

Supplementary Online Content

Sinha S, Konetzka RT. Association of COVID-19 vaccination rates of staff and COVID-19 illness and death among residents and staff in US nursing homes. *JAMA Netw Open*. 2022;5(12):e2249002. doi:10.1001/jamanetworkopen.2022.49002

eFigure 1. Timeline of COVID-19 Vaccination Policies in Nursing Homes

eFigure 2. Construction of Analytic Sample

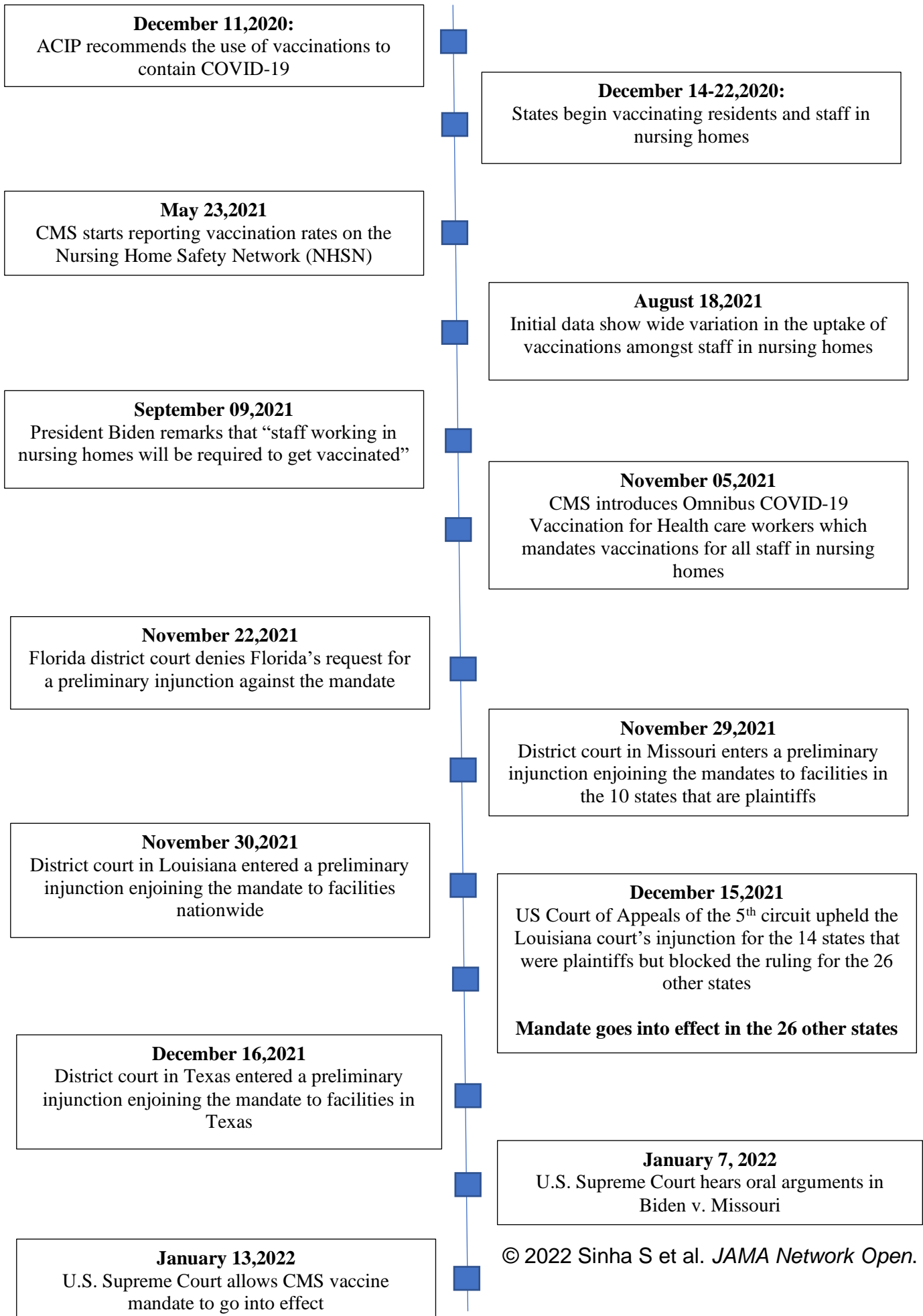
eFigure 3. Unadjusted Associations Between Staff Vaccination Rates and COVID-19 Outcomes in Nursing Homes (May 30, 2021, to January 23, 2022)

eTable 1. COVID-19 Outcomes Across Nursing Homes in the Top and Bottom Quartiles of Staff Vaccination Rates

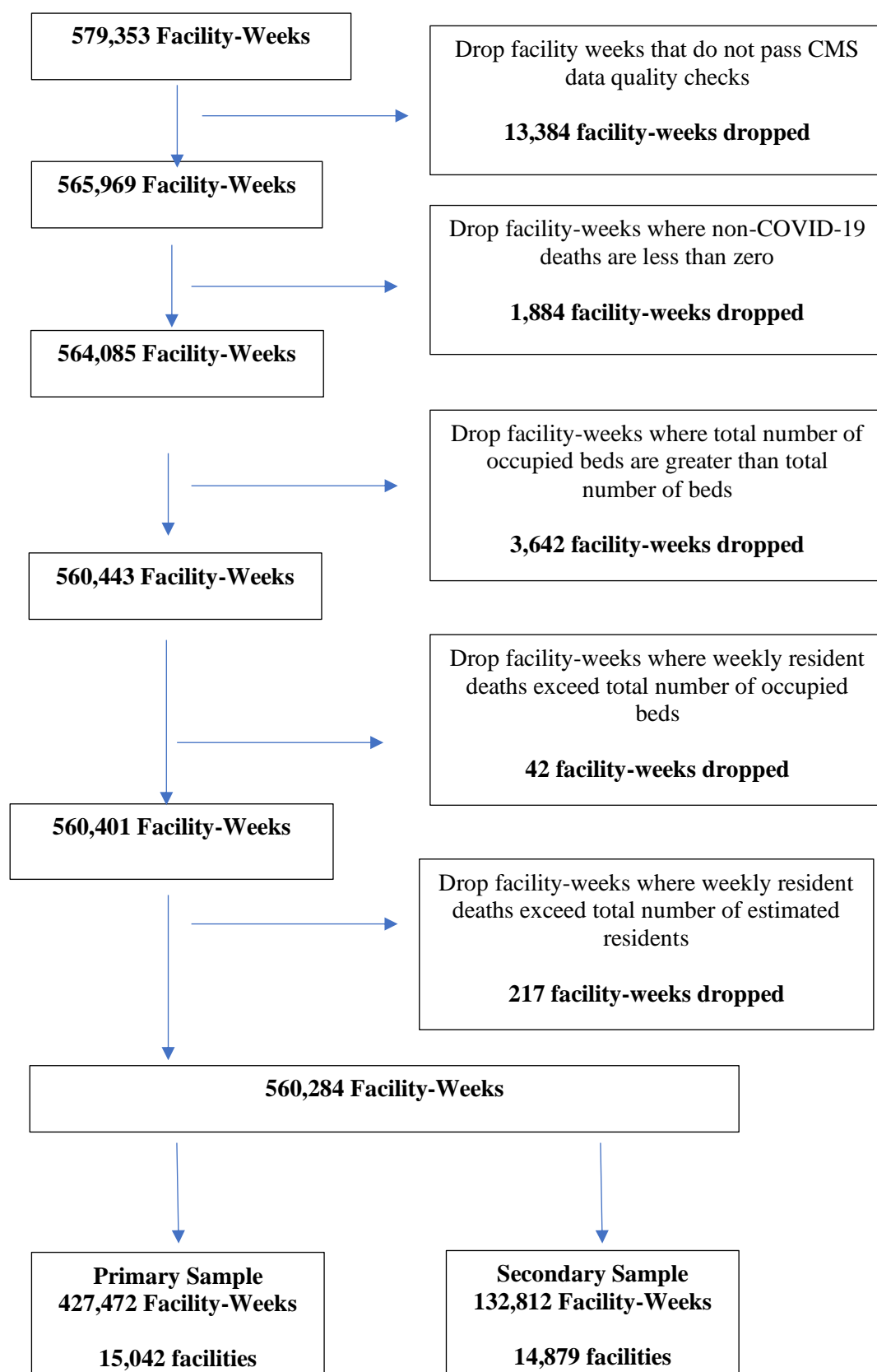
eTable 2. Effect of Staff Vaccination Rates (SVR) on COVID-19 Outcomes in Nursing Homes: Results From Negative Binomial Regression Models

This supplementary material has been provided by the authors to give readers additional information about their work.

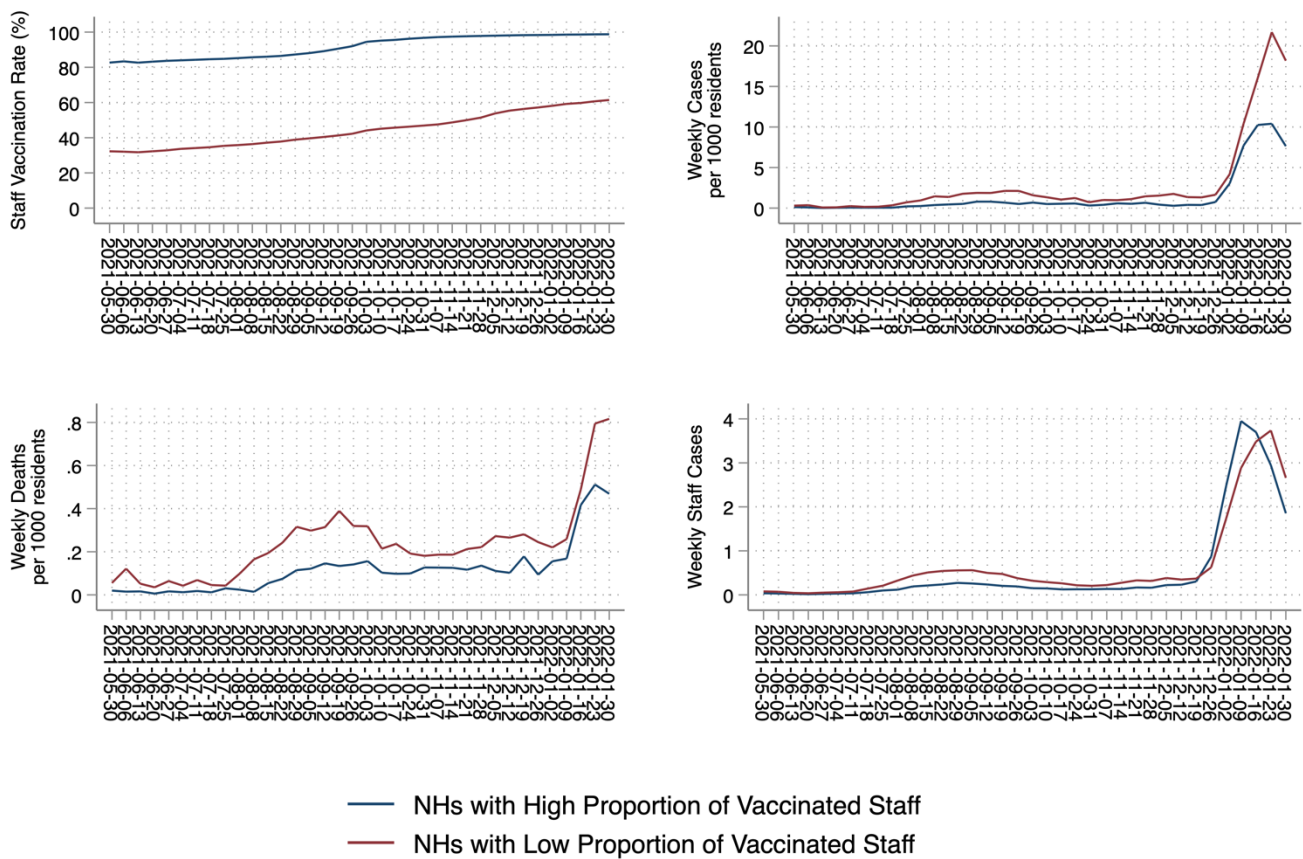
eFigure 1. Timeline of COVID-19 Vaccination Policies in Nursing Homes



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Note: (a) Nursing Homes with high proportion of vaccinated staff refers to nursing homes in the top quartile (highest 25 percent) of staff vaccination rates; nursing homes with low proportion of vaccinated staff refers to nursing homes in the bottom quartile (lowest 25 percent) of staff vaccination rates (b) Quartiles of staff vaccination rates are defined for each week, and thereby vary for each week.

eTable 1. COVID-19 Outcomes Across Nursing Homes in the Top and Bottom Quartiles of Staff Vaccination Rates

Date	Cases per 1000 residents		Deaths per 1000 residents		Staff Cases	
	Quartile 1	Quartile 4	Quartile 1	Quartile 4	Quartile 1	Quartile 4
5/30/21	0.323	0.134	0.061	0.021	0.080	0.037
6/6/21	0.375	0.088	0.123	0.016	0.070	0.031
6/13/21	0.082	0.021	0.056	0.018	0.046	0.025
6/20/21	0.099	0.047	0.037	0.007	0.037	0.015
6/27/21	0.268	0.074	0.071	0.017	0.051	0.022
7/4/21	0.170	0.056	0.045	0.013	0.059	0.030
7/11/21	0.186	0.059	0.074	0.016	0.076	0.035
7/18/21	0.376	0.060	0.048	0.012	0.144	0.061
7/25/21	0.750	0.227	0.046	0.032	0.209	0.100
8/1/21	1.006	0.272	0.106	0.026	0.330	0.119
8/8/21	1.550	0.406	0.175	0.016	0.439	0.191
8/15/21	1.455	0.478	0.209	0.058	0.508	0.215
8/22/21	1.873	0.553	0.259	0.080	0.543	0.238
8/29/21	1.994	0.858	0.339	0.124	0.554	0.272
9/5/21	1.990	0.849	0.315	0.130	0.558	0.258
9/12/21	2.268	0.718	0.337	0.150	0.499	0.236
9/19/21	2.280	0.541	0.423	0.143	0.475	0.205
9/26/21	1.700	0.721	0.345	0.149	0.380	0.191
10/3/21	1.433	0.528	0.344	0.163	0.321	0.150
10/10/21	1.126	0.578	0.235	0.111	0.288	0.147
10/17/21	1.364	0.545	0.256	0.092	0.262	0.116
10/24/21	0.786	0.336	0.205	0.105	0.217	0.127
10/31/21	1.088	0.436	0.192	0.134	0.206	0.127
11/7/21	1.054	0.629	0.200	0.137	0.222	0.135
11/14/21	1.199	0.571	0.200	0.135	0.278	0.134
11/21/21	1.572	0.804	0.228	0.142	0.330	0.182
11/28/21	1.668	0.455	0.240	0.145	0.317	0.163
12/5/21	1.925	0.312	0.296	0.119	0.383	0.225

eTable 2. Effect of Staff Vaccination Rates (SVR) on COVID-19 Outcomes in Nursing Homes: Results From Negative Binomial Regression Models

	Cases per 1000 residents	Deaths per 1000 residents	Staff Cases	Cases per 1000 residents	Deaths per 1000 residents	Staff Cases
SVR	-0.00529***	-0.00437***	-0.00503***			
	(-11.06)	(-3.86)	(-10.70)			
SVR Q2				-0.0687**	-0.123**	-0.101***
				(-3.17)	(-2.66)	(-6.05)
SVR Q3				-0.192***	-0.256***	-0.188***
				(-8.18)	(-4.90)	(-9.57)
SVR Q4				-0.271***	-0.164**	-0.247***
				(-10.65)	(-2.80)	(-10.75)
County Case Rate	0.184***	0.149***	0.195***	0.184***	0.149***	0.196***
	(19.78)	(7.78)	(35.02)	(19.76)	(7.77)	(35.05)
Hours per resident Day	-0.00781	-0.0466*	0.0320***	-0.00807	-0.0478*	0.0319***
	(-0.92)	(-2.31)	(5.25)	(-0.95)	(-2.38)	(5.23)
Facility FE	Yes	Yes	Yes	Yes	Yes	Yes
Week FE	Yes	Yes	Yes	Yes	Yes	Yes

^a Data represent facility-weeks between December 6th, 2021-January 30th, 2022

^b Weekly COVID-19 cases per 1000 residents are lagged by 2 weeks

^c Weekly COVID-19 deaths per 1000 residents are lagged by 3 weeks

^d Weekly COVID-19 Staff cases are lagged by 1 week

^e Facility Fixed Effects controls for confounding from unobserved factors that change across facilities but are constant over time

^f Week Fixed Effects controls for confounding from unobserved factors that change over time but are stable across facilities

^g * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$