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Forecasts of Use of Long-Term Services and Supports, the Aging Population, and Dementia Prevalence through 2040 in Washington State

TECHNICAL REPORT

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THIS REPORT provides technical details about the methods used to produce a series of Area Agency on Aging (AAA) and county long-range forecasts of:

1. Utilization of Medicaid-funded in-home, community residential, and skilled nursing facility services benchmarked to April 2024 utilization rates;
2. Persons meeting demographic criteria related to age, income, language, race/ethnicity; and
3. Prevalence of disability and dementia.

For these forecasts, we combined population projection data maintained by the Office of Financial Management (OFM) with other data sources containing county or state estimates of prevalence or service utilization. First, we describe the current methods and then discuss the differences from previous years' methodology. For reference, a table containing Washington State level forecasts of the measures developed in this study is presented at the end of this technical report.

OFM County Population Estimation Model (the "OFM Projection Model")

The OFM County Population Estimation Model provided the detailed "small-area" county-level population estimates and forecasts from 2020 to 2040. OFM contracted with Krupski Consulting LLC in 2010 to develop this new county-level population projection model to augment existing OFM population forecasts with income and health insurance status data from the American Community Survey (ACS). The ACS is administered annually by the United States Census Bureau. The OFM Projection Model integrates OFM long-range population forecasts with data essential for forecasting eligibility for means-tested social and health services, including eligibility for Medicaid through the expansion of coverage for low-income adults in 2014 under the Affordable Care Act (ACA). OFM staff maintain and update the model on a periodic basis.

The OFM Projection Model provided county-level population data required to produce forecasts related to disability, English proficiency, dementia and long-term care service utilization. In addition, the OFM Projection Model was used directly to produce the following forecasts:

- Number of persons aged 60 or above,
- Number of persons aged 60 or above with income at or below the Federal Poverty Level,
- Number of persons aged 60 or above that identify as a person of color,
- Number of persons aged 60 or above and American Indian or Alaska Native[1], and
- Number of persons of color aged 60 or above with income at or below the Federal Poverty Level.

[1] Data from the American Community Survey was added for this measure to be able to include those that identify as multiracial including AI/AN. Previous estimates only estimated those that identify has American Indian or Alaska Native only.

Medicaid Long-Term Services and Supports (LTSS) Utilization

LTSS utilization forecasts were developed by using the DSHS Research and Data Analysis Division's Client Services Database (RDA CSDB) to determine how many clients were using Medicaid provided LTSS in the benchmark reference month of April 2024. These counts were derived within detailed county demographic cells based on the residential and demographic information available in the RDA CSDB. Counts were derived for the following service groups: **In-home services**, **Community residential services**, **Nursing Home facilities**.

Note that these counts reflect only Medicaid LTSS services (**Table 1**) previously administered by the DSHS Aging and Long-Term Support Administration (ALTSA) and Developmental Disabilities Administration (DDA), and now by the DSHS Home and Community Living Administration (HCLA) and Behavioral Health and Habilitation Administration (BHHA). Similar services paid for through other fund sources (e.g., short-term Medicare-paid skilled nursing facility services) are not included in these forecasts.

TABLE 1.

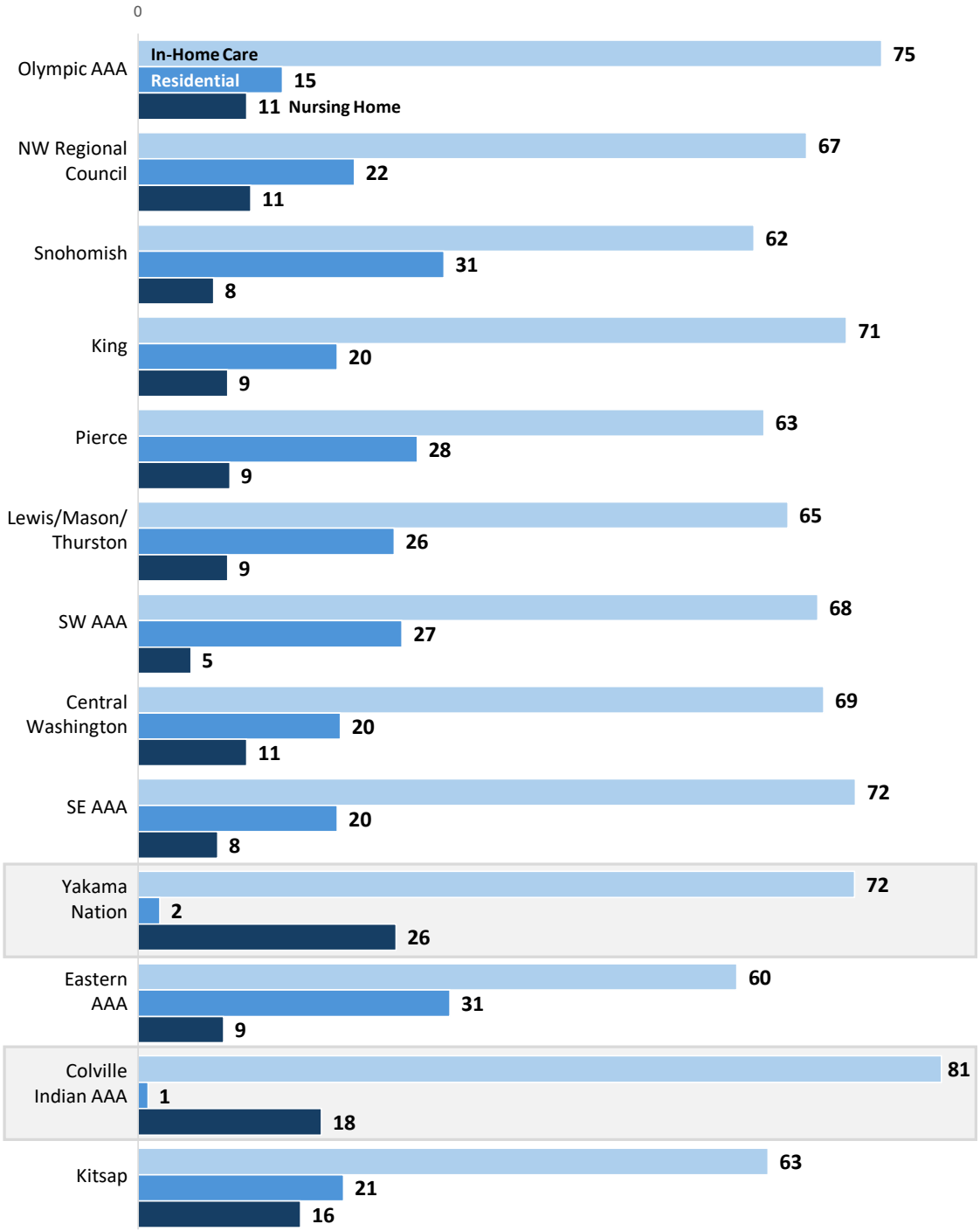
Medicaid Long-Term Services and Supports

	HCLA SERVICES		HCLA OR BHHA SERVICES
	In-Home	**Community Residential**	**RHCs and Nursing Homes**
Services formerly administered by DDA	Personal Care	Residential Habilitation Services including: • Supported Living • Companion Home • Out of home services for children • Group Home and Group Training Home • Alternative Living • State Operated Community Residential • State Operated Living Alternatives	Residential Habilitation Centers and Nursing Facilities (Now administered by BHHA)
Services formerly administered by ALTSA	• In-Home Services • PACE	Assisted Living Adult Family Homes Adult Residential Care Enhanced Services Facilities	Nursing Facilities (Now administered by HCLA)

LTSS utilization rates were estimated for county-age group-gender specific strata groups and then applied to the corresponding count of that specific county-age group-gender strata in the OFM projections to estimate the count of people with that condition in that stratum in a particular year. Then all counts for a particular county-year are summed to produce the AAA and county estimates in the tables. For counties that contribute to multiple AAAs, those counties are split on AAA lines. For example, Colville Indian AAA (PSA 12) only includes Ferry County residents that reside in that AAA's boundaries. The remainder contribute to Aging and Long-Term Care of Eastern Washington's (PSA 11) estimates.

Due to small population counts in tribal AAAs (**Figure 1**), a AAA-age-gender utilization rate was created and used rather than county-based utilization rates. Also, due to low population counts in tribal AAAs, Community Residential and Nursing Home counts were combined for projection purposes and then reallocated to service settings based on proportions observed in 2024 (**Figure 1**).

FIGURE 1.
Percentage Distribution of Medicaid LTSS Utilization by Setting and AAA, April 2024



For In-Home and Community Residential Services, caseload counts derived from the RDA CSDB were compared to the June 2025 Caseload Forecast Council (CFC) estimates for the same service categories and from the same time benchmark (April 2024). Although the caseload counts were found to be quite similar, a global ratio adjustment was performed to ensure that the statewide count of clients by service modality exactly matched the available CFC count the benchmark month. A similar adjustment was not performed for the RHC and nursing home forecast for 2 reasons; 1) the CFC does not forecast RHC utilization and 2) the CFC nursing home forecast adjusts caseloads on a "full-time equivalent" basis but

does not make a parallel adjustment to in-home or community residential caseloads. Consequently, it is important to note that our nursing home utilization projection is not comparable to CFC forecast methodology.

The LTSS forecasts presented in these reports should be interpreted as the projection (for April of each year) of the caseloads that would be observed if demographic changes (relative to April 2024) were the only factors driving future utilization trends. That is, the forecasts assume that future caseload growth is driven by changes in the county's demographic composition (e.g., growth in the population of persons in different age groups), while holding constant the propensity to use long-term care services at the level observed in April 2024 within the detailed demographic cells on which the forecast is based. Among other potential uses, these forecasts provide a benchmark for assessing how future observed caseload growth compares with expectations based solely on forecast population changes (e.g., the increased number of elders expected due to the Age Wave).

Prevalence Estimates Derived from American Community Survey (ACS) Data

The prevalence of persons meeting criteria related to disability and English proficiency was derived from 2019-2023 ACS 5-year Public Use Microdata Sample (PUMS) data for Washington State. The following definitions were applied to the ACS source data in developing prevalence estimates:

- **Disability** status was based on persons reporting ambulatory difficulty (walking or climbing stairs) or self-care difficulty (dressing or bathing).
- **Cognitive impairment** was based on persons reporting difficulty concentrating, remembering or making decisions.
- **Need for assistance with instrumental activities of daily living** (IADLs) was based on persons reporting difficulty doing errands alone such as visiting a doctor's office or shopping.
- **Limited English proficiency** was defined to include persons who reported speaking English "not well" or "not at all."

Previous analyses used a regression-based approach to develop ACS-based prevalence estimates for the county-level demographic cells available in the OFM Projection Model data file, and then aggregated estimates up to the county, AAA and statewide level for reporting purposes. Our new methodology was used to simplify estimations for the county level.

ACS PUMS data includes geographic information about an individual's place of residence in the form of Public Use Microdata Areas (PUMAs). Most PUMAs are designed to fit within and along the boundaries of a county. However, when counties have a small population, PUMAs may encompass multiple counties or a part of a county. Census blocks are a smaller geographic area that fit neatly into PUMAs and state county boundaries. To generate county-level estimates, we employed a "target-density weighting" methodology similar to that used by IPUMS NHGIS to create crosswalks across different census bureau's areas (Schroeder, 2007; IPUMS, 2024). In cases where PUMAs cross county boundaries, we used the population of census blocks to create weights based on the proportion of a PUMA's population that reside in a county. These weights were then multiplied to the person-weight in the PUMS data and those modified weights were used for analyses stratified by county. For example, if an individual with an original person weight of 20 resided in PUMA which straddled County X (25 percent of PUMA population) and County Y (75 percent), that person would contribute 5 units of their weight to County X and 15 units to County Y. Target density weights used specific-year census block populations stratified by age, gender, and race to make sure the age, gender, race, and yearly differences in population distribution were accounted for when assigning weights to individuals.

From the ACS PUMS data we calculated prevalence rates for each county-age-gender-race stratum. We then multiplied this rate to the corresponding population count for that specific county-age-gender-race stratum in the OFM projections to estimate the count of people with that condition in that stratum in a

particular year. Then all counts for a particular county-year are summed to produce the AAA and county estimates in the tables. For counties that contribute to multiple AAAs, those counties are split on AAA lines. For example, Colville Indian AAA (PSA 12) includes only Ferry County residents that reside in that AAA's boundaries. The remainder contribute to Aging and Long-Term Care of Eastern Washington's (PSA 11) estimates.

Income relative to Elder Economic Security Standard™ Index

Estimates of the number of persons aged 60 or above and at or below Elder Economic Security Standard™ Index (EESSI) are based on the county-specific EESSI standards for calendar year 2024 for a single elder person who owns their own home without a mortgage.[2] These thresholds were then translated to percent federal poverty level for a single person household in 2024 dollars and merged to ACS data to determine if each participant's household income (as a percent of the federal poverty level) was lower than their county-specific EESSI threshold. Prevalence and projections were estimated using the same methods for the ACS data.

Dementia Prevalence Estimates

Dementia prevalences were estimated for county-age group-gender specific strata groups using Medicare claims data. The population included Medicare Fee-for-Service (FFS) beneficiaries aged 65 year or above in 2023. Beneficiaries with reliable enrollment data that had a dementia diagnosis (ICD-10 list below) in 2023 or the previous 2 calendar years were categorized as having dementia. The prevalence rates for these strata were multiplied to the corresponding count of that specific county-age group-gender strata in the OFM projections to estimate the count of people with that condition in that stratum in a particular year. Then all counts for a particular county-year are summed to produce the AAA and county estimates in the tables. For counties that contribute to multiple AAAs, those counties are split on AAA lines.

The following ICD-10 codes were used to indicate if a Medicare Fee-for-Service beneficiary was diagnosed with dementia: F01, F015, F0150, F0151, F02, F0280, F0281, F03, F0390, F0391, F04, F05, F061, F068, G138, G300, G301, G308, G309, G3101, G3109, G311, G312, G3183, and G319.

Differences in Data and Methods from Previous Estimates

Projections in this latest iteration of age wave trends are a bit different than those released in 2021 (**Table 2**). In general, the numbers are somewhat lower for most measures. There are many contributing reasons for this. Most of the data used in the previous analyses, in particular the ACS Data (2015-2019), were collected before the COVID-19 pandemic. The pandemic certainly impacted the health and mortality of Washingtonians and the OFM population projections that underlay all of our forecasts.

The ACS data used for this release are the 5-Year 2019-2023 PUMS, which overlaps with the pandemic and includes multiple years after the initial outbreak. We also used a different method to more directly estimate prevalence within age-gender-race strata. In addition to the effects of the pandemic, the methods used for previous estimates may have overestimated counts for some populations (**rows 2 and 3**) while underestimating others (**row 4**). Previous estimates for AI/AN populations relied solely on OFM data and were limited to estimating those that only identified as AI/AN and no other race. Current methodology uses ACS data to include anybody that identifies as AI/AN, nearly doubling those estimates (**rows 5 and 6**).

[2] Elder Index. (2020). The Elder Index™ [Public Dataset]. Boston, MA: Gerontology Institute, University of Massachusetts Boston. Retrieved from ElderIndex.org.

TABLE 2.

Previous vs Current Release Examples of Significant Change

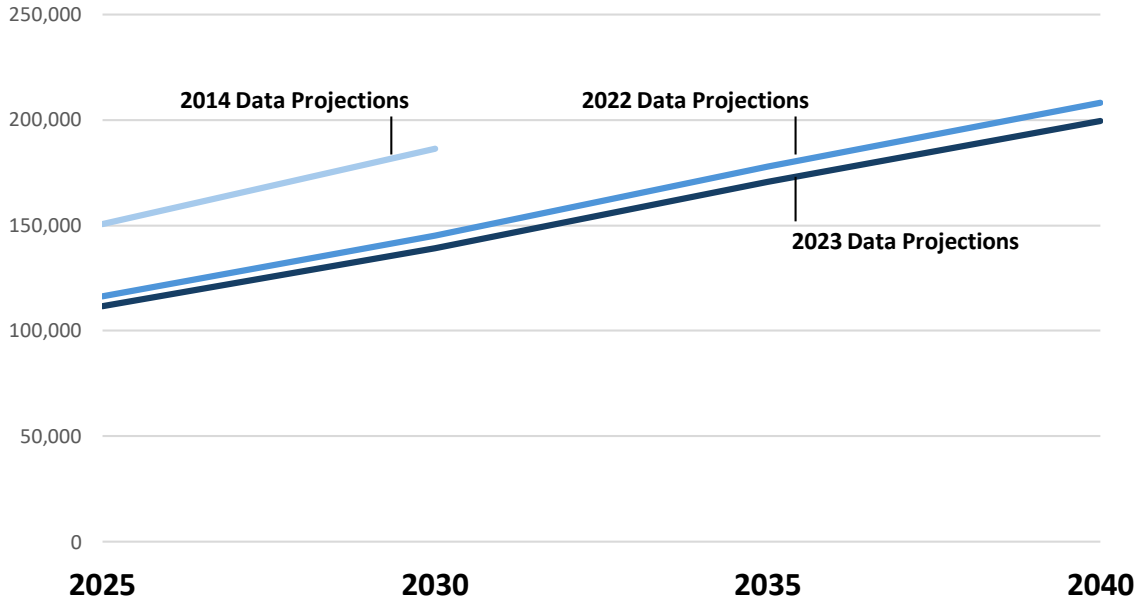
Row	Data Source	Measure	Projected 2025 Washington State Estimate		Projected 2030 Washington State Estimate	
			Previous*	Current	Previous*	Current
1	OFM	Total Age 60+	2,011,228	1,965,965	2,198,588	2,147,433
2	ACS	Age 18+ Disability	601,723	536,063	675,874	578,844
3	ACS	Age 60+ Disability	412,952	375,148	480,512	409,879
4	ACS	Age 18+ with Cognitive Impairment	373,058	418,057	408,945	446,117
5	ACS	Age 60+ AI/AN	24,804	44,404	27,379	51,635
6	ACS	Age 60+ AI/AN with a Disability	5,667	13,142	6,488	15,265
7	RDA CSDB	Nursing Home Clients	10,859	9,130	12,972	10,412
8	RDA CSDB	In-Home Services Clients	52,112	64,105	58,305	69,744
9	RDA CSDB	Community Residential Clients	16,580	23,218	19,415	25,950
10	Medicare	Age 65+ Dementia	150,634	105,223	18,365	131,171

In addition to the pandemic, the LTSS service estimates (**rows 7-9**) are affected by methodology updates and caseload growth since benchmarks were previously established based on utilization data from 2020. In particular, the forecast now includes services for persons with intellectual and developmental disabilities (i.e., provided through DDA prior to the recent agency reorganization), rather than just ALTSA services.

Previous dementia estimates relied on 2014 prevalence data. In addition to the effects of the pandemic, there has been a slight, but consistent downward trend in the prevalence of dementia in the 65+ population. This means that while the total number of people with dementia is projected to steeply increase from 2025 to 2040, the forecast is lower than previously projected based on older prevalence data (see **row 10** and **Figure 2**).

FIGURE 2.

Projections of Persons with Dementia 65+ Years Old by Data Vintage



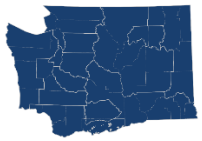


TABLE 3.

Selected Population and Aging Service Utilization Forecast, Washington State

Age	*Number of persons . . .*	2025	2026	2027	2028	2029	2030	2031	2032
Any	Using SNF* services	9,130	9,352	9,587	9,837	10,108	10,412	10,703	10,975
	Using in-home services	64,105	65,120	66,176	67,286	68,458	69,744	70,979	72,115
	Using community residential services	23,218	23,698	24,205	24,743	25,318	25,950	26,555	27,122
18+	With a disability	536,063	544,747	552,882	560,882	569,249	578,844	587,672	595,369
	With cognitive impairment	418,057	423,852	429,465	434,935	440,385	446,117	451,544	456,713
	With an IADL** difficulty	408,210	414,561	420,577	426,464	432,506	439,244	445,516	451,173
60+	TOTAL	1,965,965	2,002,481	2,035,816	2,068,543	2,103,920	2,147,433	2,186,059	2,217,842
	With a disability	375,148	382,160	388,552	394,830	401,598	409,879	417,215	423,271
	With cognitive impairment	170,867	174,062	176,977	179,840	182,932	186,722	190,093	192,879
	With an IADL difficulty	242,525	247,197	251,466	255,659	260,169	265,657	270,583	274,686
	At or below EESSI***	354,947	361,849	368,165	374,373	381,058	389,211	396,566	402,692
	At or below 100% FPL****	195,141	199,198	202,724	205,983	209,399	213,919	218,561	222,626
	People of color	344,465	359,976	374,844	389,622	405,150	422,888	442,526	460,649
	People of color at or below 100% FPL	44,165	46,264	48,240	50,133	52,031	54,144	56,646	59,003
	American Indian/Alaska Native (AI/AN)	44,404	45,840	47,196	48,538	49,959	51,635	53,301	54,796
	AI/AN with a disability	13,142	13,564	13,962	14,358	14,777	15,265	15,754	16,193
	With limited English proficiency	84,605	87,271	89,790	92,286	94,931	98,029	101,345	104,328
65+	With dementia	105,223	109,855	114,774	119,966	125,423	131,171	136,998	142,903

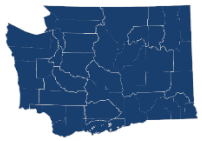


TABLE 3.

Selected Population and Aging Service Utilization Forecast, Washington State (continued)

Age	*Number of persons . . .*	2033	2034	2035	2036	2037	2038	2039	2040
Any	Using SNF* services	11,234	11,492	11,768	12,050	12,335	12,619	12,901	13,180
	Using in-home services	73,187	74,255	75,408	76,619	77,856	79,107	80,338	81,585
	Using community residential services	27,662	28,200	28,772	29,362	29,962	30,564	31,158	31,752
18+	With a disability	602,238	608,894	616,365	623,735	631,120	638,563	646,096	653,957
	With cognitive impairment	461,615	466,319	471,129	475,827	480,461	485,086	489,362	493,799
	With an IADL** difficulty	456,331	461,272	466,628	471,842	477,028	482,234	487,309	492,627
60+	TOTAL	2,244,613	2,270,059	2,301,142	2,331,808	2,362,620	2,393,788	2,426,230	2,460,874
	With a disability	428,392	433,247	439,144	444,969	450,812	456,722	462,875	469,444
	With cognitive impairment	195,235	197,470	200,186	202,867	205,562	208,291	211,134	214,164
	With an IADL difficulty	278,186	281,504	285,484	289,392	293,322	297,299	301,434	305,833
	At or below EESSI***	407,911	412,874	418,849	424,672	430,537	436,481	442,663	449,241
	At or below 100% FPL****	226,252	229,800	233,653	237,722	242,098	246,705	251,548	256,587
	People of color	477,420	493,731	511,766	529,214	547,302	565,994	585,251	605,027
	People of color at or below 100% FPL	61,236	63,450	65,804	68,181	70,612	73,125	75,765	78,622
	American Indian/Alaska Native (AI/AN)	56,150	57,470	59,000	60,620	62,288	64,015	65,797	67,632
	AI/AN with a disability	16,591	16,978	17,423	17,894	18,382	18,889	19,416	19,962
	With limited English proficiency	107,037	109,649	112,564	115,261	118,054	120,929	123,902	126,981
65+	With dementia	148,910	155,022	161,214	167,181	172,926	178,433	183,802	189,225