Differences in health care structure and incentives – do they worsen or reduce health inequalities?

Reinhard Busse, Prof. Dr. med. MPH

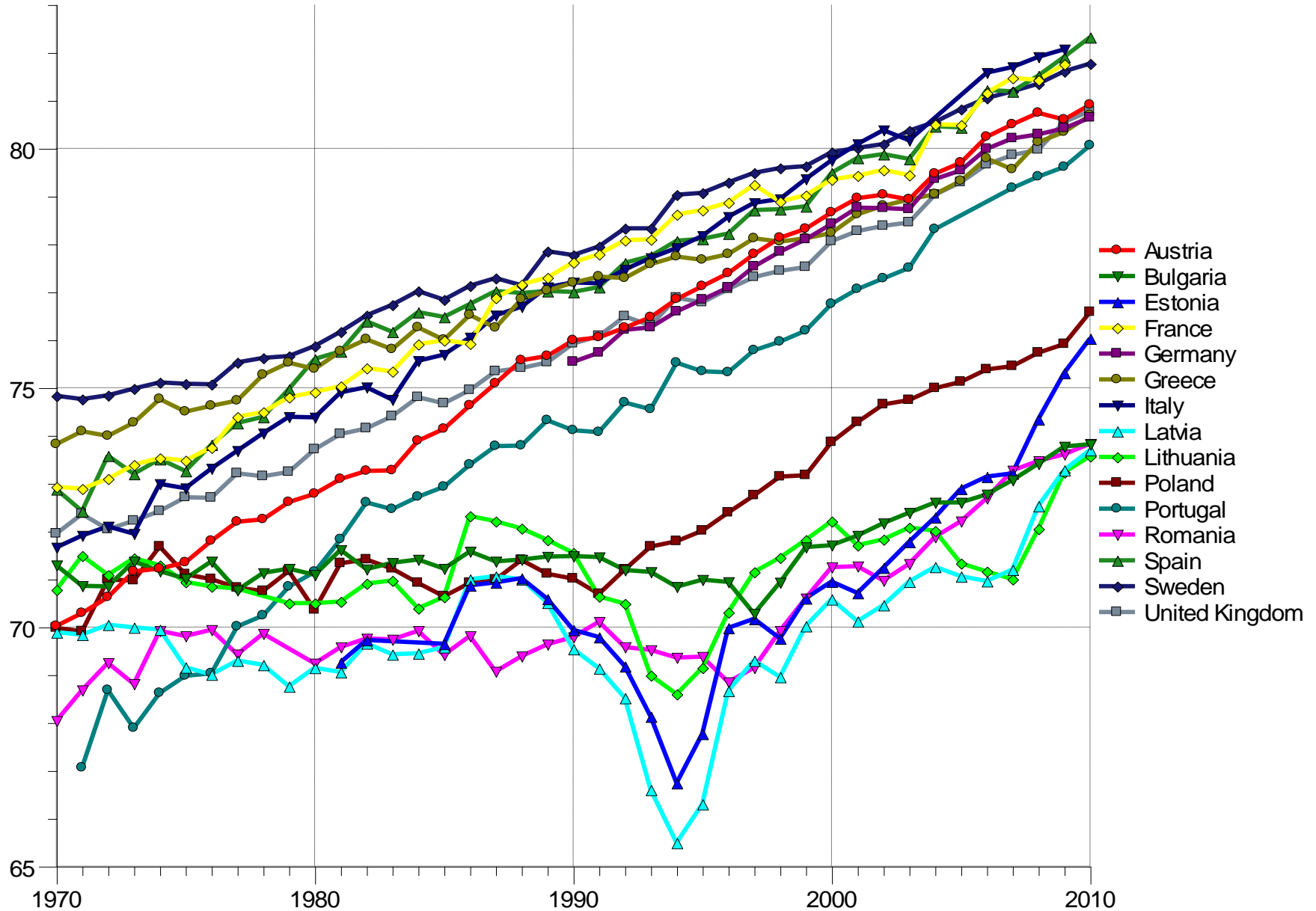Department of Health Care Management

Berlin University of Technology/

(WHO Collaborating Centre for Health Systems Research and Management)

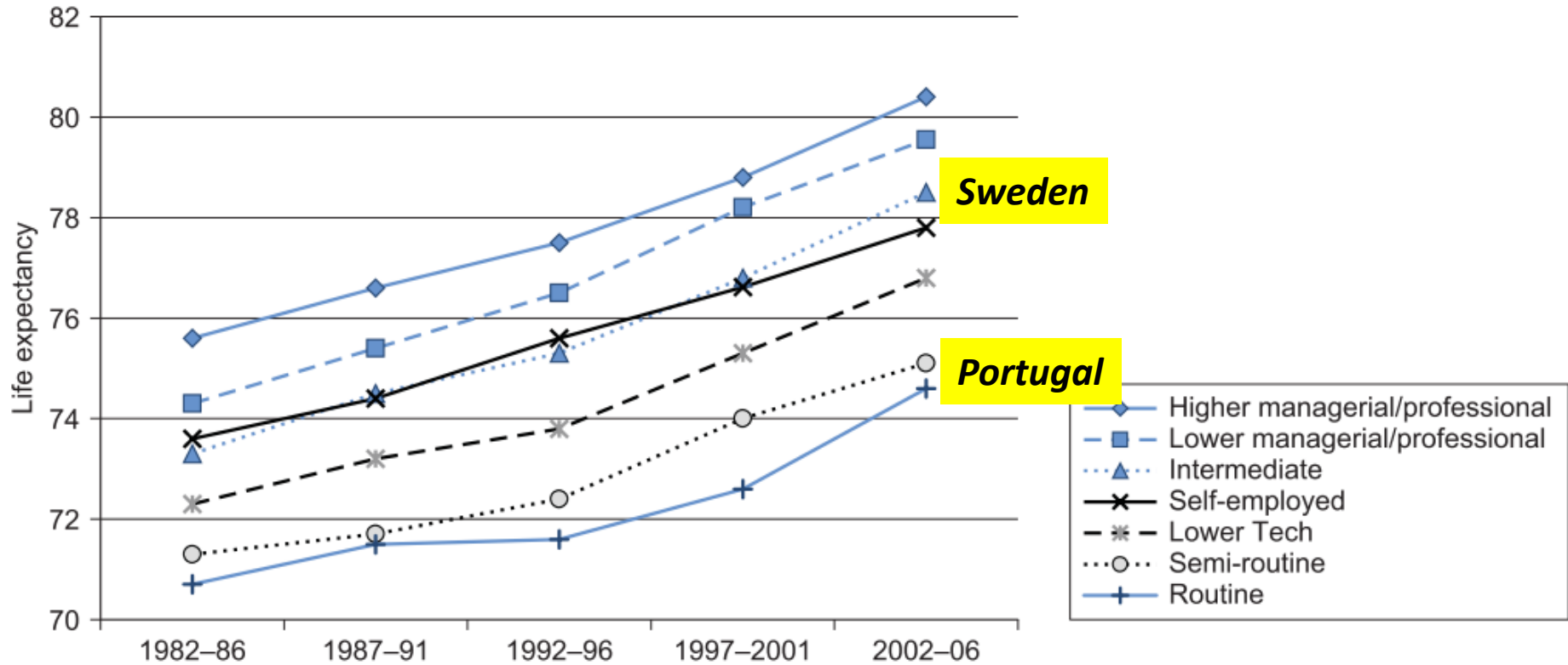European Observatory on Health Systems and Policies

2002–2012
Health Care Management

MiG

European
Observatory
on Health Systems and Policies

Technische Universität Berlin

What we forget (or don't have good data for):

MALE life expectancy at birth by socio-economic class

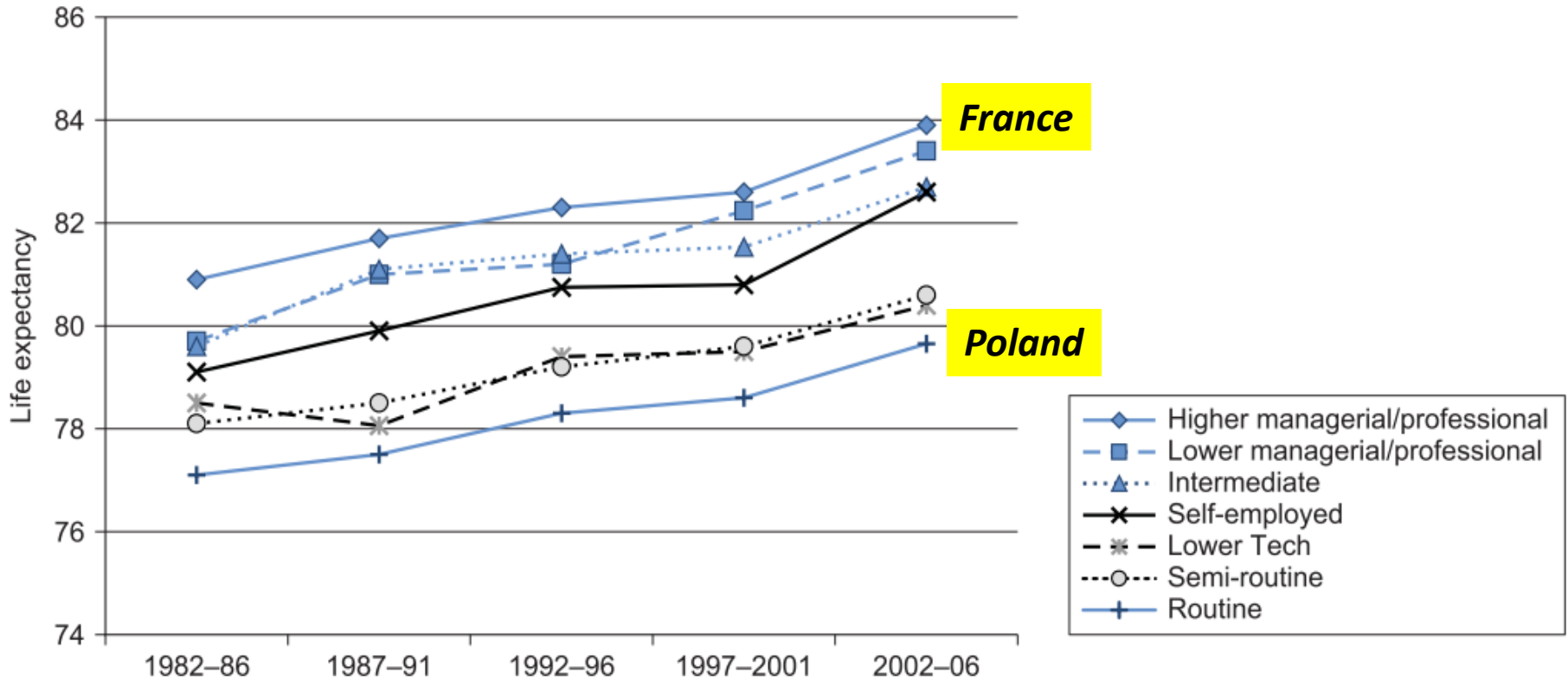**(here: in England and Wales)**

Source: ONS Longitudinal Study

Office for National Statistics (2011) Trends in life expectancy by the National Statistics Socio-economic Classification 1982–2006. Newport

What we forget (or don't have good data for):

FEMALE life expectancy at birth by socio-economic class

**(here: in England and Wales)**

Source: ONS Longitudinal Study

Office for National Statistics (2011) Trends in life expectancy by the National
Statistics Socio-economic Classification 1982–2006. Newport
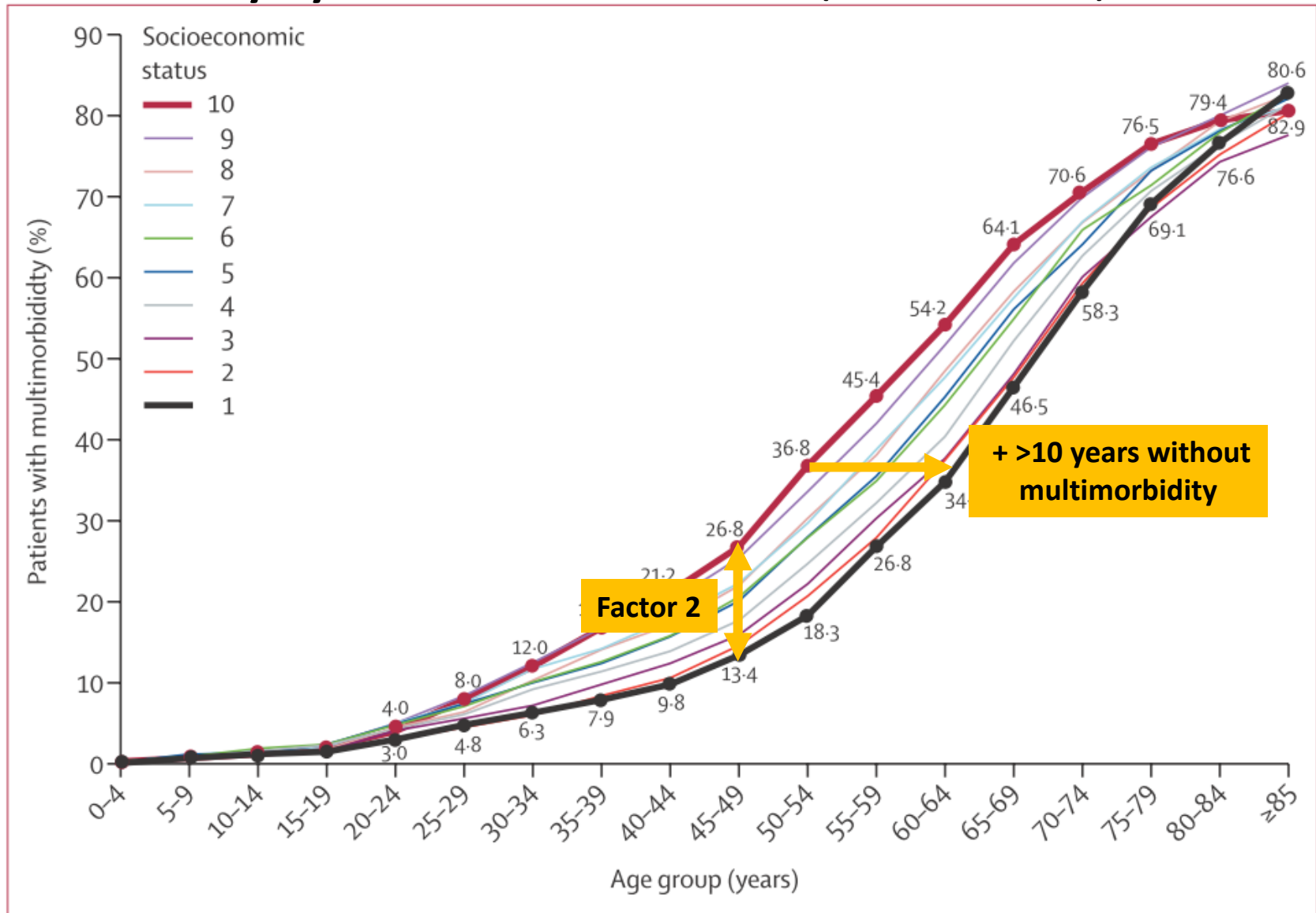
What we usually look at:
chronic disorders/ multimobidity by age (here: in Scotland)

What we forget (or don't have good data for):
multimobidity by socio-economic status (here: in Scotland)
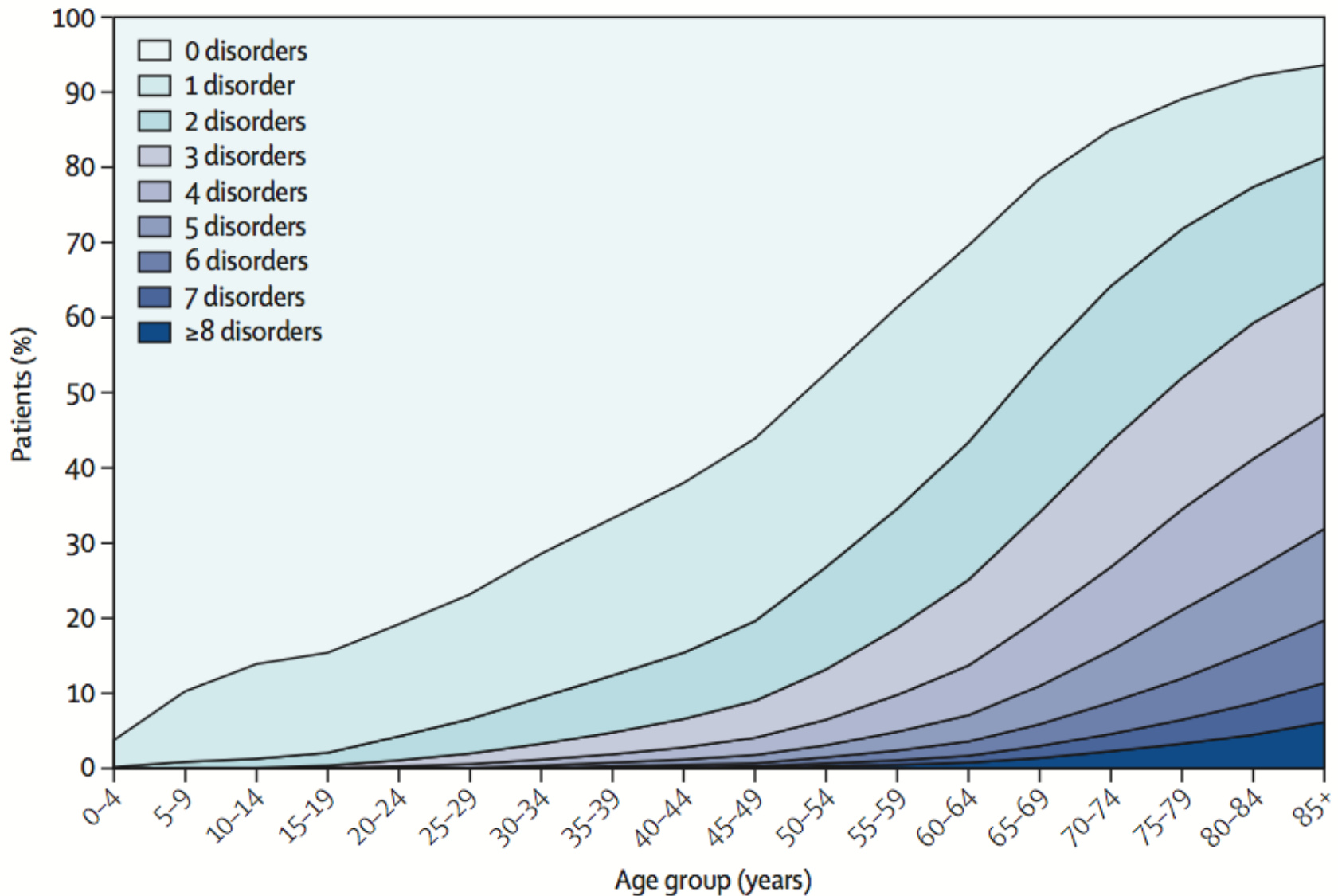
Source: Barnett K et al. (2012) Lancet 380: 37-43.

The inverse care law (early 1970s) – still true today!?

- *[Doctors] tend to gather where the climate is healthy… and where the patients can pay for their services.*

(Ivan Illich)

- *[T]he availability of good medical care tends to vary inversely with the need for it in the population served.*
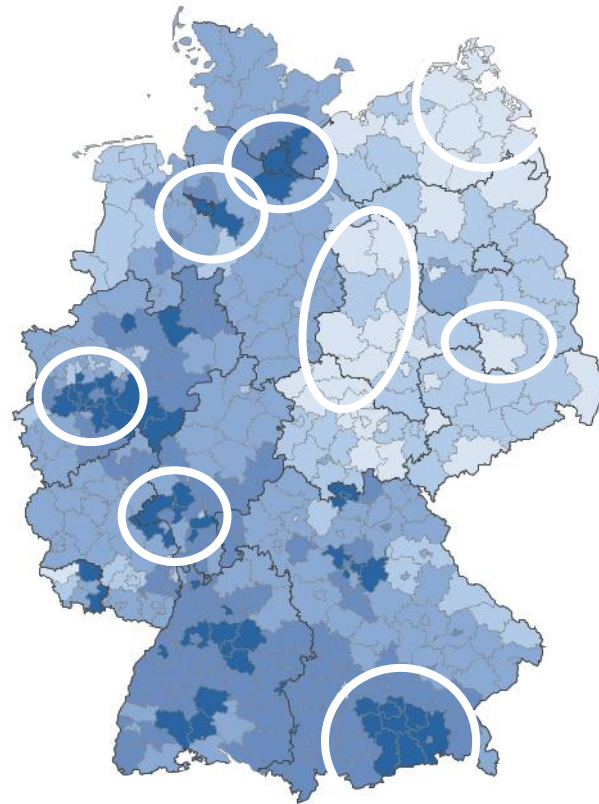
(Julian Tudor Hart)
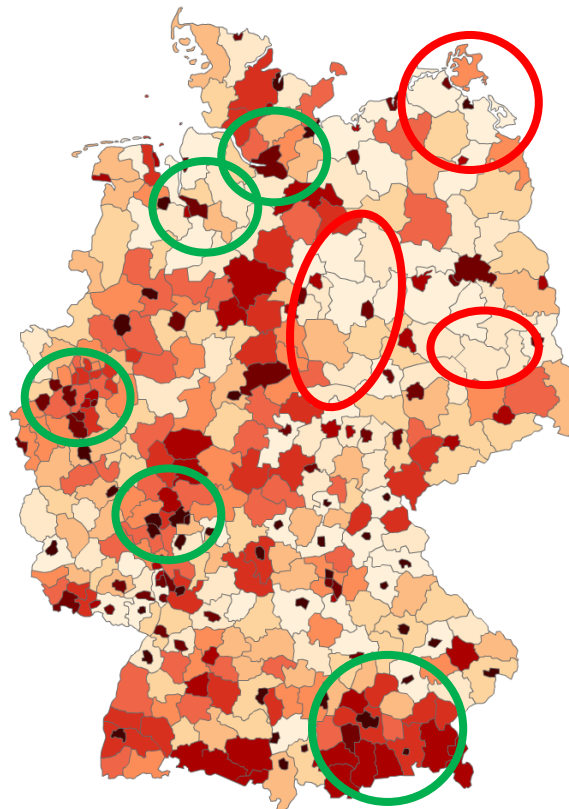
Let's take Germany as an example:
Areas with higher/lower income → more/fewer physicians

Median household income

Physician supply (PCP) 2010

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Source: www.versorgungsatlas.de

My framework to understand what we are talking about …

Need (by socio-economic status, ethnicity/ migration status etc.)

Population coverage

Content of the benefits basket

Cost-sharing arrangements

Geographical factors

Choice among available providers

Organizational barriers

Preferences

Unmet need

Realised access

Unmet need
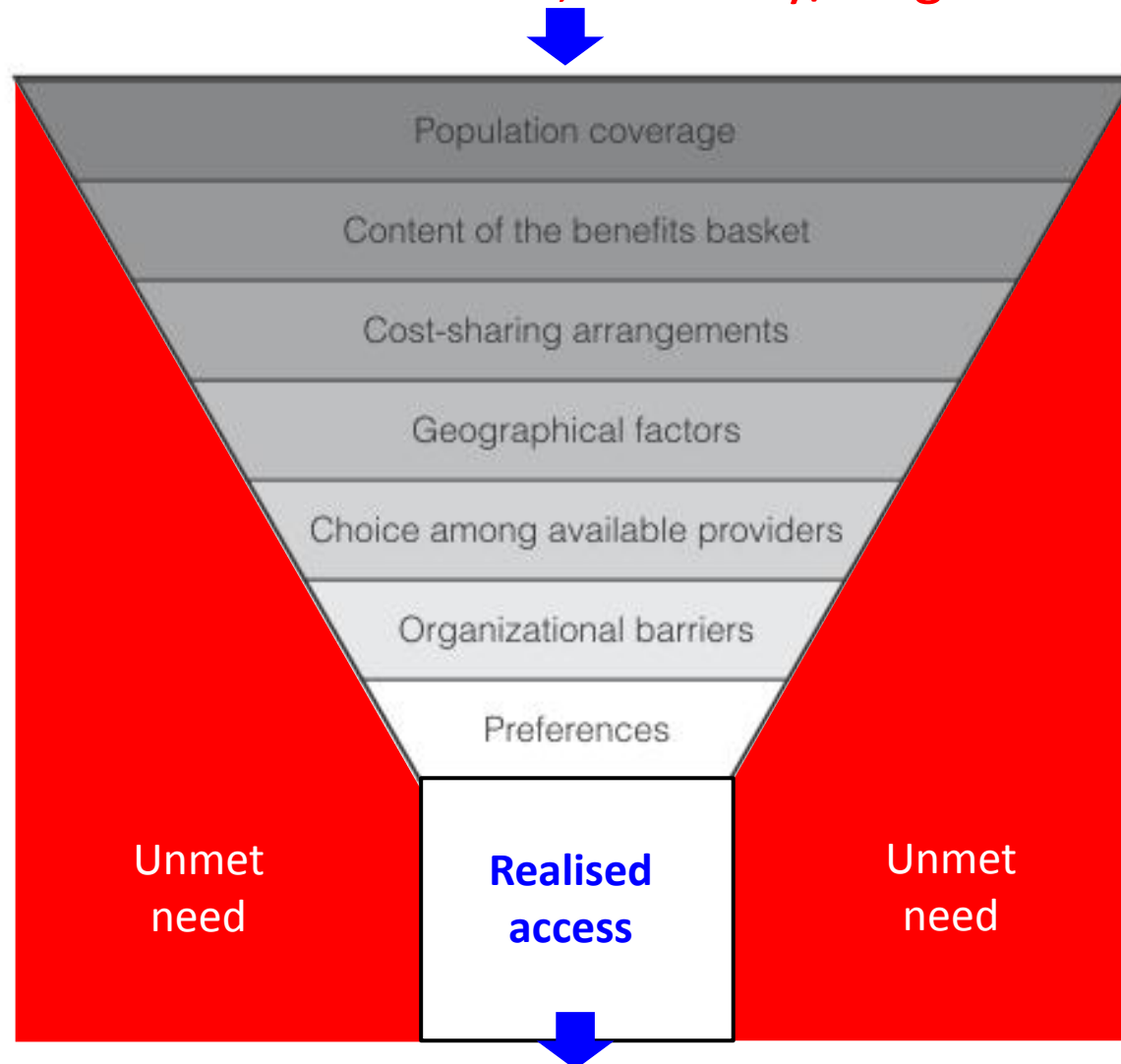
x Quality = Outcomes

Insurance coverage: the importance is known today usually by U.S. data; here: access problems in 2012 for U.S. adults

Experienced cost-related access problem
- Uninsured: 63
- Insured all year: 27

Serious problems/ unable to pay medical bills
- Uninsured: 42
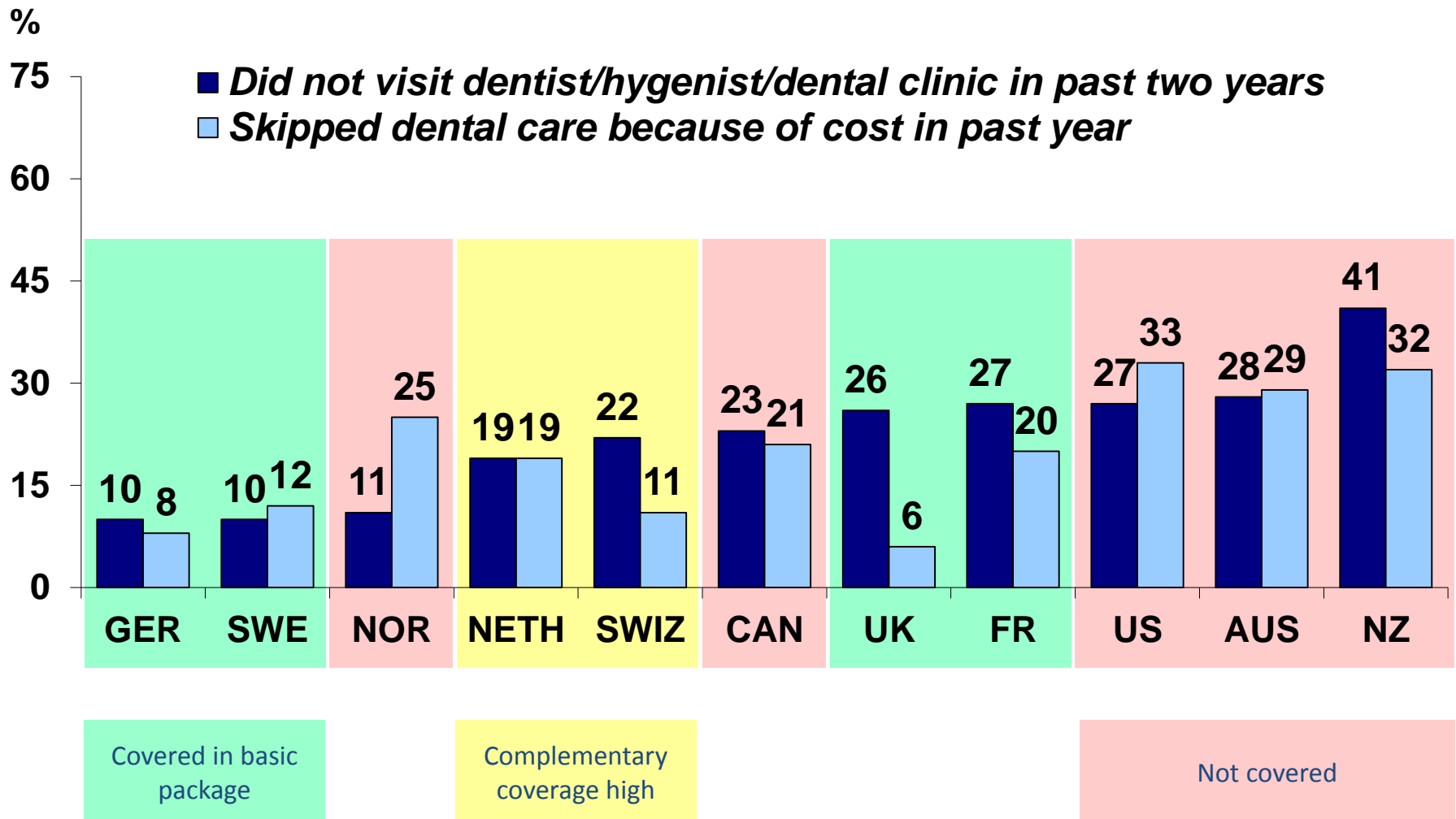- Insured all year: 15

Spent $1,000 or more out-of-pocket
- Uninsured: 39
- Insured all year: 42

Legend:
- ■ Uninsured
- □ Insured all year

%
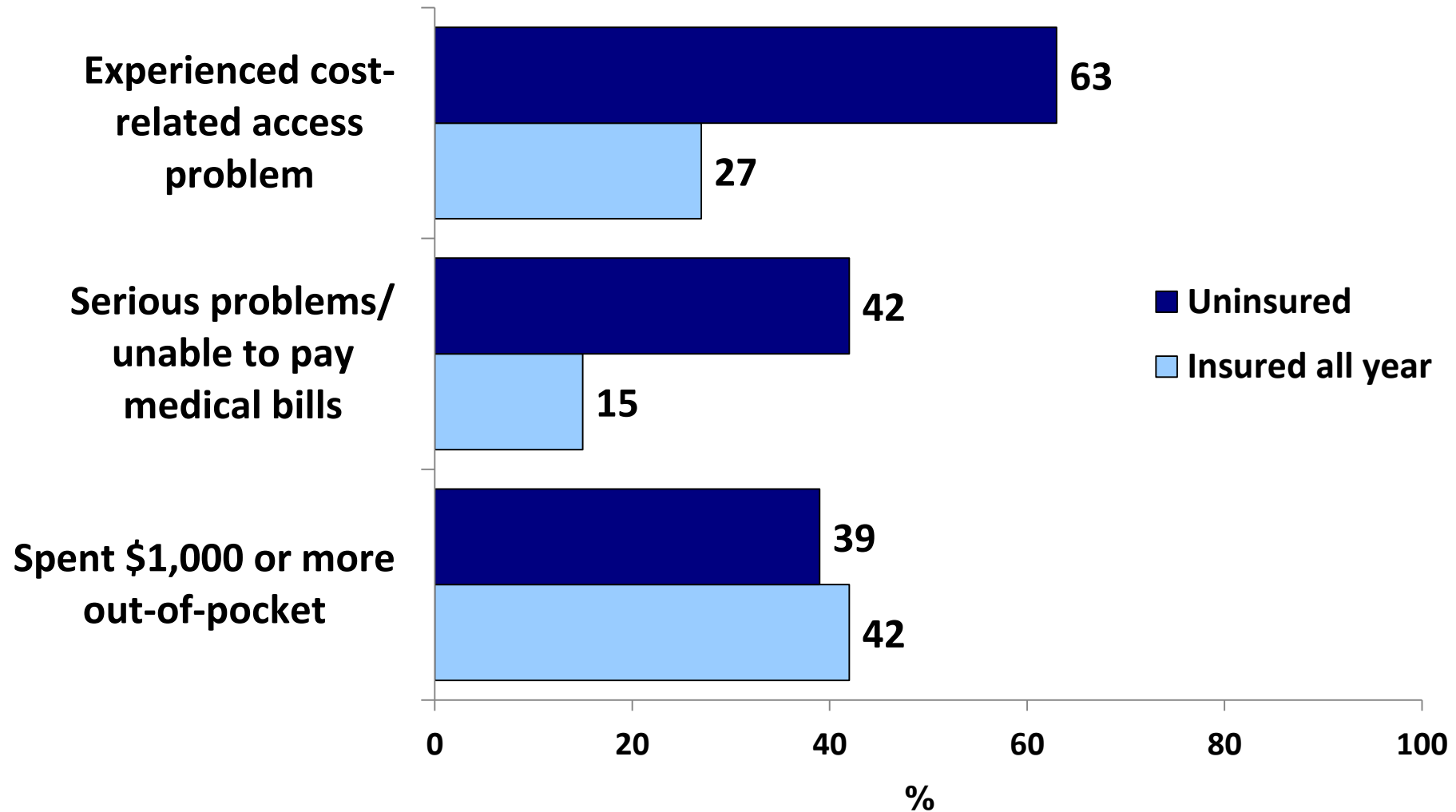
Source: 2013 Commonwealth Fund International Health Policy Survey in Eleven Countries.

The benefit basket also matters: e.g. gaps in dental care

%

■ *Did not visit dentist/hygenist/dental clinic in past two years*
■ *Skipped dental care because of cost in past year*

Bar chart values:
- GER: 10, 8
- SWE: 10, 12
- NOR: 11, 25
- NETH: 19, 19
- SWIZ: 22, 11
- CAN: 23, 21
- UK: 26, 6
- FR: 27, 20
- US: 27, 33
- AUS: 28, 29
- NZ: 41, 32

Covered in basic package (GER, SWE, UK, FR)
Complementary coverage high (NETH, SWIZ)
Not covered (NOR, CAN, US, AUS, NZ)
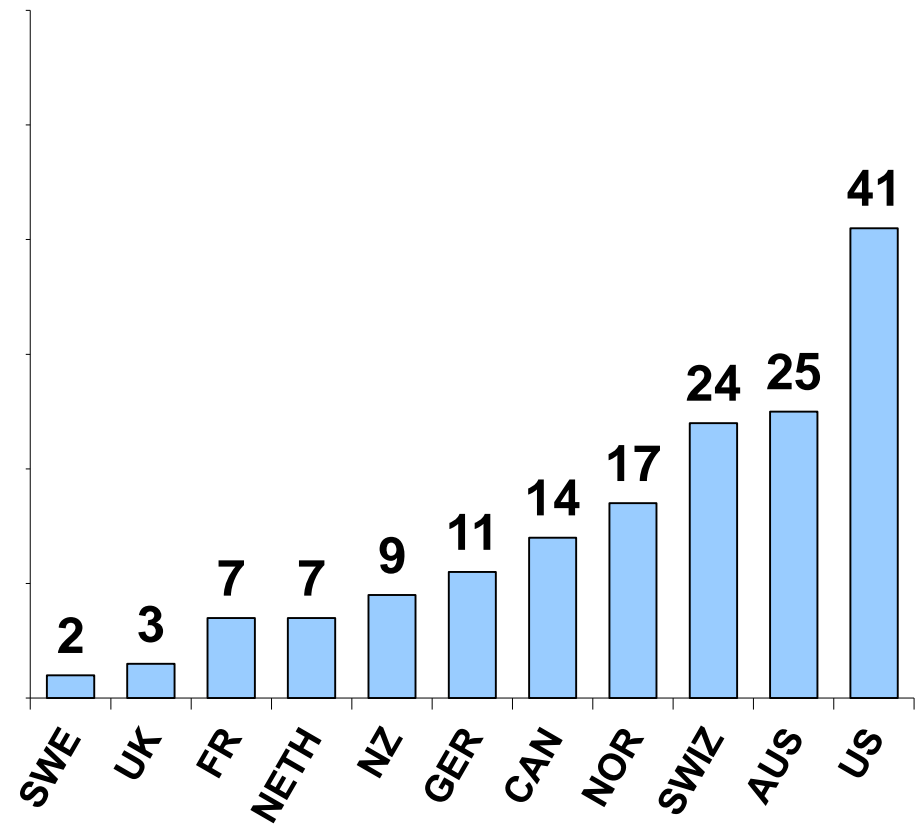
Own elaboration based on data from 2013 Commonwealth Fund International Health Policy Survey in Eleven Countries.

Cost-sharing: size and protection mechanisms are important

Experienced cost-related access problem*

Spent US$1,000 or more out-of-pocket

Cap for cost-sharing

Cost-sharing uncapped

Experienced cost-related access problem (%):
UK 4, SWE 6, NOR 10, CAN 13, SWIZ 13, GER 15, AUS 16, FR 18, NZ 21, NETH 22, US 37

Spent US$1,000 or more out-of-pocket:
SWE 2, UK 3, FR 7, NETH 7, NZ 9, GER 11, CAN 14, NOR 17, SWIZ 24, AUS 25, US 41
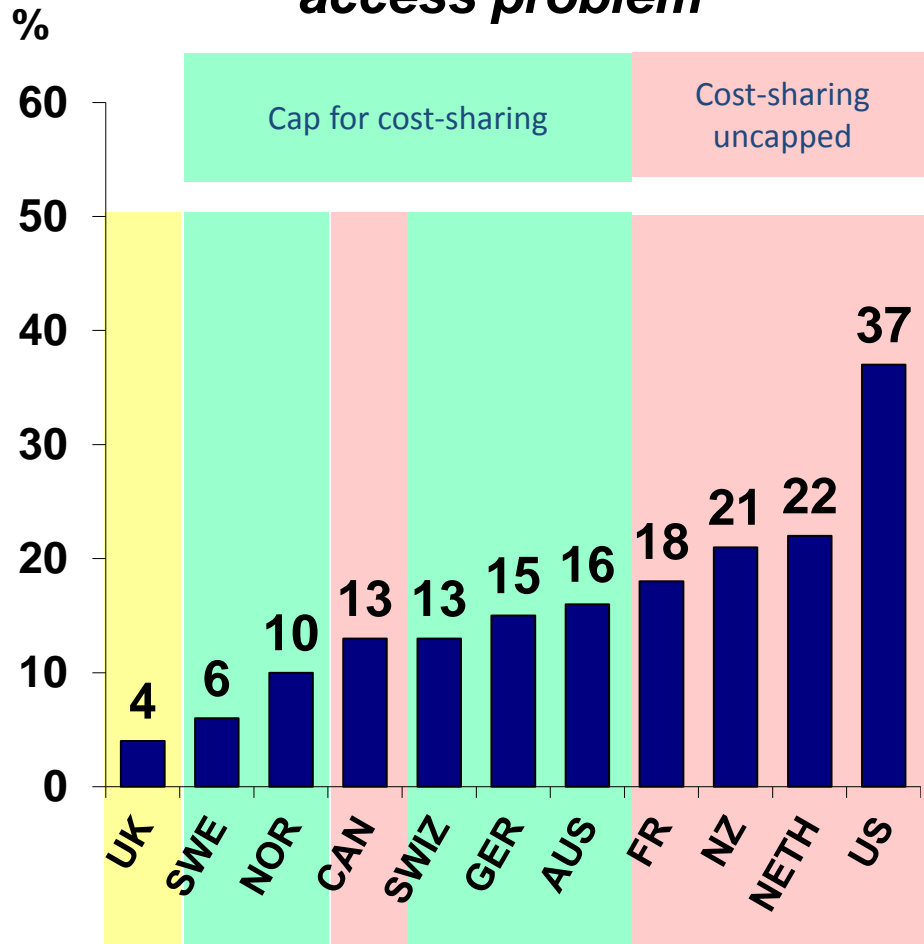
* Did not fill/skipped prescription, did not visit doctor with medical problem, and/or did not get recommended care.

Source: modified from 2013 Commonwealth Fund International Health Policy Survey in Eleven Countries.

But "no cost-sharing" is not enough; here: screening

- Socioeconomic deprivation is a strong predictor of participation in screening for colorectal cancer in Glasgow, although screening is offered without charge

- The introduction of (effective) screening programmes may result in increasing inequality in cancer outcomes

Table 2 Predictors of attendance among those who expressed interest and were randomised to FS screening (n=3171)

Variable	Attendance (%)	Odds ratios (95% CI)†‡
Age:		
61–65 (1535)	61.2	0.93 (0.80 to 1.07)
55–60 (1636)	63.0	1.00
Sex:		
Men (1541)	64.1	1.18 (1.06 to 1.32)**
Women (1630)	60.2	1.00
Socioeconomic deprivation¶:		
NT 1–2 (747)	71.0	2.34 (1.88 to 2.92)***
NT 3–4 (1155)	64.2	1.71 (1.35 to 2.18)***
NT 5–6 (551)	60.1	1.43 (1.08 to 1.9)*
NT 7–8 (718)	51.3	1.00

*p<0.05; **p<0.01; ***p<0.001; †adjusted for age group, sex, neighbourhood type (NT), and general practitioner practice; ‡analyses controlled for whether participants were invited individually or with another adult aged 55–64 years in their household; ¶NT footnote as for table 1.
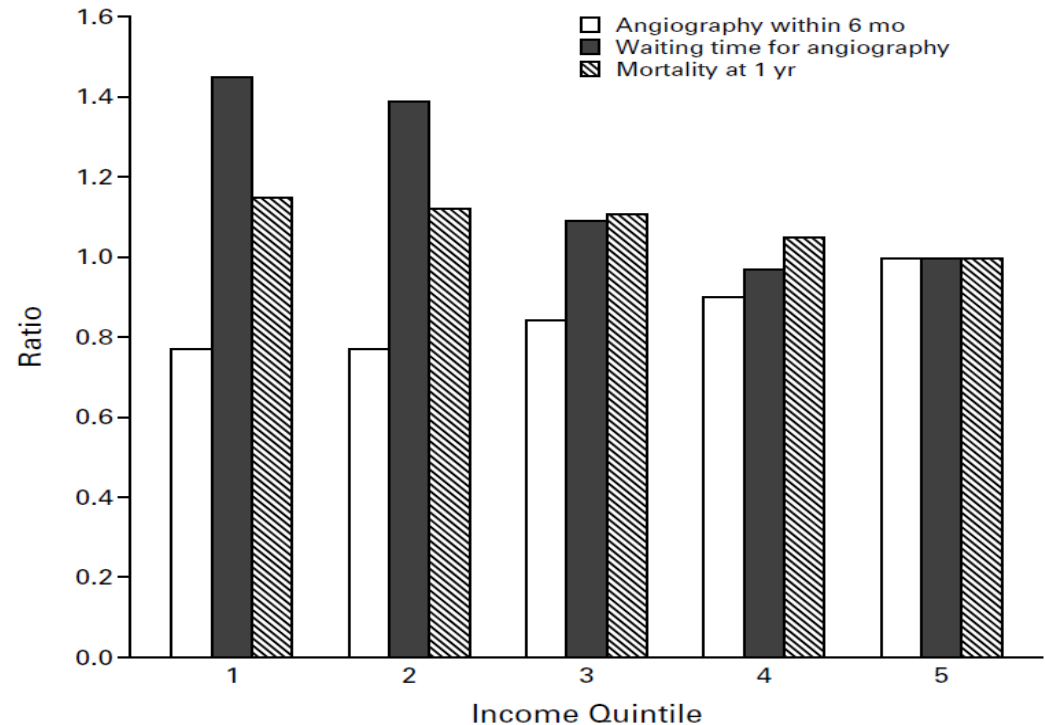
Adjusted for age, sex, GP etc., the most disadvantaged were more than 2x as likely to decline!

Source: McCaffery et al. 2002

Inequitable waiting times (and other factors), angiography after acute myocardial infarction and mortality (here: in Canada)

Higher income

→ decreased waiting time for & increased usage of coronary angiography

→ lower mortality rate

Legend:
- □ Angiography within 6 mo
- ■ Waiting time for angiography
- ▨ Mortality at 1 yr

Y-axis: Ratio (0.0 to 1.6)
X-axis: Income Quintile (1 to 5)

30%	GP	12%
24%	cardiologist	42%
67%	high-volume hospital	89%
53%	tertiary hospital >50km	10%

Source: Alter et al. 1999

Realised access: Inequity of physician visits by income (and equal need); in many countries visible – and a real problem in certain ones with poor seeing GPs and rich seeing specialists

Realised access
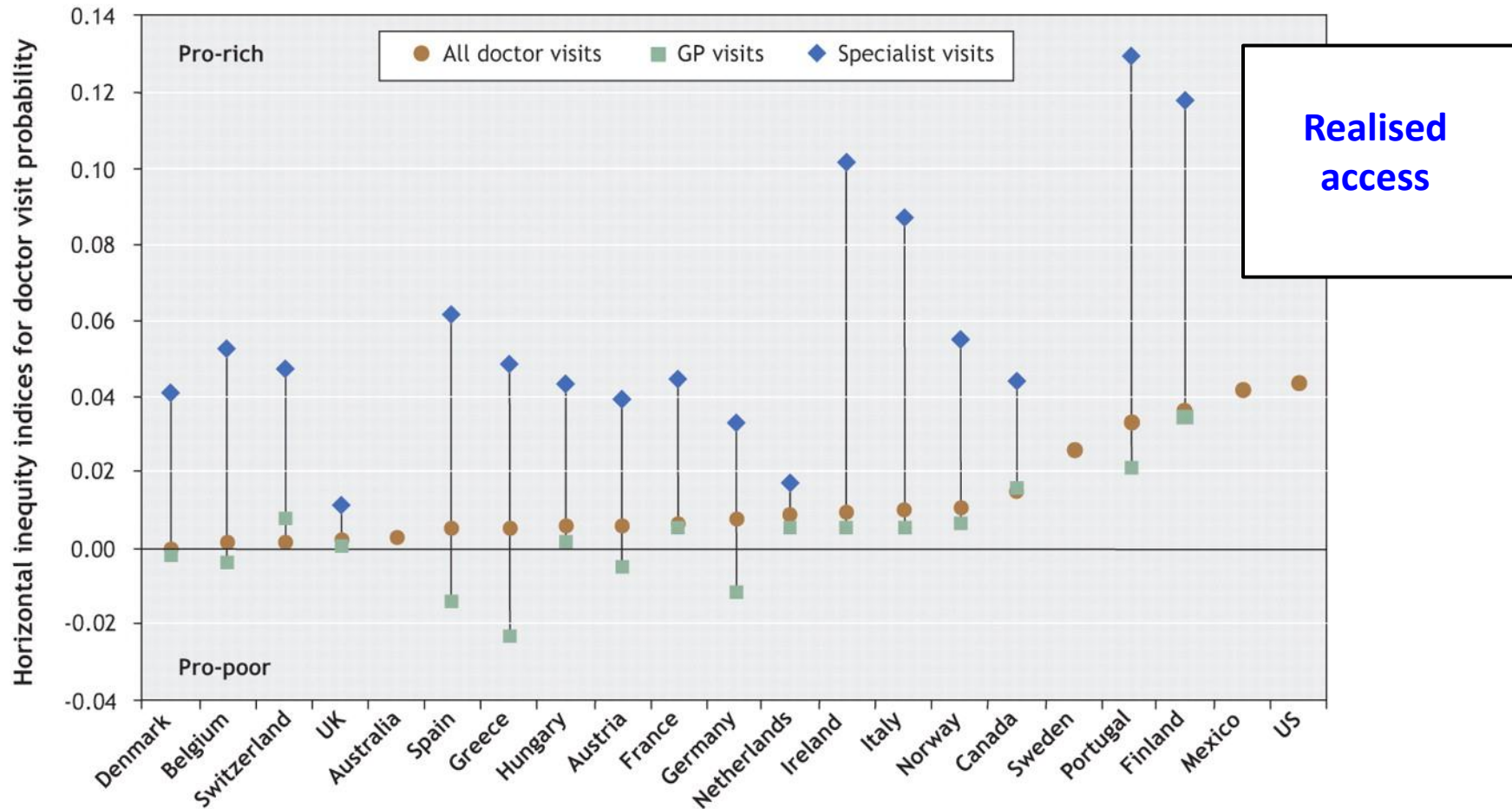
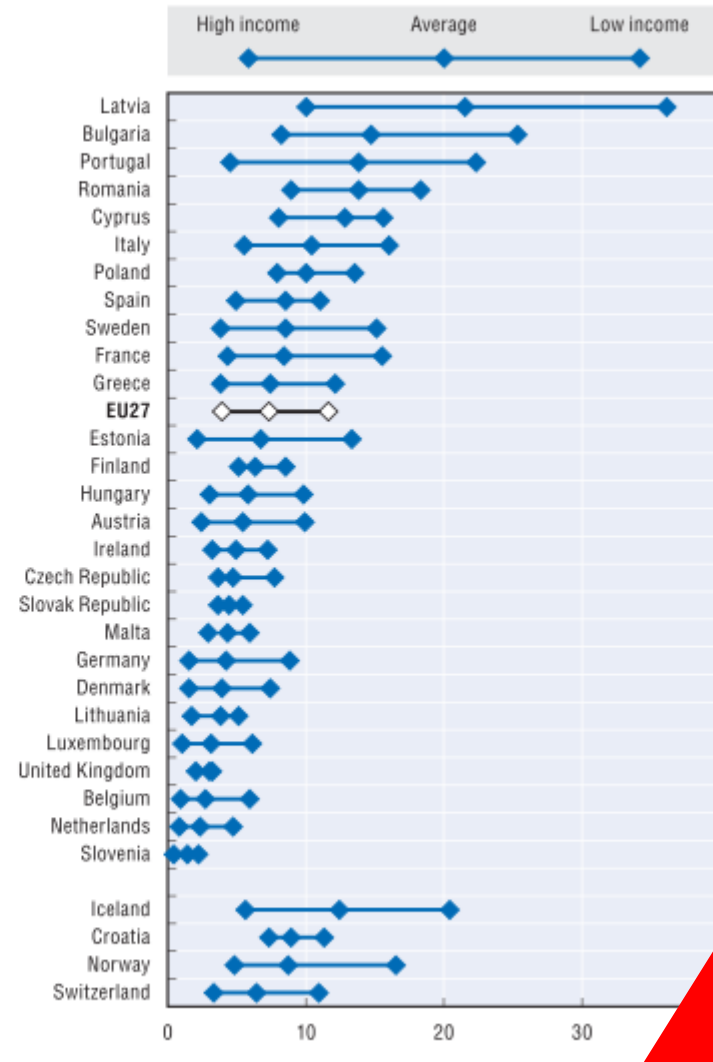3.12.1. Unmet need for a medical examination, by income quintile, 2010

3.12.2. Unmet need for a dental examination, by income quintile, 2010
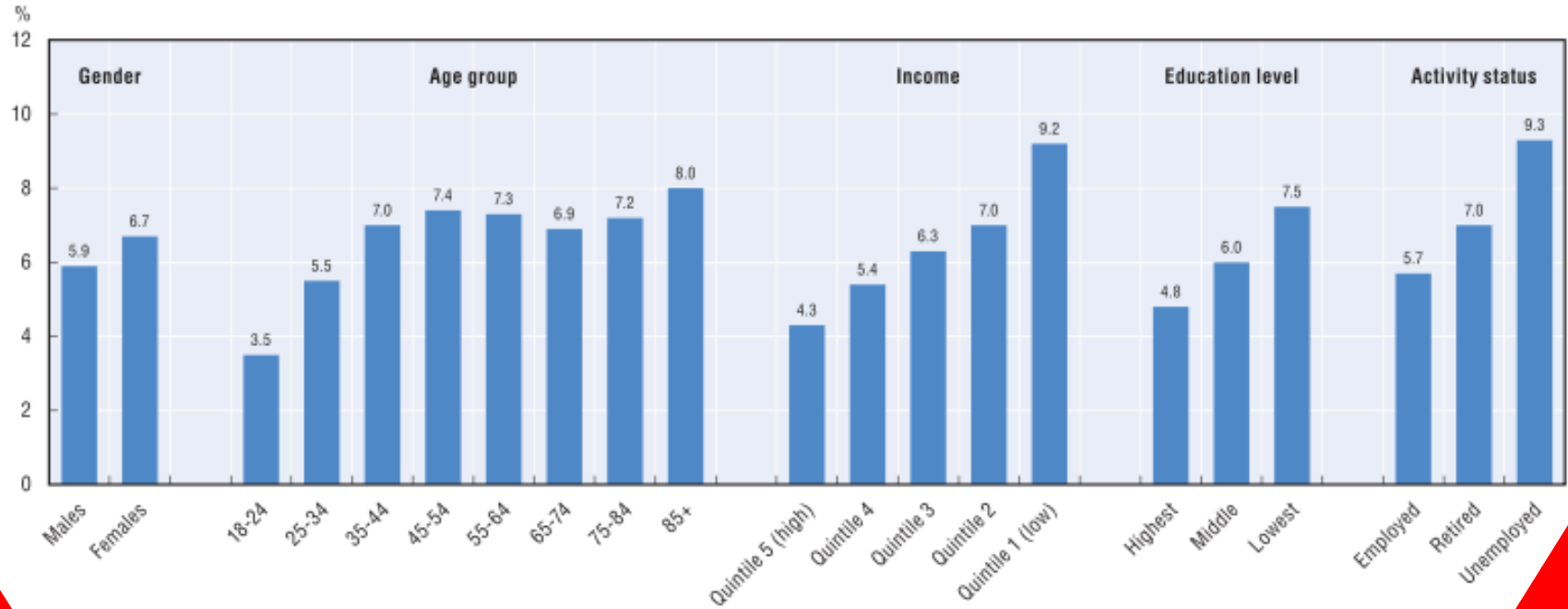
Source: Eurostat Statistics Database, based on EU-SILC.
StatLink http://dx.doi.org/10.1787/888932704741

Source: Eurostat Statistics Database, based on EU-SILC.
StatLink http://dx.doi.org/10.1787/8

Unmet need

Unmet need

Inequalities in unmet need due to income
> age > employment > education > gender

3.12.3. Inequalities in unmet need for a medical examination, EU27 average, 2010

Eurostat Statistics Database, based on EU-SILC.

StatLink http://dx.doi.org/10.1787/8889

Unmet need

Unmet need

What can we do?

- Tackle income inequalities (through taxation and redistribution)?
  → *strength of the association between health and income stronger than the unequal income distribution*
  → *reducing inequities primarily a matter of health policy*

- Focus health policy on the disadvantaged (e.g. English "Health action zones" to reduce health problems in disadvantaged areas)?
  → *limited success (maybe we should try it anyway)*

- Best solution: take inequities explicitly into account when designing the overall health system (i.e. health care for entire population) – *starting with money (financial allocation)*

Back to Germany first:

How do physician numbers relate to needs (as used in the risk structure compensation mechanism)?
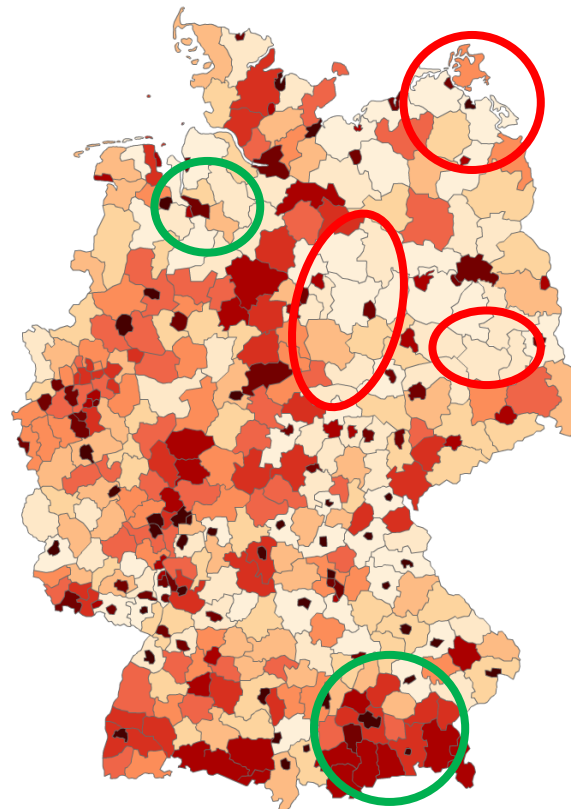
Median household income
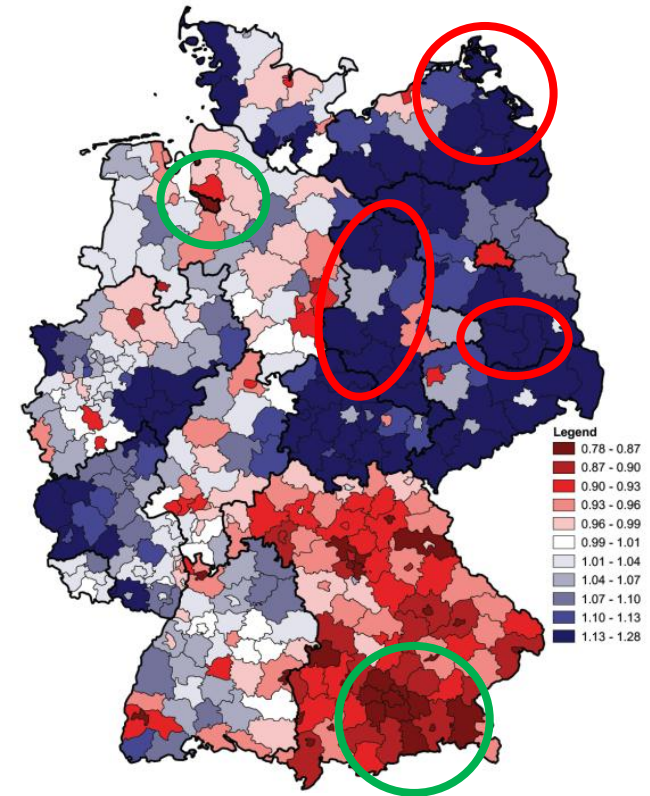
Physician supply (PCP) 2010

Equity index of outpatient care

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Legend
- 0.78 - 0.87
- 0.87 - 0.90
- 0.90 - 0.93
- 0.93 - 0.96
- 0.96 - 0.99
- 0.99 - 1.01
- 1.01 - 1.04
- 1.04 - 1.07
- 1.07 - 1.10
- 1.10 - 1.13
- 1.13 - 1.28
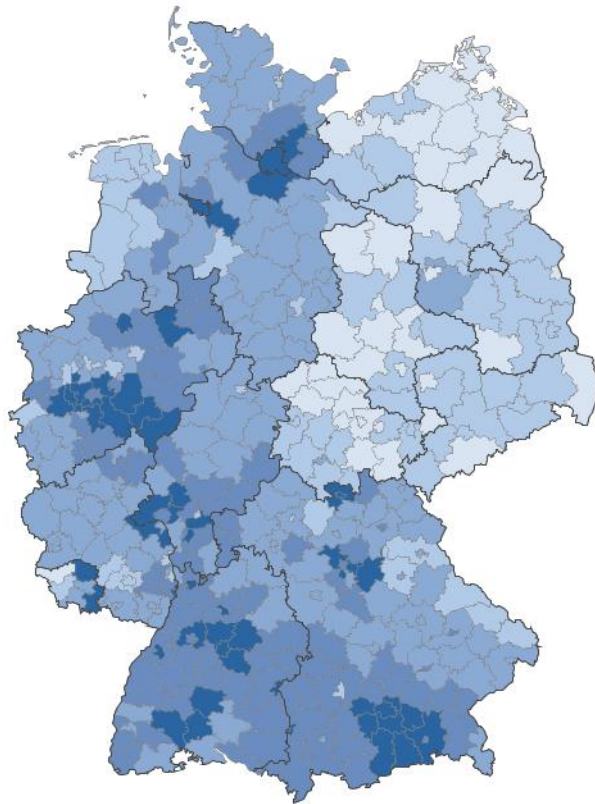
Source: www.versorgungsatlas.de

Source: Ozegowski & Sundmacher (2013)

Is England more successful (with taking area indicators rather than only individual factors into account)?

Percentage gain (loss) from equalization grant, 183 English health districts

West Surrey:
funding -18.3%
<75 mortality -20.5%

Manchester:
funding +33.1%
<75 mortality +35.4%
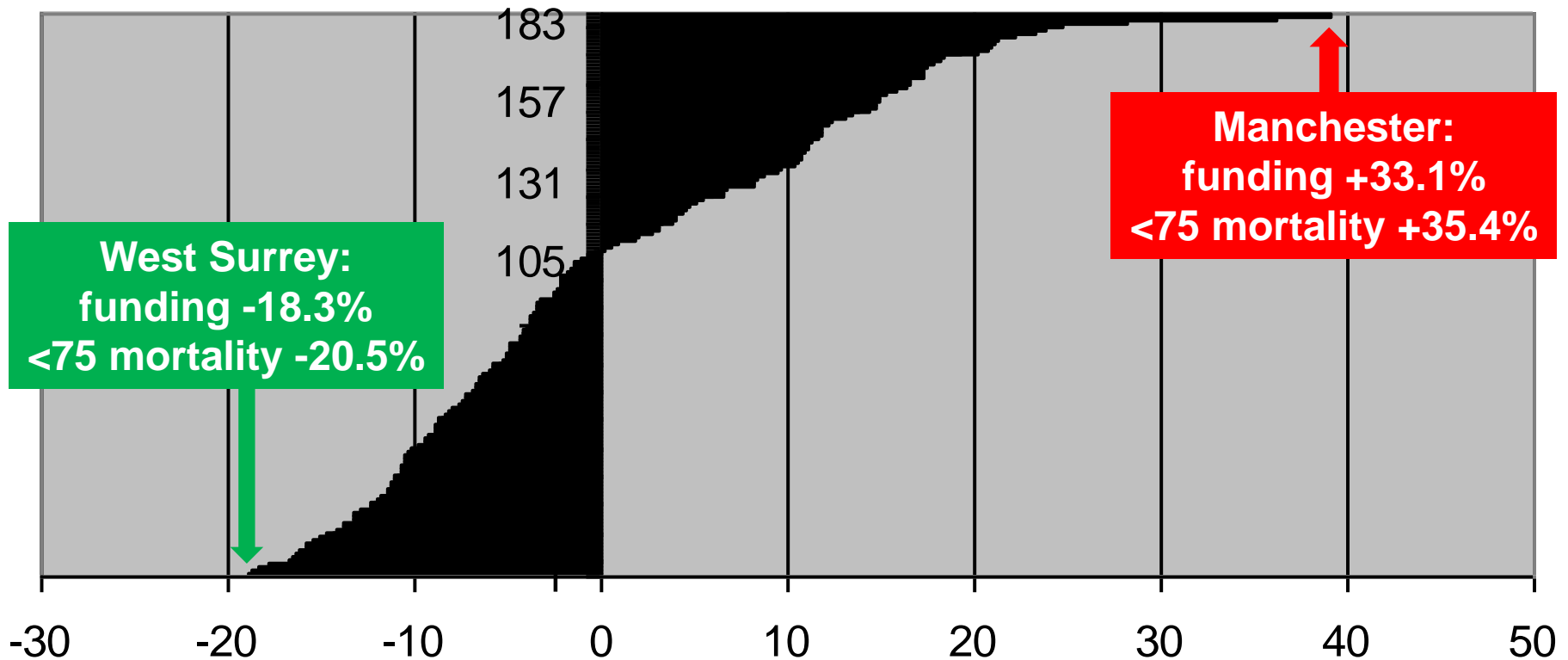
Manchester is in
Socioeconomic decile 1

Socioeconomic deprivation
Most deprived ⓘ

Overall premature deaths per 100,000 for 2009–2011 ⓘ

LOWEST: WOKINGHAM **200**

HIGHEST: MANCHESTER **455**

150th
OUT OF 150
LOCAL AUTHORITIES

HIGHEST DEATH RATE

Rank	Deaths per 100,000 for 2009–2011 ⓘ	Common causes

Cancer

LOWEST: HARROW **84**

HIGHEST: MANCHESTER **153**

150th
OUT OF 150
LOCAL AUTHORITIES
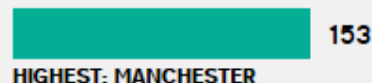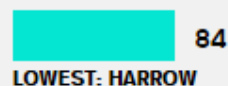
HIGHEST DEATH RATE

Smoking

Alcohol

Poor diet

How to reduce cancer rates

Reduce your risk of cancer ⊡

Heart disease and stroke

LOWEST: WOKINGHAM **40**

HIGHEST: MANCHESTER **113**

150th
OUT OF 150
LOCAL AUTHORITIES

HIGHEST DEATH RATE

High blood pressure

Smoking

Poor diet

How to reduce heart disease rates

Reduce your risk of heart disease ⊡

Surrey is in
Socioeconomic decile 10

Socioeconomic deprivation
Least deprived ⓘ

View more data at
phoutcomes.info ⧉

About the data

Access campaign materials for
local authorities ⧉

Visit the local authority
website ⧉

Overall premature deaths per 100,000 for 2009–2011 ⓘ

4th
OUT OF 150
LOCAL AUTHORITIES

200
LOWEST: WOKINGHAM
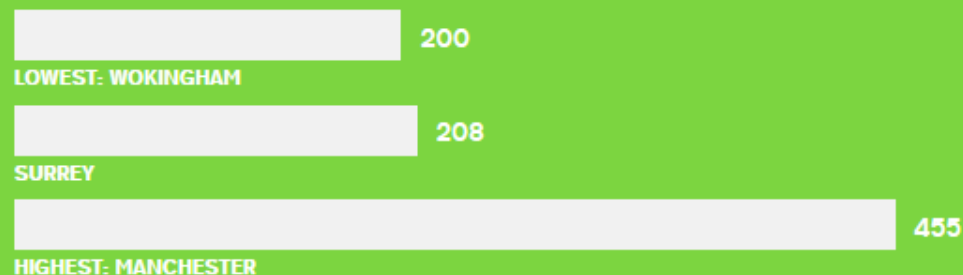
208
SURREY

455
HIGHEST: MANCHESTER

Rank	Deaths per 100,000 for 2009–2011 ⓘ	Common causes

Cancer

7th
OUT OF 150
LOCAL AUTHORITIES
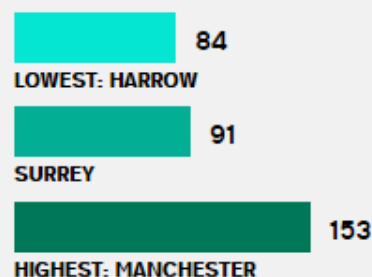
84
LOWEST: HARROW

91
SURREY

153
HIGHEST: MANCHESTER

Smoking

Alcohol

Poor diet

How to reduce cancer rates

Reduce your risk of cancer ⧉

Heart disease and stroke

5th
OUT OF 150
LOCAL AUTHORITIES
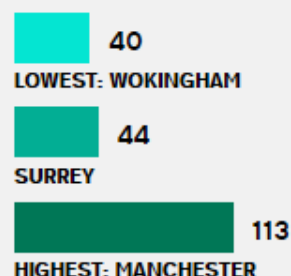
40
LOWEST: WOKINGHAM

44
SURREY

113
HIGHEST: MANCHESTER

High blood pressure

Smoking

Poor diet

How to reduce heart disease rates

Reduce your risk of heart disease ⧉

Variation in amenable mortality by SES in Australia, 1997-2001

→ Health care is doing a worse job in disadvantaged areas!

Outcomes – the good news:

Inequitable differences in amenable mortality can be addressed

HEALTHY LIVES   EXHIBIT 30
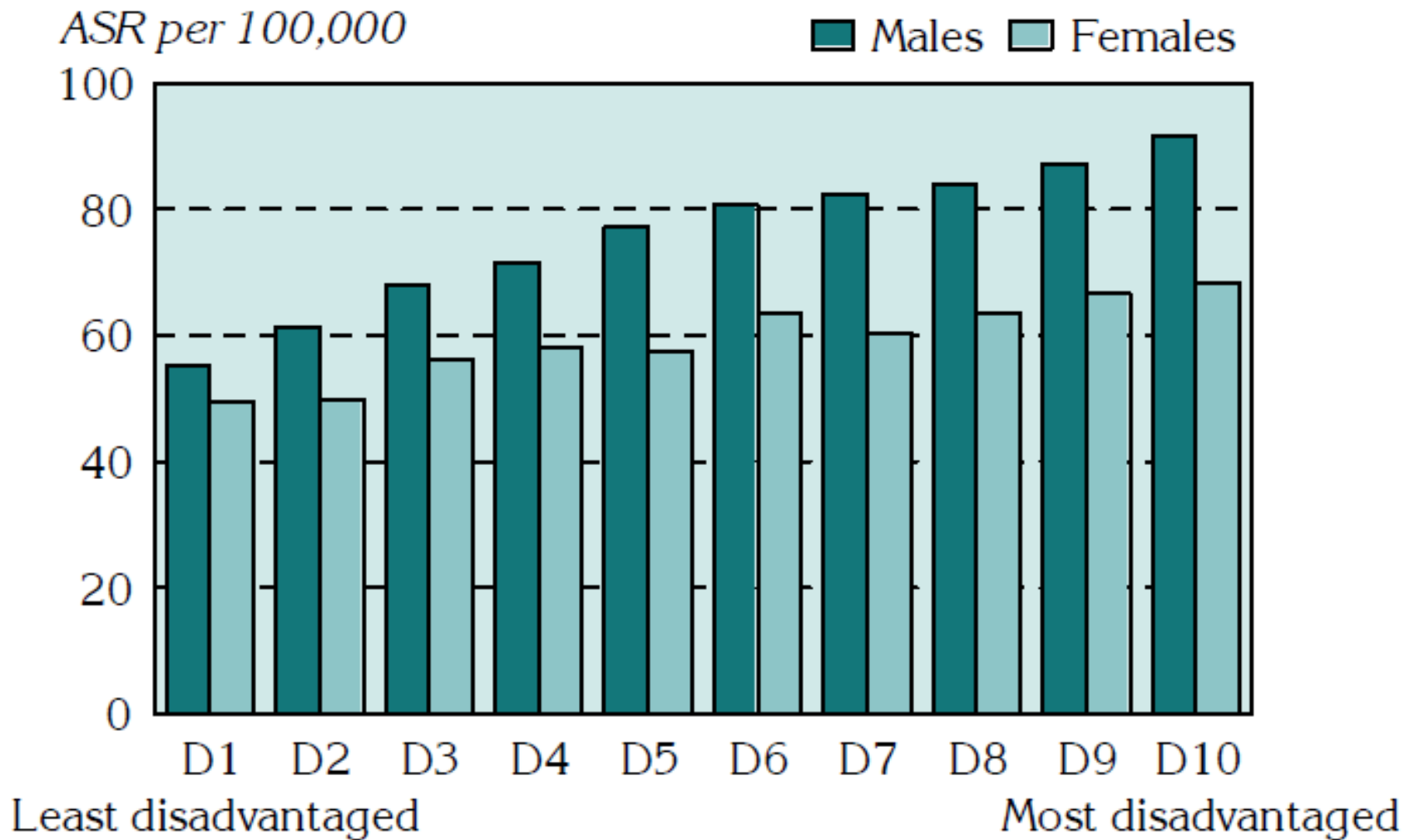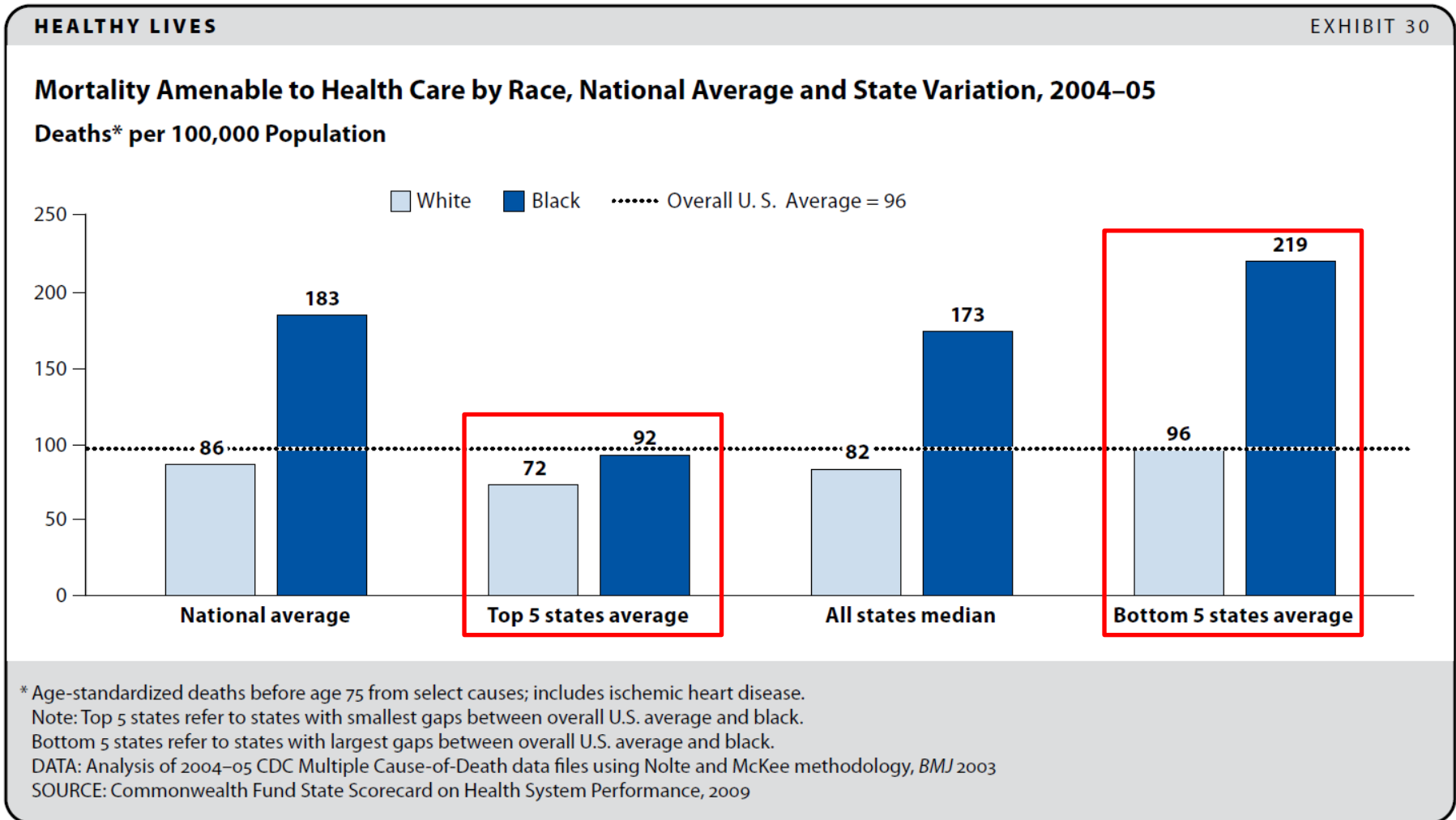
Mortality Amenable to Health Care by Race, National Average and State Variation, 2004–05

Deaths* per 100,000 Population

Legend: ☐ White ■ Black ······ Overall U. S. Average = 96

National average: White 86, Black 183
Top 5 states average: White 72, Black 92
All states median: White 82, Black 173
Bottom 5 states average: White 96, Black 219

* Age-standardized deaths before age 75 from select causes; includes ischemic heart disease.
Note: Top 5 states refer to states with smallest gaps between overall U.S. average and black.
Bottom 5 states refer to states with largest gaps between overall U.S. average and black.
DATA: Analysis of 2004–05 CDC Multiple Cause-of-Death data files using Nolte and McKee methodology, *BMJ* 2003
SOURCE: Commonwealth Fund State Scorecard on Health System Performance, 2009

Source: McCarthy et al. 2009

But how? By emphasising "quality for all"

Here: Quality improvements through "Quality and outcomes framework" by deprivation, England 2004/05-2006/07
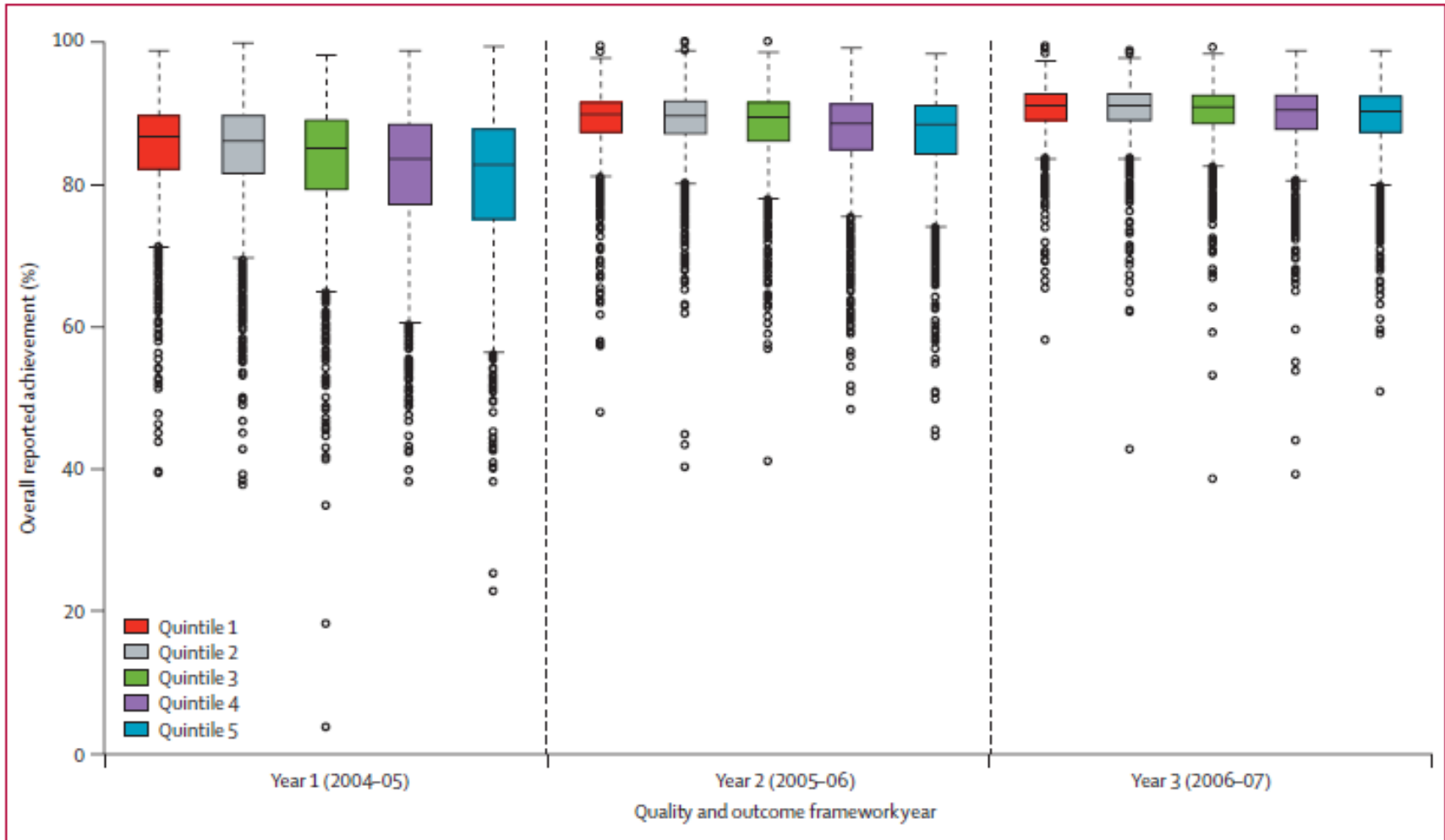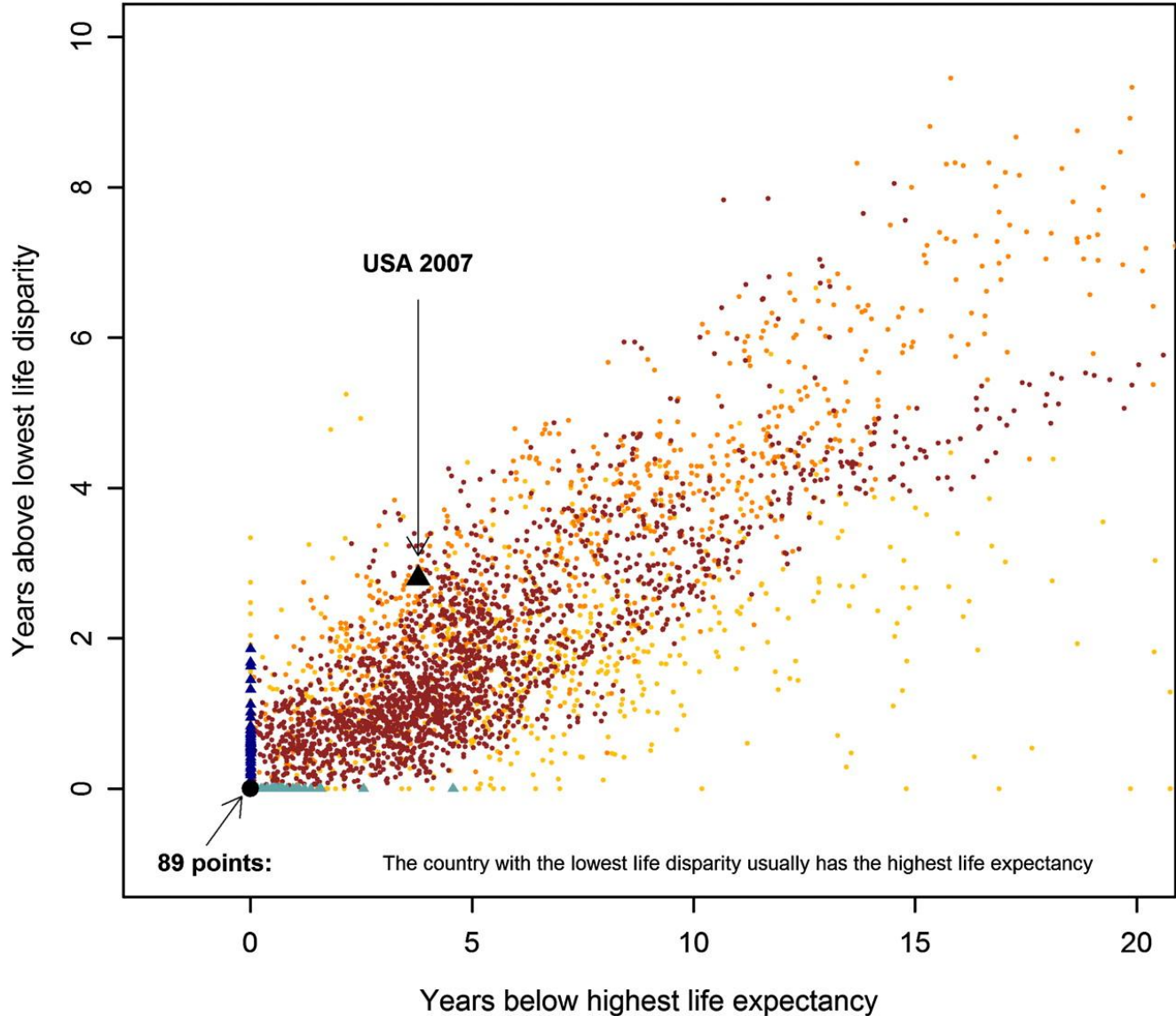
Figure 1: Distribution of scores for overall reported achievement by deprivation quintile for year 1 (2004–05) to year 3 (2006–07)
Central line shows median achievement and box shows interquartile range; whiskers represent range of achievement scores. Circles represent statistical outliers—ie, individual practices with achievement scores outside the range: first quartile–(1·5×IQR) to third quartile+(1·5×IQR).

"Better health" is associated with lower for disparities –

an argument for putting quality first (here: association between life disparity

in a specific year and life expectancy in that year for males in 40 countries and regions, 1840–2009)

Vaupel J W et al. (2011) Life expectancy and disparity: an international comparison of life table data BMJ Open 1:e000128

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The take-home message

- Inequity in health care should be at the centre of health policy (just as inefficiency, bad quality …)

- However, interventions to "help" only the disadvantaged, often by well-meaning enthusiasts, always have the potential for unwanted side-effects (increasing inequities!)

- Therefore, the only viable solution is "better health care for everybody" with clear incentives to improve access (by looking at all 7 hurdles) and especially quality: better averages can only be reached if the worst results are improved!

- For monitoring success, data should be much more readily available (e.g. "unmet need" measures every 6 months) – and health service researchers should include socio-economic status/ income … in their studies.