Supplemental File

Behavioral symptoms, depression symptoms, and medication use in Michigan nursing home residents with dementia during COVID-19

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Supplementary Table S1. International Classification of Diseases - Clinical Modification - 10th Revision (ICD-CM-10) codes used to identify Alzheimer's disease and related dementias

	ICD-CM-10 codes
Alzheimer's disease and related dementias	F01.50, F01.51, F02.80, F02.81, F03.90, F03.91, G31.01, G31.09, R41.81, F06.1, F06.8, G13.8, G30.0, G30.1, G30.8, G30.9, G31.1, G31.2, F04, F05, G94, R54

Supplementary Table S2. Observed percentage of behavioral symptoms (Agitated Reactive Behavior Scale (ARBS) ≥ 1) and depression symptoms (Patient Health Questionnaire-9 (PHQ-9) ≥ 10, indicating at least moderate depression) among Michigan long-stay nursing home residents with Alzheimer's disease and related dementias, January 2018 – June 2021.

Time period Year- month	ARBS ≥ 1 %	PHQ-9 ≥ 10 %
2018 - Jan	20.1%	3.1%
2018 - Feb	20.3%	3.2%
2018 - Mar	20.2%	2.8%
2018 - Apr	19.9%	3.1%
2018 - May	20.2%	3.1%
2018 - Jun	19.3%	2.9%
2018 - Jul	20.3%	2.9%
2018 - Aug	20.2%	3.1%
2018 - Sep	19.8%	3.0%
2018 - Oct	21.1%	2.7%
2018 - Nov	19.7%	2.4%
2018 - Dec	19.3%	2.7%
2019 - Jan	19.2%	2.9%
2019 - Feb	19.7%	2.4%
2019 - Mar	19.9%	2.7%
2019 - Apr	20.1%	2.9%
2019 - May	19.5%	2.6%
2019 - Jun	20.4%	2.9%
2019 - Jul	21.5%	2.7%
2019 - Aug	21.2%	2.8%
2019 - Sep	21.2%	3.0%
2019 - Oct	20.3%	3.4%
2019 - Nov	19.9%	3.3%
2019 - Dec	19.3%	2.9%
2020 - Jan	19.2%	3.6%
2020 - Feb	19.1%	3.3%
2020 - Mar	18.6%	3.2%
2020 - Apr	19.0%	3.4%
2020 - May	19.5%	3.8%
2020 - Jun	18.7%	3.3%
2020 - Jul	19.0%	3.2%
2020 - Aug	19.5%	3.6%
2020 - Sep	19.7%	3.8%
2020 - Oct	19.7%	3.5%
2020 - Nov	20.3%	4.0%
2020 - Dec	20.9%	4.5%
2021 - Jan	19.7%	3.9%
2021 - Feb	19.5%	3.5%
2021 - Mar	20.3%	3.9%
2021 - Apr	19.5%	3.5%
2021 - May	18.5%	3.7%
2021 - Jun	19.7%	4.2%

Supplementary Table S3. Observed percentage of antipsychotic, antianxiety, antidepressant, hypnotic, and opioid medication use among Michigan long-stay nursing home residents with Alzheimer's disease and related dementias, January 2018 – June 2021.

| Time period | Medication class, % use | | | | |
Year- month	Antipsychotic	Antianxiety	Antidepressant	Hypnotic	Opioid[a]
2018 - Jan	14.8%	19.7%	53.2%	1.0%	
2018 - Feb	15.0%	19.8%	54.6%	1.2%	
2018 - Mar	14.5%	19.4%	54.3%	1.0%	30.4%
2018 - Apr	14.6%	19.4%	53.8%	1.0%	29.3%
2018 - May	15.3%	19.8%	54.6%	1.0%	29.9%
2018 - Jun	14.4%	18.8%	54.3%	0.9%	29.6%
2018 - Jul	15.4%	19.6%	53.8%	0.8%	28.0%
2018 - Aug	15.6%	19.2%	54.4%	0.9%	28.8%
2018 - Sep	15.0%	18.4%	54.7%	0.9%	28.1%
2018 - Oct	15.4%	18.7%	54.8%	0.7%	27.6%
2018 - Nov	14.9%	18.5%	55.2%	0.9%	28.4%
2018 - Dec	14.6%	18.7%	56.3%	0.7%	28.7%
2019 - Jan	15.5%	18.5%	53.9%	0.8%	27.1%
2019 - Feb	14.9%	18.5%	53.6%	0.9%	27.2%
2019 - Mar	15.3%	18.0%	55.6%	0.6%	27.7%
2019 - Apr	15.2%	18.2%	54.1%	0.8%	27.4%
2019 - May	14.5%	17.8%	53.3%	0.6%	26.9%
2019 - Jun	14.5%	17.6%	53.2%	0.4%	26.7%
2019 - Jul	14.8%	18.2%	54.3%	0.8%	26.9%
2019 - Aug	14.9%	18.4%	54.0%	0.6%	26.5%
2019 - Sep	15.3%	17.5%	53.7%	0.5%	27.0%
2019 - Oct	14.6%	18.8%	53.5%	0.6%	26.1%
2019 - Nov	15.1%	18.1%	53.7%	0.7%	25.4%
2019 - Dec	14.3%	17.4%	54.2%	0.6%	26.0%
2020 - Jan	14.2%	18.1%	53.2%	0.7%	26.1%
2020 - Feb	14.2%	16.9%	52.4%	0.6%	24.5%
2020 - Mar	14.3%	16.8%	52.9%	0.4%	24.5%
2020 - Apr	14.4%	17.9%	53.4%	0.6%	23.9%
2020 - May	14.8%	17.3%	52.1%	0.3%	23.5%
2020 - Jun	14.9%	16.9%	52.6%	0.4%	24.9%
2020 - Jul	14.8%	18.6%	54.4%	0.6%	25.0%
2020 - Aug	15.0%	17.6%	53.7%	0.5%	24.1%
2020 - Sep	15.8%	18.9%	55.7%	0.5%	24.9%
2020 - Oct	15.4%	19.2%	56.4%	0.6%	25.6%
2020 - Nov	15.2%	18.2%	55.5%	0.6%	24.3%
2020 - Dec	15.9%	18.8%	56.2%	0.6%	26.0%
2021 - Jan	14.8%	17.3%	56.0%	0.5%	24.0%
2021 - Feb	14.8%	17.9%	55.0%	0.5%	23.1%
2021 - Mar	15.5%	18.7%	57.1%	0.3%	25.3%
2021 - Apr	15.6%	18.2%	58.4%	0.6%	25.2%
2021 - May	15.3%	18.2%	56.8%	0.5%	23.3%
2021 - Jun	15.1%	19.1%	58.0%	0.2%	26.3%

[a] Opioid use measurement reported from March 2018.