

# The Hilltop Institute



*analysis to advance the health of vulnerable populations*

## **Characteristics of Maryland Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays**

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**Table of Contents**

Overview ..... 1

Methodology..... 1

Data Sources .....2

    MMIS2 Eligibility and Claims Files .....2

    Medicare Beneficiary and Claims Files.....2

Analysis.....2

    Geographic Location and Demographics of High Utilizers ..... 3

    Providers Used Most Frequently by High Utilizers ..... 5

Summary..... 26



# Characteristics of Maryland Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays

## Overview

At the request of the Maryland Department of Health and Mental Hygiene (DHMH), The Hilltop Institute conducted a series of analyses on the health care utilization of Maryland's full-benefit Medicare-Medicaid dual-eligible beneficiaries. Together, these analyses provide an overview of how this population accesses health care services, the types of services being used, and where the services are provided. This information will inform the state's decision-making process in the development of a strategy to integrate care delivery for Maryland's dual-eligible beneficiaries under the Centers for Medicare and Medicaid Services (CMS) State Innovation Model (SIM) grant.

This analysis explores the frequency of utilization of inpatient services by full-benefit dual-eligible beneficiaries who have three or more inpatient stays. The analysis timeframe is calendar year (CY) 2012 (January 1, 2012, through December 31, 2012).

## Methodology

Hilltop used the Maryland Medicaid Management Information System (MMIS2) and Medicare claims data to examine service utilization patterns for full-benefit dual-eligible beneficiaries. The study population was defined as individuals eligible for both full Medicaid and Medicare benefits, with at least three Medicare inpatient hospital stays in CY 2012. Hilltop used MMIS2 eligibility files to identify individuals with at least one month of Medicaid eligibility and at least one month of Medicare eligibility, so that the study cohort includes individuals who were dually eligible for the full year, as well as individuals who were dually eligible for only part of the year. Hilltop then used Medicaid coverage group designations to identify full-benefit dual-eligible beneficiaries. Dual eligibles enrolled in one of the four Medicare Savings Program—Qualified Medicare Beneficiary (QMB)), Specified Low-Income Medicare Beneficiary (SLMB), Qualified Individuals (QI), and Qualified Disabled Working Individual (QDWI)—coverage group designations were excluded from the analysis, and services rendered through a Medicare Advantage plan were not included.

Hilltop used CY 2012 Medicare inpatient claims to identify the study population's Medicare inpatient hospital stays. These claims include all institutional inpatient hospital services provided under Medicare Part A, including rehabilitation hospitals, long-term hospitals, and psychiatric hospitals. Inpatient hospital stays for the same individual at the same location with a gap of one day or less were considered a single stay. Stays for the same individual with a gap of more than one day or with a change in provider were considered separate stays.



## Data Sources

### ***Maryland Medicaid Management Information System (MMIS2) Eligibility and Claims Files***

The MMIS2 system contains key Medicaid eligibility, enrollment, program, utilization, and expenditure data for the Maryland Medicaid and Children's Health Insurance Program (CHIP). The MMIS2 eligibility file contains dates of Medicaid eligibility, coverage group information, and basic demographic information. MMIS2 claims files contain service utilization and expenditure data for Medicaid enrollees served through a fee-for-service delivery model. All MMIS2 files can be linked using a unique Medicaid beneficiary identification number.

### ***Medicare Beneficiary and Claims Files***

In response to the Medicare Modernization Act of 2003 (MMA), CMS makes available to researchers the Chronic Conditions Data Warehouse (CCW). Available Medicare data include enrollment and eligibility files, fee-for-service institutional and non-institutional claims, and assessment data. The claims-level research identifiable files (RIF) are linked by a unique beneficiary identification number that allows analysis across multiple care settings. Hilltop has developed a Medicaid-Medicare beneficiary identification crosswalk to link MMIS2 and Medicare data for analysis.

## Analysis

Table 1 displays the frequency of hospital stays for full-benefit dual-eligible beneficiaries in CY 2012, with breakdowns by age: under 65 years and 65 years and older. Of the dual eligibles who had one or more hospital stays during the year, roughly three-fourths had fewer than three stays. The proportions were roughly the same among the two age groups. About 75 percent of those under age 65—and 78 percent of those aged 65 and older—had fewer than three stays. The remainder of this analysis focuses on the 4,798 (roughly one-quarter) of dual eligibles who had three or more hospital stays during CY 2012.



**Table 1. Number of Hospital Stays per Full-Benefit Dual Eligible Beneficiary, by Age Group, CY 2012**

Number of Stays	Number of Dual Eligibles under Age 65	Percentage of Total	Number of Dual Eligibles Aged 65 and Older	Percentage of Total	All Dual Eligibles	Percentage of Total
1	4,265	54.8%	7,183	55.2%	11,448	55.0%
2	1,619	20.8%	2,935	22.5%	4,554	21.9%
3	763	9.8%	1,435	11.0%	2,198	10.6%
4	413	5.3%	699	5.4%	1,112	5.3%
5	258	3.3%	338	2.6%	596	2.9%
6	150	2.0%	179	1.4%	329	1.6%
7	101	1.3%	131	1.0%	232	1.1%
8	55	0.7%	52	0.4%	107	0.5%
9	47	0.6%	36	0.3%	83	0.4%
10 or more	108	1.4%	33	0.3%	141	0.7%
<b>Total</b>	<b>7,779</b>	<b>100.0%</b>	<b>13,021</b>	<b>100.0%</b>	<b>20,800</b>	<b>100.0%</b>

### ***Geographic Location and Demographics of High Utilizers***

Table 2 shows the distribution of frequent hospital utilizers in Maryland by county. High utilizers are most common in the most populous counties in Maryland. Among high-utilizer dual-eligible beneficiaries under age 65, the majority reside in Baltimore City (28 percent), followed by Baltimore County (13.7 percent) and Prince George’s County (13.0 percent). Among those aged 65 and older, the majority reside in Baltimore City (22.3 percent), followed by Baltimore County (14.2 percent) and Montgomery County (13.0 percent).



**Table 2. Number of Full-Benefit Dual Eligible Beneficiaries  
with Three or More Inpatient Stays, by County and Age Group, CY 2012**

County	Number of Dual Eligibles under Age 65	Percentage of Total	Number of Dual Eligibles Aged 65 and Older	Percentage of Total	All Dual-Eligible Beneficiaries	Percentage of Total
Allegany	34	1.8%	92	3.2%	126	2.6%
Anne Arundel	126	6.6%	147	5.1%	273	5.7%
Baltimore City	530	28.0%	647	22.3%	1,177	24.5%
Baltimore County	260	13.7%	412	14.2%	672	14.0%
Calvert	20	1.1%	34	1.2%	54	1.1%
Caroline	20	1.1%	53	1.8%	73	1.5%
Carroll	42	2.2%	51	1.8%	93	1.9%
Cecil	42	2.2%	48	1.7%	90	1.9%
Charles	35	1.8%	88	3.0%	123	2.6%
Dorchester	22	1.2%	24	0.8%	46	1.0%
Frederick	46	2.4%	70	2.4%	116	2.4%
Garrett	16	0.8%	16	0.6%	32	0.7%
Harford	64	3.4%	85	2.9%	149	3.1%
Howard	50	2.6%	96	3.3%	146	3.0%
Kent	*	*	*	*	35	0.7%
Montgomery	162	8.5%	378	13.0%	540	11.3%
Prince George's	247	13.0%	322	11.1%	569	11.9%
Queen Anne's	*	*	*	*	32	0.7%
St. Mary's	29	1.5%	59	2.0%	88	1.8%
Somerset	12	0.6%	26	0.9%	38	0.8%
Talbot	*	*	*	*	25	0.5%
Washington	55	2.9%	70	2.4%	125	2.6%
Wicomico	30	1.6%	86	3.0%	116	2.4%
Worcester	18	0.9%	30	1.0%	48	1.0%
Out of State	*	*	*	*	12	0.3%
<b>Total</b>	<b>1,895</b>	<b>100.0%</b>	<b>2,903</b>	<b>100.0%</b>	<b>4,798</b>	<b>100.0%</b>

\*Number smaller than allowed under CMS reporting standards.



As Table 3 shows, the majority of high utilizers are female (60.8 percent). Among dual-eligible beneficiaries under age 65, nearly 56 percent are female; among those aged 65 and older, more than 64 percent are female.

**Table 3. Number of Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Sex and Age Group, CY 2012**

Sex	Number of Dual Eligibles under Age 65	Percentage of Total	Number of Dual Eligibles Aged 65 and Older	Percentage of Total	All Dual-Eligible Beneficiaries	Percentage of Total
Female	1,056	55.7%	1,863	64.2%	2,919	60.8%
Male	839	44.3%	1,040	35.8%	1,879	39.2%
<b>Total</b>	<b>1,895</b>	<b>100.0%</b>	<b>2,903</b>	<b>100.0%</b>	<b>4,798</b>	<b>100.0%</b>

Table 4 displays the racial and ethnic distribution of high utilizers. Forty-five percent of full-benefit dual-eligible beneficiaries with three or more inpatient stays are Black, while 39 percent are White. Over 10 percent have an unknown race/ethnicity. Among those under age 65, 50 percent are Black and nearly 40 percent are White. For those aged 65 and older, nearly 42 percent are Black and almost 39 percent are White. Roughly 13 percent have an unknown race/ethnicity.

**Table 4. Number of Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Race/Ethnicity and Age Group, CY 2012**

Race/Ethnicity	Number of Dual Eligibles under Age 65	Percentage of Total	Number of Dual Eligibles Aged 65 and Older	Percentage of Total	All Dual Eligibles	Percentage of Total
Asian	27	1.4%	127	4.4%	154	3.2%
Black	951	50.2%	1,210	41.7%	2,161	45.0%
White	756	39.9%	1,127	38.8%	1,883	39.3%
Hispanic or Other	36	1.9%	64	2.2%	100	2.1%
Unknown	125	6.6%	375	12.9%	500	10.4%
<b>Total</b>	<b>1,895</b>	<b>100.0%</b>	<b>2,903</b>	<b>100.0%</b>	<b>4,798</b>	<b>100.0%</b>

### **Providers Used Most Frequently by High Utilizers**

Table 5 ranks providers in Maryland and surrounding states by the frequency of stays incurred by high utilizers. Out-of-state hospitals are indicated by their state in parentheses after their name. Providers most frequently serving full-benefit dual-eligible beneficiaries with three or more inpatient stays were Good Samaritan Hospital (4.9 percent of stays), Sinai Hospital of Baltimore (4.4 percent), Johns Hopkins Hospital (4.2 percent), and University of Maryland Medical System (4.2 percent). Providers most frequently serving high-utilizing dual eligibles





under age 65 were Johns Hopkins Hospital (5.9 percent of stays), University of Maryland Medical System (5.7 percent), and Good Samaritan Hospital (4.6 percent). Those providers most frequently serving high-utilizing dual eligibles aged 65 and older were Good Samaritan Hospital (4.9 percent of stays), Sinai Hospital of Baltimore (4.6 percent), and Northwest Hospital Center (4.4 percent).



**Table 5. Number of Stays among Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Provider and Age Group, CY 2012**

Provider	Number of Stays for Dual Eligibles under Age 65	Percentage of Total	Number of Stays for Dual Eligibles Aged 65 and Older	Percentage of Total	Number of Stays for All Dual-Eligible Beneficiaries	Percentage of Total
GOOD SAMARITAN HOSP	464	5.0%	583	4.9%	1,047	4.9%
SINAI HOSPITAL OF BALTIMORE	384	4.1%	551	4.6%	935	4.4%
JOHNS HOPKINS HOSPITAL	545	5.9%	345	2.9%	890	4.2%
UNIV OF MD MEDICAL SYSTEM	531	5.7%	354	3.0%	885	4.2%
NORTHWEST HOSPITAL CENTER	336	3.6%	524	4.4%	860	4.1%
JH BAYVIEW MEDICAL CENTER	347	3.7%	340	2.9%	687	3.2%
MEDSTAR UNION MEMORIAL HOSP	367	3.9%	279	2.3%	646	3.0%
PENINSULA REGIONAL MED CT	211	2.3%	421	3.5%	632	3.0%
MEDSTAR FRANKLIN SQUARE HOSP	296	3.2%	324	2.7%	620	2.9%
ST AGNES HOSPITAL	224	2.4%	392	3.3%	616	2.9%
MEDSTAR SOUTHERN MD HOSP CTR	237	2.5%	341	2.9%	578	2.7%
HOLY CROSS HOSP OF SILVER SPRING	176	1.9%	392	3.3%	568	2.7%
BALTIMORE WASHINGTON MED CTR	313	3.4%	247	2.1%	560	2.6%
WASHINGTON ADVENTIST HOSPITAL	205	2.2%	348	2.9%	553	2.6%
MARYLAND GENERAL HOSPITAL	227	2.4%	315	2.6%	542	2.6%
SHADY GROVE ADVENTIST HOSPITAL	167	1.8%	346	2.9%	513	2.4%
WASHINGTON HOSPITAL CENTER (DC)	214	2.3%	261	2.2%	475	2.2%
WESTERN MARYLAND HEALTH SYSTEM	122	1.3%	344	2.9%	466	2.2%
FREDERICK MEMORIAL HOSPITAL	180	1.9%	261	2.2%	441	2.1%
DOCTORS COMMUNITY HOSPITAL	177	1.9%	232	2.0%	409	1.9%
ANNE ARUNDEL MEDICAL CENTER	140	1.5%	261	2.2%	401	1.9%
HOWARD COUNTY GENERAL HOSPITAL	137	1.5%	260	2.2%	397	1.9%
MERCY MEDICAL CTR	215	2.3%	177	1.5%	392	1.8%
MERITUS MEDICAL CENTER	169	1.8%	210	1.8%	379	1.8%



Provider	Number of Stays for Dual Eligibles under Age 65	Percentage of Total	Number of Stays for Dual Eligibles Aged 65 and Older	Percentage of Total	Number of Stays for All Dual-Eligible Beneficiaries	Percentage of Total
Table 5, continued						
BON SECOURS HOSPITAL	217	2.3%	132	1.1%	349	1.6%
CHARLES REGIONAL MEDICAL CENTER	86	0.9%	247	2.1%	333	1.6%
MEMORIAL HOSPITAL AT EASTON	95	1.0%	211	1.8%	306	1.4%
PRINCE GEORGES HOSPITAL CENTER	162	1.7%	141	1.2%	303	1.4%
SUBURBAN HOSPITAL	84	0.9%	202	1.7%	286	1.3%
MEDSTAR HARBOR HOSPITAL	137	1.5%	146	1.2%	283	1.3%
GREATER BALTIMORE MED CTR	109	1.2%	166	1.4%	275	1.3%
CARROLL HOSPITAL CENTER	111	1.2%	152	1.3%	263	1.2%
MEDSTAR ST MARYS HOSPITAL	86	0.9%	169	1.4%	255	1.2%
UPPER CHESAPEAKE MEDICAL CENTER	68	0.7%	186	1.6%	254	1.2%
ST JOSEPHS HOSPITAL	88	0.9%	160	1.3%	248	1.2%
LEVINDALE HEBREW GERIATRIC CENTER	61	0.7%	172	1.4%	233	1.1%
MEDSTAR MONTGOMERY MEDICAL CTR	74	0.8%	159	1.3%	233	1.1%
UNION HOSPITAL CECIL COUNTY	90	1.0%	143	1.2%	233	1.1%
CALVERT MEMORIAL HOSPITAL	73	0.8%	130	1.1%	203	1.0%
HARFORD MEMORIAL HOSPITAL	101	1.1%	80	0.7%	181	0.9%
LAUREL REGIONAL HOSPITAL	69	0.7%	105	0.9%	174	0.8%
SHEPPARD PRATT HEALTH SYSTEM	127	1.4%	34	0.3%	161	0.8%
CHESTER RIVER HOSPITAL CENTER	35	0.4%	109	0.9%	144	0.7%
GEORGETOWN MEDICAL CENTER (DC)	75	0.8%	63	0.5%	138	0.7%
FORT WASHINGTON MED CENTER	43	0.5%	67	0.6%	110	0.5%
JAMES L KERNAN HOSPITAL	41	0.4%	49	0.4%	90	0.4%
PROVIDENCE HOSPITAL (DC)	23	0.2%	57	0.5%	80	0.4%
SHORE HEALTH SYSTEM DORCHESTER	26	0.3%	53	0.4%	79	0.4%
HOWARD UNIVERSITY HOSPITAL (DC)	60	0.6%	11	0.1%	71	0.3%



Provider	Number of Stays for Dual Eligibles under Age 65	Percentage of Total	Number of Stays for Dual Eligibles Aged 65 and Older	Percentage of Total	Number of Stays for All Dual-Eligible Beneficiaries	Percentage of Total
Table 5, continued						
ATLANTIC GENERAL HOSPITAL	12	0.1%	57	0.5%	69	0.3%
CHESAPEAKE REHAB HOSPITAL	11	0.1%	49	0.4%	60	0.3%
ADVENTIST REHABILITATION HOSP OF MD	17	0.2%	42	0.4%	59	0.3%
UNIVERSITY SPECIALTY HOSPITAL	40	0.4%	19	0.2%	59	0.3%
GEORGE WASHINGTON UNIVERSITY HOSPITAL (DC)	38	0.4%	19	0.2%	57	0.3%
ALL OTHER	663	7.1%	449	3.8%	1,112	5.2%
<b>Total</b>	<b>9,306</b>	<b>100.0%</b>	<b>11,887</b>	<b>100.0%</b>	<b>21,193</b>	<b>100.0%</b>



The CMS Chronic Conditions Warehouse (CCW) has created algorithms to define clinical condition indicators. These are classifications of Medicare enrollees based on diagnoses reported on claims. Enrollees may have more than one CCW depending on the frequency of various diagnoses reported on their claims.

Table 6 shows the frequency of high utilizers in each chronic condition group. Because the enrollee can have multiple chronic conditions, they may be counted multiple times. Among all full-benefit dual-eligible beneficiaries with three or more inpatient stays, the most frequent chronic conditions were hypertension (9.5 percent), anemia (8.4 percent), and ischemic heart disease (6.9 percent). Among high-utilizing dual eligibles under age 65, the most common conditions were hypertension (8.8 percent), anemia (8.3 percent), and chronic kidney disease (6.7 percent). The most common conditions among high-utilizing dual eligibles aged 65 and older were hypertension (10.0 percent), anemia (8.5 percent), and ischemic heart disease (7.4 percent).



**Table 6. Chronic Condition Prevalence among Full-Benefit Dual Eligible Beneficiaries with Three or More Inpatient Stays, by Condition and Age Group, CY 2012 (N=4,798)**

Condition	Number of Dual Eligibles under Age 65	Percentage of Dual Eligibles under Age 65	Number of Dual Eligibles Aged 65 and Older	Percentage of Dual Eligibles Aged 65 and Older	All Dual-Eligible Beneficiaries	Percentage of Total
Hypertension	1,400	73.88%	2,502	86.19%	3,902	81.33%
Anemia	1,311	69.18%	2,134	73.51%	3,445	71.80%
Ischemic Heart Disease	969	51.13%	1,861	64.11%	2,830	58.98%
Heart Failure	960	50.66%	1,817	62.59%	2,777	57.88%
Chronic Kidney Disease	1,065	56.20%	1,691	58.25%	2,756	57.44%
Diabetes	989	52.19%	1,627	56.05%	2,616	54.52%
Depression	1,005	53.03%	925	31.86%	1,930	40.23%
Hyperlipidemia	663	34.99%	1,116	38.44%	1,779	37.08%
Chronic Obstructive Pulmonary Disease and Bronchiectasis	606	31.98%	1,044	35.96%	1,650	34.39%
Alzheimers Disease and Related Disorders or Senile Dementia	247	13.03%	1,359	46.81%	1,606	33.47%
RA/OA (Rheumatoid Arthritis/Osteoarthritis)	573	30.24%	1,006	34.65%	1,579	32.91%
Stroke/Transient Ischemic Attack	399	21.06%	1,020	35.14%	1,419	29.57%
Bipolar Disorder	657	34.67%	622	21.43%	1,279	26.66%
Atrial Fibrillation	272	14.35%	991	34.14%	1,263	26.32%
Cataract	322	16.99%	829	28.56%	1,151	23.99%
Anxiety Disorders	555	29.29%	356	12.26%	911	18.99%
Schizophrenia and Other Psychotic Disorders	472	24.91%	408	14.05%	880	18.34%
Acquired Hypothyroidism	272	14.35%	483	16.64%	755	15.74%
Mobility Impairments	327	17.26%	424	14.61%	751	15.65%
Asthma	389	20.53%	360	12.40%	749	15.61%



Condition	Number of Dual Eligibles under Age 65	Percentage of Dual Eligibles under Age 65	Number of Dual Eligibles Aged 65 and Older	Percentage of Dual Eligibles Aged 65 and Older	All Dual-Eligible Beneficiaries	Percentage of Total
Table 6, continued						
Tobacco Use	514	27.12%	197	6.79%	711	14.82%
Epilepsy	387	20.42%	271	9.34%	658	13.71%
Acute Myocardial Infarction	111	5.86%	277	9.54%	388	8.09%
Glaucoma	93	4.91%	227	7.82%	320	6.67%
Osteoporosis	88	4.64%	200	6.89%	288	6.00%
Benign Prostatic Hyperplasia	40	2.11%	235	8.10%	275	5.73%
Hip/Pelvic Fracture	41	2.16%	216	7.44%	257	5.36%
Intellectual Disabilities and Related Conditions	167	8.81%	65	2.24%	232	4.84%
Sensory - Deafness and Hearing Impairment	86	4.54%	119	4.10%	205	4.27%
Other Developmental Delays	143	7.55%	50	1.72%	193	4.02%
Lung Cancer	36	1.90%	97	3.34%	133	2.77%
Conduct Disorders and Hyperkinetic Syndrome	91	4.80%	34	1.17%	125	2.61%
Colorectal Cancer	24	1.27%	96	3.31%	120	2.50%
Female/Male Breast Cancer	42	2.22%	73	2.51%	115	2.40%
Personality Disorders	89	4.70%	19	0.65%	108	2.25%
Spinal Cord Injury	70	3.69%	33	1.14%	103	2.15%
Prostate Cancer	*	*	*	*	92	1.92%
Multiple Sclerosis and Transverse Myelitis	*	*	*	*	88	1.83%
Post-Traumatic Stress Disorder (PTSD)	*	*	*	*	82	1.71%
Cystic Fibrosis and Other Metabolic Developmental Disorders	47	2.48%	29	1.00%	76	1.58%



Condition	Number of Dual Eligibles under Age 65	Percentage of Dual Eligibles under Age 65	Number of Dual Eligibles Aged 65 and Older	Percentage of Dual Eligibles Aged 65 and Older	All Dual-Eligible Beneficiaries	Percentage of Total
Table 6, continued						
Sensory - Blindness and Visual Impairment	29	1.53%	45	1.55%	74	1.54%
Cerebral Palsy	54	2.85%	18	0.62%	72	1.50%
Traumatic Brain Injury and Nonpsychotic Mental Disorders due to Brain Damage	*	*	*	*	38	0.79%
Spina Bifida and Other Congenital Anomalies of the Nervous System	*	*	*	*	37	0.77%
Autism Spectrum Disorders	*	*	*	*	28	0.58%
Endometrial Cancer	*	*	*	*	26	0.54%
Learning Disabilities	*	*	*	*	*	0.0%
Muscular Dystrophy	*	*	*	*	*	0.0%

\*Number smaller than allowed under CMS reporting standards.





Table 7 lists the 100 most frequent diagnosis-related groups (DRGs) among hospitalizations of high-utilizer dual-eligible beneficiaries. The most frequent DRG was psychoses. Aside from the “ungrouped” category, the other DRGs included among the most frequent were cardiac, pulmonary, renal, digestive, and circulatory conditions, along with sepsis and pneumonia.



**Table 7. Top 100 DRGs for Hospitalizations among Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Condition and Age Group, CY 2012**

Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
1	885	PSYCHOSES	215	1.8%	979	10.5%	1194	5.6%
2	871	SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W MCC	662	5.6%	330	3.5%	992	4.7%
3	000	Ungrouped	244	2.1%	680	7.3%	924	4.4%
4	291	HEART FAILURE & SHOCK W MCC	363	3.1%	223	2.4%	586	2.8%
5	292	HEART FAILURE & SHOCK W CC	340	2.9%	127	1.4%	467	2.2%
6	690	KIDNEY & URINARY TRACT INFECTIONS W/O MCC	371	3.1%	82	0.9%	453	2.1%
7	683	RENAL FAILURE W CC	273	2.3%	102	1.1%	375	1.8%
8	189	PULMONARY EDEMA & RESPIRATORY FAILURE	215	1.8%	135	1.5%	350	1.7%
9	682	RENAL FAILURE W MCC	159	1.3%	187	2.0%	346	1.6%
10	812	RED BLOOD CELL DISORDERS W/O MCC	115	1.0%	210	2.3%	325	1.5%
11	191	CHRONIC OBSTRUCTIVE PULMONARY DISEASE W CC	186	1.6%	133	1.4%	319	1.5%
12	314	OTHER CIRCULATORY SYSTEM DIAGNOSES W MCC	125	1.1%	190	2.0%	315	1.5%
13	194	SIMPLE PNEUMONIA & PLEURISY W CC	213	1.8%	102	1.1%	315	1.5%
14	392	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W/O MCC	182	1.5%	120	1.3%	302	1.4%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
15	640	MISC DISORDERS OF NUTRITION,METABOLISM,FLUIDS /ELECTROLYTES W MCC	118	1.0%	175	1.9%	293	1.4%
16	641	MISC DISORDERS OF NUTRITION,METABOLISM,FLUIDS /ELECTROLYTES W/O MCC	206	1.7%	76	0.8%	282	1.3%
17	190	CHRONIC OBSTRUCTIVE PULMONARY DISEASE W MCC	177	1.5%	90	1.0%	267	1.3%
18	872	SEPTICEMIA OR SEVERE SEPSIS W/O MV 96+ HOURS W/O MCC	189	1.6%	78	0.8%	267	1.3%
19	945	REHABILITATION W CC/MCC	157	1.3%	102	1.1%	259	1.2%
20	689	KIDNEY & URINARY TRACT INFECTIONS W MCC	164	1.4%	65	0.7%	229	1.1%
21	313	CHEST PAIN	114	1.0%	112	1.2%	226	1.1%
22	65	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W CC	178	1.5%	30	0.3%	208	1.0%
23	193	SIMPLE PNEUMONIA & PLEURISY W MCC	110	0.9%	98	1.1%	208	1.0%
24	378	G.I. HEMORRHAGE W CC	158	1.3%	38	0.4%	196	0.9%
25	208	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT <96 HOURS	116	1.0%	79	0.8%	195	0.9%
26	192	CHRONIC OBSTRUCTIVE PULMONARY DISEASE W/O CC/MCC	122	1.0%	66	0.7%	188	0.9%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
27	603	CELLULITIS W/O MCC	105	0.9%	81	0.9%	186	0.9%
28	101	SEIZURES W/O MCC	74	0.6%	107	1.1%	181	0.9%
29	853	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE W MCC	99	0.8%	71	0.8%	170	0.8%
30	391	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS W MCC	59	0.5%	105	1.1%	164	0.8%
31	252	OTHER VASCULAR PROCEDURES W MCC	81	0.7%	83	0.9%	164	0.8%
32	948	SIGNS & SYMPTOMS W/O MCC	117	1.0%	47	0.5%	164	0.8%
33	312	SYNCOPE & COLLAPSE	121	1.0%	43	0.5%	164	0.8%
34	638	DIABETES W CC	80	0.7%	81	0.9%	161	0.8%
35	377	G.I. HEMORRHAGE W MCC	112	0.9%	44	0.5%	156	0.7%
36	811	RED BLOOD CELL DISORDERS W MCC	70	0.6%	85	0.9%	155	0.7%
37	870	SEPTICEMIA OR SEVERE SEPSIS W MV 96+ HOURS	90	0.8%	54	0.6%	144	0.7%
38	178	RESPIRATORY INFECTIONS & INFLAMMATIONS W CC	105	0.9%	33	0.4%	138	0.7%
39	699	OTHER KIDNEY & URINARY TRACT DIAGNOSES W CC	54	0.5%	82	0.9%	136	0.6%
40	293	HEART FAILURE & SHOCK W/O CC/MCC	106	0.9%	29	0.3%	135	0.6%
40	64	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W MCC	99	0.8%	36	0.4%	135	0.6%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
42	309	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W CC	95	0.8%	38	0.4%	133	0.6%
43	177	RESPIRATORY INFECTIONS & INFLAMMATIONS W MCC	92	0.8%	36	0.4%	128	0.6%
44	280	ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W MCC	90	0.8%	37	0.4%	127	0.6%
45	884	ORGANIC DISTURBANCES & MENTAL RETARDATION	*	*	*	*	123	0.6%
46	372	MAJOR GASTROINTESTINAL DISORDERS & PERITONEAL INFECTIONS W CC	75	0.6%	39	0.4%	114	0.5%
46	698	OTHER KIDNEY & URINARY TRACT DIAGNOSES W MCC	50	0.4%	64	0.7%	114	0.5%
46	207	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT 96+ HOURS	74	0.6%	40	0.4%	114	0.5%
49	100	SEIZURES W MCC	52	0.4%	59	0.6%	111	0.5%
50	308	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W MCC	69	0.6%	38	0.4%	107	0.5%
50	57	DEGENERATIVE NERVOUS SYSTEM DISORDERS W/O MCC	89	0.7%	18	0.2%	107	0.5%
50	389	G.I. OBSTRUCTION W CC	61	0.5%	46	0.5%	107	0.5%
53	394	OTHER DIGESTIVE SYSTEM DIAGNOSES W CC	68	0.6%	37	0.4%	105	0.5%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
54	300	PERIPHERAL VASCULAR DISORDERS W CC	67	0.6%	37	0.4%	104	0.5%
55	69	TRANSIENT ISCHEMIA	72	0.6%	27	0.3%	99	0.5%
56	74	CRANIAL & PERIPHERAL NERVE DISORDERS W/O MCC	29	0.2%	63	0.7%	92	0.4%
57	281	ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W CC	72	0.6%	17	0.2%	89	0.4%
58	264	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	38	0.3%	46	0.5%	84	0.4%
59	287	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH W/O MCC	43	0.4%	40	0.4%	83	0.4%
60	202	BRONCHITIS & ASTHMA W CC/MCC	35	0.3%	45	0.5%	80	0.4%
61	4	TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W/O MAJ O.R.	50	0.4%	29	0.3%	79	0.4%
62	684	RENAL FAILURE W/O CC/MCC	51	0.4%	26	0.3%	77	0.4%
62	947	SIGNS & SYMPTOMS W MCC	43	0.4%	34	0.4%	77	0.4%
64	981	EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS W MCC	35	0.3%	41	0.4%	76	0.4%
65	253	OTHER VASCULAR PROCEDURES W CC	55	0.5%	20	0.2%	75	0.4%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
66	470	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC	55	0.5%	19	0.2%	74	0.3%
66	393	OTHER DIGESTIVE SYSTEM DIAGNOSES W MCC	41	0.3%	33	0.4%	74	0.3%
68	637	DIABETES W MCC	28	0.2%	45	0.5%	73	0.3%
68	481	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT W CC	*	*	*	*	73	0.3%
68	371	MAJOR GASTROINTESTINAL DISORDERS & PERITONEAL INFECTIONS W MCC	42	0.4%	31	0.3%	73	0.3%
71	552	MEDICAL BACK PROBLEMS W/O MCC	49	0.4%	19	0.2%	68	0.3%
72	315	OTHER CIRCULATORY SYSTEM DIAGNOSES W CC	31	0.3%	35	0.4%	66	0.3%
73	310	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS W/O CC/MCC	51	0.4%	13	0.1%	64	0.3%
74	73	CRANIAL & PERIPHERAL NERVE DISORDERS W MCC	*	*	*	*	60	0.3%
75	329	MAJOR SMALL & LARGE BOWEL PROCEDURES W MCC	39	0.3%	20	0.2%	59	0.3%
76	299	PERIPHERAL VASCULAR DISORDERS W MCC	38	0.3%	20	0.2%	58	0.3%
76	592	SKIN ULCERS W MCC	24	0.2%	34	0.4%	58	0.3%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
78	438	DISORDERS OF PANCREAS EXCEPT MALIGNANCY W MCC	*	*	*	*	57	0.3%
79	602	CELLULITIS W MCC	23	0.2%	32	0.3%	55	0.3%
80	3	ECMO OR TRACH W MV 96+ HRS OR PDX EXC FACE, MOUTH & NECK W MAJ O.R.	38	0.3%	15	0.2%	53	0.3%
81	286	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH W MCC	25	0.2%	25	0.3%	50	0.2%
81	176	PULMONARY EMBOLISM W/O MCC	26	0.2%	24	0.3%	50	0.2%
81	195	SIMPLE PNEUMONIA & PLEURISY W/O CC/MCC	35	0.3%	15	0.2%	50	0.2%
84	554	BONE DISEASES & ARTHROPATHIES W/O MCC	36	0.3%	13	0.1%	49	0.2%
85	441	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA W MCC	24	0.2%	24	0.3%	48	0.2%
85	166	OTHER RESP SYSTEM O.R. PROCEDURES W MCC	23	0.2%	25	0.3%	48	0.2%
87	239	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W MCC	25	0.2%	22	0.2%	47	0.2%
87	92	OTHER DISORDERS OF NERVOUS SYSTEM W CC	23	0.2%	24	0.3%	47	0.2%
89	388	G.I. OBSTRUCTION W MCC	29	0.2%	17	0.2%	46	0.2%





Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
90	781	OTHER ANTEPARTUM DIAGNOSES W MEDICAL COMPLICATIONS	*	*	*	*	45	0.2%
91	919	COMPLICATIONS OF TREATMENT W MCC	20	0.2%	24	0.3%	44	0.2%
92	240	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE W CC	*	*	*	*	43	0.2%
92	66	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION W/O CC/MCC	*	*	*	*	43	0.2%
92	204	RESPIRATORY SIGNS & SYMPTOMS	21	0.2%	22	0.2%	43	0.2%
95	918	POISONING & TOXIC EFFECTS OF DRUGS W/O MCC	18	0.2%	24	0.3%	42	0.2%
96	442	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA W CC	18	0.2%	23	0.2%	41	0.2%
96	556	SIGNS & SYMPTOMS OF MUSCULOSKELETAL SYSTEM & CONN TISSUE W/O MCC	23	0.2%	18	0.2%	41	0.2%
98	439	DISORDERS OF PANCREAS EXCEPT MALIGNANCY W CC	19	0.2%	21	0.2%	40	0.2%
99	864	FEVER	19	0.2%	20	0.2%	39	0.2%
99	379	G.I. HEMORRHAGE W/O CC/MCC	*	*	*	*	39	0.2%
99	91	OTHER DISORDERS OF NERVOUS SYSTEM W MCC	17	0.1%	22	0.2%	39	0.2%



Rank	DRG Number	Condition	Number of Hospitalizations for Dual Eligibles under Age 65	Percentage of Total by Age	Number of Hospitalizations for Age 65 and Older	Percentage of Total by Age	Number of Hospitalizations for All Dual Eligibles	Percentage of Total
Table 7, continued								
99	863	POSTOPERATIVE & POST-TRAUMATIC INFECTIONS W/O MCC	13	0.1%	26	0.3%	39	0.2%
100	673	OTHER KIDNEY & URINARY TRACT PROCEDURES W MCC	14	0.1%	24	0.3%	38	0.2%
		All Other DRGS	2,453	20.6%	1,925	20.7%	4,378	20.7%
		<b>Total</b>	<b>11,887</b>	<b>100.0%</b>	<b>9,306</b>	<b>100.0%</b>	<b>21,193</b>	<b>100.0%</b>

\*Number smaller than allowed under CMS reporting standards.



Table 8 shows expenditures for the high utilizers by payer and category of service. The categories are defined to be as similar as possible for the two programs with differing payment rules but are not strictly comparable. “Carrier” services are defined under Medicare Part B as primarily professional providers’ services (e.g., physicians and other medical professionals) along with certain outpatient therapy services. The “Physician” category under Medicaid is constructed from professional claims, while the “special services” classification of Medicaid claims includes services not captured under other categories, such as laboratory testing, transportation, and other social support services.

The distribution of payments across the two payers is consistent with Medicare’s role as primary payer for acute care services and Medicaid’s coverage of long-term services and supports (LTSS). Among full-benefit dual-eligible beneficiaries under age 65 with three or more inpatient stays, 62 percent of Medicare expenditures were for inpatient care, and relatively small expenditures were spent on other categories of care. Medicaid expenditures for inpatient care consumed 26.7 percent or \$15 million of the \$58 million spent on high-utilizer dual eligibles. Because Medicaid pays only patient cost sharing for hospital stays for full-benefit dual eligibles, this expenditure reflects payment of the Medicare deductible for the initial stay and hospital coinsurance for lengthy inpatient stays. Medicare also has lifetime payment limits that may come into play for high utilizers with lengthy stays. The remaining major services paid by Medicaid include home health services (25.5 percent) and nursing facility services (22.1 percent). Among dual eligibles aged 65 and older with three or more inpatient stays, the majority of Medicaid expenditures were for nursing facility services (52.3 percent) and home health services (22.0 percent). Sixty percent of Medicare expenditures for dual eligibles aged 65 and older was for inpatient care, as might be expected for the high-utilizer population.



**Table 8. Medicaid and Medicare Expenditures for Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Service Type and Age Group, CY 2012**

Service Type	Expenditures for Dual Eligibles under Age 65	Percentage of Total Expenditures	Expenditures for Dual Eligibles Aged 65 and Older	Percentage of Total Expenditures
<b>Medicaid Expenditures</b>				
DME*	\$53,577	0.1%	\$21,642	0.0%
Home health aide	\$9,558	0.0%	\$16,386	0.0%
Nursing facility	\$12,899,022	22.1%	\$34,627,838	52.3%
Physician	\$7,418,141	12.7%	\$3,534,503	5.3%
Home health services	\$14,925,539	25.6%	\$14,578,185	22.0%
Hospice	\$169,690	0.3%	\$233,562	0.4%
Inpatient	\$15,605,799	26.7%	\$8,085,251	12.2%
Long term care	\$319,065	0.5%	\$355,244	0.5%
MCO Capitation**	\$1,431,396	2.5%	\$360,309	0.5%
Outpatient	\$3,717,439	6.4%	\$2,319,414	3.5%
Pharmacy	\$552,019	0.9%	\$347,619	0.5%
Special services	\$1,308,920	2.2%	\$1,739,917	2.6%
<b>Total</b>	<b>\$58,410,165</b>	<b>100.0%</b>	<b>\$66,219,870</b>	<b>100.0%</b>
<b>Medicare Expenditures</b>				
Carrier	\$27,949,308	12.8%	\$36,806,420	11.9%
DME*	\$3,478,863	1.6%	\$2,818,629	0.9%
Home health aide	\$3,278,667	1.5%	\$7,055,113	2.3%
Hospice	\$713,134	0.3%	\$2,346,782	0.8%
Inpatient	\$136,536,350	62.4%	\$185,335,068	60.0%
Outpatient	\$30,816,006	14.1%	\$25,276,301	8.2%
Nursing Facility	\$16,013,468	7.3%	\$49,407,469	16.0%
<b>Total</b>	<b>\$218,785,796</b>	<b>100.0%</b>	<b>\$309,045,782</b>	<b>100.0%</b>
<b>Total Medicaid &amp; Medicare Expenditures</b>	<b>\$277,195,961</b>		<b>\$375,265,652</b>	

\*Durable Medical Equipment. \*\*MCO Capitation payments are present for Medicaid recipients who participated in HealthChoice before gaining Medicare eligibility during the reporting year.

The distribution of patient service days (i.e., at least one service in each category per day) by service category (Table 9) differs significantly from the distribution of expenditures by service category (Table 8). This may be attributable to the difference between high-frequency but low-cost services and less frequent but more costly services. Among full-benefit dual-eligible beneficiaries under age 65 with three or more inpatient stays, the majority of Medicaid service days were for physician (30.5 percent), home health services (21.1 percent), and special services (20.4 percent). The majority of Medicare service days were for carrier (41.3 percent) and



outpatient services (21.6 percent). Among high-utilizing dual eligibles aged 65 and older, the majority of Medicaid service days were for special services (25.7 percent), nursing facility (25.1 percent), home health services (23.8 percent), and carrier (professional) service days (23.0 percent). Because Medicare Part B charges 20 percent coinsurance on professional fees, one might presume that most of these carrier service days represent such copayments. The majority of Medicare service days were for carrier (38.2 percent), DME (17.7 percent), and outpatient services (15.1 percent).

**Table 9. Medicaid and Medicare Service Days for Full-Benefit Dual-Eligible Beneficiaries with Three or More Inpatient Stays, by Service Type and Age Group, CY 2012**

Service Type	Service Days for Dual Eligibles under Age 65	Percentage of Total Service Days	Service Days for Dual Eligibles Aged 65 and Older	Percentage of Total Service Days
<b>Medicaid Service Days</b>				
DME	192	0.0%	106	0.0%
Home health aide	82	0.0%	128	0.0%
Nursing facility	58,507	10.0%	176,764	25.1%
Physician	177,790	30.5%	118,014	16.8%
Home health services	122,981	21.1%	167,050	23.8%
Hospice	588	0.1%	1,198	0.2%
Inpatient	28,061	4.8%	21,107	3.0%
Long term care	573	0.1%	688	0.1%
MCO Capitation**	28,220	4.8%	6,043	0.9%
Outpatient	35,401	6.1%	20,260	2.9%
Pharmacy	11,002	1.9%	11,161	1.6%
Special services	118,804	20.4%	180,714	25.7%
<b>Total</b>	<b>582,201</b>	<b>100.0%</b>	<b>703,233</b>	<b>100.0%</b>
<b>Medicare Service Days</b>				
Carrier	355,578	41.3%	473,468	38.2%
DME*	146,748	17.0%	219,746	17.7%
Home health aide	54,075	6.3%	105,548	8.5%
Hospice	3,329	0.4%	12,669	1.0%
Inpatient	70,654	8.2%	97,798	7.9%
Outpatient	186,273	21.6%	186,630	15.1%
Nursing Facility	45,057	5.2%	142,206	11.5%
<b>Total</b>	<b>861,714</b>	<b>100.0%</b>	<b>1,238,065</b>	<b>100.0%</b>
<b>Total Medicaid &amp; Medicare Service Days</b>	<b>1,443,915</b>		<b>1,941,298</b>	

\*Durable Medical Equipment. \*\*MCO Capitation payments are present for Medicaid recipients who participated in HealthChoice before gaining Medicare eligibility during the reporting year.



## Summary

About one-fourth of full-benefit dual-eligible beneficiaries incurred three or more inpatient stays in CY 2012. The distribution of high utilizers was most common in the most populous counties. Almost 62 percent of these high utilizers had inpatient stays in four counties: Baltimore City (24.5 percent of high utilizers), Baltimore County (14 percent), Prince George's County (11.9 percent), and Montgomery County (11.3 percent). Focusing interventions on these locations would have the greatest impact.

Consistent with the literature on chronic illness, females and racial minorities are disproportionately represented among the high utilizers. More than 60 percent of all high-utilizing dual eligibles were female, and 45 percent were Black. The most common chronic conditions were hypertension, anemia, ischemic heart disease, heart failure, chronic kidney disease, diabetes, depression, and hyperlipidemia. The most frequently assigned DRGs among hospitalizations of high utilizers include psychoses, sepsis, renal conditions, pulmonary, digestive, heart, and circulatory conditions.

Total expenditures for high-utilizing dual eligibles were \$652.4 million: \$527.8 million paid by Medicare (81 percent) and \$124.6 million paid by Medicaid (19 percent). Approximately 60 percent of Medicare expenditures were for inpatient care, while nursing facility services, home health services, and Medicare inpatient cost sharing together accounted for about 81 percent of Medicaid expenditures.

In terms of days of service for high utilizers, there were 2.1 million service days under Medicare and 1.3 million service days under Medicaid payment. Under Medicare, 40 percent of service days were for carrier (professional) services, reflecting frequent utilization of physician and specialist care by high utilizers in both inpatient and outpatient settings. Medicare nursing facility service days, which are limited by Medicare to rehabilitative and restorative services rather than custodial care, accounted for 9 percent of total service days. In contrast, Medicaid nursing facility service days made up 18 percent of the total. An additional 290,031 home health service days were paid by Medicaid, which was about 23 percent of total service days.





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