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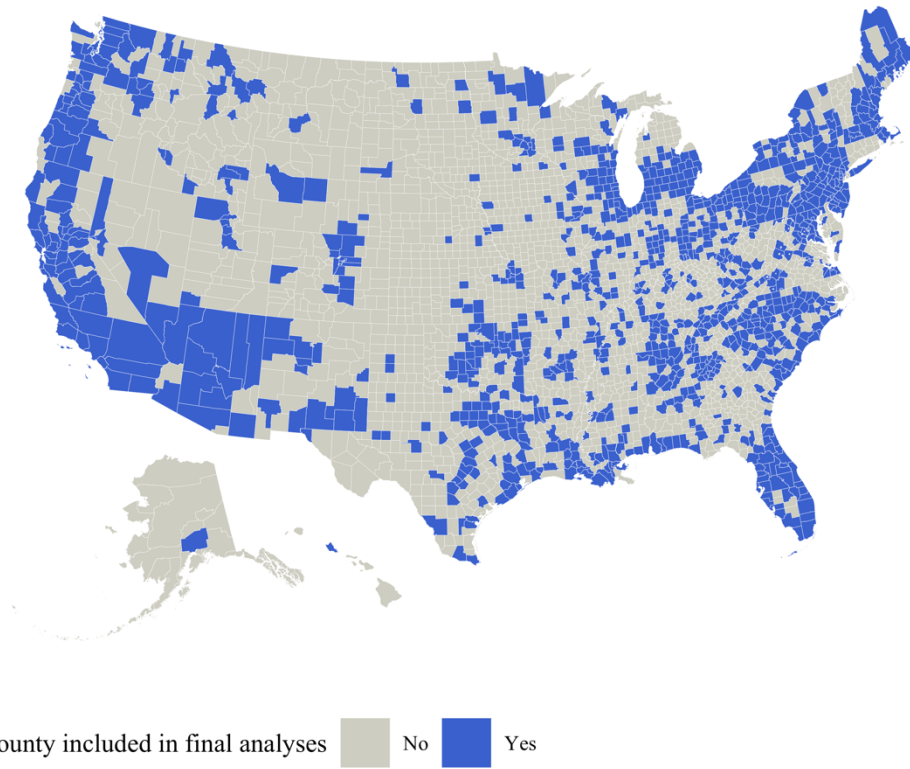
Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Kajeepeta S, Mauro PM, Keyes KM, El-Sayed AM, Rutherford CG, Seth J Prins. Association between county jail incarceration and cause-specific county mortality in the USA, 1987–2017: a retrospective, longitudinal study. *Lancet Public Health* 2021; published online Feb 23. [http://dx.doi.org/10.1016/S2468-2667\(20\)30283-8](http://dx.doi.org/10.1016/S2468-2667(20)30283-8).

Supplementary Table S1. International Classification of Diseases (ICD) codes for nine causes of death of interest

Cause of death	ICD-9 (1988-1998)	ICD-10 (1999-2017)
Cerebrovascular disease	GR72-440-470	I60-I69
Chronic lower respiratory disease	GR72-550-580	J40-J47
Diabetes	GR-72-260	E10-E14
Substance-induced	291, 292, 303, 304, 305, 357·5, 357·6, 425·5, 535·3, 571·0-571·3, 760·7, 790·3, E850-E858, E860·0, E860·1, E950·0-E950·5, E962·0, E980·0-E980·5	D59·0, D59·2, D61·1, D64·2, E16·0, E23·1, E24·2, E27·3, E66·1, F10-F19, G21·1, G24·0, G25·4, G25·6, G31·2, G62·0, G62·1, G72·0, G72·1, I42·6, I95·2, J70·3, J70·4, K29·2, K70, K85·2, K85·3, K86·0, L10·5, L27·0, L27·1, M32·0, M80·4, M81·4, M87·1, P04·2-P04·4, P96·1, Q86, R78·0-R78·5, X40-X45, X60-X65, X85, Y10-Y15
Heart disease	GR72-320-410	I00-I09, I11, I13, I120-I151
Infectious disease	001-139, 320-326, 390-392, 460-466, 480-487, 540, 680-686, 771	A00-B99, G00-G09, I00-I02, J00-J06, J09-J18, J20-J22, K35, L00-L08, P35-P39
Malignant neoplasm	GR72-160-240	C00-C97
Suicide	GR72-820	U03, X60-X84, Y87·0
Unintentional injury	CDC WONDER Injury Intent and Mechanism grouping	V01-X59, Y85-Y86



Supplementary Figure S1. Map of 1,094 distinct counties included in final analyses

Supplementary Table S2. Sensitivity analyses of within-county associations between a one-unit change in county jail incarceration rate (1 per 1,000) and change in county mortality rates for nine common causes of death with one-year lag

	Change in county jail incarceration rate (1 per 1,000)			
	Final analysis	Analysis replacing suppressed counts with 0	Analysis replacing suppressed counts with 9	Random intercepts analysis
	<i>RR^a (95% CI^b)</i>	<i>RR (95% CI)</i>	<i>RR (95% CI)</i>	<i>RR (95% CI)</i>
Cause of death outcomes				
Infectious disease	1·065 (1·061, 1·070)	1·078 (1·072, 1·084)	1·065 (1·061, 1·069)	1·066 (1·064, 1·069)
Chronic lower respiratory disease	1·049 (1·045, 1·052)	1·062 (1·057, 1·067)	1·049 (1·046, 1·052)	1·049 (1·046, 1·052)
Substance-induced	1·026 (1·020, 1·032)	1·073 (1·066, 1·081)	1·013 (1·009, 1·018)	1·027 (1·024, 1·030)
Suicide	1·025 (1·020, 1·029)	1·043 (1·034, 1·052)	1·013 (1·010, 1·016)	1·028 (1·024, 1·032)
Heart disease	1·021 (1·019, 1·023)	1·021 (1·019, 1·023)	1·021 (1·019, 1·023)	1·021 (1·020, 1·022)
Unintentional injury	1·015 (1·011, 1·018)	1·017 (1·013, 1·020)	1·015 (1·012, 1·019)	1·016 (1·014, 1·018)
Malignant neoplasm	1·014 (1·013, 1·016)	1·014 (1·013, 1·016)	1·014 (1·013, 1·016)	1·014 (1·013, 1·015)
Diabetes	1·013 (1·009, 1·018)	1·039 (1·031, 1·047)	1·010 (1·007, 1·014)	1·015 (1·012, 1·019)
Cerebrovascular disease	1·010 (1·007, 1·013)	1·005 (0·999, 1·011)	1·011 (1·009, 1·014)	1·012 (1·009, 1·015)

^aRisk Ratio

^b95% Confidence Interval

Note: includes 1,094 unique counties

Supplementary Table S3. Sensitivity analysis of within-county associations between a one-unit change in county jail incarceration rate (1 per 1,000) and change in county mortality rates for nine common causes of death restricting all models to jail incarceration rate data from 1987-2008

Cause of death outcomes	Change in county jail incarceration rate (1 per 1,000)					
	Final analysis (using all available data)			Sensitivity analysis (restricted to jail incarceration rate data from 1987-2008)		
	One-year lag <i>RR^a (95% CI^b)</i>	Five-year lag <i>RR (95% CI)</i>	Ten-year lag <i>RR (95% CI)</i>	One-year lag <i>RR (95% CI)</i>	Five-year lag <i>RR (95% CI)</i>	Ten-year lag <i>RR (95% CI)</i>
Infectious disease	1·065 (1·061, 1·070)	1·038 (1·034, 1·043)	1·011 (1·007, 1·015)	1·053 (1·047, 1·058)	1·034 (1·029, 1·039)	1·011 (1·007, 1·015)
Chronic lower respiratory disease	1·049 (1·045, 1·052)	1·041 (1·038, 1·045)	1·028 (1·024, 1·032)	1·038 (1·033, 1·042)	1·034 (1·030, 1·039)	1·028 (1·024, 1·032)
Substance-induced	1·026 (1·020, 1·032)	1·020 (1·014, 1·026)	1·008 (1·002, 1·014)	1·037 (1·030, 1·045)	1·019 (1·012, 1·026)	1·008 (1·002, 1·014)
Suicide	1·025 (1·020, 1·029)	1·008 (1·003, 1·012)	0·999 (0·995, 1·004)	1·027 (1·022, 1·033)	1·003 (0·998, 1·009)	0·999 (0·995, 1·004)
Heart disease	1·021 (1·019, 1·023)	1·016 (1·014, 1·018)	1·012 (1·010, 1·014)	1·017 (1·015, 1·020)	1·016 (1·014, 1·018)	1·012 (1·010, 1·014)
Unintentional injury	1·015 (1·011, 1·018)	1·012 (1·008, 1·016)	1·008 (1·004, 1·012)	1·022 (1·019, 1·026)	1·016 (1·012, 1·020)	1·008 (1·004, 1·012)
Malignant neoplasm	1·014 (1·013, 1·016)	1·008 (1·007, 1·010)	1·004 (1·002, 1·006)	1·011 (1·010, 1·013)	1·007 (1·005, 1·009)	1·004 (1·002, 1·006)
Diabetes	1·013 (1·009, 1·018)	1·001 (0·996, 1·006)	0·997 (0·992, 1·002)	1·010 (1·004, 1·017)	1·001 (0·995, 1·006)	0·997 (0·992, 1·002)
Cerebrovascular disease	1·010 (1·007, 1·013)	1·007 (1·003, 1·010)	1·005 (1·001, 1·009)	1·007 (1·003, 1·011)	1·008 (1·003, 1·012)	1·005 (1·001, 1·009)

^aRisk Ratio

^b95% Confidence Interval