

ICD **International Classification of** **Diseases**

Donna L. Hoyert, Ph.D.
Mortality Statistics Branch
National Center for Health Statistics

August 7, 2012



What is the ICD?

- International standard maintained by WHO
- WHO Nomenclature Regulations require use by WHO Member Countries
- Promote international comparability in collection, classification, processing, and presentation of health statistics

Expansion over time

- Originally, tool to group cause of death for presentation in tables and research
- Use and content expanded over time
- Yet, ICD is not always enough to meet morbidity needs

MORTALITY 1900-1904

COUNTRY.	NUMBER OF DEATHS FROM SMALLPOX PER 100,000 OF POPULATION: 1900 TO 1904.				
	1900	1901	1902	1903	1904
Registration area of United States	1.9	3.5	6.6	4.3	2.1
England and Wales	0.3	1.0	7.5	2.3	(1)
Scotland	1.0	6.0	2.0	1.0	(1)
Hungary	4.0	4.0	2.0	1.0	(1)
Belgium	3.0	4.0	9.0	23.0	(1)
Spain	35.0	28.0	30.0	(1)	(1)
Italy	1.0	10.0	7.0	18.0	(1)

¹ No figures available.

History of the Statistical
Classification of Diseases
and Causes of Death



Centers for Disease
Control and Prevention
National Center for
Health Statistics

Closely related but not the same, US example

ICD:

- Parent classification
- ICD is used for mortality purposes in the US
- Maintained and coordinated by WHO in conjunction with Collaborating Centres

ICD-CM:

- CM is a clinical modification of the classification
- ICD-CM used for morbidity purposes in the US
- Maintained by the US but coordinated with WHO

ICD revised periodically

- To reflect current knowledge and needs
- Need to mention 3 revisions when considering where WHO, US mortality, and US morbidity communities are today:



US morbidity summary

- Continues to use ICD-9-CM but has a freeze on most updates
- ICD-10-CM developed and was at precipice of transitioning in 2013
- Participating in effort to develop ICD-11



Details: What's happening?

- Working towards implementation
 - Previously would have implemented on a similar timeframe as mortality
 - Enactment of HIPAA in 1996 put morbidity coding standards on a different timeline
 - Developed ICD-10-CM in late 1990's
 - Were current with ICD-10 updates until code freeze in October 2011

The implementation date

- Implementation is tied to legislation and reimbursement requirements
 - Final rule in Federal Register mandates compliance by October 1, 2013
 - However in April of 2012, there was a notice in the Federal Register proposing delay of the compliance date until October 1, 2014
- So, the implementation date in the US is still unknown

Debates about implementation

Benefits:

- Address problems associated with older revision
- Better data for many purposes
 - Allows more specificity
 - Has more room for expansion
 - Uses more current concepts
 - Captures more clinical information
 - Permits improved coding
- Easier to compare with mortality data
- Many ready for transition
- Facilitate adoption of future revision

Costs:

- Many not ready for transition (seems to include many small providers)
- It takes considerable resources to switch
- Some question cost/benefit balance when another revision is on horizon



Preparing for implementation

- HHS continues to assist those implementing the code sets (e.g., files, guidelines, general equivalence maps, webinars)
- HIM and other training programs conducted
- Organizations assess how impacted, make plans, set goals, and test
 - Systems
 - People
 - End users
- Stakeholders keep moving forward regardless of what's happening with compliance date

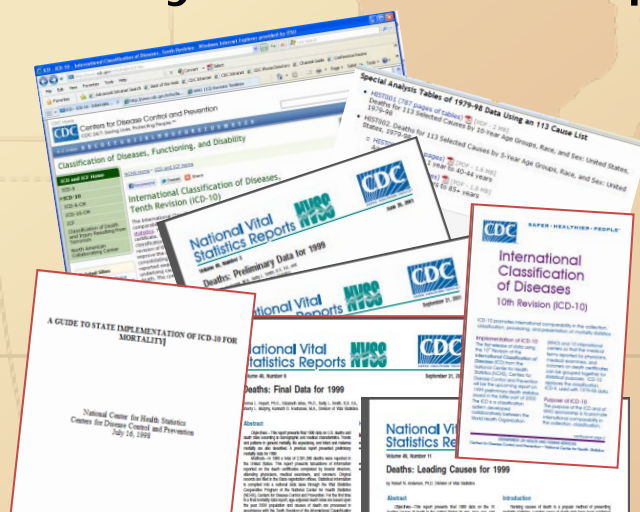
US mortality summary

- Have been using ICD-10 for more than a decade
 - Transition receding into memory
 - ICD-10 updating process continual challenge
- Some involved in developing ICD-11 but most focused on ICD-10 with ICD-11 off on horizon



Memories of ICD-10 implementation

- US mortality implemented in 1999
 - Extensive preparation in advance
 - Convert automated systems
 - Conduct training
 - Convert tables
 - Coordinate with state programs
 - Implementation generally smooth but preliminary data release slower



Since implementation

- ICD-10 included updating feature which US mortality has been doing since 1999 also
 - Innovation & challenge
 - Requires resources
 - Affects statistical trends

comparability of data between years for selected causes of death. The implementation of changes in coding rules in 2008 had an impact on several mortality causes—and the comparison of 2008 and 2007 data for these causes—in the following ways:

- The increase in deaths from Chronic obstructive pulmonary disease with acute lower respiratory infection (ICD-10 code J44.0) is a component condition of the larger category Chronic lower respiratory diseases (ICD-10 codes J40–J47). This component condition (ICD-10 code J44.0) increased as a proportion of all deaths from Chronic lower respiratory diseases between 2007 and 2008.

- Otherwise, mortality is in a stable place in continual evolution of ICD

National Vital Statistics Reports

Volume 59, Number 10



December 7, 2011

Deaths: Final Data for 2008

By Arialdi M. Minino, M.P.H.; Sherry L. Murphy, B.S.; Jiaquan Xu, M.D.;
M.A., Division of Vital Statistics

Highlights

Mortality experience in 2008

- In 2008, a total of 2,471,984 resident deaths were registered in the United States.
- The age-adjusted death rate, which takes the aging of the population into account, was 758.3 deaths per 100,000 U.S. standard population.
- Life expectancy at birth was 78.1 years.
- The 15 leading causes of death in 2008 were:
 1. Diseases of heart (heart disease)
 2. Malignant neoplasms (cancer)
 3. Chronic lower respiratory diseases
 4. Cerebrovascular diseases (stroke)
 5. Accidents (unintentional injuries)
 6. Alzheimer's disease
 7. Diabetes mellitus (diabetes)
 8. Influenza and pneumonia
 9. Nephritis, nephrotic syndrome and nephrosis (kidney disease)
 10. Intentional self-harm (suicide)
 11. Septicemia
 12. Chronic liver disease and cirrhosis

WHO summary

- ICD-10:
 - Interested in implementation
 - Oversees updating process
- ICD-11: Increasingly focus



Time for another ICD revision?

- When ICD-10 was endorsed by the WHA, a timeframe for the next revision was also specified
- Medical knowledge has continued to progress
- WHO's answer was yes

WHO's Timeline for ICD-11

- 2007: ICD-11 development began
 - Revision structures established
 - Various countries' clinical modifications of ICD-10 were entered into foundation layer
- 2011: Alpha draft
- 2012: Beta draft; field trials
- 2015: Present to World Health Assembly
- 2016: Countries could begin to implement

Aspirations for ICD-11: Process

- Open development to wider participation
- Use of new tools to develop
- Revision structures in addition to public comment



Aspirations for ICD-11: Content

- Address the needs of many users
- Foundation layer more robust, include terminology, definitions, functional criteria
- Improve connections
 - Align or harmonize with other classifications
 - Link with terminology standards (e.g., SNOMED CT)
- Ease transition for users

How's ICD-11 coming along?

- Few changes to timeline, although many content and structure issues are outstanding
- Deliverables haven't been as mature as expected
- Everything remains fluid as public comment period begins and field trials are planned
- Most expect they will be unable to implement for 5+ years after WHA endorsement

Search

[Advanced Search]

Foundation ?

Linearizations ?

Contributions

▼ ICD11 Beta

- ▶ Certain infectious and parasitic diseases
- ▶ Neoplasms
- ▶ Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
- ▶ Endocrine, nutritional and metabolic diseases
- ▶ Mental and behavioural disorders
- ▶ Diseases of the nervous system
- ▶ Diseases of the eye and adnexa
- ▶ Diseases of the ear and mastoid process
- ▶ Diseases of the circulatory system
- ▶ Diseases of the respiratory system
- ▶ Diseases of the digestive system
- ▶ Diseases of the skin
- ▶ Diseases of the musculoskeletal system and connective tissue
- ▶ Diseases of the genitourinary system
- ▶ Pregnancy, childbirth and the puerperium
- ▶ Certain conditions originating in the perinatal period
- ▶ Developmental anomalies
- ▶ Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified

ICD-11 Beta Draft Info

Welcome to the ICD11 Beta Browser

You can browse the ICD11 proposed content without registration here

If you wish to participate in the Beta Phase please [register or sign-in here](#).

[More information](#) on ICD-11 Beta Phase

[What to expect, when and how?](#)

Caveats

ICD-11 Beta draft is:

- **NOT FINAL**
- updated on a daily basis
- It is **not approved** by WHO
- **NOT TO BE USED** for CODING except for agreed FIELD TRIALS

[Known concerns about the ICD-11 Beta Phase](#)



Anencephaly

Info

Parent(s)

- Selected Cause is Other congenital malformations of the nervous system
- Congenital malformations of the nervous system
- Tabulated - Other congenital malformations of the nervous system
- Anencephaly and similar anomalies

Definition

Anencephaly is a neural tube defect. Its prevalence at birth ranges from 1 in 5000 to 1 in 2000. This malformation is characterized by the total or partial absence of the cranial vault and the covering skin, the brain being missing or reduced to a small mass. Most cases are stillborn, although some infants have been reported to survive for a few hours or even a few days. Autopsy findings reveal that anencephaly is in most cases associated with absence of adrenal glands. Anencephaly is likely to be multifactorial, the result of gene-environment interactions. Familial cases with a seemingly autosomal recessive mode of inheritance have been described but most cases are sporadic. The prevalence at birth displays an unequal geographical distribution, with especially high rates in the British Isles, China, Mexico and Turkey. This may be attributed to the genetic

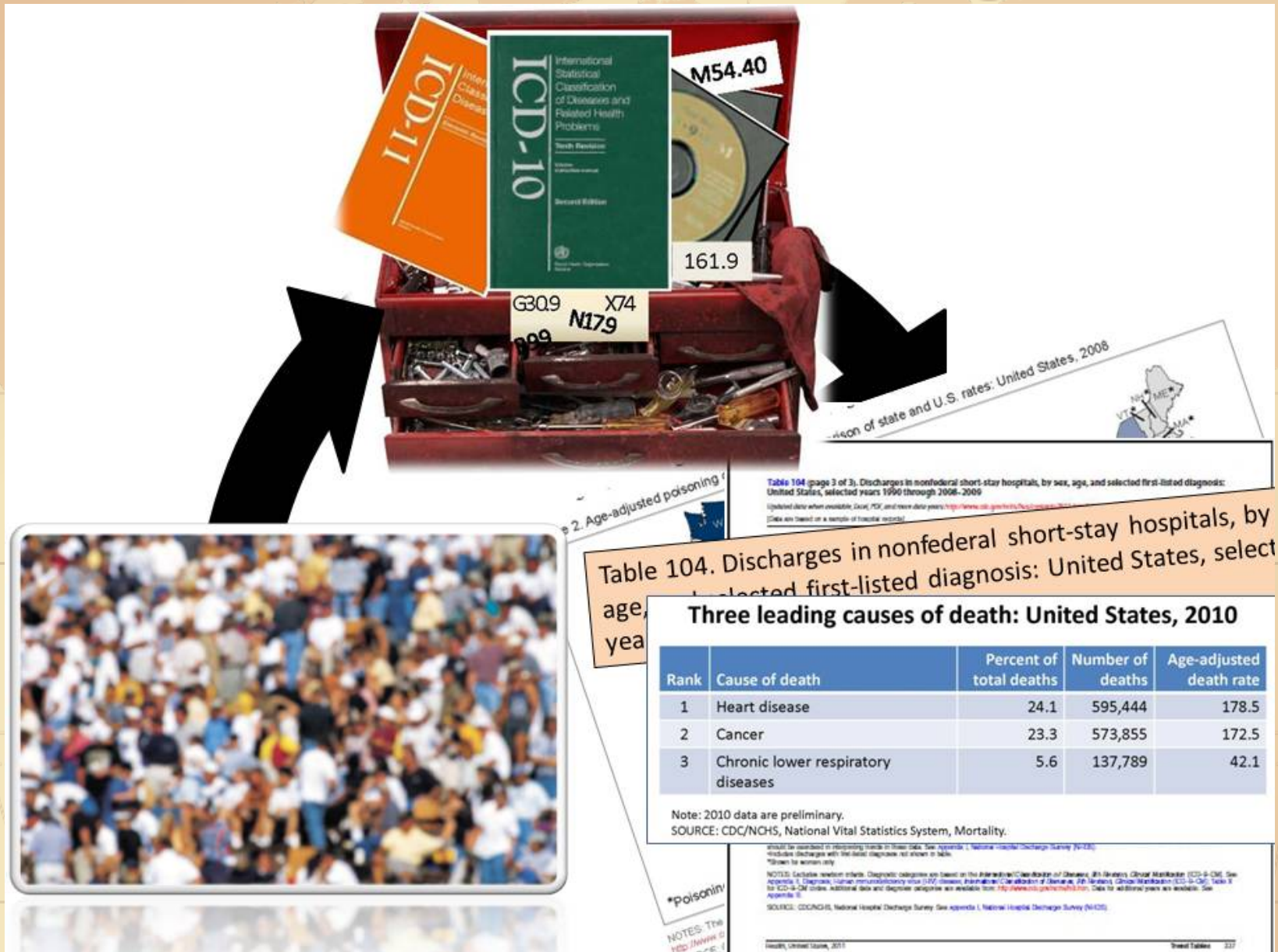
Synonyms

- Exencephaly
- Acrania
- anencephalic monster
- anencephalus
- brain absence
- brain agenesis
- brain aplasia
- brain: absent
- congenital absence of brain

Narrower Terms

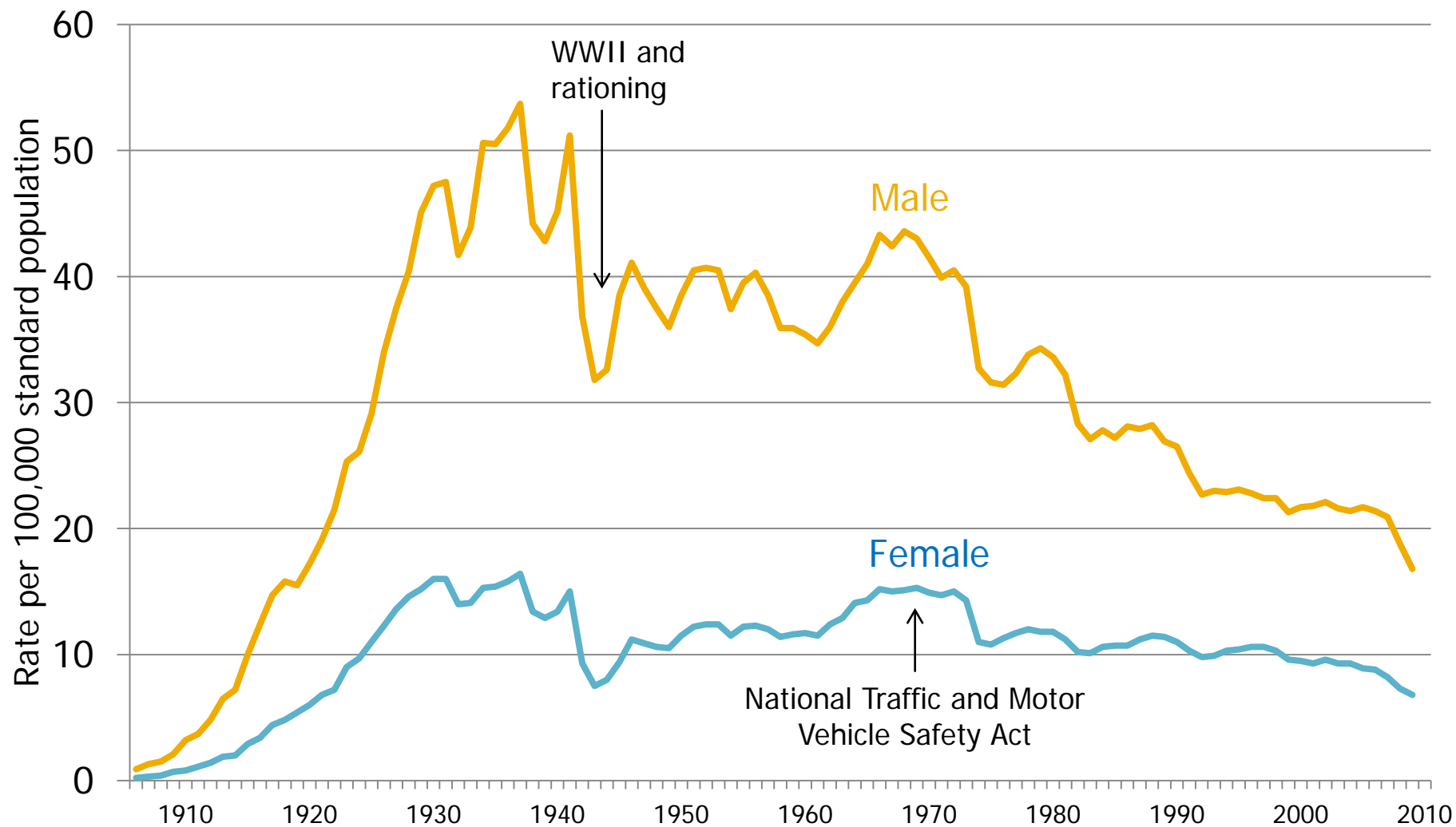
- hemianencephaly *
- hemicephaly *
- acranial monster
- acranium
- amyelencephalus
- anencephalic
- anomaly: skull, with anencephaly
- bone: anomaly, skull, with anencephaly
- congenital absence of brain

ICD brings focus to blur of experience



ICD Stands Between the Multitude of Individual Conditions and Informative Health Statistics

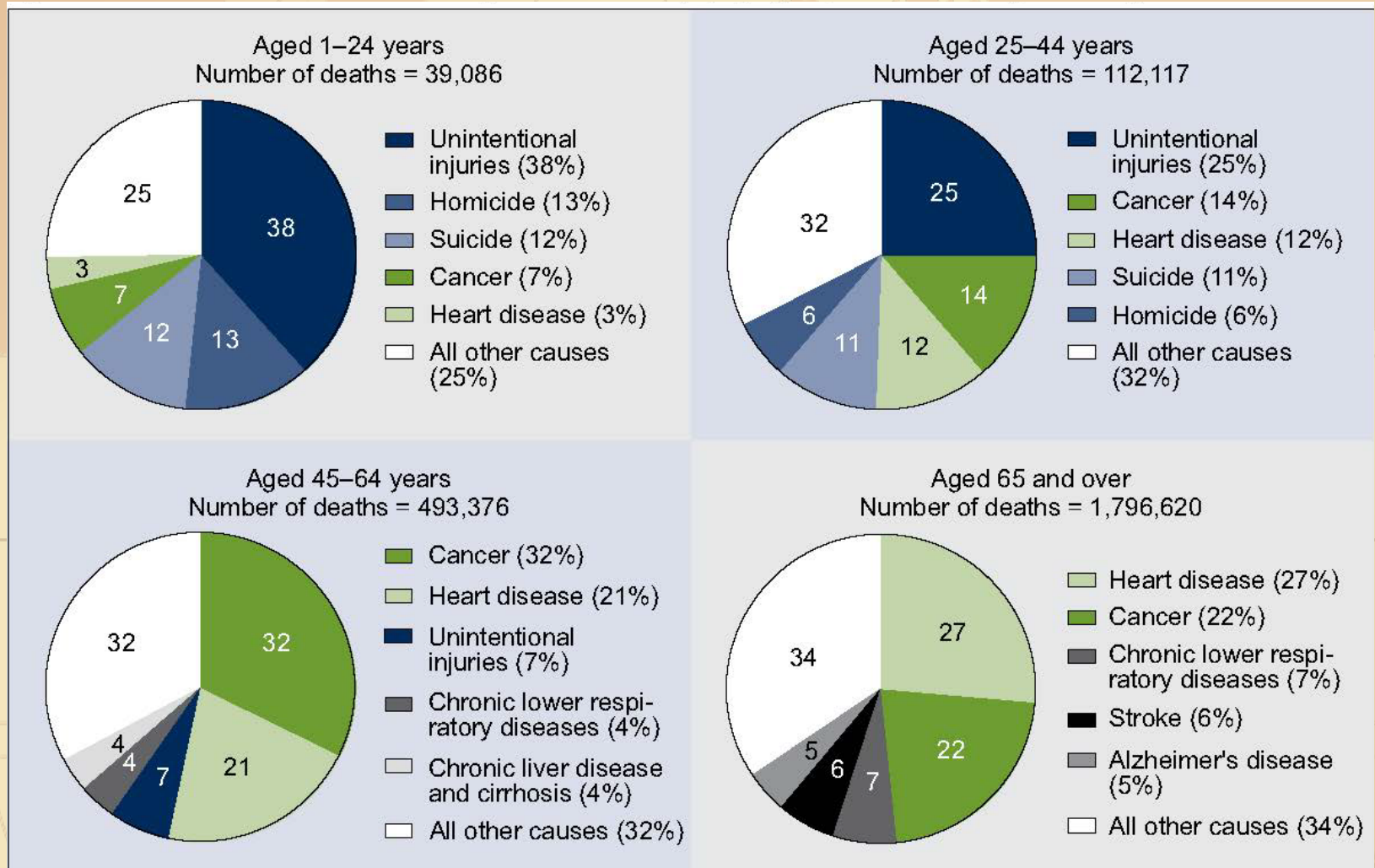
Age-adjusted death rates for motor-vehicle deaths by sex: United States, 1906-2010



NOTE: 2010 data are preliminary. Cause of death coded according to applicable revision of the ICD. 1906-1932 data are for a registration area; 1933-present data are for the US.

SOURCE: CDC/NCHS, National Vital Statistics System, Mortality.

Percent distribution of the leading causes of death by age group: United States, 2010



SOURCE: National Vital Statistics System, Mortality.

Note: 2010 data are preliminary

Minino & Murphy. Death in the United States 2010, Data Brief 99, July 2012.

A faint, light orange world map is visible in the background of the slide, showing the continents and major lines of latitude and longitude.

Thank you for your attention.

Contact information for more on:

- Mortality: Donna Hoyert, dlh7@cdc.gov
- Morbidity: Donna Pickett, dfp4@cdc.gov
- ICD-11:

<http://www.who.int/classifications/icd/revisions/en/index.html>

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.