

## Supplemental File

### **Psychotropic medication prescribing in assisted living and nursing home residents with dementia after the National Partnership**

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## Table of Contents

**Supplementary Table S1.** International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes used to identify beneficiaries with Alzheimer's disease and related dementias, Huntington's disease, Tourette syndrome, or schizophrenia.

**Supplementary Table S2.** Psychotropic medications and classes.

**Supplementary Table S3.** Percentage of psychotropic medications prescribed in assisted living (AL) and long-stay nursing home (NH) residents with ADRD, 2010-2017.

**Supplementary Table S4.** Top 10 individual medications prescribed per class in assisted living (AL) and long-stay nursing home residents (NH) with ADRD – 2011, 2013, 2017.

**Supplementary Table S5.** Monthly percent of mood stabilizer/anticonvulsant prescribing attributed to gabapentin, divalproex sodium, and levetiracetam among assisted living (AL) and long-stay nursing home (LSNH) residents with ADRD, July 2010 – December 2017.

**Supplementary Table S6.** Monthly percent of antipsychotic prescribing attributed to quetiapine, risperidone, and olanzapine among assisted living (AL) and long-stay nursing home (LSNH) residents with ADRD, July 2010 – December 2017.

**Supplementary Table S7.** Interrupted time series stability analyses using a first-order autoregressive model with robust standard errors for medication prescribing among assisted living residents with ADRD pre- and post-Partnership.

**Supplementary Table S8.** Interrupted time series stability analyses using a first-order autoregressive model with robust standard errors for medication prescribing among long-stay nursing home residents with ADRD pre- and post-Partnership.

**Supplementary Figure 1.** Example timeline of Patient A's included person-months for medication prescribing analyses.

**Supplementary Figure 2.** Selection of persons for inclusion in the study.

**Supplementary Table S1.** International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnosis codes used to identify beneficiaries with Alzheimer’s disease and related dementias, Huntington’s disease, Tourette syndrome, or schizophrenia.

	ICD-9-CM Diagnosis Codes	ICD-10-CM Diagnosis Codes
Alzheimer’s disease and related dementias (ADRD)	290.0, 290.1, 290.10, 290.11, 290.12, 290.13, 290.2, 290.20, 290.21, 290.3, 290.4, 290.40, 290.41, 290.42, 290.43, 290.8, 291.2, 294.0, 294.1, 294.10, 294.11, 294.2, 294.20, 294.21, 331, 331.0, 331.11, 331.19, 331.2, 331.7, 331.8, 331.82, 331.83, 331.89, 797	F01.50, F01.51, F02.80, F02.81, F03.90, F03.91, F04, G30.0, G30.1, G30.8, G30.9, G31.01, G31.09, G31.1, G31.2, G31.83, G31.84, R41.81
Huntington’s Disease	333.4	G10
Tourette Syndrome	307.23	F95.2
Schizophrenia	295.00, 295.01, 295.02, 295.03, 295.04, 295.05, 295.10, 295.11, 295.12, 295.13, 295.14, 295.15, 295.20, 295.21, 295.22, 295.23, 295.24, 295.25, 295.30, 295.31, 295.32, 295.33, 295.34, 295.35, 295.40, 295.41, 295.42, 295.43, 295.44, 295.45, 295.50, 295.51, 295.52, 295.53, 295.54, 295.55, 295.60, 295.61, 295.62, 295.63, 295.64, 295.65, 295.70, 295.71, 295.72, 295.73, 295.74, 295.75, 295.80, 295.81, 295.82, 295.83, 295.84, 295.85, 295.90, 295.91, 295.92, 295.93, 295.94, 295.95	F20.0, F20.1, F20.2, F20.3, F20.5, F20.81, F20.89, F20.9, F25.0, F25.1, F25.8, F25.9

Medicare data sources for assessing these codes using all diagnosis code positions on claims in the following files (primary and 24 secondary): Inpatient, Skilled Nursing Facility, Hospice, Home Health, Outpatient, Carrier claims.

**Supplementary Table S2.** Psychotropic medications and classes.

<b>Psychotropic Medication Class</b>	<b>Individual Psychotropic Medication Names</b>
Antidepressants	Amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, desvenlafaxine, doxepin, duloxetine, escitalopram, fluoxetine, fluvoxamine, imipramine, isocarboxazid, levomilnacipran, maprotiline, milnacipran, mirtazapine, nefazodone, nortriptyline, paroxetine, phenelzine, protriptyline, selegiline, sertraline, tranylcypromine, trazodone, trimipramine, venlafaxine, vilazodone, vortioxetine
Anxiolytic/sedative-hypnotics	Amobarbital, buspirone, butabarbital, chloral_hydrate, droperidol, eszopiclone, hydroxyzine, mephobarbital, meprobamate, pentobarbital, phenobarbital, promethazine, ramelteon, secobarbital, suvorexant, tasimelteon, zaleplon, zolpidem
Anticonvulsant/mood stabilizers	acetazolamide, brivaracetam, carbamazepine, divalproex, eslicarbazepine, ethosuximide, ethotoin, felbamate, gabapentin, lacosamide, lamotrigine, levetiracetam, lithium, methohexital, methsuximide, oxcarbazepine, perampanel, phenobarbital, phenytoin, pregabalin, primidone, rufinamide, tiagabine, topiramate, valproate sodium, valproic acid, vigabatrin, zonisamide
Antipsychotics	aripiprazole, asenapine, brexiprazole, cariprazine, chlorpromazine, clozapine, fluphenazine, haloperidol, iloperidone, loxapine, lurasidone, molindone, olanzapine, paliperidone, perphenazine, pimavanserin, pimozide, prochlorperazine, quetiapine, risperidone, thioridazine, thiothixene, trifluoperazine, ziprasidone
Benzodiazepines	alprazolam, chlordiazepoxide, clobazam, clonazepam, clorazepate, diazepam, estazolam, flurazepam, halazepam, lorazepam, midazolam, oxazepam, prazepam, quazepam, temazepam, triazolam
Antidementia	donepezil , galantamine, memantine, rivastigmine

**Supplementary Table S3.** Percentage of psychotropic medications prescribed in assisted living (AL) and long-stay nursing home (NH) residents with ADRD, 2010-2017.

Time 2010	Medication Class											
	Antipsychotics		Antidepressants		Anxiolytics/ Sedative- Hypnotics		Anticonvulsants/ Mood Stabilizers		Benzodiazepines <sup>a</sup>		Antidementia	
	AL	NH	AL	NH	AL	NH	AL	NH	AL	NH	AL	NH
Jul.	8.8	23.0	29.8	41.5	5.4	9.8	9.3	16.7			28.1	39.0
Aug.	8.8	23.5	29.7	42.5	5.3	9.4	9.3	15.6			27.9	38.6
Sep.	9.0	24.2	29.9	43.5	5.5	8.7	9.4	18.1			28.0	37.5
Oct.	8.8	24.0	29.7	43.5	5.3	8.1	9.3	17.7			27.5	37.0
Nov.	8.7	24.6	29.8	45.4	5.5	8.1	9.2	18.8			27.1	36.6
Dec.	8.6	23.7	29.6	47.3	5.2	7.8	9.2	19.2			27.1	35.7
<b>2011</b>												
Jan.	8.8	24.1	29.6	48.3	5.2	8.2	9.4	19.5			27.6	36.2
Feb.	8.8	24.1	29.6	48.4	5.3	7.9	9.2	19.4			27.5	36.3
Mar.	8.9	24.5	30.0	48.9	5.5	8.1	9.6	19.4			27.6	36.4
Apr.	8.9	24.1	30.0	49.2	5.4	7.7	9.5	19.3			27.6	36.3
May	8.7	24.0	30.0	49.2	5.2	7.5	9.7	19.4			27.3	36.3
Jun.	8.7	23.8	30.3	49.2	5.0	7.3	9.8	19.1			27.2	36.0
Jul.	8.6	23.7	30.3	49.0	5.1	7.5	9.8	19.2			27.3	36.1
Aug.	8.5	23.9	30.1	49.1	5.0	7.5	9.9	19.5			27.1	36.0
Sep.	8.7	23.8	30.1	48.9	5.3	7.5	9.9	19.7			27.2	35.8
Oct.	8.6	23.7	29.8	49.0	5.2	7.7	9.9	19.8			27.0	35.3
Nov.	8.3	23.6	30.0	49.0	5.3	7.7	10.0	19.8			26.5	35.0
Dec.	8.2	23.3	29.9	48.7	5.3	8.0	9.9	19.9			26.2	34.7
<b>2012</b>												
Jan.	8.3	23.8	30.2	49.3	5.3	8.2	10.0	20.1			26.4	35.0
Feb.	8.4	23.6	30.2	49.2	5.4	8.0	10.0	20.1			26.4	34.7
Mar.	8.2	23.4	30.3	49.2	5.4	7.8	10.2	20.1			26.2	34.3
Apr.	8.1	22.9	30.4	49.0	5.2	7.3	10.2	20.2			26.2	34.0
May	8.0	22.7	30.2	48.7	5.1	7.1	10.2	20.3			26.1	33.7
Jun.	8.0	22.4	30.2	48.4	5.0	6.9	10.2	20.3			26.3	33.5
Jul.	8.1	22.2	30.0	48.2	4.9	6.9	10.3	20.2			26.0	33.2
Aug.	8.1	21.9	29.9	48	4.9	6.9	10.4	20.4			25.8	32.9
Sep.	8.0	21.5	29.9	48.1	4.8	6.8	10.5	20.4			25.7	32.7
Oct.	8.1	21.2	29.9	48.0	4.8	6.8	10.5	20.4			25.4	32.7
Nov.	8.2	20.7	30.1	47.8	4.8	6.6	10.5	20.4			25.2	32.6
Dec.	7.9	20.5	29.9	47.3	4.8	6.6	10.6	20.4			25.2	32.1
<b>2013</b>												
Jan.	7.8	20.5	30.1	47.8	4.8	7.2	10.5	20.7	7.5	14.0	25.3	32.2
Feb.	8.1	20.1	30.5	47.8	4.8	7.3	10.7	20.7	9.3	15.6	25.7	32.2

Mar.	8.0	19.9	30.7	47.8	4.8	7.3	10.9	20.7	9.8	15.7	25.7	32.1
Apr.	8.0	19.7	30.8	47.8	4.7	7.0	11.2	20.8	9.6	15.8	25.8	32.0
May	8.2	19.5	31.1	47.7	4.6	6.8	11.4	21.0	9.5	15.7	25.8	31.7
Jun.	8.1	19.1	31.1	47.5	4.6	6.5	11.4	21.1	9.6	15.3	25.6	31.5
Jul.	8.3	18.9	31.2	47.5	4.6	6.6	11.6	21.2	9.8	15.5	25.5	31.5
Aug.	8.3	18.8	31.2	47.4	4.5	6.5	11.6	21.2	9.8	15.6	25.4	31.5
Sep.	8.3	18.6	31.2	47.5	4.4	6.4	11.6	21.3	9.8	15.4	25.2	31.2
Oct.	8.1	18.5	31.2	47.6	4.5	6.5	11.8	21.3	9.9	15.6	25.1	31.2
Nov.	8.1	18.4	31.1	47.5	4.4	6.3	12.0	21.4	9.9	15.5	25.1	31.1
Dec.	8.0	18.2	31.0	47.4	4.5	6.3	11.7	21.5	9.7	15.3	25.0	31.0

**2014**

Jan.	8.0	18.1	31.1	47.8	4.6	6.5	12.0	21.8	10.1	15.8	25.0	31.1
Feb.	8.0	17.8	31.4	47.6	4.6	6.4	12.0	21.7	10.2	15.5	25.1	31.0
Mar.	8.2	17.6	31.6	47.6	4.5	6.4	12.1	21.8	10.2	15.7	25.1	30.9
Apr.	8.2	17.6	31.6	47.7	4.4	6.1	12.2	21.9	10.3	15.6	25.0	30.9
May	8.1	17.4	31.6	47.6	4.4	5.9	12.3	22.1	10.1	15.6	24.9	30.8
Jun.	8.0	17.4	31.7	47.5	4.1	5.7	12.4	22.2	10.0	15.5	24.8	30.6
Jul.	8.1	17.3	31.7	47.6	4.1	5.8	12.3	22.3	10.1	15.7	24.5	30.5
Aug.	8.0	17.1	31.8	47.4	4.2	5.7	12.5	22.4	10.1	15.7	24.4	30.1
Sep.	8.0	17.0	31.8	47.5	4.2	5.7	12.5	22.5	10.1	15.5	24.3	30.0
Oct.	8.0	17.0	31.7	47.6	4.2	5.7	12.6	22.5	10.3	15.6	24.2	29.8
Nov.	7.8	16.7	31.6	47.4	4.0	5.6	12.6	22.6	10.0	15.3	23.9	29.7
Dec.	7.6	16.6	31.6	47.4	4.1	5.7	12.7	22.7	9.9	15.3	23.8	29.5

**2015**

Jan.	7.7	16.5	31.6	47.5	4.2	5.8	12.6	22.6	10.0	15.6	23.6	29.4
Feb.	7.7	16.3	31.4	47.5	4.0	5.8	12.5	22.7	10.1	15.5	23.3	29.2
Mar.	7.8	16.3	31.5	47.5	4.1	5.9	12.5	22.9	10.2	15.6	23.3	29.2
Apr.	7.7	15.9	31.7	47.5	4.0	5.6	12.5	22.9	10.2	15.5	23.2	29.0
May	7.6	15.7	31.7	47.3	3.8	5.2	12.5	22.9	9.9	15.3	23.0	28.9
Jun.	7.6	15.5	31.6	47.1	3.6	5.2	12.5	23.1	9.9	15.3	23.0	28.8
Jul.	7.6	15.3	31.6	47.1	3.5	5.1	12.6	23.2	10.0	15.5	22.9	28.6
Aug.	7.6	15.1	31.5	47.2	3.5	5.1	12.7	23.3	9.8	15.4	22.7	28.4
Sep.	7.6	15.0	31.5	47.3	3.6	5.1	12.8	23.5	9.9	15.4	22.6	28.2
Oct.	7.6	14.8	31.4	47.2	3.6	5.1	12.9	23.5	9.7	15.5	22.6	27.9
Nov.	7.6	14.7	31.3	47.0	3.5	5.0	12.8	23.6	9.5	15.3	22.3	27.7
Dec.	7.5	14.4	31.3	47.0	3.5	5.1	13.0	23.8	9.7	15.3	22.1	27.5

**2016**

Jan.	7.8	14.4	31.6	47.4	3.7	5.3	13.0	24.0	9.8	15.5	22.4	27.6
Feb.	7.6	14.3	31.4	47.3	3.7	5.4	13.0	24.1	9.7	15.4	22.4	27.6
Mar.	7.5	14.4	31.6	47.5	3.7	5.5	13.2	24.2	9.8	15.6	22.4	27.5

Apr.	7.5	14.3	31.8	47.6	3.6	5.3	13.4	24.3	9.8	15.3	22.4	27.4
May	7.5	14.1	31.9	47.5	3.5	5.2	13.4	24.5	9.8	15.2	22.4	27.3
Jun.	7.7	13.9	32.2	47.8	3.5	5.1	13.7	24.5	9.9	15.3	22.3	27.2
Jul.	7.6	13.9	32.1	47.8	3.5	5.1	13.6	24.8	9.8	15.3	22.2	27.0
Aug.	7.6	14.0	32.1	47.8	3.6	5.2	13.6	25.0	9.8	15.3	22.3	26.9
Sep.	7.7	13.8	32.2	47.7	3.6	5.1	13.5	25.1	9.8	15.2	22.3	26.8
Oct.	7.6	13.8	32.1	47.8	3.6	5.1	13.5	25.2	9.6	15.2	22.2	26.7
Nov.	7.6	13.8	32.1	47.6	3.6	5.1	13.6	25.3	9.5	15.3	22.2	26.5
Dec.	7.7	13.8	32.1	47.6	3.6	5.1	13.7	25.3	9.5	15.3	22.0	26.4
<b>2017</b>												
Jan.	7.9	13.8	32.3	47.7	3.8	5.4	13.8	25.4	9.9	15.2	21.9	26.1
Feb.	7.8	13.7	32.3	47.8	3.8	5.4	13.8	25.5	9.7	15.1	21.9	26.2
Mar.	8.0	13.7	32.5	47.9	4.0	5.4	13.9	25.7	9.6	15.2	21.8	26.1
Apr.	7.9	13.6	32.4	48.1	3.9	5.4	13.8	25.8	9.6	15.0	21.6	25.8
May	7.7	13.6	32.5	48.0	3.8	5.4	13.9	26.0	9.6	14.9	21.6	25.8
Jun.	7.8	13.6	32.4	48.1	3.8	5.4	14.0	26.1	9.6	14.8	21.4	25.5
Jul.	7.9	13.7	32.6	48.0	3.8	5.4	14.0	26.2	9.6	14.9	21.3	25.5
Aug.	7.9	13.8	32.7	48.0	3.9	5.4	14.1	26.3	9.7	14.8	21.2	25.4
Sep.	8.0	13.7	32.7	47.9	3.9	5.4	14.2	26.3	9.5	14.6	20.9	25.1
Oct.	8.0	13.7	32.8	47.9	3.9	5.5	14.3	26.5	9.4	14.6	20.8	25.1
Nov.	8.0	13.6	32.8	48.1	3.9	5.5	14.4	26.7	9.4	14.4	20.7	24.8
Dec.	8.0	13.5	32.8	47.9	3.9	5.5	14.4	26.8	9.2	14.1	20.5	24.7

<sup>a</sup> Not measured until 2013 when the Medicare Modernization Act exclusion of benzodiazepines from Medicare Part D plans was eliminated by the Patient Protection and Affordable Care Act. The bold line at April 2012 indicates the start of the Partnership.

**Supplementary Table S4.** Top 10 individual medications prescribed per class in assisted living (AL) and long-stay nursing home residents (NH) with ADRD – 2011, 2013, 2017.

Class	Year	Cohort	Top 10 Medications from Most to Least Commonly Prescribed
Anticonvulsants/ Mood Stabilizers	2011	AL	gabapentin, divalproex sodium, levetiracetam, pregabalin, phenytoin, primidone, lamotrigine, carbamazepine, topiramate, lithium
		NH	gabapentin, divalproex sodium, levetiracetam, phenytoin, pregabalin, valproic acid, carbamazepine, lamotrigine, primidone, oxcarbazepine
	2013	AL	gabapentin, divalproex sodium, levetiracetam, pregabalin, primidone, lamotrigine, phenytoin, carbamazepine, topiramate, lithium
		NH	gabapentin, divalproex sodium, levetiracetam, phenytoin, pregabalin, lamotrigine, valproic acid, carbamazepine, primidone, topiramate
	2017	AL	gabapentin, levetiracetam, divalproex sodium, pregabalin, lamotrigine, primidone, carbamazepine, phenytoin, topiramate, oxcarbazepine
		NH	gabapentin, divalproex sodium, levetiracetam, pregabalin, phenytoin, lamotrigine, valproic acid, primidone, carbamazepine, topiramate
Antidepressants	2011	AL	citalopram, sertraline, mirtazapine, escitalopram, trazodone, paroxetine, duloxetine, venlafaxine, fluoxetine, bupropion
		NH	citalopram, mirtazapine, sertraline, escitalopram, trazodone, duloxetine, paroxetine, venlafaxine, fluoxetine, bupropion
	2013	AL	citalopram, sertraline, mirtazapine, escitalopram, trazodone, duloxetine, paroxetine, venlafaxine, fluoxetine, bupropion
		NH	mirtazapine, citalopram, sertraline, trazodone, escitalopram, duloxetine, paroxetine, venlafaxine, fluoxetine, bupropion
	2017	AL	sertraline, mirtazapine, escitalopram, trazodone, citalopram, duloxetine, bupropion, venlafaxine, fluoxetine, paroxetine
		NH	mirtazapine, sertraline, trazodone, escitalopram, citalopram, duloxetine, venlafaxine, paroxetine, fluoxetine, bupropion
Antipsychotics	2011	AL	quetiapine, risperidone, olanzapine, aripiprazole, haloperidol, ziprasidone, prochlorperazine, perphenazine, thioridazine, chlorpromazine
		NH	quetiapine, risperidone, olanzapine, haloperidol,

			aripiprazole, ziprasidone, prochlorperazine, perphenazine, chlorpromazine, clozapine
	2013	AL	quetiapine, risperidone, olanzapine, aripiprazole, haloperidol, prochlorperazine, ziprasidone, perphenazine, clozapine, loxapine
		NH	quetiapine, risperidone, olanzapine, haloperidol, aripiprazole, ziprasidone, prochlorperazine, perphenazine, chlorpromazine, thioridazine
	2017	AL	quetiapine, risperidone, olanzapine, aripiprazole, haloperidol, pimavanserin, prochlorperazine, ziprasidone, lurasidone, perphenazine
		NH	quetiapine, risperidone, olanzapine, aripiprazole, haloperidol, ziprasidone, prochlorperazine, pimavanserin, perphenazine, lurasidone
Anxiolytics/ Sedative- Hypnotics	2011	AL	zolpidem, buspirone, hydroxyzine, promethazine, eszopiclone, zaleplon, ramelteon, phenobarbital, meprobamate
		NH	zolpidem, buspirone, promethazine, hydroxyzine, eszopiclone, ramelteon, zaleplon, meprobamate, chloral hydrate, phenobarbital
	2013	AL	zolpidem, buspirone, hydroxyzine, promethazine, eszopiclone, phenobarbital, zaleplon, ramelteon, meprobamate
		NH	zolpidem, buspirone, hydroxyzine, promethazine, phenobarbital, eszopiclone, zaleplon, ramelteon, meprobamate
	2017	AL	buspirone, zolpidem, hydroxyzine, promethazine, phenobarbital, eszopiclone, ramelteon, suvorexant, zaleplon, meprobamate
		NH	buspirone, hydroxyzine, zolpidem, promethazine, phenobarbital, ramelteon, eszopiclone, zaleplon, suvorexant, meprobamate
Benzodiazepines <sup>a</sup>	2013	AL	lorazepam, alprazolam, clonazepam, temazepam, diazepam, clorazepate, triazolam, oxazepam, chlordiazepoxide, flurazepam
		NH	lorazepam, alprazolam, clonazepam, temazepam, diazepam, clorazepate, chlordiazepoxide, oxazepam, triazolam, clobazam
	2017	AL	lorazepam, alprazolam, clonazepam, temazepam, diazepam, clorazepate, triazolam, oxazepam, chlordiazepoxide,



			clobazam
		NH	lorazepam, alprazolam, clonazepam, temazepam, diazepam, clorazepate, chlordiazepoxide, oxazepam, triazolam, clobazam
Antidementia	2011	AL	donepezil, memantine, rivastigmine, galantamine
		NH	donepezil, memantine, rivastigmine, galantamine
	2013	AL	donepezil, memantine, rivastigmine, galantamine
		NH	donepezil, memantine, rivastigmine, galantamine
	2017	AL	donepezil, memantine, rivastigmine, galantamine
		NH	donepezil, memantine, rivastigmine, galantamine

<sup>a</sup> Not measured until 2013 due to the start of Medicare Part D coverage. Results are displayed for 2011, 2013, and 2017 to describe medication prescribing at three time points over the course of the study.

**Supplementary Table S5.** Monthly percent of mood stabilizer/anticonvulsant prescribing attributed to gabapentin, divalproex sodium, and levetiracetam among assisted living (AL) and long-stay nursing home (LSNH) residents with ADRD, July 2010 – December 2017.

Month-Year	Gabapentin (%)		Divalproex Sodium (%)		Levetiracetam (%)	
	AL	LSNH	AL	LSNH	AL	LSNH
July 2010	39.21	28.48	14.14	25.45	8.33	11.52
August 2010	39.51	29.46	13.66	25.89	8.46	10.71
September 2010	39.75	28.08	13.58	26.88	8.57	10.81
October 2010	39.95	27.83	13.56	24.44	8.47	12.13
November 2010	39.44	27.72	13.54	25.90	8.96	12.98
December 2010	39.21	28.12	13.71	25.76	9.43	12.39
January 2011	38.48	28.88	13.78	26.55	10.00	12.65
February 2011	38.19	29.36	13.40	26.50	9.68	12.65
March 2011	38.11	28.94	13.30	26.44	9.31	12.71
April 2011	38.38	28.85	12.73	25.97	9.68	12.89
May 2011	38.15	29.23	13.59	25.71	9.99	13.00
June 2011	38.31	29.66	13.45	25.52	10.28	12.99
July 2011	38.88	30.25	13.32	25.61	9.65	13.13
August 2011	38.61	30.21	12.93	25.90	9.85	13.03
September 2011	38.61	29.82	13.18	26.13	9.77	13.30
October 2011	39.83	29.76	13.01	26.26	9.88	13.30
November 2011	39.83	30.16	12.81	26.05	9.93	13.09
December 2011	39.99	30.30	12.31	25.61	10.14	13.32
January 2012	39.27	30.13	13.53	25.51	10.30	13.35
February 2012	39.12	30.78	13.29	25.59	10.65	13.11
March 2012	40.24	31.19	12.85	25.35	10.63	13.37
April 2012	39.81	31.38	13.00	25.01	10.74	13.43
May 2012	40.28	31.52	12.61	24.93	10.43	13.50
June 2012	39.75	32.04	12.80	24.40	10.62	13.53
July 2012	40.24	32.27	12.49	24.13	10.59	13.86
August 2012	41.38	32.99	12.48	23.86	10.58	13.68
September 2012	41.69	32.92	12.15	24.14	10.98	13.48
October 2012	41.21	33.04	12.89	23.92	10.83	13.74
November 2012	41.27	33.38	12.74	23.49	10.65	13.66
December 2012	41.78	33.33	12.26	23.44	11.22	13.88
January 2013	40.96	33.15	12.28	22.94	11.30	13.80
February 2013	40.70	33.39	12.22	22.88	11.44	13.84
March 2013	41.07	33.57	12.22	22.8	11.49	13.90
April 2013	42.59	33.80	12.04	22.56	11.08	14.19
May 2013	42.50	33.78	11.61	22.46	11.21	14.15
June 2013	42.72	34.09	11.59	22.33	11.01	14.00
July 2013	42.63	34.17	11.41	22.29	11.06	13.90
August 2013	42.47	34.22	11.29	22.43	11.22	14.23
September 2013	42.45	34.87	11.15	22.22	11.05	13.96

October 2013	42.73	35.03	11.35	22.07	11.02	14.01
November 2013	43.04	35.05	11.13	22.09	10.73	14.09
December 2013	43.40	35.21	11.01	22.14	11.24	14.13
January 2014	43.36	35.67	10.73	21.89	11.11	14.25
February 2014	43.04	35.64	11.09	21.81	10.9	14.48
March 2014	43.23	35.71	11.08	21.83	11.05	14.37
April 2014	43.63	35.55	10.94	21.87	11.03	14.71
May 2014	43.75	35.62	11.46	21.67	10.79	14.61
June 2014	44.20	35.75	11.23	21.70	10.62	14.70
July 2014	43.89	35.61	11.22	21.86	10.65	14.82
August 2014	43.74	35.71	11.23	21.91	10.55	14.76
September 2014	43.81	36.07	10.77	21.90	11.10	14.60
October 2014	44.02	36.22	10.45	21.82	11.12	14.56
November 2014	44.00	36.62	10.66	21.39	10.86	14.58
December 2014	44.32	36.64	10.71	21.64	10.91	14.53
January 2015	44.26	36.85	11.07	21.74	10.76	14.46
February 2015	44.44	37.00	10.80	21.56	11.00	14.56
March 2015	44.64	37.37	10.74	21.39	11.03	14.50
April 2015	44.27	37.46	11.01	21.53	11.15	14.43
May 2015	44.37	37.53	10.84	21.58	11.09	14.46
June 2015	44.75	37.47	10.83	21.81	11.11	14.34
July 2015	45.01	37.72	10.74	21.59	10.96	14.38
August 2015	45.24	37.45	10.77	21.46	10.98	14.71
September 2015	45.15	37.52	11.13	21.23	10.83	14.82
October 2015	45.38	37.74	11.19	21.27	10.79	14.69
November 2015	45.47	37.74	11.30	21.24	11.01	14.85
December 2015	45.97	38.06	10.95	21.18	10.90	14.77
January 2016	45.77	38.60	10.91	20.94	11.08	14.65
February 2016	45.78	38.75	10.90	20.97	11.33	14.70
March 2016	45.45	38.66	10.72	21.13	11.59	14.84
April 2016	45.71	38.71	10.58	20.91	11.40	14.97
May 2016	45.75	38.52	10.62	21.08	11.40	14.87
June 2016	46.20	38.40	10.51	21.05	11.24	14.86
July 2016	45.71	38.43	10.50	21.19	11.35	14.72
August 2016	45.69	38.66	10.35	21.19	11.48	14.70
September 2016	45.57	38.63	10.48	21.04	11.54	14.78
October 2016	45.85	38.59	10.46	21.04	11.42	14.74
November 2016	46.26	38.86	10.37	20.94	11.17	14.76
December 2016	46.42	38.95	10.38	20.79	11.08	14.71
January 2017	46.42	38.71	10.46	20.85	11.09	14.69
February 2017	46.67	38.75	10.33	20.81	11.32	14.81
March 2017	46.38	38.88	10.40	20.69	11.61	14.88
April 2017	46.26	38.58	10.64	20.71	11.64	14.96
May 2017	46.69	38.67	10.63	20.75	11.43	15.04
June 2017	46.47	38.86	10.43	20.75	11.65	15.09

July 2017	46.65	38.91	10.72	20.50	11.44	15.11
August 2017	46.84	38.76	10.41	20.45	11.52	15.13
September 2017	47.38	38.95	10.51	20.45	11.41	15.19
October 2017	47.62	39.14	10.33	20.25	11.37	15.12
November 2017	47.21	39.36	10.23	20.30	11.40	15.00
December 2017	47.39	39.16	10.13	20.25	11.42	15.16

**Supplementary Table S6.** Monthly percent of antipsychotic prescribing attributed to quetiapine, risperidone, and olanzapine among assisted living (AL) and long-stay nursing home (LSNH) residents with ADRD, July 2010 – December 2017.

Month-Year	Quetiapine (%)		Risperidone (%)		Olanzapine (%)	
	AL	LSNH	AL	LSNH	AL	LSNH
July 2010	43.68	33.18	27.68	27.96	14.80	15.17
August 2010	44.93	38.35	26.88	23.71	14.33	14.85
September 2010	44.29	38.20	26.83	27.07	15.12	14.25
October 2010	45.01	38.35	27.42	27.99	14.59	12.95
November 2010	45.98	38.91	26.78	27.86	13.93	13.30
December 2010	47.12	39.98	25.48	27.73	13.44	13.10
January 2011	46.79	40.27	25.99	28.07	13.50	12.83
February 2011	45.85	39.92	26.32	28.57	14.06	12.54
March 2011	44.76	39.96	26.35	28.80	13.84	12.58
April 2011	46.31	40.07	25.82	29.27	13.05	12.51
May 2011	46.90	40.11	26.26	29.43	12.67	12.41
June 2011	46.55	39.70	26.65	29.94	12.72	12.34
July 2011	47.31	39.97	26.89	30.08	12.28	12.00
August 2011	46.39	40.17	27.34	30.19	12.48	11.94
September 2011	45.42	40.05	27.46	30.09	12.68	12.17
October 2011	44.97	40.04	27.80	30.00	12.60	12.06
November 2011	45.12	40.06	27.86	29.96	12.16	12.30
December 2011	44.23	39.47	27.99	30.24	12.35	12.65
January 2012	43.97	39.47	27.14	29.99	13.00	12.54
February 2012	44.90	39.67	26.96	30.06	12.57	12.40
March 2012	44.06	39.54	27.80	30.53	12.61	12.22
April 2012	44.57	40.07	27.15	30.62	12.72	12.14
May 2012	45.02	40.18	26.63	30.65	12.95	12.08
June 2012	45.08	40.83	26.93	30.21	12.66	11.91
July 2012	44.87	40.79	27.69	30.05	12.41	11.82
August 2012	44.87	40.76	27.11	30.07	13.11	11.55
September 2012	45.17	41.00	26.38	30.27	13.09	11.63
October 2012	44.55	41.17	27.29	30.08	12.90	11.76
November 2012	43.86	41.84	27.85	29.94	13.27	11.43
December 2012	43.90	41.99	27.96	29.36	12.75	11.46
January 2013	43.70	41.79	27.57	29.22	12.26	11.64
February 2013	43.55	41.97	27.65	29.22	12.51	11.91
March 2013	44.35	41.68	27.57	29.30	12.40	12.13
April 2013	45.11	41.73	27.30	29.07	12.57	12.23
May 2013	45.51	41.98	27.44	29.39	12.20	12.18
June 2013	46.01	42.08	27.37	28.98	11.92	12.23
July 2013	45.75	41.92	26.93	29.15	11.92	12.30
August 2013	45.60	42.29	26.57	29.03	12.43	12.19
September 2013	46.19	42.47	26.30	29.24	12.99	12.09

October 2013	46.28	42.67	26.45	29.10	12.84	12.15
November 2013	46.95	42.50	25.84	29.17	12.81	12.11
December 2013	46.48	42.36	25.24	28.61	13.17	12.20
January 2014	47.58	42.54	24.55	28.38	12.86	12.15
February 2014	48.23	42.60	24.72	28.72	12.33	12.09
March 2014	48.24	42.83	24.59	28.64	12.24	12.16
April 2014	48.88	42.72	24.49	28.70	11.86	12.14
May 2014	48.99	42.81	24.03	28.58	12.22	12.23
June 2014	48.85	42.85	23.66	28.81	12.38	12.20
July 2014	48.27	42.92	24.26	28.45	12.28	12.32
August 2014	49.02	43.44	23.55	28.13	12.58	12.41
September 2014	48.43	43.35	23.82	28.18	13.11	12.38
October 2014	47.51	43.46	24.65	27.82	12.69	12.57
November 2014	48.33	43.76	24.19	27.91	12.97	12.43
December 2014	49.03	43.87	24.01	27.97	12.27	12.49
January 2015	48.88	43.74	23.63	27.75	12.44	12.63
February 2015	49.19	44.40	23.21	27.60	12.00	12.67
March 2015	48.82	44.41	23.10	27.02	12.09	12.61
April 2015	49.33	44.74	23.54	26.84	12.15	12.88
May 2015	49.71	45.00	24.16	26.65	11.79	13.11
June 2015	49.43	44.83	23.81	26.83	11.62	13.06
July 2015	49.64	44.57	23.77	26.73	11.83	13.34
August 2015	49.69	44.66	23.79	26.60	11.84	13.19
September 2015	49.77	44.78	23.45	26.57	12.44	13.45
October 2015	49.12	44.96	23.57	26.63	12.32	13.35
November 2015	49.58	45.02	22.77	26.62	12.38	13.39
December 2015	50.39	45.35	22.41	26.20	12.54	13.49
January 2016	49.58	45.31	22.56	26.09	12.74	13.67
February 2016	49.28	45.39	22.08	26.13	13.07	13.61
March 2016	49.59	44.82	22.51	26.08	13.06	13.59
April 2016	49.52	45.16	22.74	26.31	13.05	13.36
May 2016	50.49	45.71	21.37	25.69	13.24	13.35
June 2016	50.64	45.68	21.43	25.58	13.35	13.56
July 2016	50.17	45.62	21.07	25.60	13.87	13.66
August 2016	49.93	45.58	20.31	25.13	14.09	13.83
September 2016	49.98	45.68	20.56	24.88	13.71	14.00
October 2016	50.12	45.58	20.54	25.15	13.88	13.99
November 2016	49.64	45.95	21.01	24.93	13.29	13.97
December 2016	49.81	45.80	21.03	24.76	13.23	13.77
January 2017	50.47	45.93	20.95	24.57	13.41	14.10
February 2017	50.12	46.02	21.65	24.73	12.96	14.01
March 2017	50.07	46.03	20.93	24.40	13.27	13.82
April 2017	51.07	46.32	20.64	24.50	13.12	13.54
May 2017	50.48	46.45	20.26	24.41	13.75	13.64
June 2017	51.24	46.64	20.10	24.36	13.62	13.37

July 2017	51.20	46.71	19.96	24.31	13.25	13.37
August 2017	51.19	46.18	19.93	24.30	13.29	13.30
September 2017	51.34	46.51	19.86	23.87	12.96	13.50
October 2017	50.76	46.23	19.80	23.63	13.38	13.88
November 2017	50.12	46.17	20.37	23.43	13.10	13.82
December 2017	50.45	46.18	19.50	23.74	13.13	13.61

**Supplementary Table S7.** Interrupted time series stability analyses using a first-order autoregressive model with robust standard errors for medication prescribing among assisted living residents with ADRD pre- and post-Partnership.

	Antipsychotics		Anticonvulsants / Mood Stabilizers		Anxiolytics / Sedative- Hypnotics		Antidepressants		Antidementia	
	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs
<b>Period 1: Pre-Partnership (Jul. 2010 - Mar. 2012)</b>										
Prescribing at beginning of period 1, Jul. 2010 (%)	8.94	(8.69, 9.19)	9.22	(8.99, 9.45)	5.35	(5.15, 5.55)	29.70	(29.44, 29.97)	28.06	(27.74, 28.39)
Slope during pre-Partnership period	-0.04	(-0.06, -0.02)**	0.05	(0.03, 0.07)**	-0.01	(-0.03, 0.008)	0.03	(-0.001, 0.05)	-0.08	(-0.12, -0.05)**
<b>Period 2: Post-Partnership (Apr. 2012 - Dec. 2017)</b>										
Level change	-0.06	(-0.21, 0.09)	0.007	(-0.13, 0.14)	-0.25	(-0.41, -0.09)*	0.03	(-0.13, 0.19)	0.10	(-0.12, 0.33)
Prescribing at start of period 2, Apr. 2012 (%)	8.11	(7.92, 8.29)	10.35	(10.03, 10.66)	4.87	(4.56, 5.18)	30.26	(29.85, 30.67)	26.41	(25.92, 26.91)
Slope during post-Partnership period	-0.006	(-0.01, -0.001)*	0.06	(0.06, 0.07)**	-0.02	(-0.03, -0.01)**	0.04	(0.03, 0.05)**	-0.08	(-0.09, -0.07)**
Slope change pre- and post-Partnership	0.03	(0.01, 0.05)*	0.008	(-0.02, 0.03)	-0.009	(-0.03, 0.02)	0.01	(-0.02, 0.05)	0.001	(-0.04, 0.04)
Prescribing at end of period 2, Dec. 2017 (%)	7.71	(7.51, 7.92)	14.51	(14.29, 14.74)	3.53	(3.24, 3.82)	32.74	(32.43, 33.05)	20.77	(20.46, 21.09)

\*p < 0.05, \*\*p < 0.001, Residents with diagnoses of Huntington's disease, Tourette syndrome, or schizophrenia were excluded. Prevalence reported in the predicted percent from the interrupted time series model. Est. = Estimate, CLs = Confidence Limits

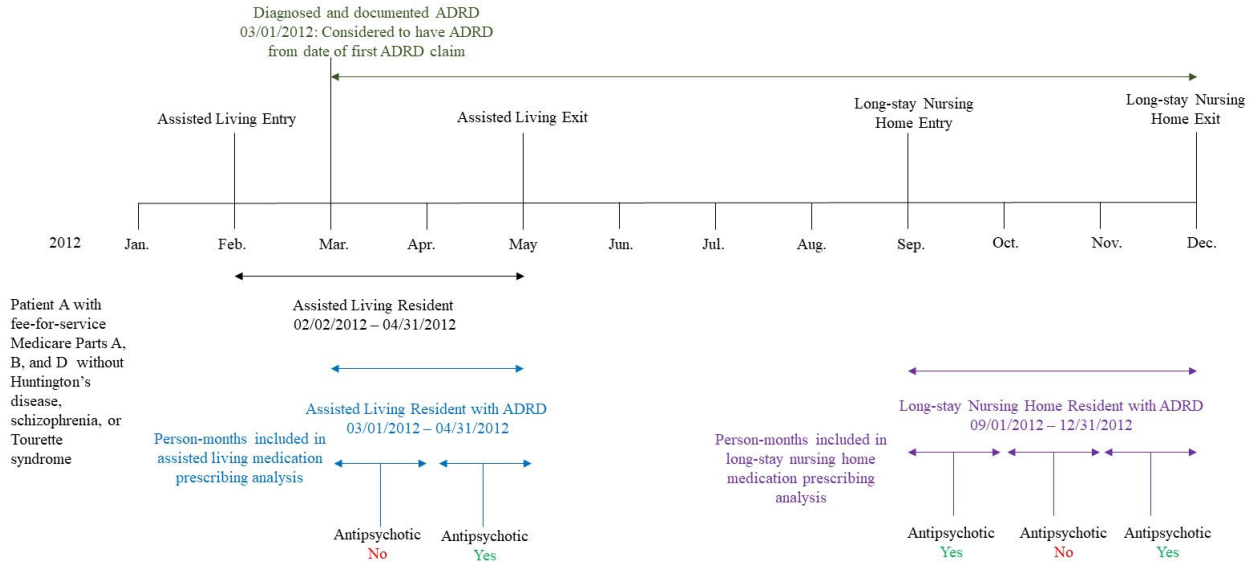


**Supplementary Table S8.** Interrupted time series stability analyses using a first-order autoregressive model with robust standard errors for medication prescribing among long-stay nursing home residents with ADRD pre- and post-Partnership.

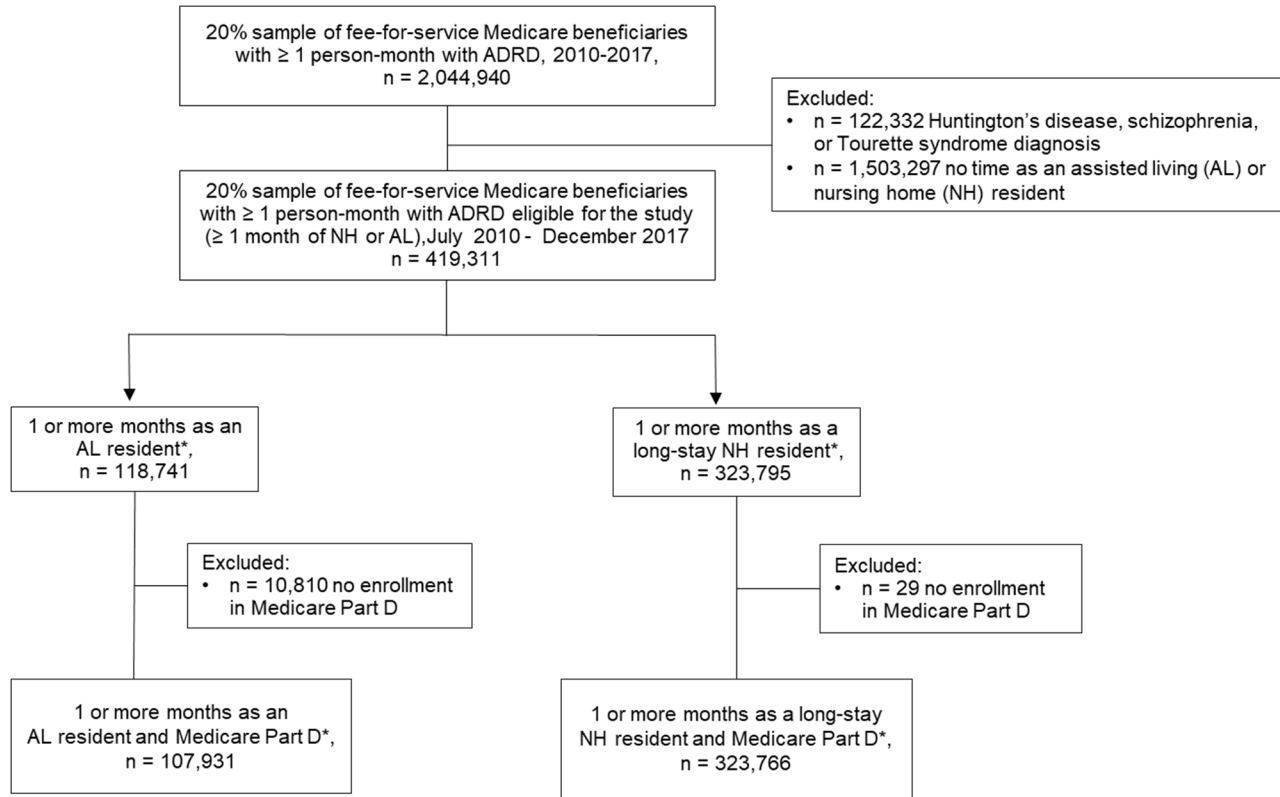
	Antipsychotics		Anticonvulsants / Mood Stabilizers		Anxiolytics / Sedative- Hypnotics		Antidepressants		Antidementia	
	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs	Est.	95% CLs
<b>Period 1: Pre-Partnership (Jul. 2010 - Mar. 2012)</b>										
Prescribing at beginning of period 1, Jul. 2010 (%)	22.75	(22.13, 23.38)	17.47	(15.90, 19.04)	9.30	(8.25, 10.34)	41.79	(41.15, 42.42)	38.41	(37.33, 39.50)
Slope during pre-Partnership period	0.01	(-0.13, 0.14)	0.14	(0.05, 0.23)*	-0.10	(-0.16, -0.04)*	0.37	(0.17, 0.57)**	-0.22	(-0.28, -0.16)**
<b>Period 2: Post-Partnership (Apr. 2012 – Dec. 2017)</b>										
Level change	-0.52	(-0.70, -0.33)**	-0.60	(-1.30, 0.10)	-0.36	(-0.58, -0.14)*	-0.58	(-0.91, -0.26)*	-0.05	(-0.40, 0.29)
Prescribing at start of period 2, Apr. 2012 (%)	22.39	(19.69, 25.10)	19.79	(19.49, 20.09)	6.78	(6.09, 7.47)	48.98	(45.05, 52.91)	33.68	(33.35, 34.01)
Slope during post-Partnership period	-0.14	(-0.17, -0.11)**	0.10	(0.09, 0.10)**	-0.03	(-0.04, -0.01)**	-0.02	(-0.07, 0.04)	-0.13	(-0.14, -0.12)**
Slope change pre- and post-Partnership	-0.15	(-0.31, 0.02)	-0.04	(-0.14, 0.05)	0.08	(0.01, 0.15)*	-0.39	(-0.64, -0.14)*	0.09	(0.03, 0.15)*
Prescribing at end of period 2, Dec. 2017 (%)	12.93	(11.40, 14.46)	26.40	(26.20, 26.59)	5.06	(4.66, 5.47)	47.66	(46.46, 48.85)	24.76	(24.53, 24.99)

\*p < 0.05, \*\*p < 0.001, Residents with diagnoses of Huntington's disease, Tourette syndrome, or schizophrenia were excluded. Prevalence reported in the predicted percent from the interrupted time series model. Est. = Estimate, CLs = Confidence Limits

**Supplementary Figure 1.** Example timeline of Patient A’s included person-months for medication prescribing analyses.



**Supplementary Figure 2.** Selection of persons for inclusion in the study.



\*Beneficiaries were assigned to a care setting in a calendar month based on the highest level of care. Long-stay NH resident was defined as those with a continuous stay at any facility for  $\geq 100$  days and no more than 10 days outside of a facility. Beneficiaries may contribute to both the AL and long-stay NH cohort if they transitioned from one setting to another during the study period.