**SUPPLEMENTARY MATERIAL**

**Evaluation of Stillbirth Among Pregnant People with Sickle Cell Trait**

**CONTENTS**

[SUPPLEMENTARY TABLES 2](#_Toc82690876)

[eTable 1. ICD codes for clinical conditions 2](#_Toc82690877)

[eTable 2. Regression results for stillbirth 4](#_Toc82690878)

[SUPPLEMENTARY FIGURES 5](#_Toc82690879)

[eFigure 1. Stillbirth rate over time and by season for the total patient population. 5](#_Toc82690880)

# SUPPLEMENTARY TABLES

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| eTable 1. ICD codes for clinical conditions | | |
| Diagnosis/Procedure | ICD 9 | ICD 10 |
| Sickle cell trait  (diagnosis) | 282.5 | D57.3 |
| Sickle cell disease  (diagnosis) | 282.41, 282.42, 282.60, 282.61, 282.62, 282.63, 282.64, 282.68, 282.69 | D57.0, D57.00, D57.01, D57.02, D57.1, D57.20, D57.21, D57.211, D57.212, D57.219, D57.40, D57.41, D57.411, D57.412, D57.419, D57.80, D57.81, D57.811, D57.812, D57.819, 282.41, 282.42, 282.60, 282.61, 282.62, 282.63, 282.64, 282.68, 282.69 |
| Sickle cell (pain) crisis  (diagnosis) | 282.42, 282.62, 282.64, 282.69 | D57.0, D57.00, D57.01, D57.02, D57.21, D57.211, D57.212, D57.219, D57.41, D57.411, D57.412, D57.419, D57.81, D57.811, D57.812, D57.819 |
| Multiple gestation (birth)  (diagnosis) | 651.01, 651.11, 651.21, 651.31, 651.41, 651.51, 651.61, 651.71, 651.81, 651.91, 652.61, 660.51, 662.31, 678.11, V27.2, V27.3, V27.4, V27.5, V27.6, V27.7, V31.00, V31.01, V31.1, V31.2, V32.00, V32.01, V32.1, V32.2, V33.00, V33.01, V33.1, V33.2, V34.00, V34.01, V34.1, V34.2, V35.00, V35.01, V35.1, V35.2, V36.00, V36.01, V36.1, V36.2, V37.00, V37.01, V37.1, V37.2 | O30.02, O30.021, O30.022, O30.023, O30.029, O60.10X2, O60.10X3, O60.10X4, O60.10X5, O60.10X9, O60.12X2, O60.12X3, O60.12X4, O60.12X5, O60.12X9, O60.13X2, O60.13X3, O60.13X4, O60.13X5, O60.13X9, O60.14X2, O60.14X3, O60.14X4, O60.14X5, O60.14X9, O60.20X2, O60.20X3, O60.20X4, O60.20X5, O60.20X9, O60.22X2, O60.22X3, O60.22X4, O60.22X5, O60.22X9, O60.23X2, O60.23X3, O60.23X4, O60.23X5, O60.23X9, Z37.2, Z37.3, Z37.4, Z37.5, Z37.50, Z37.51, Z37.52, Z37.53, Z37.54, Z37.59, Z37.6, Z37.60, Z37.61, Z37.62, Z37.63, Z37.64, Z37.69, Z37.7, Z38.3, Z38.30, Z38.31, Z38.6, Z38.61, Z38.62, Z38.63, Z38.64, Z38.65, Z38.66, Z38.68, Z38.69 |
| Cesarean section  (diagnosis) | 669.7, 669.71, 763.4, V30.01, V31.01, V32.01, V33.01, V34.01, V35.01, V36.01, V37.01, V39.01, 649.81, 649.82 | O75.82, O82  Z38.01, Z38.31, Z38.69, Z38.66, Z38.62, Z38.64 |
| Cesarean section  (procedure) | 74, 74.0, 74.1, 74.2, 74.4, 74.99 | 10D00Z0, 10D00Z1, 10D00Z2 |
| Stillbirth  (diagnosis) | V27.1, V27.3, V27.4, V27.7, V32.00, V32.01, V33.00, V33.01, V35.00, V35.01, V36.00, V36.01, V37.00, V37.01 | Z37.1, Z37.3, Z37.4, Z37.6, Z37.60, Z37.61, Z37.62, Z37.63, Z37.64, Z37.69, Z37.7 |
| Blood products transfusion (procedure) | 99.00, 99.01, 99.02, 99.03, 99.04, 99.05, 99.06, 99.07, 99.08, 99.09 | 30230H0, 30230H1, 30230K0, 30230K1, 30230L0, 30230L1, 30230M0, 30230M1, 30230N0, 30230N1, 30230P0, 30230P1, 30230R0, 30230R1, 30230T0, 30230T1, 30233H0, 30233H1, 30233K0, 30233K1, 30233L0, 30233L1, 30233M0, 30233M1, 30233N0, 30233N1, 30233P0, 30233P1, 30233R0, 30233R1, 30233T0, 30233T1, 30240H0, 30240H1, 30240K0, 30240K1, 30240L0, 30240L1, 30240M0, 30240M1, 30240N0, 30240N1, 30240P0, 30240P1, 30240R0, 30240R1, 30240T0, 30240T1, 30243H0, 30243H1, 30243K0, 30243K1, 30243L0, 30243L1, 30243M0, 30243M1, 30243N0, 30243N1, 30243P0, 30243P1, 30243R0, 30243R1, 30243T0, 30243T1, 30250H0, 30250H1, 30250K0, 30250K1, 30250L0, 30250L1, 30250M0, 30250M1, 30250N0, 30250N1, 30250P0, 30250P1, 30250R0, 30250R1, 30250T0, 30250T1, 30253H0, 30253H1, 30253K0, 30253K1, 30253L0, 30253L1, 30253M0, 30253M1, 30253N0, 30253N1, 30253P0, 30253P1, 30253R0, 30253R1, 30253T0, 30253T1, 30260H0, 30260H1, 30260K0, 30260K1, 30260L0, 30260L1, 30260M0, 30260M1, 30260N0, 30260N1, 30260P0, 30260P1, 30260R0, 30260R1, 30260T0, 30260T1, 30263H0, 30263H1, 30263K0, 30263K1, 30263L0, 30263L1, 30263M0, 30263M1, 30263N0, 30263N1, 30263P0, 30263P1, 30263R0, 30263R1, 30263T0, 30263T1 |
| *ICD*, International Classification of Diseases | | |

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| eTable 2. Regression results for stillbirth | | |
| Independent Variables | Total Population | Black/African American Pop. |
| Sickle Cell Status |  |  |
| Sickle Cell Trait | 8.94 (1.05, 75.79), p = 0.045 | 0.91 (0.59, 1.40), p = 0.671 |
| Sickle Cell Disease | 26.40 (2.48, 280.90), p = 0.007 | 3.59 (1.41, 9.12), p = 0.007 |
| Number of Pain Crises Before Delivery | 0.58 (0.17, 2.02), p = 0.395 | 0.72 (0.23, 2.24), p = 0.566 |
| Number of Blood Transfusions Before Delivery | 1.25 (0.66, 2.39), p = 0.497 | 0.59 (0.16, 2.26), p = 0.444 |
| Prior Cesarean: Yes | 0.44 (0.23, 0.82), p = 0.010 | 0.30 (0.12, 0.74), p = 0.009 |
| Delivery Episode | 1.06 (0.88, 1.29), p = 0.520 | 1.20 (0.97, 1.48), p = 0.097 |
| Multiple Gestation (Birth) Diagnosis: Yes | 4.68 (3.48, 6.2­9), p < 0.001 | 3.68 (2.43, 5.58), p < 0.001 |
| Patient Age | 1.01 (1.00, 1.03), p = 0.100 | 1.01 (0.99, 1.03), p = 0.270 |
| Marital Status: Married | 0.72 (0.57, 0.91), p = 0.006 | 0.76 (0.55, 1.05), p = 0.096 |
| Race/Ethnicity |  |  |
| Hispanic | 0.88 (0.41, 1.89), p = 0.750 |  |
| Hispanic × Sickle Cell | 0.18 (0.01, 3.37), p = 0.249 |  |
| Black/African American | 1.20 (0.59, 2.42), p = 0.617 |  |
| Black/African American × Sickle Cell | 0.11 (0.01, 0.93), p = 0.043 |  |
| White | 0.55 (0.27, 1.13), p = 0.105 |  |
| White × Sickle Cell | 0.32 (0.02, 6.12), p = 0.449 |  |
| Asian | 0.71 (0.32, 1.58), p = 0.396 |  |
| Asian × Sickle Cell | 0 (0, >100), p = 0.958 |  |
| Other or Mixed | 0.80 (0.34, 1.86), p = 0.606 |  |
| Other or Mixed × Sickle Cell | 0.37 (0.02, 7.18), p = 0.512 |  |
| Native Hawaiian/Pacific Islander | 1.09 (0.14, 8.76), p = 0.935 |  |
| Native Hawaiian/Pacific Islander × Sickle Cell | Not Available |  |
| American Indian/Alaskan Native | 3.18 (0.67, 15.06), p = 0.144 |  |
| American Indian/Alaskan Native × Sickle Cell | Not Available |  |
| Blood Type (reference: Blood Type O) |  |  |
| Blood Type A | 0.88 (0.71, 1.09), p = 0.238 | 0.76 (0.57, 1.00), p = 0.051 |
| Blood Type B | 0.96 (0.75, 1.23), p = 0.746 | 0.96 (0.72, 1.27), p = 0.764 |
| Blood Type AB | 1.17 (0.79, 1.75), p = 0.436 | 0.91 (0.53, 1.58), p = 0.747 |
| Blood Type Unknown | 1.14 (0.68, 1.90), p = 0.623 | 1.09 (0.49, 2.42), p = 0.840 |
| Rhesus (Rh) Factor: Negative | 1.15 (0.84, 1.58), p = 0.380 | 1.21 (0.80, 1.85), p = 0.364 |
| Year (reference: 2010) |  |  |
| 2011 | 1.17 (0.85, 1.60), p = 0.337 | 1.04 (0.72, 1.51), p = 0.832 |
| 2012 | 0.86 (0.61, 1.21), p = 0.387 | 0.72 (0.47, 1.09), p = 0.122 |
| 2013 | 0.82 (0.57, 1.17), p = 0.265 | 0.64 (0.41, 1), p = 0.051 |
| 2014 | 0.88 (0.63, 1.25), p = 0.487 | 0.86 (0.57, 1.29), p = 0.468 |
| 2015 | 0.90 (0.63, 1.27), p = 0.530 | 0.0 (0.53, 1.23), p = 0.312 |
| 2016 | 0.97 (0.69, 1.37), p = 0.882 | 0.92 (0.60, 1.39), p = 0.682 |
| 2017 | 1.13 (0.76, 1.69), p = 0.541 | 1.02 (0.62, 1.69), p = 0.932 |
| *Race/ethnicity* categories are “Non-Hispanic”­ unless otherwise specified | | |

# SUPPLEMENTARY FIGURES



eFigure 1. Stillbirth rate over time and by season for the total patient population. Presents stillbirth rates from January-March 2010 to July-September 2017 as an area graph. Stillbirth rates vary from 0.4% in April-June 2013 to 1.1% in April-June 2012, and there is no distinguishable trend over time.