SUPPLEMENTAL MATERIAL

Additional Details about Methods

Identifying Beneficiaries with ADRD

The Medicare Master Beneficiary Summary File (MBSF) chronic conditions segment includes beneficiary data for each of the 27 defined Chronic Conditions Warehouse (CCW) chronic conditions. Specifically, we identified AL residents with ADRD as those with a flag for Alzheimer's Disease, Related Disorders, or Senile Dementia. To have this flag, beneficiaries must have at least one inpatient, skilled nursing facility, home health, Part B institutional, or Part B non-institutional (carrier) claim with a related code in any position during the 3-year look-back period.

Identifying a Cohort of Medicare Beneficiaries Residing in AL

We identified Medicare Part B claims in the Carrier File that had a Place of Service code #13 and/or Current Procedural Terminology (CPT) codes 99324-99337, indicating that care was delivered in an AL setting. We used the Outcome and Assessment Information Set (OASIS) to identify beneficiaries with a start of care assessment that had a living arrangement code indicating "congregate living situation with around-the-clock assistance." The Part B Claims/Carrier data and the OASIS were linked to a ZIP code History File (ZHF) to obtain beneficiaries' 9-digit ZIP codes on the claim and/or OASIS assessment date(s) indicating services were rendered in an AL setting. The MBSF was linked to the ZHF to obtain beneficiaries' residential ZIP codes. The ZHF was created by integrating the MBSF and the Enterprise Cross Reference File, which contains beneficiaries' 9-digit ZIP code as of their change of residence date. We then compiled the 9-digit ZIP codes of beneficiaries whose first seven digits of their ZIP codes matched to those of an AL. To that list, we added the 9-digit ZIP codes of ALs and created a yearly finder file of 52,493 validated 9-digit ZIP codes associated with 11,916 ALs (many large AL campuses have more than one 9-digit ZIP code). Using this finder file, we searched beneficiaries' residential ZIP codes to identify Medicare beneficiaries residing in large AL settings with a validated 9-digit ZIP code pertaining to an AL on December 31, 2016.

Supplemental Tables with the observed and adjusted rates presented in the figures

Supplementary Table S1. Unadjusted rate of ADRD by state (arrayed from largest to smallest share of assisted living residents with ADRD)

State	Number of assisted living residents with ADRD	Total number of assisted living residents	Proportion of assisted living residents with ADRD (%)	Proportion of residents in the community with ADRD (%)
Total	88,867	293,336	30.3	6.1
NC	3,831	8,109	47.2	6.2
KS	903	2,462	36.7	5.9
WV	154	420	36.7	5.8
NY	5,816	16,295	35.7	6.5
FL	10,435	30,211	34.5	7.5
TX	5,069	14,758	34.4	7.3
NV	415	1,214	34.2	5.6
NJ	3,190	9,496	33.6	6.8
UT	442	1,337	33.1	5.6
MS	539	1,643	32.8	6.2
TN	1,504	4,595	32.7	6.1
GA	1,744	5,375	32.5	6.5
IN	1,107	3,416	32.4	5.8
AR	678	2,139	31.7	6.6
ME	825	2,640	31.3	5.2
MA	2,572	8,352	30.8	5.6
DE	300	983	30.5	5.9
MD	1,997	6,575	30.4	6.3
IL	3,478	11,487	30.3	6.1
RI	371	1,238	30.0	4.9
VT	219	731	30.0	4.3
LA	474	1,583	29.9	6.5
NM	216	723	29.9	5.3
OH	3,293	11,103	29.7	5.5

MI	1,583	5,364	29.5	7.2
SC	1,418	4,848	29.3	5.8
AL	660	2,257	29.2	6.7
OK	872	2,982	29.2	6.0
CO	1,490	5,097	29.2	5.0
WY	119	409	29.1	4.2
OR	1,431	4,987	28.7	5.0
VA	3,090	10,874	28.4	6.0
KY	676	2,391	28.3	5.6
NH	574	2,032	28.3	4.8
MT	334	1,202	27.8	4.6
WI	2,329	8,443	27.6	5.0
CA	7,411	27,213	27.2	6.3
AZ	1,741	6,520	26.7	5.1
NE	1,127	4,244	26.6	5.1
MO	1,679	6,371	26.4	5.8
WA	2,960	11,250	26.3	5.4
ID	489	1,901	25.7	5.0
CT	372	1,477	25.2	6.6
PA	5,227	21,013	24.9	5.4
SD	287	1,178	24.4	3.8
IA	1,293	5,368	24.1	4.4
ND	301	1,257	24.0	4.2
MN	1,832	7,773	23.6	4.8

Supplementary Table S2. Adjusted rates of moving into a nursing home among residents with an ADRD diagnosis in assisted living and community (arrayed by absolute difference from largest to smallest)

State	Number of assisted living residents who moved to a nursing home	Total number of assisted living residents with an ADRD diagnosis	Adjusted percent of assisted living residents who moved to a nursing home	95% CI	Number of community residents who moved to a nursing home	Total number of community residents	Adjusted percent of community residents who moved to a nursing home	95% CI	Absolute difference in adjusted rates of moving into a nursing home
Total	21,151	88,867	23.8%	23.5%, 24%	342,190	2,074,420	16.5%	16.4%, 16.6%	7.3%*
DE	98	300	33.6%	28%, 38.7%	9,228	1,601	17.3%	16.6%, 18%	16.3%*
ND	98	301	34.9%	29%, 40.5%	3,726	775	22.0%	20.6%, 23.3%	12.9%*
CT	121	372	33.5%	28.7%, 37.3%	28,195	6,241	21.3%	20.9%, 21.8%	12.2%*
RI	122	371	33.5%	29%, 38.4%	5,208	1,168	22.4%	21.4%, 23.5%	11.2%*
KY	195	676	29.3%	25.9%, 32.7%	32,295	6,105	18.3%	17.9%, 18.7%	11.0%*
NY	1,575	5,816	26.1%	25.2%, 27.1%	123,532	19,439	15.3%	15.1%, 15.5%	10.8%*
PA	1,527	5,225	29.3%	28.1%, 30.6%	74,135	14,417	19.0%	18.7%, 19.2%	10.3%*
IL	1,016	3,481	29.0%	27.7%, 30.6%	89,570	17,386	18.9%	18.7%, 19.2%	10.1%*
AR	169	679	25.4%	22.3%, 28.5%	28,484	4,292	15.5%	15.1%, 16%	9.9%*
CA	1,666	7,413	22.5%	21.6%, 23.4%	199,239	26,193	13.9%	13.8%, 14.1%	8.6%*
IA	376	1,294	30.9%	28.4%, 33.8%	19,771	4,262	22.4%	21.8%, 23%	8.5%*
FL	2,651	10,438	23.7%	22.9%, 24.3%	161,341	25,738	15.3%	15.1%, 15.5%	8.4%*

AL	155	660	24.4%	20.6%, 28%	38,974	6,532	16.5%	16.1%, 16.8%	7.9%*
MA	731	2,573	28.7%	26.6%, 30.2%	50,024	10,472	20.7%	20.4%, 21.1%	7.9%*
CO	357	1,490	25.3%	23%, 27.4%	23,572	3,855	17.5%	16.9%, 18%	7.8%*
MO	428	1,679	26.1%	23.7%, 28%	42,199	7,915	18.5%	18.2%, 18.9%	7.6%*
SD	82	287	30.4%	25.3%, 37%	4,346	935	22.8%	21.7%, 24.2%	7.6%*
VA	691	3,090	23.3%	21.9%, 24.8%	62,860	9,849	15.7%	15.4%, 15.9%	7.6%*
TN	373	1,505	24.8%	22.6%, 27%	45,198	8,364	17.9%	17.5%, 18.2%	6.9%*
GA	341	1,744	20.0%	18%, 21.8%	61,278	8,059	13.2%	13%, 13.5%	6.8%*
NV	87	415	21.0%	17.7%, 24.7%	15,633	2,087	14.2%	13.7%, 14.7%	6.8%*
OK	201	872	23.3%	20.6%, 26.1%	31,747	5,256	16.6%	16.3%, 17%	6.7%*
NJ	847	3,190	25.4%	23.9%, 26.8%	74,728	14,237	18.8%	18.5%, 19.1%	6.6%*
LA	91	473	19.4%	15.5%, 23%	31,845	4,152	12.9%	12.5%, 13.2%	6.5%*
SC	291	1,416	21.3%	19.4%, 23.6%	38,723	5,667	14.8%	14.5%, 15.2%	6.5%*
TX	1,132	5,068	21.9%	20.7%, 22.9%	163,350	24,537	15.5%	15.4%, 15.7%	6.4%*
NE	280	1,126	26.1%	23.3%, 28.5%	13,277	2,528	20.0%	19.1%, 20.8%	6.1%*
WA	533	2,959	18.9%	17.5%, 20.2%	42,984	5,285	12.8%	12.5%, 13.1%	6.1%*
OH	858	3,294	26.1%	24.6%, 27.4%	67,225	13,989	20.2%	19.9%, 20.5%	5.9%*
MI	364	1,583	22.7%	20.5%, 24.6%	82,213	14,928	17.1%	16.8%, 17.4%	5.6%*

MN	399	1,832	23.2%	21.5%, 25.2%	17,486	2,875	17.6%	16.9%, 18.1%	5.6%*
MD	423	1,998	21.9%	20.2%, 23.8%	51,126	8,429	16.6%	16.3%, 16.9%	5.3%*
IN	286	1,107	25.5%	23%, 27.7%	46,139	9,682	20.5%	20.1%, 20.8%	5.1%*
AZ	293	1,742	16.9%	15.1%, 18.4%	34,179	3,979	12.1%	11.7%, 12.4%	4.8%*
ID	83	489	17.7%	13.7%, 21.3%	9,217	1,157	13.0%	12.3%, 13.8%	4.6%
OR	212	1,430	15.4%	13.6%, 17.1%	20,002	2,083	10.7%	10.2%, 11.1%	4.6%*
WI	464	2,329	20.5%	19%, 21.9%	30,008	4,722	16.0%	15.6%, 16.5%	4.5%*
WY	27	119	23.1%	15.3%, 30%	3,738	664	19.2%	17.9%, 20.4%	3.9%
KS	225	902	24.3%	21.6%, 27.1%	23,009	4,744	20.8%	20.3%, 21.4%	3.5%*
NC	691	3,828	18.4%	17.1%, 19.5%	72,161	11,184	15.4%	15.1%, 15.7%	3.0%*
MT	59	334	18.7%	14%, 22.8%	7,080	1,084	16.0%	15%, 16.9%	2.8%
ME	186	825	22.1%	19.4%, 24.9%	10,982	2,193	19.4%	18.7%, 20.2%	2.7%
MS	91	539	17.7%	14.7%, 20.7%	27,356	4,216	15.2%	14.7%, 15.6%	2.5%
NH	98	574	17.8%	14.4%, 20.9%	11,015	2,138	19.7%	18.9%, 20.5%	1.9%
VT	39	219	18.7%	13.9%, 23.7%	5,085	984	19.4%	18.3%, 20.5%	0.7%
UT	68	442	16.4%	12.6%, 19.6%	12,199	1,892	16.3%	15.5%, 17%	0.2%
WV	23	154	14.5%	8.6%, 20.2%	16,135	2,421	14.3%	13.8%, 14.8%	0.2%
NM	28	216	13.7%	9.7%, 18.7%	12,603	1,479	13.7%	13%, 14.4%	0%

NOTES: The bootstrap resampling method was performed to estimate the 95% CIs of adjusted rates. Two-sample t-tests were used to compare adjusted group means. *p<0.05.

Supplementary Table S3. Adjusted rates of hospitalization before moving to a nursing home among residents with an ADRD diagnosis in assisted living and community (arrayed by absolute difference from largest to smallest)

State	Number of assisted living residents who were hospitalized	Total number of assisted living residents with an ADRD diagnosis	Adjusted percent of assisted living residents who were hospitalized	95% CI	Number of community residents who were hospitalized	Total number of community residents	Adjusted percent of community residents who were hospitalized	95% CI	Absolute difference in adjusted hospitalization rate
Total	33,457	88,867	37.6%	37.3%, 37.9%	697,968	2,074,420	33.6%	33.5%, 33.7%	4.0%*
AR	299	679	44.8%	40.7%, 49.2%	9,638	28,484	35.0%	34.5%, 35.6%	9.8%*
RI	159	371	44.1%	39.1%, 49.2%	1,858	5,208	35.9%	34.5%, 37.2%	8.2%*
GA	680	1,744	39.9%	37.9%, 41.9%	19,740	61,278	32.4%	32%, 32.8%	7.5%*
NV	184	415	43.7%	38.9%, 49%	5,555	15,633	36.2%	35.4%, 36.7%	7.5%*
KY	282	676	41.7%	37.8%, 44.9%	11,787	32,295	35.2%	34.8%, 35.7%	6.4%*
CA	2,736	7,413	36.8%	35.6%, 37.8%	58,349	199,239	30.5%	30.3%, 30.7%	6.3%*
MA	1,100	2,573	43.4%	41.4%, 45.1%	18,452	50,024	37.1%	36.7%, 37.5%	6.2%*
CO	511	1,490	36.9%	34.2%, 39.5%	6,616	23,572	30.8%	30%, 31.4%	6.1%*
WY	46	119	40.1%	31.7%, 49%	1,140	3,738	34.2%	32.8%, 35.9%	5.9%
NY	2,497	5,816	40.0%	39%, 41.2%	43,032	123,532	34.2%	34%, 34.5%	5.8%*
WA	1,036	2,959	37.8%	35.6%, 39.5%	12,551	42,984	32.1%	31.6%, 32.6%	5.7%*
FL	4,510	10,438	39.9%	39%, 40.6%	58,793	161,341	34.4%	34.2%, 34.6%	5.5%*
IL	1,382	3,481	39.6%	38%, 41.6%	31,288	89,570	34.1%	33.8%, 34.4%	5.5%*

TX	2,006	5,068	38.5%	37.4%, 39.6%	55,507	163,350	33.6%	33.4%, 33.8%	4.9%*
AL	253	660	39.5%	35.3%, 43.9%	13,860	38,974	34.8%	34.4%, 35.2%	4.7%*
OK	334	872	38.4%	35.4%, 41.2%	10,769	31,747	33.8%	33.3%, 34.3%	4.6%*
SC	509	1,416	37.0%	34.8%, 39.6%	12,387	38,723	32.4%	31.9%, 32.9%	4.6%*
LA	183	473	38.9%	34.5%, 43.7%	11,408	31,845	34.5%	34%, 34.9%	4.4%
ND	102	301	37.2%	31.1%, 41.9%	1,116	3,726	32.8%	31.3%, 34.3%	4.4%
TN	609	1,505	40.4%	37.7%, 43%	16,618	45,198	36.0%	35.6%, 36.5%	4.4%*
WI	791	2,329	36.2%	34.1%, 38.5%	9,287	30,008	32.6%	32.1%, 33.2%	3.6%*
IA	420	1,294	35.5%	33%, 38.2%	5,909	19,771	32.1%	31.5%, 32.8%	3.4%*
MS	205	539	39.9%	35.9%, 44%	10,135	27,356	36.6%	36%, 37.1%	3.3%
OR	455	1,430	34.2%	31.9%, 36.8%	5,673	20,002	30.9%	30.2%, 31.7%	3.3%*
MN	613	1,832	36.5%	34.5%, 39%	5,355	17,486	33.2%	32.6%, 34.2%	3.2%*
MO	623	1,679	37.6%	35.1%, 40%	14,645	42,199	34.4%	34%, 34.8%	3.2%*
NC	1,377	3,828	35.8%	34.5%, 37.5%	23,522	72,161	32.7%	32.3%, 33%	3.1%*
DE	106	300	36.8%	30.8%, 42.1%	3,176	9,228	33.8%	32.9%, 34.8%	3.0%
MT	110	334	35.8%	29.6%, 41.1%	2,099	7,080	32.9%	31.7%, 34.1%	3.0%
NE	377	1,126	36.2%	33.3%, 38.9%	4,068	13,277	33.2%	32.4%, 34%	3.0%
AZ	578	1,742	33.4%	31.3%, 35.9%	10,012	34,179	30.6%	30.2%, 31.1%	2.8%*

NH	175	574	32.8%	29.5%, 37.6%	3,729	11,015	35.6%	34.7%, 36.4%	2.8%
MI	604	1,583	37.6%	35.2%, 40%	30,904	82,213	35.0%	34.7%, 35.3%	2.6%
WV	60	154	37.7%	30.3%, 45.3%	5,967	16,135	35.1%	34.4%, 35.6%	2.6%
VT	62	219	31.6%	25.6%, 37.5%	1,590	5,085	34.1%	32.7%, 35.3%	2.5%
PA	2,010	5,225	38.5%	37%, 39.6%	27,116	74,135	36.0%	35.7%, 36.3%	2.4%*
NM	59	216	29.1%	23.4%, 35.9%	3,518	12,603	31.4%	30.6%, 32.1%	2.3%
ID	148	489	32.7%	28.8%, 37.4%	2,577	9,217	30.7%	29.6%, 31.7%	2.0%
IN	401	1,107	35.6%	33.1%, 38.4%	15,903	46,139	33.8%	33.4%, 34.2%	1.8%
NJ	1,141	3,190	34.7%	33.1%, 36.3%	25,125	74,728	32.9%	32.6%, 33.2%	1.8%
KS	327	902	36.0%	32.9%, 38.5%	7,693	23,009	34.6%	33.9%, 35.2%	1.4%
MD	615	1,998	31.7%	29.8%, 33.9%	16,905	51,126	33.2%	32.8%, 33.5%	1.4%
SD	89	287	33.8%	28.3%, 39.1%	1,398	4,346	35.2%	34%, 36.5%	1.4%
UT	120	442	29.8%	25.1%, 34.5%	3,143	12,199	28.7%	27.8%, 29.5%	1.2%
OH	1,160	3,294	35.5%	34%, 37.3%	23,725	67,225	34.4%	34.1%, 34.7%	1.1%
VA	1,036	3,090	35.0%	33.3%, 37.2%	21,079	62,860	34.2%	33.8%, 34.5%	0.9%
ME	253	825	31.6%	27.7%, 35.2%	3,396	10,982	31.9%	31.2%, 32.8%	0.3%
CT	124	372	35.0%	30.2%, 39.9%	9,855	28,195	35.1%	34.5%, 35.6%	0.1%

NOTES: The bootstrap resampling method was performed to estimate the 95% CIs of adjusted rates. Two-sample t-tests were used to compare adjusted group means. *p<0.05.