Medication use among Medicare beneficiaries with medical and psychiatric conditions, 2009-2011

Medication Use in Medicare Data Points #19

Psychiatric diagnoses are common among Medicare beneficiaries. Complicating the management of these conditions is the high rate of concurrent psychiatric and medical conditions.[1-3] In 2010, 14% of Medicare fee-for-service (FFS) beneficiaries had depression.[2] More than 65% of these beneficiaries with depression also had three or more chronic physical conditions.[2] This pattern of dual psychiatric-medical comorbidity is seen with schizophrenia, bipolar disorder, depression, and anxiety and is associated with higher levels of morbidity and health care use, as well as poorer outcomes for chronic medical conditions.[3-7]

The group of Medicare beneficiaries with psychiatric-medical comorbidity is likely to increase in size as more people age into Medicare program eligibility, particularly those with chronic psychiatric and medical disorders that require lifetime care. Care for chronic physical and psychiatric conditions often includes the use of multiple prescription drugs, which increases the potential for complex drug interactions.[8,9] Multiple medications and use of psychotropic drugs increases the possibility of adverse drug events.[10, 11]

Expenditures for medication coverage under Medicare Part D are substantial. Concurrent with the implementation of the Medicare Part D program between 2005 and 2006, Medicare expenditures for outpatient prescription drugs increased from $5.9 billion to $44.3 billion, a sevenfold increase.[12] Also between 2005 and 2006, the percentage of Medicare beneficiaries who received at least one Medicare payment for an outpatient prescription drug purchase increased from 21% to 68%.[12] In 2008, the Congressional Budget Office estimated that Medicare Part D expenditures would grow to more than $54.3 billion in 2009 and to $138 billion by 2018.[13]

Within the Medicare population, the majority of beneficiaries who have a psychiatric diagnosis also have one or more medical diagnoses. Use of multiple medications is common in this population. In particular, the number of unique medications and number of unique medication groups is greatest for those with both medical and psychiatric diagnoses. This pattern is seen at all Part D benefit phases.

Medication use and access has increased under Part D.[14, 15] A major focus of Part D benefits is increased drug coverage for low-income individuals. By 2008, more than one-third of Medicare beneficiaries enrolled in prescription drug plan (PDP) or Medicare Advantage prescription drug plans (MA-PD plans) received low-income subsidy assistance.[16] Part D is required to cover nearly all antipsychotic and antidepressant medications to protect against the risk associated with interruptions in these medications.[16] However, access to psychiatric medications may be lower among dual Medicare-Medicaid eligibles, leading to greater rates of psychiatric-related emergency department use.[17] In addition, the existence of a Part D coverage gap before reaching the catastrophic coverage phase can decrease use of essential medications, including antidepressants.[18, 19] The population of Medicare beneficiaries with both medical and psychiatric conditions likely experiences complexity in treatment regimens. It is unclear how medication is being used within this population. Given this uncertainty, baseline data are needed regarding the medication use of Medicare beneficiaries.

This report examines medication utilization for beneficiaries with psychiatric, medical, or both types of diagnoses. In this report, we examine the numbers of Medicare beneficiaries diagnosed with psychiatric and medical conditions; their comparative patterns of medication receipt (number of unique medications, medication groups, receipt of generics, and number of prescribers); and the ways in which medication receipt varies as beneficiaries move through Part D coverage phases over the course of a year. See Tables 1-9 and Figures 1 and 2.

Table 1: Percentage of total Medicare FFS eligibles by diagnosis type, 2009-2011

	2009	2010	2011
Total population A and B FFS* (n)	32,548,516	33,041,639	33,770,290
% of population with			
No psychiatric or medical diagnosis	29.4	29.2	30.1
Medical diagnosis only	49.3	48.7	47.0
Psychiatric diagnosis only	4.6	4.7	5.0
Psychiatric and medical diagnosis	16.8	17.4	17.9
Total	100.0	100.0	100.0
Total population A, B, and D† (n)	17,559,564	16,674,314	16,278,237
% of population with			
No psychiatric or medical diagnosis	23.12	22.61	23.04
Medical diagnosis only	47.92	49.17	49.72
Psychiatric diagnosis only	6.43	6.15	5.96
Psychiatric and medical diagnosis	22.53	22.07	21.28
Total	100.00	100.00	100.00

*Population includes beneficiaries with Medicare Parts A and B fee-for-service coverage.
† Population includes beneficiaries with Medicare Parts A and B fee-for-service coverage and Part D coverage for all months enrolled in Medicare annually.

Figure 1: Percentage of Medicare A and B FFS beneficiaries by diagnosis type and age, 2011
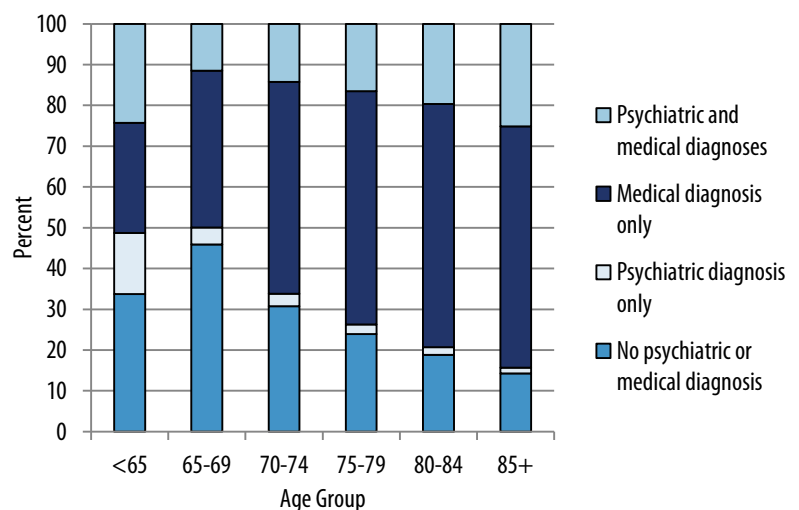
Table 2: Number and percent distribution of Medicare A and B FFS beneficiaries by demography and diagnosis type, 2011

	Total (#)	Total (%)	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
			Percent of total			
Total	33,770,290	100.0	30.1	5.0	47.0	17.9
Age						
<65	6,196,524	100.0	33.8	15.0	27.0	24.3
65-69	7,713,925	100.0	45.9	4.2	38.5	11.5
70-74	6,209,355	100.0	30.8	3.1	51.9	14.2
75-79	4,942,090	100.0	23.9	2.3	57.2	16.5
80-84	4,074,441	100.0	18.8	1.9	59.7	19.7
85+	4,633,955	100.0	14.3	1.4	59.2	25.2
Race or ethnicity						
Non-Hispanic White	27,165,091	100.0	29.8	5.1	46.9	18.3
African American	3,318,549	100.0	29.4	5.1	48.5	17.1
Hispanic	2,007,852	100.0	31.8	5.1	44.5	18.6
Asian or Pacific Islander	747,811	100.0	34.5	3.3	52.2	10.0
American Indian / Alaska Native	171,957	100.0	28.1	6.5	45.5	20.0
Other / Unknown	359,030	100.0	41.9	5.4	40.6	12.1
Gender						
Male	15,105,782	100.0	32.5	4.2	49.8	13.5
Female	18,664,508	100.0	28.1	5.7	44.7	21.5
Urbanicity						
Urban	30,327,865	100.0	29.8	5.1	47.1	18.0
Rural	3,331,028	100.0	30.6	4.8	46.9	17.8
Unknown	111,397	100.0	74.2	2.3	20.5	3.0
Medicare status						
Full dual	5,577,662	100.0	19.4	10.2	37.3	33.2
Partial dual	884,858	100.0	23.4	8.6	43.6	24.4
QMB	904,394	100.0	32.8	3.7	49.3	14.2
Nondual	26,403,376	100.0	22.8	10.0	41.2	26.0
Part D status						
Full Part D	17,559,564	100.0	23.1	6.4	48.0	22.5
Any Part D	727,968	100.0	35.9	8.3	36.4	19.4
No Part D	15,482,758	100.0	37.7	3.3	46.4	12.7

QMB = qualified Medicare beneficiary.

METHODS

We used Medicare enrollment data, 100 percent FFS Parts A and B institutional/noninstitutional claims data, and 100 percent Part D claims data for reference years 2009 through 2011 from the CMS Chronic Conditions Warehouse (CCW). We identified Medicare beneficiaries who had Part A and Part B Medicare coverage with no Medicare Advantage (i.e., managed care enrollment) during their period of eligibility. We determined whether they had a psychiatric or a selected medical diagnosis during the reference year.

Psychiatric diagnoses, identified by International Classification of Diseases-9th edition (ICD-9) codes, included: Schizophrenia (295.x), Bipolar disorders (296.0-296.1, 296.4-296.8, 300.13), Major depression (296.2x,296.3x), Dysthymia (300.4), Other depression (298.0, 309.0-309.1, 311), Generalized anxiety disorder (300.2), Panic disorder with or without agoraphobia (300.01, 300.21), Post-traumatic stress disorder (PTSD, 309.81), Obsessive-compulsive disorder (OCD, 300.3), Social phobia (300.23), Other anxiety (300.00, 300.09), Delusional disorders (297.x), Other non-organic psychoses (298.1-298.9), and Other psychiatric conditions (e.g., personality disorders and any other disorders excluding developmental, organic, or substance use disorders; ICD-9 codes: 296.90, 296.99, 300.1, 300.20, 300.22, 300.29, 300.5-300.9, 301, 307, 309 [except 309.81-PTSD, 312.0-312.4, 312.89-312.9]). Medical diagnoses analyzed in this report include: Alzheimer's disease, Dementia, Cancers (Colorectal, Endometrial, Female breast, Lung, and Prostate), Chronic kidney disease (CKD), Chronic obstructive pulmonary disease (COPD), Diabetes, Heart Failure, Ischemic heart disease (IHD), Arthritis, and Stroke or Transient ischemic attack (TIA).

The medical conditions were identified using the CCW condition definitions.[20]

We assessed trends in diagnosis and medication use across years and demographic factors, including age and gender (identified in the beneficiary summary file during the year the procedure took place), as well as race/ethnicity, region, and urbanicity as defined below.

Race/ethnicity: We defined race and ethnicity using the Research Triangle Institute Race Code, which applies a surname algorithm to assign Hispanic ethnicity.[21]

Age: We defined age categories using the age of the beneficiary at the end of each reference year.

Urban/Rural: We used the Core Based Statistical Area (CBSA) of the beneficiary to identify the urban region in which the beneficiary resides. We categorized beneficiaries who do not reside in a CBSA as rural.[22]

Dual Status: We used CMS' established algorithm for defining the annual dual eligibility status of each beneficiary using the monthly State Reported Dual Eligibility Status Codes. The algorithm categorizes beneficiaries into four groups: Full Duals had full Medicare and Medicaid coverage (including prescription drugs) during the most recent month of dual eligibility for the reference year; QMB beneficiaries had Medicaid and participated in the Qualified Medicare Beneficiary Program during the most recent month of dual eligibility for the reference year; and Other/Partial Duals had Medicaid and participated in the Specified Low-Income Medicare Beneficiary Program, the Qualifying Individual Program, or the Qualified Disabled and Working Individuals Program during the most recent month of dual eligibility for the reference year.

Table 3: Number and percent distribution of Medicare A and B FFS beneficiaries by diagnosis type and comorbidity, 2011

	Total (#)	Total (%)	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
			Percent of total			
Total	33,770,290	100.0	30.1	5.0	47.0	17.9
Psychiatric diagnoses						
0 psych diagnoses	26,016,359	100.0	39.0	n/a	61.0	n/a
1 psych diagnosis	4,684,517	100.0	n/a	23.4	n/a	76.6
2+ psych diagnoses	3,069,414	100.0	n/a	19.7	n/a	80.4
Schizophrenia	612,908	100.0	n/a	38.8	n/a	61.2
Bipolar disorders	148,769	100.0	n/a	32.0	n/a	68.0
Major depression	1,363,935	100.0	n/a	22.9	n/a	77.1
Dysthymia	874,365	100.0	n/a	18.1	n/a	81.9
Other depression	3,675,846	100.0	n/a	17.0	n/a	83.0
Generalized anxiety disorder	661,160	100.0	n/a	23.5	n/a	76.5
Panic disorder	240,165	100.0	n/a	29.5	n/a	70.5
PTSD	198,976	100.0	n/a	38.0	n/a	62.0
OCD	79,337	100.0	n/a	42.8	n/a	57.2
Social phobia	11,567	100.0	n/a	50.5	n/a	49.5
Other anxiety	2,715,832	100.0	n/a	20.2	n/a	79.8
Delusional disorders	87,750	100.0	n/a	15.7	n/a	84.3
Other non-organic psychoses	937,957	100.0	n/a	10.5	n/a	89.5
Other psychiatric conditions	1,424,844	100.0	n/a	23.2	n/a	76.9
Medical diagnoses						
Alzheimer's and dementia	3,498,983	100.0	n/a	n/a	50.6	49.4
Cancer	2,689,276	100.0	n/a	n/a	74.1	25.9
CKD	4,910,911	100.0	n/a	n/a	67.2	32.9
COPD	3,691,650	100.0	n/a	n/a	58.8	41.2
Diabetes	9,009,155	100.0	n/a	n/a	72.7	27.3
Heart failure	4,997,940	100.0	n/a	n/a	65.2	34.8
IHD	9,748,985	100.0	n/a	n/a	71.6	28.4
Arthritis	9,404,132	100.0	n/a	n/a	67.2	32.8
Stroke/TIA	1,249,679	100.0	n/a	n/a	55.1	44.9

PTSD = post-traumatic stress disorder; OCD = obsessive compulsive disorder; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; IHD = ischemic heart disease; TIA = transient ischemic attack.

Table 4: Number and percent distribution of Medicare Parts A, B, and D FFS beneficiaries by demography and diagnosis type, 2011

	Total (#)	Total (%)	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
			Percent of total			
Total	17,559,564	100.0	23.1	6.4	47.9	22.5
Age						
<65	4,125,407	100.0	26.0	17.9	27.0	29.1
65-69	3,308,952	100.0	34.0	4.8	44.9	16.3
70-74	3,158,411	100.0	25.5	3.3	54.0	17.3
75-79	2,452,331	100.0	19.8	2.4	58.2	19.7
80-84	2,055,184	100.0	15.3	1.9	59.8	23.0
85+	2,459,279	100.0	10.6	1.3	59.1	29.1
Race or ethnicity						
Non-Hispanic White	13,602,465	100.0	23.2	6.5	47.5	22.9
African American	1,924,800	100.0	22.2	6.8	48.8	22.2
Hispanic	1,265,516	100.0	22.0	6.1	48.1	23.8
Asian or Pacific Islander	498,323	100.0	26.1	3.8	58.1	12.0
American Indian / Alaska Native	98,752	100.0	22.6	8.3	44.6	24.5
Other / Unknown	169,708	100.0	29.7	7.4	45.8	17.1
Gender						
Male	7,053,378	100.0	24.9	6.3	51.0	17.8
Female	10,506,186	100.0	22.0	6.5	45.9	25.7
Urbanicity						
Urban	15,597,789	100.0	23.0	6.5	47.8	22.6
Rural	1,944,705	100.0	23.9	5.6	48.7	21.8
Unknown	17,070	100.0	40.1	3.4	46.6	10.0
Medicare status						
Full dual	5,333,215	100.0	19.1	10.3	37.6	33.0
Partial dual	791,774	100.0	21.4	8.5	44.8	25.3
QMB	10,605,307	100.0	25.4	4.1	53.8	16.7
Nondual	829,268	100.0	21.1	9.8	42.2	26.9

QMB = qualified Medicare beneficiary.

Nonduals had Medicare coverage only for the reference year.[23]

Part D Status: We categorized Part D status into three groups. All Part D indicates continuous Part D coverage during the reference year for all months of Medicare eligibility (i.e., months where the beneficiary was alive and covered by Medicare). Any Part D indicates at least one month of continuous or noncontinuous Part D coverage during the reference year. No Part D indicates no Part D coverage during the reference year. We identified the number of coverage months using the monthly Part D plan contract identifier.

Part D Coverage Phase: We identified the number of days each beneficiary spent in the deductible, pre-initial coverage limit (pre-ICL), initial coverage limit (ICL), and catastrophic coverage phase using the "Benefit Phase" indicator variable included in the CCW Part D Event files.[24] We calculated the number of days in each stage using the dates each stage went into effect.

We used the Medi-Span classification system to classify a variety of aspects of prescribed medications.[25] The system consoli-dates National Drug Codes (NDCs) into a single drug title, with a total of 2,523 drugs in the classification system. Drugs are consolidated into 95 drug groups, and drug groups are consolidated into 18 drug categories (See **Appendix A**).

Antipsychotic use: We considered beneficiaries to be using antipsychotic or antimanic drugs if they used any drug in the Medi-Span drug group "Antipsychotic/Antimanic Agents." We used the indicator to find individuals who received these medications but who did not have a psychiatric diagnosis captured in our analysis, as undiagnosed mental conditions are common among Medicare beneficiaries.

Antipsychotics are one of the groups of critical medications covered by Part D.[16] We did not conduct a parallel analysis with antidepressants (another critical group) because they have nonpsychiatric indications such as pain or insomnia.[26-28]

Generics and brands: We used the "Brand/Generic" indicator variable developed by CMS to classify each drug as name brand or generic. (Note: This indicator is a CMS internal variable not generally released in files sent to external researchers.)

Unique prescribers: We counted unique prescribers using the "CCW_PRSCRBR_ID" variable included in the CCW Part D Event files.[24]

RESULTS

The distribution of psychiatric and medical diagnoses among the approximately 33 million Medicare beneficiaries from 2009 to 2011 is shown in **Table 1**. Approximately 30 percent of the population had no psychiatric or medical diagnosis captured by our measures, and approximately 50 percent had chronic medical diagnoses only (though this percentage decreased somewhat from 49.3% in 2009 to 47% in 2011). About 17 to 18 percent of beneficiaries had both psychiatric and medical diagnoses, and 5 percent had a psychiatric diagnosis only.

The population of 33.7 million Medicare beneficiaries with full Part A and B fee-for-service (A and B FFS) coverage in 2011 overall and by psychiatric and medical morbidity categories is described in **Tables 2 and 3 (**overall totals and proportions shown in Tables 2 and 3, population numbers shown in Appendix B). Results from 2009 and 2010 show no significant variation from 2011, so we present only results for 2011 here.

Table 5: Number and percent distribution of Medicare Parts A, B, and D FFS beneficiaries by diagnosis type and comorbidity, 2011

	Total (#)	Total (%)	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
				Percent of total		
Total	17,559,564	100.0	23.1	6.4	47.9	22.5
Psychiatric diagnoses						
0 psych diagnoses	12,474,957	100.0	32.6	n/a	67.5	n/a
1 psych diagnosis	2,924,270	100.0	n/a	23.6	n/a	76.4
2+ psych diagnoses	2,160,337	100.0	n/a	20.4	n/a	79.7
Schizophrenia	549,089	100.0	n/a	38.8	n/a	61.2
Bipolar disorders	122,889	100.0	n/a	32.4	n/a	67.6
Major depression	947,252	100.0	n/a	22.8	n/a	77.3
Dysthymia	584,468	100.0	n/a	17.8	n/a	82.2
Other depression	2,421,730	100.0	n/a	16.8	n/a	83.2
Generalized anxiety disorder	440,846	100.0	n/a	22.9	n/a	77.1
Panic disorder	168,465	100.0	n/a	29.6	n/a	70.4
PTSD	142,685	100.0	n/a	38.9	n/a	61.1
OCD	61,620	100.0	n/a	45.1	n/a	54.9
Social phobia	8,941	100.0	n/a	51.5	n/a	48.5
Other anxiety	1,773,338	100.0	n/a	19.7	n/a	80.3
Delusional disorders	65,053	100.0	n/a	16.9	n/a	83.1
Other non-organic psychoses	646,525	100.0	n/a	12.1	n/a	87.9
Other psychiatric conditions	991,056	100.0	n/a	24.4	n/a	75.6
Medical diagnoses						
Alzheimer's and dementia	2,219,170	100.0	n/a	n/a	47.5	52.5
Cancer	1,389,083	100.0	n/a	n/a	70.7	29.3
CKD	2,874,153	100.0	n/a	n/a	63.2	36.8
COPD	2,283,662	100.0	n/a	n/a	54.1	45.9
Diabetes	5,303,784	100.0	n/a	n/a	68.1	31.9
Heart failure	3,025,205	100.0	n/a	n/a	61.3	38.8
IHD	5,466,246	100.0	n/a	n/a	67.4	32.6
Arthritis	5,470,735	100.0	n/a	n/a	63.0	37.0
Stroke/TIA	742,555	100.0	n/a	n/a	51.5	48.5

PTSD = post-traumatic stress disorder; OCD = obsessive compulsive disorder; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; IHD = ischemic heart disease; TIA = transient ischemic attack.

Figure 2: Percentage of total Medicare parts A and B FFS beneficiaries with Part D coverage, total and by diagnosis category, 2011
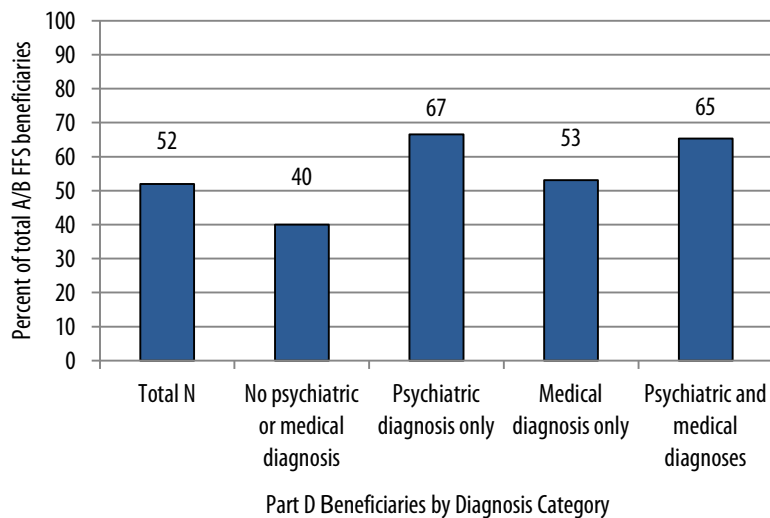
Among age groups, disability-eligible individuals (age <65) were much more likely to have psychiatric diagnoses and were more likely to only have psychiatric conditions (**Table 2, Figure 1**). Among racial and ethnic groups, Asian/Pacific Islanders had notably lower percentages of psychiatric diagnoses only or psychiatric diagnoses with medical comorbidity than other groups. Relatively high psychiatric and/or psychiatric-medical morbidity was evident among females; beneficiaries with dual Medicaid and Medicare status; and beneficiaries with Part D coverage (**Table 2**).

The most common of the specific psychiatric diagnoses we investigate were other depression (3.7 million beneficiaries), other anxiety (2.7 million), and major depression (1.4 million; **Table 3**). The most common chronic medical diagnoses within this population were ischemic heart disease (IHD, 9.7 million), arthritis (9.4 million), and diabetes (9 million). One-quarter to one-half of those with chronic medical diagnoses were also diagnosed with a psychiatric condition (**Table 3**). A majority of individuals diagnosed with each psychiatric condition had psychiatric-medical comorbidity, ranging from 50% of beneficiaries diagnosed with social phobia who also have a medical comorbidity to 90% of beneficiaries with other non-organic psychoses who have a medical comorbidity (**Table 3**).

The population of 17.6 million Medicare beneficiaries who had Part D coverage for all months of Medicare enrollment in 2011 is described in **Tables 4 and 5** (overall totals and proportions shown in Tables 4 and 5, population numbers shown in Appendix C). Among those with Part D coverage, the largest morbidity category overall was medical only (48%).

However, the percentage with no psychiatric or medical diagnosis was nearly equal to that with psychiatric-medical comorbidity (approximately 23% for both). A greater percentage of Part D beneficiaries (6.4%) also had psychiatric-only diagnoses compared to the overall A and B FFS group (5%). Other than often higher percentages for morbidity groups, most other patterns mirrored those in the overall A and B FFS population (**Table 5**).

Slightly over 50 percent of Medicare A and B FFS beneficiaries had Part D coverage for all months of Medicare eligibility in 2011, and a greater percentage of beneficiaries with a psychiatric diagnosis (67%) had Part D coverage for all eligible months than other diagnosis groups (**Figure 2**).

Table 6 displays co-occurrence of psychiatric condition categories with chronic medical conditions and categories among the whole A and B FFS population. The most common combinations of psychiatric and medical conditions were among depressive and/or anxiety disorders linked with cardiovascular and arthritis conditions. The most common combinations experienced in this population were depression-cardiovascular (2.2 million beneficiaries); depression-arthritis (2.1 million); depression-diabetes (1.6 million); anxiety-cardiovascular (1.5 million); and anxiety-arthritis (1.4 million). Depressive disorders, anxiety disorders, and the combination of both a depressive and anxiety condition were the most prevalent categories of psychiatric conditions, and generally had higher numbers of beneficiaries with concurrent medical conditions than other psychiatric conditions. The same analysis among beneficiaries with Parts A, B, and D coverage for all eligible months is shown in **Table 7**. The overall patterns were consistent between the Part D and whole Parts A and B populations.

The most common combinations for the population with Parts A, B, and D coverage were depression-cardiovascular (1.5 million beneficiaries); depression-arthritis (1.4 million); depression-diabetes (1.1 million); anxiety-cardiovascular (1.0 million); and anxiety-arthritis (0.9 million; **Table 7**).

An analysis of the time in, time to reach, and percentage of beneficiaries reaching each Part D benefit phase for A and B FFS beneficiaries with Part D coverage for all eligible months is shown in **Table 8**. Within this population, all diagnosis groups spent the longest mean time in the pre-ICL (pre-coverage gap) phase. Beneficiaries with psychiatric, chronic medical, or psychiatric-medical conditions spent fewer days in the deductible and pre-ICL phases and reached these phases more quickly than beneficiaries with no diagnosed conditions. Those with psychiatric-medical comorbidity had the shortest time in deductible and pre-ICL phases with 63 and 217 mean days in phase compared to 163 and 263 days for the no-diagnosis group. Conversely, those with psychiatric-medical comorbidity had the longest mean time in the ICL (coverage gap) phase (127 days), just slightly longer than the medical diagnosis group (124 days). While those with none of the measured diagnoses had the most time in the catastrophic phase (163 days), followed by those with psychiatric diagnoses (152 days), and those with psychiatric-medical diagnoses (140 days), they were also the least likely to reach this phase.

Only 2.4 percent of beneficiaries with none of our selected diagnoses reached the catastrophic stage, while 17.2 percent of beneficiaries with psychiatric-medical diagnoses reached this stage (**Table 8**).

The analysis of mean days to reaching each benefit phase shows that the psychiatric-only, medical-only, and psychiatric-medical groups reached the deductible, pre-ICL, and ICL phases more quickly than the no-diagnosis group. However, possibly owing to the shorter time spent by the no-diagnosis group in the ICL coverage gap, this group moved from the ICL to the catastrophic stage the most quickly, with 196 days to reach the catastrophic stage compared to between 210 and 237 days for the other diagnosis groups (**Table 8**).

Table 9 shows the number of medications, groups, prescribers, and percentage of prescription claims for generic drugs in each benefit phase by diagnosis category for the population with Parts A, B, and D coverage for all eligible months in 2011. Claims were submitted for the highest average number of unique medications during the pre-ICL phase for all diagnostic categories, reflecting the longest time in phase for pre-ICL (7.3 medications prescribed in 4.1 drug groups by 2.7 prescribers for the overall population). In almost all phases, the psychiatric-medical comorbidity group had the highest mean unique medications (10.3 in the pre-ICL phase and 5.8 in the ICL phase); the highest mean number of drug groups (5.6 in the pre-ICL and 3.1 in the ICL); and the highest number of prescribers (3.5 in pre-ICL and 1.8 in the ICL).

Table 6: Number and percentage of Medicare A and B FFS beneficiaries by concurrent psychiatric and medical diagnosis category, 2011

Variable	Total with psych condition #	%	Alzheimer's, dementia #	%	Cancers #	%	Cardiovascular conditions #	%	Diabetes #	%	CKD #	%	COPD #	%	Arthritis #	%
Schizophrenia	612,908	100.0	115,980	18.9	22,154	3.6	166,745	27.2	201,519	32.9	84,928	13.9	110,072	18.0	135,372	22.1
Bipolar	148,769	100.0	26,974	18.1	6,492	4.4	45,838	30.8	46,148	31.0	26,499	17.8	31,197	21.0	48,888	32.9
Depression	4,783,313	100.0	1,164,539	24.4	437,619	9.2	2,214,003	46.3	1,605,698	33.6	1,055,650	22.1	1,006,187	21.0	2,060,487	43.1
Anxiety disorders	3,383,269	100.0	611,640	18.1	301,752	8.9	1,462,108	43.2	979,898	29.0	630,877	18.7	728,208	21.5	1,413,615	41.8
Any anxiety + depression	1,619,302	100.0	379,856	23.5	143,197	8.8	748,003	46.2	508,598	31.4	341,710	21.1	405,782	25.1	754,804	46.6
Delusions	87,750	100.0	49,822	56.8	6,961	7.9	43,640	49.7	29,692	33.8	22,584	25.7	19,529	22.3	34,257	39.0
Other non-organic psychoses	937,957	100.0	501,468	53.5	105,158	11.2	577,146	61.5	362,188	38.6	327,507	34.9	247,450	26.4	400,733	42.7
Other psychiatric conditions	1,424,844	100.0	375,894	26.4	116,906	8.2	619,505	43.5	449,606	31.5	308,360	21.6	278,975	19.6	566,449	39.8

The only exception was a mean of 1.2 prescribers in the deductible phase for the psychiatric-only group versus 1.0 in the psychiatric-medical group. In the same phase, the psychiatric-only group's mean medication count (2.3) was also close to that of the psychiatric-medical category (2.5; **Table 9**).

All diagnostic categories' percent generic fills decreased across coverage phases (**Table 9**). All diagnostic categories had the highest percentage of generic prescription fills in the deductible phase, with the total population having 91 percent of prescriptions filled as generics. The pre-ICL phase showed similar trends to the deductible phase, with all categories having approximately 80 percent of fills as generics. In the ICL (coverage gap) phase, the percentage of generic fills was higher among the psychiatric-medical (72%) and psychiatric-only (69%) groups and lower among medical-only (67%) and no-diagnosis (62%) groups. This pattern continued in the catastrophic phase, with a higher percentage of generic fills for psychiatric diagnoses alone (63%) or with chronic medical comorbidities (66%) than for medical-only (61%) or no-diagnosis groups (56%; **Table 9**).

DISCUSSION

Our work based on an examination of the full population of beneficiaries in the Medicare fee-for-service system reveals important patterns about the prevalence of psychiatric and medical diagnoses in this group. Psychiatric diagnoses are prevalent and variable with age, gender, and race. Perhaps more importantly, a majority of persons with psychiatric diagnoses also have co-occurring chronic diseases: 77 percent of beneficiaries with one psychiatric diagnosis and 80 percent of beneficiaries with two or more psychiatric diagnoses also have a diagnosis of a chronic medical condition (**Table 3**). The most prevalent condition combinations generally occurred among common psychiatric and medical condition categories, particularly depression and/or anxiety disorders, cardiovascular-related conditions, and arthritis. Our estimate of the co-occurrence of medical and psychiatric conditions includes nine common chronic medical conditions. This may underestimate the full burden of psychiatric and medical comorbidities in this population, since many types of cancer and less common comorbidities such as liver disease, anemia, HIV/AIDS, dyslipidemia, and others are not counted.

While coverage phase patterns varied, individuals with psychiatric-medical comorbidity generally spent the fewest days in the early Part D coverage phases, but more days in the ICL/coverage gap phase than any other group.

Table 7: Number and percentage of Medicare Parts A, B, and D FFS beneficiaries by concurrent psychiatric and medical diagnosis category, 2011

Variable	Total with psych condition		Alzheimer's, dementia		Cancers		Cardiovascular conditions		Diabetes		CKD		COPD		Arthritis	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Schizophrenia	549,089	100.0	101,989	18.6	18,644	3.4	147,701	26.9	182,874	33.3	74,915	13.6	100,131	18.2	120,816	22.0
Bipolar	122,889	100.0	21,708	17.6	4,875	4.0	37,247	30.3	38,722	31.5	21,378	17.4	26,820	21.8	40,193	32.7
Depression	3,150,040	100.0	793,297	25.2	259,878	8.3	1,466,679	46.6	1,110,495	35.3	702,316	22.3	703,232	22.3	1,371,362	43.5
Anxiety disorders	2,214,961	100.0	415,426	18.8	178,374	8.1	961,339	43.4	678,191	30.6	419,417	18.9	511,569	23.1	943,255	42.6
Any anxiety + depression	1,123,987	100.0	263,913	23.5	89,190	7.9	517,898	46.1	370,072	32.9	237,635	21.1	297,772	26.5	527,779	47.0
Delusions	65,053	100.0	35,144	54.0	4,633	7.1	31,692	48.7	23,089	35.5	16,376	25.2	15,122	23.3	25,041	38.5
Other non-organic psychoses	646,525	100.0	338,251	52.3	62,691	9.7	384,568	59.5	258,294	40.0	218,340	33.8	174,635	27.0	272,335	42.1
Other psychiatric conditions	991,056	100.0	257,628	26.0	69,639	7.0	417,125	42.1	323,153	32.6	210,060	21.2	202,442	20.4	385,933	39.0

Table 8: Number of days to reach and number of days in Part D benefit phase among Medicare parts A, B, and D FFS beneficiaries by diagnosis category

	Total	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
Mean days to reaching benefit phase					
Deductible	27.1	49.3	29.8	22.8	15.6
Pre-ICL	49.1	68.4	60.5	46.3	38.7
ICL (coverage gap)	198.6	214.2	173.7	213.0	181.2
Catastrophic	224.4	196.1	210.4	236.7	222.1
Mean days in benefit phase					
Deductible	104.1	163.0	117.3	97.5	62.9
Pre-ICL	245.4	262.5	225.9	256.1	217.2
ICL (coverage gap)	123.4	107.9	118.0	123.8	126.5
Catastrophic	137.1	162.6	151.7	124.9	139.5
Percent of beneficiaries reaching benefit phase					
Deductible	42.4	45.0	50.8	38.9	45.1
Pre-ICL	79.6	69.7	78.2	81.3	84.7
ICL (coverage gap)	29.2	10.0	29.4	28.8	46.0
Catastrophic	8.3	2.4	13.5	5.7	17.2

ICL = Initial coverage limit.

They moved through benefit phases more quickly than most other diagnosis groups, and 17% of beneficiaries with psychiatric-medical comorbidity reached the final catastrophic benefit phase, a much higher proportion than among the other diagnosis categories (**Table 8**). Beneficiaries with psychiatric-medical conditions also were prescribed the greatest number of unique medications across more groups by more prescribers than other diagnosis groups in nearly every benefit phase (**Table 9**). Along with research cited previously, these results suggest that the joint occurrence of medical and psychiatric diagnoses increases the number of involved health care providers, and may increase the risk of poorer health care outcomes and problems related to polypharmacy.

This analysis also compared the population with Parts A and B FFS Medicare coverage with the population with Parts A and B FFS coverage that also received Part D coverage during their months in Medicare. The Medicare Part D benefit provides both an opportunity and a challenge to studying pharmacy use among beneficiaries.

Roughly 50 percent of Medicare beneficiaries with A and B FFS coverage received pharmacy benefits through the Part D program for all months of Medicare eligibility in 2011 (**Figure 2**). However, beneficiary profiles differ between the full population and the population receiving Part D benefits. For example, about 16 percent of the entire Parts A and B FFS Medicare population are designated as "Full Duals" receiving both Medicare and Medicaid coverage (**Table 2**).

When we examine the population receiving Part D benefits, the proportion of Full Duals jumps to 30 percent, indicating that those covered by Part D may also be a more vulnerable population (**Table 4**). There is also a greater burden of psychiatric and psychiatric-medical comorbid conditions among the Part D population. For example, looking at the burden of psychiatric diagnoses within each population, we find that 9.1% of the whole A and B FFS population compared to 12.3% of the population with Parts A, B, and D coverage have two or more psychiatric diagnoses (calculations based on Tables 3 and 5). Thus, for the purposes of understanding psychiatric diagnoses in the Medicare program, Part D data may be very useful. However, it is important to note that Part D comparison populations who do not have psychiatric diagnoses are likely sicker than the average Medicare population.

When interpreting findings related to time until, time in, and percentage of benefi-ciaries reaching Part D benefit phases, it is important to note that many plans under Part D do not include a deductible phase, meaning some people have no days in this phase before reaching the pre-ICL phase.[29] Many plans also may have varying cost sharing, covered drugs, premiums, and related policies beyond minimum "standard" or actuarially equivalent coverage, which is also affected by low income status or dual eligibility with Medicaid.[16]

Table 9: Prescription-related claims among Medicare parts A, B, and D FFS beneficiaries by diagnosis category, 2011

	Unique prescriptions (#)	Median phase length (days)	Mean unique medications (#)	Mean medication groups (#)	Mean unique prescribers (#)	Mean prescription fills for generics (% of total fills)
Total						
Deductible	60,509,975	55	2	1.4	0.9	90.7
Pre-ICL	416,441,024	271	7.3	4.1	2.7	79.2
ICL	145,133,176	120	3.1	1.7	1	69.1
Catastrophic	71,482,622	129	1.2	0.6	0.4	63.5
No psychiatric or medical diagnosis						
Deductible	11,496,841	127	1.6	1.1	0.9	92
Pre-ICL	45,171,487	299	3.8	2.4	1.7	77.9
ICL	5,763,173	96	0.6	0.4	0.3	62.4
Catastrophic	2,873,236	162	0.2	0.2	0.1	55.6
Psychiatric diagnosis only						
Deductible	4,978,028	66	2.3	1.6	1.2	92.7
Pre-ICL	22,983,411	243	5.8	3.5	2.7	80.6
ICL	7,763,254	113	2.3	1.4	1	69
Catastrophic	6,114,168	151	1.3	1.3	0.5	63.1
Medical diagnosis only						
Deductible	28,416,920	51	1.9	1.3	0.8	90.4
Pre-ICL	215,411,519	284	7.5	4.1	2.8	78.7
ICL	64,747,238	121	2.8	1.5	1	66.8
Catastrophic	21,674,056	113	0.8	0.8	0.2	60.5
Psychiatric and medical diagnoses						
Deductible	15,618,186	30	2.5	1.8	1	89.5
Pre-ICL	132,874,607	219	10.3	5.6	3.5	80.2
ICL	66,859,511	122	5.8	3.1	1.8	72
Catastrophic	40,821,162	135	2.8	2.8	0.8	65.7

ICL = Initial coverage limit (coverage gap).

Additionally, any effect of the ICL/coverage gap phase on patterns shown here is subject to change as the Federal Government phases out this gap through 2020.[30] This suggests a need for further study on the impact of variations in coverage and costs to beneficiaries and approaching changes in Part D under the Affordable Care Act on patients with different health condition profiles.

In 2011, more than 5 million beneficiaries with psychiatric diagnoses received benefits through Medicare's FFS and Part D pharmacy programs (**Table 4**). While this accounts for approximately one-quarter of beneficiaries with this type of coverage, the sheer size of this population deserves attention. For example, there are 950,000 beneficiaries with a diagnosis of major depression, 2.4 million with other depression, 1.5 million with cardiovascular-depression comorbidity, and 1.1 million with diabetes-depression comorbidity in this population (**Tables 5 and 7**). Although most beneficiaries in Medicare are not represented in this population, this group still represents a large number of beneficiaries who are experiencing complicated conditions. Thus, understanding the joint role of psychiatric and medical diag-nosis within this population is important to maintaining the health of the Medicare population.

In spite of the strengths of this analysis, some limitations must be acknowledged. First, as we have previously noted, we include analysis of a limited number of chronic medical conditions only, which may underestimate the full extent of the psychiatric-medical burden of comorbidity in the Medicare population. Second, we present unadjusted numbers and do not conduct statistical testing of differences in proportions. However, our analysis is based on a 100 percent sample of Medicare FFS beneficiaries for all study years, the full population of interest.

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With the large size of the full Medicare FFS population, it is likely that even small, unimportant trends would be measured as being statistically different.[31] Therefore, we chose to omit statistical testing and leave conclusions about the importance of patterns to the reader. Despite these limitations, we believe that the use of the full population supports the strength of our conclusions, and that the results of this inquiry provide important insights about medication use among beneficiaries with medical and psychiatric conditions over time and across demographic groups.

CONCLUSION

Within the Medicare population, the majority of beneficiaries who have a psychiatric diagnosis also have one or more medical diagnoses. While the beneficiaries who suffer from psychiatric or combined psychiatric-medical conditions are a minority of all Medicare beneficiaries, they still represent a large population with high rates of unique drug and drug group use and catastrophic coverage use. The joint occurrence of medical and psychiatric diagnoses places these beneficiaries at risk for poorer health outcomes and increases the risk of problems related to polypharmacy. This group accounts for 6 million beneficiaries in the Medicare Parts A and B FFS population, and is important to consider in future research and decisionmaking regarding best practices in medication and health care management.

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Appendix A: Part D therapeutic drug categories and groups

Drug category	Drug group	Drug category	Drug group	Drug category	Drug group
ADHD/Antinarcotic/Anti-obesity/Anorexic agents	ADHD/Anti-narcolepsy/Anti-obesity/Anorexiants	Central nervous system agents	Antispychotics/antimanic agents	Nutritional products	Dietary products / dietary management products
Analgesics and anesthetics	Analgesics - anti-inflammatory	Central nervous system agents	Hypnotics	Nutritional products	Minerals and electrolytes
Analgesics and anesthetics	Analgesics - nonnarcotic	Endocrine and metabolic drugs	Androgens-anabolic	Nutritional products	Multivitamins
Analgesics and anesthetics	Analgesics - opioid	Endocrine and metabolic drugs	Antidiabetics	Nutritional products	Nutrients
Analgesics and anesthetics	General anesthetics	Endocrine and metabolic drugs	Contraceptives	Nutritional products	Vitamins
Analgesics and anesthetics	Gout agents	Endocrine and metabolic drugs	Corticosteroids	Respiratory agents	Antiasthmatic and broncho-dilator agents
Analgesics and anesthetics	Local anesthetics-parenteral	Endocrine and metabolic drugs	Endocrine and metabolic agents - misc.	Respiratory agents	Antihistamines
Analgesics and anesthetics	Migraine products	Endocrine and metabolic drugs	Estrogens	Respiratory agents	Cough / cold / allergy
Anti-infective agents	Amebicides	Endocrine and metabolic drugs	Oxytocics	Respiratory agents	Nasal agents - systemic and topical
Anti-infective agents	Aminoglycosides	Endocrine and metabolic drugs	Progestins	Respiratory agents	Respiratory agents - misc.
Anti-infective agents	Anthelmintics	Endocrine and metabolic drugs	Thyroid agents	Topical products	Anorectal agents
Anti-infective agents	Anti-infective agents - misc.	Gastrointestinal agents	Antacids	Topical products	Dermatologicals
Anti-infective agents	Antifungals	Gastrointestinal agents	Antidiarrheals	Topical products	Mouth / throat / dental agents
Anti-infective agents	Antimalarials	Gastrointestinal agents	Antiemetics	Topical products	Opthalmic agents
Anti-infective agents	Antimycobacterial agents	Gastrointestinal agents	Digestive aids	Topical products	Otic agents
Anti-infective agents	Antivirals	Gastrointestinal agents	Gastrointestinal agents - misc.		
Anti-infective agents	Cephalosporins	Gastrointestinal agents	Laxatives		
Anti-infective agents	Fluoroquinolones	Gastrointestinal agents	Ulcer drugs		
Anti-infective agents	Macrolides	Genitourinary agents	Genitourinary agents - misc.		
Anti-infective agents	Penicillins	Genitourinary agents	Urinary anti-infectives		
Anti-infective agents	Sulfonamides	Genitourinary agents	Urinary antispasmodics		
Anti-infective agents	Tetracyclines	Genitourinary agents	Vaginal products		
Anti-neoplastic agents	Antineoplastics	Hematological agents	Anticoagulants		
Biologicals	Biologicals misc.	Hematological agents	Hematological agents - misc.		
Biologicals	Passive immunizing agents	Hematological agents	Hematopoietic agents		
Biologicals	Toxoids	Hematological agents	Hemostatics		
Biologicals	Vaccines	Miscellaneous psychotherapeutic / neurological agents	Psychotherapeutic / neurological agents - misc.		
Cardiovascular agents	Antianginal agents	Miscellaneous	Alternative medicines		
Cardiovascular agents	Antiarrhythmics	Miscellaneous	Antidotes		
Cardiovascular agents	Antihyperlipidemics	Miscellaneous	Antiseptics and disinfectants		
Cardiovascular agents	Antihypertensives	Miscellaneous	Assorted classes		
Cardiovascular agents	Beta blockers	Miscellaneous	Chemicals		
Cardiovascular agents	Calcium channel blockers	Miscellaneous	Diagnostic products		
Cardiovascular agents	Cardiotonics	Miscellaneous	Medical devices		
Cardiovascular agents	Cardiovascular agents - misc.	Neuromuscular drugs	Anticonvulsants		
Cardiovascular agents	Diuretics	Neuromuscular drugs	Antimyasthenic agents		
Cardiovascular agents	Vasospressors	Neuromuscular drugs	Antiparkinson agents		
Central nervous system agents	Antianxiety agents	Neuromuscular drugs	Musculoskeletal therapy agents		
Central nervous system agents	Antidepressants	Neuromuscular drugs	Neuromuscular agents		

Appendix B: Number of Medicare A and B FFS beneficiaries by demography, comorbidity, and diagnosis type, 2011

Variable	Total	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
Total	33,770,290	10,151,684	1,697,607	15,864,675	6,056,324
Age					
<65	6,196,524	2,091,050	930,284	1,670,780	1,504,410
65-69	7,713,925	3,539,635	321,451	2,967,963	884,876
70-74	6,209,355	1,909,707	191,487	3,225,153	883,008
75-79	4,942,090	1,182,780	114,917	2,827,661	816,732
80-84	4,074,441	766,652	75,344	2,430,650	801,795
85+	4,633,955	661,860	64,124	2,742,468	1,165,503
Race or ethnicity					
Non-Hispanic White	27,165,091	8,082,115	1,373,469	12,746,945	4,962,562
African American	3,318,549	974,062	167,443	1,609,620	567,424
Hispanic	2,007,852	638,987	101,400	893,703	373,762
Asian or Pacific Islander	747,811	257,849	24,916	390,199	74,847
American Indian / Alaska Native	171,957	48,269	11,109	78,282	34,297
Other / Unknown	359,030	150,402	19,270	145,926	43,432
Gender					
Male	15,105,782	4,906,432	634,891	7,522,192	2,042,267
Female	18,664,508	5,245,252	1,062,716	8,342,483	4,014,057
Urbanicity					
Urban	30,327,865	9,049,897	1,535,782	14,280,585	5,461,601
Rural	3,331,028	1,019,135	159,256	1,561,217	591,420
Unknown	111,397	82,652	2,569	22,873	3,303
Medicare status					
Full dual	5,577,662	1,080,038	567,918	2,079,792	1,849,914
Partial dual	884,858	206,655	76,063	386,122	216,018
QMB	904,394	206,341	90,508	372,378	235,167
Nondual	26,403,376	8,658,650	963,118	13,026,383	3,755,225
Part D status					
Full Part D	17,559,564	4,060,416	1,129,000	8,414,541	3,955,607
Any Part D	727,968	261,457	60,613	264,801	141,097
No Part D	15,482,758	5,829,811	507,994	7,185,333	1,959,620

QMB = qualified Medicare beneficiary.

Variable	Total	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
Total	33,770,290	10,151,684	1,697,607	15,864,675	6,056,324
Psychiatric diagnoses					
0 psych diagnoses	26,016,359	10,151,684	n/a	15,864,675	n/a
1 psych diagnosis	4,684,517	n/a	1,094,351	n/a	3,590,166
2+ psych diagnoses	3,069,414	n/a	603,256	n/a	2,466,158
Schizophrenia	612,908	n/a	237,728	n/a	375,180
Bipolar disorders	148,769	n/a	47,594	n/a	101,175
Major depression	1,363,935	n/a	311,893	n/a	1,052,042
Dysthymia	874,365	n/a	158,095	n/a	716,270
Other depression	3,675,846	n/a	623,929	n/a	3,051,917
Generalized anxiety disorder	661,160	n/a	155,406	n/a	505,754
Panic disorder	240,165	n/a	70,920	n/a	169,245
PTSD	198,976	n/a	75,611	n/a	123,365
OCD	79,337	n/a	33,982	n/a	45,355
Social phobia	11,567	n/a	5,846	n/a	5,721
Other anxiety	2,715,832	n/a	549,473	n/a	2,166,359
Delusional disorders	87,750	n/a	13,801	n/a	73,949
Other non-organic psychoses	937,957	n/a	98,306	n/a	839,651
Other psychiatric conditions	1,424,844	n/a	329,868	n/a	1,094,976
Medical diagnoses					
Alzheimer's and dementia	3,498,983	n/a	n/a	1,771,942	1,727,041
Cancer	2,689,276	n/a	n/a	1,993,115	696,161
CKD	4,910,911	n/a	n/a	3,300,588	1,610,323
COPD	3,691,650	n/a	n/a	2,171,892	1,519,758
Diabetes	9,009,155	n/a	n/a	6,547,760	2,461,395
Heart failure	4,997,940	n/a	n/a	3,258,623	1,739,317
IHD	9,748,985	n/a	n/a	6,983,394	2,765,591
Arthritis	9,404,132	n/a	n/a	6,316,557	3,087,575
Stroke/TIA	1,249,679	n/a	n/a	688,639	561,040

PTSD = post-traumatic stress disorder; OCD = obsessive compulsive disorder; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; IHD = ischemic heart disease; TIA = transient ischemic attack.

Appendix C: Number of Medicare Parts A, B, and D FFS beneficiaries by demography, comorbidity, and diagnosis type, 2011

Variable	Total	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
Total	17,559,564	4,060,416	1,129,000	8,414,541	3,955,607
Age					
<65	4,125,407	1,072,979	737,696	1,113,904	1,200,828
65-69	3,308,952	1,124,451	159,628	1,485,992	538,881
70-74	3,158,411	804,473	102,718	1,706,016	545,204
75-79	2,452,331	484,393	58,452	1,426,568	482,918
80-84	2,055,184	313,825	38,250	1,229,717	473,392
85+	2,459,279	260,295	32,256	1,452,344	714,384
Race or ethnicity					
Non-Hispanic White	13,602,465	3,152,228	880,895	6,455,949	3,113,393
African American	1,924,800	426,990	131,235	938,923	427,652
Hispanic	1,265,516	278,223	77,008	608,877	301,408
Asian or Pacific Islander	498,323	130,168	19,069	289,078	60,008
American Indian / Alaska Native	98,752	22,341	8,201	44,060	24,150
Other / Unknown	169,708	50,466	12,592	77,654	28,996
Gender					
Male	7,053,378	1,752,821	447,076	3,595,559	1,257,922
Female	10,506,186	2,307,595	681,924	4,818,982	2,697,685
Urbanicity					
Urban	15,597,789	3,589,722	1,018,706	7,459,680	3,529,681
Rural	1,944,705	463,845	109,723	946,912	424,225
Unknown	17,070	6,849	571	7,949	1,701
Medicare status					
Full dual	5,333,215	1,017,404	547,244	2,006,478	1,762,089
Partial dual	791,774	169,512	67,434	354,540	200,288
QMB	10,605,307	2,698,267	432,691	5,703,910	1,770,439
Nondual	829,268	175,233	81,631	349,613	222,791

QMB = qualified Medicare beneficiary.

Variable	Total	No psychiatric or medical diagnosis	Psychiatric diagnosis only	Medical diagnosis only	Psychiatric and medical diagnoses
Total	17,559,564	4,060,416	1,129,000	8,414,541	3,955,607
Psychiatric diagnoses					
0 psych diagnoses	12,474,957	4,060,416	n/a	8,414,541	n/a
1 psych diagnosis	2,924,270	n/a	689,377	n/a	2,234,893
2+ psych diagnoses	2,160,337	n/a	439,623	n/a	1,720,714
Schizophrenia	549,089	n/a	213,034	n/a	336,055
Bipolar disorders	122,889	n/a	39,773	n/a	83,116
Major depression	947,252	n/a	215,517	n/a	731,735
Dysthymia	584,468	n/a	104,087	n/a	480,381
Other depression	2,421,730	n/a	405,775	n/a	2,015,955
Generalized anxiety disorder	440,846	n/a	100,897	n/a	339,949
Panic disorder	168,465	n/a	49,874	n/a	118,591
PTSD	142,685	n/a	55,530	n/a	87,155
OCD	61,620	n/a	27,769	n/a	33,851
Social phobia	8,941	n/a	4,606	n/a	4,335
Other anxiety	1,773,338	n/a	349,081	n/a	1,424,257
Delusional disorders	65,053	n/a	10,992	n/a	54,061
Other non-organic psychoses	646,525	n/a	78,378	n/a	568,147
Other psychiatric conditions	991,056	n/a	242,166	n/a	748,890
Medical diagnoses					
Alzheimer's and dementia	2,219,170	n/a	n/a	1,053,279	1,165,891
Cancer	1,389,083	n/a	n/a	982,603	406,480
CKD	2,874,153	n/a	n/a	1,817,583	1,056,570
COPD	2,283,662	n/a	n/a	1,235,020	1,048,642
Diabetes	5,303,784	n/a	n/a	3,612,018	1,691,766
Heart failure	3,025,205	n/a	n/a	1,852,833	1,172,372
IHD	5,466,246	n/a	n/a	3,682,452	1,783,794
Arthritis	5,470,735	n/a	n/a	3,444,794	2,025,941
Stroke/TIA	742,555	n/a	n/a	382,387	360,168

PTSD = post-traumatic stress disorder; OCD = obsessive compulsive disorder; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; IHD = ischemic heart disease; TIA = transient ischemic attack.