MPIDR-NES Training Programme

Moscow, New Economic School,14th January - 1st February 2013

Population and Health

Лекция 6. Источники данных и системы классификации
Lecture 6. Data sources and classification systems

MAX PLANCK INSTITUTE FOR DEMOGRAPHIC RESEARCH
MAX-PLANCK-INSTITUT FÜR DEMOGRAFISCHE FORSCHUNG

РЭШ
Российская экономическая школа

Data sources: advantages of population-level mortality data

❖ **Advantages of using population-level *mortality* data:**

- ❑ Data cover whole populations and give more precise picture of health patterns of populations;
- ❑ Data are collected via centralized systems using uniform methodology and procedures;
- ❑ Based on uniform (international) definitions and classifications;
- ❑ Health is measured by strictly defined criterion (death) which is comparable across countries and in time;
- ❑ Special methods allow combining population-level mortality data with additional health characteristics (morbidity, disability, …) from other sources and derive *complex population-based health indicators* accounting for both mortality and health status.

❖ **Limitations**

- ❑ Requires fully functioning and costly data collection system.

Data sources: increasing variety of data on population health

Growing need for high quality population health data versus reality:

- **Increasing variety of data sources, data collection methods, and variables measuring health outcomes …**

  … but reliable high quality data on population health are still available only for few developed countries.

- **National and international health surveys cover many countries (including developing countries) and address a wider range of health issues…**

***… but many problems remain as these surveys still have serious limitations*:**

- *variety in sample sizes, methodology and definitions…*
- *findings are not always comparable across countries and in time;*
- *they often do not cover people in institutions and marginal population groups;*
- *or restricted to some (the only accessible) areas or sub-populations.*

Data sources: why we focus only on the developed countries?

Estimated completeness of population- based mortality data

Proportion of all deaths which are covered by the vital registration system

	Year	Completeness (%)
Albania	2004	58
Armenia	2003	68
Azerbaijan	2004	71
Belarus	2003	100
Brazil	2004	84
Colombia	2005	81
Ecuador	2005	70
Georgia	2001	85
Kazakhstan	2006	89
Kyrgyzstan	2006	89
Nicaragua	2005	61
Peru	2000	67
Tajikistan	2005	60
Turkmenistan	1998	81

Most of the developed countries show 99-100% of completeness of registrations of deaths.

Many developing countries show even worse figures than those in this table or do not have functioning registration systems at all.

Health/mortality survey data sometimes give very different outcomes on the same population.

In many cases demographic surveillance sites cover relatively small groups within populations. Results cannot be extrapolated to the national level.

Source: WHO, 2013 (http://apps.who.int/gho/data/#).

Sources of population-level death statistics
Systems of registration of deaths in developed countries

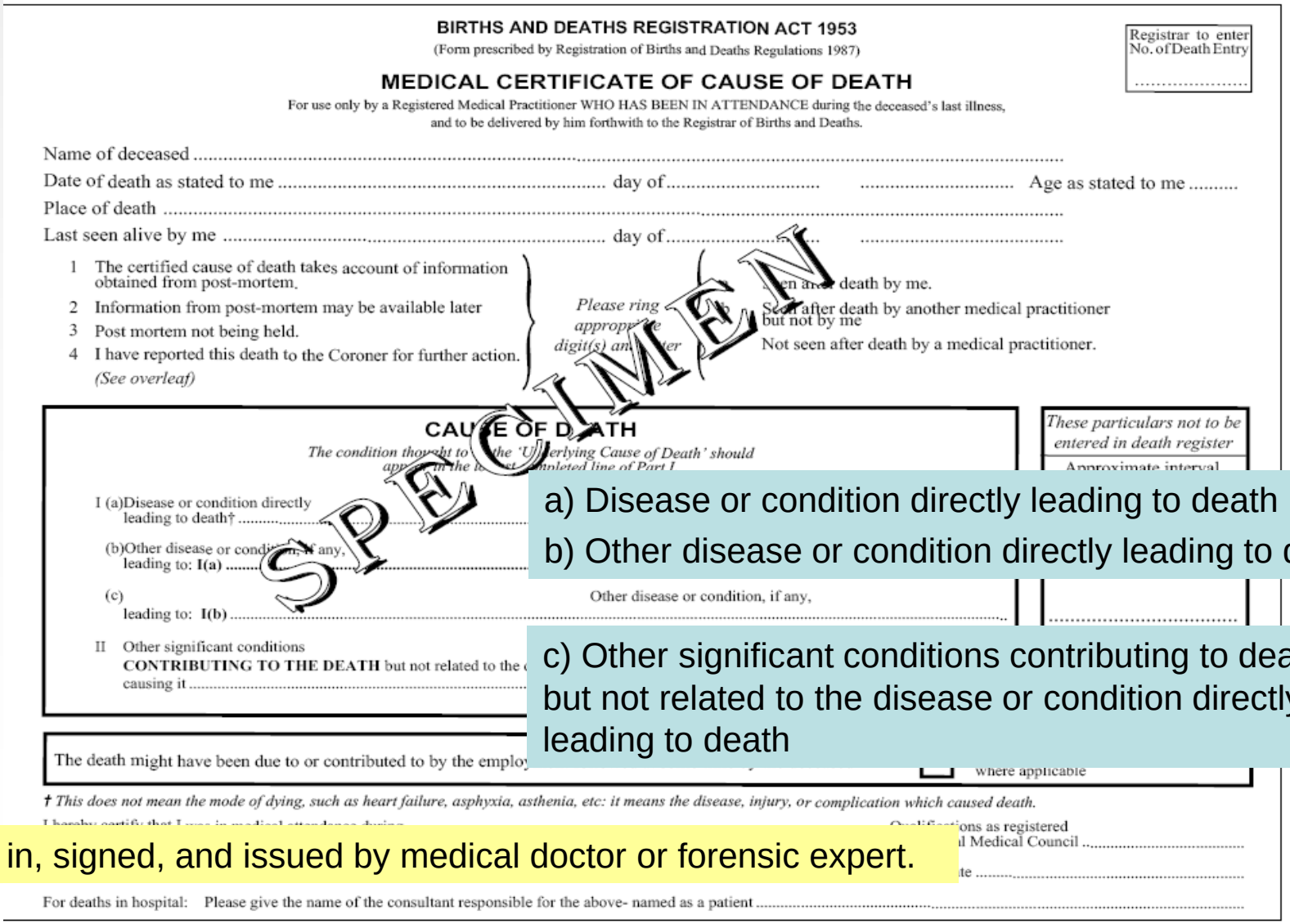
❖ Civil registration:

- ❑ a *continuous, permanent, and obligatory recording system of the events* which establish or change an individual civil status (specified in the civil code) such as birth, death, marriage, …
- ❑ Provides legal documents and *has* a *statistical function and is a primary data source for vital events* (including deaths).
- ❑ Usually provides very limited additional information (e.g. on socio-economic characteristics (age, cause of death, place of birth & residence, sometimes – education and marital status).

❖ Population register:

- ❑ a permanent and continuous system *based on the linkage of individual records of demographic and social information on each individual and households* in a given territory.
- ❑ regularly and rapidly updated by the recording observed *changes* in the civil or socio-economic status;
- ❑ can provide at any time an estimate of the population or any event (deaths) by various socio-economic characteristics;
- ❑ only few countries have fully functioning population registers which cover the whole population (Nordic countries, the Netherlands).

Sources of population-level death statistics
Medical death certificate: an example of England & Wales



BIRTHS AND DEATHS REGISTRATION ACT 1953

(Form prescribed by Registration of Births and Deaths Regulations 1987)

Registrar to enter No. of Death Entry .....

MEDICAL CERTIFICATE OF CAUSE OF DEATH

For use only by a Registered Medical Practitioner WHO HAS BEEN IN ATTENDANCE during the deceased's last illness, and to be delivered by him forthwith to the Registrar of Births and Deaths.

Name of deceased .....

Date of death as stated to me ..... day of .... Age as stated to me .....

Place of death .....

Last seen alive by me ..... day of .....

1 The certified cause of death takes account of information obtained from post-mortem.
2 Information from post-mortem may be available later
3 Post mortem not being held.
4 I have reported this death to the Coroner for further action.
(See overleaf)

Please ring appropriate digit(s) and letter

a) Seen after death by me.
b) Seen after death by another medical practitioner but not by me
c) Not seen after death by a medical practitioner.

SPECIMEN

CAUSE OF DEATH

The condition thought to be the 'Underlying Cause of Death' should appear in the last completed line of Part I

These particulars not to be entered in death register

Approximate interval

I (a) Disease or condition directly leading to death† .....

(b) Other disease or condition, if any, leading to: I(a) .....

(c) Other disease or condition, if any, leading to: I(b) .....

II Other significant conditions **CONTRIBUTING TO THE DEATH** but not related to the causing it .....

a) Disease or condition directly leading to death

b) Other disease or condition directly leading to death

c) Other significant conditions contributing to death but not related to the disease or condition directly leading to death

The death might have been due to or contributed to by the employ... where applicable

† *This does not mean the mode of dying, such as heart failure, asphyxia, asthenia, etc: it means the disease, injury, or complication which caused death.*

...ons as registered ...l Medical Council .....

...te .....

For deaths in hospital: Please give the name of the consultant responsible for the above- named as a patient .....

Filled in, signed, and issued by medical doctor or forensic expert.

Source: National Statistical Office, 2007.

Sources of population-level death statistics
Death certificate: examples of England and Wales

Death certificate is issued by the civil registration institution (General Register Office). This document includes the following information:

- Date and place of death
- Name and surname of the deceased
- Date and place of birth
- Occupation
- Usual address
- + information on (underlying and secondary) causes of death from medical death certificate

Individual death records database at national statistics / institutes

Aggregated mortality data releases available for public

Extract from the USA death certificate

Education

Race

Occupation

Business/industry

To Be Completed By: FUNERAL DIRECTOR

51. DECEDENT'S EDUCATION-Check the box that best describes the highest degree or level of school completed at the time of death.

- ☐ 8th grade or less
- ☐ 9th - 12th grade; no diploma
- ☐ High school graduate or GED completed
- ☐ Some college credit, but no degree
- ☐ Associate degree (e.g., AA, AS)
- ☐ Bachelor's degree (e.g., BA, AB, BS)
- ☐ Master's degree (e.g., MA, MS, MEng, MEd, MSW, MBA)
- ☐ Doctorate (e.g., PhD, EdD) or Professional degree (e.g., MD, DDS, DV

52. DECEDENT OF HISPANIC ORIGIN? Check the box that best describes whether the decedent is Spanish/Hispanic/Latino. Check the "No" box if decedent is not Spanish/Hispanic/Latino.

- ☐ No, not Spanish/Hispanic/Latino
- ☐ Yes, Mexican, Mexican American, Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, other Spanish/Hispanic/Latino (Specify) _____

53. DECEDENT'S RACE (Check one or more races to indi
decedent considered himself or herself to be)

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native (Name of the enrolled or principal tribe) _____
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Vietnamese
- ☐ Other Asian (Specify) _____
- ☐ Native Hawaiian
- ☐ Guamanian or Chamorro
- ☐ Samoan
- ☐ Other Pacific Islander (Specify) _____
- ☐ Other (Specify) _____

54. DE ione during most of working life. DO NOT USE RETIRED).

55. K

Coding causes of death in medical death certificate
Classifications of causes of death

International Classification of Diseases by WHO (since 1948):

The ICD is the international standard diagnostic classification for all general epidemiological, many health management purposes and clinical use.

It is used to **classify diseases and other health problems** recorded on many types of health and vital records including death certificates and health records.

ICD changes in time!
The most recent classification is ICD-10 **(International** Statistical **Classification of Diseases** and Related Health Problems**, Tenth Revision).**

The ICD-10 is divided into 21 big chapters (groups of diseases/problems) and includes 10000! items (exact diseases or problems).
http://apps.who.int/classifications/icd10/browse/2010/en

Problem of comparability between different classifications (e.g. from 203 items in ICD0 to ~10000 in ICD10: some items are not corresponding between each ICDs or are located in different chapters.

Problems of comparability across countries and in time!
More details and some solutions - during the lectures 13-14 by France Meslé.

Examples of grouping causes of death for research purposes

Concept of avoidable causes of death:

1. Causes amenable to medical interventions or treatable causes – (due to early detection, prevention and modern medical treatments) (e.g. “Birth trauma and asphyxia”, “Appendicitis” or “Breast cancer”).

2. Causes avoidable through primary prevention (national health policies): (e.g. “Malignant neoplasm of trachea bronchus and lung”, “cirrhosis of liver”, “transport accidents”).

Note: there is an upper age limit (for most of the causes ~75 years).
For more details see: Nolte & McKee, 2004.

Concept of “man-made” diseases:

These are causes of death related to life style or psychosocial factors.
Alcohol- and smoking related causes of death (e.g. “poisoning by alcohol”, “lung cancer” , “traffic accidents”, “suicides”, and “homicides”).
Meslé & Vallin, 2004.

Other important classifications by WHO

International Classification of Functioning, Disability and Health (ICF).

ICF is a classification of health and health-related domains. These domains are classified from body, individual and societal perspectives by means of two lists: a list of body functions and structure, and a list of domains of activity and participation. Since an individual's functioning and disability occurs in a context, the ICF also includes a list of environmental factors.

http://apps.who.int/classifications/icfbrowser/

Data sources on mortality and health

1. Databases on mortality statistics.

2. Databases on morbidity, disability, and health risk factors.

Data sources on mortality statistics: international databases

The Human Mortality Database (http://www.mortality.org)

Department of Demography at the University of California, Berkeley	Max Planck Institute for Demographic Research

- First launched in May 2002 with 17 countries
- Currently 37 countries or areas and 9000+ users

Main principles

- Easy and free access via the internet, user-friendly format of data
- Data comparability across countries and time
- Uniform methods to calculate mortality estimates
- Careful documentation of data sources and computational methods:

  ➔Methods protocol: http://www.mortality.org/Public/Docs/MethodsProtocol.pdf
- Uniform and additional country-specific data quality checks

The Human Mortality Database (www.mortality.org)
The raw (original) data

1) The original data received from national statistical offices:

- *Births* (by sex)
- *Deaths* (by age & birth cohort, and sex)
- *Population estimates or census counts* by age, and sex
- *Background and documentation files* (overview of specifics of data collection systems, a special focus on data quality), references, and notes.

An example of input data file on deaths

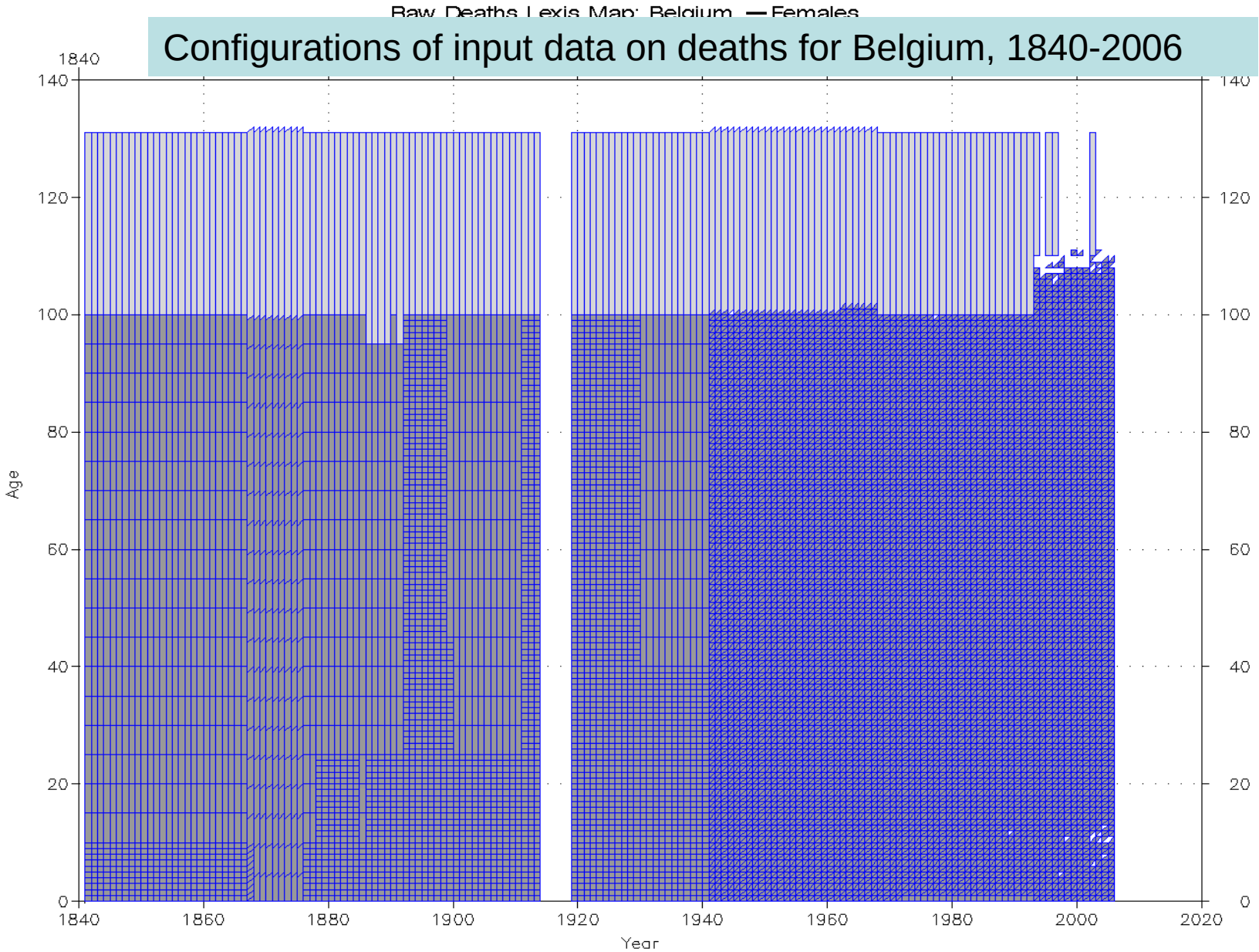
Read “Structure of data files section”!

PopName	Area	Year	YearReg	YearInterv	Sex	Age	AgeInterva	Lexis	RefCode	Access	Deaths	NoteCod	NoteCode	NoteCode	LDB
BELTNP	10	1841	1841	1	f	0	1	RR	49	O	9248	.	.	.	1
BELTNP	10	1841	1841	1	f	1	1	RR	49	O	4126	.	.	.	1
BELTNP	10	1841	1841	1	f	2	1	RR	49	O	2147	.	.	.	1
BELTNP	10	1841	1841	1	f	3	1	RR	49	O	1241	.	.	.	1
BELTNP	10	1841	1841	1	f	4	1	RR	49	O	869	.	.	.	1
BELTNP	10	1841	1841	1	f	5	1	RR	49	O	628	.	.	.	1
BELTNP	10	1841	1841	1	f	6	1	RR	49	O	565	.	.	.	1
BELTNP	10	1841	1841	1	f	7	1	RR	49	O	471	.	.	.	1
BELTNP	10	1841	1841	1	f	8	1	RR	49	O	372	.	.	.	1
BELTNP	10	1841	1841	1	f	9	1	RR	49	O	341	.	.	.	1
BELTNP	10	1841	1841	1	f	10	5	RR	49	O	1420	.	.	.	1
BELTNP	10	1841	1841	1	f	15	5	RR	49	O	1818	.	.	.	1
BELTNP	10	1841	1841	1	f	20	5	RR	49	O	1619	.	.	.	1

The Human Mortality Database (www.mortality.org)

The raw (original) data

Configurations of input data on deaths for Belgium, 1840-2006



The Human Mortality Database (www.mortality.org)
Adjustments for the input data

❖ Adjustments for the deaths and population estimates
- Distributing deaths and population of unknown age;
- Splitting deaths by single age into single age and birth cohort data;
- Splitting deaths and population by 5 year age groups into single age data;
- Splitting death counts in open age interval into single age and birth cohort.

❖ Special adjustments for population estimates
- backwards recalculated population estimates for ages 80+ using extinct cohorts or survivor ratio methods;
- in some cases: new inter-censal population estimates according to the HMD methodology.

❖ Special solutions and alternative data sources
- adjustments to territorial / definition changes;
- war periods and historical series.

The Human Mortality Database (www.mortality.org)

The HMD estimates: period & cohort death rates and life tables

+WARNING
+Background and Documentation (for Sweden)
+List of Data Sources (for Sweden)

Age x Year

1. Births 1749-2010
2. Deaths 1751-2010 Lexis triangles 1x1 5x1
3. Population size (January 1st)
1751-2011 1-year 5-year
4. Exposure-to-risk
By year of death (period)
1751-2010 1x1 1x5 1x10 5x1 5x5 5x10
By year of birth (cohort)
1676-1980 1x1 1x5 1x10 5x1 5x5 5x10

5. Death rates
By year of death (period)
1751-2010 1x1 1x5 1x10 5x1 5x5 5x10
By year of birth (cohort)
1676-1980 1x1 1x5 1x10 5x1 5x5 5x10

6. Life tables
By year of death (period) 1751-2010
Female 1x1 1x5 1x10 5x1 5x5 5x10
Male 1x1 1x5 1x10 5x1 5x5 5x10
Total 1x1 1x5 1x10 5x1 5x5 5x10
By year of birth (cohort) 1751-1919
Female 1x1 1x5 1x10 5x1 5x5 5x10
Male 1x1 1x5 1x10 5x1 5x5 5x10
Total 1x1 1x5 1x10 5x1 5x5 5x10

7. Life expectancy at birth
By year of death (period) 1751-2010
By year of birth (cohort) 1751-1919

Attention to data quality

- Special **diagnostic tools** for *internal and external plausibility* checks
- Comparisons of the HMD estimates to official data
- Additional checks by country specialists
- Data quality issues are documented in the Background & Documentation files and notes
- In case of unresolved problems or poor quality of the input data, **special warnings are given in the respective country pages**
- Special solutions for inter-censal population estimates, but no adjustments for coverage errors or age heaping problems

Kannisto-Thatcher Database on Old Age Mortality
at the Max Planck Institute for Demographic Research

- Was created to **provide detailed mortality and population data at advanced ages (80+) with the main goal is to document the longevity revolution at oldest ages and to facilitate research into its causes and consequences;**
- The core set of data was assembled, tested for quality, and converted into cohort mortality histories by Väinö Kannisto and Roger Thatcher;
- **The database contains detailed data (deaths and population by age, year of birth, and calendar year; complete life tables**) for 35 countries;
- Data are **comparable across countries and time due to uniform methods** to calculate mortality estimates;
- Data processing and the analysis of data trends **online (analysis toolkit);**
- Freely available online: http://www.demogr.mpg.de/databases/ktdb/

Analysis Toolkit: Output

Kannisto-Thatcher Database

File Edit View Favorites Tools

Back Forward

Address http://www.demogr.mpg.de/cgi-bin/databases/ktdb/ktdbp3.php?yb=1911&ye=2003&agr=1&ltw=1&x1=80&x2=90&ind=2&Submit22=Continue&c7=1&c13=1&ye1=2003

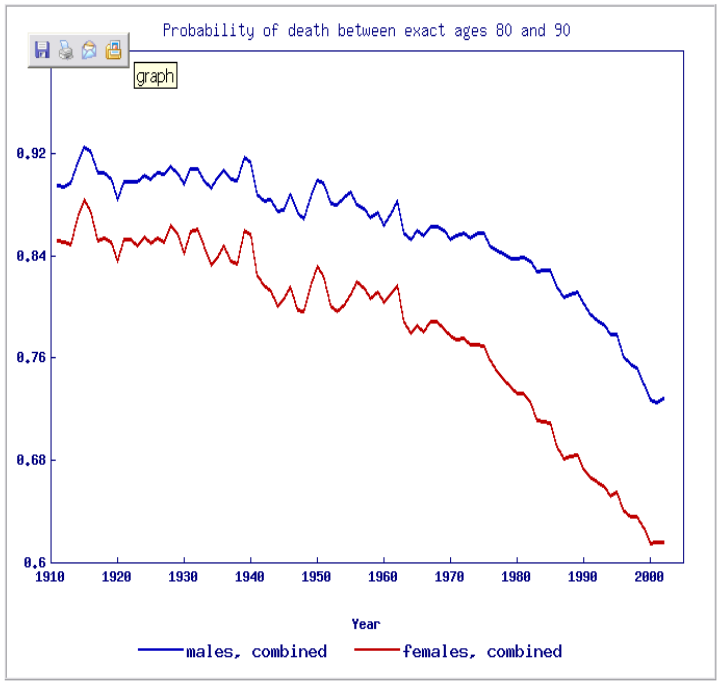
Links

Time period	1911 - 2002
Countries	England & Wales, Germany West
Output	Indicators aggregated by countries
CSV format	Probability of death between exact ages 80 and 90: $q_{80,90}$
Graphs	Graphic presentation of the trend
Method for aggregation	Summing up country-deaths and summing up country-populations

Probability of death between exact ages 80-90

First Year	Last Year	Ma
1911	1912	0.894
1912	1913	0.892
1913	1914	0.895
1914	1915	0.913
1915	1916	0.924
1916	1917	0.920
1917	1918	0.903
1918	1919	0.903
1919	1920	0.898
1920	1921	0.883
1921	1922	0.896
1922	1923	0.897
1923	1924	0.896
1924	1925	0.901
1925	1926	0.898
1926	1927	0.903
1927	1928	0.903
1928	1929	0.909
1929	1930	0.902
1930	1931	0.894

Countries: England & Wales, Germany West



Males ☑

Females ☑

Done

The WHO Mortality Database
Data on causes of death

http://www.who.int/whosis/mort/download/en/index.html

- **The biggest collection of data on age-specific mortality data by cause of death;**
- **Also covers developing countries;**
- **Data are classified by the International Classifications of Diseases (ICD);**
- **Long-term series since the 1950s (vary from country to country);**
- **Includes original data provided by national statistical institutes;**
- **No adjustments for input data or data quality checks;**
- **Only general documentation (codes of causes of death), little attention to country specifics;**
- **User unfriendly!**

The WHO Mortality Database
Data on causes of death

http://www.who.int/whosis/mort/download/en/index.html

Data files

Documentation [zip 87Kb]
Contains a Word file with information on the WHO Mortality Database, file specifications and list of causes of death. Last updated: 26 November 2012.

Availability [zip 149Kb]
Contains an Excel file with the list of countries-years available for the mortality and population data. Last updated: 26 November 2012.

Country codes [zip 3Kb]
Country codes and names. Last updated: 09 July 2012

Notes [zip 1Kb]
Notes pertaining to data for some countries-years. Last updated: 09 July 2012

Populations and live birth [zip 500Kb]
Reference populations and live births (for regular users, figures are now in units) Last updated: 26 November 2012.

Mortality, ICD-7 [zip 4.7Mb]
Data file containing the detailed mortality data for the seventh revision of the ICD (International Classification of Diseases). Last updated: 18 February 2004

Mortality, ICD-8 [5.3Mb]
Data file containing the detailed mortality data for the eighth revision of the ICD (International Classification of Diseases). Last updated: 09 July 2012

Mortality, ICD-9 [13.1Mb]
Data file containing the detailed mortality data for the ninth revision of the ICD (International Classification of Diseases). Last updated: 09 July 2012

Mortality, ICD-10 [zip 24.7Mb]
Data file containing the detailed mortality data for the tenth revision of the ICD (International Classification of Diseases). Last updated: 26 November 2012.

Documentation: very important!

Country codes

Population exposures

Deaths by cause (different classifications)

Note: very large files!

You will need STATA, SPSS, or other software + some computer resources.

The WHO Mortality Database

The structure of the database: deaths by cause of death

Country code

File: Country codes [zip 3Kb]”

Year

Country name

Number of classification of causes of death (ICD)

WHO classification of causes of death used in this database:

e.g. 08A –
abridged version of ICD8,
see **documentation** *for detail codes!*

3150	Israel	1975	08A	Icd8
3150	Israel	1976	08A	Icd8
3150	Israel	1977	08A	Icd8
3150	Israel	1978	08A	Icd8
3150	Israel	1979	09B	Icd9
3150	Israel	1980	09B	Icd9
3150	Israel	1981	09B	Icd9
3150	Israel	1982	09B	Icd9
3150	Israel	1983	09B	Icd9
3150	Israel	1984	09B	Icd9
3150	Israel	1985	09B	Icd9
3150	Israel	1986	09B	Icd9
3150	Israel	1987	09B	Icd9
3150	Israel	1988	09B	Icd9
3150	Israel	1989	09B	Icd9
3150	Israel	1990	09B	Icd9
3150	Israel	1991	09B	Icd9
3150	Israel	1992	09B	Icd9
3150	Israel	1993	09B	Icd9
3150	Israel	1994	09B	Icd9
3150	Israel	1995	09B	Icd9
3150	Israel	1996	09B	Icd9
3150	Israel	1997	09B	Icd9
3150	Israel	1998	104	Icd10
3150	Israel	1999	104	Icd10
3150	Israel	2000	104	Icd10
3150	Israel	2001	104	Icd10
3150	Israel	2003	104	Icd10

The WHO Mortality Database
The structure of the database: deaths by cause of death

Table 3. ICD 8 A-LIST (condensed) and

Extract from documentation

ICD-8 A-LIST (condensed)	Detailed List Numbers	Cause
A000		All causes
A001	000	Cholera
A002	001	Typhoid fever
A003	002, 003	Paratyphoid fever and other salmonella infections
A004	004, 006	Bacillary dysentery and amoebiasis
A005	008, 009	Enteritis and other diarrhoeal diseases
A006	010-012	Tuberculosis of respiratory system
A007	013	Tuberculosis of meninges and central nervous system
A008	014	Tuberculosis of intestines, peritoneum and mesenteric glands
A009	015	Tuberculosis of bones and joints

WHO codes

ICD codes

Data file “mortIcd8” -> rename -> add extension “.txt”, eg. mortIcd8.txt:
text file – comma separated format

Country	Admin1	SubDiv	Year	List	Cause	Sex	Frmat	IM_Frmat	Deaths1	Deaths2
1060			1980	08A	A000	1	7	8	1087	375
1060			1980	08A	A000	2	7	8	1194	313
1060			1980	08A	A001	1	7	8	0	0
1060			1980	08A	A001	2	7	8	0	0
1060			1980	08A	A002	1	7	8	4	0
1060			1980	08A	A002	2	7	8	14	1
1060			1980	08A	A003	1	7	8	3	1

The WHO Health for All Database
Some problems

- **Jumps in the series – attributable to the changes in the ICD classifications;**
- **Absence of data quality checks lead to mistakes – strange jumps, peaks, disruptions in the data series;**

More information will be provided during the lectures 13-14.

In order to extract data for countries / periods under your interest, use SPSS or STATA (insheet command).

B47	E800-E848	Transport accidents
B470	E800-E807	Railway accidents
B471	E810-E819	Motor vehicle traffic accident
B472	E826-E829	Other road vehicle accidents

Be careful – double-coding!
"B47" "Transport accidents" already includes "B470", "B471", "B472", …

The WHO Health for All Database
Extraction of particular causes of death

Codes are given in variable “Cause”: e.g. B470 – railway accidents

3 digits code: transformation of variable “cause” into the three variables:

cause1 – a letter code, e.g. “B”
cause2 – 2 digits code, e.g. “47”
cause3 – 1 digit last code, e.g. “0”

Possible algorithm in STATA:
“substr” ->returns the substring of a string, starting at column n1, for a length of n2.

```
gen cause1=substr(cause, 1,1)
gen cause2=substr(cause, 2,2)
gen cause3=substr(cause, 4,4)
destring cause2,  replace force
destring cause3,  replace force
```

2 digits code: transformation of variable “cause” into the two variables:

```
replace cause1=substr(cause, 1,1)
replace cause2=substr(cause, 2,3)
```

The WHO Health for All Database:
an interactive analytical toolkit

РЭШ Российская экономическая школа

WHO Health for All Database

http://www.euro.who.int/hfadb

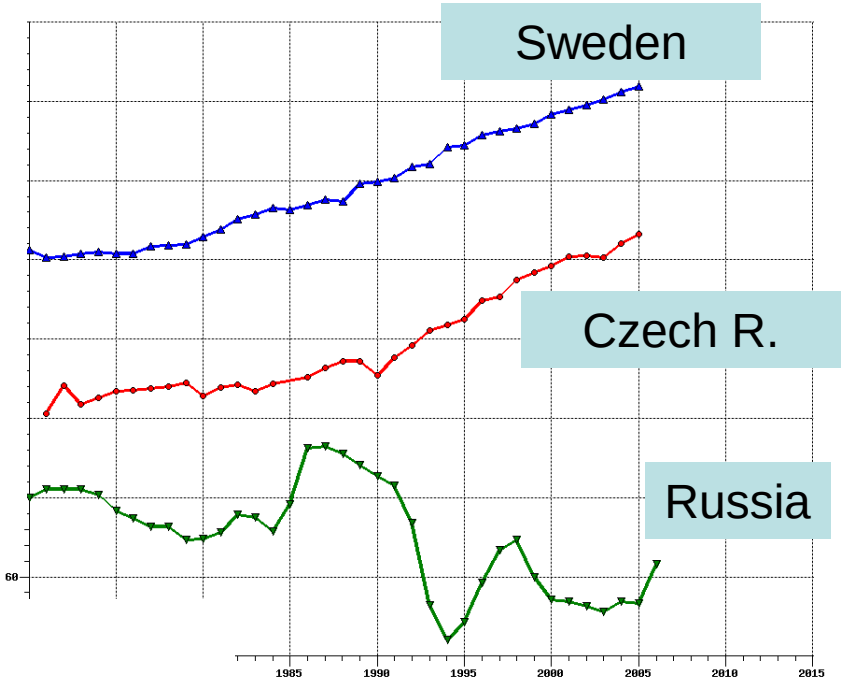
- 01 DEMOGRAPHIC AND SOCIO-ECONOMIC INDICATORS
- 02 MORTALITY-BASED INDICATORS
- 03 MORBIDITY, DISABILITY AND HOSPITAL DISCHARGES
- 04 LIFE STYLES
- 05 ENVIRONMENT
- 06 HEALTH CARE RESOURCES
- 07 HEALTH CARE UTILIZATION AND EXPENDITURE
- 08 MATERNAL AND CHILD HEALTH

WHO Health for All Mortality Database
Mortality indicators by 67 causes of death:

http://data.euro.who.int/hfamdb

- 01 All causes of death & infectious diseases
- 02 Cancer mortality
- 03 Diseases of blood, endocrine, nervous systems, etc.(Ch.3-8)
- 04 Diseases of circulatory & respiratory systems
- 05 Diseases of digestive, musculosceletal systems, etc. (Ch.11-14)
- 06 Maternal and perinatal conditions
- 07 Ill-defined causes
- 08 External causes of mortality
- 09 Population and ICD used

Changes in male life expectancy at birth



Other important international databases providing data on mortality

EUROSTAT (Statistical Office of European Union)

- Links to national statistical institutions
- CRONOS data base (population, mortality, and health)

http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/

Note: It is better to "Google" "EUROSTAT" + "CRONOS"

UN Population Division Database

- Reports on population mortality
- Various mortality data, projections
- Population, Resources, Environment and Development Database:

http://esa.un.org/unpd/wpp/unpp/panel_population.htm

The Human Life-Table Database (MPIDR, UCB, INED)

- Series of life tables for many countries covering long-term periods
- Mainly officially published life tables by national statistical offices
- Some unofficial life tables produced by researchers
- Some life tables for regional or ethnic sub-populations

http://www.lifetable.de

The centralized information system for infectious diseases WHO CISID system

http://data.euro.who.int/cisid/

Incidence of hepatitis C in Germany and the UK

CISID | Hepatitis B | STI | Data Analyser 1 | Data Analyser 2 | Data Analyser 3 | Data Analyser 4

Action:: Query builder | **Display table** | Display chart | Display map | Options

6015 - Hepatitis C - Incidence (cases per 100 000 population)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Germany		7.07				10.61	8.23	8.49		10.15	
United Kingdom of Great Britain and Northern Ireland				1.25	1.75	1.78	2.25	2.63	12.51	17.57	

Country	Year	Comment
All	All	Blank cells indicate that data is either unavailable and/or has not yet been reported to WHO

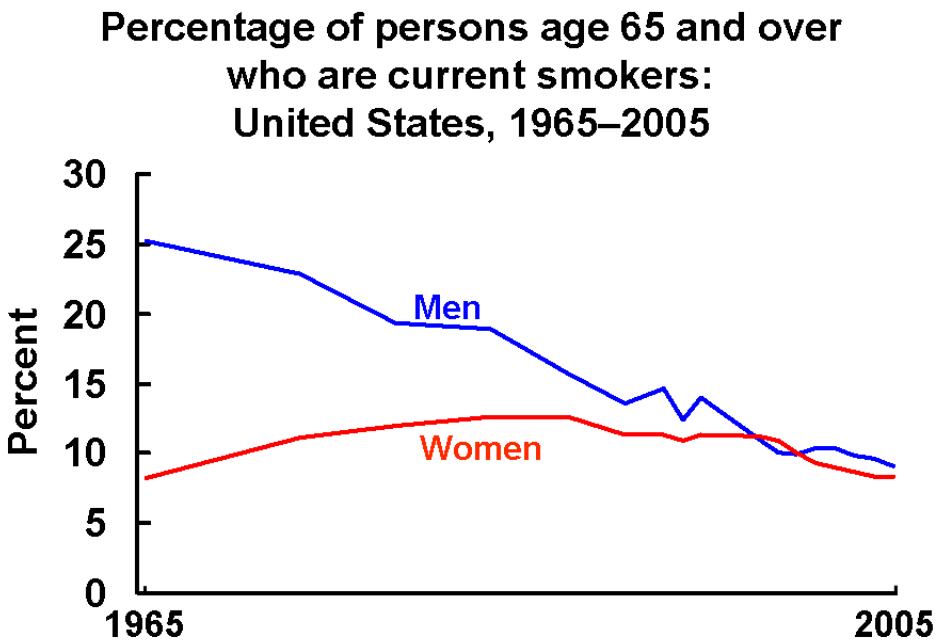
Applications
- Area code reference
- Data Analyser
- Data Analyser Pro
- Indicator search

Login
User name:
Password:
Login

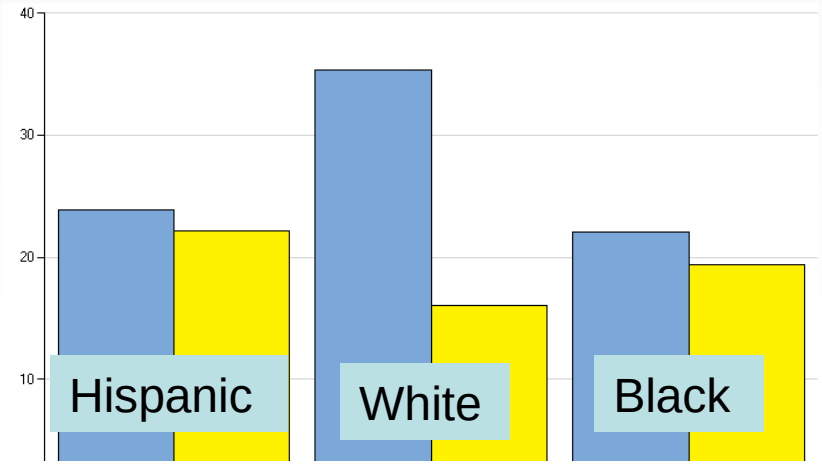
National health databases: National Center for Health Statistics (USA)

http://www.cdc.gov/nchs/hdi.htm

- Health and functional status
- Health care use and expenditures
- Health conditions
- Health insurance and access
- Mortality and life expectancy
- Pregnancy and birth
- Risk factors and disease prevention



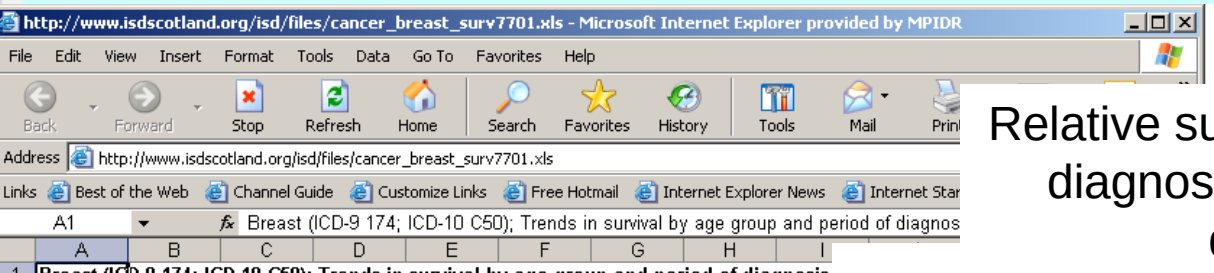
SOURCE: CDC/NCHS, National Health Interview Survey, Trends in Health and Aging, 2007. Available from: www.cdc.gov/nchs/agingact.htm.



Prevalence of heart dis. and diabetes by race. USA, males, 65+

Breast cancer incidence and survival. The cancer register of Scotland

http://www.isdscotland.org/Health-Topics/Cancer/Cancer-Statistics/Breast/



Breast (ICD-9 174; ICD-10 C50); Trends in survival by age group and period of diagnosis

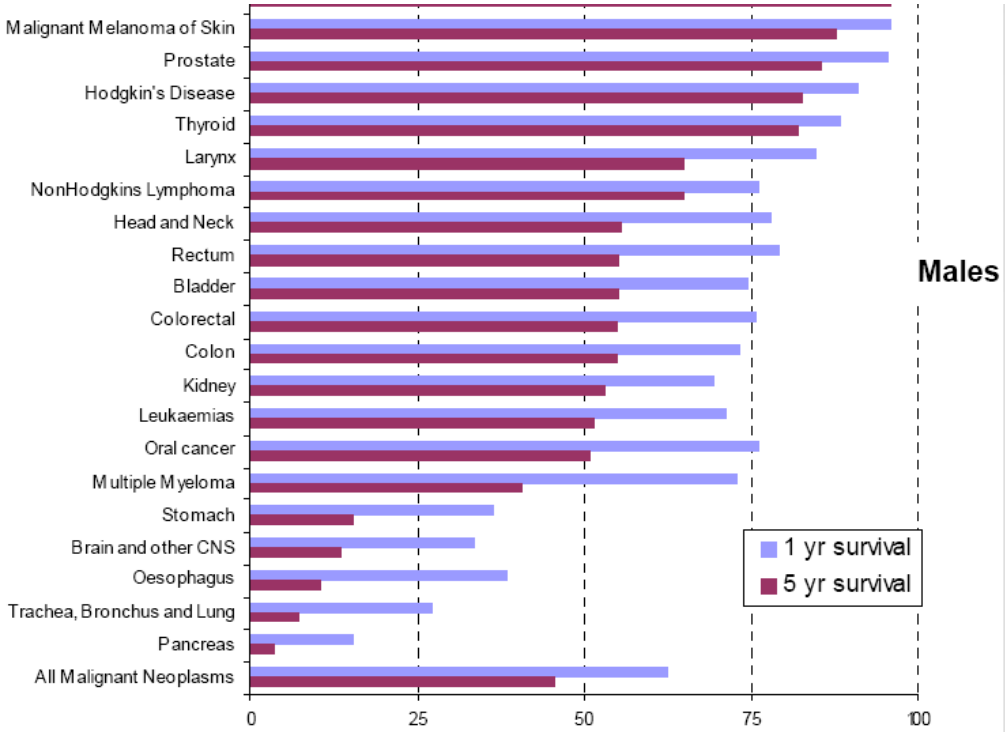
Observed and relative survival (%) at 1,3,5,and 10 years; patients diagnosed 1977-2001. [1]

Females

Age group	period	Number of cases analysed	Observed survival (%) at 1 yr	3 yr	5 yr	10yr
15-44	1977-1981	1478	94.0	76.9	65.0	51.9
	1982-1986	1538	97.3	80.5	69.7	57.4
	1987-1991	1657	96.1	80.8	71.9	59.2
	1992-1996	1752	96.7	83.8	75.5	65.8
	1997-2001	1940	97.7	88.0	80.7	-
45-54	1977-1981	2260	90.9	72.5	62.1	48.7
	1982-1986	2266	92.6	75.0	65.7	52.6
	1987-1991	2547	94.5	81.1	72.5	60.5
	1992-1996	3224	96.4	86.2	79.4	68.8
	1997-2001	3631	97.2	89.6	83.2	-

Females

Relative survival (%) at 1 and 5 years after diagnosis by cancer and sex patients diagnosed 2003-2007



Data on risk factors: survey-based data

The WHO Global InfoBase

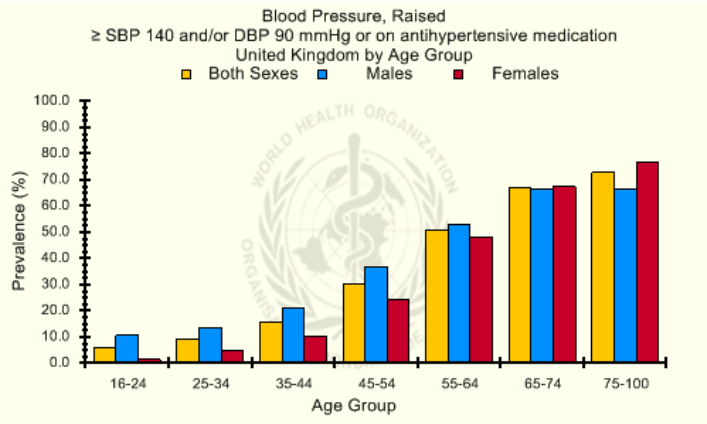
https://apps.who.int/infobase/Indicators.aspx

2 Report contents, including survey information, data tables, and optional graphs

Summary of Survey/Information Source

The information below is associated with the following survey:

Title: Health Survey for England **Year:** 2003
Coverage: subnational
InfoBase Ref. #: 101069a11 **Urban/Rural:** both urban and rural populations
Notes: Additional information from Health Survey for Englang 2003 (Volume 2) - Ris ... more
Click here to view bibliography,methodology and extended details on the information



Source: Department of Health. Health Survey for England, 2002 (http://www.who.int/infobase

IBRef: 101069)

[+] click to enlarge graph

United Kingdom

Data Group Information (Definitions, Quantities, etc.)

Definition Code: ≥ SBP 140 and/or DBP 90 mmHg or on antihypertensive medication

United Kingdom

Data Group Information (Definitions, Quantities, etc.)

Definition Code: ≥ SBP 140 and/or DBP 90 mmHg or on antihypertensive medication

Males

Age Group	Sample Size (n)	Prevalence (%)	95 % CI
16-24	370	10.6	-
25-34	557	13.6	-
35-44	806	21.3	-
45-54	699	36.7	-
55-64	736	53.2	-
65-74	577	66.6	-
75+	363	66.7	-
16+	**4,108**	**34.3**	**32.8-35.8**

Females

Age Group	Sample Size (n)	Prevalence (%)	95 % CI
16-24	479	1.5	-
25-34	715	4.9	-
35-44	994	10.4	-
45-54	837	24.3	-
55-64	889	48.2	-
65-74	617	67.3	-
75+	544	76.6	-
16+	**5,075**	**30.1**	**28.8-31.4**

Both Sexes

Age Group	Sample Size (n)	Prevalence (%)	95 % CI
16-24	849	6.1	-
25-34	1,272	9.3	-
35-44	1,800	15.9	-
45-54	1,536	30.4	-
55-64	1,625	50.7	-
65-74	1,194	66.9	-
75+	907	72.9	-
16+	**9,183**	**32.1**	**31.1-33.1**

Health surveys: examples and data sources-1

eurohex Advanced research on European health expectancies

Formerly: EHEMU network
http://www.eurohex.eu/

- **Aggregated cross-national data on health from different surveys;**
- **Data explanations, questionnaires;**
- **Raw data: cross-tabulations and percentages;**
- **Uniformly calculated life tables and estimates of health/disability-adjusted expectancies.**

- **Methodology for calculation of health expectancy;**
- **Calculation and interpretation guide;**
- **Software applications (Excel, SAS, SPSS);**
- **Glossary.**

Health surveys: examples and data sources-2

1 step: selection of survey/ indicator/sex/age/country

Methodology

Survey

Indicator

Prevalence

ECHP 1995-2001
(The European Community Household Panel)

EB 2002-2005
(Eurobarometer survey)

ESS 2002-2004
(The European Social Survey)

SHARE 2004-2006
(Survey of Health, Ageing and Retirement in Euro

SILC 2004-2009
(Statistics on Income and Living Conditions)

Select

Prevalence | SILC

Self-perceived health
Morbidity
Activity limitation

Prevalence | SILC | Activity limitation

Countries	Years	Ages	Sexes
Slovakia Slovenia Spain Sweden Switzerland UnitedKingdom EA15 EU25 EU27	2004 2005 2006 2007	All ages 50 65 85	Both Men Women

Raw Data

2 step: output

Prevalence/ Activity limitation (AL)/ Sweden/ 2009/ according to SILC / by age/ for men

country	year	age	Men		
			Not limited	Limited	Severely limited
Sweden	2009	[0-14]	0.971	0.0248	0.0042
Sweden	2009	[15-19]	0.942	0.0496	0.0085
Sweden	2009	[20-24]	0.9458	0.0356	0.0185
Sweden	2009	[25-29]	0.9481	0.0314	0.0205

Health surveys: examples and data sources-3

Survey of Health, Ageing, and Retirement in Europe
http://www.share-project.org

- Coordinated by Munich Center for the Economics of Aging (MEA), Max Planck Institute for Social Law and Social Policy.
- a multidisciplinary and cross-national **panel** database of micro data on **health**, socio-economic status and social and family networks.
- Covers individuals **aged 50 or over**.
- The survey's 3rd wave, SHARELIFE, collects detailed retrospective life-histories in thirteen countries in 2008-09.
- **Fifteen countries:** Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, the Netherlands, Spain, Italy, Greece, Israel, the Czech Republic, Poland, and Ireland.
- **The first wave** was conducted in 2004-2006, **the second wave** was conducted in (2006-2007), **the third wave** was conducted in 2008-2009.
- **Freely available** for researchers.
- **Health and social variables:** self-reported health, physical functioning, cognitive functioning, health behavior, use of health care facilities, psychological variables, economic variables (current work activity, job characteristics, opportunities to work past retirement age, sources and composition of current income, wealth and consumption, housing, education), and social support variables (e.g. assistance within families, transfers of income and assets, social networks, volunteer activities).

Health surveys: examples and data sources-4

http://www.cdc.gov/nchs/nhis.htm

nchs National Center for Health Statistics ...Monitoring the Nation's Health

National Health Interview Survey (NHIS)

Celebrating the First 50 years: 1957 - 2007

NCHS Home | NHIS Home | Description | 1997 NHIS | 1998 NHIS
1999 NHIS | NHIS on Disability | News Releases and Fact Sheets
Data Highlights | Coming Events | Methods | Publications
Micro-data | Related Sites | Other Federal Agencies
Search NCHS | NCHS Definitions | Contact us

ability

National Health Interview Survey on Disability (NHIS-D)

NCHS Home | NHIS-D Home | Description
News Releases and Fact Sheets | Data Highlights | Bibliography
Coming Events | Methods | Micro-data | Related Links
Other Federal Agencies | Search NCHS
NCHS Definitions | Contact us

- a cross-sectional household interview survey covering the civilian non-institutionalized population;
- includes the major demographic and health characteristics with particular focus on illness and disability;
- some data are freely available, some data can be accessed through an application process: a research proposal should be submitted to the NCHS Research Data Center (RDC).

Homework task

1) Find and extract male Standardized Death Rates for ischaemic heart diseases (for all ages) for the following countries: Russia, Ukraine, Estonia, Czech Republic. Time period: 1980-latest available year.
Try to represent trends graphically. Copy your graph into a Word document and write few brief comments.

2) Find appropriate data source and calculate survival probabilities between the exact ages 15 and 60 for Russian and French males in 2005.
Write few brief comments.