



Supplementary Information for

Carceral-Community Epidemiology, Structural Racism, and Covid-19 Disparities

Eric Reinhart

Lead Health and Justice Researcher, Data and Evidence for Justice Reform (DE JURE),
The World Bank

PhD candidate, Harvard University Department of Anthropology

MD candidate, The University of Chicago Pritzker School of Medicine

Advanced candidate in adult psychoanalysis, The Chicago Center for Psychoanalysis

Daniel L. Chen, JD, PhD

Lead Principal Investigator, Data and Evidence for Justice Reform (DE JURE), The
World Bank

Directeur de Recherche, Centre National de la Recherche Scientifique (CNRS)

Professor, Toulouse School of Economics

Professor, Institute for Advanced Study in Toulouse

Eric Reinhart

Email: reinhar@fas.harvard.edu

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Table S1. Estimates for relationship between the weekly case rate of Covid-19 and the detainees released in March per capita while controlling for poverty rate, percentage of Black and Hispanic population, rate of public transit usage, population density and cumulative case rate by week starting March 29 in the Chicago ZIP codes

Week	March release rate	Poverty	Public transit	% Blacks	% Hispanics	Population Density	Cumulative case rate by week 13
11	-0.00237	-0.000187**	0.000336***	0.0000152	0.0000498	-1.05e-09	0.0114
12	-0.00823	-0.0000513	0.000176	0.0000579	-0.000126	6.22e-09*	0.224***
13	0.0106	0.000238	-0.000512*	-0.0000731	0.0000758	-5.18e-09*	0.765***
14	0.0360	0.000825	-0.0000458	0.00000172	0.000252	-1.68e-08**	0.751***
15	0.0303	0.00158	0.000704	-0.00113	0.000498	-2.43e-08	0.998***
16	0.163*	0.00407***	-0.000462	-0.00119*	0.00130*	6.34e-09	0.405*
17	0.299*	0.00139	0.000476	0.000415	0.00455***	-5.92e-09	0.579*
18	0.916***	0.00123	0.0000574	-0.00102	0.00761***	8.03e-09	0.784***
19	0.659***	0.000969	-0.000640	-0.000392	0.00584***	8.07e-10	0.509**
20	0.624***	0.00123	-0.000468	-0.000674	0.00485***	8.07e-10	0.509**
21	0.621***	0.000134	0.0000296	-0.0000626	0.00466***	1.02e-10	0.451***
22	0.374***	0.00114	-0.000580	-0.000176	0.00244***	1.37e-08	0.241*
23	0.181***	0.00118*	-0.000419	-0.000468	0.000833***	4.51e-09	0.0621
24	0.132***	0.000238	0.0000569	-0.000284	0.00105***	2.32e-10	0.180**
25	-0.00222	0.0000806	-0.000000526	0.0000262	0.000695***	2.39e-09	0.143**
26	0.132***	0.00000741	-0.000243	-0.000214	0.000359*	2.42e-09	0.0569
27	0.0188	0.000132	0.000128	-0.000112	0.000295	-5.63e-10	0.0523
28	-0.0536	-0.000217	-0.0000499	0.000306	0.000187	3.29e-10	0.0245
29	-0.0866	-0.000289	-0.000163	0.000463	0.000419	-4.50e-09	-0.0977
30	-0.0179	0.000172	-0.00118	0.000228	0.0000790	6.83e-09	-0.0965
31	0.0661	-0.000949*	-0.000376	0.000297	0.00136***	-1.96e-09	0.185*
32	0.102*	-0.000597	-0.000574	-0.000197	0.000865**	-1.17e-08	0.149

Table S2. Estimated relationship between cumulative Covid-19 case rates and the detainees released in March per capita while controlling for poverty rate, percentage of Black and Hispanic population, rate of public transit usage, population density and cumulative case rate by week starting March 29 in the Chicago ZIP codes

Week	March release rate	Poverty	Public transit	% Blacks	% Hispanics	Population Density	Cumulative case rate by week 13
11	-0.00184	-0.000202**	0.000350***	0.0000235	0.0000556	-1.06e-09	0.0123
12	-0.0121	-0.000259	0.000350	0.0000913	-0.000115	7.80e-09**	0.244***
13	-0.0121	-0.000000598	-0.000232*	0.0000329	-0.000110*	3.20e-09**	0.984***
14	0.0421	0.00157**	-0.000726	-0.000266	-0.000254	-1.22e-08	1.644***
15	0.0724	0.00315	-0.000242	-0.00245	0.00150	-3.13e-08	2.931***
16	0.297	0.00661**	-0.000242	-0.00245	0.00150	-3.13e-08	2.931***
17	1.140***	0.00664*	0.000181	-0.00241	0.00630***	-3.70e-08	3.530***
18	2.056***	0.00787*	0.000239	-0.00343	0.0139***	-2.89e-08	4.314***
19	2.715***	0.00884	-0.000401	-0.00383	0.0198***	-2.13e-08	4.828***
20	3.312***	0.00945	-0.000979	-0.00429	0.0243***	-2.70e-08	5.143***
21	3.933***	0.00959	-0.00153	-0.00499	0.0323***	-8.41e-09	6.076***
22	4.307***	0.0107	-0.00153	-0.00452	0.0314***	-1.31e-08	5.834***
23	4.488***	0.0119	-0.00195	-0.00499	0.0323***	-8.64e-09	5.896***
24	4.620***	0.0121	-0.00189	-0.00528	0.0333***	-8.41e-09	6.076***
25	4.618***	0.0122	-0.00214	-0.00546	0.0344***	-3.60e-09	6.276***
26	4.751***	0.0122	-0.00214	-0.00546	0.0344***	-3.60e-09	6.276***
27	4.769***	0.0124*	-0.00201	-0.00558	0.0347***	-4.16e-09	6.329***
28	4.716***	0.0121	-0.00206	-0.00527	0.0348***	-3.83e-09	6.353***
29	4.629***	0.0119	-0.00222	-0.00481	0.0353***	-8.33e-09	6.255***
30	4.611***	0.0120	-0.00340	-0.00458	0.0353***	-1.50e-09	6.159***
31	4.678***	0.0111	-0.00378	-0.00428	0.0367***	-3.46e-09	6.344***
32	4.779***	0.0105	-0.00435	-0.00448	0.0376***	-1.51e-08	6.493***

Table S3. Estimated relationship between cumulative Covid-19 case rates as of August 8 and the variables selected by elastic regression: detainees released in March per capita and 17 of the principal components from a principal components analysis of 1,706 variables from the U.S. Census and American Community Survey 2018 5-Year Estimates (all those that have no missing values for Chicago ZIP codes)

Variable	Association with the cumulative case rate of Covid-19 as of August 8 (beta coefficients)
Detainees released in March per capita	4.37961***
Principal Components 20	-0.00036**
Principal Components 3	-0.00032***
Principal Components 5	-0.00031***
Principal Components 13	-0.00031**
Principal Components 2	0.00028***
Principal Components 15	0.00023*
Principal Components 17	-0.00022
Principal Components 1	0.00020***
Principal Components 14	0.00018
Principal Components 12	0.00017
Principal Components 18	-0.00015
Principal Components 7	0.00014
Principal Components 4	0.00012
Principal Components 16	-0.00011
Principal Components 8	-0.00008
Principal Components 6	0.00007
Principal Components 9	-0.00002

Table S4. Estimated relationship between cumulative Covid-19 case rates and the detainees released in March per capita while controlling for poverty rate, percentage of Black and Hispanic population, rate of public transit usage, population density and cumulative case rate by week starting March 29 in the Chicago zip codes as well as the detainees released from adjacent ZIP codes in March

Week	March release rate	March release rate - donut	Poverty	Public transit	% Blacks	% Hispanics	Population Density	Cumulative case rate by week 13
11	-0.00202	0.00658	-0.000197**	0.000350***	0.0000147	0.0000526	-9.99e-10	0.0133
12	-0.0122	0.00308	-0.000257	0.000350	0.0000872	-0.000116	7.82e-09**	0.245***
13	-0.0118	-0.00871	-0.00000693	-0.000232*	0.0000445	-0.000106	3.13e-09*	0.983***
14	0.0445	-0.0898	0.00150*	-0.000724	-0.000146	-0.000213	-1.30e-08	1.631***
15	0.0730	-0.0217	0.00313	-0.0000225	-0.00137	0.000254	-3.67e-08	2.639***
16	0.304	-0.225	0.00645*	-0.000236	-0.00215	0.00161	-3.33e-08	2.897***
17	1.162***	-0.776	0.00607*	0.000199	-0.00137	0.00665***	-4.36e-08	3.414***
18	2.083***	-0.984	0.00715	0.000262	-0.00212	0.0144***	-3.74e-08	4.167***
19	2.749***	-1.236	0.00794	-0.000372	-0.00218	0.0203***	-3.19e-08	4.644***
20	3.321***	-0.341	0.00920	-0.000971	-0.00383	0.0245***	-2.99e-08	5.092***
21	3.941***	-0.280	0.00938	-0.000943	-0.00398	0.0291***	-2.93e-08	5.551***
22	4.318***	-0.382	0.0104	-0.00152	-0.00401	0.0316***	-1.64e-08	5.777***
23	4.503***	-0.541	0.0115	-0.00194	-0.00427	0.0325***	-1.33e-08	5.815***
24	4.640***	-0.713	0.0116	-0.00188	-0.00433	0.0336***	-1.45e-08	5.970***
25	4.640***	-0.807	0.0116	-0.00187	-0.00417	0.0344***	-1.29e-08	6.099***
26	4.777***	-0.955	0.0115	-0.00211	-0.00419	0.0348***	-1.18e-08	6.133***
27	4.798***	-1.037	0.0116	-0.00198	-0.00419	0.0351***	-1.31e-08	6.173***
28	4.747***	-1.131	0.0113	-0.00203	-0.00376	0.0353***	-1.35e-08	6.184***
29	4.648***	-0.687	0.0114	-0.00220	-0.00389	0.0356***	-1.42e-08	6.153***
30	4.628***	-0.594	0.0116	-0.00339	-0.00379	0.0356***	-6.60e-09	6.070***
31	4.700***	-0.820	0.0105	-0.00376	-0.00319	0.0371***	-1.05e-08	6.221***
32	4.803***	-0.879	0.00984	-0.00433	-0.00331	0.0380***	-2.27e-08	6.361***

Table S5. Estimated relationship between cumulative Covid-19 case rates and the detainees released in March per capita while controlling for poverty rate, percentage of Black and Hispanic population, rate of public transit usage, population density and cumulative case rate by week starting March 29 in the Chicago ZIP codes as well as the rate of cumulative tests performed for detecting Covid-19

Week	March release rate	Cumulative tests rate	Poverty rate	Public transit	% Blacks	% Hispanics	Population Density	Cumulative case rate by week 13
11	-0.00241	0.0763*	-0.000212**	0.000330***	0.0000403	0.0000790*	-1.41e-09	0.00857
12	-0.0124	0.0473*	-0.000368	0.000335	0.000136	0.0000146	6.36e-09*	0.235***
13	-0.0106	-0.00191	0.00000549	-0.000238*	0.0000235	-0.000122	3.17e-09**	0.988***
14	-0.0260	0.0689*	0.00135*	-0.000412	0.000172	0.000283	-5.76e-09	1.433***
15	-0.112	0.172***	0.00177	0.00108	0.000533	0.00208*	-5.34e-09	1.812***
16	-0.0262	0.217***	0.00390	0.00167	0.000704	0.00780***	2.63e-08	2.067***
17	0.596**	0.203***	0.00430	0.00221	0.000441	0.00780***	2.63e-08	2.067***
18	1.108***	0.196***	0.00539	0.00252	-0.000227	0.0133***	3.68e-08	2.503***
19	1.450***	0.183***	0.00617	0.00239	-0.000686	0.0175***	3.61e-08	2.931***
20	2.075***	0.136***	0.00603	0.00188	-0.00118	0.0221***	1.25e-08	3.580***
21	2.846***	0.101**	0.00728	0.00131	-0.00232	0.0268***	5.38e-09	4.341***
22	3.307***	0.0742**	0.00839	0.000733	-0.00268	0.0300***	7.80e-09	4.960***
23	3.522***	0.0658**	0.00932	0.000249	-0.00298	0.0313***	8.05e-09	5.186***
24	3.798***	0.0542*	0.00963	-0.000528	-0.00328	0.0327***	5.85e-09	5.469***
25	3.844***	0.0469*	0.00971	-0.000848	-0.00314	0.0339***	5.91e-09	5.713***
26	4.003***	0.0407*	0.00984	-0.00136	-0.00330	0.0345***	3.89e-09	5.841***
27	4.039***	0.0381*	0.00984	-0.00143	-0.00320	0.0352***	1.13e-09	5.974***
28	3.976***	0.0343*	0.0100	-0.00183	-0.00286	0.0356***	-4.33e-10	6.056***
29	3.967***	0.0301*	0.0100	-0.00240	-0.00250	0.0361***	-6.31e-09	6.019***
30	3.850***	0.0325*	0.0101	-0.00372	-0.00189	0.0364***	-2.09e-09	5.924***
31	3.964***	0.0285*	0.00963	-0.00422	-0.00178	0.0377***	-4.50e-09	6.140***
32	3.984***	0.0296*	0.00935	-0.00515	-0.001729	0.0386***	-1.58e-08	6.251***