

SPECIAL METHODS USED FOR SELECTED POPULATIONS

For the sake of comparability, we aim to follow the general principles described in the *Methods Protocol* for all populations included in the HMD. However, exact uniformity of methods is not always possible, because data at the required level of detail are not available in all situations. Therefore, in a few special cases, we have developed special methods to accommodate the realities of the available data. The populations listed below have been treated with special methods.

Population	Special method	For more details:
Belarus	The original death counts for all years were aggregated for ages 99+. Population estimates for almost extinct cohorts were derived using the survival ratio method at ages 85+ years.	See the “Data Quality Issues” section of the country-specific documentation
Belgium	Counts of live births (1895-1923, 1919) and infant deaths (1886-1955, 1958-60) were corrected to include false stillbirths. Special methods were implemented to accommodate missing deaths for 1914-18.	See Appendices 2 and 3 of the country-specific documentation
Bulgaria	Population estimates were constructed for 1989-1992 by treating official estimates for 1988 as a “pseudo-census” and then applying the intercensal survival method.	See the “Data Quality Issues” section of the country-specific documentation
Canada	Death counts were adjusted for missing information (e.g., sex, age, year of birth) and errors in the year of birth. In some cases, the original death counts were aggregated by Lexis triangle into the 1x1 format because of apparent data quality problems.	See the “Death Count Data, Specific Details” section of the country-specific documentation
Finland	Imputation of Lexis triangle for deaths in 1999-2009, when the year of occurrence was not provided (only year of registration, age, sex, and year of birth)	See Appendix 2 in the country-specific documentation
France	Counts of live births and infant deaths (1899-1974) were corrected to include false stillbirths. During the World Wars, estimates (deaths, population) were used to include the military population.	See the country-specific documentation
Germany	We used a special method to derive the intercensal population estimates for the period 1990–2011.	See Appendix 2 of the country-specific documentation
Germany, East and West	We used a special method to derive the intercensal population estimates for the period 1987–	See Appendix 2 of the country-specific documentation

Population	Special method	For more details:
	2011.	
Israel	The official annual population estimates for 1985-1995 and 1996-2007 were adjusted using a special method. Unlike the standard HMD method for producing inter-censal population estimates, this method takes into account the distribution of net-migration across years and cohorts within the inter-censal period.	See Appendix 2 of the country-specific documentation
Italy	The age distribution for death counts was estimated for years 1893-94. Census counts were adjusted for the years 1871, 1921, and 1951 to cover the same territory as the death counts. During the two World Wars, estimates of deaths and population were used to include the military population.	See the country-specific documentation (in particular Appendix 2)
Lithuania	The survival ratio method was used for ages 85+ rather than 90+ to derive population estimates for almost extinct cohorts. The original death counts were aggregated for ages 99+.	See the “Population Count Data, Specific Details” and “Data Quality Issues” sections of the country-specific documentation
New Zealand	The Māori and Non-Māori population counts were adjusted for 1991-1995 to follow the older definition of ethnicity. Due to the fact that deaths in 1995 are classified by a mixture of the previous and current definitions of ethnicity, a special adjustment factor was introduced for Māori and Non-Māori deaths. Census counts were adjusted for 1960 & 1970 to cover the <i>de jure</i> (“usual resident”) population.	See Appendix 2 of the country-specific documentation
Norway	The sex distribution for births was estimated for the years 1846-1915.	See the country-specific documentation
Portugal	The survival ratio method was used for ages 80+ rather than 90+ to derive population estimates for almost extinct cohorts.	See the “Population Count Data, Specific Details” section of the country-specific documentation
Russia	Prior to calculation of HMD estimates, i) the original death counts for 1959-1989 were aggregated for ages 99+, and ii) official population estimates in recent years were aggregated for ages 80+. Population estimates for almost extinct cohorts were derived using the	See Appendix 2 of the country-specific documentation

Population	Special method	For more details:
	survival ratio method for ages 80+ rather than 90+.	
Scotland	A special method was used to split population estimates by 5year age groups during WWI.	See the country-specific documentation
Spain	Counts of live births and infant deaths (1930-1974) were corrected to include false stillbirths. The census counts were adjusted for the years 1940, 1950, and 1960 to cover the <i>de facto</i> population and the same territory as death counts.	See the country-specific documentation
Sweden	Death counts were adjusted for the years 1863, 1865, 1868, and 1870 to match a secondary, more reliable (but less detailed) data source.	See the “Data Sources” section of the country-specific documentation
Switzerland	Death counts were adjusted for females for the year 1878.	See the “Death Count Data, Deaths at 99+” section of the country-specific documentation
Ukraine	Due to data quality issues at older ages in official statistics, population estimates in recent years were aggregated for ages 80+ years. Population estimates for almost extinct cohorts were derived using the survival ratio method for ages 80+ years rather than for ages 90+ years. In addition, prior to calculation of HMD estimates, the original death counts for 1959-1989 were aggregated for all ages 99+ years.	See the “Data Quality Issues, Age Heaping in Deaths” section of the country-specific documentation
United Kingdom	During the two World Wars, for England & Wales and for Scotland, estimates (deaths, population) were used to include the military population. For the civilian population, a special method was used to split population estimates by 5 year age groups during WWI and WWII.	See the country specific documentation
United States	The original mortality data are tabulated in a mix of Lexis triangles, single-years of age and five-year age groups to protect confidentiality for all years 1959-2013. Population estimates have been adjusted to exclude the Armed Forces overseas (1940-1969) and the population of Alaska and Hawaii (1950-1958). Births were adjusted for 1959 to include Hawaii. The extinct cohort method was used for ages 75+ (rather than 80+) during 1933-39 because official population estimates extend only to age 75+.	See the country-specific documentation