



Statistical Brief #1

Utilization of Hospital Inpatient Services by Fee-for-Service and Managed Care Medicaid Recipients: New York State, 2007

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Introduction

A major goal of current New York State (NYS) health care policy is to provide appropriate and timely preventive and ambulatory care in order to reduce the frequency of inpatient hospitalization. The importance of this goal is clear when one looks at the frequency and cost of hospitalization for the state's Medicaid population. Medicaid spending in New York for inpatient hospital services is almost twice the national average, and the state ranks fourth in the country in terms of the cost per enrollee for those services.¹ The purpose of this report is to present findings from analysis of New York State's Medicaid administrative data to describe the utilization of hospital inpatient services by Medicaid recipients during 2007. Findings are presented separately for recipient events that were fee-for-service (FFS) or managed care at the time the hospital inpatient services were provided.

Findings

Inpatient Events

There were a total of 917,641 reported Medicaid recipient inpatient events from Article 28 facilities in NYS during 2007. FFS hospitalizations statewide accounted for 553,989 or 60.4% and managed care hospitalizations accounted for 363,652, or 39.6% of all inpatient hospital events. The majority of these hospitalizations, 574,098 (62.6%) took place in New York City (NYC), while the remaining 343,543 (37.4%) took place in the rest of the state (ROS).²

Age, Gender, and Race/Ethnicity of Hospitalized Medicaid Recipients

Table 1 describes the age, gender, and race/ethnicity of hospitalized NYS Medicaid recipients according to their FFS or managed care payment status at the time of the hospitalization. On average, hospitalized FFS recipients were older than hospitalized managed care recipients (aged 46.1 and 25.0 years, respectively). Nearly 80% of managed care recipients were aged 44 years or younger (37.3% aged ≤ 18 years and 41.6% aged 19-44 years). This, and the fact that nearly two-thirds (65.3%) of hospitalized managed care recipients were female, suggests that a large proportion of managed care hospitalizations were for recipients who received maternal, adolescent, child, and neonatal inpatient services. By contrast, only 46.0% of all hospitalized FFS recipients were aged 44 years and younger (13.5% aged ≤ 18 years and 32.5% aged 19-44 years), and a much lower percentage (53.5%) were female.

HIGHLIGHTS

■ In 2007, there were 917,641 Medicaid hospitalizations: 553,989 (60.4%) fee-for-service (FFS) and 363,652 (39.6%) managed care.

■ Hospitalized FFS recipients were older, more likely to be male, white non-Hispanic, and less likely to be Asian or Hispanic than hospitalized managed care recipients.

■ 62% of all Medicaid hospitalizations occurred in New York City (NYC) hospitals.

■ Hospitalized patients in NYC compared to the rest of the state (ROS) were similar in age and gender. However, NYC recipients were more likely to be black non-Hispanic and Hispanic, while ROS recipients were more likely to be white non-Hispanic.

■ FFS hospitalizations were much more likely for alcohol and drug use and mental health-related diagnoses than any other diagnosis.

■ Nearly 50% of managed care hospital events were for pregnancy and childbirth-related or newborn and neonate diagnoses.

¹ CMS, 2008 Statistical Supplement, Tables 13.26 and 13.3.

² New York City is defined as the five boroughs (Manhattan, Queens, Bronx, Brooklyn, and Staten Island). Rest of State (ROS) is the remainder of the state, excluding New York City.

Particularly striking were differences between hospitalized FFS and managed care recipients with respect to the youngest and oldest age categories. While 37.3% of hospitalized managed care recipients were aged 18 and younger, a much lower percentage (13.5%) of FFS recipients was in the youngest age category.

Alternatively, over a quarter (25.6%) of hospitalized FFS recipients were aged 65 years and over while very few (1.4%) hospitalized managed care recipients were in this age group. This reflects the large proportion of dual eligible (those eligible for both Medicare and Medicaid) FFS recipients aged ≥ 65 years who for the most part are not in managed care plans.

Nearly one-third (32.2%) of hospitalized managed care recipients were of Hispanic origin, while 23.9% were white non-Hispanic and 23.5% were black non-Hispanic. A lower percentage of hospitalized FFS recipients were Hispanic (24.0%) compared to managed care (32.2%), but the proportion of white non-Hispanic or black non-Hispanic was higher in FFS than for managed care (34.5% and 25.9%, respectively). The percentage of hospitalized recipients who were Asian was much higher in managed care (7.4%) than in FFS Medicaid (3.2%).

Regional Differences in the Age, Gender, and Race/Ethnicity of Hospitalized Medicaid Recipients

Table 2 addresses the regional variation in the demographic characteristics of hospitalized Medicaid recipients. Overall, hospitalized recipients in NYC were slightly older than their ROS counterparts (aged 38.7 and 36.3 years, respectively). Both FFS and managed care recipients in NYC were older on the average compared to ROS. Over 57% of all hospitalized NYC FFS recipients were aged 45 years and older compared to only 49.0% for ROS.

In both NYC and ROS, all Medicaid females were hospitalized much more frequently than males (56.6% females NYC and 60.9% females ROS). For FFS recipients in NYC, however, males (49.3%) and females (50.7%) were almost equally likely to be hospitalized, while ROS FFS females (57.6%) were more likely to be hospitalized

compared to ROS FFS males (42.4%). Managed care female recipients were much more likely to be hospitalized than male recipients, regardless of region (likely reflecting, among other things, their childbearing status).

There were pronounced regional differences in terms of race and ethnicity for the hospitalized NYS Medicaid population. NYC hospitalized recipients compared to ROS were much more likely to be black non-Hispanic (28.1% and 19.8%), Hispanic (32.6% and 18.5%), and Asian (6.6% and 1.9%), and much less likely to be white non-Hispanic (16.6% and 53.3%, respectively). Unfortunately, a sizeable percentage in both regions (16.0% in NYC and 6.1% ROS) were categorized as “Other or unknown” so that their race/ethnicity could not be determined. Newborns accounted for by far the highest proportion of those in the “Other or unknown” group in both NYC and ROS.

Major Diagnostic Category of Hospitalized Medicaid Recipients

Major Diagnostic Categories (MDC) describe each of the body systems by dividing all possible ICD-9-CM diagnoses into 25 mutually exclusive categories. Table 3 describes the frequency of hospitalizations in each MDC for all NYS Medicaid hospitalizations during 2007 ranked from the most to least frequent by FFS payment status. The table clearly illustrates the differences in hospitalizations between the FFS and managed care populations.

The most striking differences were that over 20% of all hospitalizations for FFS recipients were related to alcohol and drug use (MDC 20) and mental health (MDC 19) inpatient stays (10.3% and 10.1%, respectively), compared to only 5.9% of all hospitalizations for managed care recipients for these reasons combined. The most frequent reasons for hospitalization for managed care recipients were pregnancy and childbirth-related (MDC 14) or newborn and neonate (MDC 15) inpatient stays (25.1% and 23.9%, respectively), accounting for nearly half of all managed care hospitalizations. By contrast, hospitalizations for pregnancy and childbirth-related and newborn and neonate diagnoses combined accounted for 15.9% of all FFS hospitalizations.

Findings (continued from page 2)

It should also be noted that diseases and disorders of the circulatory system (MDC 05) were relatively frequent hospital events for both FFS and managed care recipients. This was the most frequent MDC (13.2% of all events) for FFS recipients and the third most frequent (7.4% of all events) for managed care. Recipients in this MDC are likely to be medically debilitated, and can often require extended inpatient and outpatient medical care.

Regional Differences in Major Diagnostic Category (MDC) of Hospitalized Medicaid Recipients

Tables 4 and 5 display the number of hospitalizations associated with each MDC for NYC and ROS, respectively. There was relatively little variation between the two regions in terms of the most frequent conditions associated with hospitalization. For example, slightly over half (50.2%) of all hospitalizations for managed care recipients were for pregnancy and childbirth-related or newborn and neonate inpatient stays in ROS, while they accounted for 48.4% of NYC hospitalizations for managed

care recipients. Similarly, 19.3% of all hospitalizations for FFS recipients in the ROS were for alcohol and drug use and mental health, while 21% of all hospitalizations for FFS recipients in NYC were associated with these conditions.

Data Source and Methods

The data upon which these analyses were based were derived from extracts of fee-for-service claim and managed care encounter data from New York State’s Medicaid Data Mart. Medicaid staff aggregated multiple claims and encounters for a single inpatient hospitalization into a single “event” record that summarized the inpatient stay. This strategy yielded 917,641 events representing all inpatient events at New York State Article 28 facilities for Medicaid recipients during 2007.

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Table 1. Age, Gender, and Race/Ethnicity of Hospitalized Medicaid Recipients by Payment Category: New York State, 2007

	Fee-for-Service	Managed Care	Total Medicaid
Age (Years)	(%)	(%)	(%)
≤18	13.5	37.3	23.0
19-44	32.5	41.6	36.1
45-64	28.3	19.7	24.9
≥65	25.6	1.4	16.0
Mean	46.1	25.0	37.8
Gender			
Male	46.5	34.7	41.8
Female	53.5	65.3	58.2
Race/Ethnicity			
White non-Hispanic	34.5	23.9	30.3
Black non-Hispanic	25.9	23.5	25.0
Asian	3.2	7.4	4.8
Native American/PI	0.4	0.5	0.4
Hispanic	24.0	32.2	27.2
Other or Unknown	12.1	12.6	12.3

Table 2. Age, Gender, and Race/Ethnicity of Hospitalized Medicaid Recipients by Region and Payment Category: New York State, 2007

Region and Characteristic	Fee-for-Service (%)	Managed Care (%)	Total Medicaid (%)
New York City			
Age (Years)			
≤18	10.9	37.4	22.1
19-44	31.9	40.0	35.3
45-64	29.6	20.9	25.9
≥65	27.7	1.7	16.7
Mean	48.3	25.5	38.7
Gender			
Male	49.3	35.4	43.4
Female	50.7	64.6	56.6
Race/Ethnicity			
White non-Hispanic	18.4	14.1	16.6
Black non-Hispanic	30.8	24.3	28.1
Asian	4.4	9.5	6.6
Native American/PI	0.3	0.5	0.4
Hispanic	30.4	35.3	32.6
Other or Unknown	15.7	16.3	16.0
Rest of the State			
Age (Years)			
≤18	17.5	37.2	24.4
19-44	33.5	44.7	37.5
45-64	26.4	17.2	23.2
≥65	22.6	0.9	14.9
Mean	43.0	23.9	36.3
Gender			
Male	42.4	33.1	39.1
Female	57.6	66.9	60.9
Race/Ethnicity			
White non-Hispanic	58.5	43.6	53.3
Black non-Hispanic	18.6	22.0	19.8
Asian	1.3	3.0	1.9
Native American/PI	0.5	0.4	0.5
Hispanic	14.5	25.9	18.5
Other or Unknown	6.7	5.2	6.1

Table 3. Major Diagnostic Category for Medicaid Recipients by Payment Category at Hospitalization: New York State 2007

AP-DRG* Major Diagnostic Categories (MDCs)	Fee-for-Service		Managed Care	
	Inpatient Events	Events (%)	Inpatient Events	Events (%)
05-Diseases / Disorders of the Circulatory System	72,907	13.2	26,982	7.4
20-Alcohol/Drug Use / Alcohol/Drug Induced Organic Mental Disorders	56,780	10.3	10,833	3.0
19-Mental Diseases / Disorders	56,178	10.1	10,618	2.9
04-Diseases / Disorders of the Respiratory System	49,131	8.9	24,658	6.8
15-Newborns / Other Neonates with Conditions Originating in the Perinatal Period	44,392	8.0	86,954	23.9
14-Pregnancy, Childbirth / the Puerperium	43,610	7.9	91,261	25.1
06-Diseases / Disorders of the Digestive System	37,909	6.8	20,782	5.7
01-Diseases / Disorders of the Nervous System	27,899	5.0	11,762	3.2
08-Diseases / Disorders of the Musculoskeletal System / Connective Tissue	22,165	4.0	10,354	2.9
11-Diseases / Disorders of the Kidney / Urinary Tract	22,072	4.0	7,643	2.1
10-Endocrine, Nutritional / Metabolic Diseases / Disorders	19,092	3.5	10,488	2.9
18-Infectious / Parasitic Diseases, Systemic or Unspecified Sites	16,619	3.0	5,076	1.4
24-Human Immunodeficiency Virus Infections	14,064	2.5	1,762	0.5
09-Diseases / Disorders of the Skin, Subcutaneous Tissue / Breast	13,944	2.5	7,555	2.1
07-Diseases / Disorders of the Hepatobiliary System / Pancreas	13,261	2.4	7,264	2.0
21-Poisonings, Toxic Effects, Other Injuries / Other Complications of Treatment	8,569	1.6	4,832	1.3
16-Diseases / Disorders of Blood, Blood Forming Organs / Immunological Disorders	8,148	1.5	4,049	1.1
03-Ear, Nose, Mouth, Throat / Craniofacial Diseases / Disorders	6,584	1.2	5,848	1.6
23-Rehabilitation, Aftercare, Other Factors Influencing Health Status	5,786	1.0	2,336	0.6
13-Diseases / Disorders of the Female Reproductive System	4,673	0.8	6,209	1.7
17-Lymphatic, Hematopoietic, Other Malignancies, Chemotherapy / Radiotherapy	4,100	0.7	2,223	0.6
Pre MDC or Multiple MDC, Not Assigned to MDCs	2,476	0.5	1,658	0.5
12-Diseases / Disorders of the Male Reproductive System	1,569	0.3	753	0.2
02-Diseases / Disorders of the Eye	1,051	0.2	776	0.2
22-Burns	527	0.1	787	0.2
25-Multiple Significant Trauma	483	0.1	189	0.1
Total	553,989	100.0	363,652	100.0

* All Patient Diagnostic Related Group

Table 4. Major Diagnostic Category for Medicaid Recipients by Payment Category at Hospitalization: New York City 2007

AP-DRG* Major Diagnostic Categories (MDCs)	Fee-for-Service		Managed Care	
	Inpatient Events	Events (%)	Inpatient Events	Events (%)
05-Diseases / Disorders of the Circulatory System	48,887	14.8	19,684	8.1
20-Alcohol/Drug Use / Alcohol/Drug Induced Organic Mental Disorders	38,248	11.5	6,618	2.7
19-Mental Diseases / Disorders	31,580	9.5	6,327	2.6
04-Diseases / Disorders of the Respiratory System	27,763	8.4	16,960	7.0
06-Diseases / Disorders of the Digestive System	22,749	6.9	13,531	5.6
14-Pregnancy, Childbirth / the Puerperium	20,113	6.1	59,270	24.4
15-Newborns / Other Neonates with Conditions Originating in the Perinatal Period	19,046	5.7	58,286	24.0
01-Diseases / Disorders of the Nervous System	17,131	5.2	7,876	3.2
11-Diseases / Disorders of the Kidney / Urinary Tract	13,613	4.1	5,213	2.1
08-Diseases / Disorders of the Musculoskeletal System / Connective Tissue	12,802	3.9	6,751	2.8
10-Endocrine, Nutritional / Metabolic Diseases / Disorders	12,101	3.7	6,944	2.9
24-Human Immunodeficiency Virus Infections	11,589	3.5	1,502	0.6
18-Infectious / Parasitic Diseases, Systemic or Unspecified Sites	9,524	2.9	3,353	1.4
09-Diseases / Disorders of the Skin, Subcutaneous Tissue / Breast	8,977	2.7	5,082	2.1
07-Diseases / Disorders of the Hepatobiliary System / Pancreas	8,350	2.5	4,714	1.9
16-Diseases / Disorders of Blood, Blood Forming Organs / Immunological Disorders	5,593	1.7	3,059	1.3
21-Poisonings, Toxic Effects, Other Injuries / Other Complications of Treatment	5,357	1.6	3,027	1.2
03-Ear, Nose, Mouth, Throat / Craniofacial Diseases / Disorders	4,572	1.4	4,201	1.7
23-Rehabilitation, Aftercare, Other Factors Influencing Health Status	3,887	1.2	1,662	0.7
13-Diseases / Disorders of the Female Reproductive System	2,913	0.9	4,034	1.7
17-Lymphatic, Hematopoietic, Other Malignancies, Chemotherapy / Radiotherapy	2,674	0.8	1,673	0.7
Pre MDC or Multiple MDCs, Not Assigned to MDCs	1,409	0.4	1,083	0.4
12-Diseases / Disorders of the Male Reproductive System	1,172	0.4	600	0.2
02-Diseases / Disorders of the Eye	741	0.2	559	0.2
22-Burns	326	0.1	606	0.2
25-Multiple Significant Trauma	254	0.1	112	0.0
Total	331,371	100.0	242,727	100.0

* All Patient Diagnostic Related Group

**Table 5. Major Diagnostic Category of Medicaid Recipients by Payment Category at Hospitalization:
Rest of New York State 2007**

AP-DRG* Major Diagnostic Categories (MDCs)	Fee-for-Service		Managed Care	
	Inpatient Events	Events (%)	Inpatient Events	Events (%)
15-Newborns / Other Neonates with Conditions Originating in the Perinatal Period	25,346	11.4	28,668	23.7
19-Mental Diseases / Disorders	24,598	11.0	4,291	3.5
05-Diseases / Disorders of the Circulatory System	24,020	10.8	7,298	6.0
14-Pregnancy, Childbirth / the Puerperium	23,497	10.6	31,991	26.5
04-Diseases / Disorders of the Respiratory System	21,368	9.6	7,698	6.4
20-Alcohol/Drug Use / Alcohol/Drug Induced Organic Mental Disorders	18,532	8.3	4,215	3.5
06-Diseases / Disorders of the Digestive System	15,160	6.8	7,251	6.0
01-Diseases / Disorders of the Nervous System	10,768	4.8	3,886	3.2
08-Diseases / Disorders of the Musculoskeletal System / Connective Tissue	9,363	4.2	3,603	3.0
11-Diseases / Disorders of the Kidney / Urinary Tract	8,459	3.8	2,430	2.0
18-Infectious / Parasitic Diseases, Systemic or Unspecified Sites	7,095	3.2	1,723	1.4
10-Endocrine, Nutritional / Metabolic Diseases / Disorders	6,991	3.1	3,544	2.9
09-Diseases / Disorders of the Skin, Subcutaneous Tissue / Breast	4,967	2.2	2,473	2.0
07-Diseases / Disorders of the Hepatobiliary System / Pancreas	4,911	2.2	2,550	2.1
21-Poisonings, Toxic Effects, Other Injuries / Other Complications of Treatment	3,212	1.4	1,805	1.5
16-Diseases / Disorders of Blood, Blood Forming Organs / Immunological Disorders	2,555	1.1	990	0.8
24-Human Immunodeficiency Virus Infections	2,475	1.1	260	0.2
03-Ear, Nose, Mouth, Throat / Craniofacial Diseases / Disorders	2,012	0.9	1,647	1.4
23-Rehabilitation, Aftercare, Other Factors Influencing Health Status	1,899	0.9	674	0.6
13-Diseases / Disorders of the Female Reproductive System	1,760	0.8	2,175	1.8
17-Lymphatic, Hematopoietic, Other Malignancies, Chemotherapy / Radiotherapy	1,426	0.6	550	0.5
Pre MDC or Multiple MDCs, Not Assigned to MDCs	1,067	0.5	575	0.5
12-Diseases / Disorders of the Male Reproductive System	397	0.2	153	0.1
02-Diseases / Disorders of the Eye	310	0.1	217	0.2
25-Multiple Significant Trauma	229	0.1	77	0.1
22-Burns	201	0.1	181	0.1
Total	222,618	100.0	120,925	100.0

* All Patient Diagnostic Related Group