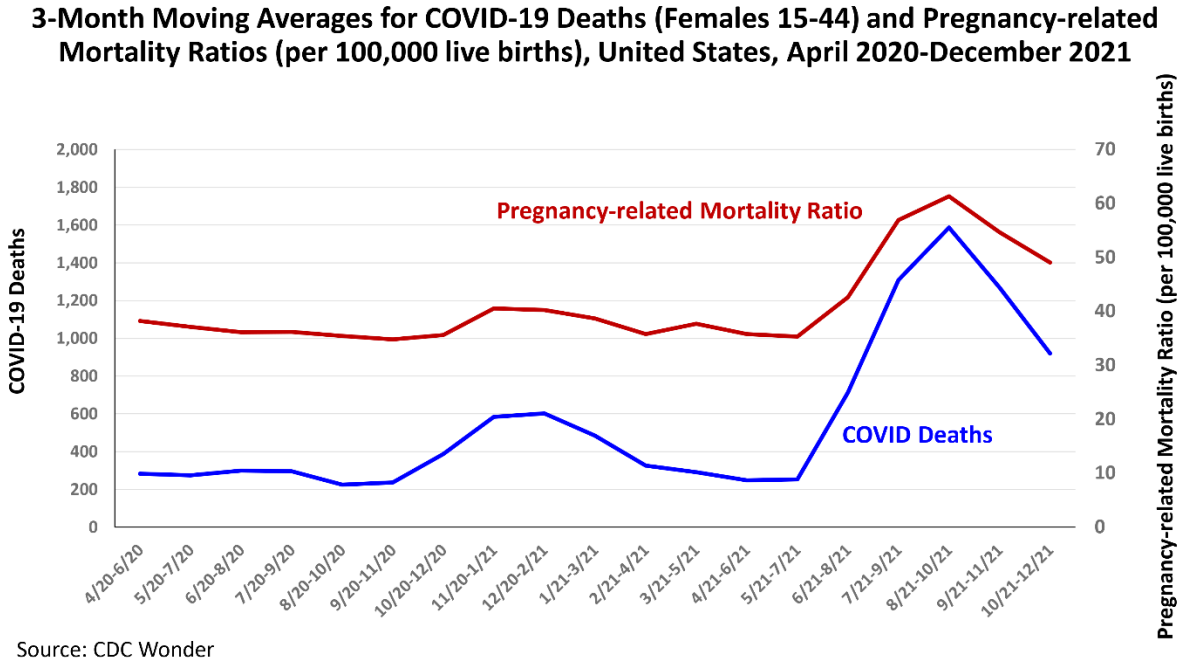
Appendix 1. Three-month moving averages for coronavirus disease 2019 (COVID-19) deaths (females aged 15–44 years) and pregnancy-related mortality ratios (per 100,000 live births), United States, April 2020–December 2021. Data from the CDC WONDER online database.



Source: CDC Wonder

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Appendix 2. Pregnancy-Related Mortality Ratios Overall and by Race and Ethnicity or Rural–Urban Residence During Compared With Before the Pandemic, 2019–2021, United States

	Pre-pandemic	Pandemic (2020)	Pandemic (2021)
Overall			
Pregnancy-related (PR) deaths, n	1345	999	1666
PRMR per 100,000 live births (95% CI)[1]	29.0 (27.5-30.6)	36.7 (34.4-38.9)	45.5 (43.3-47.7)
Absolute change (p-value)[2]	-	7.7 (p<0.001)	8.8 (p<0.001)
% change[2]	-	26.4	24.0
% of PR deaths with COVID-19	-	13.6	33.0
Race/ethnicity[3]			
non-Hispanic Black			
Pregnancy-related (PR) deaths, n	446	323	506
PRMR per 100,000 live births (95% CI)[1]	65.6 (59.5-71.7)	81.2 (72.3-90.0)	97.7 (89.2-106.2)
Absolute change (p-value)[2]	-	15.6 (p=0.003)	16.5 (p=0.009)
% change[2]	-	23.8	20.3
% of PR deaths with COVID	-	12.4	28.5
non-Hispanic AIAN			
Pregnancy-related (PR) deaths, n	24	16	42
PRMR per 100,000 live births (95% CI)[1]	68.6 (41.1-96.0)	79.0 (40.3-117.7)	160.8 (112.2-209.4)
Absolute change (p-value)[2]	-	10.4 (p=0.661)	81.8 (p=0.017)
% change[2]	-	15.2	103.6
% of PR deaths with COVID	-	NR	35.7
Hispanic			
Pregnancy-related (PR) deaths, n	212	195	352
PRMR per 100,000 live births (95% CI)[1]	19.3 (16.7-21.9)	29.8 (25.6-33.9)	39.7 (35.6-43.9)
Absolute change (p-value)[2]	-	10.4 (p<0.001)	10.0 (p=0.001)
% change[2]	-	54.1	33.5
% of PR deaths with COVID	-	31.8	42.6
non-Hispanic White			
Pregnancy-related (PR) deaths, n	593	405	681
PRMR per 100,000 live births (95% CI)[1]	25.0 (23.0-27.1)	29.1 (26.3-31.9)	36.1 (33.4-38.8)
Absolute change (p-value)[2]	-	4.1 (p=0.019)	7.0 (p<0.001)
% change[2]	-	16.3	23.9
% of PR deaths with COVID	-	5.9	30.5
non-Hispanic Asian			
Pregnancy-related (PR) deaths, n	48	38	52
PRMR per 100,000 live births (95% CI)[1]	16.3 (11.7-20.9)	23.3 (15.9-30.8)	24.3 (17.7-30.9)
Absolute change (p-value)[2]	-	7.1 (p=0.094)	1.0 (p=0.847)
% change[2]	-	43.4	4.2
% of PR deaths with COVID	-	NR	38.5

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Rural-urban residence[4]			
Large metro			
Pregnancy-related (PR) deaths, n	662	516	804
PRMR per 100,000 live births (95% CI)[1]	25.3 (23.4-27.2)	33.7 (30.8-36.7)	39.1 (36.4-41.8)
Absolute change (p-value)[2]	-	8.42 (p<0.001)	5.4 (p=0.009)
% change[2]	-	33.3	15.9
% of PR deaths with COVID	-	15.7	30.0
Medium/small metro			
Pregnancy-related (PR) deaths, n	417	311	583
PRMR per 100,000 live births (95% CI)[1]	29.9 (27.0-32.8)	37.7 (33.5-41.9)	52.4 (48.2-56.7)
Absolute change (p-value)[2]	-	7.8 (p=0.002)	14.7 (p<0.001)
% change[2]	-	26.1	39.0
% of PR deaths with COVID	-	11.9	33.6
Rural			
Pregnancy-related (PR) deaths, n	266	172	279
PRMR per 100,000 live births (95% CI)[1]	42.5 (37.4-47.6)	46.5 (39.5-53.4)	56.2 (49.6-62.8)
Absolute change (p-value)[2]	-	4.0 (p=0.358)	9.7 (p=0.049)
% change[2]	-	9.4	21.0
% of PR deaths with COVID	-	10.5	40.1

NR = not reported due to fewer than 10 deaths in given category.

1. All rates presented met standards of reliability (numerator >16 deaths), which corresponded to SEs that were below 25% of the rate under the assumption of a Poisson distribution.
2. Compared to the prior column/time period.
3. Race/ethnicity categories are single-race categories. Hispanic origin includes all races. AIAN = American Indian Alaska Native.
4. Six rural-urban categories were collapsed to 3 to ensure reliable estimates: Large urban (large central, large fringe metropolitan), medium/small urban (medium, small metropolitan), or rural (micropolitan, noncore areas).

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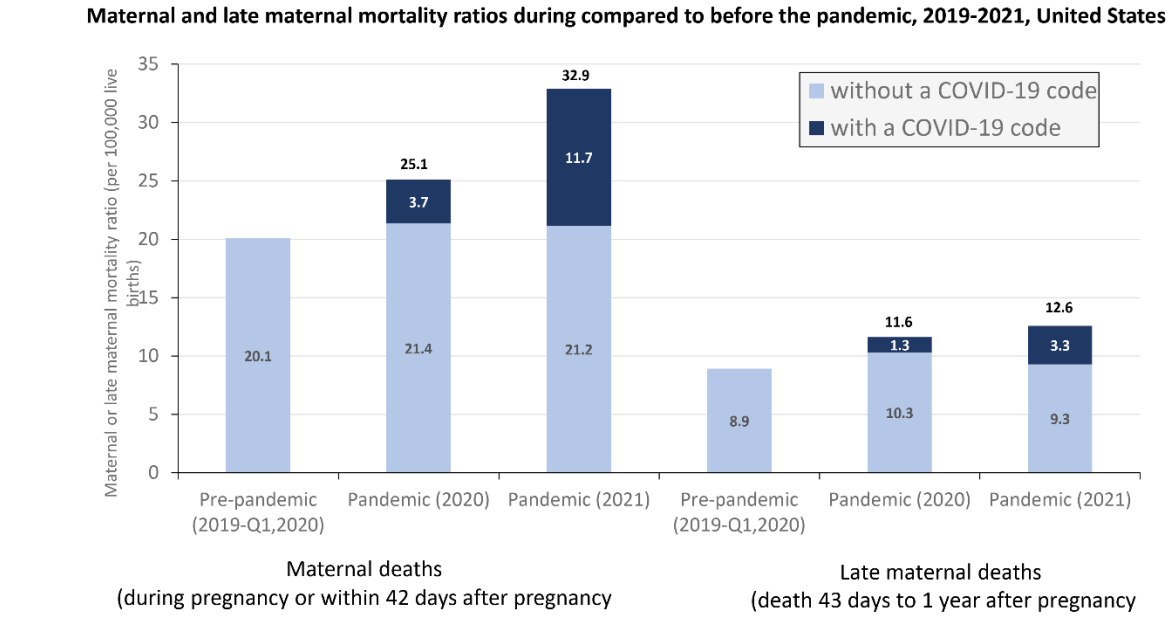
Appendix 3. Maternal and late maternal mortality ratios during compared to before the pandemic, 2019–2021, United States.



Footnote: Q1: January-March, Q2: April-June, Q3: July-September, Q4: October-December

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