**Additional file 5: Alternative model for constructing race/ethnic-specific life tables using dummy interaction terms**

$$log\left(d\_{x,i}\right)=β\_{0}+f\left(x\right)+\sum\_{i=2}^{n}\left(β\_{i}race\_{i}+g\left(x\\_race\_{i}\right)\right)+log\left(pyrs\_{x,i}\right)$$

where $x$ denotes age in years, $i$ denotes race/ethnicity, $d\_{x,i}$ denotes the age- and race/ethnic-specific counts of deaths in the population, $β\_{0}$ denotes the coefficient at baseline (i.e. the log of the mortality rate at the reference age for the reference race/ethnic group), $f(x)$ denotes a cubic spline function on age, $g(x\\_race\_{i})$ denotes a cubic spline function on the dummy interaction between $race\_{i}$ and age, $β\_{i} $denotes the main effect of $race\_{i}$ (i.e. how mortality differs at the reference age in race/ethnic group $i$ compared to the reference race/ethnic group, and $pyrs\_{x,i}$ denotes the age- and race/ethnic-specific person-years at risk in the population.

In addition to the knots on age specified in Additional file 1, four knots were initially specified for the interaction between each race/ethnicity and age, at the 25th, 50th and 75th percentiles of their distributions. An algorithm embedded in *mvrs* and based on AIC then identified the number of knots to be included in the final model for each.