

Table S1: Comparative characteristics of Kaiser Permanente and statewide populations.

		California			Washington	
		KPNC members	KPSC members	State population	KPWA members	State population
Sex	Female	51.2%	51.5%	50.3%	53.4%	50.0%
	Male	48.8%	48.5%	49.7%	46.6%	50.0%
Age group	0-9y	11.5%	11.8%	12.2%	7.9%	12.3%
	10-19y	11.6%	12.5%	13.2%	9.7%	12.2%
	20-29y	13.7%	14.5%	14.7%	13.8%	14.1%
	30-39y	15.3%	14.7%	14.4%	14.8%	14.7%
	40-49y	13.6%	13.3%	12.8%	13.9%	12.5%
	50-59y	13.7%	13.3%	12.6%	15.5%	12.5%
	60-69y	11.2%	10.9%	10.5%	14.1%	11.5%
	70-79y	6.4%	6.3%	6.1%	7.3%	6.9%
	≥80y	3.0%	2.7%	3.6%	3.1%	3.3%
Race/ethnicity	White, non-Hispanic	45.0%	34.1%	37.0%	69.3%	68.6%
	Black, non-Hispanic	7.0%	8.5%	5.5%	4.8%	3.5%
	Hispanic	23.0%	43.2%	39.1%	10.5%	12.7%
	Asian/Pacific Islander	22.8%	12.7%	14.4%	10.9%	8.5%
	Native American	0.4%	0.3%	0.4%	0.8%	1.0%
	Other/Unknown	1.8%	1.3%	3.6%	3.8%	5.7%

Table S2: Criteria used to ascertain laboratory- and clinically-confirmed COVID-19 cases.

Outcome definition	Criteria
Laboratory-confirmed COVID-19	Positive SARS-CoV-2 test result with or without diagnosis
Clinically-confirmed COVID-19	Any of the of the following diagnoses without accompanying negative SARS-CoV-2 testing result: COVID-19 acute respiratory distress syndrome; COVID-19 pneumonia; COVID-19 acute bronchitis; COVID-19 lower respiratory infection; Coronavirus disease 2019 (COVID-19)

Table S3: First acute inpatient admission, by region, age group, and date.

Date	Northern California								Southern California								Washington							
	0-19	20-29	30-39	40-49	50-59	60-69	70-79	≥80	0-19	20-29	30-39	40-49	50-59	60-69	70-79	≥80	0-19	20-29	30-39	40-49	50-59	60-69	70-79	≥80
12 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17 Feb	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
24 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 Feb	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
26 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27 Feb	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
29 Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2 Mar	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Mar	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Mar	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
5 Mar	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6 Mar	0	1	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 Mar	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8 Mar	0	0	0	2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
9 Mar	0	1	0	0	2	1	3	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0
10 Mar	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0
11 Mar	0	0	1	1	3	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
12 Mar	0	0	1	1	2	1	2	1	0	0	0	0	0	0	3	1	0	0	0	0	0	1	0	0
13 Mar	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 Mar	0	0	0	3	3	3	1	2	0	0	0	3	1	1	0	2	0	0	0	0	1	0	0	0
15 Mar	0	1	2	4	1	3	2	1	0	0	1	0	2	1	1	0	0	0	0	0	2	0	0	0
16 Mar	0	1	0	4	4	4	4	0	0	0	0	1	3	0	2	2	0	0	0	0	0	1	1	0
17 Mar	0	0	1	2	2	2	1	4	0	0	1	1	0	2	0	1	0	0	0	1	0	0	0	0
18 Mar	0	0	2	2	1	6	0	2	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	0
19 Mar	0	0	0	4	6	1	0	1	0	0	1	3	1	0	0	1	0	0	0	0	0	2	0	0
20 Mar	0	0	1	2	5	3	2	1	0	0	4	3	2	3	0	1	0	0	0	1	0	0	0	1
21 Mar	0	0	2	0	6	5	2	4	0	1	1	4	2	4	2	1	0	0	1	0	0	1	0	0
22 Mar	0	0	0	1	4	4	4	2	0	2	1	4	7	5	1	1	0	0	0	0	1	1	0	0
23 Mar	0	1	1	2	2	9	3	7	0	0	3	5	4	8	5	4	0	0	0	0	0	1	2	0
24 Mar	0	1	2	0	4	5	5	1	0	0	9	1	6	2	4	2	0	0	0	0	2	2	0	0
25 Mar	0	2	1	3	5	4	1	1	1	0	4	7	3	9	2	4	0	0	0	0	0	1	0	0
26 Mar	0	0	3	2	5	4	2	6	0	1	4	2	6	9	3	2	0	0	0	0	1	1	0	0
27 Mar	0	0	1	1	8	7	3	2	1	3	3	4	8	8	6	3	0	0	0	0	1	1	2	0
28 Mar	0	0	3	4	2	2	3	2	0	1	4	3	8	11	3	3	0	1	0	0	1	1	0	1
29 Mar	0	0	3	5	4	6	5	1	0	3	5	4	8	9	9	4	0	0	0	2	1	0	0	0
30 Mar	0	0	0	4	5	4	5	1	0	3	5	2	10	4	12	2	0	0	0	0	0	2	1	0
31 Mar	0	1	1	2	4	9	6	0	0	2	3	6	9	7	5	2	0	0	0	1	0	2	0	0
1 Apr	0	1	1	5	4	5	3	3	0	0	7	11	7	9	9	3	0	0	0	0	0	0	0	1
2 Apr	0	0	0	5	4	4	4	1	0	1	1	4	11	5	3	8	0	0	2	1	0	0	2	0
3 Apr	0	1	3	3	2	4	2	1	0	2	2	6	8	10	10	6	0	0	0	0	0	0	0	2
4 Apr	0	1	4	3	3	2	4	2	0	1	0	6	5	8	5	5	0	0	1	0	2	3	1	0
5 Apr	0	1	0	3	2	1	3	1	0	1	2	1	7	8	5	5	0	0	0	0	0	2	0	0
6 Apr	0	0	1	3	4	5	3	5	1	4	3	6	6	8	8	0	0	0	0	4	1	0	0	0
7 Apr	0	3	1	5	1	3	2	5	0	0	4	5	5	5	7	3	0	0	0	0	0	0	0	0
8 Apr	0	1	1	2	2	3	3	2	0	1	1	6	8	13	8	5	0	0	1	0	1	2	3	0
9 Apr	1	2	1	1	5	2	3	5	0	0	6	2	6	9	6	5	0	0	0	0	0	1	0	0
10 Apr	0	2	0	5	7	1	2	2	0	2	4	6	11	8	4	7	0	0	0	0	1	2	1	1
11 Apr	0	0	2	2	4	1	1	3	0	2	4	7	6	5	6	1	0	0	1	0	0	0	0	0
12 Apr	0	0	0	2	3	3	1	1	0	1	2	7	0	9	1	3	0	0	0	0	0	0	0	0
13 Apr	0	0	0	2	3	2	3	4	0	2	2	3	6	10	3	1	0	0	0	0	0	0	1	0
14 Apr	0	0	0	1	4	2	1	2	0	0	4	3	10	3	3	2	0	0	0	0	0	0	0	0

[illegible]

Table S4: Time separating admission and COVID-19 case determination.

Admission date range	Time from admission to COVID-19 diagnosis		
	Median	25%ile-75%ile	Range
Before 1 March, 2020	3	1.5 to 4.5	0 to 6
March 1-7, 2020	3	0 to 5.5	-1 to 14
March 8-14, 2020	1.5	0 to 5.75	-15 to 14
March 15-21, 2020	1	0 to 3	-21 to 10
March 22-28, 2020	0	0 to 1	-8 to 14
March 29-April 4, 2020	0	-2 to 1	-12 to 14
April 5-12, 2020	0	-3 to 1	-25 to 14
April 13-19, 2020	0	-3 to 0	-27 to 4
All patients	0	-1 to 1	-27 to 14

Table S5: Frequency distribution of durations of hospital stay, by clinical outcome.

Days	Age group and outcome																										
	0-9y			10-19y			20-29y			30-39y			40-49y			50-59y			60-69y			70-79y			≥80y		
	S	D	C	S	D	C	S	D	C	S	D	C	S	D	C	S	D	C	S	D	C	S	D	C	S	D	C
1	--	--	--	--	--	--	--	--	--	2	--	--	1	--	--	--	1	--	2	--	--	2	1	--	--	--	--
2	--	--	--	--	--	--	1	--	--	6	--	--	6	--	--	6	--	--	3	--	--	1	--	--	2	5	--
3	--	--	--	1	--	--	12	--	--	11	1	--	15	--	--	18	1	--	16	--	--	8	--	--	3	1	--
4	--	--	--	1	--	--	2	--	--	13	--	--	20	--	--	22	--	--	22	7	--	13	1	--	5	3	--
5	--	--	--	--	--	--	2	--	--	11	1	--	12	--	--	31	1	--	21	1	--	10	5	--	2	6	--
6	--	--	--	--	--	--	6	--	--	14	--	--	14	1	--	20	1	--	20	--	1	20	3	--	7	6	--
7	--	--	--	--	--	--	4	--	--	10	--	--	16	--	--	21	2	--	14	2	--	10	6	--	4	6	--
8	--	--	--	1	--	--	6	--	--	7	1	--	9	1	--	17	6	--	19	2	--	8	3	--	4	4	--
9	--	--	--	--	--	--	2	--	--	3	--	--	8	1	--	9	1	--	10	4	--	8	2	--	3	3	--
10	--	--	--	--	--	--	--	--	--	5	--	--	8	--	--	2	1	--	11	4	--	4	4	--	2	4	--
11	--	--	--	--	--	--	1	--	--	3	--	--	8	--	--	7	2	--	8	2	--	5	3	--	3	6	--
12	--	--	--	--	--	--	2	--	--	3	--	--	3	2	--	7	4	--	7	4	--	6	4	--	3	5	--
13	--	--	--	--	--	--	1	--	--	2	--	--	1	1	--	4	2	--	7	--	1	2	1	--	5	4	--
14	--	--	--	--	--	--	--	--	1	1	1	1	5	--	--	6	1	4	9	2	3	3	2	5	4	1	4
15	--	--	--	--	--	--	--	--	--	5	1	3	7	2	2	4	--	1	6	1	3	3	--	5	5	2	1
16	--	--	--	--	--	--	--	1	--	1	--	--	3	1	1	--	--	1	2	2	--	3	2	2	6	1	--
17	--	--	--	--	--	--	--	--	--	3	--	--	3	--	--	2	--	3	5	1	3	1	2	3	--	--	--
18	--	--	--	--	--	--	--	--	2	1	--	--	1	--	1	3	--	2	2	1	1	2	1	4	4	3	2
19	--	--	--	--	--	--	--	--	--	2	--	--	2	--	1	2	--	2	5	--	1	--	1	3	7	3	1
20	--	--	--	--	--	--	--	--	1	1	--	--	1	1	--	1	--	1	1	--	1	1	1	--	--	--	2
21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2	--	--	3	1	4	5	--	--	3	2	--
22	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	2	--	2	--	1	--	3	2	1	1	--	--
23	--	--	--	--	--	--	--	--	1	--	--	1	2	--	--	2	1	1	1	--	2	--	1	1	--	1	1
24	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	1	--	3	1	1	--	1	1	1	1	--	--
25	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	--	2	2	1	2	1	2	1	--	--	--
26	--	--	--	--	--	--	1	--	--	--	--	--	1	--	1	1	--	1	1	--	1	2	--	3	--	--	1
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	1	1	4	1	1	--	1	--	--	--	--
28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	--	1	1	--	3	1	--	1	--	--	--
29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	1	2	--	--	--	1	--	--
30	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	1	--	1	--	--	1	1	1	2	--	--	--
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	1	1	--	--
32	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	1	--	--	--	--	1	--	1	--	--	--	--
33	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	--	--	1	--	--	1	--	--	1	--	--	--
34	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--	1	--	--	--	--
35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	--	--	--	--	--	--	--	--	--	--
36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	--	--	1	--	--	--	--	--	--
38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	--	--	--	--	--	--	--	1	1	--	--
39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--
40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	1
42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--
43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--
44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	1	--	--	--	--	--	--
46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--

S: survival; D: death; C: censoring

Observations are excluded from 81 individuals with completed hospitalizations for whom disposition data were unavailable (Table 1).

Table S6: Sensitivity analysis: Estimates of duration of stay in analyses excluding patients without laboratory diagnosis.

Parameter	Mean	Median	25-75%ile	2.5-97.5%ile
Duration of hospital stay (all inpatients)	12.1	10.1	5.3-16.9	0.9-34.5
Duration of hospital stay (survivors)	11.3	9.3	4.8-15.8	0.8-33.1
Duration of hospital stay (non-survivors)	14.5	12.7	7.3-19.9	1.6-37.6
Duration of ICU stay	12.0	10.5	6.0-16.4	1.3-30.7

Table S7: Sensitivity analysis: Estimates of clinical outcome probabilities in analyses excluding patients without laboratory diagnosis.

Parameter	Age group	Estimate (95% CI)	
		Male patients	Female patients
Probability of ICU admission	10-19y	38.6% (27.4-53.2%)	32.4% (22.1-46.0%)
	20-29y	36.1% (27.3-46.9%)	30.3% (22.0-40.8%)
	30-39y	45.2% (36.2-55.8%)	22.4% (17.3-28.6%)
	40-49y	53.7% (44.5-64.4%)	33.6% (26.8-41.5%)
	50-59y	50.9% (43.6-59.6%)	36.2% (29.6-43.8%)
	60-69y	47.6% (40.9-55.3%)	35.7% (29.4-43.0%)
	70-79y	58.8% (48.3-71.1%)	34.7% (28.2-42.2%)
	≥80y	44.4% (35.4-54.9%)	30.5% (24.0-38.3%)
	All patients	50.1% (43.1-58.2%)	33.4% (27.6-40.1%)
Probability of death	10-19y	2.3% (1.3-3.8%)	1.6% (0.9-2.8%)
	20-29y	3.5% (2.2-5.4%)	2.5% (1.5-4.0%)
	30-39y	5.9% (4.0-8.4%)	3.5% (2.3-5.3%)
	40-49y	9.5% (6.9-12.7%)	6.2% (4.3-8.6%)
	50-59y	14.5% (11.3-18.2%)	9.8% (7.3-13.0%)
	60-69y	22.3% (18.4-26.9%)	15.2% (11.9-19.3%)
	70-79y	36.9% (30.2-45.1%)	24.1% (19.0-30.1%)
	≥80y	54.8% (43.3-68.3%)	36.5% (28.1-46.5%)
	All patients	24.0% (19.9-28.9%)	14.9% (11.7-18.6%)

Table S8: Event time distribution parameters obtained from other studies.

Parameters	Distribution	Median	25-75%ile	2.5-97.5%ile	Source
Incubation period (time from infection to symptoms; days)	Weibull($k = 1.45, \lambda = 7.53$)	5.85	3.19-9.43	0.60-18.52	refs. ¹⁸⁻²¹
	LogNorm($\mu_{\log} = 1.62, \sigma_{\log} = 0.42$)	5.06	3.82-6.71	2.23-11.47	ref. ²⁰
Time from symptoms onset to hospitalization	Gamma($k = 0.74, \theta = 0.20$)	2.22	0.74-5.10	0.03-15.57	ref. ²²
	Gamma($k = 5.078, \theta = 0.765$)	6.21	4.49-8.32	2.18-13.54	ref. ²³
Serial interval (days)	Weibull($k = 1.45, \lambda = 7.53$)	4.65	2.54-7.49	0.48-14.67	refs. ^{18,26-28}

Table S9: Probability of hospitalization, given infection, fitted against estimates from other studies.

Study	Age group	Distribution	Mean	2.5-97.5%ile
Verity et al., 2020 ²⁴	0-19y	$\text{LogNorm}(\mu_{\log} = -5.41, \sigma_{\log} = 0.31)$	0.5%	0.3-0.8%
	20-29y	$\text{LogNorm}(\mu_{\log} = -4.50, \sigma_{\log} = 0.30)$	1.1%	0.6-2.0%
	30-39y	$\text{LogNorm}(\mu_{\log} = -3.28, \sigma_{\log} = 0.32)$	4.0%	2.0-7.3%
	40-49y	$\text{LogNorm}(\mu_{\log} = -3.11, \sigma_{\log} = 0.32)$	4.7%	2.6-8.1%
	50-59y	$\text{LogNorm}(\mu_{\log} = -2.43, \sigma_{\log} = 0.32)$	9.4%	5.0-17.7%
	60-69y	$\text{LogNorm}(\mu_{\log} = -2.08, \sigma_{\log} = 0.31)$	13.1%	6.7-22.7%
	70-79y	$\text{LogNorm}(\mu_{\log} = -1.73, \sigma_{\log} = 0.31)$	18.5%	9.3-31.5%
	80-89y	$\text{LogNorm}(\mu_{\log} = -1.64, \sigma_{\log} = 0.30)$	20.2%	10.8-36.1%
Salje et al., 2020 ²⁵	0-19y	$\text{LogNorm}(\mu_{\log} = -6.86, \sigma_{\log} = 0.31)$	0.1%	0.06-0.2%
	20-29y	$\text{LogNorm}(\mu_{\log} = -5.19, \sigma_{\log} = 0.31)$	0.6%	0.3-1.1%
	30-39y	$\text{LogNorm}(\mu_{\log} = -4.48, \sigma_{\log} = 0.30)$	1.2%	0.6-2.0%
	40-49y	$\text{LogNorm}(\mu_{\log} = -4.15, \sigma_{\log} = 0.27)$	1.6%	0.9-2.7%
	50-59y	$\text{LogNorm}(\mu_{\log} = -3.48, \sigma_{\log} = 0.28)$	3.2%	1.7-5.4%
	60-69y	$\text{LogNorm}(\mu_{\log} = -2.69, \sigma_{\log} = 0.29)$	7.0%	3.8-11.8%
	70-79y	$\text{LogNorm}(\mu_{\log} = -2.22, \sigma_{\log} = 0.32)$	11.4%	5.9-19.8%
	80-89y	$\text{LogNorm}(\mu_{\log} = -1.18, \sigma_{\log} = 0.29)$	32.5%	17.3-54.5%

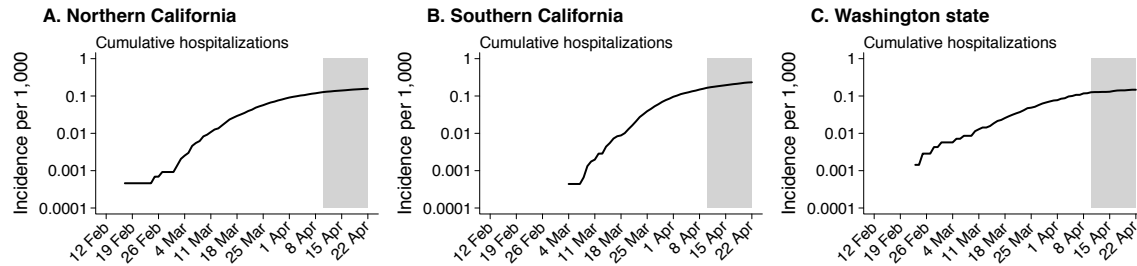


Figure S1: Cumulative incidence of first COVID-19 hospitalization. We illustrate cumulative incidence of first acute inpatient admission with confirmed COVID-19 diagnosis among all individuals with KP health plans on a log₁₀ scale; data are identical to panels A-C of **Figure 1**. Grey regions plotted from April 10 onward indicate admission dates for which patients were excluded from analyses of clinical outcomes (duration of hospitalization, ICU admission, and case fatality risk) due to limited follow-up duration.

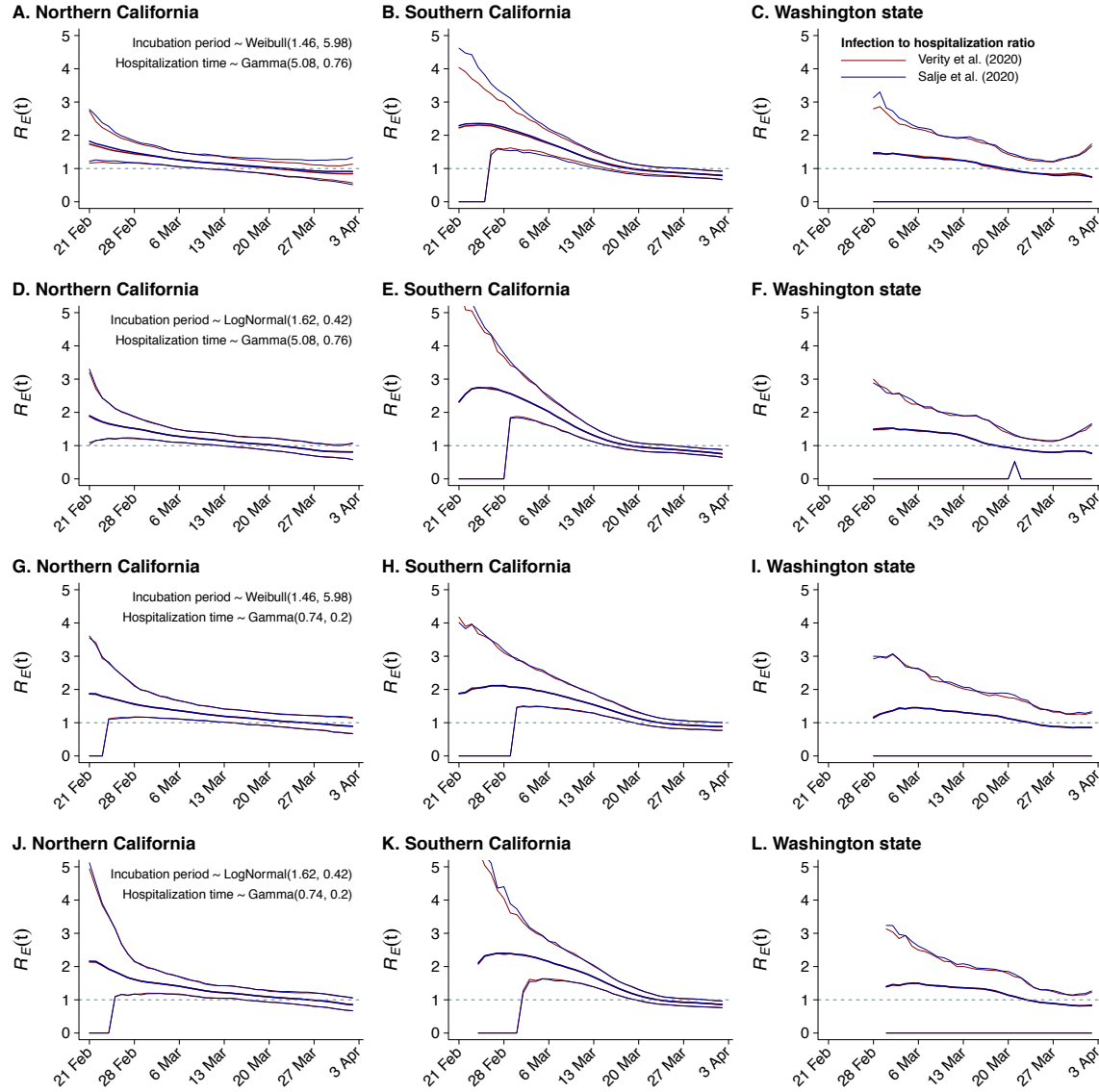


Figure S2: Dynamics of SARS-CoV-2 transmission in the cohort populations inferred from hospitalization data. We illustrate estimates of the effective reproduction number (R_E) for infections acquired on day t , $R_E(t)$, describing the number of secondary infections each individual who acquired infection on day t would be expected to cause, for Northern California, Southern California, and Washington state. Each row contains estimates based on alternative distributional assumptions and parameterizations of the duration of the incubation period and the time from symptoms onset to hospitalization (**A-L**). Within each panel, we present estimates generated under two parameterizations of the (age-specific) infection-to-hospitalization ratio with red and blue lines. Bold (center) lines indicate mean estimates; thin lines indicate 95% confidence interval bounds. Dates of implementation of community mitigation measures are addressed, in part, in ref.[29].