Provisional Abstract

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Seasonality of mortality in Germany since 1950 and the identification of exceptional events (like the summer heat wave of August 2003)

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Classical writers of demography identified seasonal variation for all demographic variables including mortality. The pattern of seasonality of mortality above age 1 (winter peaks, summer trough) is in principle unchanged but declined in strength. Even infant mortality does – now other than in the 19th century – show an identical distribution.

Extreme fluctuations in the number of deaths caused by epidemics, still frequent during the 19th century, disappeared with a few exceptions in 20th century. After Second World War extreme values of mortality became an exception. Like in many other European countries ten thousand of deaths were attributed to the consequences of the August 2003 heat wave in Germany as well as in other countries. To clarify the death burden of this (and other) extraordinary events we must compare observed and expected mortality. Expected mortality is the number of deaths for a given month taking into account its normal seasonal component. Mortality data from the German Statistical Office (East and West) from 1948 to 2004 were used to calculate the seasonal pattern of mortality in Germany using the Hodrick-Prescott filter.

We conclude that most of what happened during the 2003 heat wave in Germany was no more than a short term reaction in the date of death (harvesting-effect) and had only minor consequences on annual mortality.