Still “the sick man of Europe”?

Trends in Scottish mortality in a European context

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PHINS Seminar
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Background

- '*Understanding the Health of Scotland's Population in an International Context*' Leon et al, London School of Hygiene and Tropical Medicine, March 2003
  - focused on understanding Scotland's health in an international context.
  - a major component of this work was an analysis of mortality trends from 1950 to 2000 in 20 European countries

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Reasons for updating

- Scottish data are now available for a full **60 year period from 1950 to 2010**

- Data for the other Western European countries have been extended, allowing for a more up to date comparison of Scottish mortality within Europe

- A comparison of **mortality among younger working age adults (15-44 years of age)** has been added, reflecting concerns about trends (and inequalities) in avoidable deaths in this age group

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Data Source

- **World Health Organisation Statistical Information System (WHOSIS):**
  - The WHO Mortality Database contains counts of deaths by country, 5-year age group, sex, individual year and cause-of-death, coded according to the International Classification of Diseases (ICD) in use at the time of death registration in each country.
  - Mid-year population estimates were obtained from the same WHO website.

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Countries

Region	Countries
UK	Scotland, England & Wales, Northern Ireland
Northern Europe	Denmark, Finland, Norway, Sweden
Western Europe	Belgium, France, Ireland, The Netherlands
Central Europe	Austria, Germany, Switzerland
Southern Europe	Greece, Italy, Portugal, Spain
Eastern Europe	Hungary, Poland

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Mortality by age

Five different age groups –

- infancy (the first year of life),
- childhood (1-14 years of age),
- younger working adults (15-44 years),
- working age adults (15-74 years)
- the elderly (75 years and older)

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Mortality by cause

(for working age population – 15 -74 years)

13 selected Causes

- Cancers:- oesophageal, stomach, colorectal, pancreatic, lung and breast
- Ischaemic heart disease
- Cerebrovascular disease
- Chronic obstructive pulmonary disease
- Chronic liver disease, including cirrhosis
- External causes
- Suicide;
- Motor vehicle accidents

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Methodology

- Age-standardised mortality rates
- Western European country means, minimums and maximums
- Rank position

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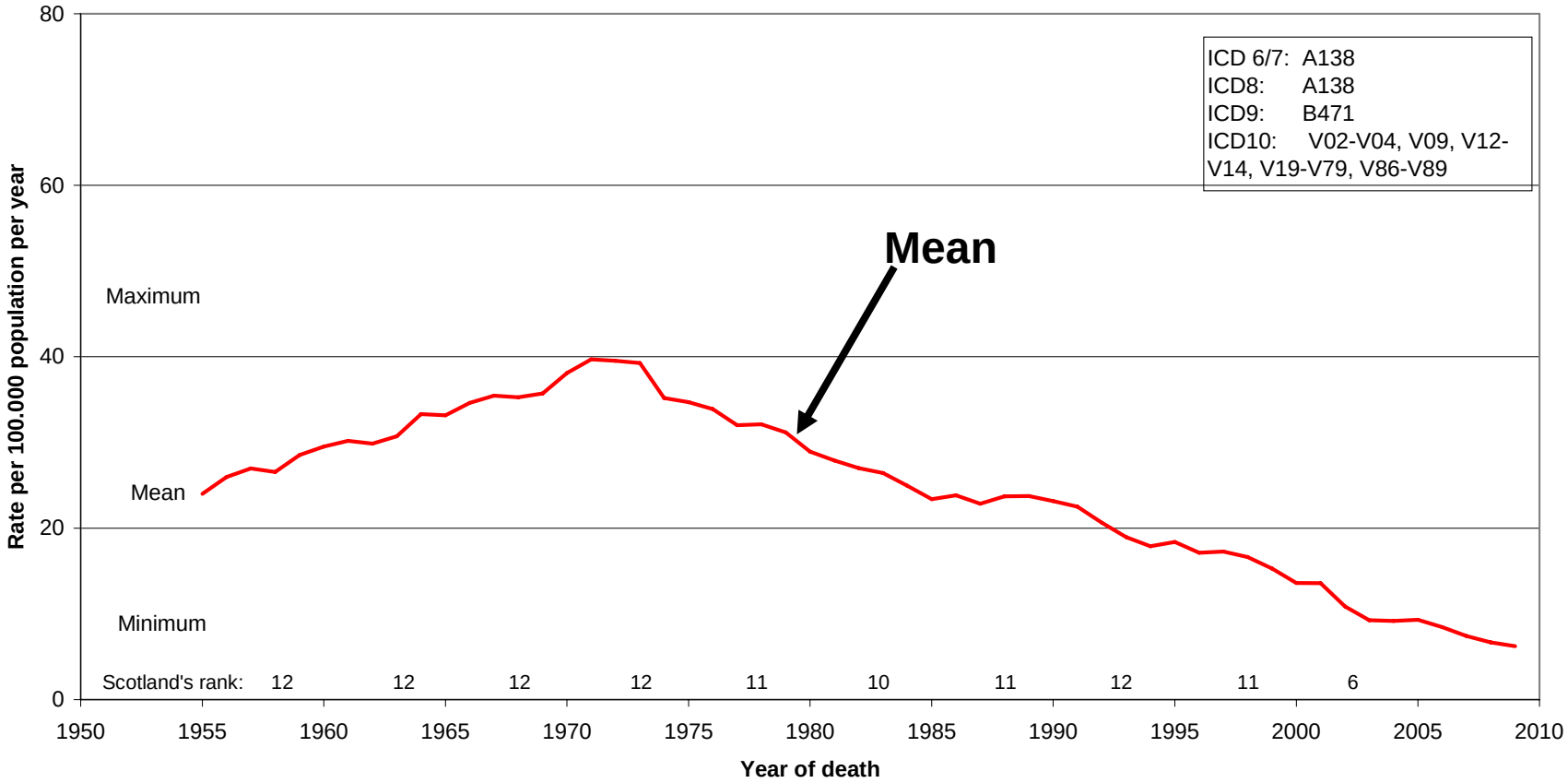
Example of graph format

Figure Q1M

Motor vehicle accidents mortality age standardised rates among men aged 15-74 years

Scotland in context of maximum, minimum, and mean rates for 16 Western European countries

Source: WHOSIS (April 2012)



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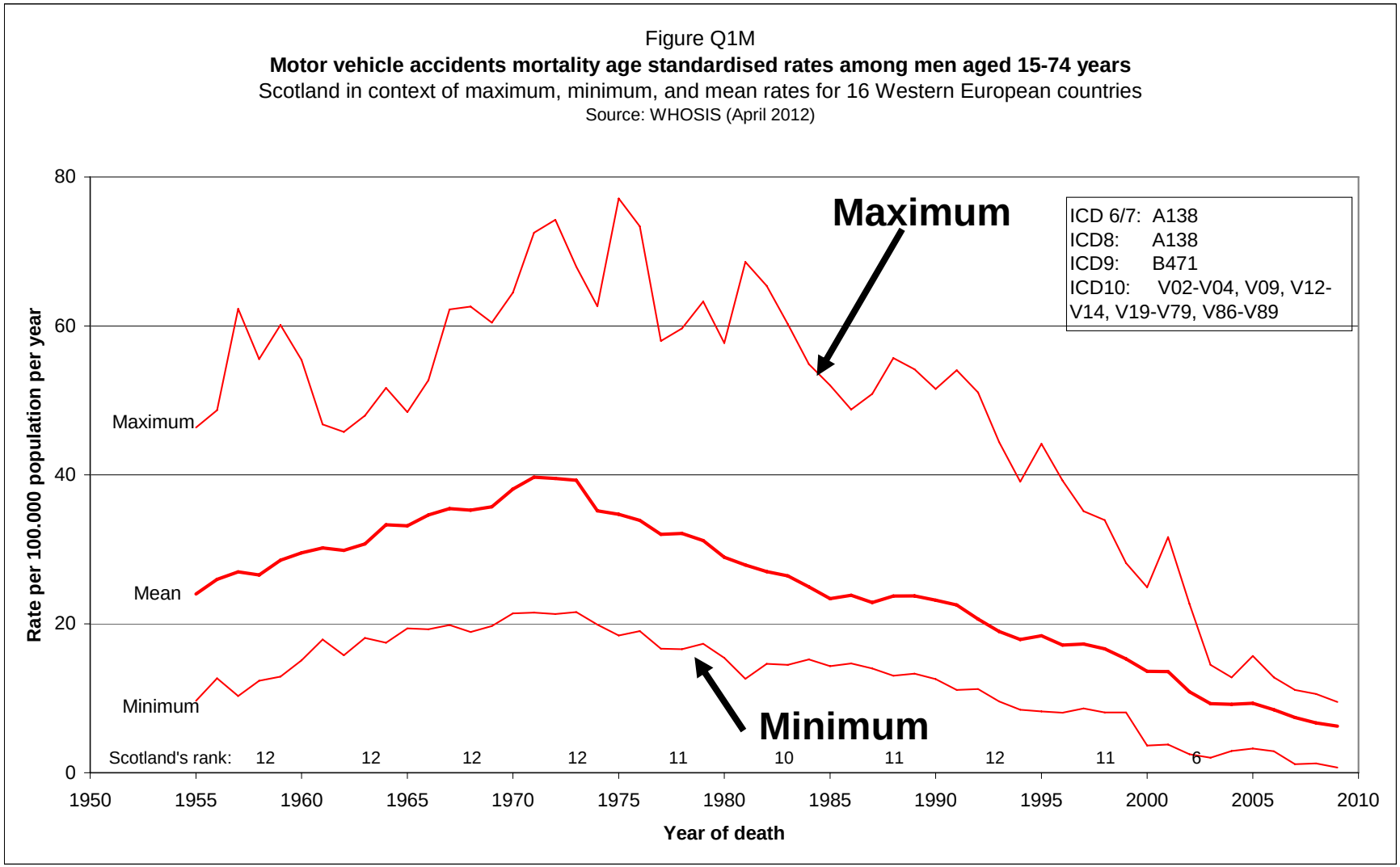
Example of graph format



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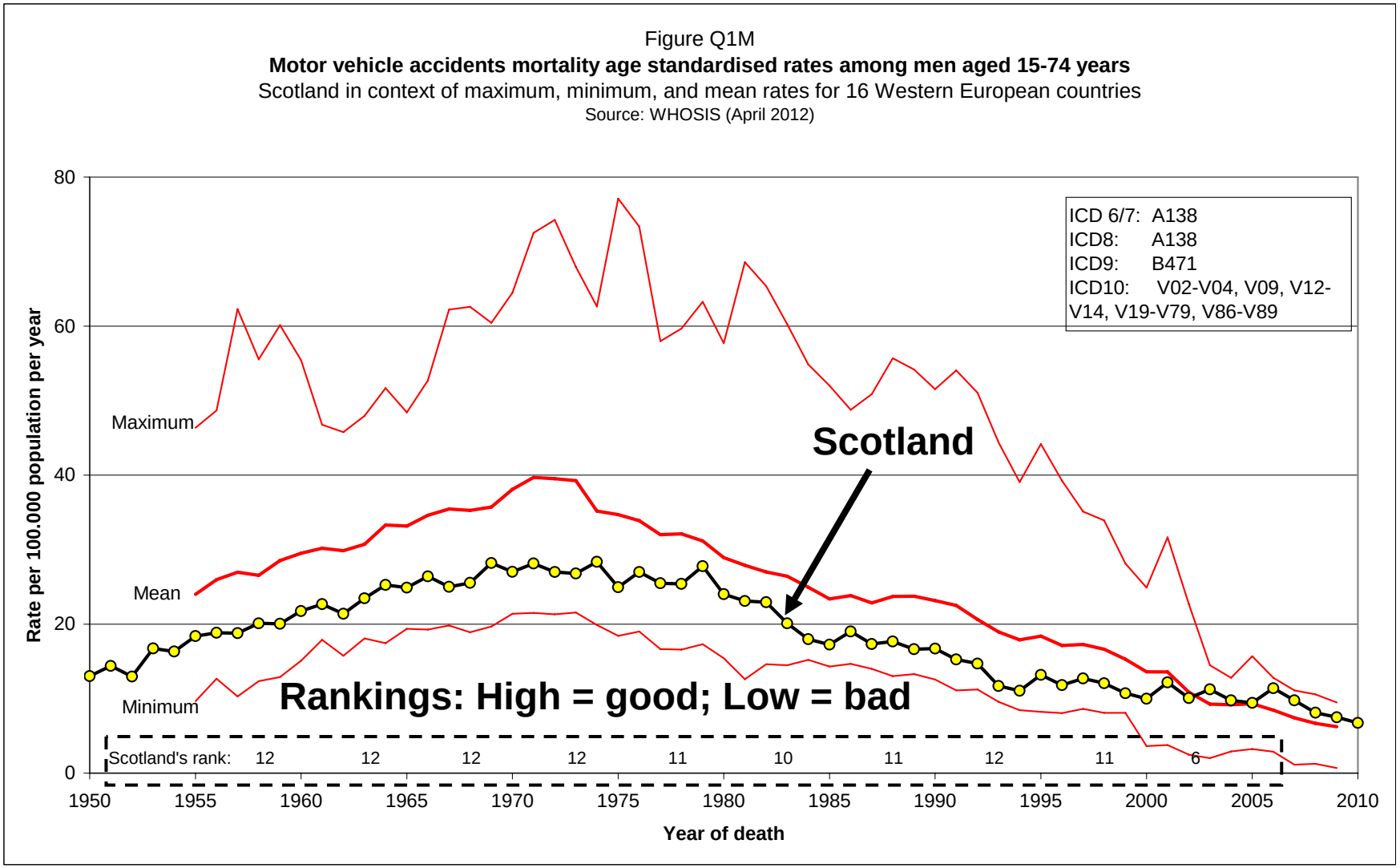
Example of graph format



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Trends by age

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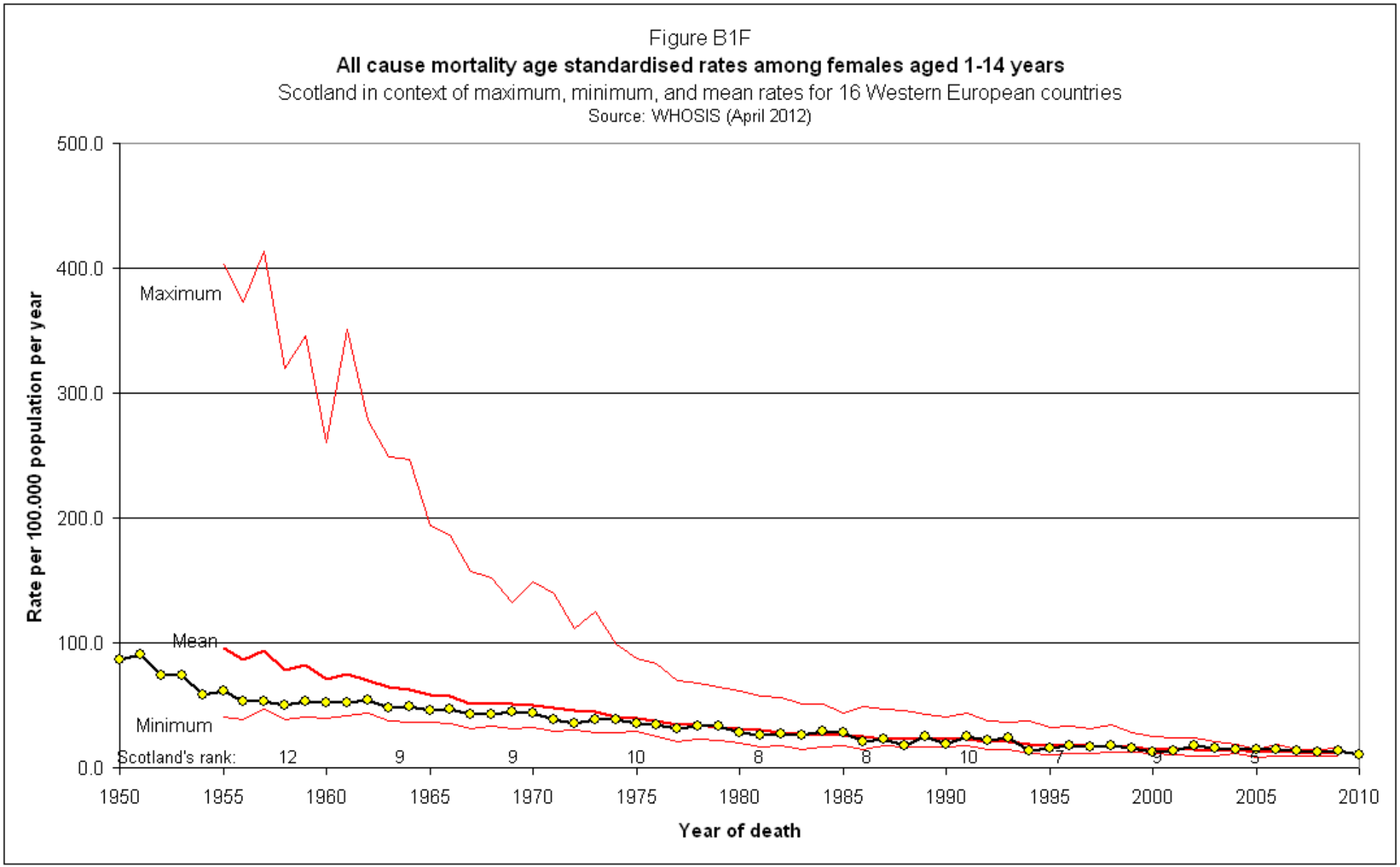
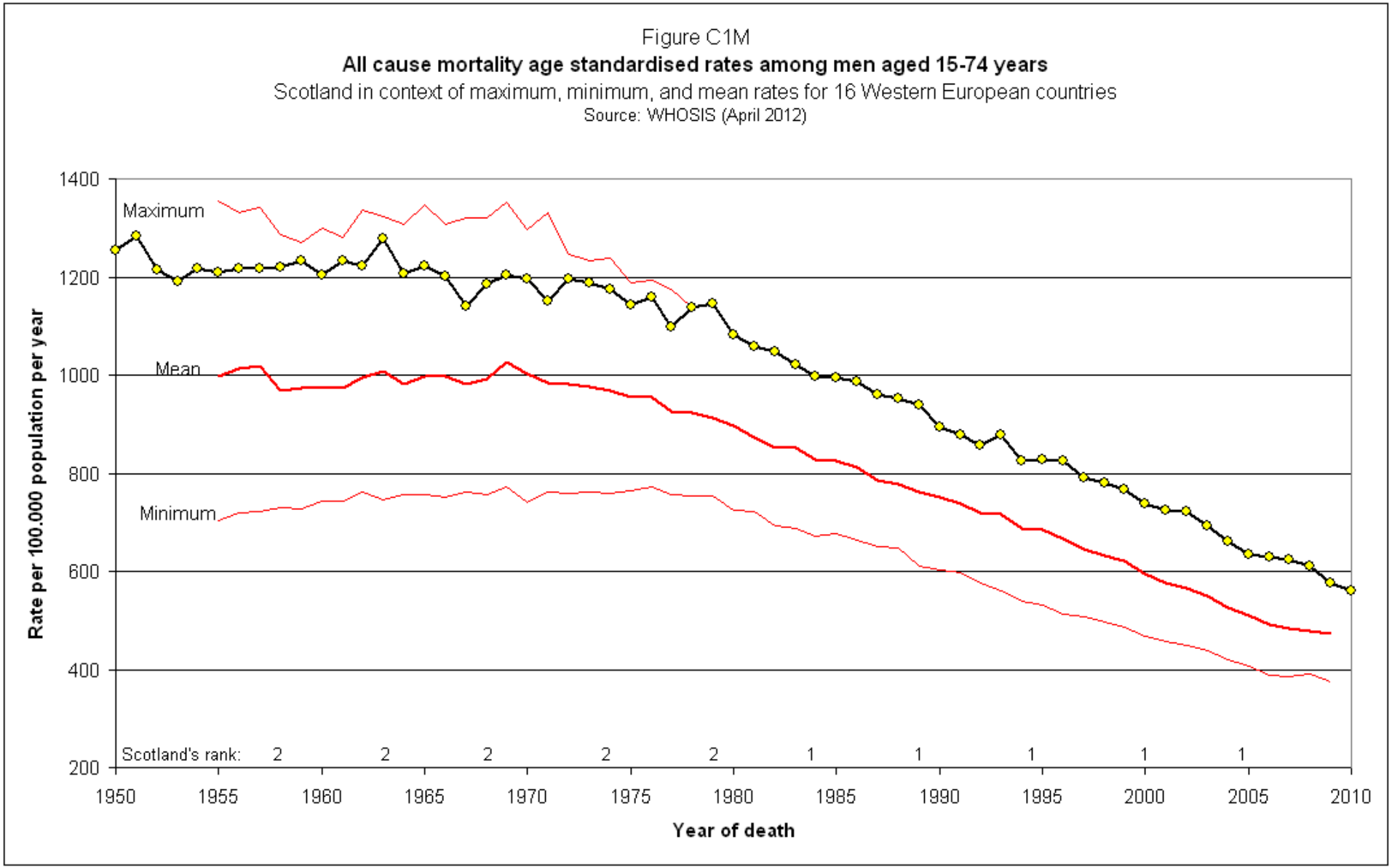
Infant Deaths

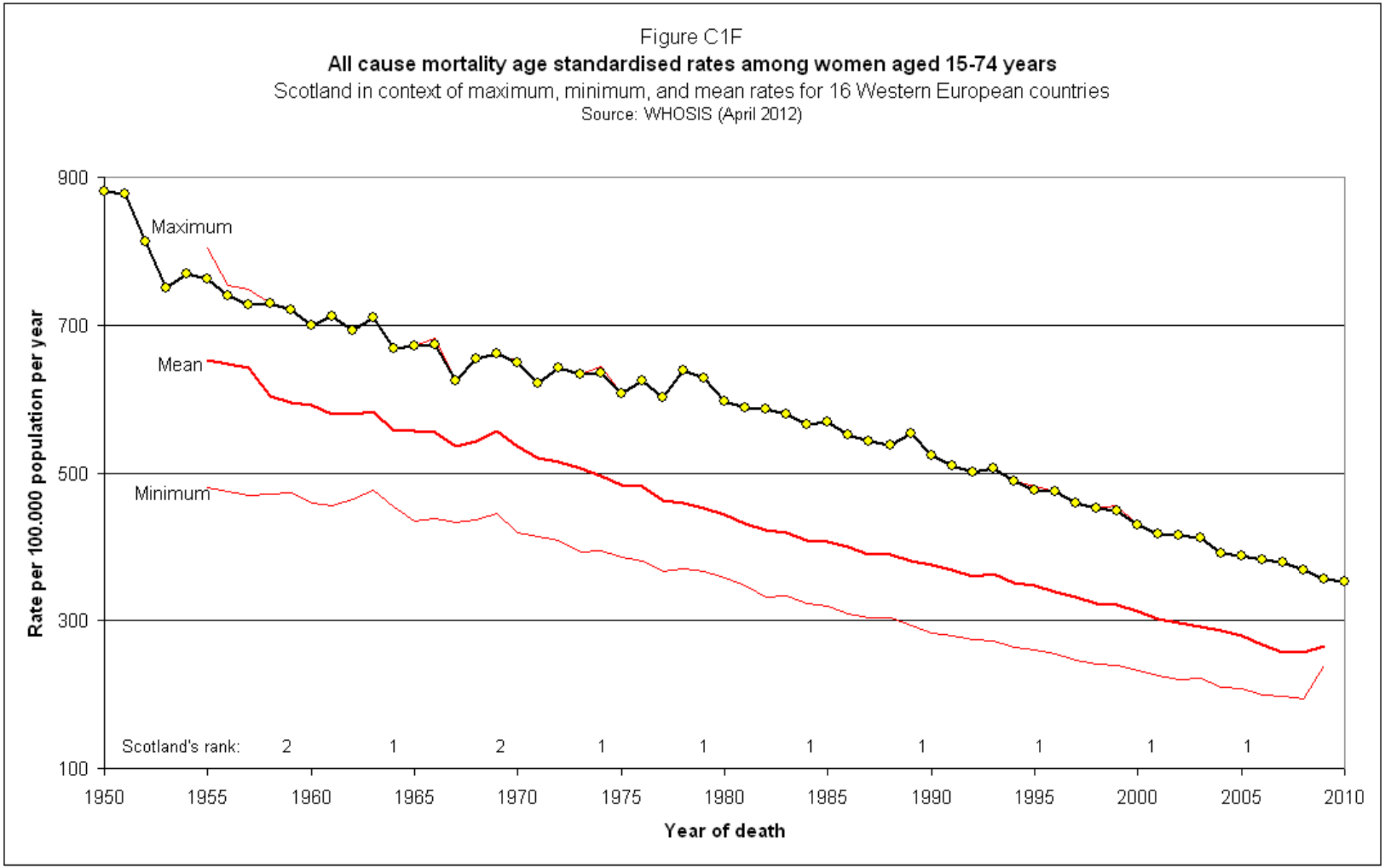
Children's Mortality



Working Age Mortality - Men

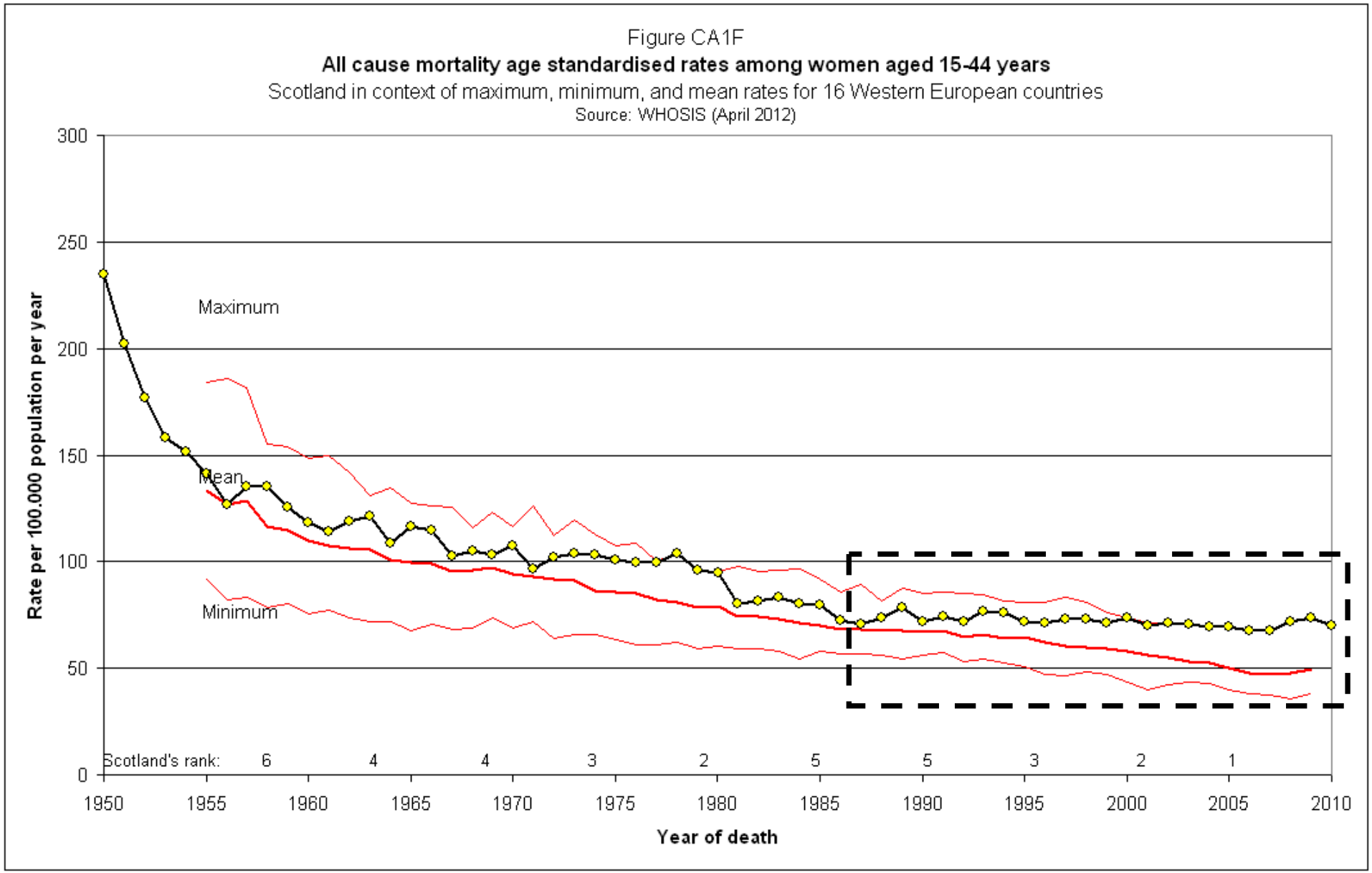


Working Age Mortality - Women

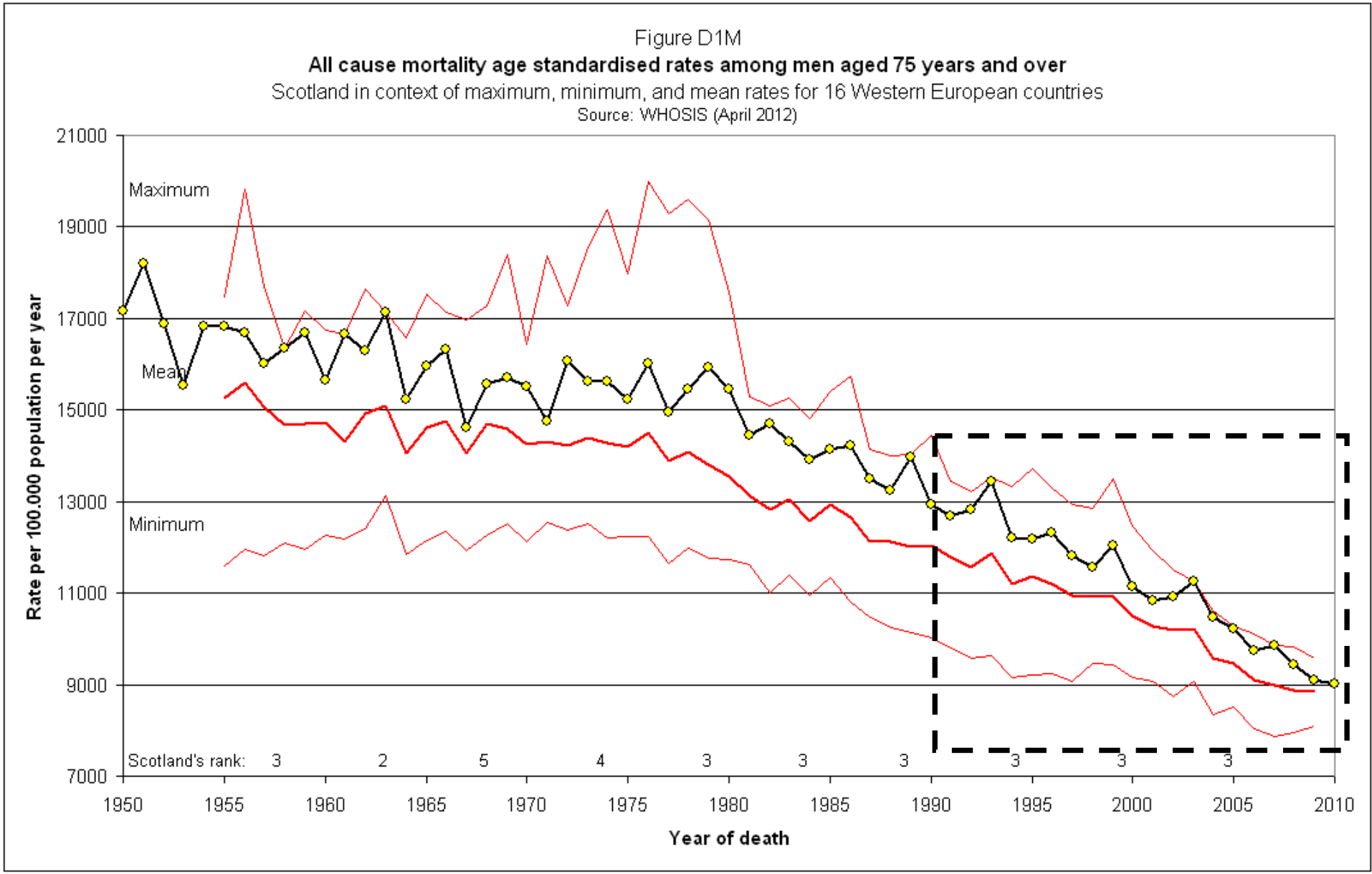


Younger Working Age Mortality - Men

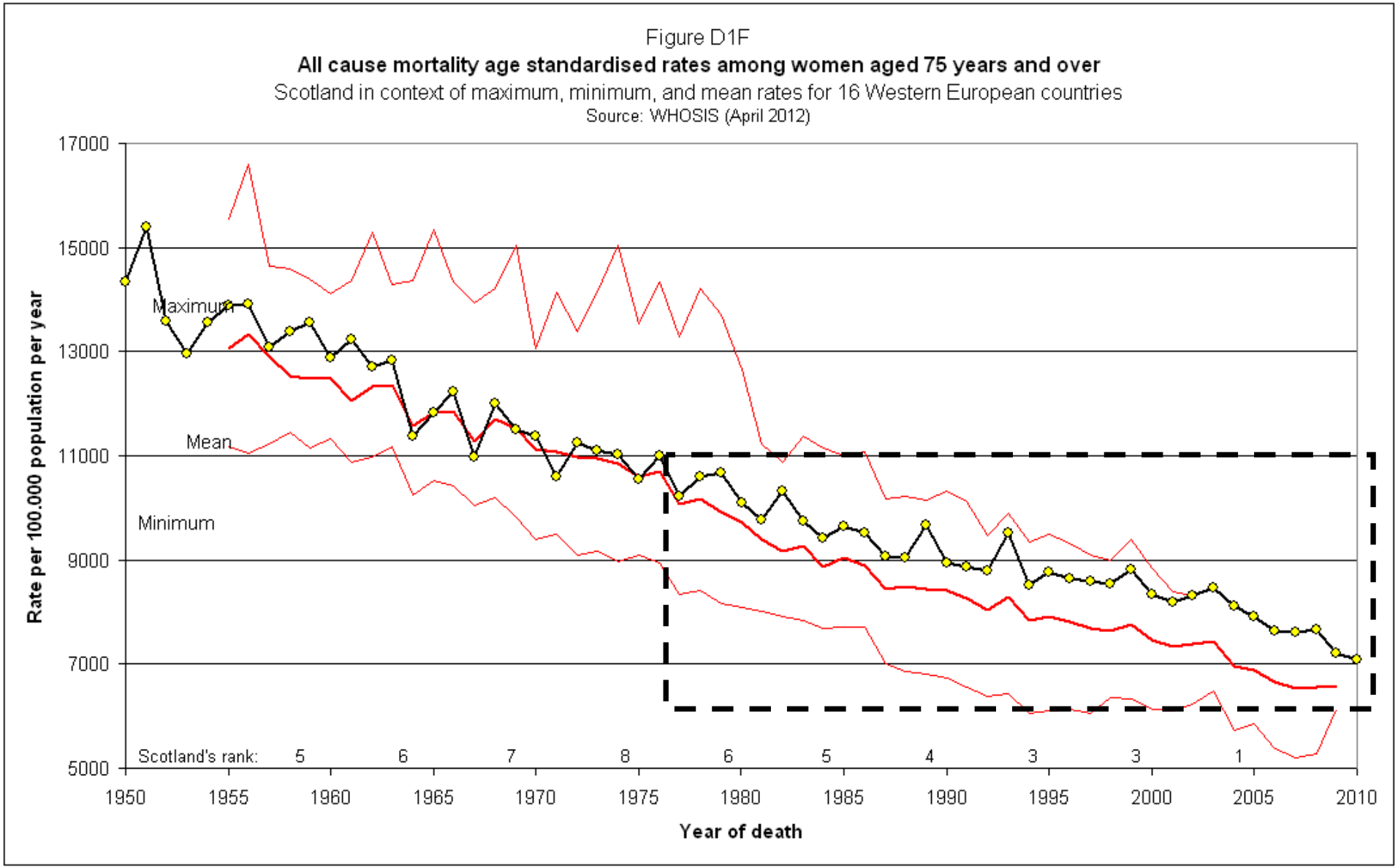
Younger Working Age Mortality - Women



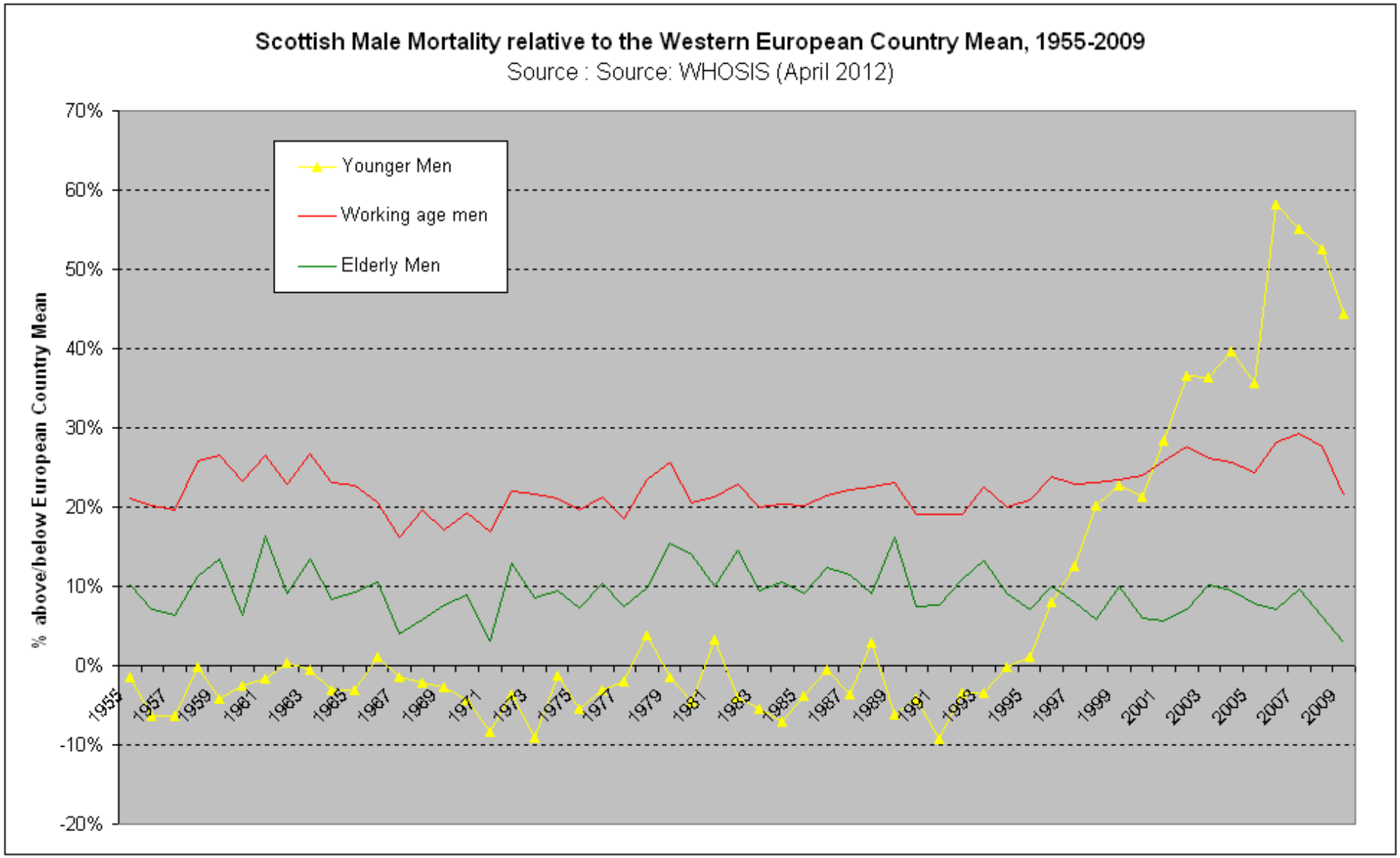
Elderly Mortality - Men



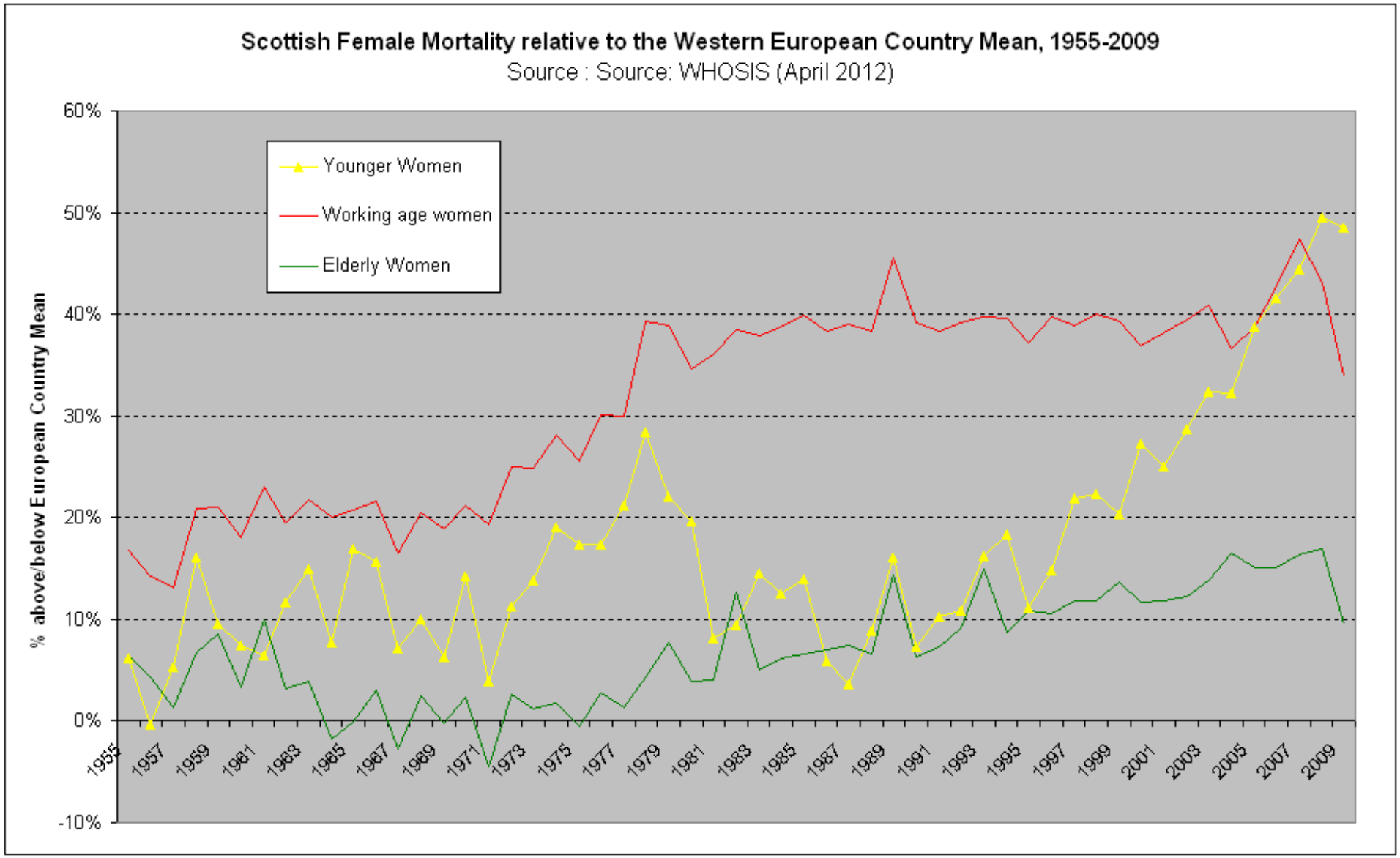
Elderly Mortality - Women



Comparison to WE Mean – Males



Comparison to WE Mean – Females



Trends for selected causes

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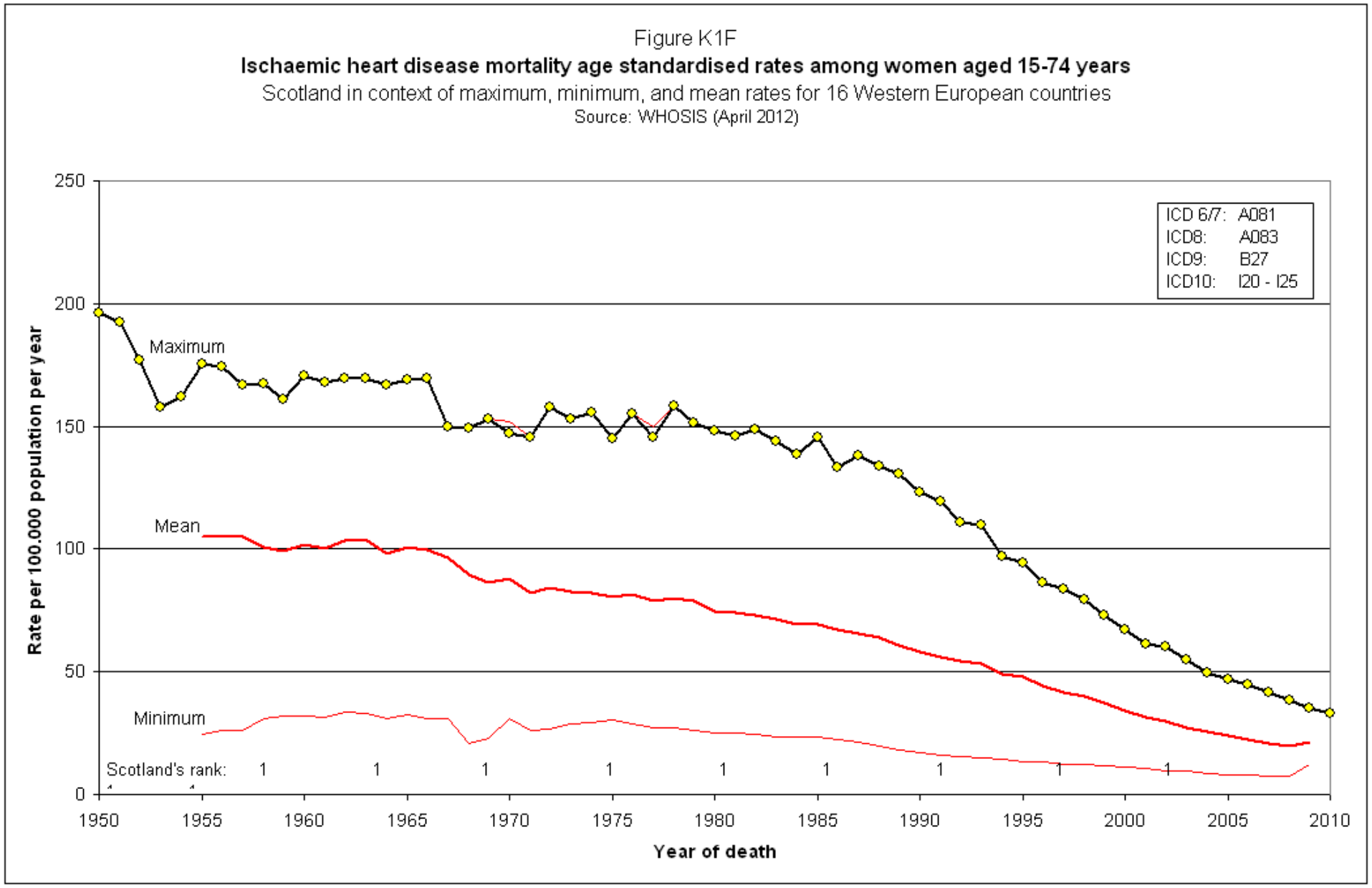
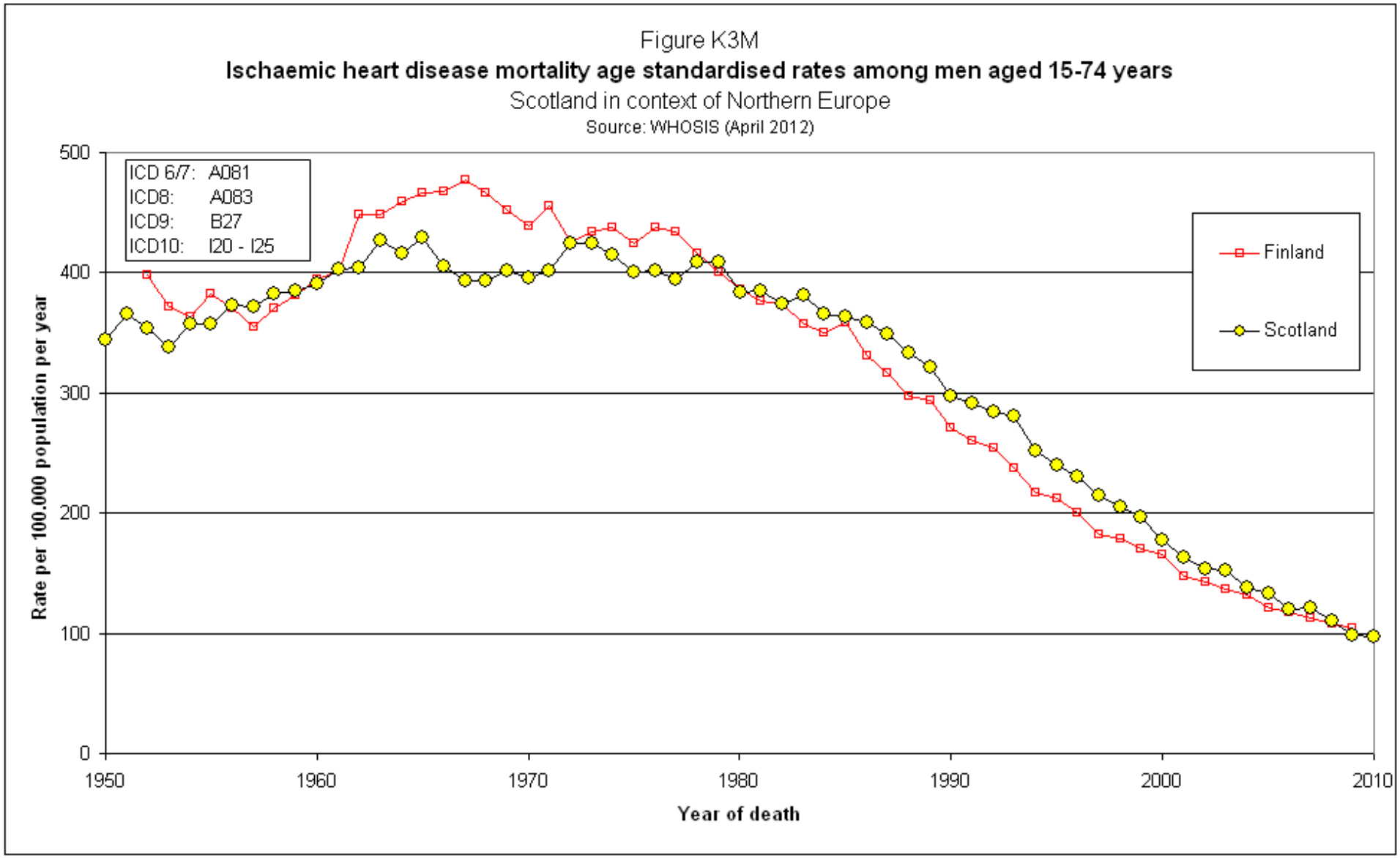
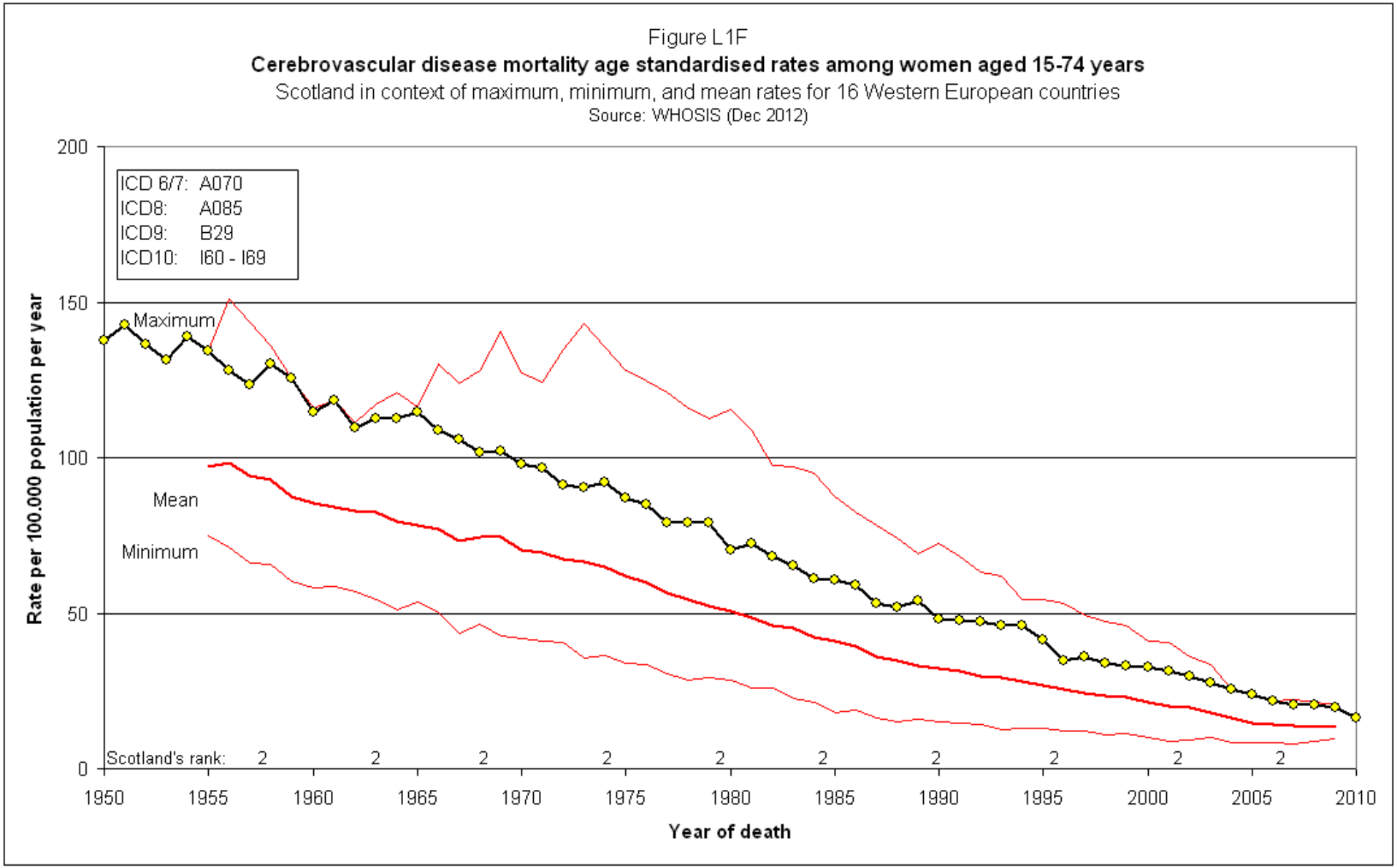
Ischaemic Heart Disease



Ischaemic Heart Disease - Scotland vs Finland



Cerebrovascular Disease



Lung cancer

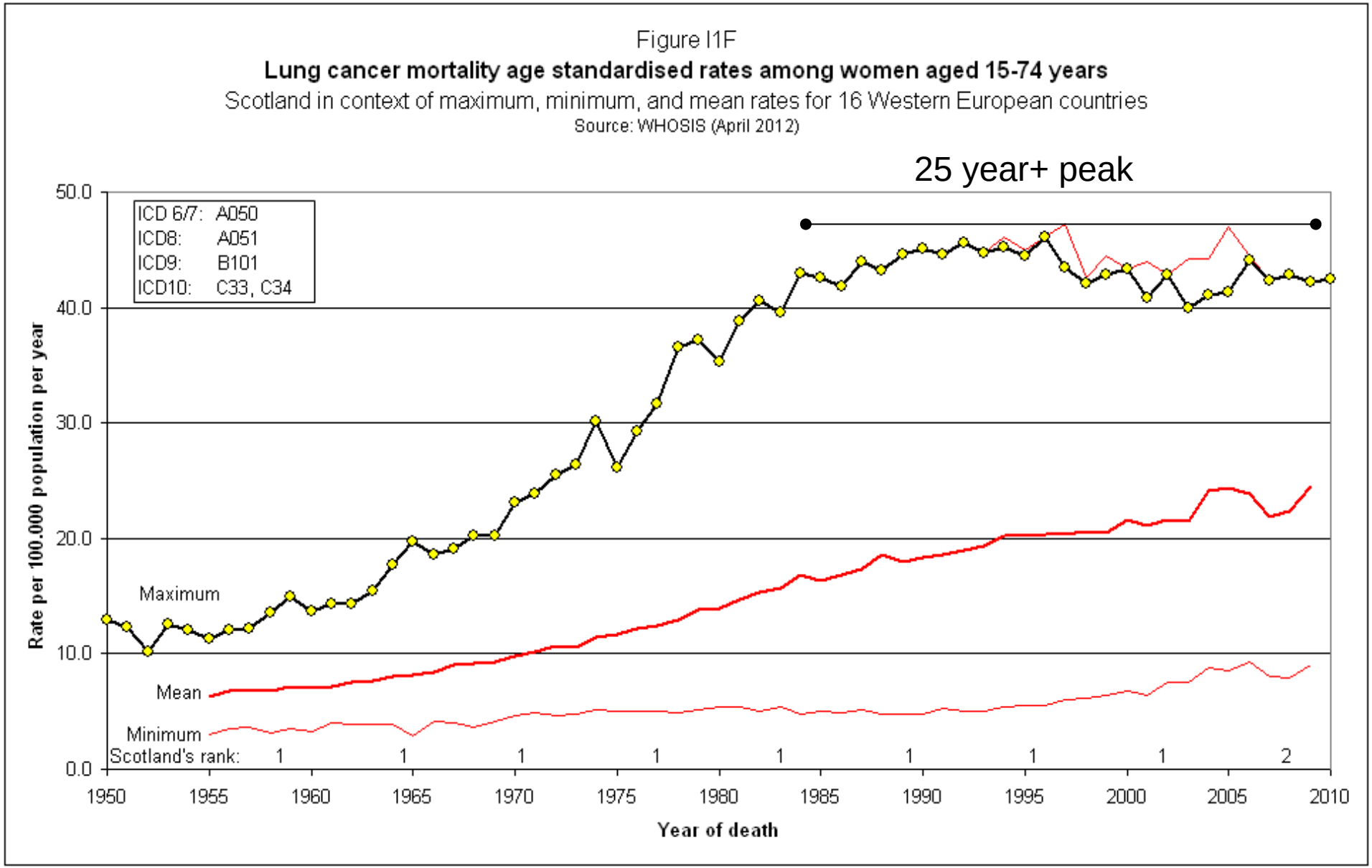
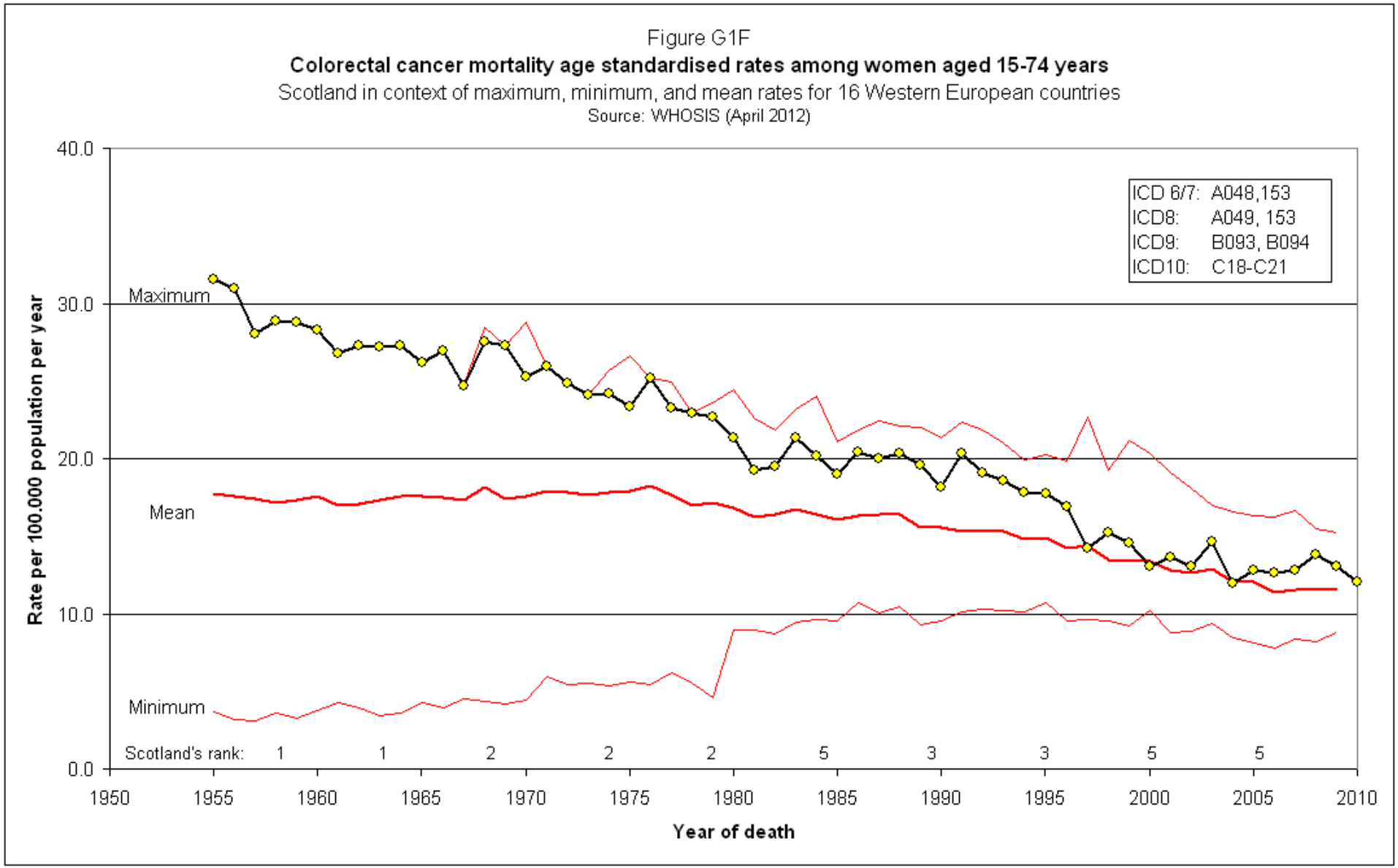
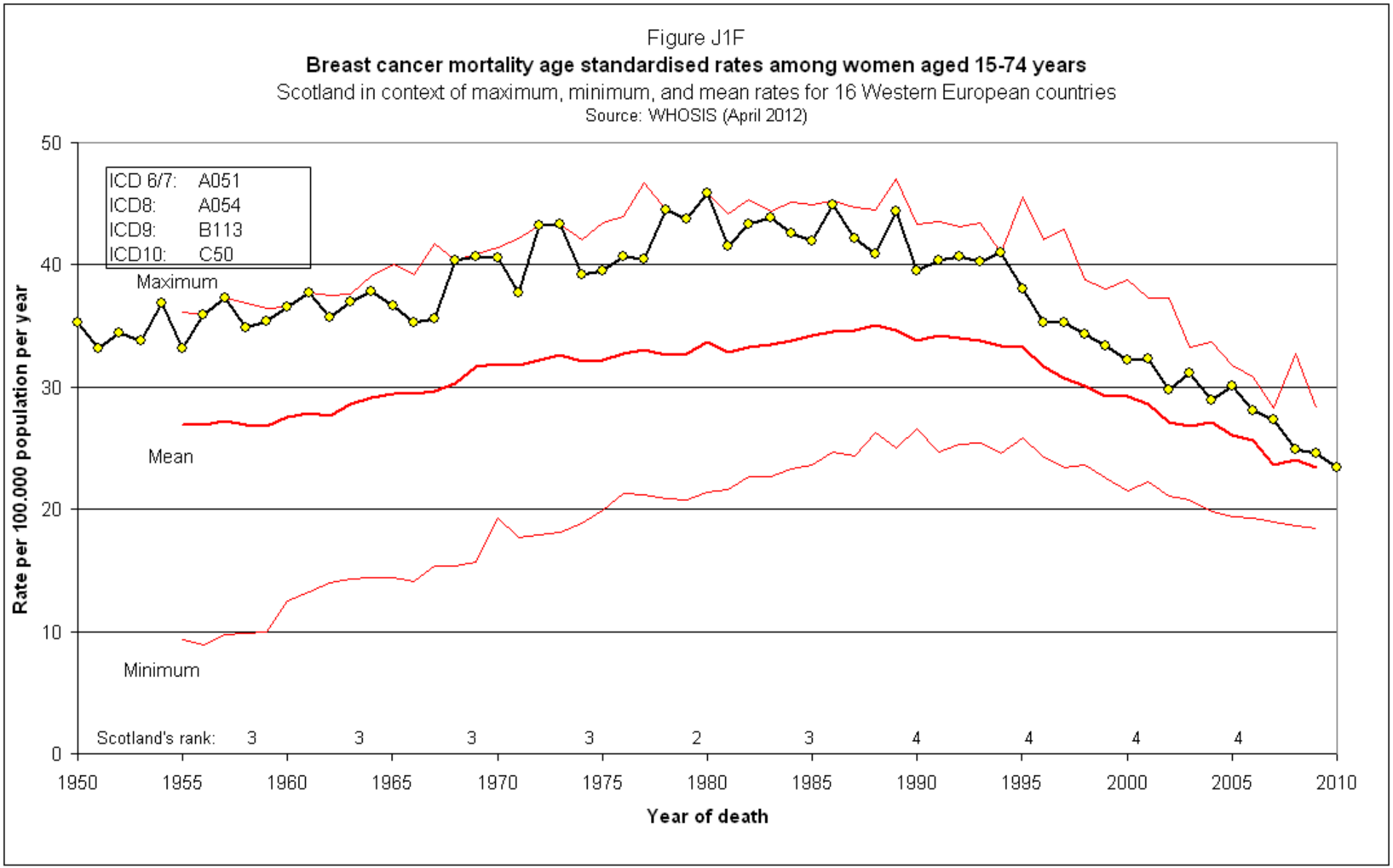


Figure I1F
Lung cancer mortality age standardised rates among women aged 15-74 years
Scotland in context of maximum, minimum, and mean rates for 16 Western European countries
Source: WHOSIS (April 2012)
25 year+ peak
ICD 6/7: A050
ICD8: A051
ICD9: B101
ICD10: C33, C34
Maximum
Mean
Minimum
Scotland's rank: 1 1 1 1 1 1 1 1 2
Rate per 100.000 population per year
Year of death
0.0
10.0
20.0
30.0
40.0
50.0
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010

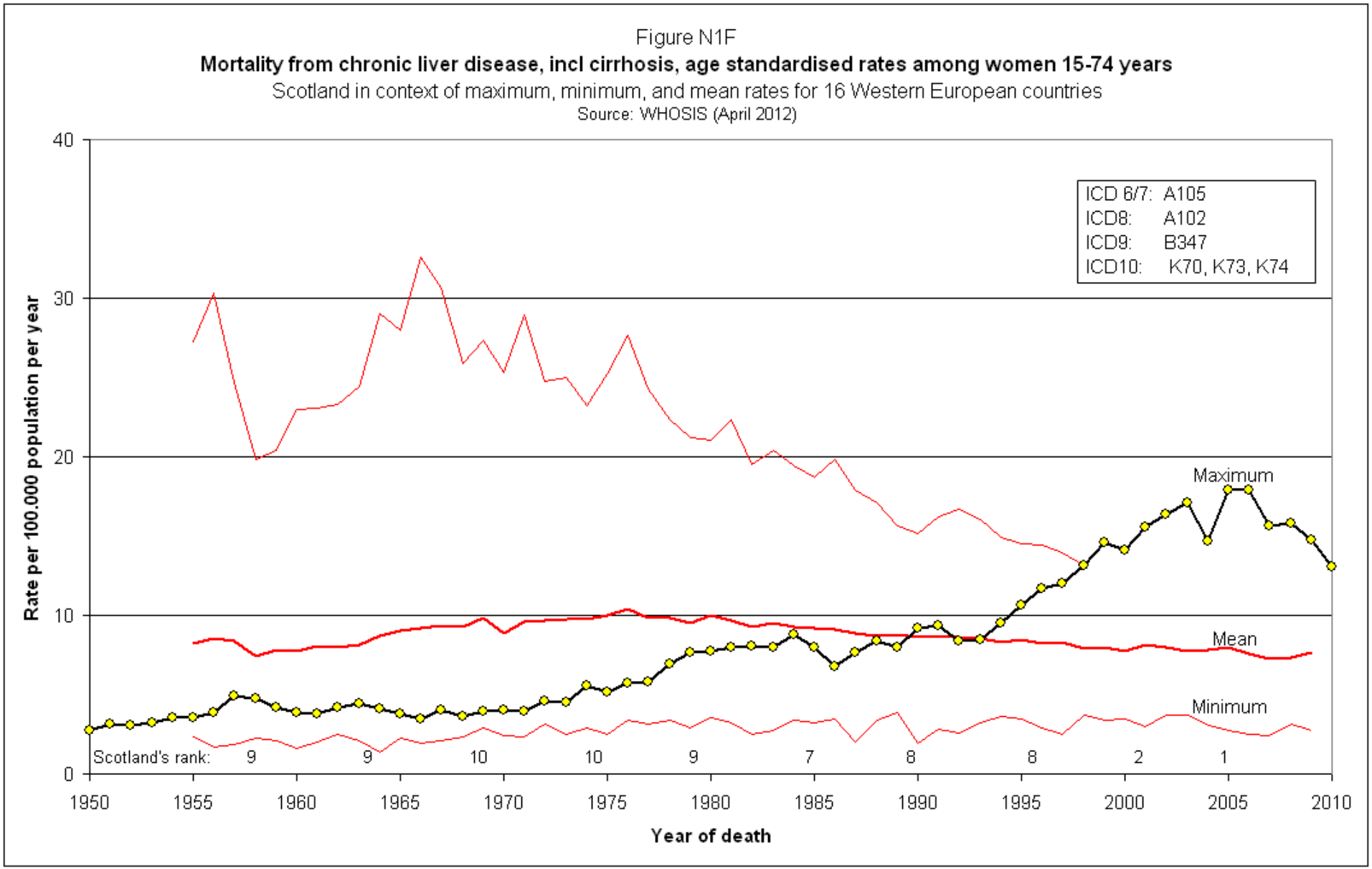
Colorectal cancer



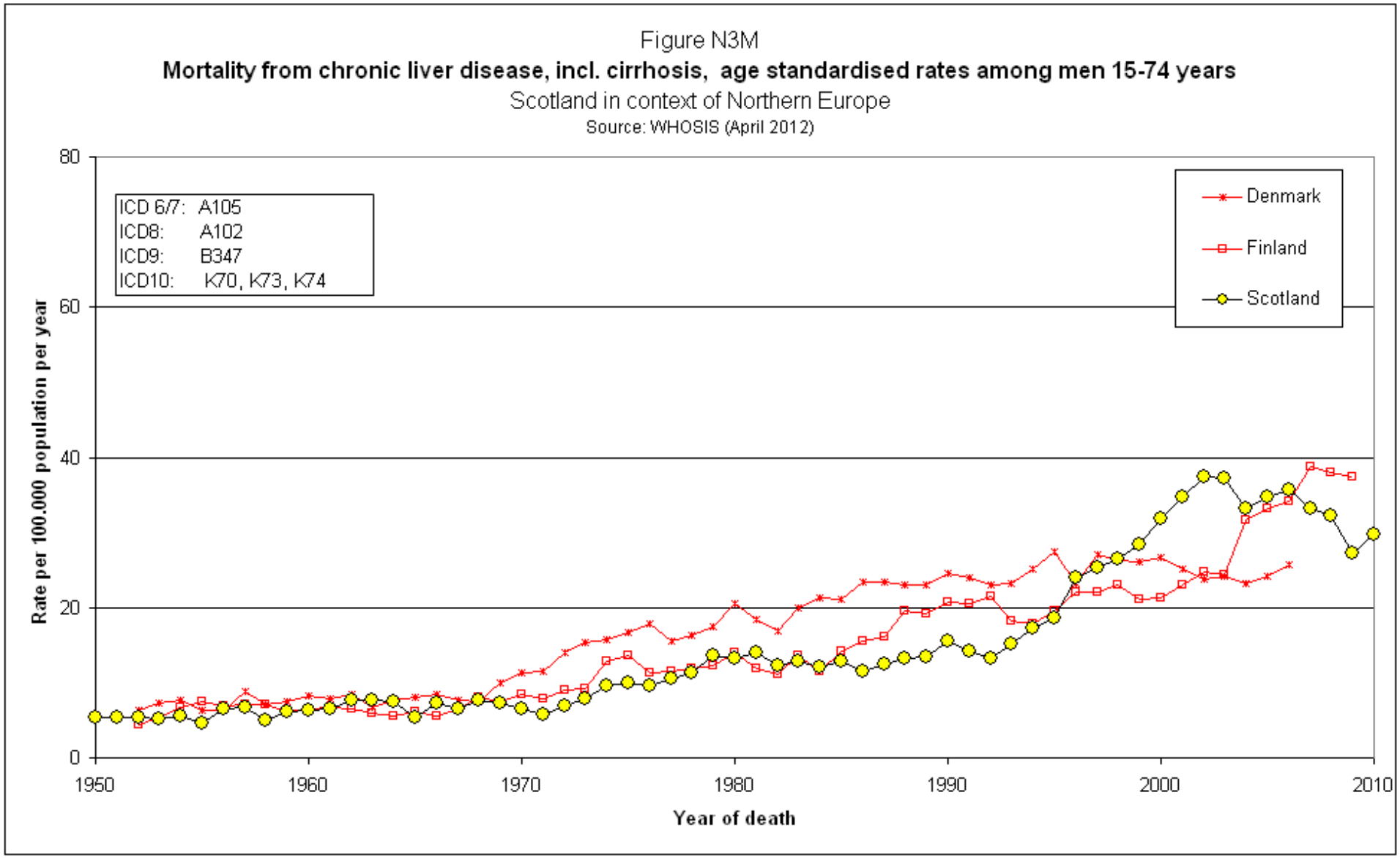
Breast cancer



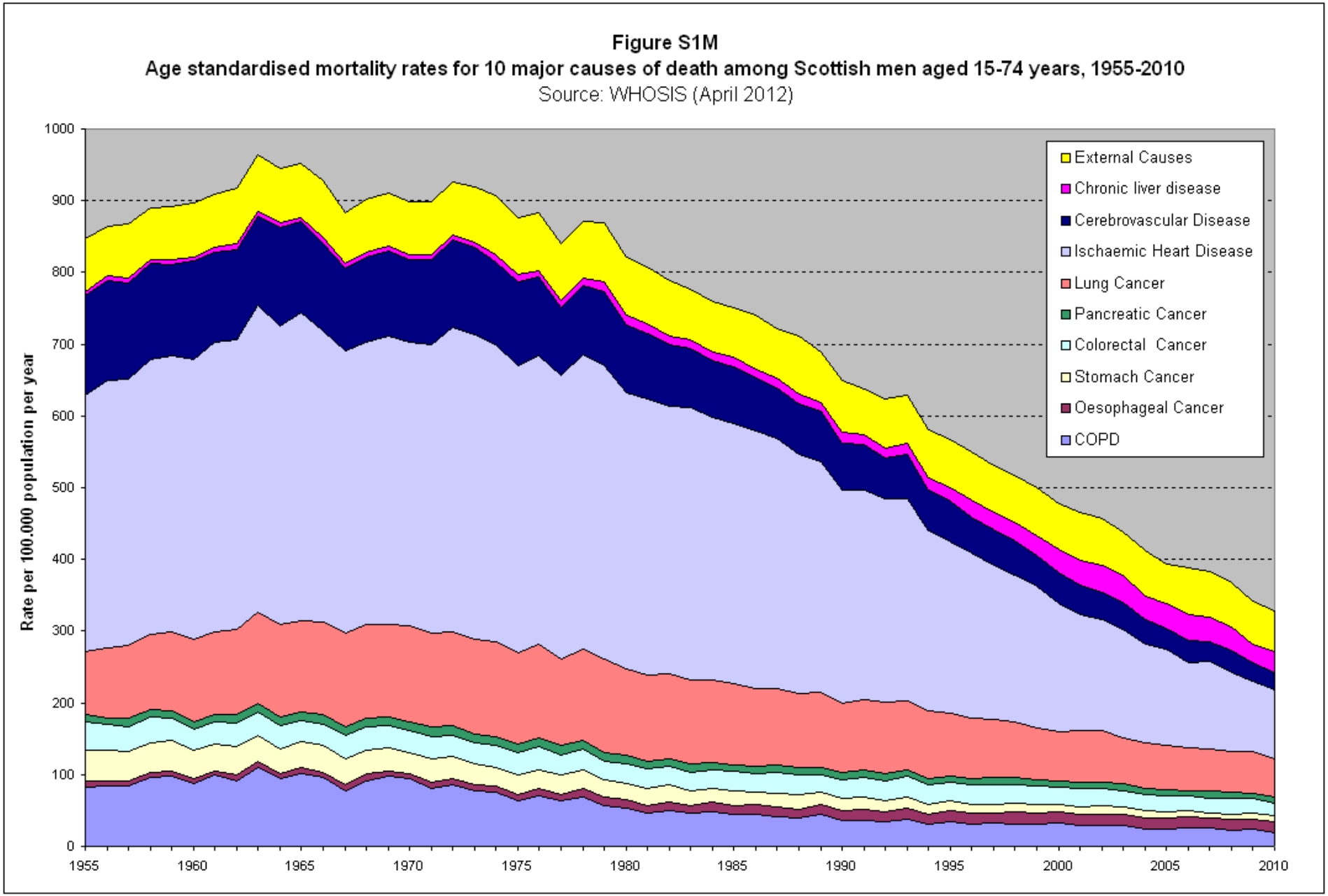
Chronic liver disease, including cirrhosis



Chronic liver disease, including cirrhosis
Scotland vs Finland



Cumulative Mortality - Males

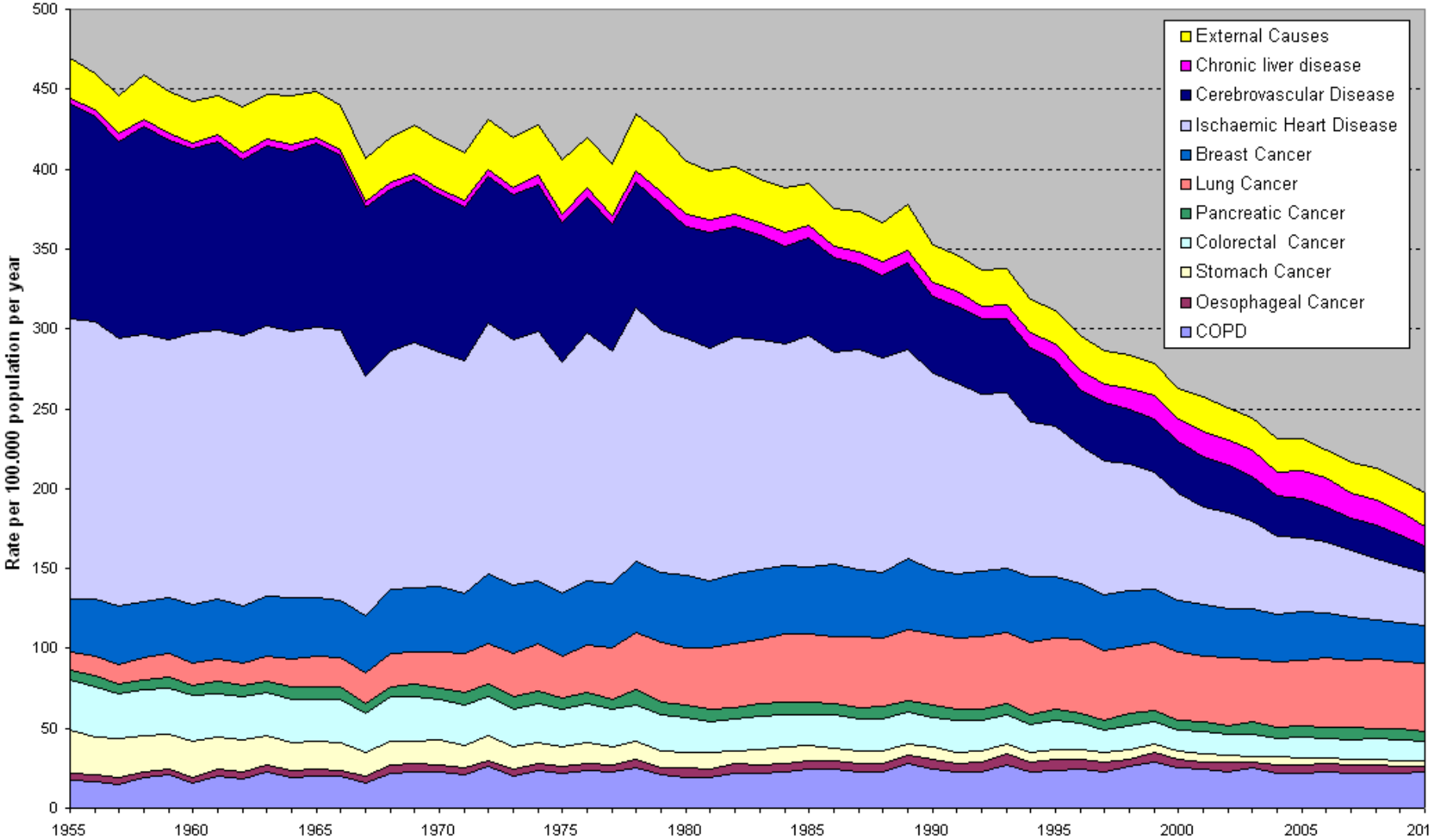


Cumulative Mortality - Females

Figure S1F

Age standardised mortality rates for 11 major causes of death among Scottish women aged 15-74 years, 1955-2010

Source: WHOSIS (April 2012)

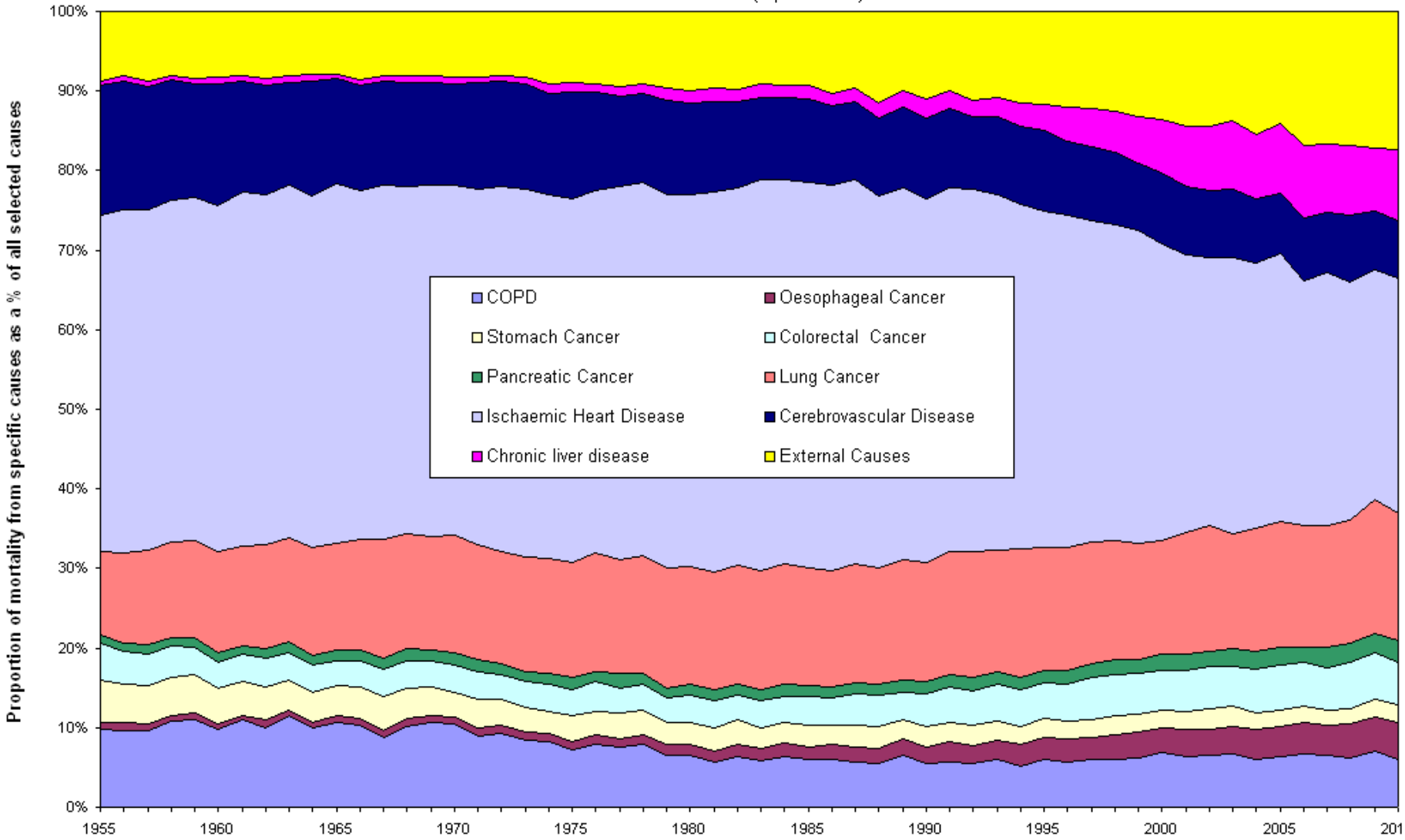


Proportionate Contribution by Cause - Males

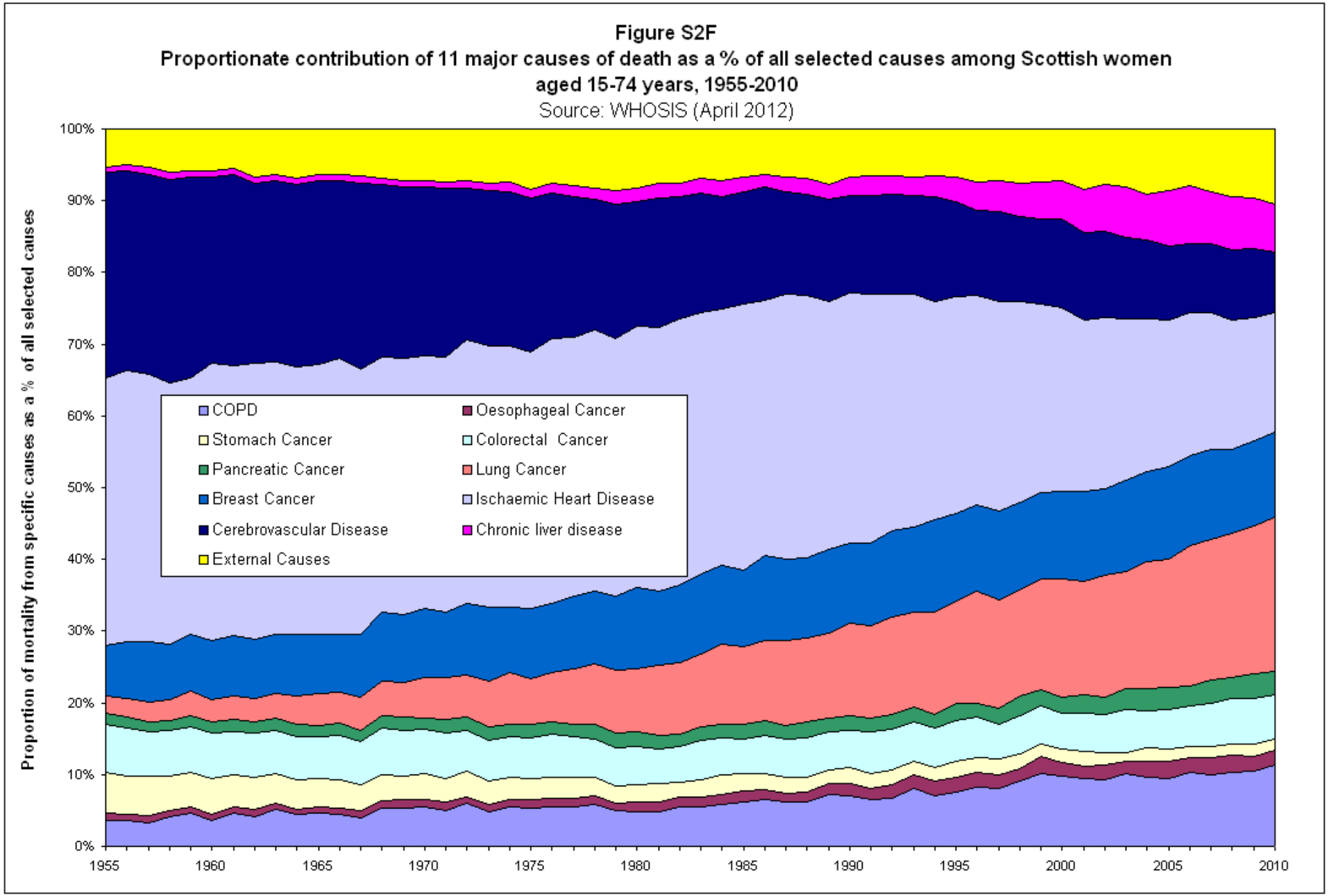
Figure S2M

Proportionate contribution of 10 major causes of death as a % of all selected causes among Scottish men aged 15-74 years, 1955-2010

Source: WHOSIS (April 2012)



Proportionate Contribution by Cause - Females



Conclusions

- Reductions in mortality in all age groups over last 60 years e.g. infant mortality has reduced by 90%
- However, Scotland's relative position within Western Europe has become notably worse, particularly for women
- Rise/flat trend in mortality in younger working age group in last 25 years and Scotland now has highest mortality in Western Europe in this age group
- Mortality among working age people has reduced for many causes and Scottish rates are converging with Western European mean – ischaemic heart disease, male lung cancer, colorectal cancer, female breast cancer
- 25 year peak in lung cancer mortality among women
- Other concerns - highest rates of mortality due to oesophageal cancer in Western Europe, suicide rates 3rd/4th highest in Western Europe and chronic liver disease mortality amongst the highest in Europe
- Potential for **further research** into causes associated with younger working age mortality and elderly female mortality; comparisons to a wider range of European countries

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