

## Online Resource 1

### **Trends in Life Expectancy and Lifespan Variation by Educational Attainment: United States, 1990–2010**

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Table S1: Educational attainment composition by age, non-Hispanic white men 1990-2010

| Age   | 1990 |      |       |      |       | 2000 |      |       |      |       | 2010 |      |       |      |       |
|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|
|       | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total |
| 25-29 | 0.10 | 0.36 | 0.30  | 0.25 | 1.00  | 0.07 | 0.38 | 0.25  | 0.30 | 1.00  | 0.07 | 0.35 | 0.27  | 0.32 | 1.00  |
| 30-34 | 0.09 | 0.34 | 0.30  | 0.27 | 1.00  | 0.07 | 0.38 | 0.23  | 0.32 | 1.00  | 0.06 | 0.35 | 0.25  | 0.34 | 1.00  |
| 35-39 | 0.08 | 0.29 | 0.32  | 0.31 | 1.00  | 0.08 | 0.41 | 0.22  | 0.29 | 1.00  | 0.06 | 0.35 | 0.25  | 0.35 | 1.00  |
| 40-44 | 0.09 | 0.26 | 0.31  | 0.35 | 1.00  | 0.08 | 0.41 | 0.22  | 0.29 | 1.00  | 0.06 | 0.37 | 0.24  | 0.34 | 1.00  |
| 45-49 | 0.13 | 0.31 | 0.26  | 0.30 | 1.00  | 0.07 | 0.36 | 0.24  | 0.33 | 1.00  | 0.07 | 0.40 | 0.22  | 0.31 | 1.00  |
| 50-54 | 0.17 | 0.34 | 0.24  | 0.26 | 1.00  | 0.08 | 0.33 | 0.23  | 0.36 | 1.00  | 0.07 | 0.41 | 0.22  | 0.30 | 1.00  |
| 55-59 | 0.22 | 0.33 | 0.21  | 0.24 | 1.00  | 0.12 | 0.38 | 0.19  | 0.31 | 1.00  | 0.06 | 0.36 | 0.24  | 0.34 | 1.00  |
| 60-64 | 0.28 | 0.32 | 0.19  | 0.21 | 1.00  | 0.15 | 0.40 | 0.18  | 0.27 | 1.00  | 0.07 | 0.33 | 0.23  | 0.37 | 1.00  |
| 65-69 | 0.30 | 0.33 | 0.18  | 0.18 | 1.00  | 0.20 | 0.39 | 0.15  | 0.25 | 1.00  | 0.10 | 0.37 | 0.20  | 0.33 | 1.00  |
| 70-74 | 0.36 | 0.33 | 0.17  | 0.15 | 1.00  | 0.24 | 0.39 | 0.14  | 0.23 | 1.00  | 0.13 | 0.40 | 0.18  | 0.29 | 1.00  |
| 75-79 | 0.44 | 0.29 | 0.14  | 0.13 | 1.00  | 0.27 | 0.39 | 0.14  | 0.21 | 1.00  | 0.16 | 0.40 | 0.16  | 0.29 | 1.00  |
| 80-84 | 0.50 | 0.24 | 0.13  | 0.13 | 1.00  | 0.30 | 0.38 | 0.13  | 0.18 | 1.00  | 0.20 | 0.39 | 0.14  | 0.27 | 1.00  |
| 85-89 | 0.57 | 0.20 | 0.11  | 0.12 | 1.00  | 0.35 | 0.37 | 0.12  | 0.17 | 1.00  | 0.20 | 0.39 | 0.14  | 0.27 | 1.00  |
| 90+   | 0.60 | 0.19 | 0.10  | 0.10 | 1.00  | 0.43 | 0.30 | 0.10  | 0.17 | 1.00  | 0.24 | 0.40 | 0.13  | 0.24 | 1.00  |

Source: Author's calculation of the U.S. Census Integrated Public Use Microdata Sample and American Community Survey (Ruggles et al. 2010).

Table S2: Educational attainment composition by age, non-Hispanic white women 1990-2010

| Age   | 1990 |      |       |      |       | 2000 |      |       |      |       | 2010 |      |       |      |       |
|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|
|       | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total |
| 25-29 | 0.08 | 0.33 | 0.33  | 0.25 | 1.00  | 0.06 | 0.33 | 0.27  | 0.35 | 1.00  | 0.05 | 0.26 | 0.28  | 0.42 | 1.00  |
| 30-34 | 0.07 | 0.34 | 0.34  | 0.25 | 1.00  | 0.06 | 0.36 | 0.25  | 0.34 | 1.00  | 0.05 | 0.26 | 0.27  | 0.42 | 1.00  |
| 35-39 | 0.07 | 0.33 | 0.33  | 0.27 | 1.00  | 0.06 | 0.39 | 0.26  | 0.30 | 1.00  | 0.04 | 0.28 | 0.28  | 0.40 | 1.00  |
| 40-44 | 0.08 | 0.35 | 0.31  | 0.26 | 1.00  | 0.06 | 0.40 | 0.25  | 0.29 | 1.00  | 0.05 | 0.32 | 0.26  | 0.37 | 1.00  |
| 45-49 | 0.12 | 0.39 | 0.28  | 0.21 | 1.00  | 0.06 | 0.39 | 0.25  | 0.31 | 1.00  | 0.05 | 0.37 | 0.27  | 0.32 | 1.00  |
| 50-54 | 0.16 | 0.43 | 0.24  | 0.16 | 1.00  | 0.07 | 0.42 | 0.23  | 0.28 | 1.00  | 0.05 | 0.39 | 0.26  | 0.30 | 1.00  |
| 55-59 | 0.21 | 0.45 | 0.21  | 0.13 | 1.00  | 0.11 | 0.47 | 0.20  | 0.23 | 1.00  | 0.05 | 0.39 | 0.25  | 0.31 | 1.00  |
| 60-64 | 0.25 | 0.44 | 0.19  | 0.12 | 1.00  | 0.15 | 0.50 | 0.17  | 0.18 | 1.00  | 0.07 | 0.42 | 0.23  | 0.29 | 1.00  |
| 65-69 | 0.28 | 0.44 | 0.18  | 0.10 | 1.00  | 0.19 | 0.51 | 0.15  | 0.15 | 1.00  | 0.10 | 0.47 | 0.20  | 0.23 | 1.00  |
| 70-74 | 0.35 | 0.41 | 0.15  | 0.09 | 1.00  | 0.22 | 0.51 | 0.14  | 0.13 | 1.00  | 0.13 | 0.50 | 0.18  | 0.19 | 1.00  |
| 75-79 | 0.43 | 0.35 | 0.14  | 0.09 | 1.00  | 0.26 | 0.50 | 0.13  | 0.11 | 1.00  | 0.17 | 0.52 | 0.16  | 0.16 | 1.00  |
| 80-84 | 0.47 | 0.30 | 0.14  | 0.10 | 1.00  | 0.31 | 0.46 | 0.12  | 0.11 | 1.00  | 0.19 | 0.52 | 0.15  | 0.14 | 1.00  |
| 85-89 | 0.52 | 0.26 | 0.14  | 0.08 | 1.00  | 0.36 | 0.41 | 0.11  | 0.12 | 1.00  | 0.21 | 0.53 | 0.14  | 0.12 | 1.00  |
| 90+   | 0.56 | 0.25 | 0.12  | 0.07 | 1.00  | 0.41 | 0.36 | 0.11  | 0.13 | 1.00  | 0.27 | 0.48 | 0.13  | 0.13 | 1.00  |

Source: Author's calculation of the U.S. Census Integrated Public Use Microdata Sample and American Community Survey (Ruggles et al. 2010).

Table S3: Educational attainment composition by age, non-Hispanic black men 1990-2010

| Age   | 1990 |      |       |      |       | 2000 |      |       |      |       | 2010 |      |       |      |       |
|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|
|       | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total |
| 25-29 | 0.18 | 0.44 | 0.29  | 0.10 | 1.00  | 0.15 | 0.50 | 0.23  | 0.13 | 1.00  | 0.15 | 0.43 | 0.28  | 0.14 | 1.00  |
| 30-34 | 0.18 | 0.41 | 0.29  | 0.12 | 1.00  | 0.14 | 0.51 | 0.22  | 0.13 | 1.00  | 0.14 | 0.44 | 0.27  | 0.16 | 1.00  |
| 35-39 | 0.18 | 0.38 | 0.30  | 0.14 | 1.00  | 0.15 | 0.50 | 0.23  | 0.13 | 1.00  | 0.11 | 0.44 | 0.28  | 0.17 | 1.00  |
| 40-44 | 0.21 | 0.36 | 0.28  | 0.15 | 1.00  | 0.16 | 0.47 | 0.23  | 0.14 | 1.00  | 0.11 | 0.46 | 0.26  | 0.17 | 1.00  |
| 45-49 | 0.29 | 0.36 | 0.22  | 0.13 | 1.00  | 0.16 | 0.45 | 0.23  | 0.16 | 1.00  | 0.14 | 0.47 | 0.24  | 0.16 | 1.00  |
| 50-54 | 0.36 | 0.35 | 0.19  | 0.11 | 1.00  | 0.19 | 0.43 | 0.21  | 0.16 | 1.00  | 0.15 | 0.45 | 0.24  | 0.16 | 1.00  |
| 55-59 | 0.46 | 0.29 | 0.15  | 0.10 | 1.00  | 0.27 | 0.42 | 0.17  | 0.14 | 1.00  | 0.16 | 0.43 | 0.25  | 0.17 | 1.00  |
| 60-64 | 0.55 | 0.26 | 0.12  | 0.08 | 1.00  | 0.36 | 0.39 | 0.15  | 0.11 | 1.00  | 0.20 | 0.41 | 0.23  | 0.17 | 1.00  |
| 65-69 | 0.61 | 0.24 | 0.10  | 0.05 | 1.00  | 0.45 | 0.34 | 0.12  | 0.10 | 1.00  | 0.26 | 0.41 | 0.17  | 0.16 | 1.00  |
| 70-74 | 0.69 | 0.20 | 0.07  | 0.04 | 1.00  | 0.50 | 0.32 | 0.09  | 0.09 | 1.00  | 0.32 | 0.38 | 0.16  | 0.13 | 1.00  |
| 75-79 | 0.74 | 0.16 | 0.05  | 0.04 | 1.00  | 0.57 | 0.27 | 0.08  | 0.08 | 1.00  | 0.39 | 0.36 | 0.14  | 0.11 | 1.00  |
| 80-84 | 0.80 | 0.12 | 0.05  | 0.03 | 1.00  | 0.62 | 0.24 | 0.07  | 0.07 | 1.00  | 0.46 | 0.31 | 0.11  | 0.12 | 1.00  |
| 85-89 | 0.82 | 0.11 | 0.04  | 0.03 | 1.00  | 0.67 | 0.22 | 0.06  | 0.06 | 1.00  | 0.55 | 0.29 | 0.09  | 0.08 | 1.00  |
| 90+   | 0.84 | 0.09 | 0.04  | 0.03 | 1.00  | 0.71 | 0.20 | 0.05  | 0.05 | 1.00  | 0.60 | 0.22 | 0.08  | 0.11 | 1.00  |

Source: Author's calculation of the U.S. Census Integrated Public Use Microdata Sample and American Community Survey (Ruggles et al. 2010).

Table S4: Educational attainment composition by age, non-Hispanic black women 1990-2010

| Age   | 1990 |      |       |      |       | 2000 |      |       |      |       | 2010 |      |       |      |       |
|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|
|       | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total | 0-11 | 12   | 13-15 | 16+  | Total |
| 25-29 | 0.14 | 0.39 | 0.35  | 0.13 | 1.00  | 0.11 | 0.44 | 0.28  | 0.18 | 1.00  | 0.10 | 0.34 | 0.34  | 0.22 | 1.00  |
| 30-34 | 0.15 | 0.37 | 0.34  | 0.14 | 1.00  | 0.10 | 0.45 | 0.28  | 0.17 | 1.00  | 0.09 | 0.34 | 0.33  | 0.23 | 1.00  |
| 35-39 | 0.15 | 0.37 | 0.32  | 0.16 | 1.00  | 0.11 | 0.45 | 0.28  | 0.16 | 1.00  | 0.08 | 0.34 | 0.34  | 0.24 | 1.00  |
| 40-44 | 0.18 | 0.38 | 0.29  | 0.15 | 1.00  | 0.12 | 0.44 | 0.27  | 0.17 | 1.00  | 0.09 | 0.39 | 0.31  | 0.22 | 1.00  |
| 45-49 | 0.25 | 0.38 | 0.24  | 0.13 | 1.00  | 0.13 | 0.44 | 0.25  | 0.18 | 1.00  | 0.10 | 0.39 | 0.30  | 0.20 | 1.00  |
| 50-54 | 0.33 | 0.37 | 0.19  | 0.11 | 1.00  | 0.17 | 0.45 | 0.22  | 0.17 | 1.00  | 0.11 | 0.39 | 0.30  | 0.20 | 1.00  |
| 55-59 | 0.42 | 0.33 | 0.15  | 0.10 | 1.00  | 0.24 | 0.45 | 0.18  | 0.14 | 1.00  | 0.13 | 0.40 | 0.27  | 0.20 | 1.00  |
| 60-64 | 0.50 | 0.31 | 0.12  | 0.08 | 1.00  | 0.32 | 0.43 | 0.14  | 0.11 | 1.00  | 0.17 | 0.41 | 0.24  | 0.19 | 1.00  |
| 65-69 | 0.58 | 0.26 | 0.09  | 0.06 | 1.00  | 0.40 | 0.38 | 0.11  | 0.11 | 1.00  | 0.23 | 0.43 | 0.20  | 0.14 | 1.00  |
| 70-74 | 0.64 | 0.23 | 0.07  | 0.06 | 1.00  | 0.47 | 0.35 | 0.09  | 0.09 | 1.00  | 0.31 | 0.41 | 0.16  | 0.12 | 1.00  |
| 75-79 | 0.71 | 0.19 | 0.05  | 0.05 | 1.00  | 0.54 | 0.31 | 0.07  | 0.08 | 1.00  | 0.36 | 0.39 | 0.13  | 0.11 | 1.00  |
| 80-84 | 0.73 | 0.17 | 0.05  | 0.05 | 1.00  | 0.60 | 0.27 | 0.07  | 0.07 | 1.00  | 0.44 | 0.35 | 0.12  | 0.10 | 1.00  |
| 85-89 | 0.78 | 0.14 | 0.05  | 0.04 | 1.00  | 0.64 | 0.24 | 0.05  | 0.07 | 1.00  | 0.48 | 0.36 | 0.10  | 0.07 | 1.00  |
| 90+   | 0.80 | 0.12 | 0.05  | 0.03 | 1.00  | 0.68 | 0.20 | 0.05  | 0.06 | 1.00  | 0.54 | 0.30 | 0.07  | 0.09 | 1.00  |

Source: Author's calculation of the U.S. Census Integrated Public Use Microdata Sample and American Community Survey (Ruggles et al. 2010).

Table S5: Proportion reporting "12th grade, no diploma" among those with 9-12 years of schooling (no diploma), American Community Survey 2010

| Age   | Non-Hispanic White |       | Non-Hispanic Black |       |
|-------|--------------------|-------|--------------------|-------|
|       | Men                | Women | Men                | Women |
| 25-29 | 0.215              | 0.194 | 0.192              | 0.195 |
| 30-34 | 0.224              | 0.171 | 0.189              | 0.200 |
| 35-39 | 0.211              | 0.185 | 0.193              | 0.205 |
| 40-44 | 0.255              | 0.207 | 0.216              | 0.219 |
| 45-49 | 0.218              | 0.216 | 0.212              | 0.221 |
| 50-54 | 0.240              | 0.210 | 0.222              | 0.235 |
| 55-59 | 0.247              | 0.236 | 0.235              | 0.207 |
| 60-64 | 0.240              | 0.225 | 0.207              | 0.189 |
| 65-69 | 0.231              | 0.220 | 0.197              | 0.189 |
| 70-74 | 0.245              | 0.220 | 0.185              | 0.166 |
| 75-79 | 0.236              | 0.219 | 0.216              | 0.197 |
| 80-84 | 0.231              | 0.221 | 0.194              | 0.184 |
| 85-89 | 0.241              | 0.223 | 0.192              | 0.175 |
| 90+   | 0.286              | 0.221 | 0.233              | 0.180 |

Table S6: Replication of Olshansky et al. (2012) estimates of  $e_{25}^0$  for non-Hispanic white men and women, U.S. 1990-2010

| Years of schooling | Olshansky et al. 2012 |      |       |      | Sasson (replication) |      |       |      |
|--------------------|-----------------------|------|-------|------|----------------------|------|-------|------|
|                    | Men                   |      | Women |      | Men                  |      | Women |      |
|                    | 1990                  | 2000 | 1990  | 2000 | 1990                 | 2000 | 1990  | 2000 |
| 0-11               | 47.0                  | 45.3 | 54.5  | 51.4 | 46.7                 | 45.4 | 54.3  | 51.6 |
| 12                 | 46.5                  | 47.9 | 53.6  | 53.8 | 47.1                 | 47.9 | 54.0  | 53.8 |
| 13-15              | 53.5                  | 55.0 | 58.2  | 58.9 | 52.8                 | 55.1 | 57.9  | 59.0 |
| 16+                | 52.1                  | 54.7 | 56.4  | 58.4 | 51.6                 | 54.5 | 56.3  | 58.4 |
| Total              | 49.3                  | 51.0 | 55.4  | 55.6 | 49.3                 | 50.9 | 55.4  | 55.7 |

\* Results are based on data from the National Vital Statistics System and the Census Integrated Public Use Microdata Samples for 1990 and 2000. In order to replicate Olshansky et al. (2012) as closely as possible, the same coding scheme was adopted for educational attainment categories; because these authors did not report how they handled missing data on educational attainment, the latter were imputed by assuming equal risk of mortality across educational attainment groups subject to their relative proportion in the census population. The similarity between the replication and Olshansky et al. (2012) suggests that any remaining discrepancies between the latter and the results reported in the main text (e.g., Table 2) are driven by different educational attainment categorization and, to a lesser extent, the Bayesian imputation method (Eq. 1).

Figure S1: Age-at-death distribution by years of schooling, non-Hispanic white men 1990-2010

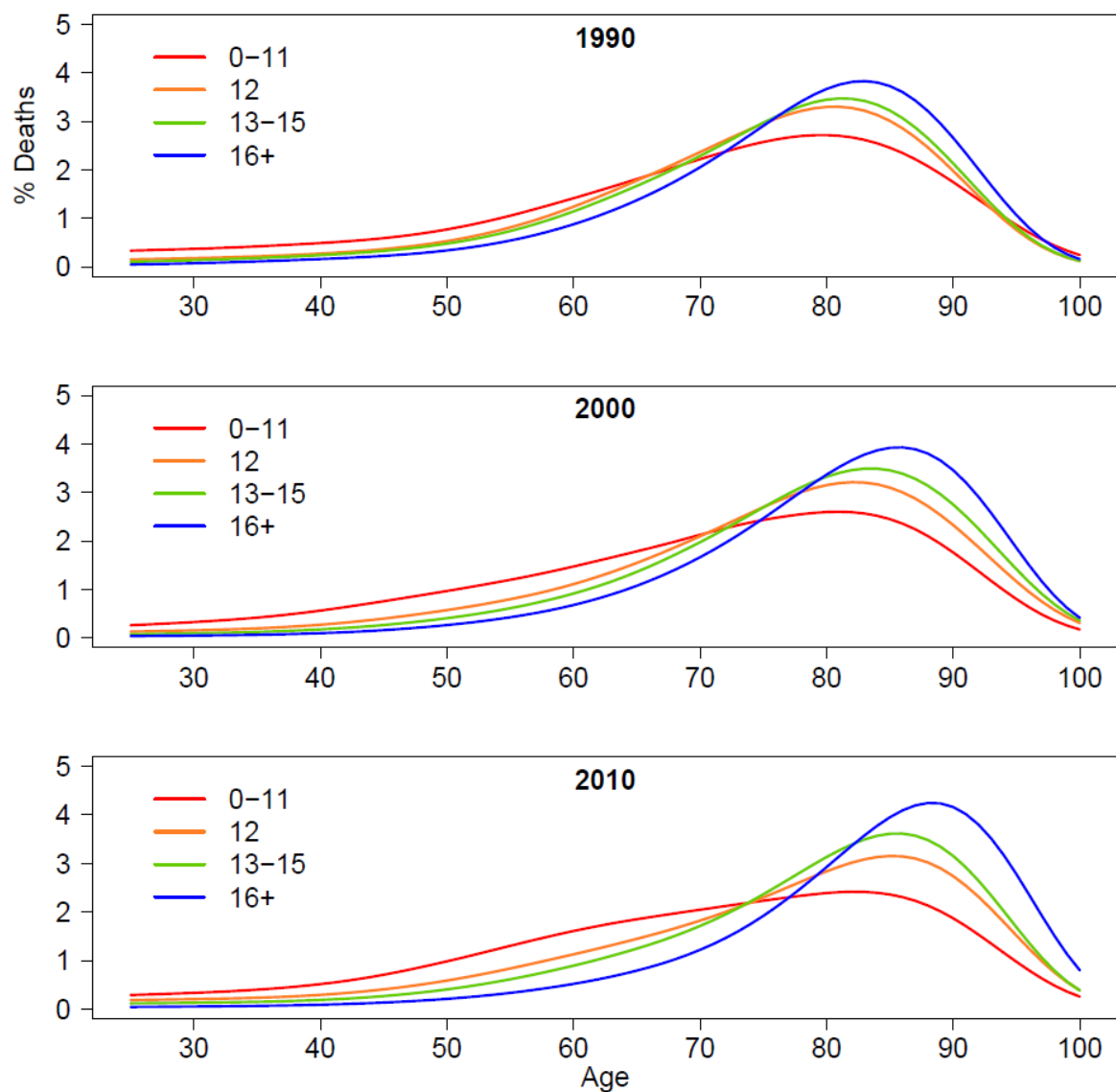




Figure S2: Age-at-death distribution by years of schooling, non-Hispanic white women 1990-2010

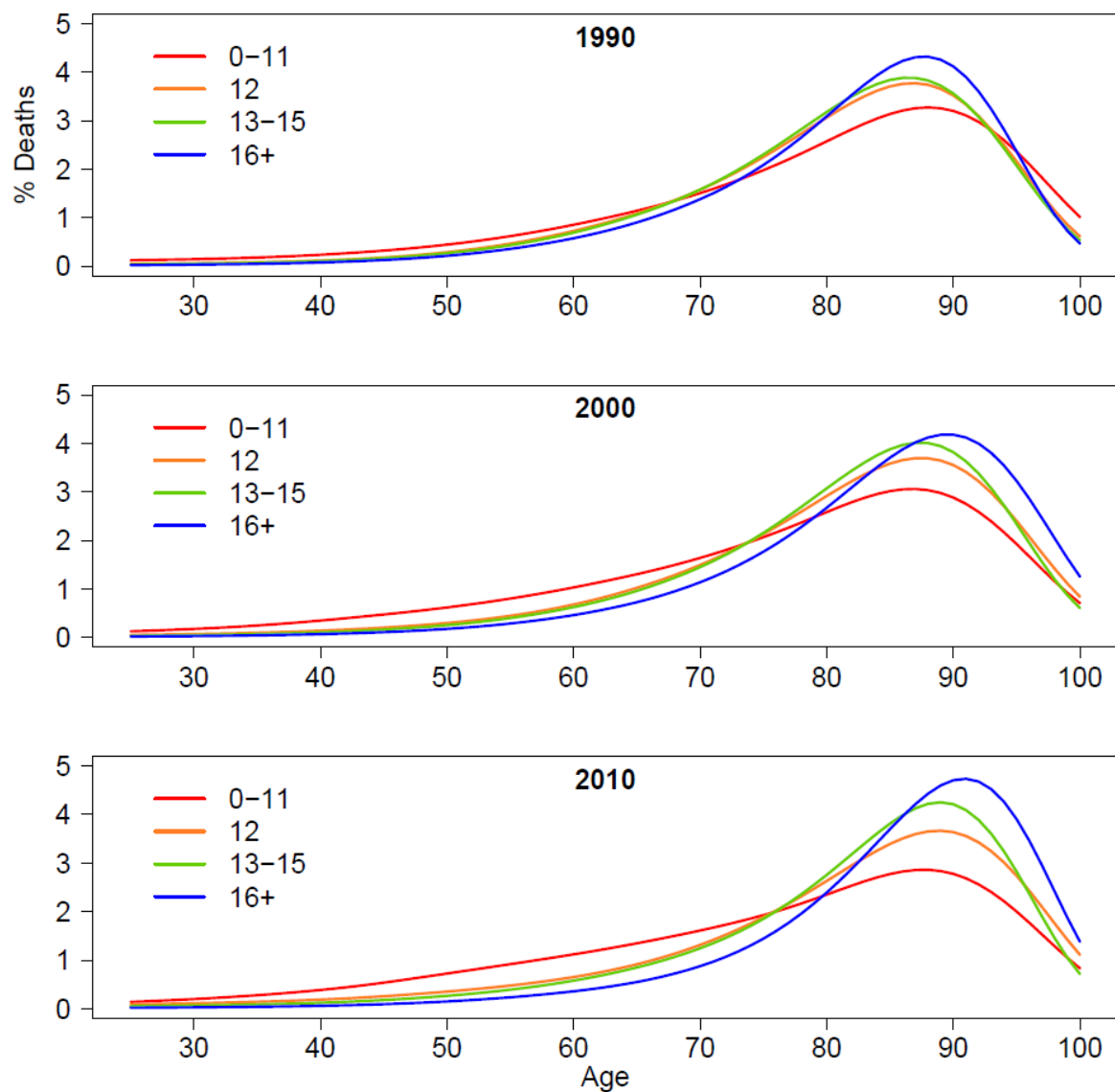


Figure S3: Age-at-death distribution by years of schooling, non-Hispanic black men 1990-2010

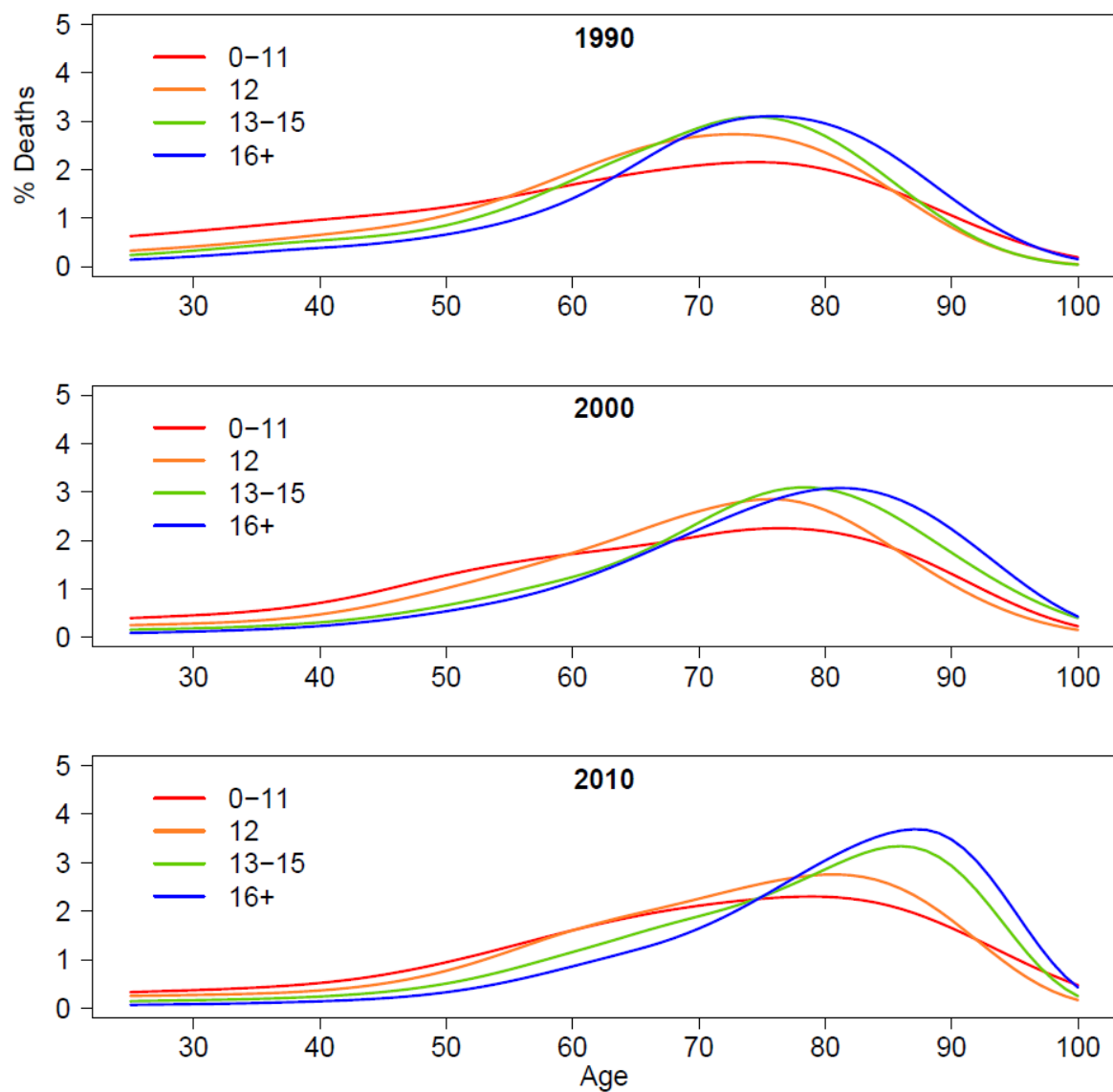


Figure S4: Age-at-death distribution by years of schooling, non-Hispanic black women 1990-2010

