

# ABOUT MORTALITY DATA FOR SCOTLAND

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Last Revised: 26 April 2013

We are still working on the *Background and Documentation* file for Scotland. For a description of the original data used to estimate the mortality surface for Scotland, see Appendix 1.

## **DATA QUALITY ISSUES**

For the period around the two world wars, population estimates and death counts provided by the General Register Office cover the civilian population only. During World War I and World War II, the male population exhibits a sudden decline because the military is not included. There is a corresponding increase in the male population during the first post-war years due to demobilization.

Population estimates for the period around World War I are available by five-year age groups only. Unfortunately, the standard HMD method for splitting such data into single years of age does not work well due to the irregular implicit migration pattern. The following special procedure has been applied. First, the standard HMD method was applied to split the 1911 and 1921 census data into single years of age data. Next, a modified spline method was used to split population estimates data for the periods 1911-1921, 1921-1931, and 1931-1938. The same method has been used for England & Wales. For a detailed description of the method, see the *Background & Documentation* file for the Civilian Population of England & Wales (Appendix 2).

Population estimates for the period 1855-1860 are pre-censal population estimates calculated according to the HMD methodology (assuming zero net-migration). In addition, life expectancies at ages 65 and 80 seem to be unreasonably high (if compared to Sweden) at least until the mid-1870s (Appendix 2, Figure 1).

The population estimates for 2001-2011 are post-censal estimates based on the 2001 census data. For the years 2003-2006, these post-censal population estimates were adjusted by the General Register Office for Scotland to include unregistered immigration using special methods and data sources. During the period 2001-2011 the U.K. experienced large immigration flows which were partly unaccounted for by the official statistics (see *Background and Documentation file for England and Wales Total population*). At the time of the current update, the GRO Scotland and the ONS have not published revised inter-censal population estimates based on the 2011 census.

The compulsory registration of births began on July 1<sup>st</sup>, 1837. However, according to the U.K. Office for National Statistics (ONS) birth registration was incomplete until 1874.

Therefore, the quality of the data for 1855-1875 is assumed to be lower than in later years and should be used with caution.

## **ACKNOWLEDGEMENTS**

We would like to thank Frank Dixon and Ian Brown at the General Register Office for Scotland for their assistance in compiling these data. We are also very grateful to James Oeppen (Max Planck Institute for Demographic Research) for his expert advice on the data for Scotland

## APPENDIX 1:

### DESCRIPTION OF DATA USED FOR LEXIS DATABASE

#### DEATHS

Period	Type of Data	Age grouping	RefCode
1855-1962	Annual number of deaths to the <i>de facto</i> population, by sex and age groups ( <i>nx1</i> rectangles)	0, 1, 2, 3, 4, 5-9, ..., 100+, unknown	2
1963-2011	Annual number of deaths to the <i>de facto</i> population, by sex and age groups (1x1 rectangles)	0, 1, 2, ..., maximum age attained, unknown	3, 4, 5, 6, 7, 8, 18, 21

#### POPULATION

Period	Type of Data	Age grouping	Comments	RefCode
1861, 1871, 1881, 1891, 1901	Census counts	0, 1, 2, 3, 4, 5-9, ..., 105+, unknown	<i>de facto</i> population	9, 10, 11,
1911, 1921	Census counts	0, 1, 2, 3, 4, 5-9, ..., 95-99, 100+, unknown	<i>de facto</i> population	12
1931	Census counts	0, 1, 2, 3, ..., 100+, unknown	<i>de facto</i> population	13
1912-1938	Annual mid-year population estimates (of permanent residents)	0-4, 5-9, ....., 85+, unknown	The data for 1912-20 exclude the military population	14
1939-1970	Annual mid-year population estimates (of permanent residents)	0,1,2,3,.....,85+, unknown	The data for 1939-50 exclude the military population	15
1971-2011	Annual mid-year population estimates (of permanent residents)	0,1,2,3,.....,90+, unknown		15, 16, 19, 22

#### BIRTHS

Period	Type of Data	RefCode
1855-2011	Annual live birth counts, by sex	1, 17, 20

## APPENDIX 2:

Figure 1. Female life expectancy at ages 65 and 80 in Scotland and Sweden, 1855-2011.

