

DISPARITIES IN INFANT MORTALITY IN THE US, 1989-2005

APPENDIX A. Calculation and breakdown of the Theil Index (T), Mean Log Deviation (MLD), and Symmetrized Theil Index (STI) components.

DISPARITIES IN INFANT MORTALITY IN THE US, 1989-2005

OVERALL INFANT MORTALITY

1989-1990

| Equal weight | | | | | T | MLD | STI | |
|----------------------------|----------------|----------------------------|-------------------------|---|----------------------------|--|---|-------------------|
| | <i>n</i> | <i>p_j</i> | IMR _{<i>j</i>} | <i>r</i> =IMR _{<i>j</i>} /IMR _{total} | ln <i>r_j</i> | <i>p_j</i> * <i>r_j</i> *ln <i>r_j</i> | <i>p_j</i> *[-ln <i>r_j</i>] | (T+MLD)/2 |
| American Indian | -- | 111.1 | 13.4 | 1.4 | 0.3 | 53.7 | -38.1 | 7.8 |
| Asian and Pacific Islander | -- | 111.1 | 6.9 | 0.7 | -0.3 | -26.0 | 35.8 | 4.9 |
| Central/South American | -- | 111.1 | 7.1 | 0.7 | -0.3 | -24.4 | 32.7 | 4.2 |
| Cuban | -- | 111.1 | 6.7 | 0.7 | -0.3 | -27.2 | 38.5 | 5.6 |
| Mexican | -- | 111.1 | 7.4 | 0.8 | -0.3 | -21.9 | 28.2 | 3.2 |
| non-Hispanic Black | -- | 111.1 | 17.5 | 1.8 | 0.6 | 124.5 | -67.7 | 28.4 |
| non-Hispanic White | -- | 111.1 | 7.5 | 0.8 | -0.2 | -20.4 | 25.8 | 2.7 |
| Other/Unknown Hispanic | -- | 111.1 | 8.3 | 0.9 | -0.1 | -13.6 | 15.7 | 1.0 |
| Puerto Rican | -- | 111.1 | 10.8 | 1.1 | 0.1 | 16.4 | -14.4 | 1.0 |
| Total | 8205977 | IMR_{total} | 9.5 | | | T = 61.1 | MLD = 56.5 | STI = 58.8 |
| Population weight | | | | | T | MLD | STI | |
| | <i>n</i> | <i>p_j</i> | IMR _{<i>j</i>} | <i>r</i> =IMR _{<i>j</i>} /IMR _{total} | ln <i>r_j</i> | <i>p_j</i> * <i>r_j</i> *ln <i>r_j</i> | <i>p_j</i> *[-ln <i>r_j</i>] | (T+MLD)/2 |
| American Indian | 75336 | 9.2 | 13.4 | 1.5 | 0.4 | 5.0 | -3.4 | 0.8 |
| Asian and Pacific Islander | 267088 | 32.5 | 6.9 | 0.7 | -0.3 | -7.1 | 9.5 | 1.2 |
| Central/South American | 155591 | 19.0 | 7.1 | 0.8 | -0.3 | -3.8 | 5.0 | 0.6 |
| Cuban | 22166 | 2.7 | 6.7 | 0.7 | -0.3 | -0.6 | 0.9 | 0.1 |
| Mexican | 720781 | 87.8 | 7.4 | 0.8 | -0.2 | -15.7 | 19.6 | 2.0 |
| non-Hispanic Black | 1336085 | 162.8 | 17.5 | 1.9 | 0.6 | 197.5 | -104.2 | 46.7 |
| non-Hispanic White | 5391966 | 657.1 | 7.5 | 0.8 | -0.2 | -108.3 | 132.4 | 12.1 |
| Other/Unknown Hispanic | 121888 | 14.9 | 8.3 | 0.9 | -0.1 | -1.5 | 1.6 | 0.1 |
| Puerto Rican | 115076 | 14.0 | 10.8 | 1.2 | 0.2 | 2.6 | -2.2 | 0.2 |
| Total | 8205977 | IMR_{total} | 9.2 | | | T = 68.1 | MLD = 59.2 | STI = 63.7 |

Note: the proportions, *p_j*, are multiplied by 1000 to attain numbers identical to those produced by HD*Calc.

OVERALL INFANT MORTALITY

2005-2006

| Equal weight | | | | | T | MLD | STI | |
|----------------------------|----------------|---------------------------------|------------|-----------------------|-----------|--------------------|-------------------|-------------------|
| | n | p_j | IMR_j | $r=IMR_j/IMR_{total}$ | $\ln r_j$ | $p_j^*r_j*\ln r_j$ | $p_j^*[-\ln r_j]$ | $(T+MLD)/2$ |
| American Indian | -- | 111.1 | 8.4 | 1.2 | 0.2 | 29.3 | -23.7 | 2.8 |
| Asian and Pacific Islander | -- | 111.1 | 4.6 | 0.7 | -0.4 | -29.3 | 43.3 | 7.0 |
| Central/South American | -- | 111.1 | 4.5 | 0.7 | -0.4 | -29.7 | 44.2 | 7.3 |
| Cuban | -- | 111.1 | 4.8 | 0.7 | -0.3 | -26.9 | 37.8 | 5.5 |
| Mexican | -- | 111.1 | 5.3 | 0.8 | -0.2 | -21.4 | 27.4 | 3.0 |
| non-Hispanic Black | -- | 111.1 | 13.5 | 2.0 | 0.7 | 151.7 | -76.3 | 37.7 |
| non-Hispanic White | -- | 111.1 | 5.7 | 0.8 | -0.2 | -16.8 | 20.1 | 1.7 |
| Other/Unknown Hispanic | -- | 111.1 | 6.2 | 0.9 | -0.1 | -9.6 | 10.6 | 0.5 |
| Puerto Rican | -- | 111.1 | 8.1 | 1.2 | 0.2 | 22.8 | -19.2 | 1.8 |
| Total | 8419151 | IMR_{total} | 6.8 | | | T = 70.2 | MLD = 64.1 | STI = 67.1 |
| Population weight | | | | | T | MLD | STI | |
| | n | p_j | IMR_j | $r=IMR_j/IMR_{total}$ | $\ln r_j$ | $p_j^*r_j*\ln r_j$ | $p_j^*[-\ln r_j]$ | $(T+MLD)/2$ |
| American Indian | 83876 | 10.0 | 8.4 | 1.3 | 0.2 | 2.8 | -2.3 | 0.3 |
| Asian and Pacific Islander | 453235 | 53.8 | 4.6 | 0.7 | -0.4 | -13.9 | 20.3 | 3.2 |
| Central/South American | 316765 | 37.6 | 4.5 | 0.7 | -0.4 | -9.9 | 14.5 | 2.3 |
| Cuban | 33004 | 3.9 | 4.8 | 0.7 | -0.3 | -0.9 | 1.3 | 0.2 |
| Mexican | 1424103 | 169.2 | 5.3 | 0.8 | -0.2 | -31.2 | 39.4 | 4.1 |
| non-Hispanic Black | 1209405 | 143.6 | 13.5 | 2.0 | 0.7 | 202.5 | -100.6 | 51.0 |
| non-Hispanic White | 4634928 | 550.5 | 5.7 | 0.8 | -0.2 | -78.0 | 92.2 | 7.1 |
| Other/Unknown Hispanic | 133525 | 15.9 | 6.2 | 0.9 | -0.1 | -1.2 | 1.3 | 0.1 |
| Puerto Rican | 130310 | 15.5 | 8.1 | 1.2 | 0.2 | 3.5 | -2.9 | 0.3 |
| Total | 8419151 | IMR_{total} | 6.7 | | | T = 73.7 | MLD = 63.3 | STI = 68.5 |

Note: the proportions, p_j , are multiplied by 1000 to attain numbers identical to those produced by HD*Calc.

DISPARITIES IN INFANT MORTALITY IN THE US, 1989-2005

PRETERM INFANT MORTALITY

1989-1990

| Equal weight | | | | | T | MLD | STI | |
|----------------------------|---------------|----------------------------|------------------|--|-----------|-----------------------|--------------------|----------------------|
| | n | p_j | IMR _j | $r = \text{IMR}_j / \text{IMR}_{\text{total}}$ | $\ln r_j$ | $p_j * r_j * \ln r_j$ | $p_j * [-\ln r_j]$ | $(T + \text{MLD})/2$ |
| American Indian | -- | 111.1 | 50.1 | 1.1 | 0.1 | 16.6 | -14.6 | 1.0 |
| Asian and Pacific Islander | -- | 111.1 | 32.3 | 0.7 | -0.3 | -25.0 | 34.0 | 4.5 |
| Central/South American | -- | 111.1 | 38.1 | 0.9 | -0.1 | -13.7 | 15.9 | 1.1 |
| Cuban | -- | 111.1 | 43.3 | 1.0 | 0.0 | -1.6 | 1.7 | 0.0 |
| Mexican | -- | 111.1 | 36.0 | 0.8 | -0.2 | -18.1 | 22.0 | 2.0 |
| non-Hispanic Black | -- | 111.1 | 60.6 | 1.4 | 0.3 | 49.3 | -35.8 | 6.8 |
| non-Hispanic White | -- | 111.1 | 47.3 | 1.1 | 0.1 | 8.9 | -8.2 | 0.3 |
| Other/Unknown Hispanic | -- | 111.1 | 38.5 | 0.9 | -0.1 | -12.8 | 14.6 | 0.9 |
| Puerto Rican | -- | 111.1 | 49.1 | 1.1 | 0.1 | 13.8 | -12.4 | 0.7 |
| Total | 818780 | IMR_{total} | 43.9 | | | T = 17.3 | MLD = 17.2 | STI = 17.3 |

| Population weight | | | | | T | MLD | STI | |
|----------------------------|---------------|----------------------------|------------------|--|-----------|-----------------------|--------------------|----------------------|
| | n | p_j | IMR _j | $r = \text{IMR}_j / \text{IMR}_{\text{total}}$ | $\ln r_j$ | $p_j * r_j * \ln r_j$ | $p_j * [-\ln r_j]$ | $(T + \text{MLD})/2$ |
| American Indian | 8148 | 10.0 | 50.1 | 1.0 | 0.0 | 0.1 | -0.1 | 0.0 |
| Asian and Pacific Islander | 25107 | 30.7 | 32.3 | 0.7 | -0.4 | -8.5 | 13.0 | 2.2 |
| Central/South American | 15706 | 19.2 | 38.1 | 0.8 | -0.3 | -3.9 | 5.0 | 0.6 |
| Cuban | 2034 | 2.5 | 43.3 | 0.9 | -0.1 | -0.3 | 0.3 | 0.0 |
| Mexican | 70486 | 86.1 | 36.0 | 0.7 | -0.3 | -19.9 | 27.2 | 3.7 |
| non-Hispanic Black | 235961 | 288.2 | 60.6 | 1.2 | 0.2 | 71.9 | -58.6 | 6.6 |
| non-Hispanic White | 433989 | 530.0 | 47.3 | 1.0 | 0.0 | -22.4 | 23.5 | 0.5 |
| Other/Unknown Hispanic | 12699 | 15.5 | 38.5 | 0.8 | -0.2 | -3.0 | 3.9 | 0.4 |
| Puerto Rican | 14650 | 17.9 | 49.1 | 1.0 | 0.0 | -0.1 | 0.1 | 0.0 |
| Total | 818780 | IMR_{total} | 49.4 | | | T = 13.9 | MLD = 14.3 | STI = 14.1 |

Note: the proportions, p_j , are multiplied by 1000 to attain numbers identical to those produced by HD*Calc.

DISPARITIES IN INFANT MORTALITY IN THE US, 1989-2005

PRETERM INFANT MORTALITY

2005-2006

| Equal weight | | | | | T | MLD | STI | |
|----------------------------|----------------|----------------------------|------------------|-----------------------|-----------|---------------------|-------------------|-------------------|
| | n | p_j | IMR _j | $r=IMR_j/IMR_{total}$ | $\ln r_j$ | $p_j^*r_j^*\ln r_j$ | $p_j^*[-\ln r_j]$ | $(T+MLD)/2$ |
| American Indian | -- | 111.1 | 29.7 | 0.9 | -0.1 | -5.5 | 5.7 | 0.1 |
| Asian and Pacific Islander | -- | 111.1 | 27.3 | 0.9 | -0.1 | -13.2 | 15.1 | 1.0 |
| Central/South American | -- | 111.1 | 25.3 | 0.8 | -0.2 | -19.2 | 23.8 | 2.3 |
| Cuban | -- | 111.1 | 26.5 | 0.8 | -0.2 | -15.7 | 18.5 | 1.4 |
| Mexican | -- | 111.1 | 28.1 | 0.9 | -0.1 | -10.9 | 12.2 | 0.6 |
| non-Hispanic Black | -- | 111.1 | 51.3 | 1.6 | 0.5 | 89.8 | -54.8 | 17.5 |
| non-Hispanic White | -- | 111.1 | 29.1 | 0.9 | -0.1 | -7.8 | 8.4 | 0.3 |
| Other/Unknown Hispanic | -- | 111.1 | 27.1 | 0.9 | -0.1 | -13.9 | 16.1 | 1.1 |
| Puerto Rican | -- | 111.1 | 37.5 | 1.2 | 0.2 | 24.0 | -20.0 | 2.0 |
| Total | 1034314 | IMR_{total} | 31.3 | | | T = 27.6 | MLD = 25.0 | STI = 26.3 |
| Population weight | | | | | T | MLD | STI | |
| | n | p_j | IMR _j | $r=IMR_j/IMR_{total}$ | $\ln r_j$ | $p_j^*r_j^*\ln r_j$ | $p_j^*[-\ln r_j]$ | $(T+MLD)/2$ |
| American Indian | 11296 | 10.9 | 29.7 | 0.9 | -0.1 | -1.1 | 1.3 | 0.1 |
| Asian and Pacific Islander | 47251 | 45.7 | 27.3 | 0.8 | -0.2 | -7.5 | 9.2 | 0.8 |
| Central/South American | 36545 | 35.3 | 25.3 | 0.8 | -0.3 | -7.5 | 9.9 | 1.2 |
| Cuban | 4187 | 4.0 | 26.5 | 0.8 | -0.2 | -0.7 | 0.9 | 0.1 |
| Mexican | 158337 | 153.1 | 28.1 | 0.8 | -0.2 | -22.5 | 26.7 | 2.1 |
| non-Hispanic Black | 214729 | 207.6 | 51.3 | 1.5 | 0.4 | 136.6 | -89.0 | 23.8 |
| non-Hispanic White | 526180 | 508.7 | 29.1 | 0.9 | -0.1 | -61.9 | 71.3 | 4.7 |
| Other/Unknown Hispanic | 17715 | 17.1 | 27.1 | 0.8 | -0.2 | -2.9 | 3.6 | 0.3 |
| Puerto Rican | 18074 | 17.5 | 37.5 | 1.1 | 0.1 | 2.3 | -2.0 | 0.1 |
| Total | 1034314 | IMR_{total} | 33.42 | | | T = 34.7 | MLD = 31.8 | STI = 33.3 |

Note: the proportions, p_j , are multiplied by 1000 to attain numbers identical to those produced by HD*Calc.