The Human Cause-of-Death Database
Free access to coherent time series of cause-specific mortality

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The Human Cause-of-Death Database
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The Human Cause-of-Death Database (HCD) is a joint project of the French Institute for Demographic Studies (INED) in Paris, France and the Max Planck Institute for Demographic Research (MPIDR) in Rostock, Germany, based at the MPIDR. We seek to provide free and user-friendly access to detailed series of cause-specific mortality for researchers, students, journalists, policy analysts, and others interested in analysis of cause-of-death patterns. In contrast to other existing databases on causes of deaths, we provide time series with causes of death classified according to a constant (fixed) list/classification of causes of death. The main goal of the database is to document trends of cause-specific mortality and to facilitate research on their comparative analyses.

Although in each country the original series of vital statistics are based on the currently acting classifications of causes of death, we provide reconstructed data according to the most recent version of the classification in use (see Background for details). We pay special attention to rigorous data checking and documentation and to warranting data comparability across time and countries by means of universal and standardized methodology. Due to peculiarities of the original national cause-of-death nomenclatures and procedures, computational procedures may be somewhat modified accordingly. Respective country-specific information is given in the Background and Documentation text for the country in question.

At present the database contains continuous data series for the following 16 countries:

Detailed data by country			
Belarus	Czech Republic	England & Wales	Estonia
France	Germany	Japan	Latvia
Lithuania	Moldova	Poland	Romania
Russia	Spain	Ukraine	USA

The HCD data series will be updated regularly. For more information, please begin by reading an overview of the database. If you have any comments or questions, or trouble gaining access to the data, please write to us.

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Russia
Death Counts and Death Rates

	Full list	Intermediate list	Short list
Death counts by age	-	1965 - 2014	1965 - 2014
Age-specific death rates	1965 - 2014	1965 - 2014	1965 - 2014
Crude death rates	1965 - 2014	1965 - 2014	1965 - 2014
Standardized death rates	1965 - 2014	1965 - 2014	1965 - 2014
Ill-defined death counts	-	1965 - 2014	1965 - 2014

Population Exposures and Birth Counts

	Available data
Population exposures	1965 - 2014
Birth counts	1965 - 2014

All country data in one zip file ZIP

Country page last updated: 2016-01-21

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CAUSE-OF-DEATH LISTS
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BACKGROUND

The Human Cause-of-Death Database (HCD) is a joint project of the French Institute for Demographic Studies (INED) in Paris, France, and the Max Planck Institute for Demographic Research (MPIDR) in Rostock, Germany, based at the MPIDR.

The main goal of the HCD is to provide access to detailed high-quality data on cause-specific mortality to a broad audience of users. In contrast to other existing databases on causes of death, the HCD provides time series with a coherent classification of causes, based on ICD-10. For comparability purposes, we provide mortality data classified according to a short list and an intermediate list of causes of death, identical for all countries. In addition, a detailed list is provided, which varies according to country-specific availability.

The following features make the HCD particularly attractive to its users:
- Continuous data series with coherent cause-of-death classification;
- Availability of basic age-standardized indicators
- Detailed documentation
- Free and easy access to all data
- A uniform and easy to use format of data files

TYPES OF DATA IN THE HCD

Detailed data by causes of death

The HCD includes sex and age-specific death counts and death rates, crude death rates and standardized death rates by causes of death, after redistribution of ill-defined causes of death (according to country-specific methods described in the Background and Documentation for each country). Causes of death are classified according to three lists: short, intermediate and full.

The full list is country-specific; it includes 4- or 3-digit items of ICD-10 or equivalent country-specific lists. For comparability, we also provide mortality data classified according to intermediate and short lists of causes of death, which are identical for all countries. **The intermediate list** consists of 104 items compared to 16 in the **short list.**

Population exposures and birth counts

The source for these data is the Human Mortality Database (www.mortality.org). In some cases we correct infant mortality and, respectively, birth counts

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THE METHOD OF RECONSTRUCTION

Cause-of-death time series are disrupted by periodical changes in the disease classifications. This limits mortality analysis and only allows to analyze cause-specific time-trends for a short period (covered by the same classification) or only for broad groups of causes of death.

To reconstruct consistent series, it is necessary to establish transition coefficients between items of two successive classifications, in order to redistribute deaths classified according to the old classification into items of the new classification. When bridge coding (double classification of deaths simultaneously into the old and new classification) has been performed, transition coefficients can be inferred directly from the results, but there are only two countries in the database where this has been done (and only for the transition from ICD-9 to ICD-10), namely England and Wales and the U.S.A. For the other transitions coherent time series are reconstructed by producing ex-post double coding. The method developed at INED in the 1980s is used as a guideline, but the work was tailored to each country independently.

For each classification change, the method comprises three steps (Vallin and Meslé, 1988, 1998; Meslé and Vallin, 1996):
- Setting up a correspondence table which lists, for each item of one classification, all items of the succesive one that are a priori equivalent in terms of medical content.
- Building fundamental associations of items that identify the smallest possible number of items containing the same medical contents in both classifications and testing the consistency of the associations over time using a statistical test (Barbieri, Chung, and Boe, 2008; Camarda, Peccholdová, and Meslé, 2015).
- Setting up ex-post double-coding according to the structure of fundamental associations, to finally obtain transition coefficients.

The results derived from the medical logic of the classification rules **have to be checked statistically**, to detect and solve any remaining breaks in the series. Such checks are carried out by age group and sex.

In addition, national statistical offices introduce occasional changes independent of the official revisions of the classification. To address this problem, the statistical continuity of the series over time is systematically verified and any artificial disruption dealt with appropriately.

Finally country- and time-specific methods are used **to deal with ill-defined causes** (Ledermann, 1955; Vallin and Meslé, 1988).

Figure 1. Leukemia mortality trend in Russia before (left) and after reconstruction (right), age-standardized rates per 100 000
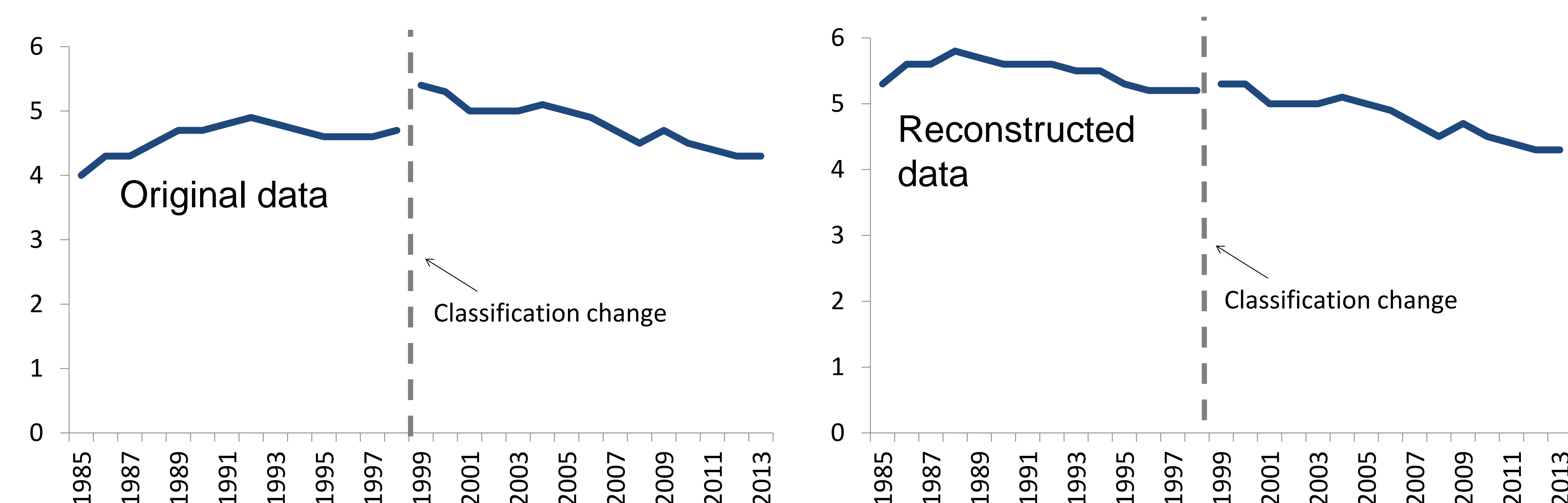
DATA AVAILABILITY

Country	Period
Belarus	1965-2016
Czech Republic*	1994-2016
England and Wales*	2001-2016
Estonia	1955-2012
France*	2000-2015
Germany*	1998-2015
Japan*	1995-2015
Latvia	1956-2012

Country	Period
Lithuania	1956-2012
Moldova	1965-2014
Poland	1959-2016
Romania	1980-2012
Russia	1965-2014
Spain	1980-2012
Ukraine	1965-2013
USA*	1999-2013

Currently, we have several countries with short data series starting with the introduction of ICD-10 in the country. We are working on data reconstruction for these countries, and in the near future these data will be replaced by longer, reconstructed time series with constant classification of causes.

ACKNOWLEDGEMENTS

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