OECD's Health Care Quality Indicator Project Methodological and Policy Challenges

- Niek Klazinga, March 25th 2010
- Toronto, HSPRN

Key terms

- International (geographics/politics)
- Comparison (methodology/measurement/management)
- Quality (definition of domain)
- Care (definition of boundaries and subject matter of services and systems)

- Part of overall performance measurement for health system improvement

Reasons for international comparisons on performance related to quality of care

- Accountability
- Strategic decision making
- Learning/improvement

Table 1.1 Conditions under which performance measurement is possible and problematic

Performance measurement possible	Performance measurement problematic
• An organization has products	• An organization has obligations and is highly value-oriented
• Products are simple	• Products are multiple
• An organization is product-oriented	• An organization is process-oriented
• Autonomous production	• Co-production: products are generated together with others
• Products are isolated	• Products are interwoven
• Causalities are known	• Causalities are unknown
• Quality definable in performance indicators	• Quality not definable in performance indicators
• Uniform products	• Variety of products
• Environment is stable	• Environment is dynamic

Source: Managing performance in the public sector. De Bruijn H. (2002), p. 13

Measurement and Management

- A measure on quality of care does not exist independently
- validation is dependent on the use/purpose
- Validation is dependent on the boundaries of the universe it is supposed to signal upon
- Measures need to be integrated in management/decision making mechanisms of government, financiers, managers, professionals and patients
- Apart from reliability and validity, relevance and usefullness are important criteria for selecting quality measures
- As a consequence the users should be involved in the development of the measures

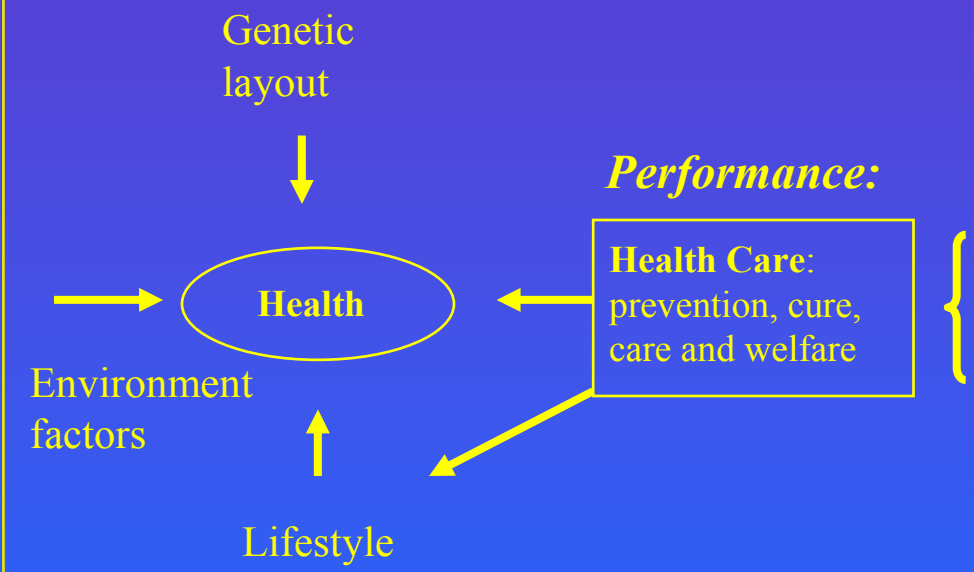
Health systems performance management

- Health Systems (scope , components and boundaries)
- Performance (objectives on various dimensions such as health results, efficiency and equity – measurement challenges)
- Management (heterogeneous national governance models, integration of performance indicators in management mechanisms)

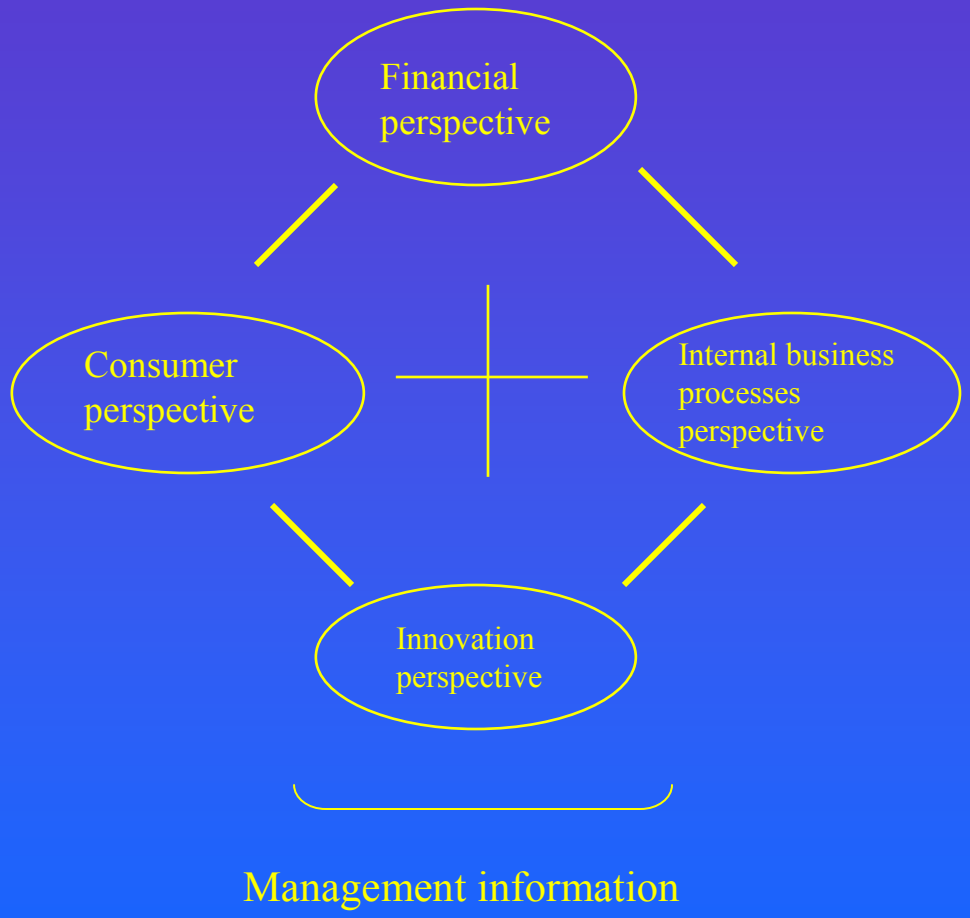
Key messages health systems performance measurement

- Boundaries
- Concepts
- Governance
- Interaction research / policy

Lalonde-model



Balanced scorecard



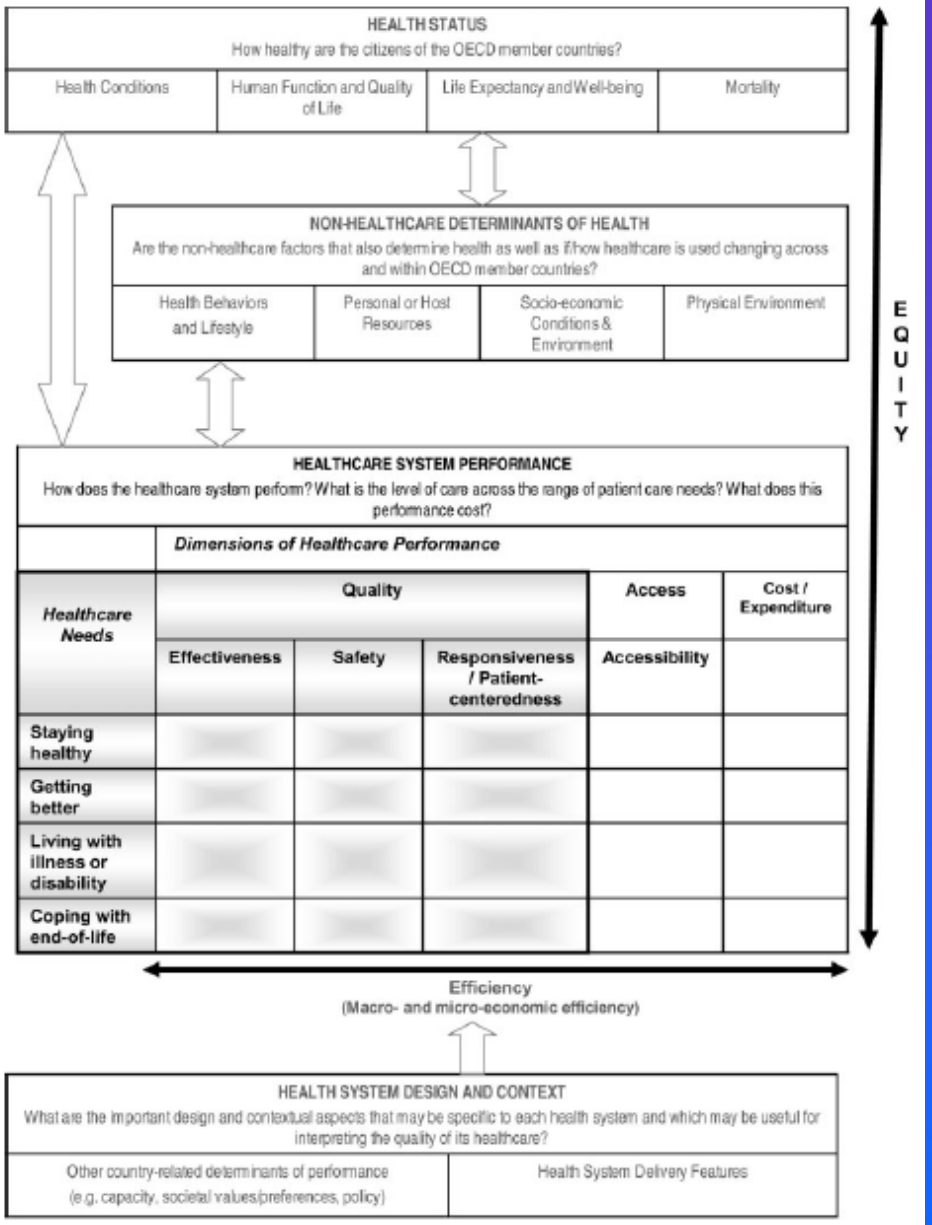
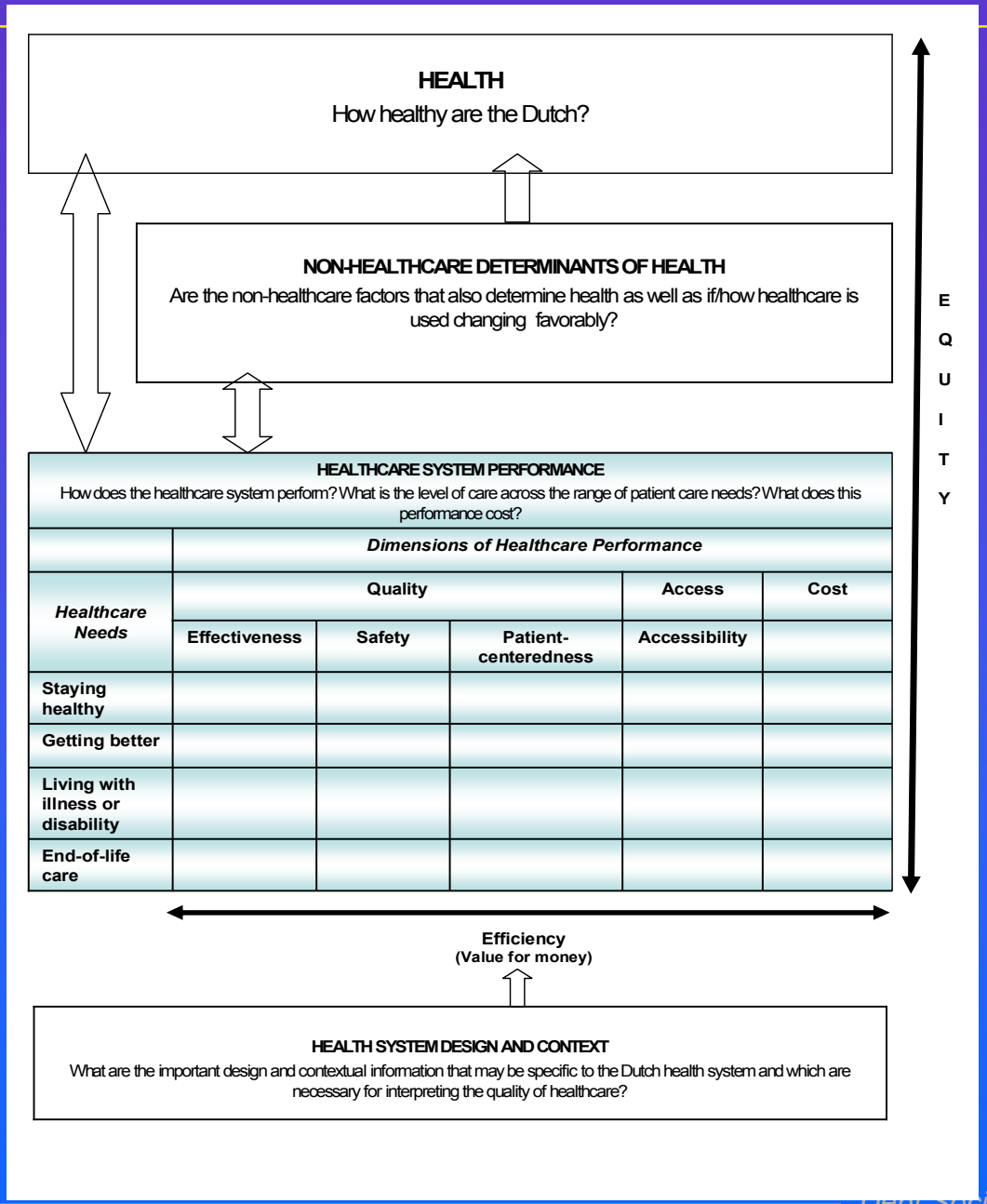


Figure 5. Conceptual framework for Organization for Economic Cooperation and Development Health Care Quality Indicator (HCQI) Project. The shaded area represents the current Focus of the HCQI Project.

Source: Arah OA, et al. A conceptural framework for the OECD Health Care Quality Indicators Project. *Int J Quality Health Care*. 2006; Sep 18; Suppl.1:5-13.

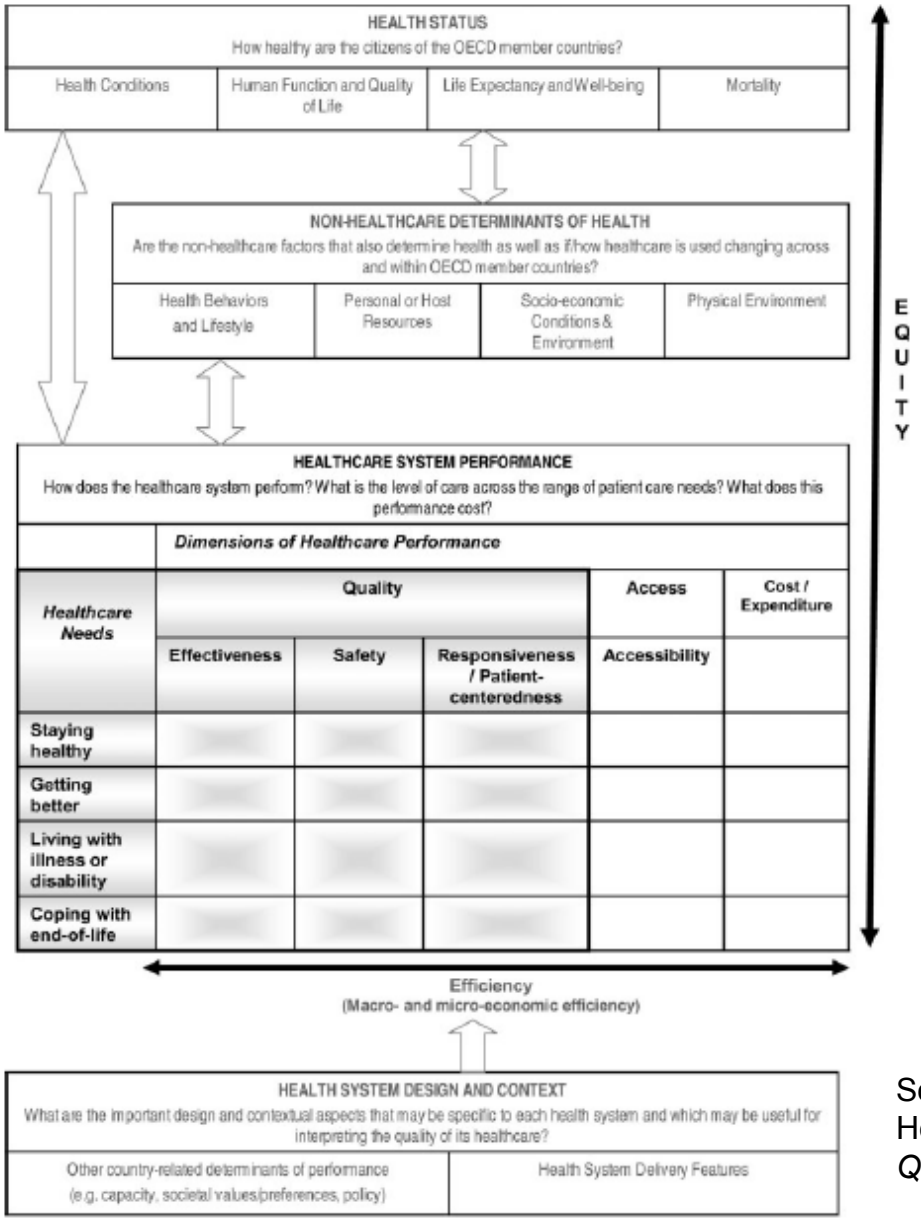

HEALTH
How healthy are the Dutch?
NON-HEALTHCARE DETERMINANTS OF HEALTH
Are the non-healthcare factors that also determine health as well as if/how healthcare is used changing favorably?
HEALTHCARE SYSTEM PERFORMANCE
How does the healthcare system perform? What is the level of care across the range of patient care needs? What does this performance cost?
Dimensions of Healthcare Performance
Healthcare Needs
Quality
Access
Cost
Effectiveness
Safety
Patient-centeredness
Accessibility
Staying healthy
Getting better
Living with illness or disability
End-of-life care
EQUITY
Efficiency
(Value for money)
HEALTH SYSTEM DESIGN AND CONTEXT
What are the important design and contextual information that may be specific to the Dutch health system and which are necessary for interpreting the quality of healthcare?

Combining various rationalities

- Public Health
- Medicine
- Management sciences
- Economics
- Societal / individual values

History OECD's Health Care Quality Indicator Project

- Ministerial Conference Ottawa 2000
- Founding work Nordic Countries and Commonwealth Fund
- Expert group and subgroups (37 countries in 2010)
- Conceptual framework
- Systematic selection of quality indicators and pilot testing
- Refinement methodology
- Publication in Health at a Glance (2007,2009)
- Ministerial October 2010



Conceptual Framework for OECD Health Care Quality Indicator (HCQI) Project.

(shaded area represents the current focus of the HCQI Project)

Source: Arah OA, et al. A conceptual framework for the OECD Health Care Quality Indicators Project. *International Journal Quality Health Care*. 2006; Sep 18; Suppl.1:5-13.

Area's of interest

- Health promotion, prevention and primary care
- Acute care
- Mental Health Care
- Cancer care
- Patient safety
- Patient experiences

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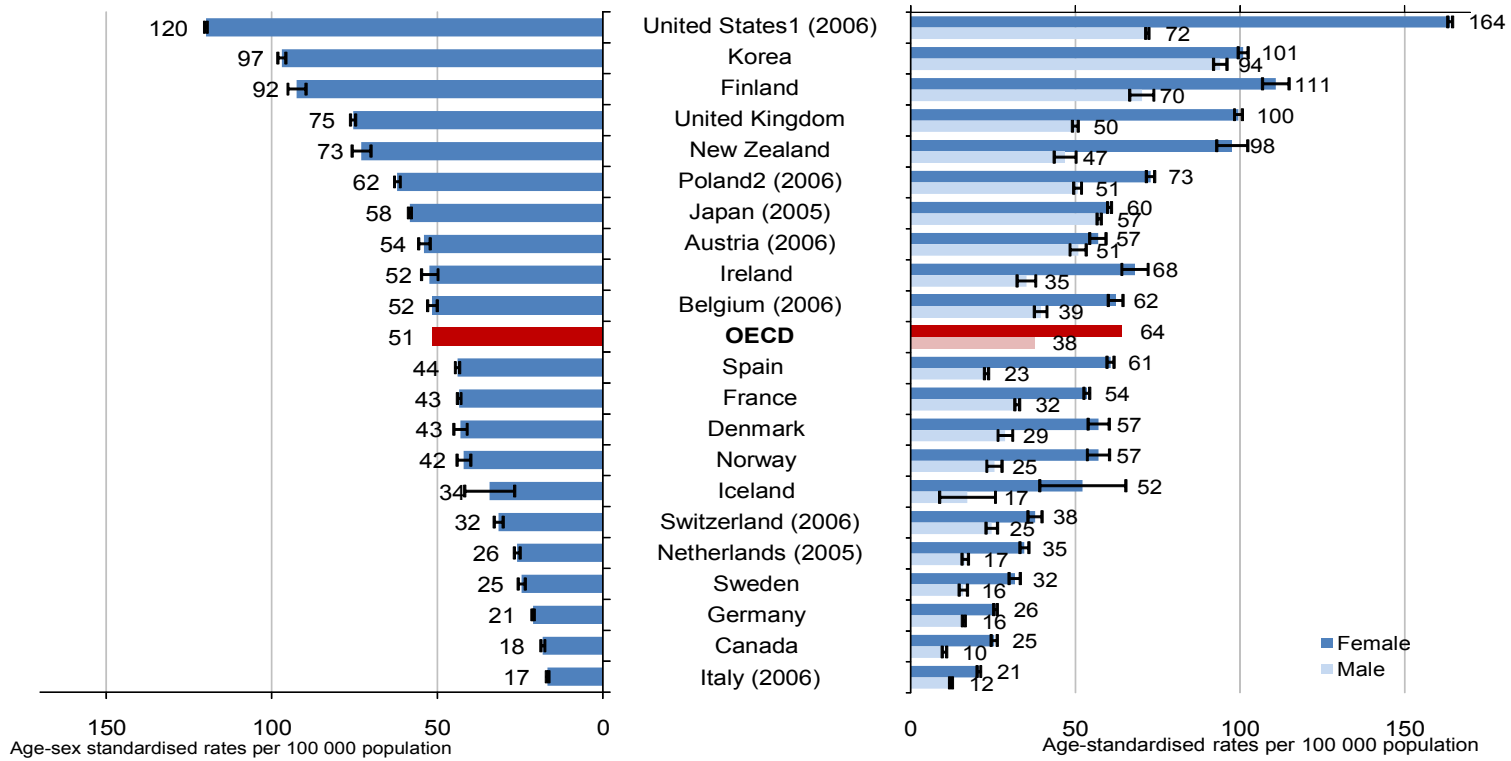
Health Promotion, Prevention and Primary Care

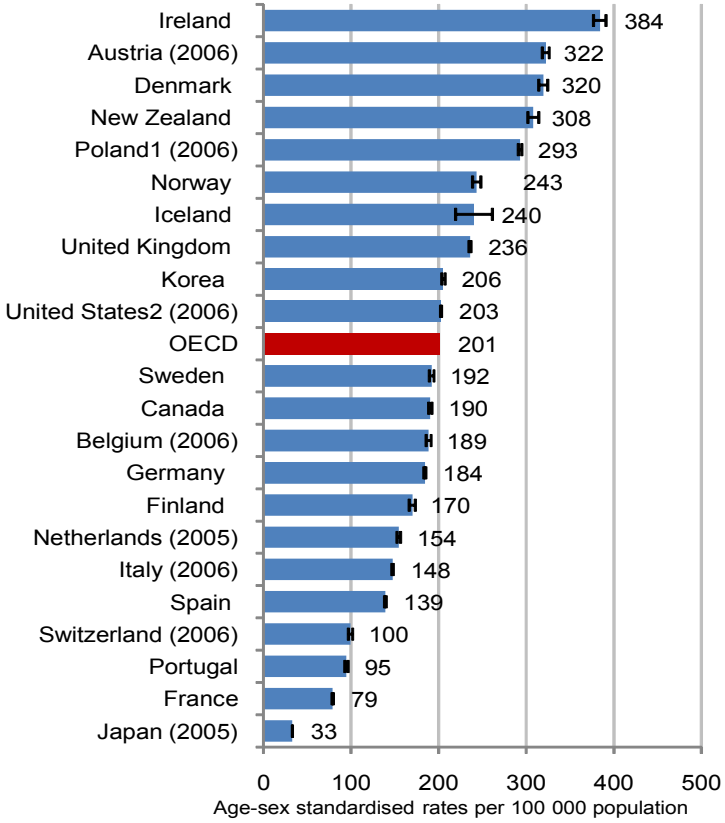
Indicators related to "avoidable" hospital admissions

5.1.1. **Asthma admission rates, aged 15 and over, 2007**

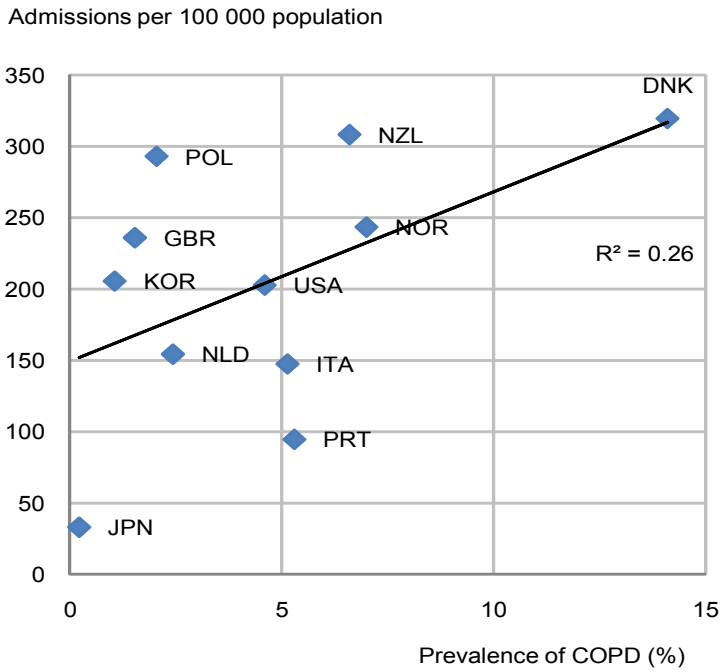


1. Does not fully exclude day cases. 2. Includes transfers from other hospital units, which marginally elevate the rates.

5.1.2. **COPD admission rates, aged 15 and over, 2007**



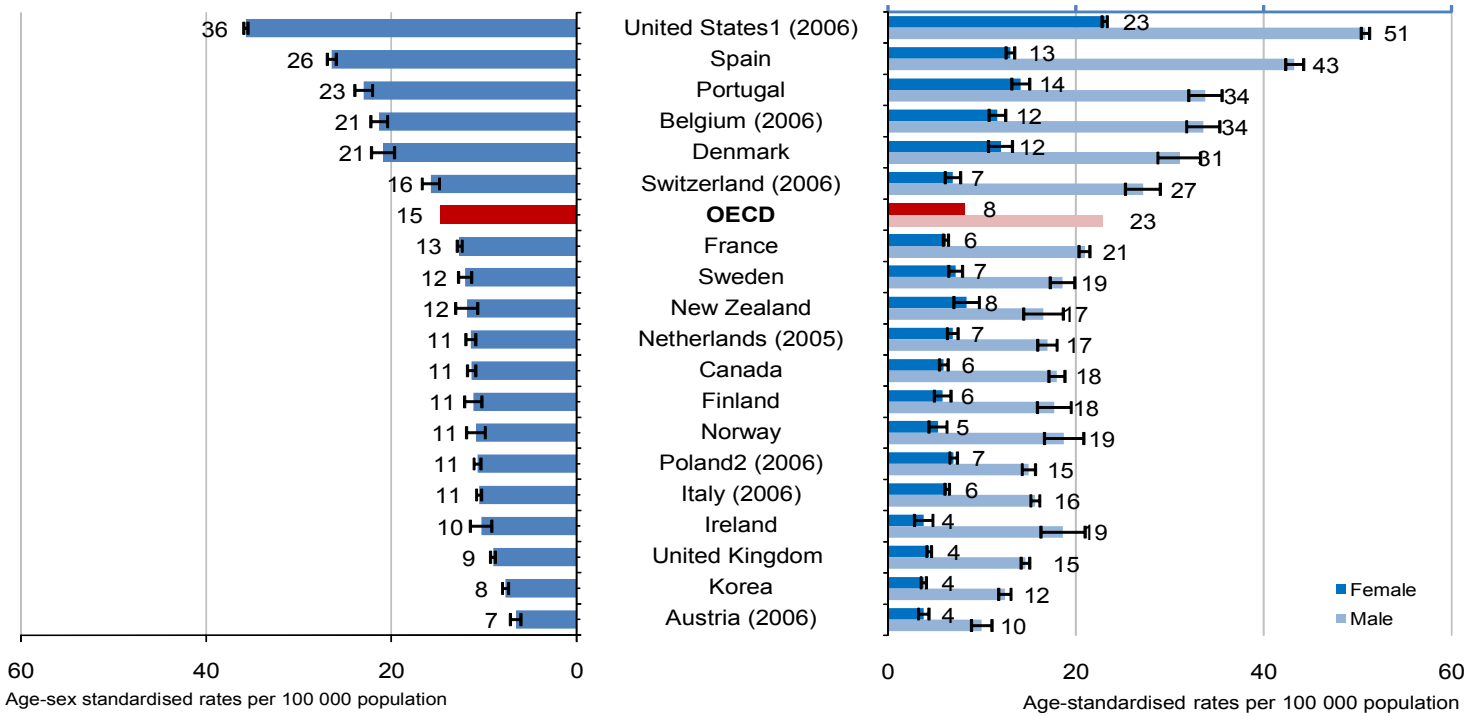
5.1.3. **COPD admission rates and prevalence rates, 2007 (or latest year)**



1. Includes transfers from other hospital units, which marginally elevate the rates. 2. Does not fully exclude day cases.

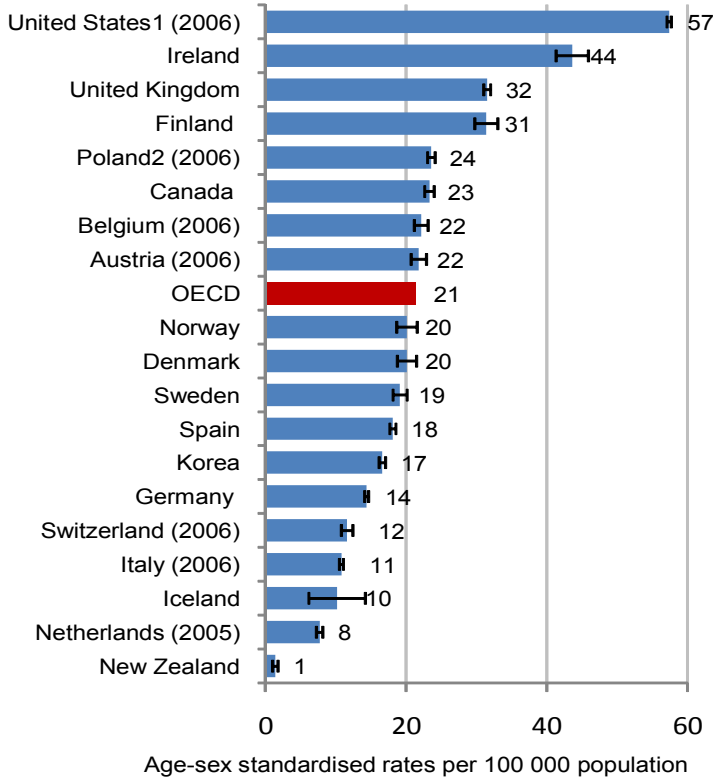
Source: OECD HCQI Data 2009. Rates have been age-sex standardised to the 2005 OECD population. 95% confidence intervals are represented by H.

5.2.1. **Diabetes lower extremity amputation rates, aged 15 and over, 2007**

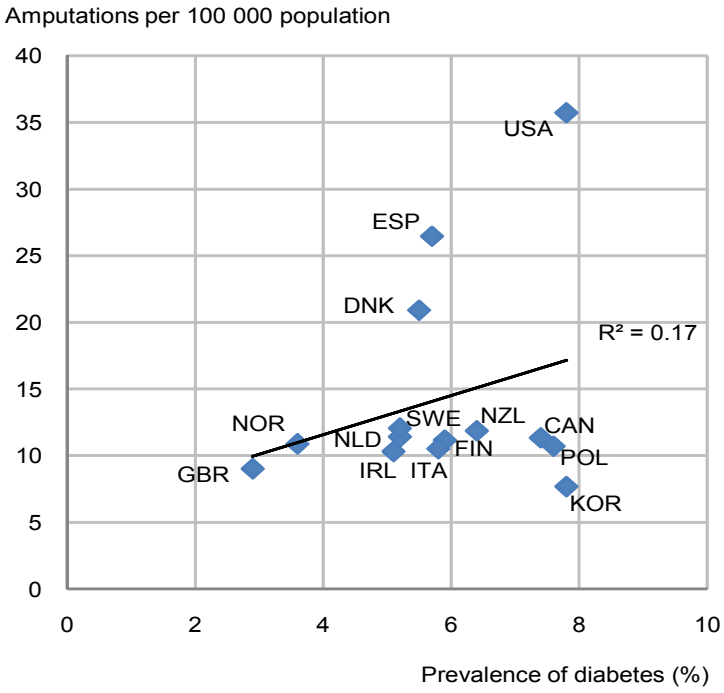


1. Does not fully exclude day cases. 2. Includes transfers from other hospital units, which marginally elevate the rates.

5.2.2. **Diabetes acute complications admission rates, aged 15 and over, 2007**



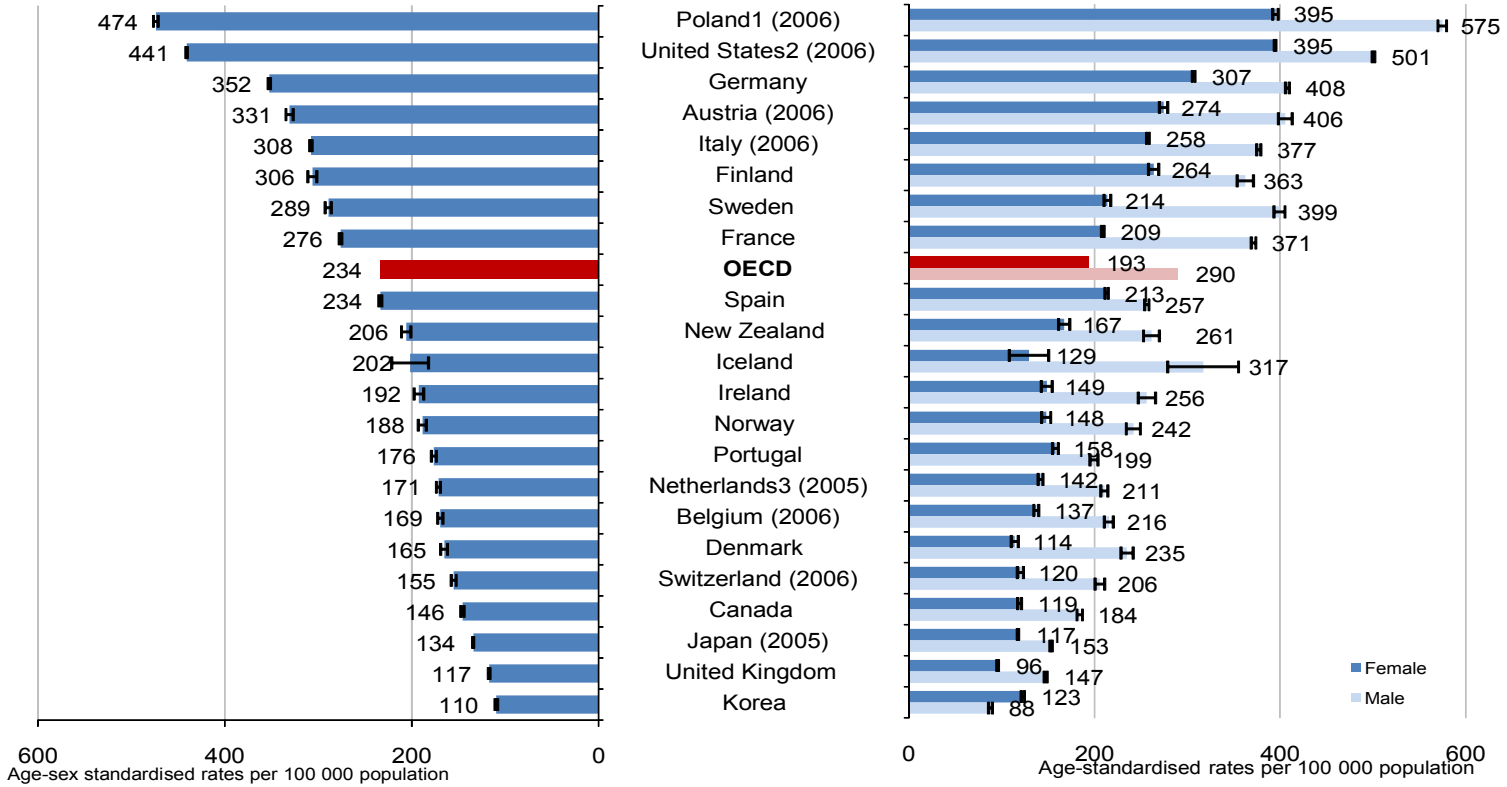
5.2.3. **Diabetes lower extremity amputation rates and prevalence of diabetes, 2007**



1. Does not fully exclude day cases. 2. Includes transfers from other hospital units, which marginally elevate the rates.

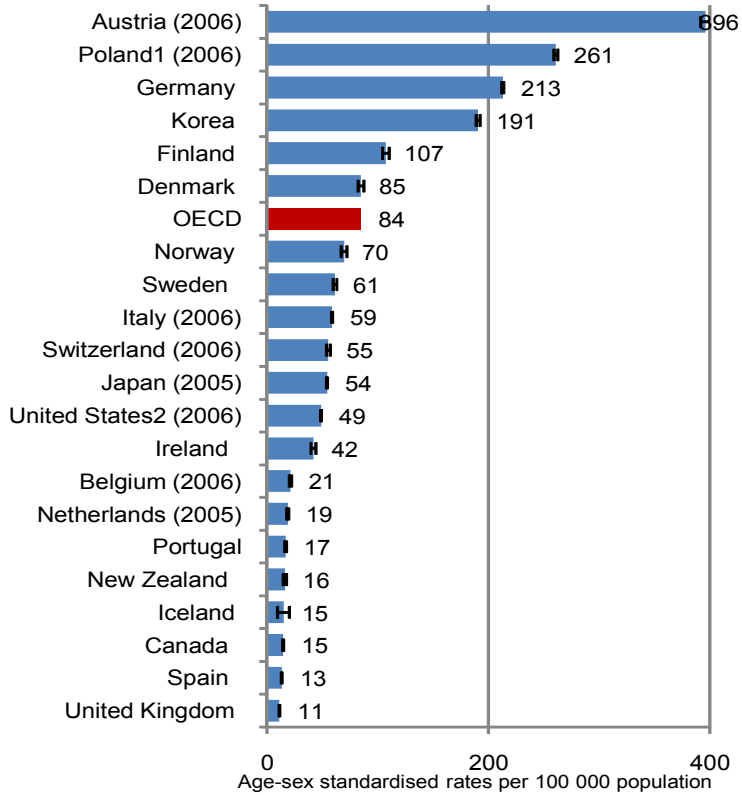
Source: OECD HCQI Data 2009. Rates have been age-sex standardised to the 2005 OECD population. Diabetes prevalence (aged 20-79 years) are from the *International Diabetes Federation* (2006). 95% confidence intervals are represented by H.

5.3.1. **CHF admission rates, aged 15 and over, 2007**

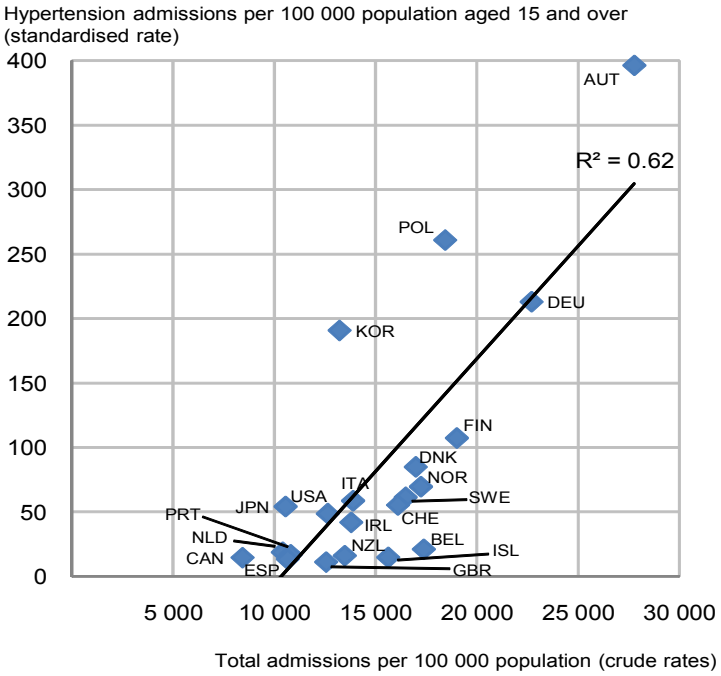


1. Includes transfers from other hospital units, which marginally elevate the rates. 2. Does not fully exclude day cases. 3. Includes admissions for additional diagnosis codes, which marginally elevate the rate.

5.3.2. **Hypertension admission rates, aged 15 and over, 2007**



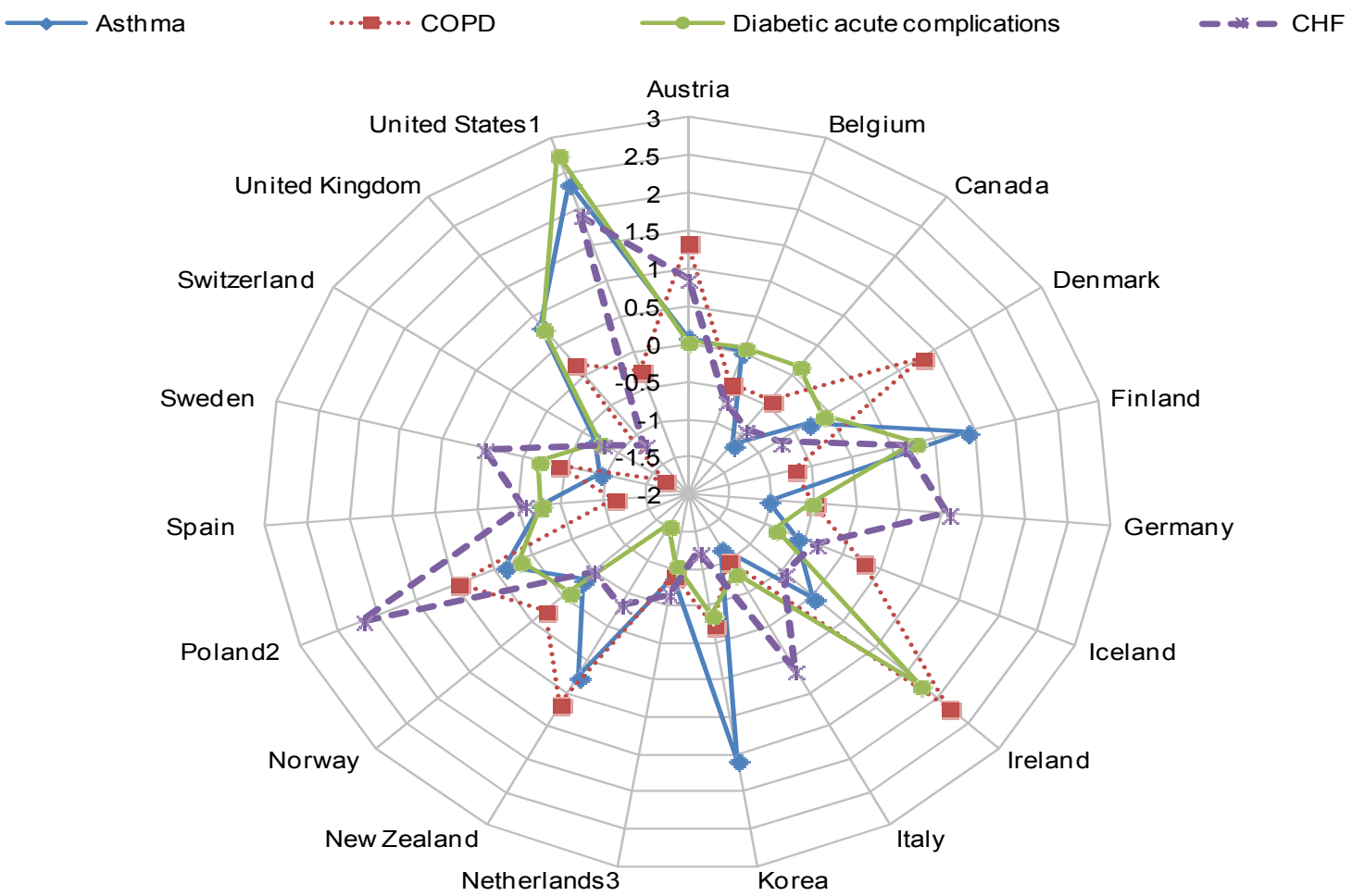
5.3.3. **Hypertension admission rates and total admission rates, 2007 (or latest year available)**



1. Includes transfers from other hospital units, which marginally elevate the rates. 2. Does not fully exclude day cases.

Source: OECD HCQI Data 2009. Rates have been age-sex standardised to the 2005 OECD population. 95% confidence intervals are represented by H.

Avoidable hospital admission rates, 2007



Note: Data from Austria, Belgium, Italy, Poland, Switzerland and the United States refer to 2006. Data from the Netherlands refer to 2005.
1. Data does not fully exclude day cases. 2. Data includes transfers from other hospitals and/or other units within the same hospitals, which marginally elevate the rates. 3. Data for CHF includes admissions for additional diagnosis codes, which marginally elevate the rate.
Source: OECD Health Care Quality Indicators Database, 2009

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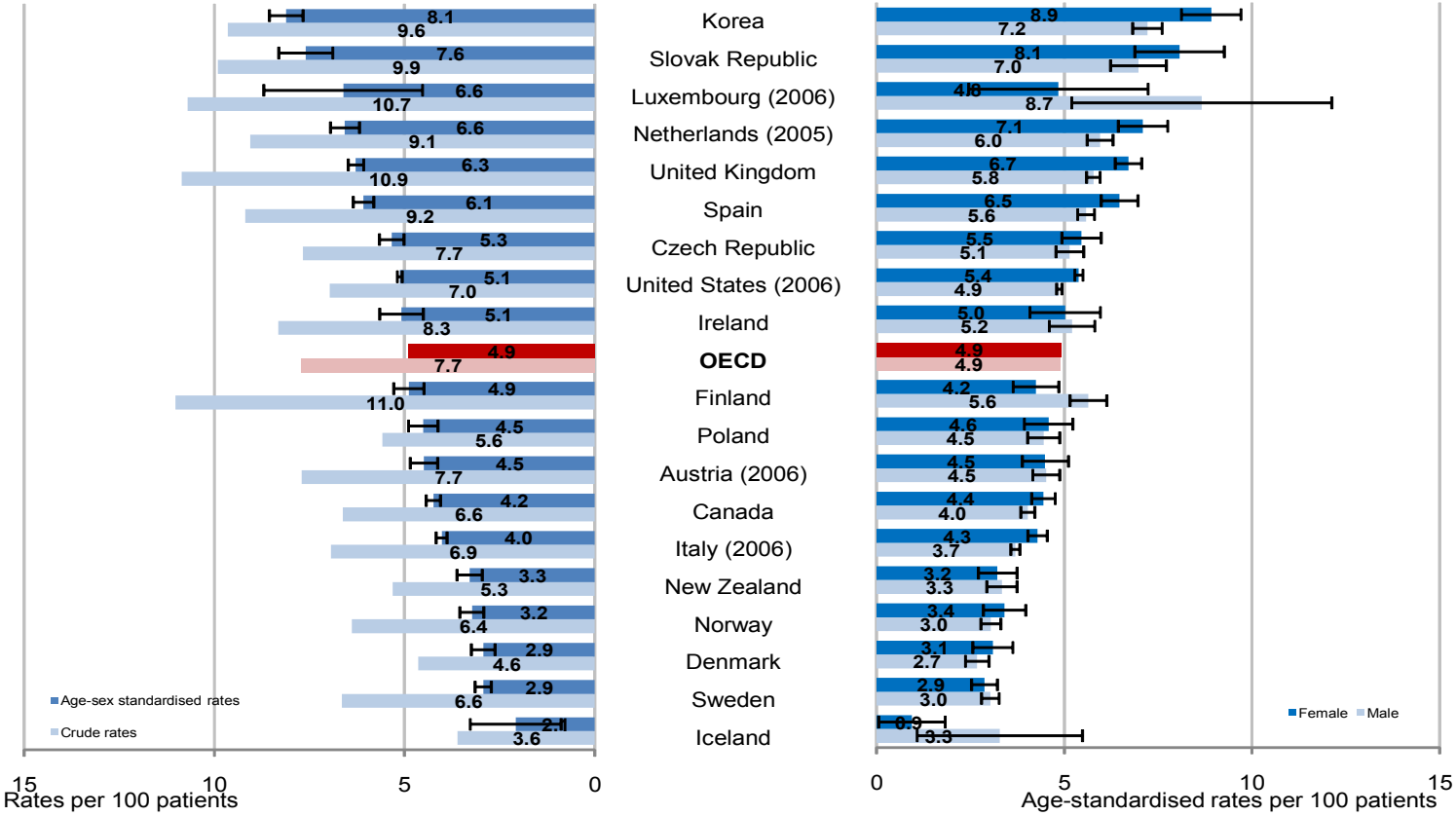
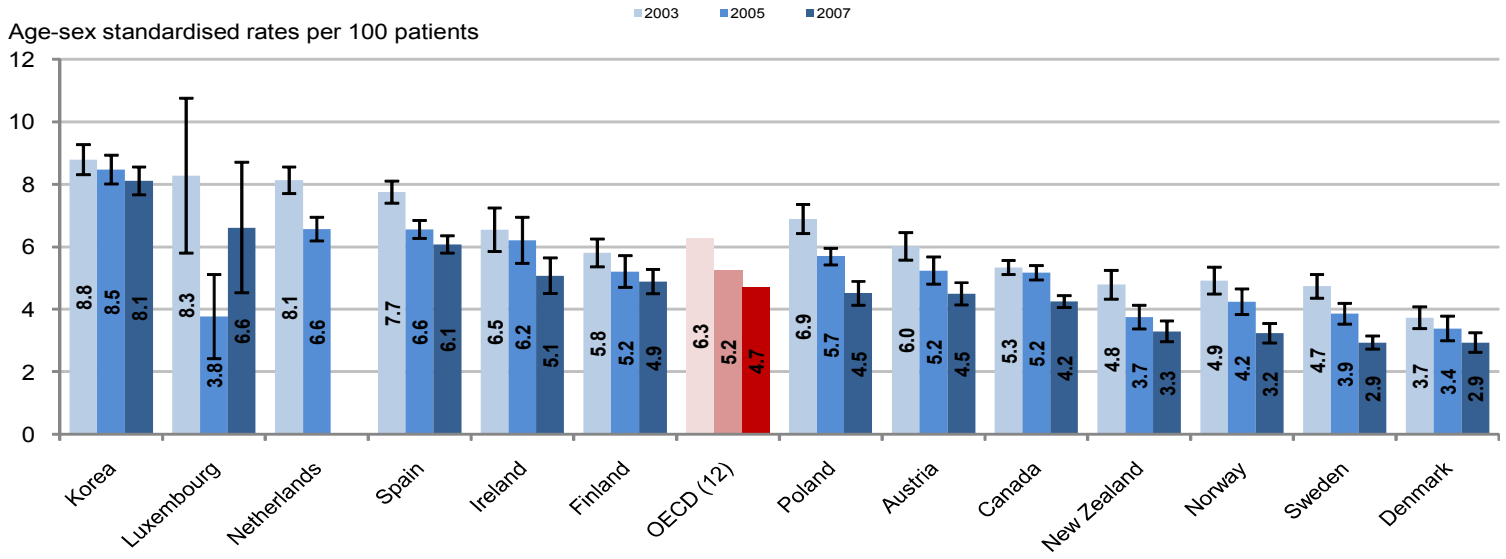
Acute Hospital Care

30 day case-fatality rates AMI and Stroke

5.4.1. **In-hospital case-fatality rates within 30 days after admission for AMI, 2007**

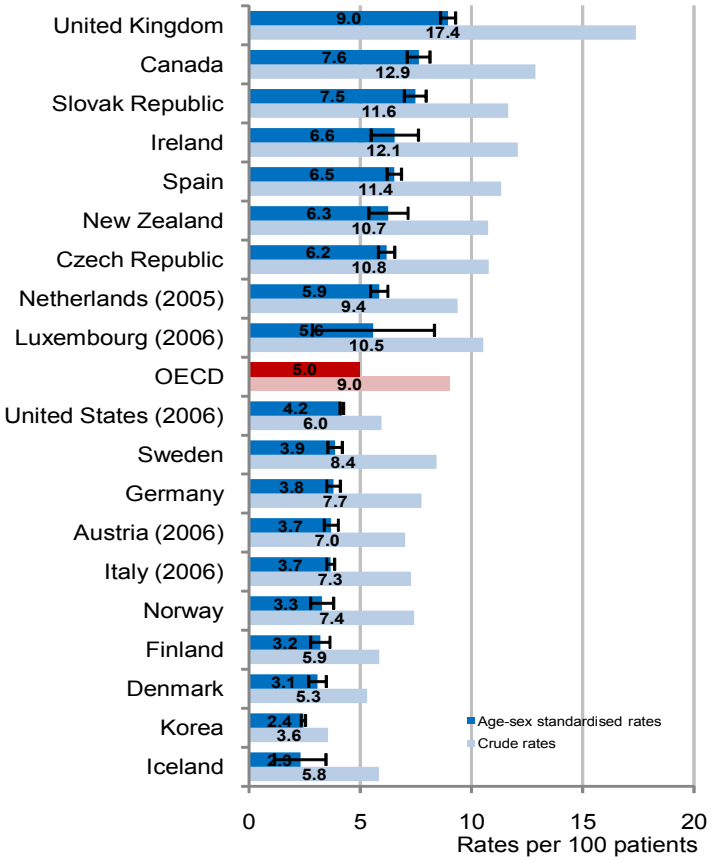


5.4.2. **Reduction in in-hospital case-fatality rates within 30 days after admission for AMI, 2003-2007 (or nearest year)**

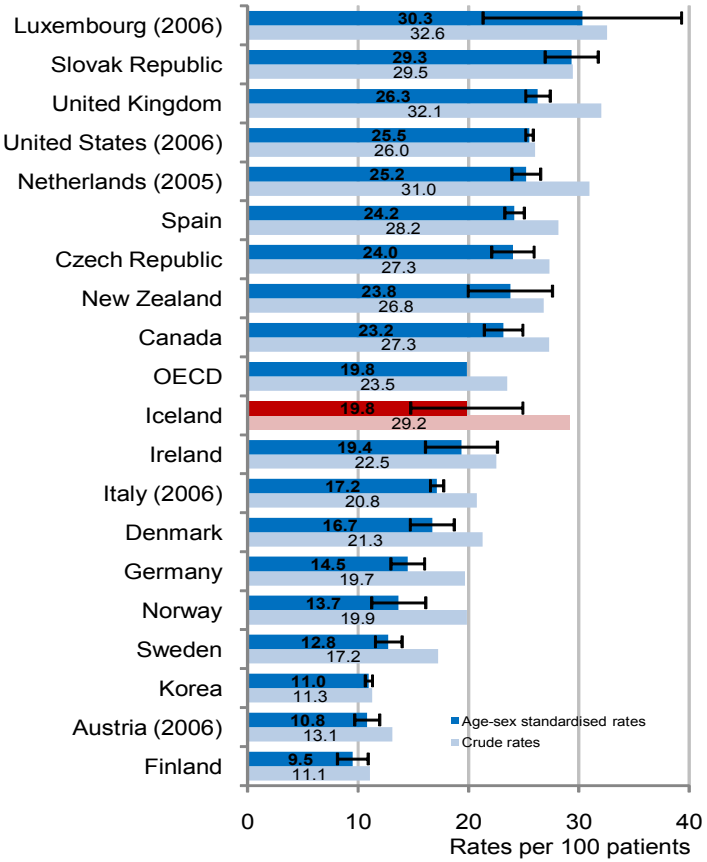


Source: OECD HCQI Data 2009. Rates have been age-sex standardised to the 2005 OECD population (45+). 95% confidence intervals are represented by H.

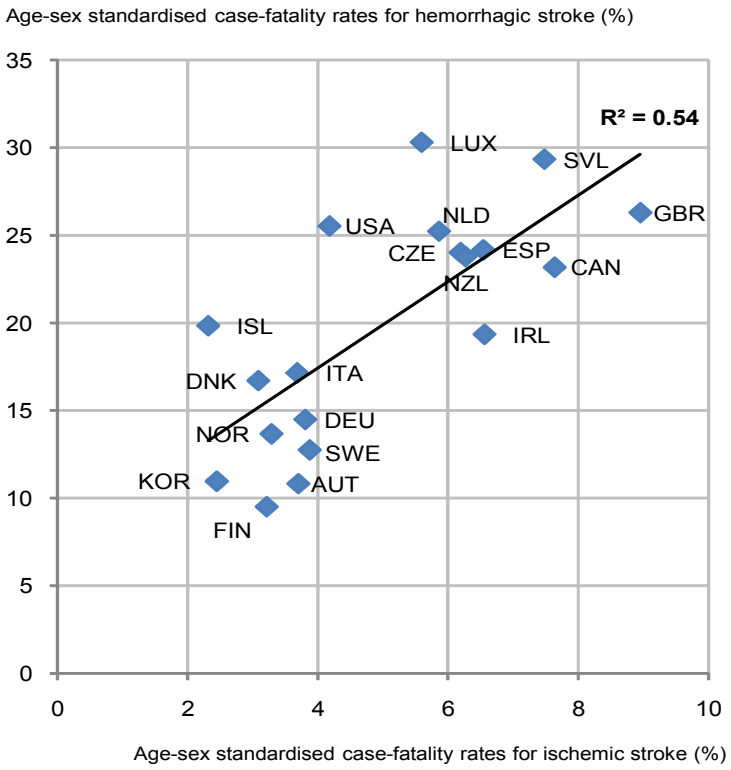
5.5.1. **In-hospital case-fatality rates within 30 days after admission for *ischemic stroke*, 2007**



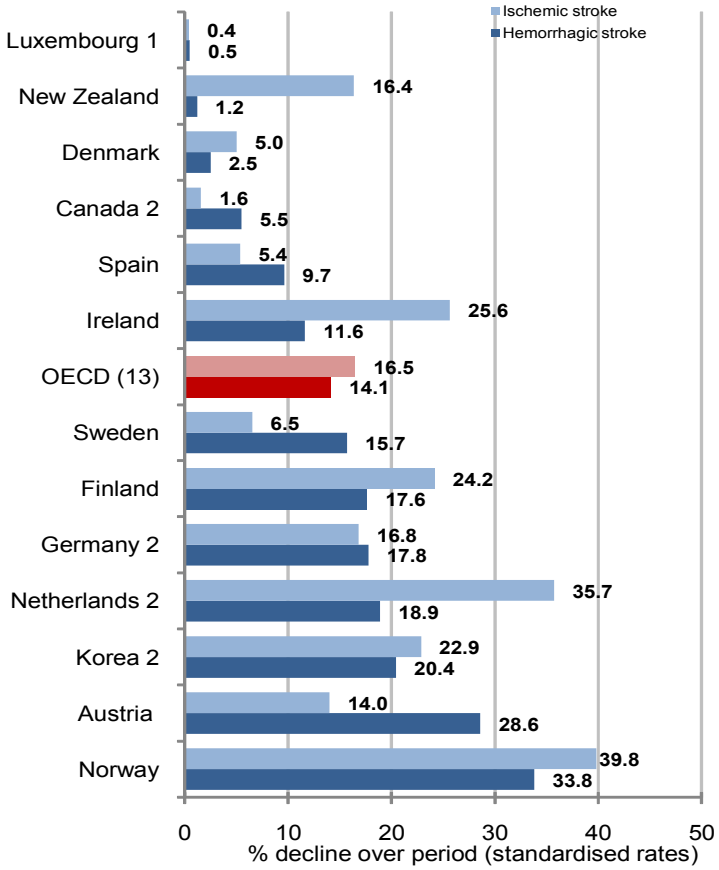
5.5.2. **In-hospital case-fatality rates within 30 days after admission for *hemorrhagic stroke*, 2007**



5.5.3. **In-hospital case-fatality rates within 30 days after admission for ischemic and hemorrhagic stroke, 2007**



5.5.4. **Reduction in in-hospital case-fatality within 30 days after admission for stroke, 2002-2007**



1. Based on change from 2002-2003 to 2006. 2. Based on a three-year period only.

Source: OECD HCQI Data 2009. Rates are age-sex standardised to the 2005 OECD population (45+). 95% confidence intervals are represented by H in the relevant charts.

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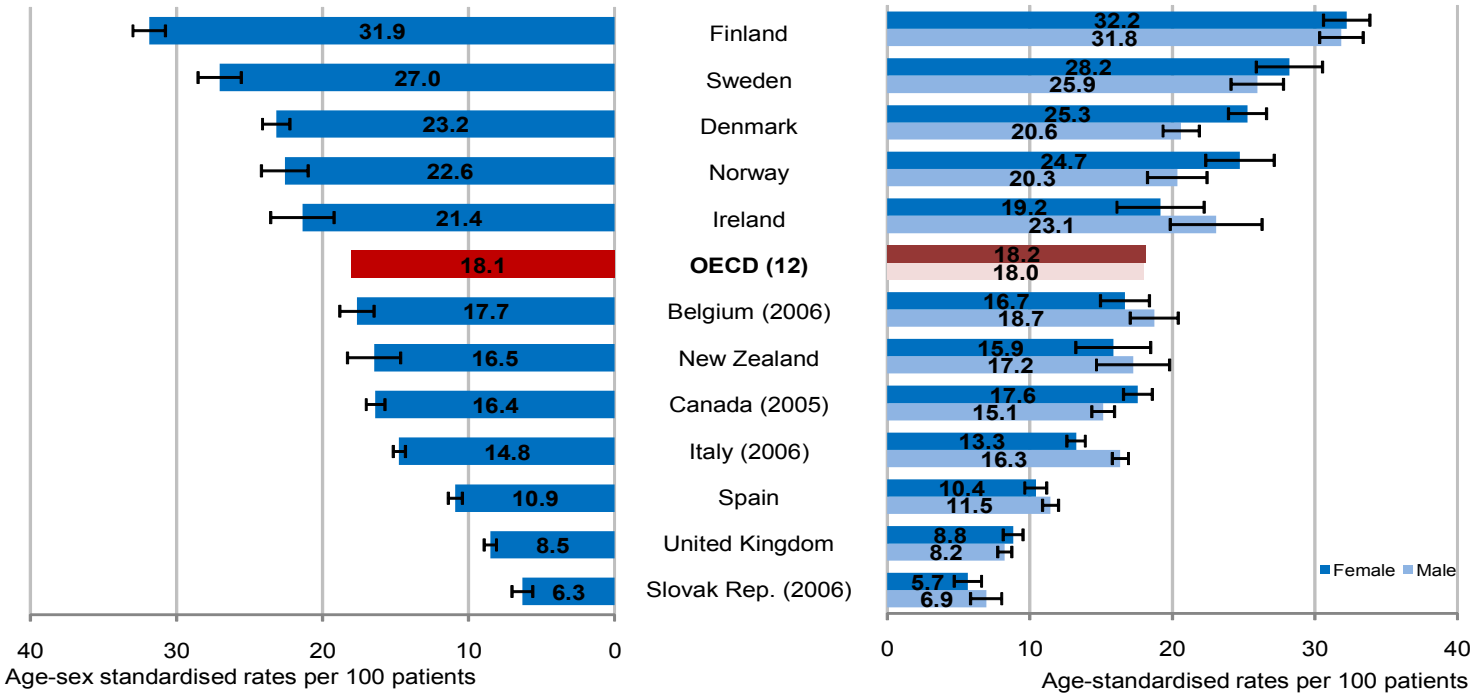
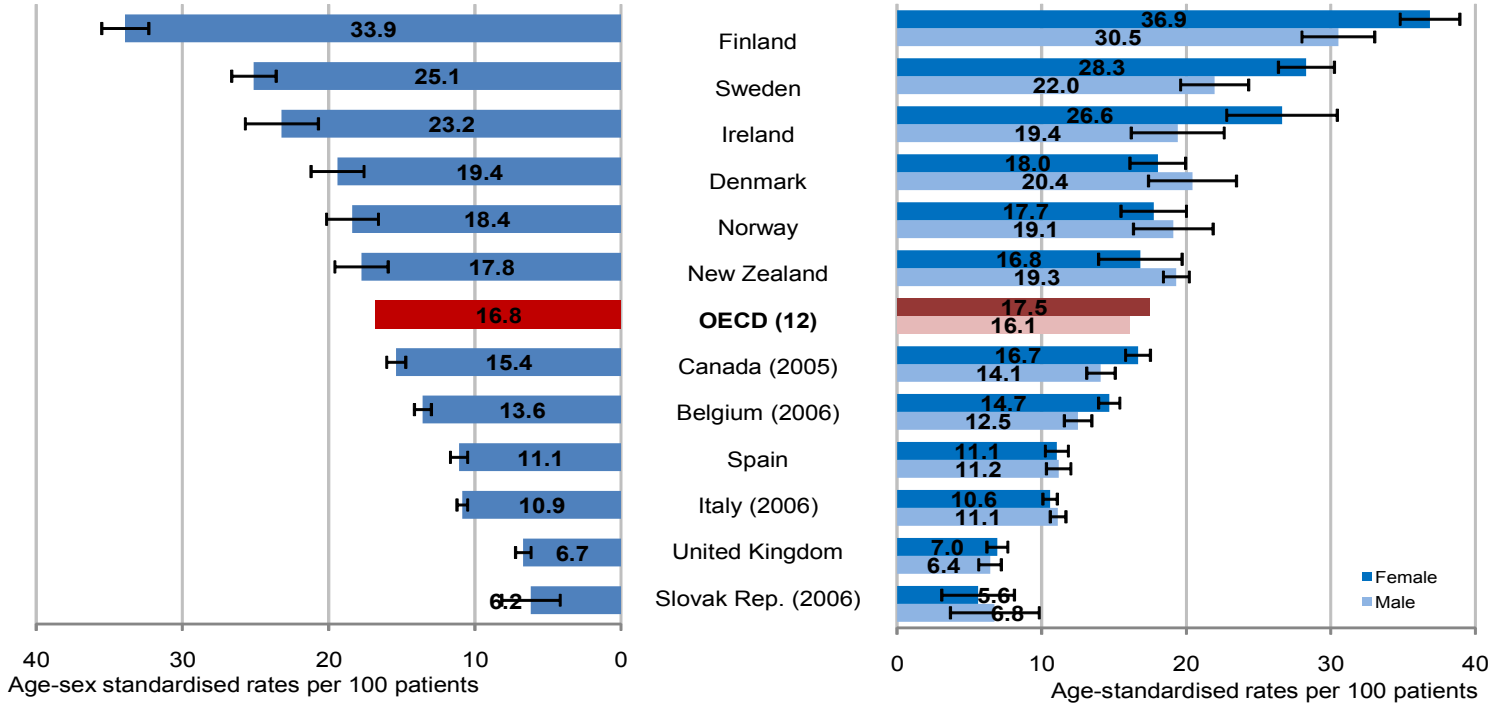
Mental Health Care

Re-admission rates schizophrenia and bi-polar disorders

5.6.1. **Unplanned schizophrenia re-admissions to the same hospital, 2007**



5.6.2. **Unplanned bipolar disorder re-admissions to the same hospital, 2007**



Source: OECD HCQI Data 2009. Rates are age-sex standardised to the 2005 OECD population. 95% confidence intervals are represented by H.

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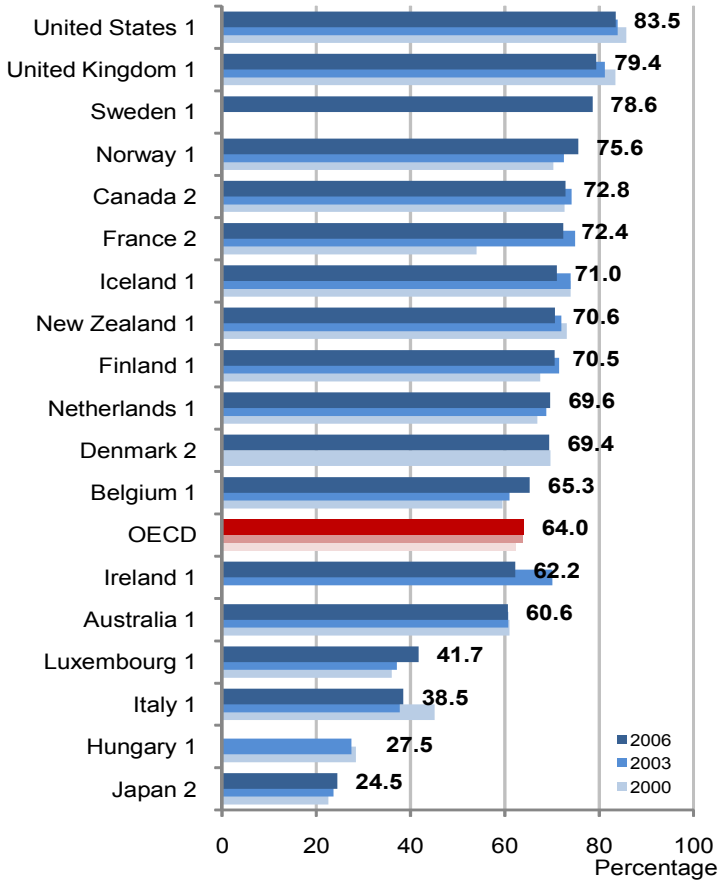
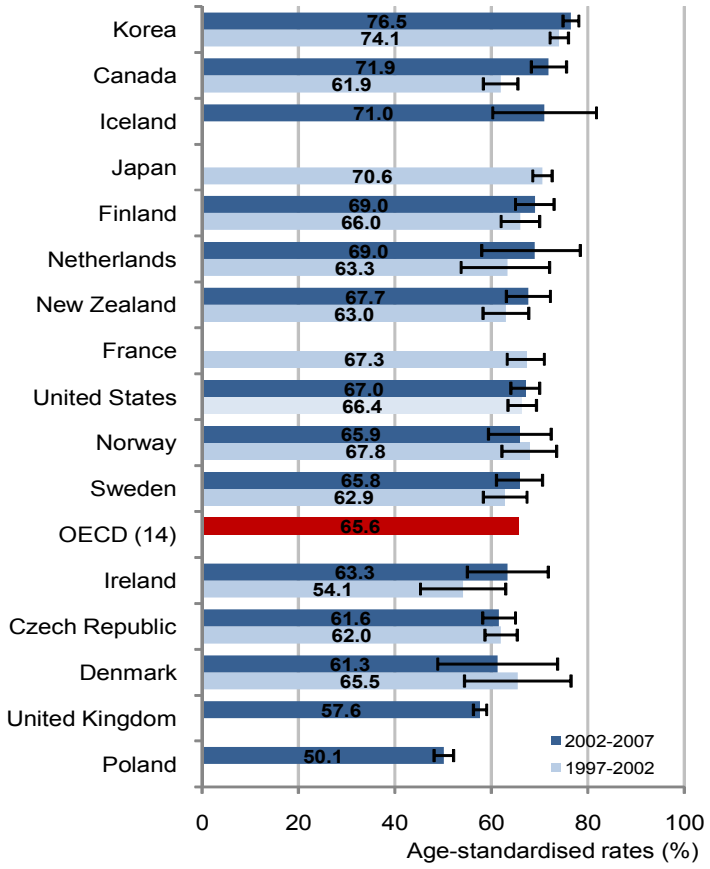
Cancer care

Screening and survival rates breast, cervical and colorectal cancer

5.7.1. **Cervival cancer screening, percentage of women screened aged 20-69, 2000 to 2006 (or nearest year)**

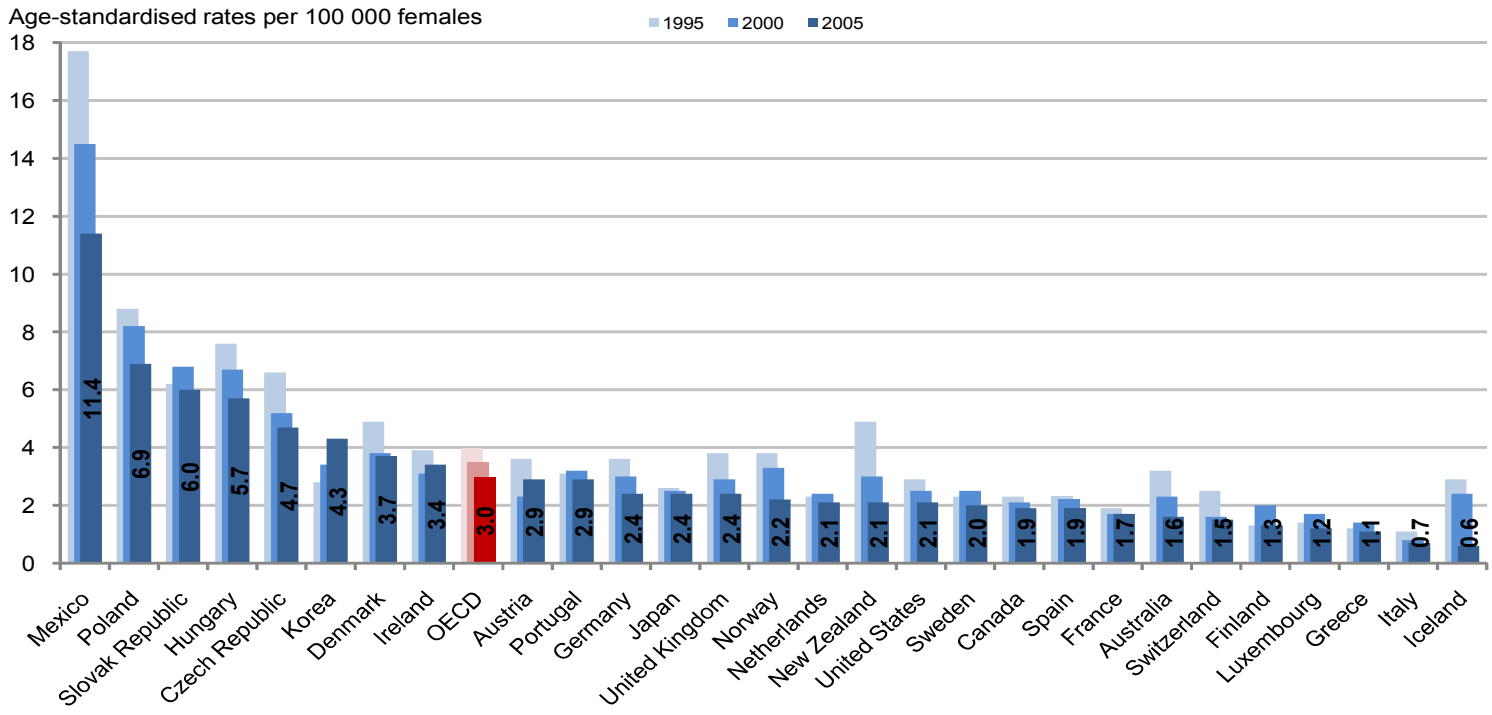


5.7.2 **Cervical cancer five-year relative survival rate, 1997-2002 and 2002-2007 (or nearest period)**



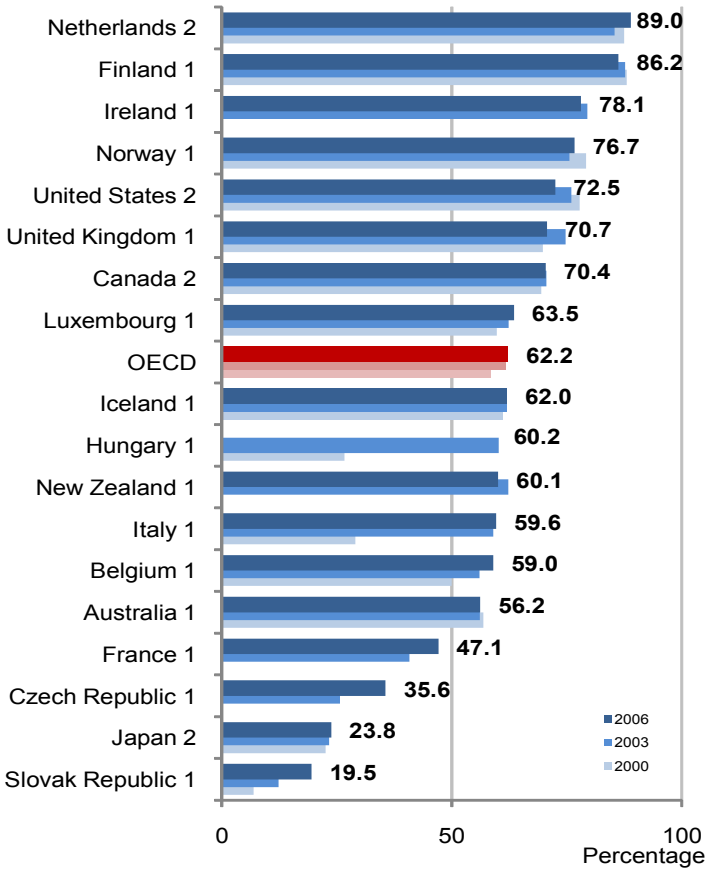
1. Programme. 2. Survey.

5.7.3. **Cervical cancer mortality, females, 1995 to 2005 (or nearest year)**

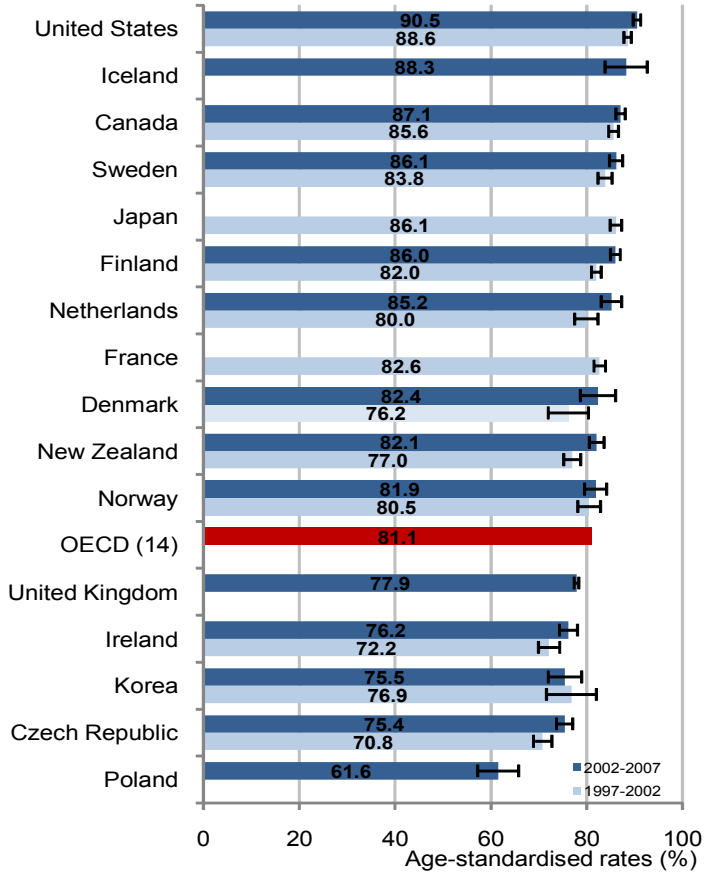


Sources: OECD HCQI Data 2009. Survival rates are age standardised to the International Cancer Survival Standards population. *OECD Health Data 2009* (cancer screening; mortality data extracted from the WHO Mortality Database and age standardised to the 1980 OECD population). The 95% confidence intervals are represented by H in the relevant charts.

5.8.1. **Mammography screening, percentage of women aged 50- 69 screened, 2000 to 2006 (or nearest year)**

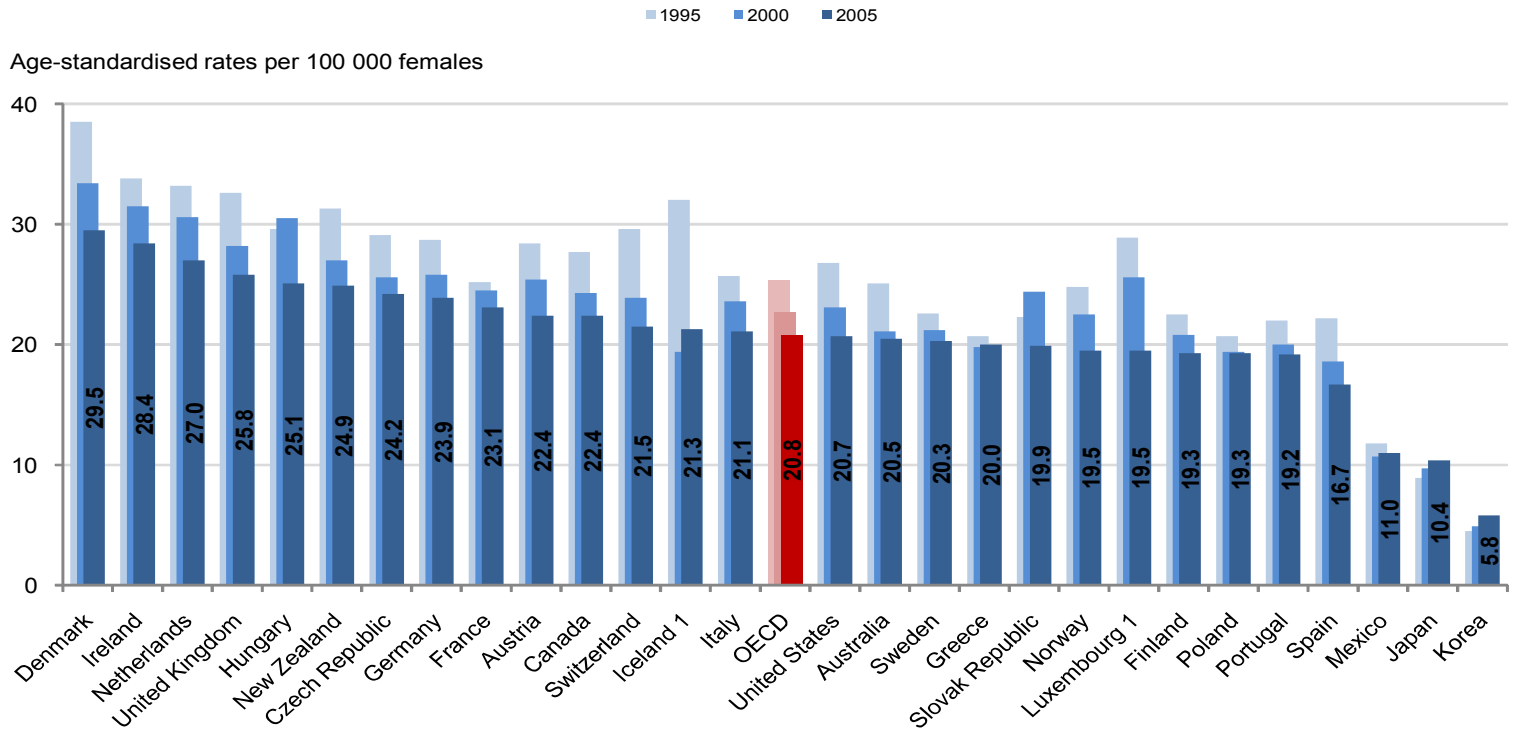


5.8.2 **Breast cancer five-year relative survival rate, 1997-2002 and 2002-2007 (or nearest period)**



1. Programme. 2. Survey.

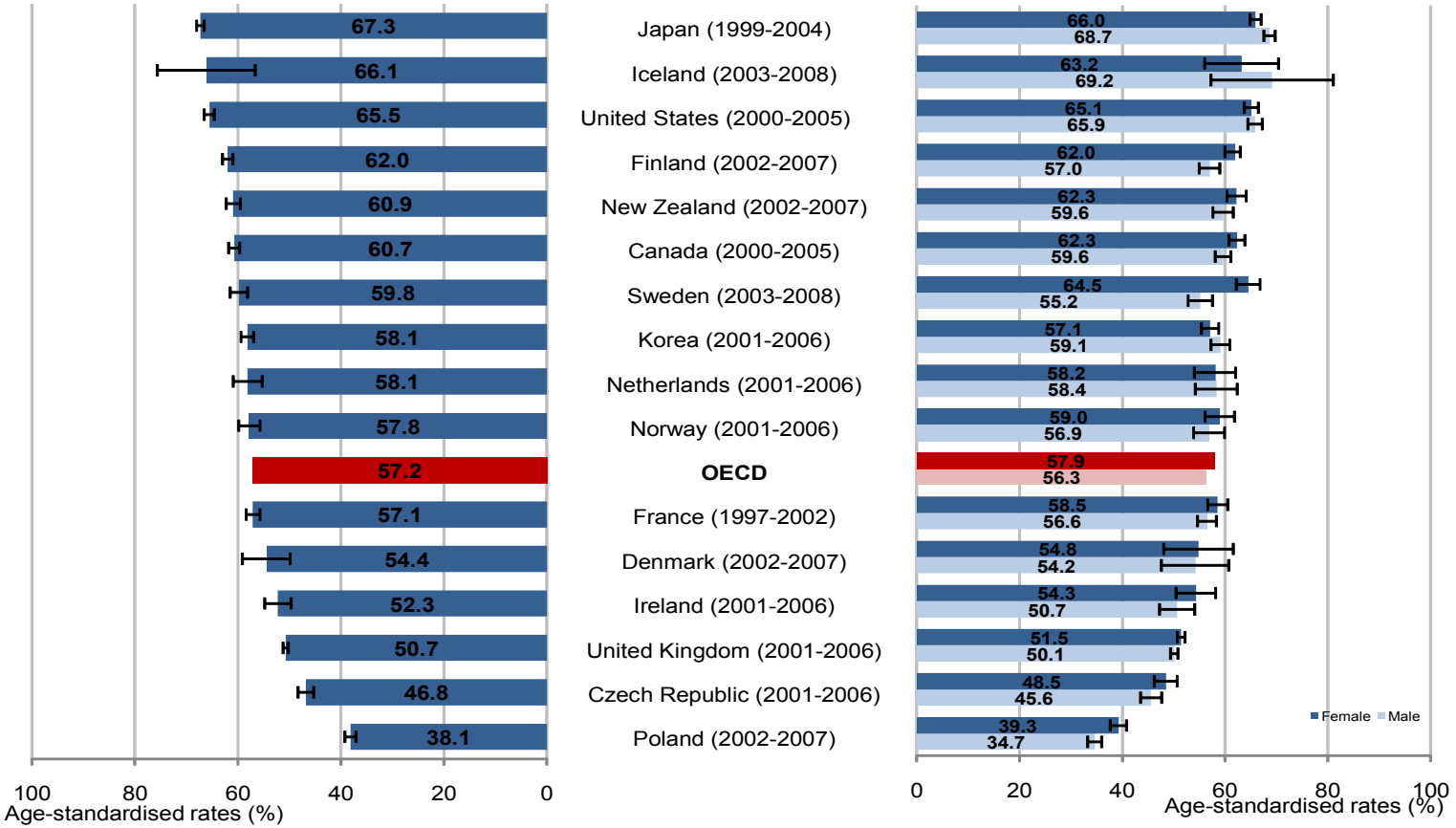
5.8.3. **Breast cancer mortality, females, 1995 to 2005 (or nearest available year)**



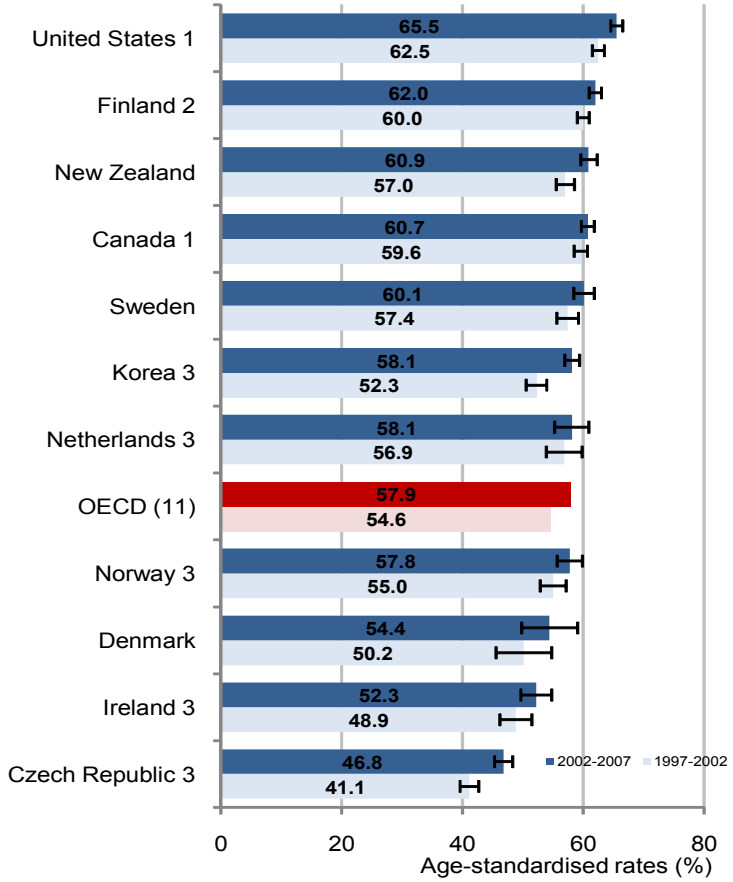
1. Rates for Iceland and Luxembourg are based on a three-year average.

Sources: OECD HCQI Data 2009. Survival rates are age standardised to the International Cancer Survival Standards population. *OECD Health Data 2009* (cancer screening; mortality data extracted from the WHO Mortality Database and age standardised to the 1980 OECD population). The 95% confidence intervals are represented by H in the relevant charts.

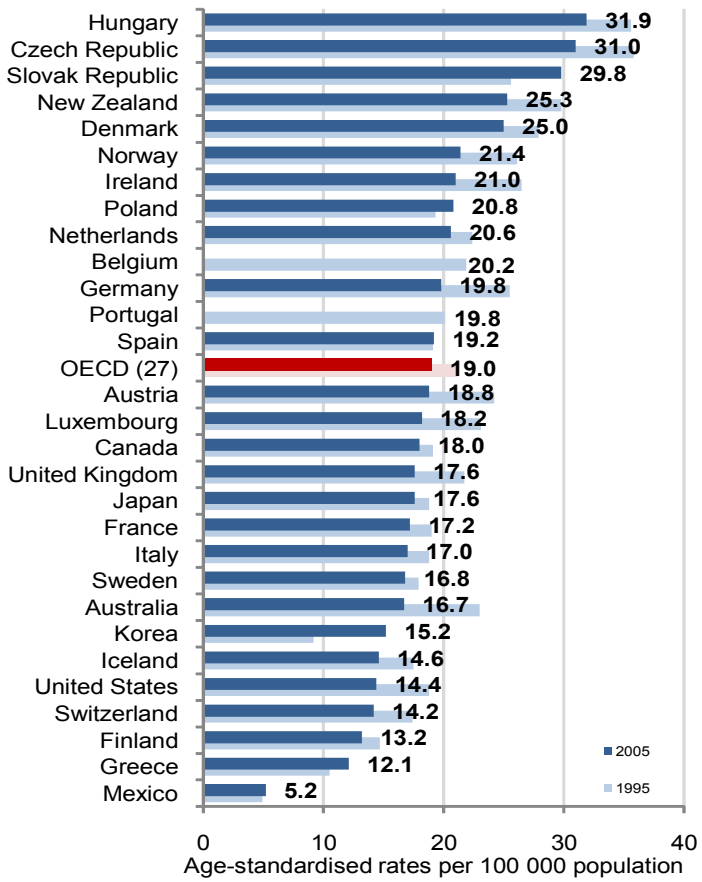
5.9.1. **Colorectal cancer, five-year relative survival rate, total and male/female, latest period**



5.9.2. **Colorectal cancer, five-year relative survival rate, 1997-2002 and 2002-2007**



5.9.3. **Colorectal cancer mortality, 1995 to 2005 (or nearest year)**



1. 2000-2005 rather than 2002-2007. 2. 1998-2003 rather than 1997-2002 3. 2001-2006 rather than 2002-2007.

Sources: OECD HCQI Data 2009. Survival rates are age standardised to the International Cancer Survival Standards population. *OECD Health Data 2009* (mortality data extracted from the WHO Mortality Database and age standardised to the 1980 OECD population). The 95% confidence intervals are represented by H in the relevant charts.

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Patient Safety Indicators

Indicators

- Foreign body left in during procedure (PSI 5)
- Catheter related bloodstream infections (PSI 7)
- Postoperative pulmonary embolism or deep vein thrombosis (PSI 12)
- Postoperative sepsis (PSI 13)
- Accidental puncture and laceration (PSI 15)
- Obstetric trauma -- vaginal delivery with instrument (PSI 18)
- Obstetric trauma -- vaginal delivery without instrument (PSI 19)

Patient Safety Indicators

- Dependent on administrative data-bases
- Comparability coding practices
- Importance secondary diagnosis
- Importance “present at admission” code
- Importance UPI

Summary Statistics

Country	Year of data collection	Number of indicators provided	Mean number of secondary diagnoses provided
Belgium	2006	7	yes
Canada	2007	7	yes
Denmark	2008	7	yes
Finland	2007	7	no
Germany	2007	7	yes
Iceland	2007	1	no
Ireland	2007	7	yes
Italy	2007	2	yes
Lativa	2007	7	no *
New Zealand	2007	7	yes
Norway	2007	7	yes
Portugal	2007	6	yes
Singapore	2007	5	yes
Spain	2007	7	yes
Sweden	2007	7	yes
Switzerland	2007	7	yes
United Kingdom	2007	7	yes #
United States of America	2006	7	yes

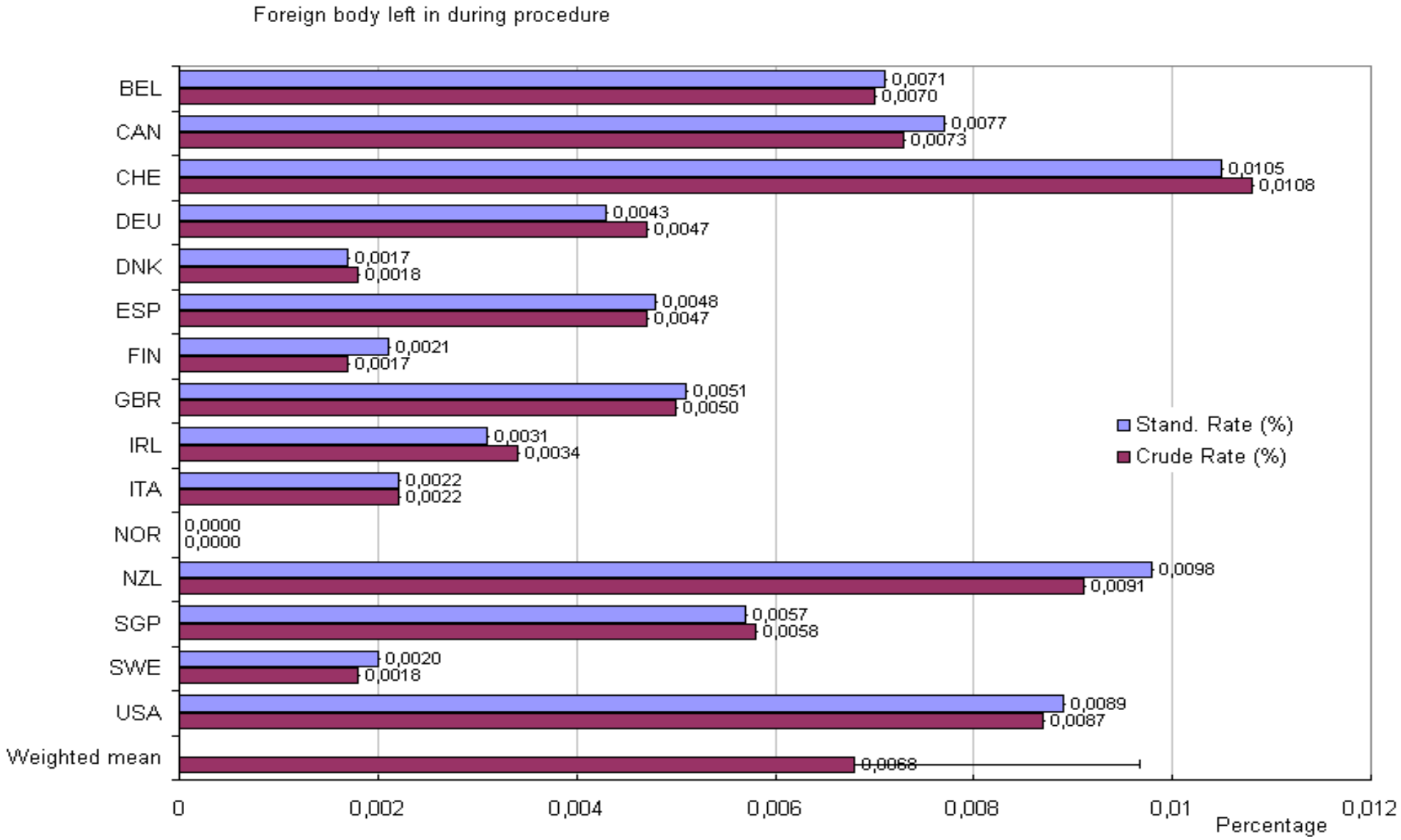
*) birth registry data

#) Data from England used

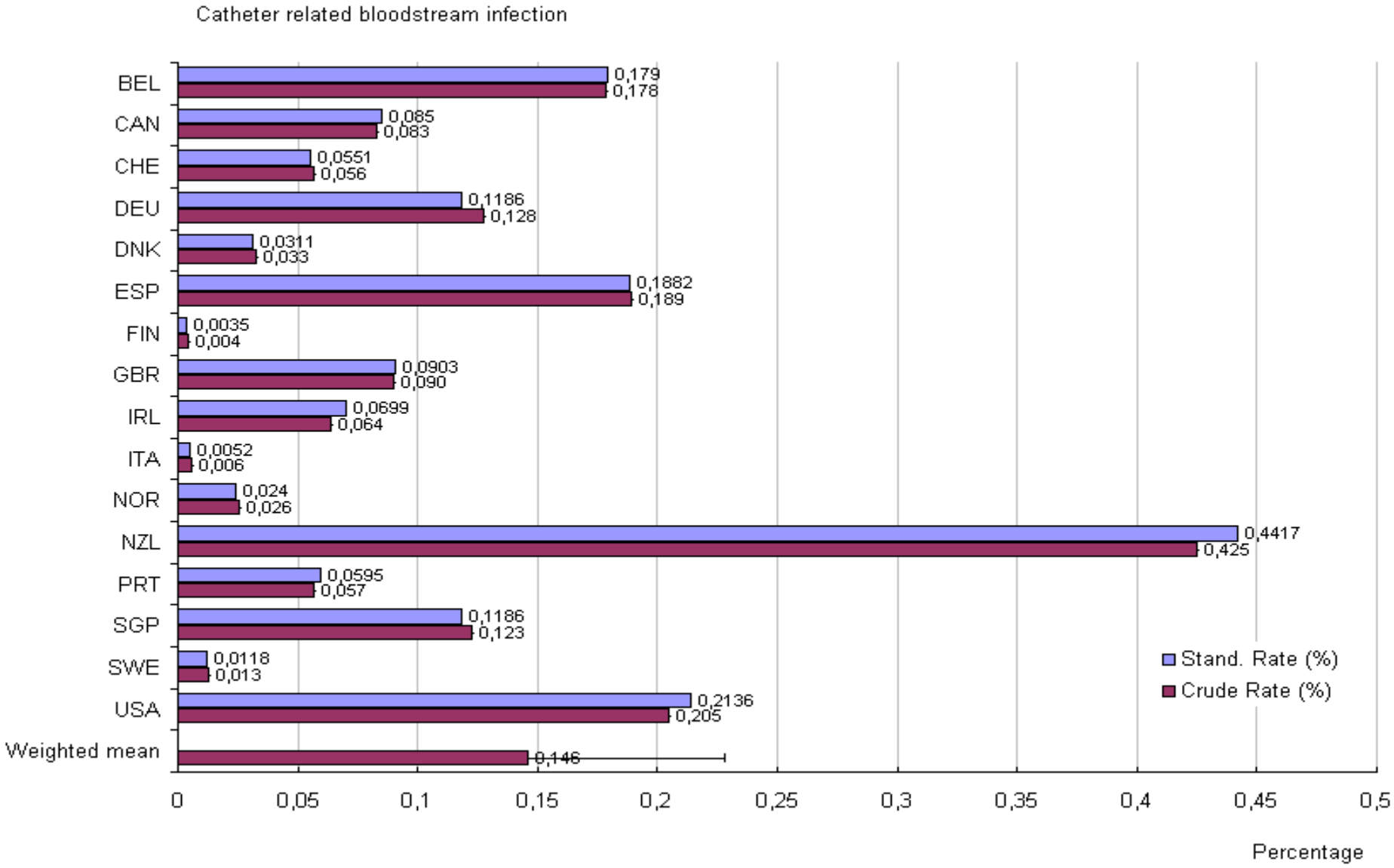
Charts on age-sex standardized versus crude rates

- All countries are included in these charts
- Weighted mean and standard deviation are displayed
  - Weight factors are denominator counts
- No ranking of countries is applied in these charts
  - Comparability issues due to documentation effects are obvious and will be discussed later

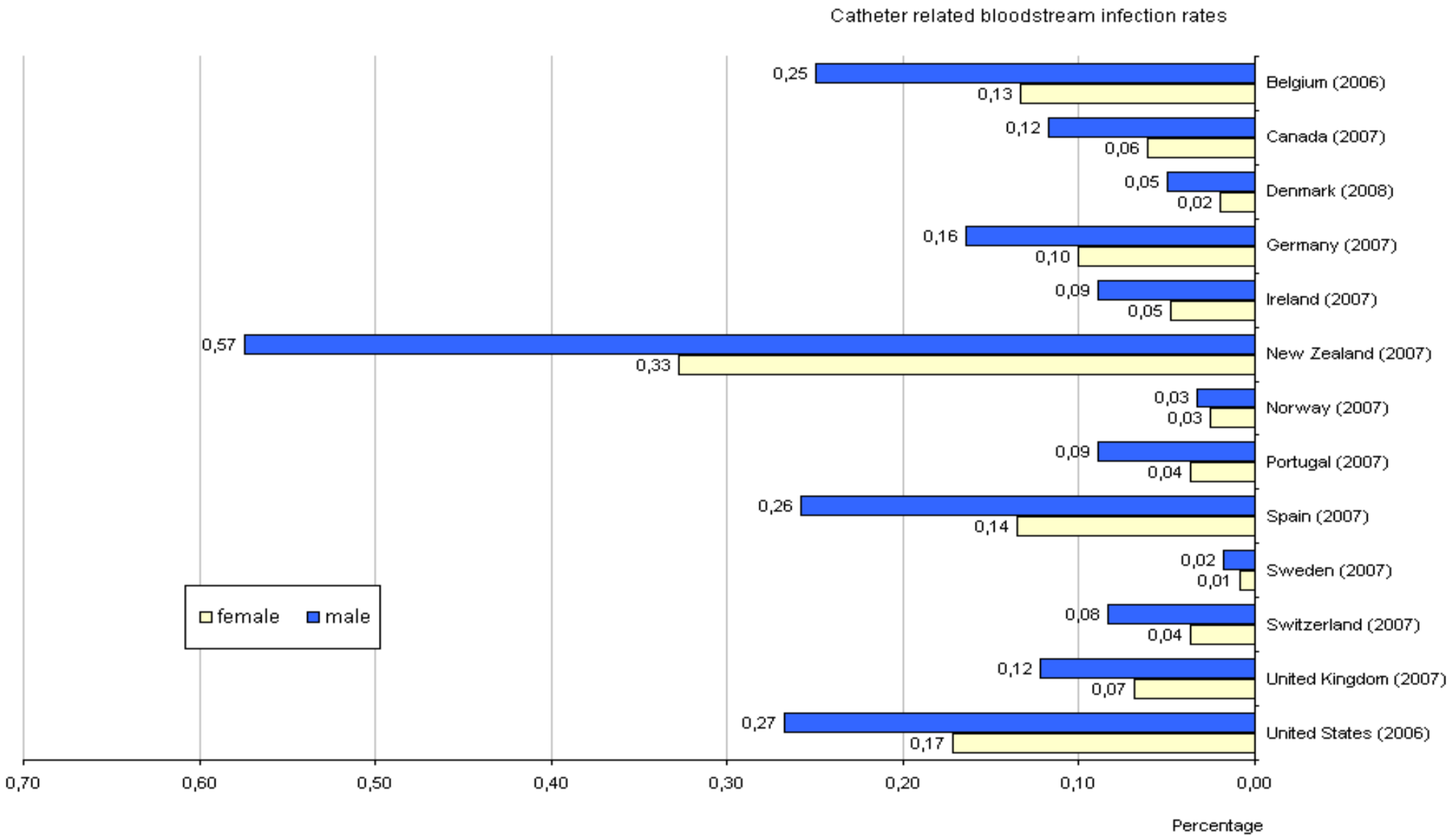
Foreign body left in during procedure



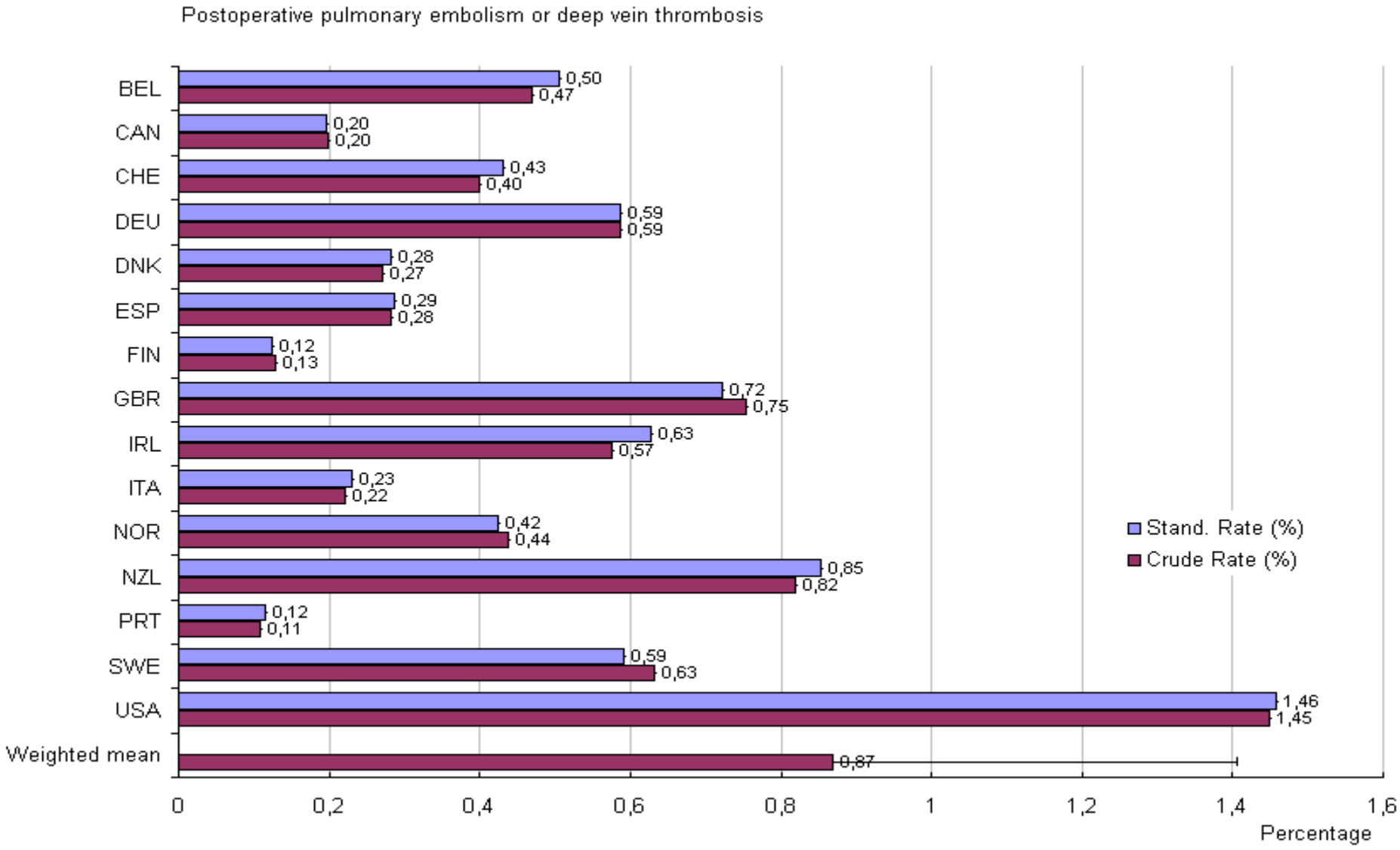
Catheter related bloodstream infections



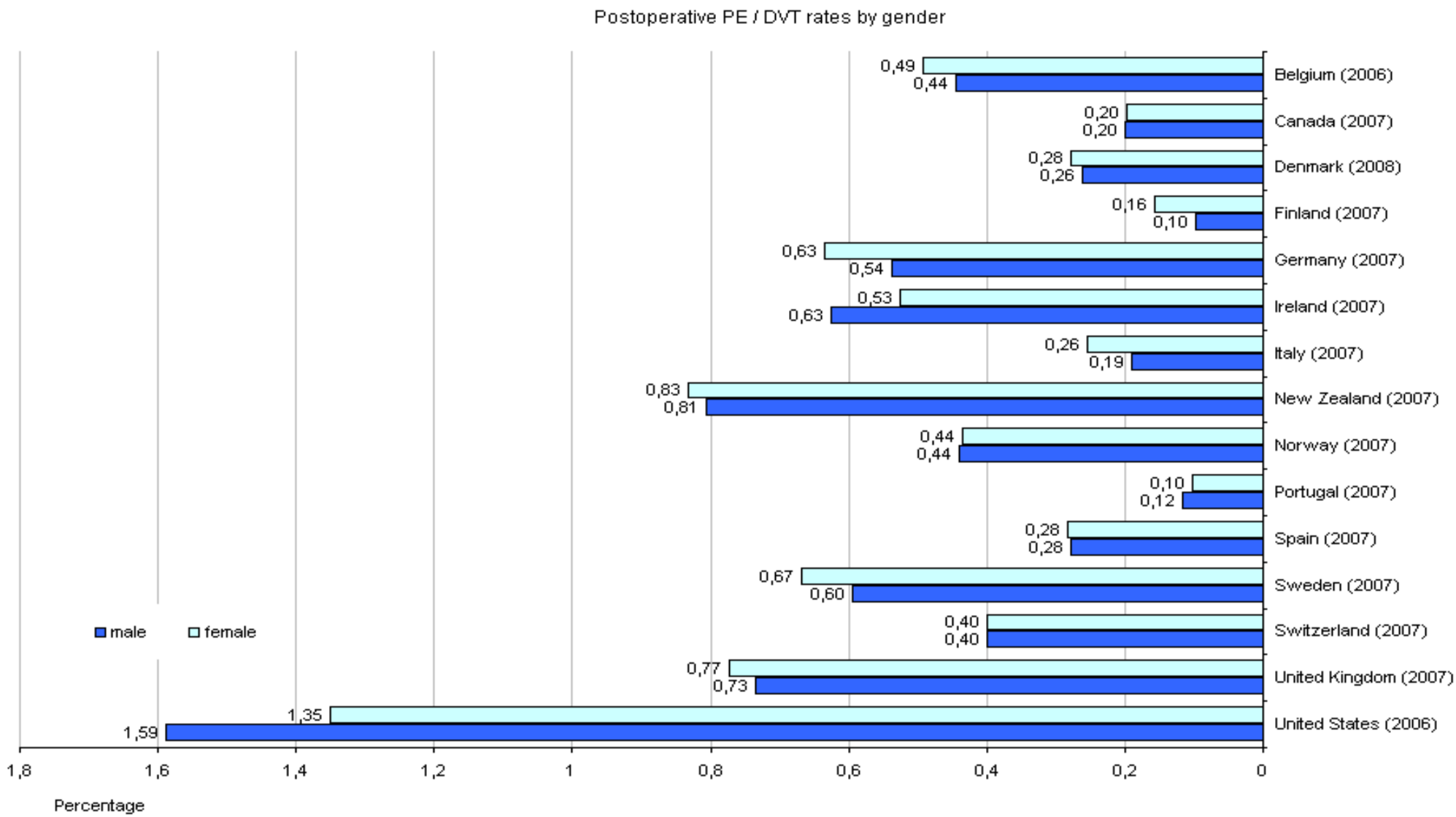
Catheter related bloodstream infections – gender categories



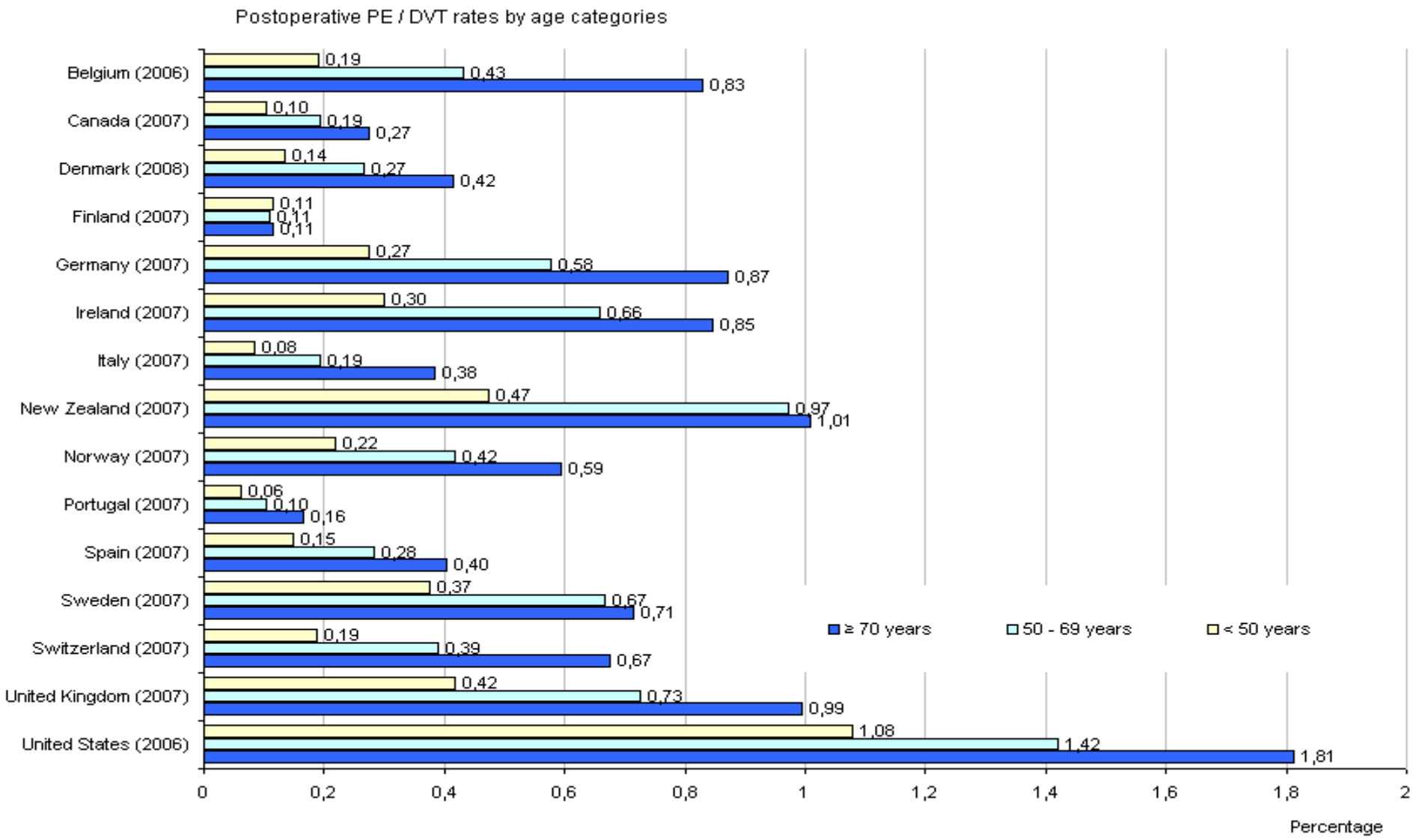
Postoperative pulmonary embolism or deep vein thrombosis



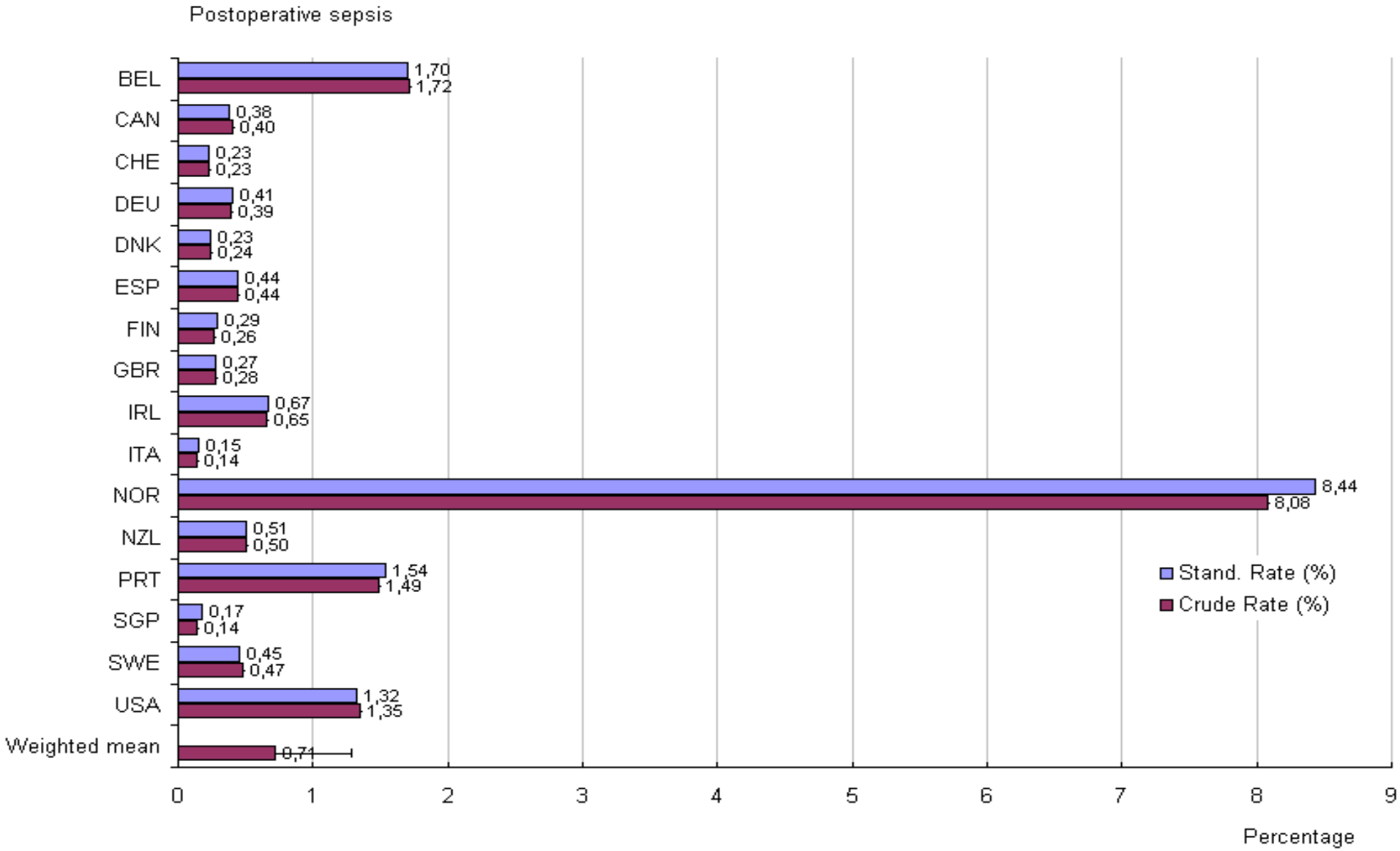
Postoperative PE / DVT - gender



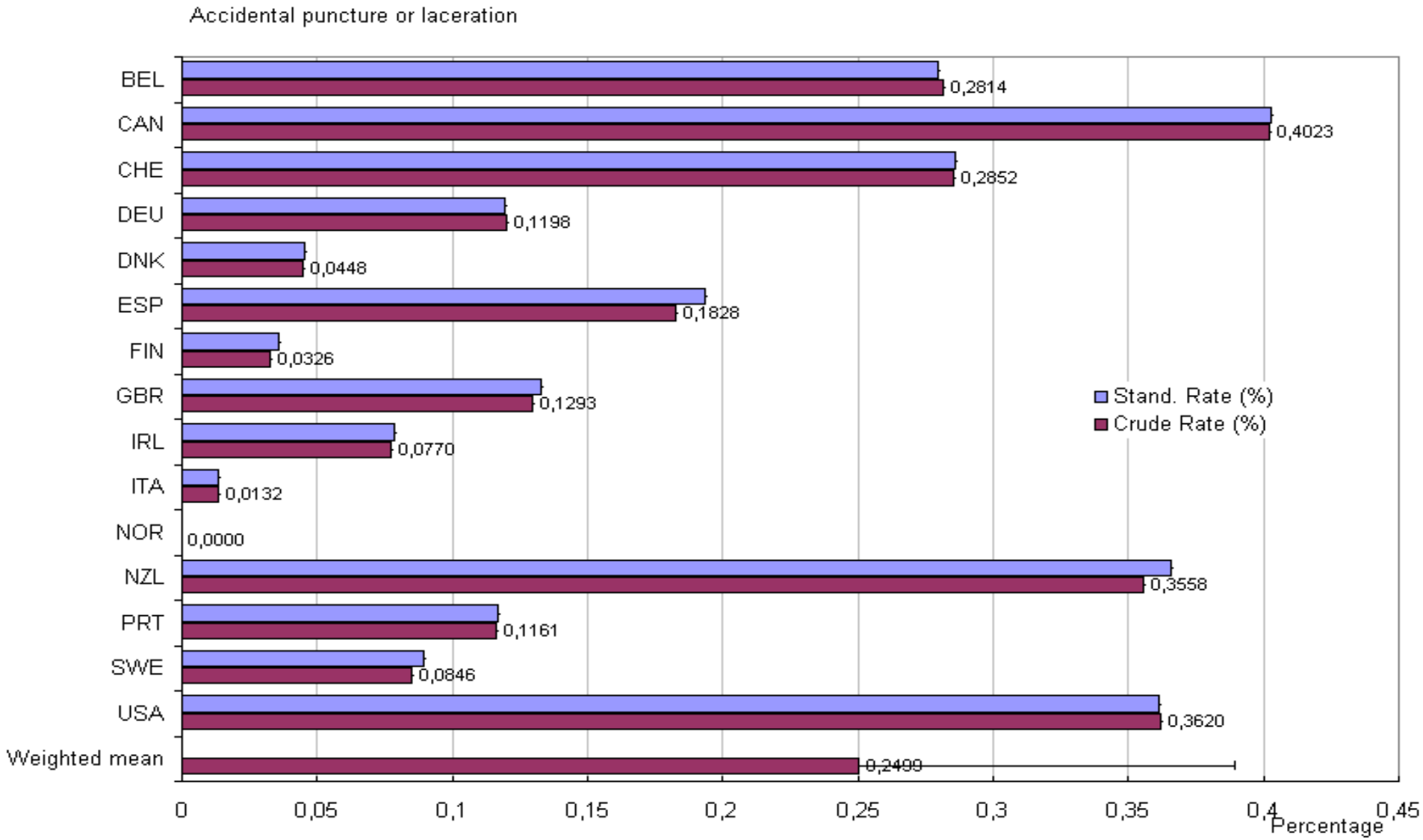
Postoperative PE / DVT - age



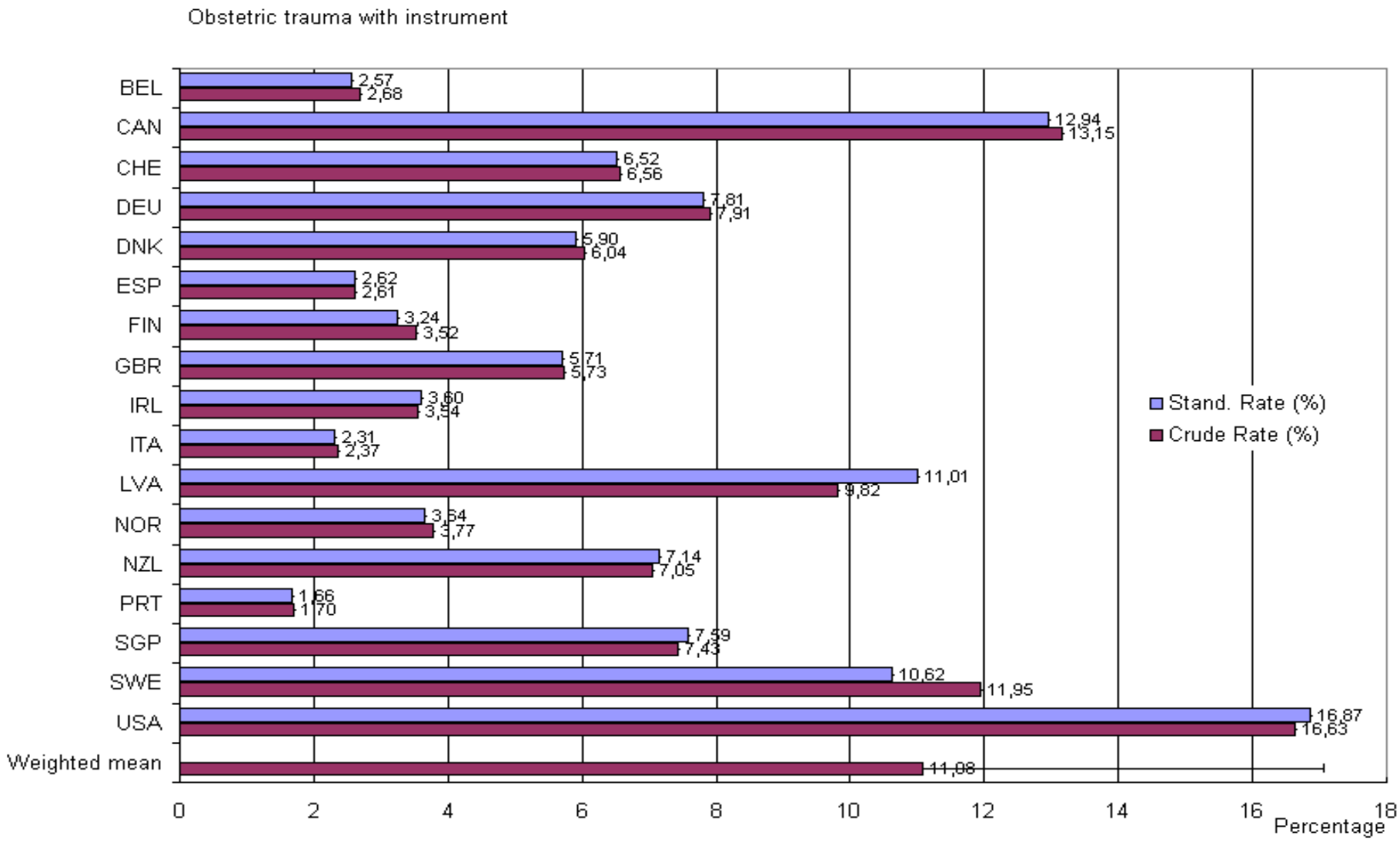
Postoperative sepsis



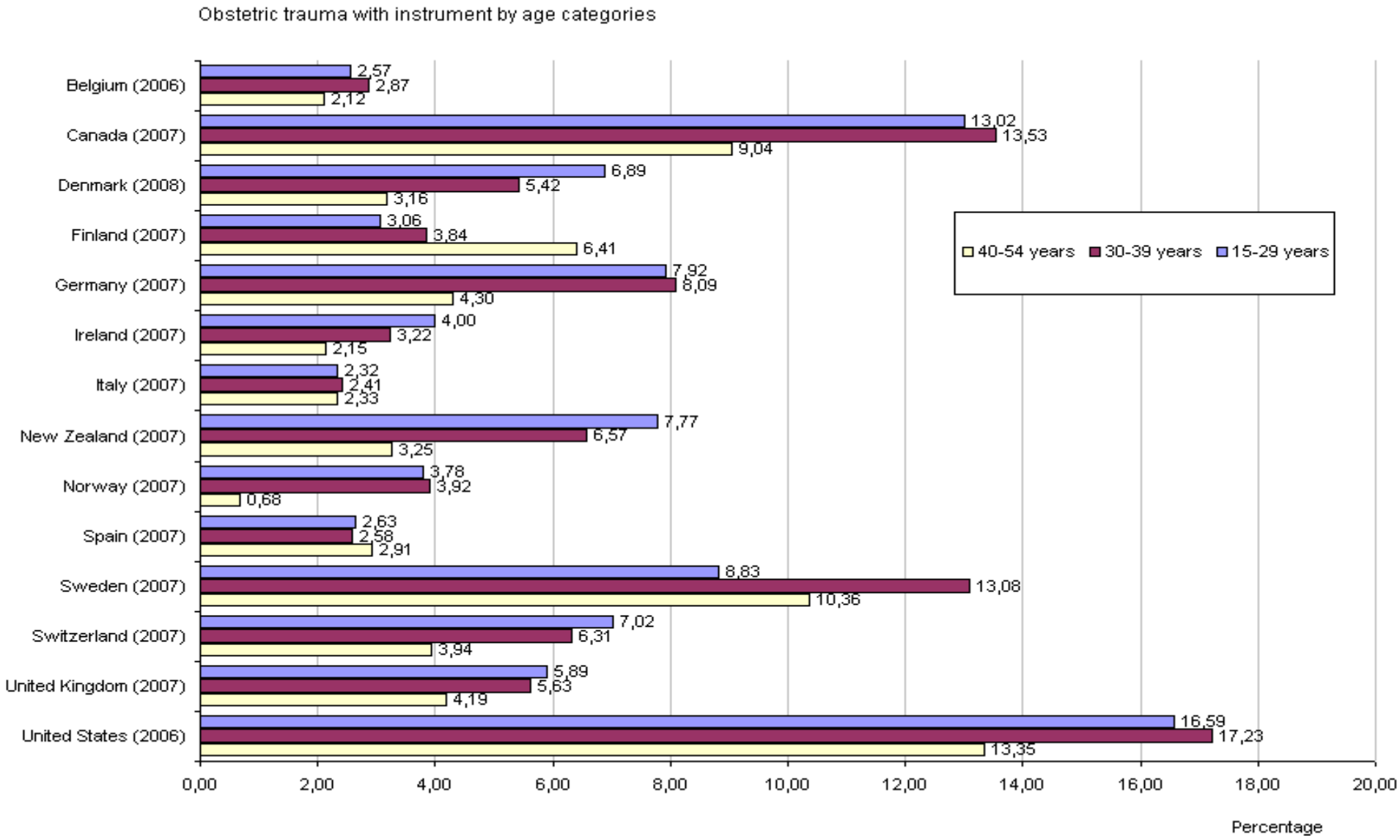
Accidental puncture and laceration



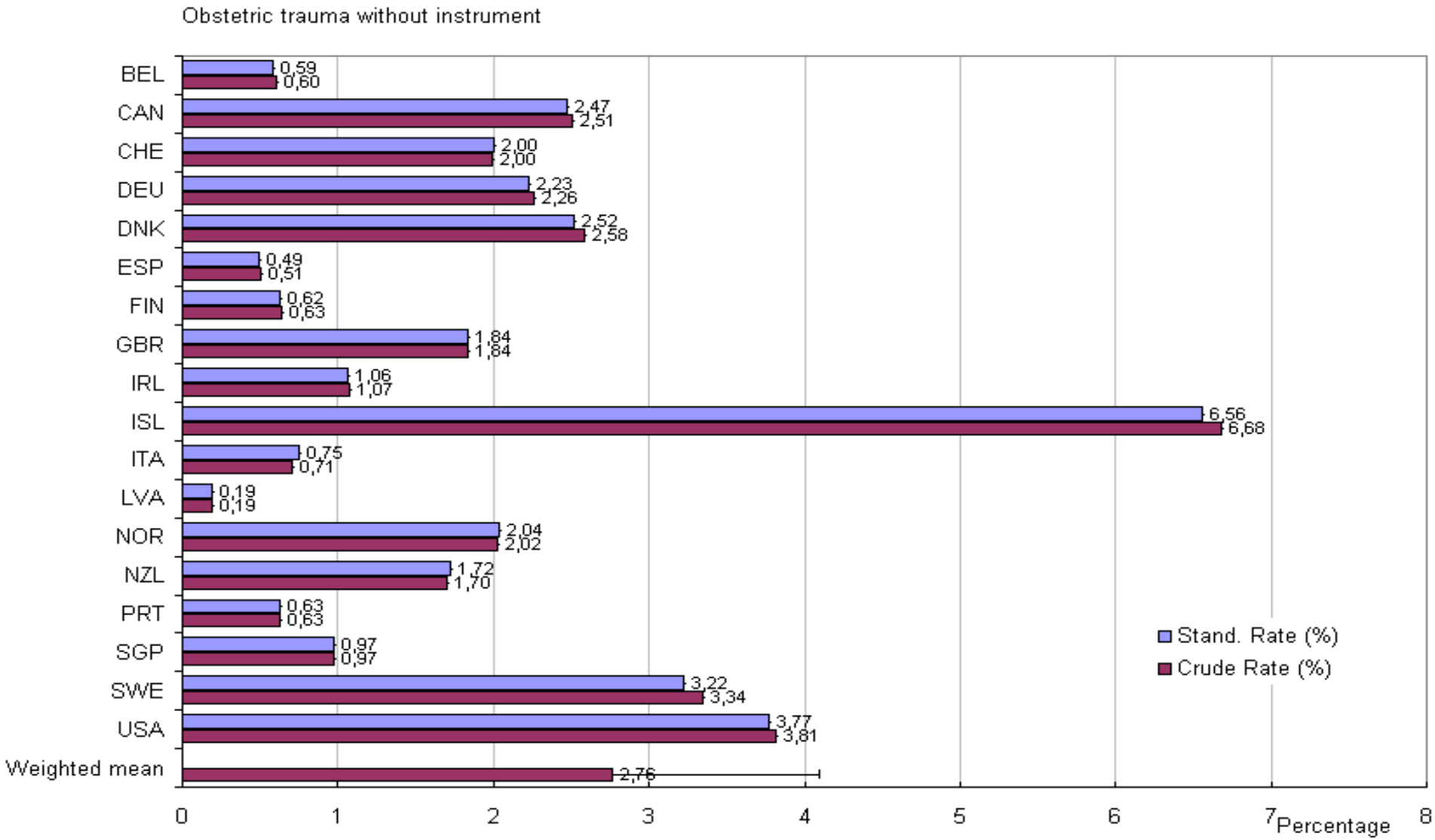
Obstetric trauma -- vaginal delivery with instrument



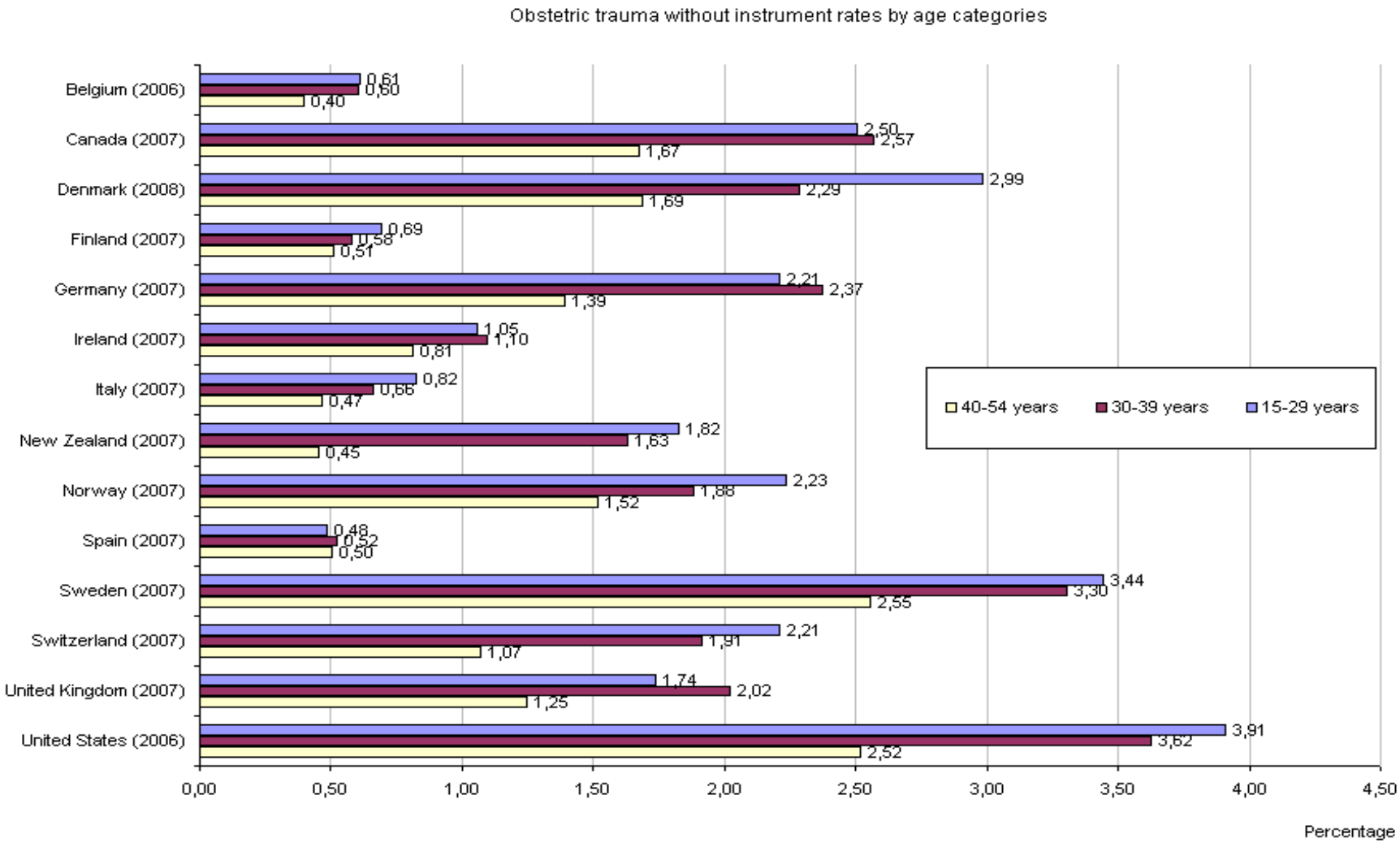
Obstetric trauma -- vaginal delivery with instrument – age categories



Obstetric trauma -- vaginal delivery without instrument



Obstetric trauma -- vaginal delivery without instrument – age categories



Year to year reliability by indicator (2008 / 2009)

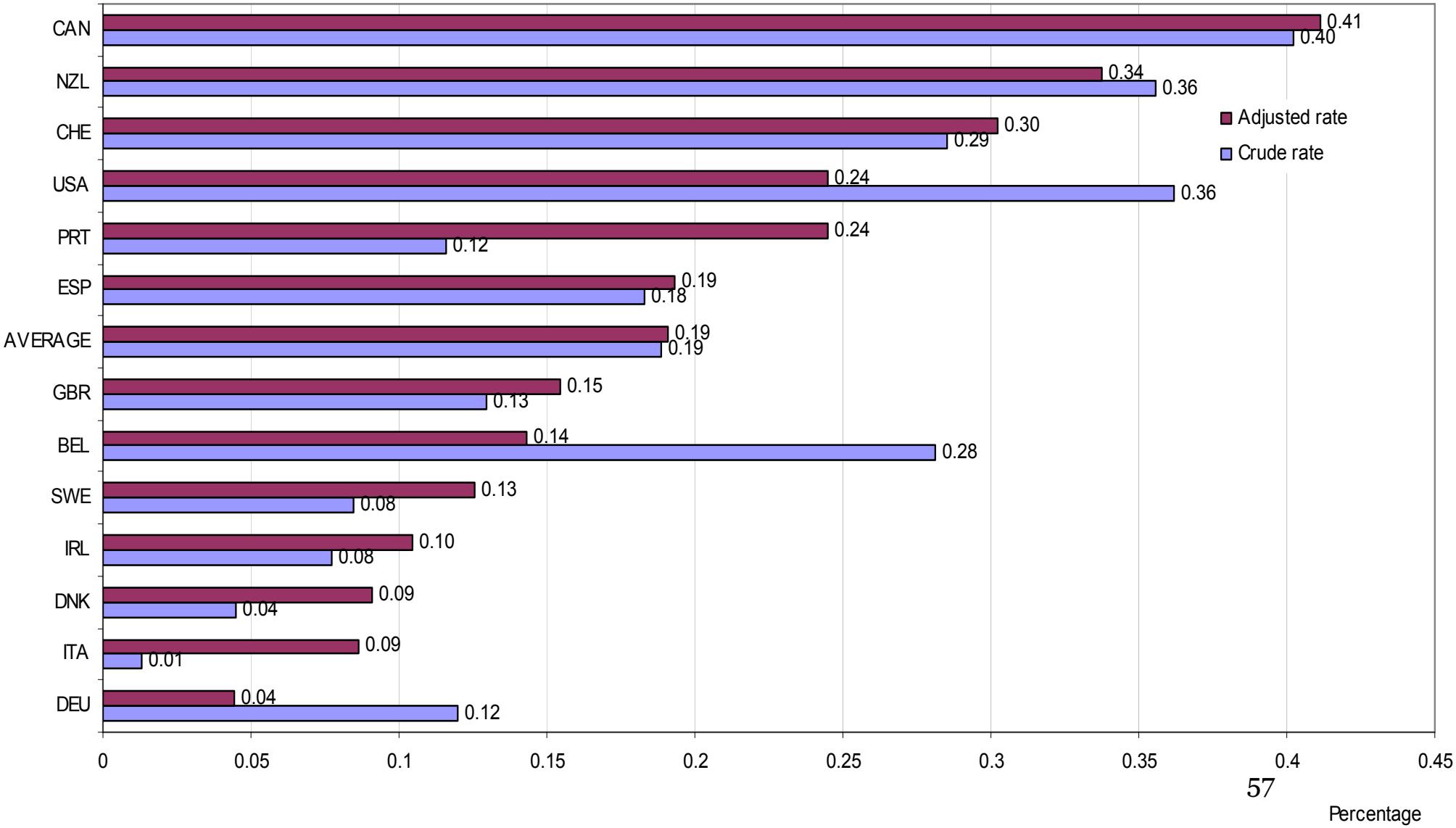
Indicator name	n (countries)	Pearson's correlation coefficient (p≤ 0.01)
Foreign body left in during procedure (PSI 5)	13	0.920
Catheter related bloodstream infection (PSI 7)	14	0.994
Postoperative pulmonary embolism (PE) or deep vein thrombosis (DVT) (PSI 12)	13	0.821
Postoperative sepsis (PSI 13)	14	0.970
Accidental Puncture or Laceration (PSI 15)	13	0.916
Obstetric trauma – vaginal delivery with instrument (PSI 18)	14	0.996
Obstetric trauma – vaginal delivery without instrument (PSI 19)	14	0.981

Charts on **adjusted**, age-sex standardized versus crude rates

- Adjustment by mean number of secondary diagnoses
- Exclusions of countries / indicators with mission information on mean number of secondary diagnoses
- Exclusion of zero or unrealistic high rates (Norway)

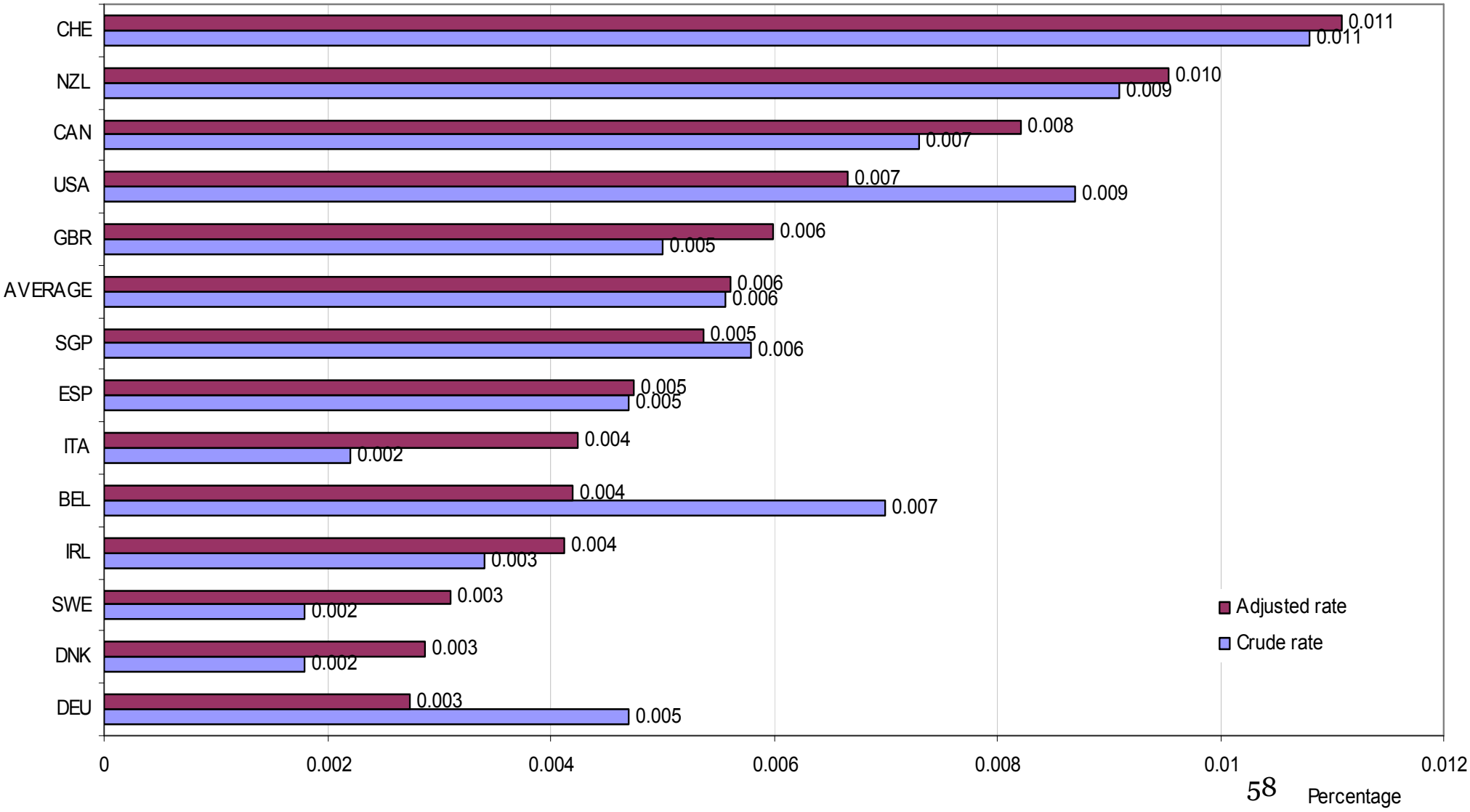
Accidental Puncture or Laceration

Adjusted, age-sex standardized versus crude rates



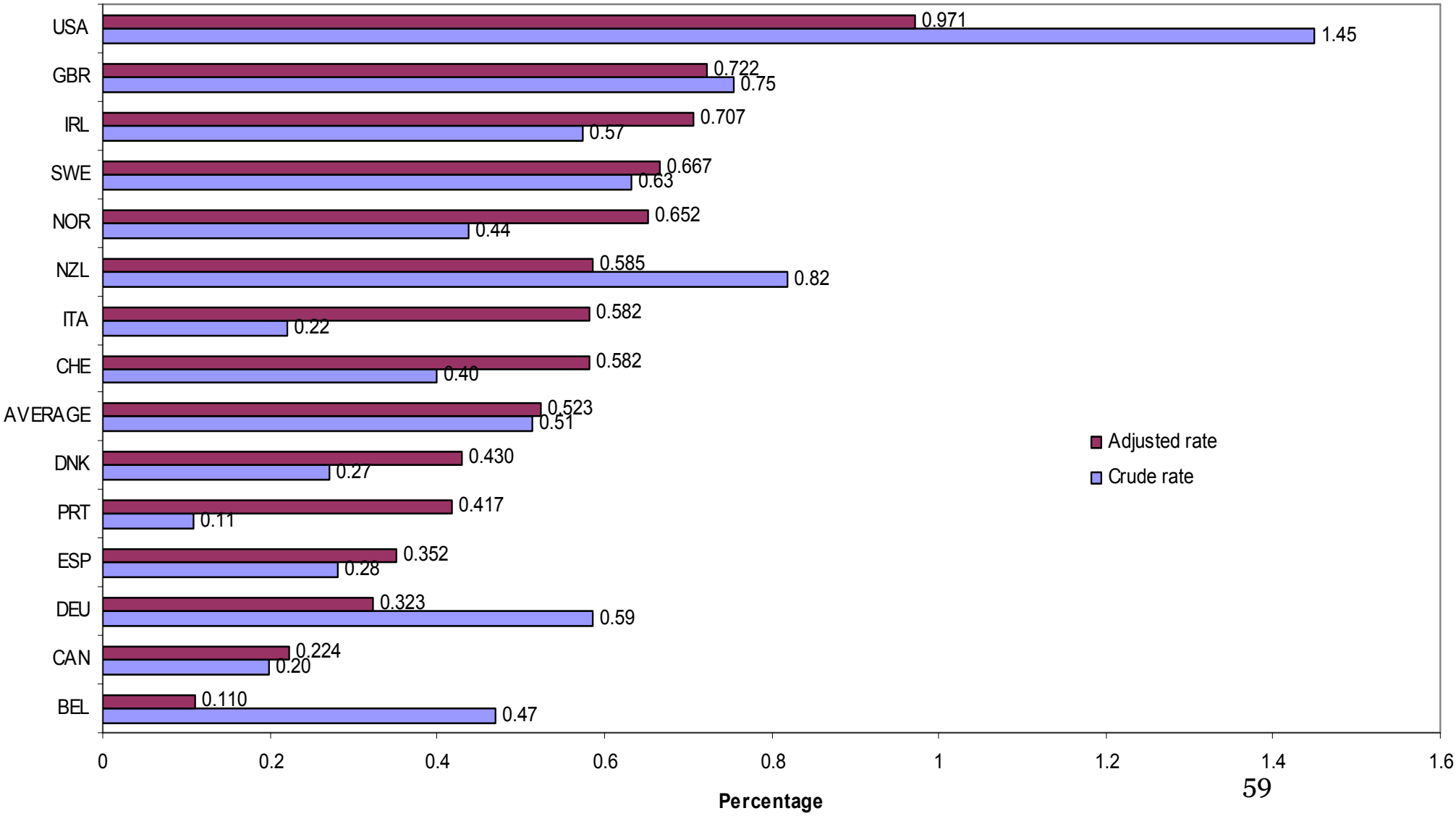
Foreign Body Left In During Procedure

Adjusted, age-sex standardized versus crude rates



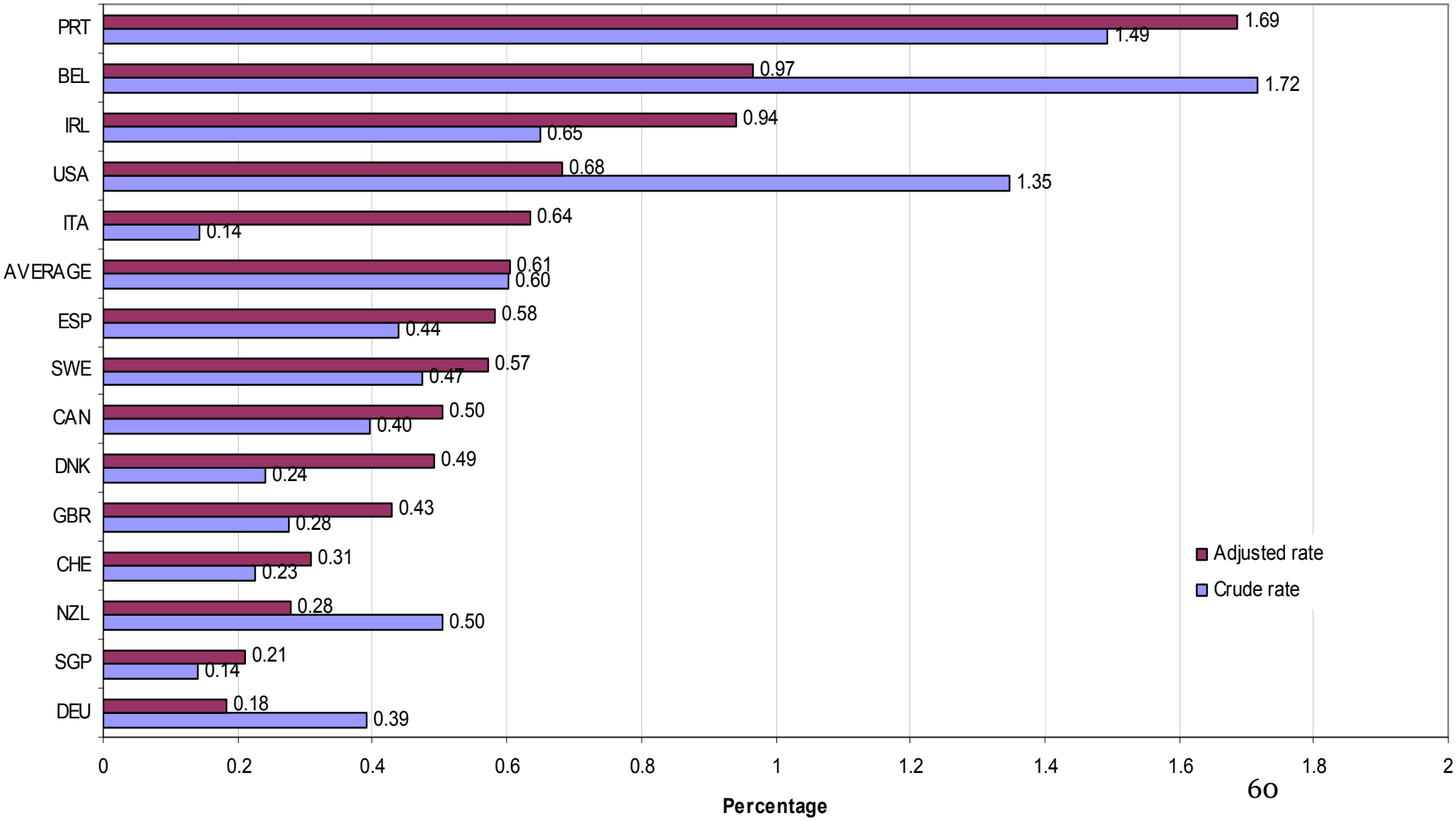
Postoperative Deep Vein Thrombosis/PE

Adjusted, age-sex standardized versus crude rates



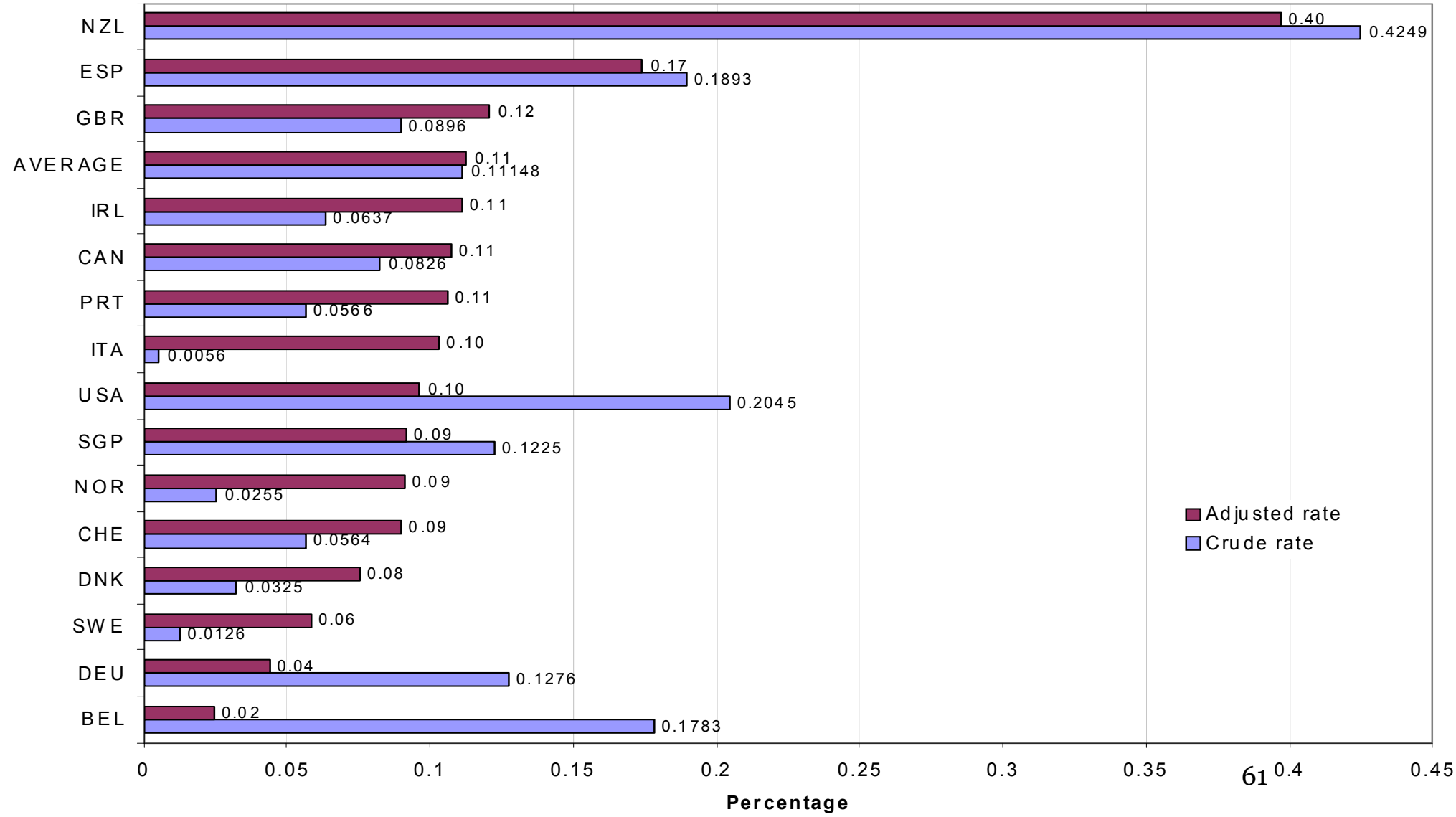
Postoperative Sepsis

Adjusted, age-sex standardized versus crude rates



Vascular Catheter-Associated Infection

Adjusted, age-sex standardized versus crude rates



Conclusions

- Variations in crude rates are subject to documentation effects
- Adjustment by mean number of secondary diagnoses is recommended for the non-obstetric indicators
- Documentation effects do not apply to the obstetric indicators
- Ongoing work on country-specific effects of the exclusion criteria (replication analyses in 11 countries)

Patient Experiences

- Common set of questions for population based statistics under development on access, autonomy and communication

- Basic set of principles for setting up national systems for measuring patient experiences

Limitations National Information Infrastructures

- Mortality Statistics
- Registries
- Administrative Data-Bases
- Electronic Health Records
- Household and Patient Surveys

National Information Infrastructures

- Mortality statistics
- Registries (cancer)
- Administrative Databases
- Electronic Health Records
- Surveys
- UPI's/co-morbidity
- UPI's/coding-staging
- UPI's, present-at-admission codes, secondary diagnoses
- Standardized secondary data-use, privacy concerns
- UPI's

The fruits of comparing apples and pears

- Getting a common understanding on various kind of fruits
- Improvement of (national) information infrastructures for measuring performance
- Balancing science and management
- Healthy policy styles
- Challenge for Health Services Research

Health Services Research in Europe
Working Conference

"Where research and policy meet"

8-9 April 2010, The Hague, the Netherlands

General aims:

- Improving HSR contribution to health policy at national and European level;
- setting an agenda for European HSR;
- strengthening the research-policy infrastructure Europe-wide.

Key dates:

- Abstract submission is now open and will close 15 December 2009
- Registration opens: 2 November 2009 (early bird until 1 Feb 2010)
- Conference: 8-9 April 2010

More information: www.healthservicesresearch.eu