

stlco_fimr_report

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Fetal Mortality Rate, Saint Louis County 2019 to 2023

$$\text{Fetal mortality rate} = \frac{\text{Fetal deaths at 20 weeks of gestation or more}}{\text{Live births and fetal deaths at 20 weeks or more}} \times 1,000$$

For Normal Distribution (deaths ≥ 100):

$$\begin{aligned} \text{Lower: } R_1 - 1.96 * R_1 * \frac{\text{RSE}(R_1)}{100} \\ \text{Upper: } R_1 + 1.96 * R_1 * \frac{\text{RSE}(R_1)}{100} \end{aligned}$$

$$\text{RSE of the fetal mortality rate: RSE} = 100 * \sqrt{\frac{1}{D} + \frac{1}{B}}$$

For Poisson Distribution (deaths < 100):

$$\begin{aligned} \text{Lower: } R_1 \cdot L(0.95, D_{\text{adj}}) \\ \text{Upper: } R_1 \cdot U(0.95, D_{\text{adj}}) \end{aligned}$$

$$D_{\text{adj}} = \frac{D \bullet B}{D + B}$$

Using the CDC Poisson L/U confidence-limit table for fetal and perinatal mortality rates. Using qchisq in R, same values as the CDC Poisson L/U confidence-limit table

$$L = \frac{\text{qchisq}(0.025, 2n)}{2n}$$

$$U = \frac{\text{qchisq}(0.975, 2(n + 1))}{2n}$$

Table 1: Overall Fetal Mortality Rate, Saint Louis County, 2019 to 2023

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Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
			per 1000 live births and fetal deaths	Lower	Upper	
277	52,414	52,691	5.26	4.64	5.88	Normal

Table 2: Annual Fetal Mortality Rate, Saint Louis County, 2019 to 2023

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Year	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
				per 1000 live births and fetal deaths	Lower	Upper	
2019	69	11,343	11,412	6.05	4.70	7.65	Poisson
2020	59	10,539	10,598	5.57	4.24	7.18	Poisson
2021	63	10,494	10,557	5.97	4.59	7.64	Poisson
2022	44	10,416	10,460	4.21	3.06	5.65	Poisson
2023	42	9,622	9,664	4.35	3.13	5.87	Poisson

Figure 1: Annual Fetal Mortality Rate, Saint Louis County, 2019 to 2023

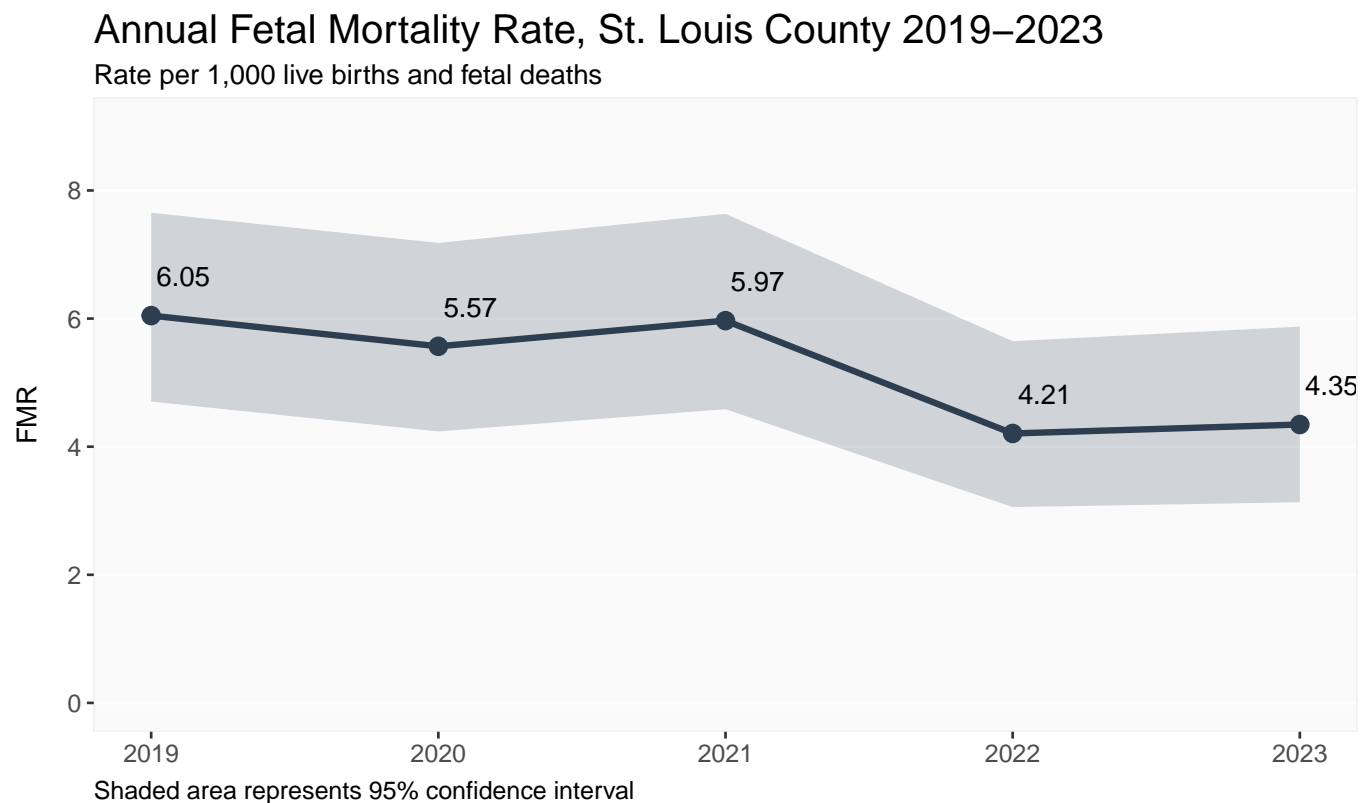


Table 3: Fetal Mortality Rate by Race, Saint Louis County, 2019 to 2023

Table 3: Fetal Mortality Rate by Race, Saint Louis County, 2019 to 2023

Race	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
				per 1000 live births and fetal deaths	Lower	Upper	
Black	154	17,267	17,421	8.84	7.44	10.24	Normal
White	103	28,670	28,773	3.58	2.89	4.27	Normal
Other	18	6,127	6,145	2.93	1.74	4.63	Poisson
Missing/Unknown	2	350	352	5.68	0.69	20.52	Poisson

Table 4: Fetal Mortality Rate by Race, Saint Louis County, 2019 to 2023

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Year	Race	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
					per 1000 live births/fetal deaths	Lower	Upper	
2019	Black	39	3,802	3,841	10.15	7.22	13.88	Poisson
2019	White	27	6,134	6,161	4.38	2.89	6.38	Poisson
2019	Other	3	1,361	1,364	2.20	0.45	6.43	Poisson
2020	Black	29	3,671	3,700	7.84	5.25	11.26	Poisson
2020	White	23	5,630	5,653	4.07	2.58	6.10	Poisson
2020	Other	5	1,190	1,195	4.18	1.36	9.76	Poisson
2020	Missing/Unknown	2	48	50	40.00	4.84	144.49	Poisson
2021	Black	33	3,469	3,502	9.42	6.49	13.23	Poisson
2021	White	24	5,754	5,778	4.15	2.66	6.18	Poisson
2021	Other	6	1,191	1,197	5.01	1.84	10.91	Poisson
2022	Black	26	3,327	3,353	7.75	5.07	11.36	Poisson
2022	White	17	5,752	5,769	2.95	1.72	4.72	Poisson
2022	Other	1	1,251	1,252	0.80	0.02	4.45	Poisson
2023	Black	27	2,998	3,025	8.93	5.88	12.99	Poisson
2023	White	12	5,400	5,412	2.22	1.15	3.87	Poisson
2023	Other	3	1,134	1,137	2.64	0.54	7.71	Poisson

Figure 2: Annual Fetal Mortality Rate by Race, Saint Louis County, 2019 to 2023

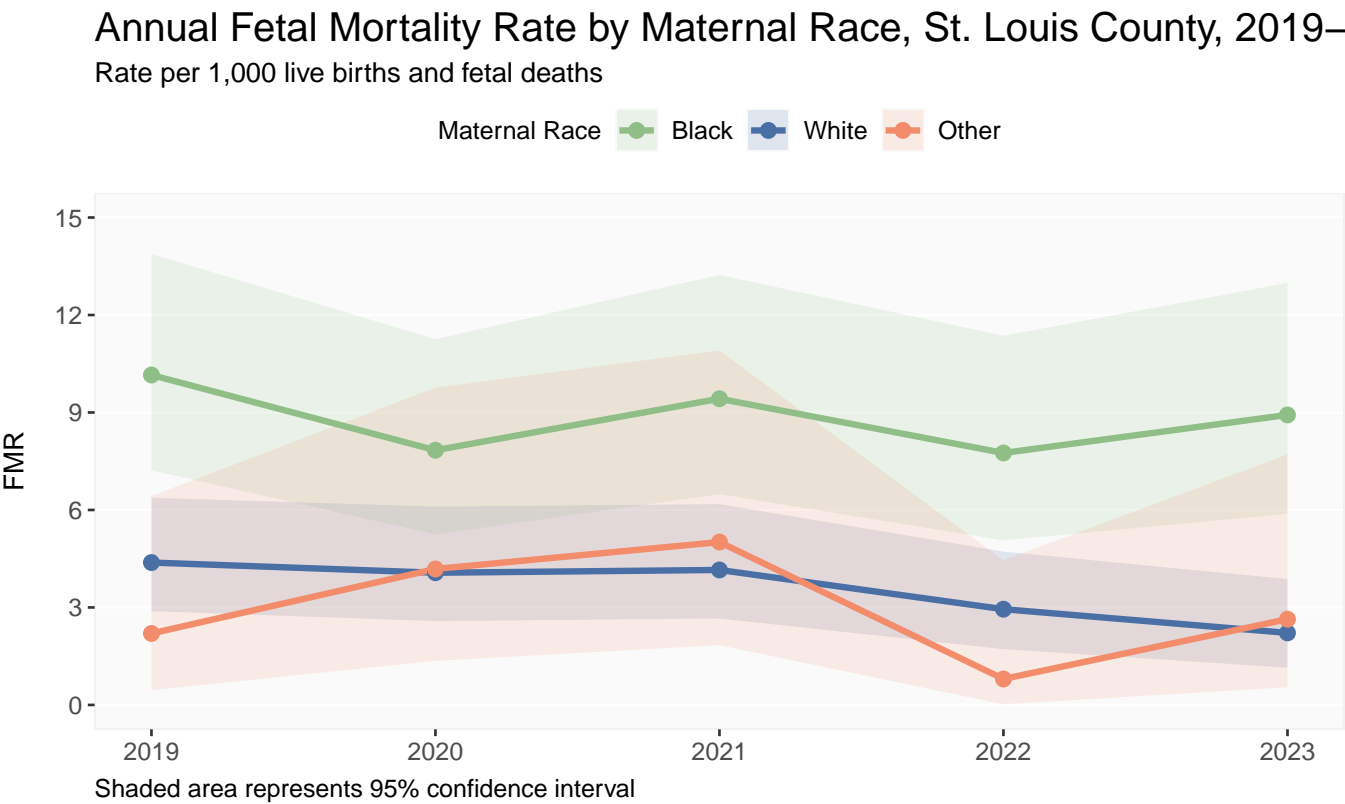


Table 5: Fetal Mortality Rate by Sex, Saint Louis County, 2019 to 2023

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Sex	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
				per 1000 live births and fetal deaths	Lower	Upper	
M	139	26,828	26,967	5.15	4.30	6.01	Normal
F	133	25,584	25,717	5.17	4.29	6.05	Normal
U	5	NA	NA	NA	NA	NA	Poisson

Table 6: Annual Fetal Mortality Rate by Sex, Saint Louis County, 2019 to 2023

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Year	Sex	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
					per 1000 live births and fetal deaths	Lower	Upper	
2019	M	35	5,808	5,843	5.99	4.17	8.33	Poisson
2019	F	34	5,535	5,569	6.11	4.23	8.53	Poisson
2020	M	30	5,396	5,426	5.53	3.73	7.89	Poisson
2020	F	26	5,142	5,168	5.03	3.29	7.37	Poisson
2020	U	3	NA	NA	NA	NA	NA	Poisson
2021	M	32	5,370	5,402	5.92	4.05	8.36	Poisson
2021	F	30	5,123	5,153	5.82	3.93	8.31	Poisson
2021	U	1	NA	NA	NA	NA	NA	Poisson
2022	M	22	5,358	5,380	4.09	2.56	6.19	Poisson
2022	F	21	5,058	5,079	4.13	2.56	6.32	Poisson
2022	U	1	NA	NA	NA	NA	NA	Poisson
2023	F	22	4,726	4,748	4.63	2.90	7.02	Poisson
2023	M	20	4,896	4,916	4.07	2.49	6.28	Poisson

Figure 3: Annual Fetal Mortality Rate by Sex, Saint Louis County, 2019 to 2023

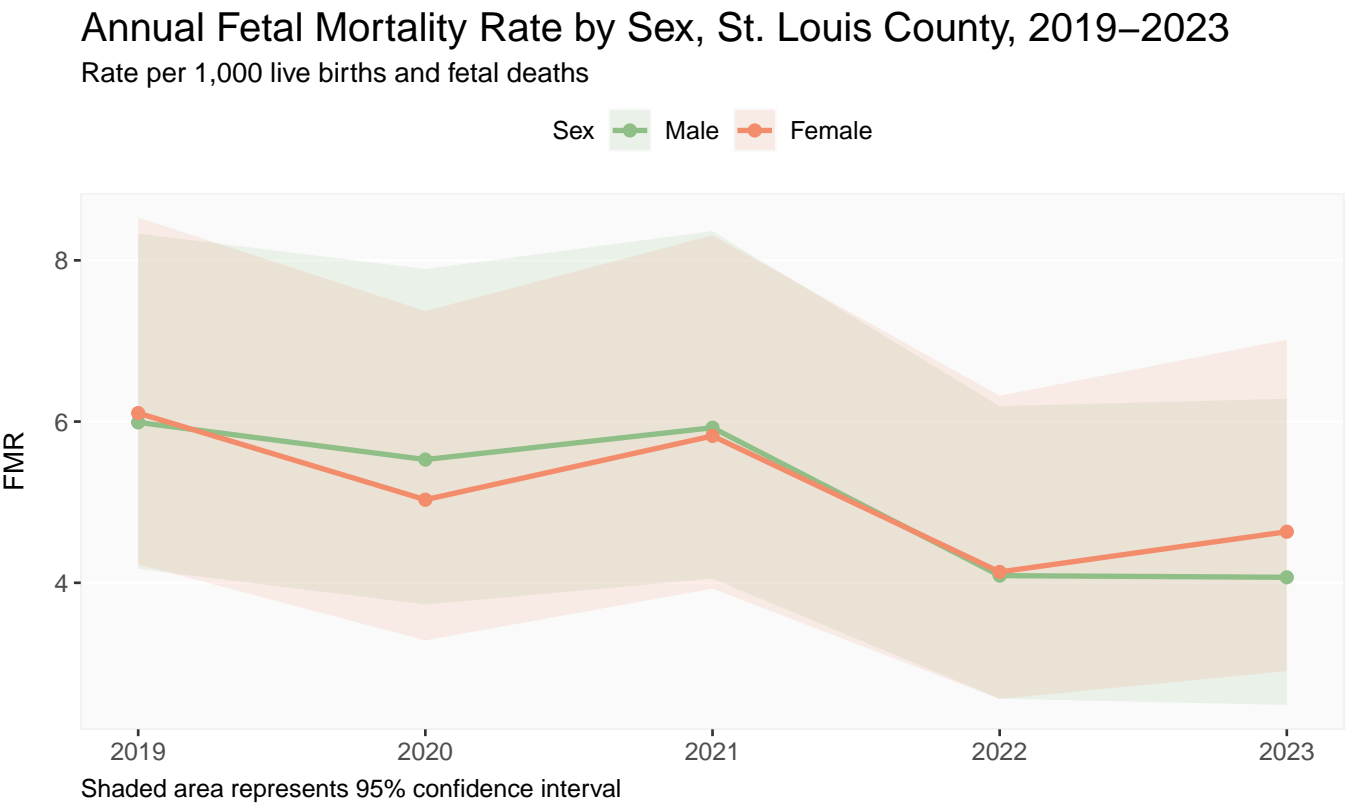


Table 7: Fetal Mortality Rate by Maternal Age Group, Saint Louis County, 2019 to 2023

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County 2019 to 2023

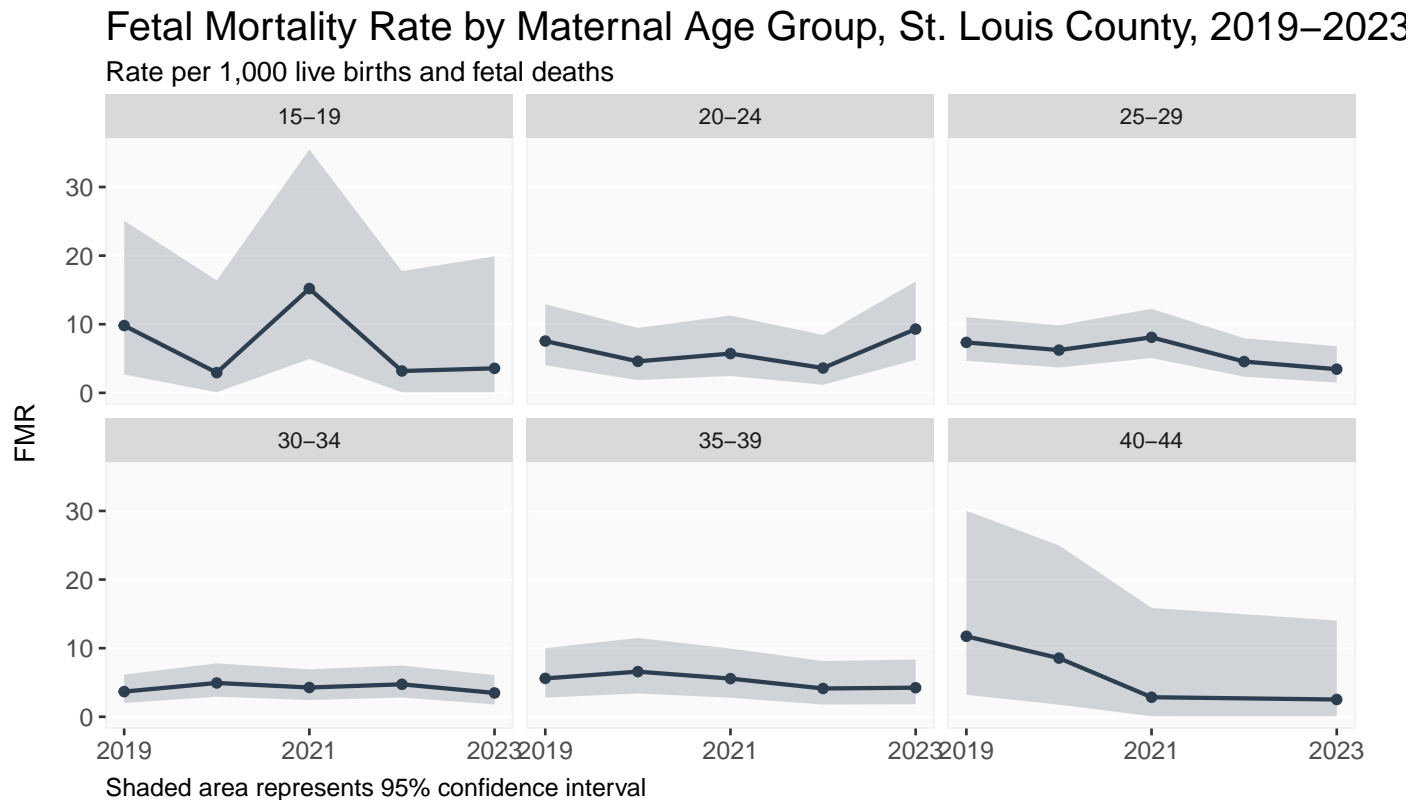
Age Group	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
				per 1000 live births and fetal deaths	Lower	Upper	
15-19	12	1,659	1,671	7.18	3.71	12.54	Poisson
20-24	45	7,273	7,318	6.15	4.49	8.23	Poisson
25-29	83	13,605	13,688	6.06	4.82	7.53	Poisson
30-34	78	18,397	18,475	4.22	3.34	5.27	Poisson
35-39	50	9,547	9,597	5.21	3.87	6.87	Poisson
40-44	9	1,789	1,798	5.01	2.29	9.50	Poisson

Table 8: Annual Fetal Mortality Rate by Maternal Age Group, Saint Louis County, 2019 to 2023

Table 8: Fetal Mortality Rate by Maternal Age Group, Saint Louis
County 2019 to 2023

Year	Age Group	Fetal Deaths	Live Births	Total	Fetal Mortality Rate	95% CI		CI Method
					per 1000 live births and fetal deaths	Lower	Upper	
2019	15-19	4	404	408	9.80	2.67	25.10	Poisson
2019	20-24	13	1,709	1,722	7.55	4.02	12.91	Poisson
2019	25-29	23	3,105	3,128	7.35	4.66	11.03	Poisson
2019	30-34	14	3,802	3,816	3.67	2.01	6.16	Poisson
2019	35-39	11	1,956	1,967	5.59	2.79	10.01	Poisson
2019	40-44	4	337	341	11.73	3.20	30.03	Poisson
2020	15-19	1	339	340	2.94	0.07	16.39	Poisson
2020	20-24	7	1,517	1,524	4.59	1.85	9.46	Poisson
2020	25-29	18	2,870	2,888	6.23	3.69	9.85	Poisson
2020	30-34	18	3,633	3,651	4.93	2.92	7.79	Poisson
2020	35-39	12	1,813	1,825	6.58	3.40	11.49	Poisson
2020	40-44	3	348	351	8.55	1.76	24.98	Poisson
2021	15-19	5	324	329	15.20	4.93	35.47	Poisson
2021	20-24	8	1,390	1,398	5.72	2.47	11.28	Poisson
2021	25-29	22	2,697	2,719	8.09	5.07	12.25	Poisson
2021	30-34	16	3,735	3,751	4.27	2.44	6.93	Poisson
2021	35-39	11	1,966	1,977	5.56	2.78	9.96	Poisson
2021	40-44	1	350	351	2.85	0.07	15.87	Poisson
2022	15-19	1	313	314	3.18	0.08	17.74	Poisson
2022	20-24	5	1,378	1,383	3.62	1.17	8.44	Poisson
2022	25-29	12	2,620	2,632	4.56	2.36	7.96	Poisson
2022	30-34	18	3,787	3,805	4.73	2.80	7.48	Poisson
2022	35-39	8	1,932	1,940	4.12	1.78	8.13	Poisson
2023	15-19	1	279	280	3.57	0.09	19.90	Poisson
2023	20-24	12	1,279	1,291	9.30	4.80	16.24	Poisson
2023	25-29	8	2,313	2,321	3.45	1.49	6.79	Poisson
2023	30-34	12	3,440	3,452	3.48	1.80	6.07	Poisson
2023	35-39	8	1,880	1,888	4.24	1.83	8.35	Poisson
2023	40-44	1	396	397	2.52	0.06	14.03	Poisson

Figure 4: Annual Fetal Mortality Rate by Maternal Age Group, Saint Louis County, 2019 to 2023



Reference

1. Centers for Disease Control and Prevention. (2023). User guide to the 2023 fetal death public use file. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/fetaldeath/2023fetaluserguide.pdf
2. MacDorman, M. F., & Gregory, E. C. W. (2015, July 23). Fetal and perinatal mortality: United States, 2013 (National Center for Health Statistics. Vital and Health Statistics, 64[8], 1–24). <https://stacks.cdc.gov/view/cdc/231851>