774	Cocaine Abuse & Dependence	7,961	0.31	\$41,582,859	0.12	\$5,223	\$3,804	4.23	4.00
	8	203	Chest Pain	30,960	1.22	\$163,275,832	0.48	\$5,274	\$3,863	1.82	1.00
	9	560	Vaginal Delivery	151,633	5.96	\$820,687,809	2.41	\$5,412	\$5,067	2.42	2.00
	10	563	Preterm Labor	3,659	0.14	\$20,191,469	0.06	\$5,518	\$3,597	2.79	2.00
Total for Ranks based on Total Costs [1]				3,551	0.14	\$26,449,462	0.08				
Total for Ranks based on Mean Cost per Discharge [2]				421,019	16.55	\$1,565,869,809	4.60				

[1] Total for Ranking based on Total Cost is calculated only for ranked (1 – 10) APR-DRGs.

[2] Total for Ranking based on Mean Cost per Discharge is calculated only for ranked (1 – 10) APR-DRGs.

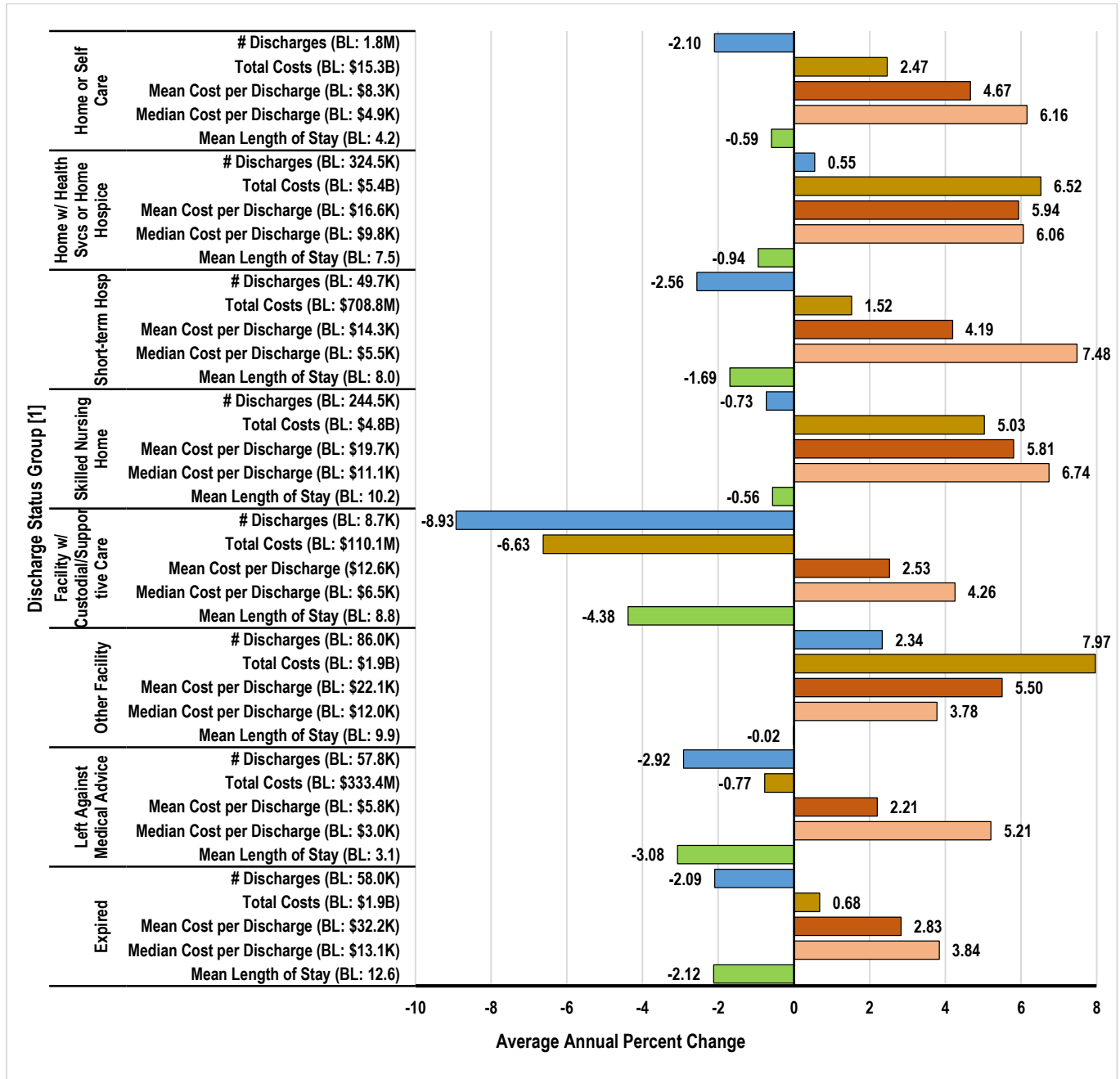
Table 4: Utilization and Cost of New York State Inpatient Hospital Discharges by Discharge Status, 2009-2012

Discharge Status[1]		2009		2010		2011		2012	
		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total		Percent of Annual Total	
Home or Self Care	Discharges (N)	1,836,216	68.89	1,786,141	68.12	1,756,712	67.96	1,722,897	67.72
	Total Costs	\$15,298,159,056	50.27	\$15,338,519,286	49.30	\$15,964,330,347	48.66	\$16,458,574,319	48.38
	Mean Cost/Discharge	\$8,331		\$8,588		\$9,088		\$9,553	
	Median Cost/Discharge	\$4,871		\$5,151		\$5,531		\$5,828	
	Mean Length of Stay	4.22		4.20		4.18		4.14	
Home w/ Health Services or Home Hospice	Discharges (N)	324,485	12.17	330,548	12.61	325,902	12.61	329,879	12.97
	Total Costs	\$5,390,964,202	17.71	\$5,744,696,238	18.46	\$6,075,395,938	18.52	\$6,516,539,187	19.15
	Mean Cost/Discharge	\$16,614		\$17,379		\$18,642		\$19,754	
	Median Cost/Discharge	\$9,802		\$10,330		\$11,018		\$11,696	
	Mean Length of Stay	7.48		7.36		7.32		7.27	
Short-term Hospital	Discharges (N)	49,726	1.87	47,215	1.80	46,036	1.78	45,998	1.81
	Total Costs	\$708,760,530	2.33	\$673,256,165	2.16	\$730,089,631	2.23	\$741,611,507	2.18
	Mean Cost/Discharge	\$14,253		\$14,259		\$15,859		\$16,123	
	Median Cost/Discharge	\$5,457		\$5,656		\$6,041		\$6,776	
	Mean Length of Stay	8.00		8.09		9.01		7.60	
Skilled Nursing Facility	Discharges (N)	244,488	9.17	246,148	9.39	244,329	9.45	239,146	9.40
	Total Costs	\$4,828,423,396	15.86	\$5,112,682,856	16.43	\$5,536,873,339	16.88	\$5,594,849,023	16.45
	Mean Cost/Discharge	\$19,749		\$20,771		\$22,662		\$23,395	
	Median Cost/Discharge	\$11,071		\$11,750		\$12,559		\$13,463	
	Mean Length of Stay	10.21		10.15		10.11		10.04	
Facility w/ Custodial Supportive Care	Discharges (N)	8,711	0.33	7,291	0.28	7,251	0.28	6,580	0.26
	Total Costs	\$110,135,325	0.36	\$89,125,364	0.29	\$92,210,075	0.28	\$89,660,034	0.26
	Mean Cost/Discharge	\$12,643		\$12,224		\$12,717		\$13,626	
	Median Cost/Discharge	\$6,461		\$6,734		\$6,958		\$7,322	
	Mean Length of Stay	8.77		7.92		7.93		7.67	
Other Facility	Discharges (N)	86,024	3.23	91,682	3.50	93,559	3.62	92,192	3.62
	Total Costs	\$1,900,193,304	6.24	\$2,028,215,033	6.52	\$2,235,029,429	6.81	\$2,391,398,835	7.03
	Mean Cost/Discharge	\$22,089		\$22,122		\$23,889		\$25,939	
	Median Cost/Discharge	\$12,001		\$11,857		\$12,546		\$13,415	
	Mean Length of Stay	9.88		9.65		9.71		9.88	
Left Against Medical Advice	Discharges (N)	57,823	2.17	56,948	2.17	54,731	2.12	52,912	2.08
	Total Costs	\$333,387,801	1.10	\$314,017,229	1.01	\$319,296,386	0.97	\$325,703,038	0.96
	Mean Cost/Discharge	\$5,766		\$5,514		\$5,834		\$6,156	
	Median Cost/Discharge	\$3,046		\$3,078		\$3,365		\$3,548	
	Mean Length of Stay	3.14		3.05		2.99		2.86	
Expired	Discharges (N)	57,941	2.17	56,160	2.14	56,250	2.18	54,382	2.14
	Total Costs	\$1,864,676,100	6.13	\$1,811,700,303	5.82	\$1,856,776,133	5.66	\$1,903,043,168	5.59
	Mean Cost/Discharge	\$32,182		\$32,260		\$33,009		\$34,994	
	Median Cost/Discharge	\$13,169		\$13,320		\$13,918		\$14,745	
	Mean Length of Stay	12.58		12.30		11.94		11.79	

Note: Annual totals are given in Table 1.

[1] Other Facility includes discharged/transferred to: (a) hospice-certified medical facility providing hospice level of care; (b) designated cancer center or children's hospital; (c) court/law enforcement; (d) federal health care facility; (e) hospital-based Medicare approved swing bed; (f) Medicare certified long term care hospital; (g) nursing facility certified under Medicaid but not certified under Medicare; (h) psychiatric hospital or psychiatric distinct part unit of a hospital; (i) critical access hospital (CAH); (j) another type of health care institution not defined elsewhere in the codes used; (c)-(j) with a planned acute care hospital inpatient readmission; inpatient rehabilitation facility including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission.

Figure 3: Average Annual Percent Change in Utilization and Cost of New York State Inpatient Hospital Discharges by Discharge Status Group, 2009-2012



Average Annual Percent Change = $[(2012 \text{ value}/2009 \text{ value})^{1/3} - 1] \times 100$

[1] Other Facility includes discharged/transferred to: (a) hospice-certified medical facility providing hospice level of care; (b) designated cancer center or children’s hospital; (c) court/law enforcement; (d) federal health care facility; (e) hospital-based Medicare approved swing bed; (f) Medicare certified long term care hospital; (g) nursing facility certified under Medicaid but not certified under Medicare; (h) psychiatric hospital or psychiatric distinct part unit of a hospital; (i) critical access hospital (CAH); (j) another type of health care institution not defined elsewhere in the codes used; (c)-(j) with a planned acute care hospital inpatient readmission; inpatient rehabilitation facility including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission.

Definitions

The Statewide Planning and Research Cooperative System (SPARCS)

The Statewide Planning and Research Cooperative System is a comprehensive data reporting system, established in 1979, created to collect data on hospital discharges. The data collected currently comes from inpatient hospitalizations, emergency room visits, and ambulatory surgery centers. Data regarding patient characteristics (i.e. race, ethnicity, gender, age) treatments diagnoses, procedures, charges and payer are collected for each visit or stay. Data is received from all Article 28 facilities in NYS. Article 28 facilities are those health care facilities in NYS which are established, operated, and regulated under NYS Public Health Law section 28. They do not include institutions such as State run mental health facilities.

Unit of analysis

The unit of analysis is the inpatient 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 a year will be counted each time as a separate 'discharge' from the hospital. All discharges from SPARCS are included in analysis; nothing is excluded.

Costs and Charges

Information on what constitutes charges in SPARCS is detailed below and is available on page 259 of the Submission Data Dictionary, located at:
http://www.health.ny.gov/statistics/sparcs/sysdoc/elements_837/index.htm

Up to 999 lines of services are collected. The line item charge amount is for services incurred by the patient during the billing period that will be charged to the primary payer. The amount is inclusive of the provider's base charge and any applicable tax amounts reported within this line's amount segments. The line item charge amounts are related to the Service Line Revenue Code.

The service line charges reported in SPARCS are multiplied by respective RCCs to get the service line costs.

Service line costs and service line charges are then aggregated to discharge levels to get cost and charges for a discharge. All services are included in the aggregation; nothing is excluded.

Cost represents the hospital's cost to produce the services, not the amount paid for services by payers; they will reflect the actual expense incurred in the production of hospital services.

All Patient Refined Diagnostic Related Groups (APR-DRGs)

All Patient Refined Diagnostic Related Groups were assigned using grouper software created and distributed by 3M™ Corporation [3M™ Health Information Systems]. A total of 314 base APR-DRGs constitute a hospital inpatient services classification system that groups patients according to diagnosis, type of treatment (procedures), and other relevant criteria (ex., age, sex, discharge status). It represents the patient's condition at the time of discharge and includes the impact of conditions that developed during the hospital stay. The assignment of the APR-DRG is accomplished through a 7-step process that essentially eliminates diagnoses and procedures from consideration in the assignment of the APR-DRG.

Values for the APR-DRG are dependent upon the discharge year of the patient. APR-DRGs for 2009, 2010 and 2011 discharge data are based on APR-DRG Version 26, Version 27 and Version 28, respectively.

Primary Payer

The primary payer is based upon the initial Source of Payment Code indicated on the SPARCS discharge record. A discharge may also have been paid in part by another payer, but Primary Payer indicates that payer which is principally responsible for the cost of the discharge. Payer categories combined Initial Source of payment codes as follows:

- Self -Pay – Self-Pay
- Medicaid – Medicaid
- Medicare – Medicare
- Private Insurance – Insurance Company, Dental Maintenance Organization
- No Charge - Mutually Defined
- Other – Workers' Compensation, Other Federal Programs, CHAMPUS, Other Non-Federal Program, Point of Service, Automobile Medical, Disability, Federal Employees Program, Liability Medical, Title V.

Region

Region is a geographical subdivision of NYS assigned by SPARCS based upon the county in which the hospital is located. There are 12 regions: Western NY, Finger Lakes, Central NY, Capital/Adirondack, Hudson Valley, Bronx, Kings, Manhattan, Staten Island (SI)/Queens, Long Island, Out of NYS, Unknown. Region was then further grouped as follows:

- NYC - Bronx, Kings, Manhattan, Staten Island (SI), Queens
- Out of State
- Unknown
- Rest of State

Discharge Status

Discharge status is based upon NYS Patient Status/Disposition indicated on the SPARCS discharge record. Discharge status combined NYS Patient Status/Disposition as follows:

- Home or Self Care - home or self care (routine discharge); home or self care with a planned acute care hospital inpatient readmission
- Short-term Hospital - discharged/transferred to a short-term general hospital for inpatient care; discharged/transferred to a short-term general hospital for inpatient care with a planned acute care hospital inpatient readmission
- Skilled Nursing Facility - discharged/transferred to skilled nursing facility with Medicare certification in anticipation of skilled care; discharged/transferred to skilled nursing facility with Medicare certification with a planned acute care hospital inpatient readmission
- Facility w/ Custodial/Supportive Care - discharged/transferred to a facility that provides custodial or supportive care; discharged/transferred to a facility that provides custodial or supportive care with a planned acute care hospital inpatient readmission
- Other Facility includes discharged/transferred to: (a) hospice-certified medical facility providing hospice level of care; (b) designated cancer center or children's hospital; (c) court/law enforcement; (d) federal health care facility; (e) hospital-based Medicare approved swing bed; (f) Medicare certified long term care hospital; (g) nursing facility certified under Medicaid but not certified under Medicare; (h) psychiatric hospital or psychiatric distinct part unit of a hospital; (i) critical access hospital (CAH); (j) another type of health care institution not defined elsewhere in the codes used; (c)-(j) with a planned acute care hospital inpatient readmission; inpatient rehabilitation facility including rehabilitation distinct part units of a hospital with a planned acute care hospital inpatient readmission
- Home w/ Health Services or Home Hospice - discharged/transferred to home under care of organized home health service organization in anticipation of covered skilled care; home hospice; discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission
- Left Against Medical Advice
- Expired -to include expired; expired at home; expired in a medical facility (e.g. hospital, SNF, ICF, or free standing hospice); expired-place unknown.

Average Annual Percent Change

Average annual percent change from 2009 to 2012 is calculated using the following definition:

$$\text{Ave. Annual \%Chg} = [(2012 \text{ value}/2009 \text{ value})^{1/3} - 1] \times 100$$

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Citations

1. Pfuntner A, Wier LM, Steiner C. Costs for Hospital Stays in the United States, 2010. HCUP Statistical Brief #146. January 2013. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb146.pdf>
2. Weiss A, Elixhauser A. Overview of Hospital Stays in the United States, 2012. HCUP Statistical Brief #180. October 2014. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb180-Hospitalizations-United-States-2012.pdf>
3. Centers for Medicare & Medicaid Services. National Health Expenditures 2012 Highlights.
<https://wayback.archive-it.org/2744/20140516162444/http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf>
4. Moore B, Levit K, Elixhauser A. Costs for Hospital Stays in the United States, 2012. HCUP Statistical Brief #181. October 2014. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb181-Hospital-Costs-United-States-2012.pdf>

Note: Estimates of cost in HCUP Statistical Brief #181 differ from the National Health Expenditure Accounts (NHEA) produced annually by the Centers for Medicare & Medicaid Services. These differences are detailed in *How HCUP estimates of costs differ from National Health Expenditure Accounts* in the Definition section of the HCUP Statistical Brief #181.

Contact Information

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

Please contact us at:

Division of Information and Statistics
Office of Quality and Patient Safety
New York State Department of Health
Corning Tower, Room 1911
Albany, New York 12237

Phone: (518) 474-3189

Fax: (518) 486-3518

Email: BHI@health.ny.gov