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Research and Policy

# Monitoring Health Inequalities by SES: Lessons from Scotland

*Toronto, May, 2013*

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University of Toronto.



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*March, 2013*

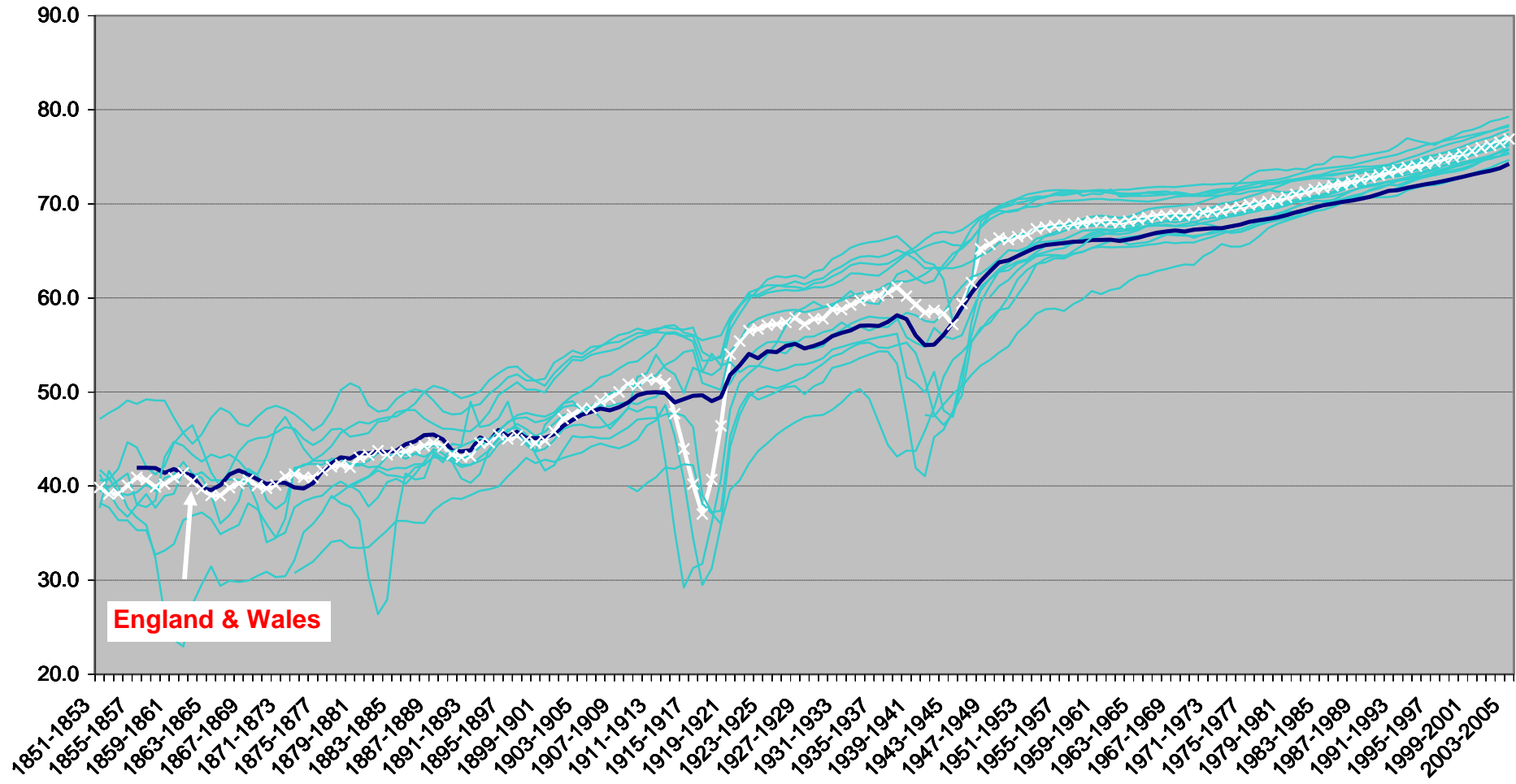
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# Key Questions for the Scottish Collaboration for Public Health Research and Policy (2008-):

- What are the key public health and primary care interventions that can efficiently improve population health status in a setting like Scotland?
- How capable are these interventions of also reducing socio-economic disparities in various health outcomes, and over what time-frame?

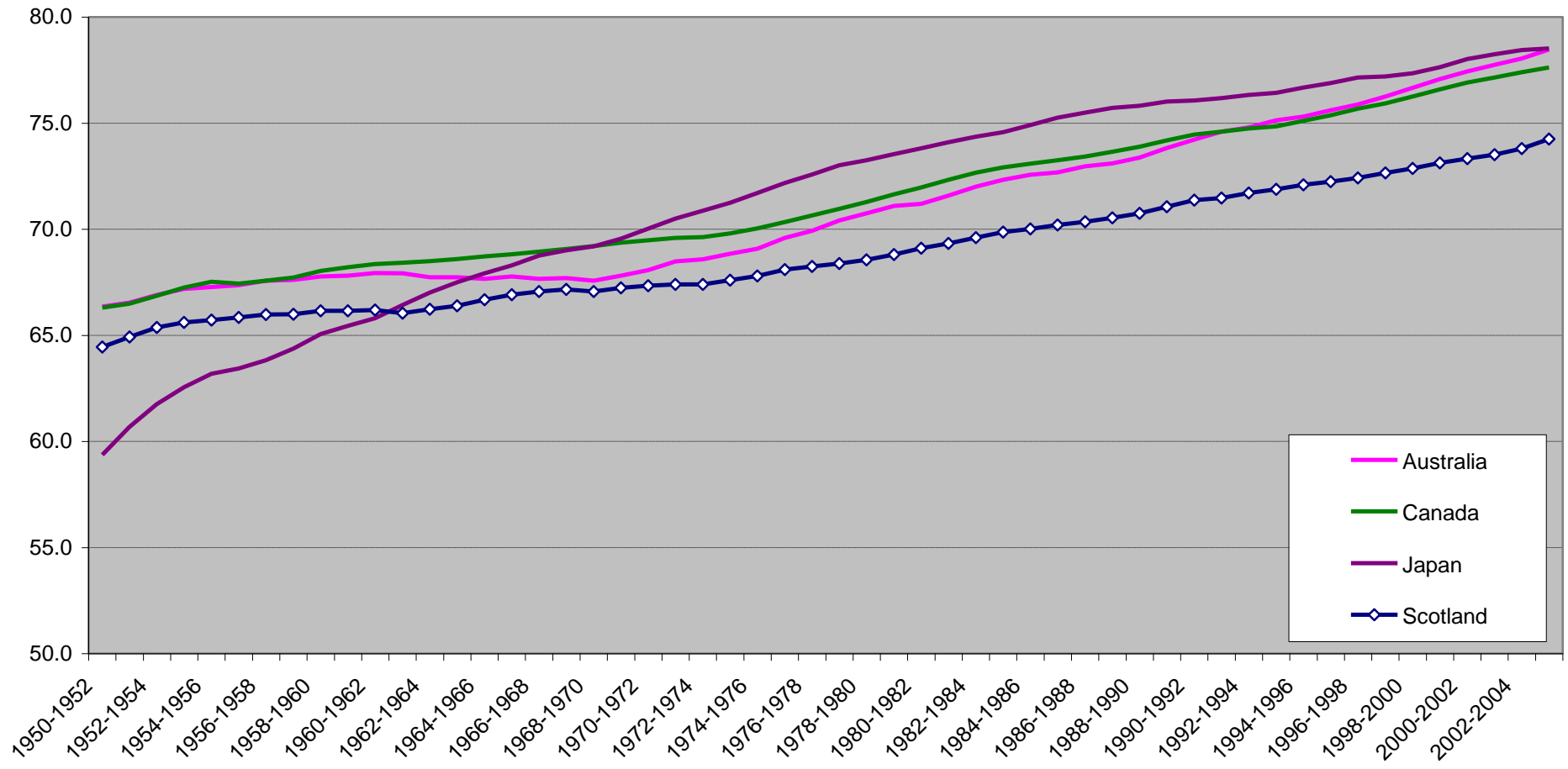
# Life expectancy trends

Male life expectancy: Scotland & other Western European Countries, 1851-2005  
Source: Human Mortality Database



# Life expectancy trends

Male life expectancy: Scotland & selected OECD countries, 1950-2005  
Source: Human Mortality Database



# Comparison of all-cause death rates in selected European countries\*, Scotland and local council areas of Scotland. Men aged 0-64 during 2001.

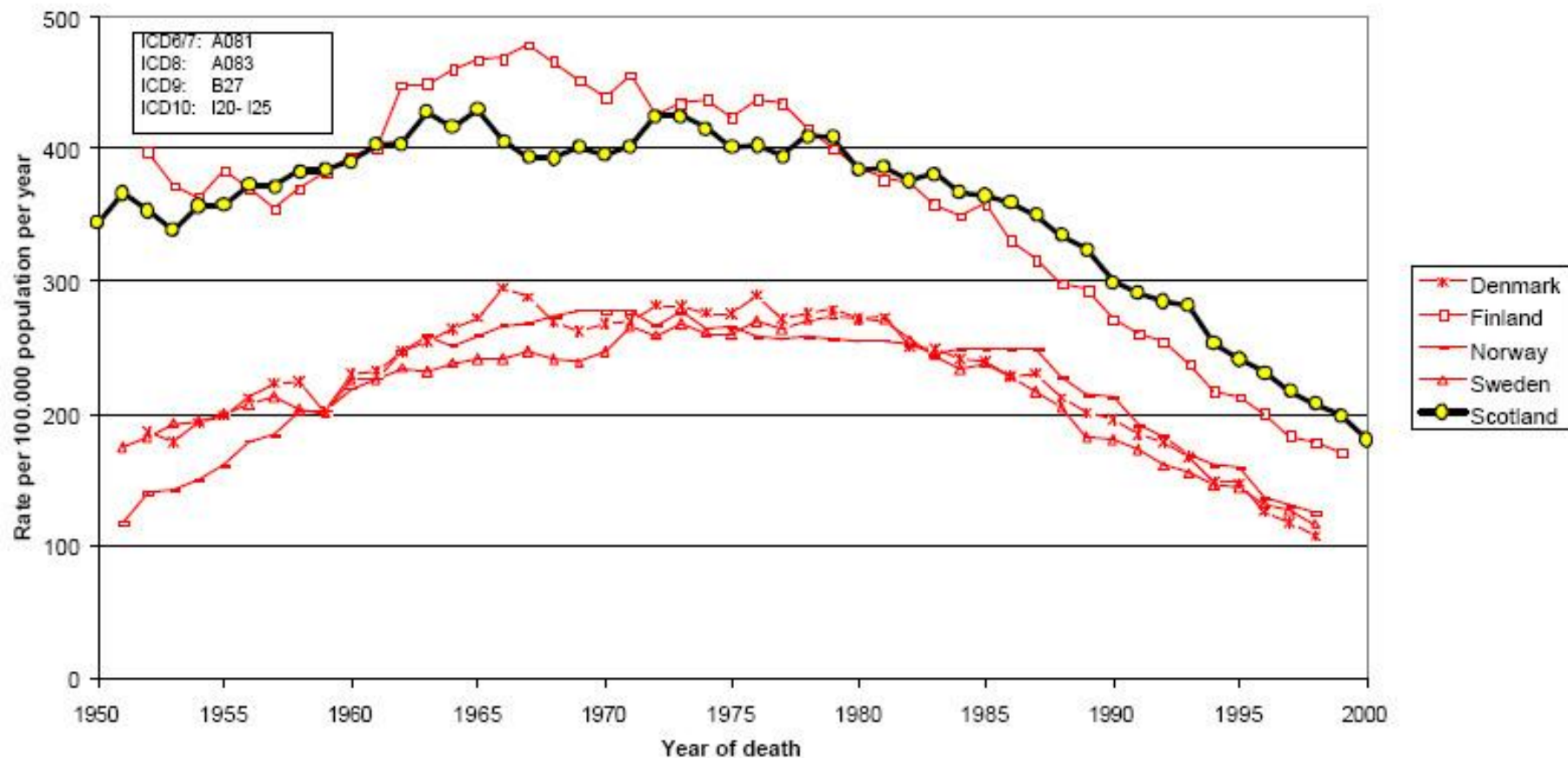


**Source:** Leyland AH, Dundas R, Mcloone P, Boddy FA. Inequalities in mortality in Scotland 1981-2001. Occasional paper no. 16. Glasgow: MRC Social and Public Health Sciences Unit, 2007.

# Ischaemic heart disease mortality age standardised rates among men aged 15-74 years

## Scotland in context of Northern Europe

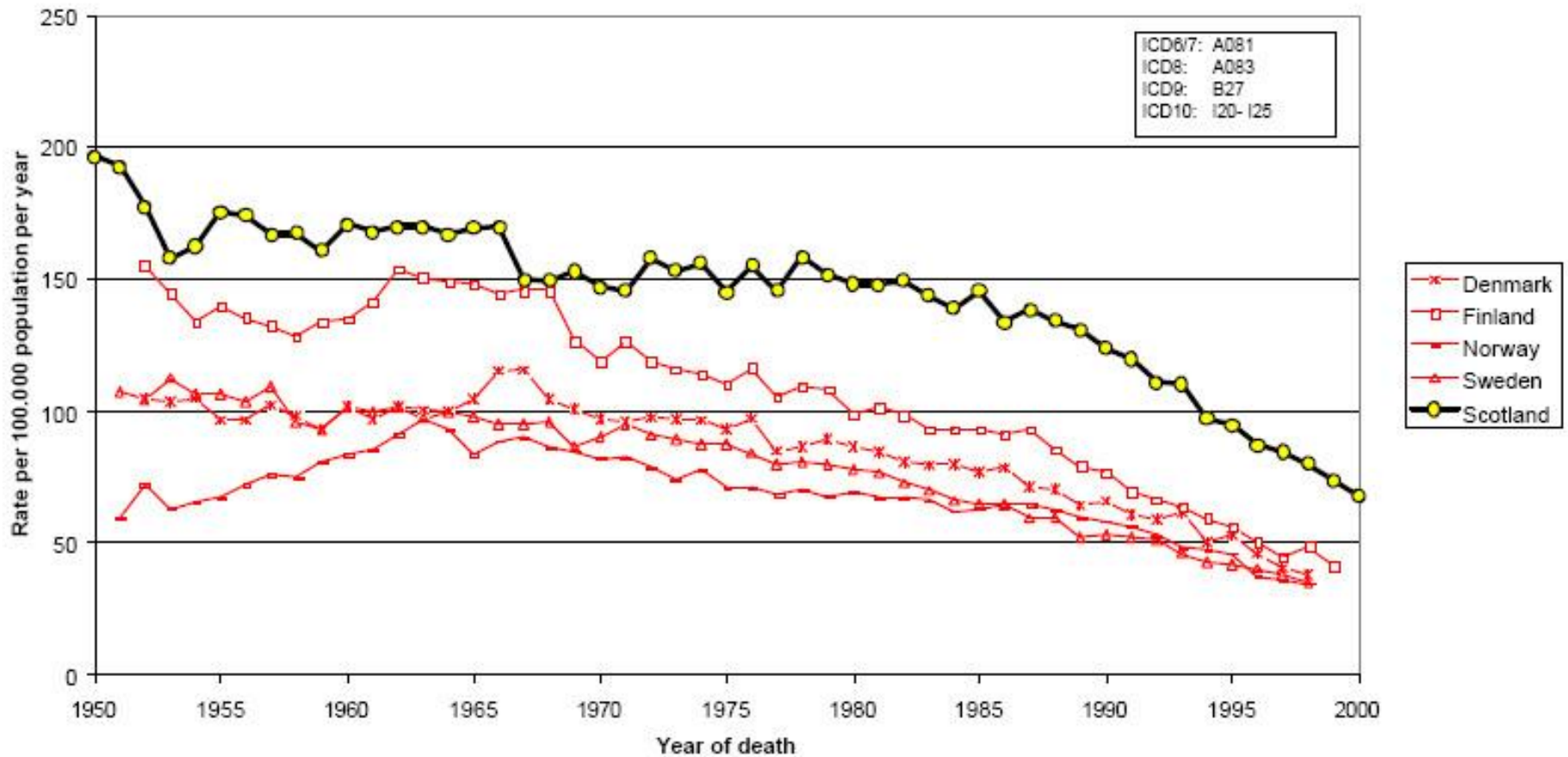
Source: WHOSIS (May 2002)



**Source:** Leon D, et al. Understanding the health of Scotland's population in an international context: a review of current approaches, knowledge and recommendations for new research directions. Part I; Figure 4.26. Report by London School of Hygiene & Tropical Medicine, February, 2003 (2<sup>nd</sup> revision). ISBN: 1-904196-11-X.

# Ischaemic heart disease mortality age standardised rates among women aged 15-74 years Scotland in context of Northern Europe

Source: WHOSIS (May 2002)

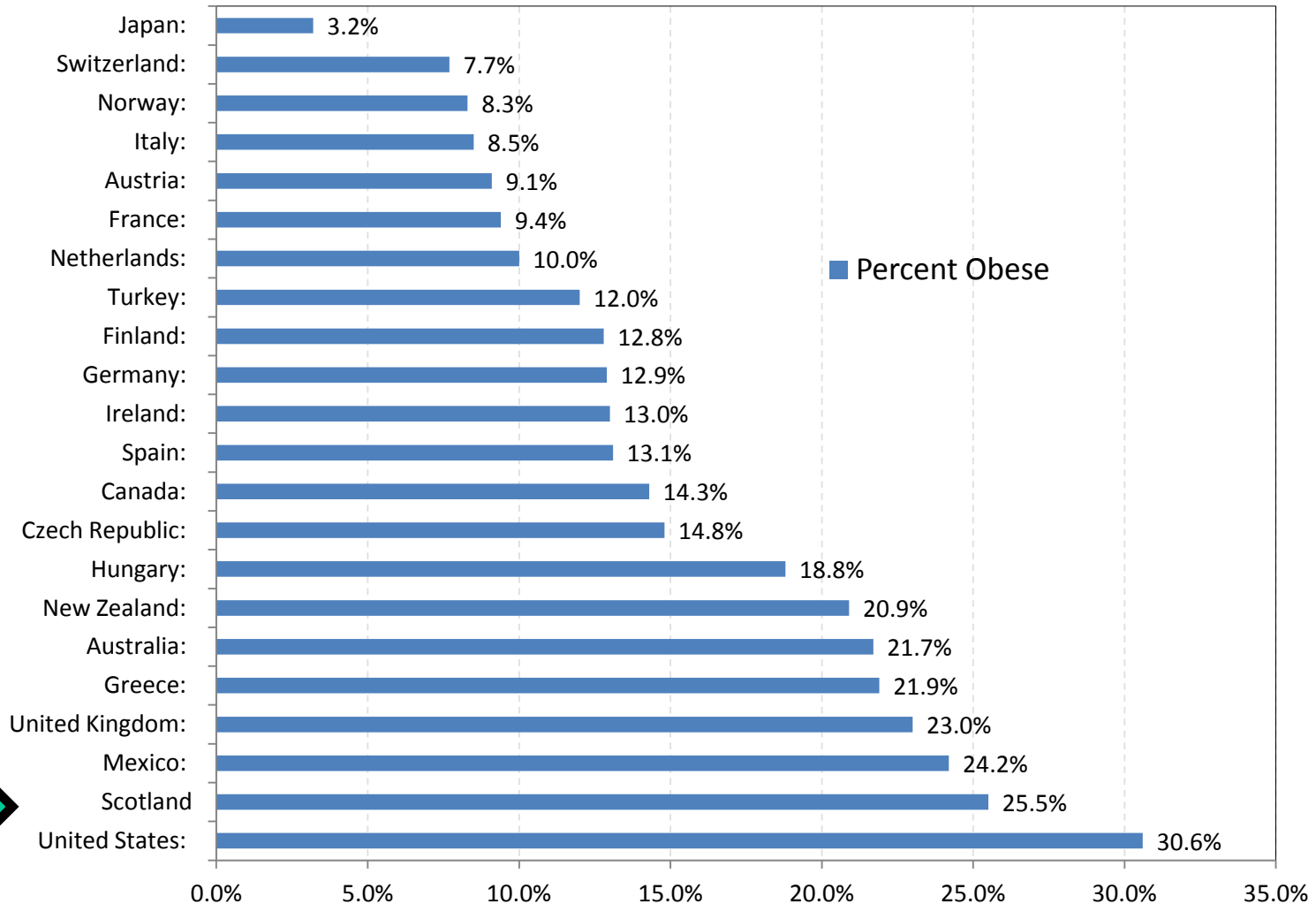


**Source:** Leon D, et al. Understanding the health of Scotland's population in an international context: a review of current approaches, knowledge and recommendations for new research directions. Part I; Figure 4.27. Report by London School of Hygiene & Tropical Medicine, February, 2003 (2<sup>nd</sup> revision). ISBN: 1-904196-11-X.

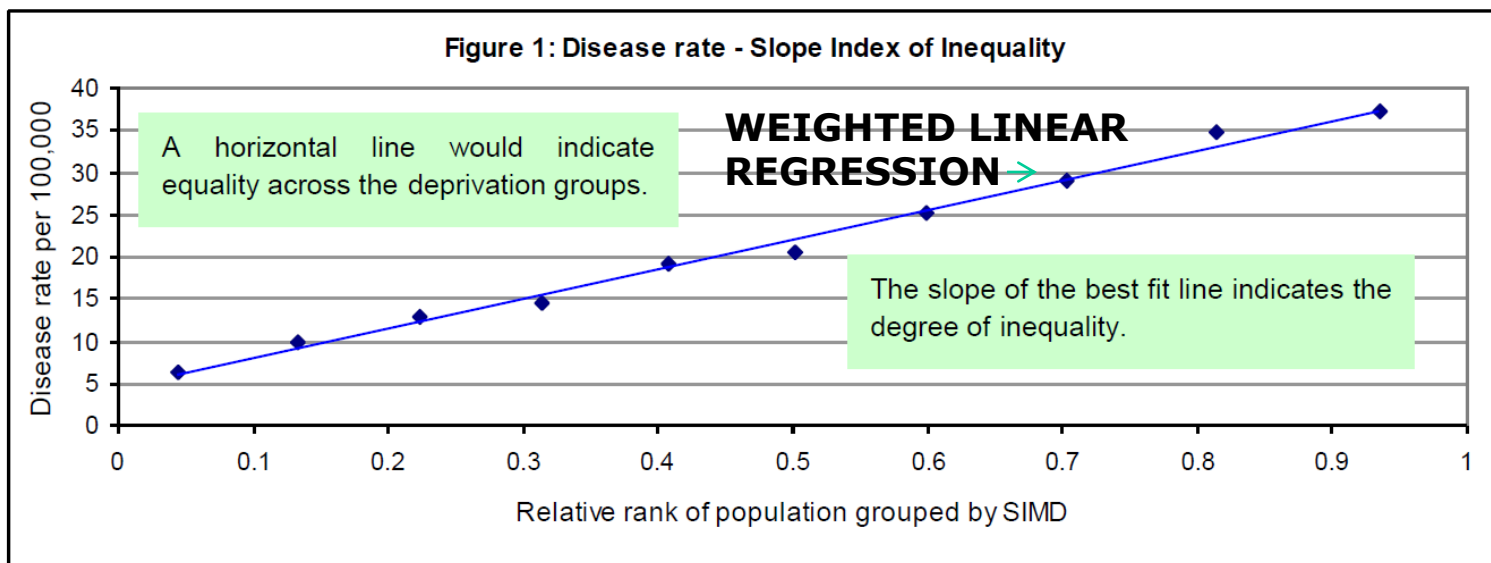


# Obesity in OECD Countries: % Adult

Population ( $\geq 15$  years) with a BMI  $\geq 30\text{kg/m}^2$  (Source OECD Health data 2006)

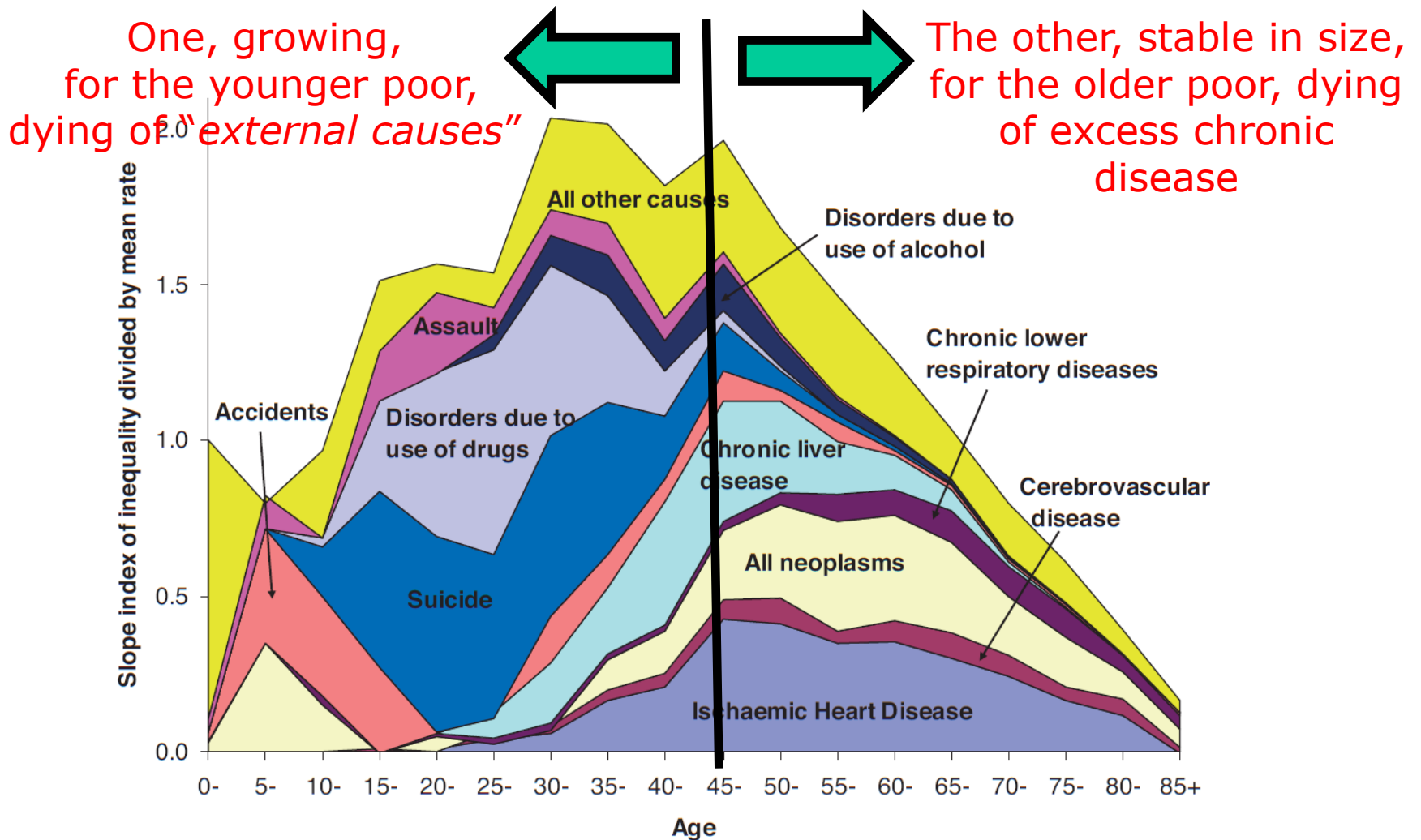


# COMMONLY USED "SUMMARY INDICES" OF HEALTH INEQUALITY BY SOCIAL CLASS



**RELATIVE INDEX OF INEQUALITY = SLOPE INDEX / OVERALL POPULATION LEVEL OF SAME OUTCOME IN SAME PERIOD --- UNITLESS, SO CAN USE TO COMPARE INEQUALITY OVER DIVERSE HEALTH OUTCOMES**

# Age specific contribution to inequalities in specific causes of death, across SIMD quintiles (Scots men 2000-02): "Two Paupers' Graveyards"



SOURCE: Leyland et al. (2007) MRC SPHSU, Glasgow.

# How Do Scotland's Inequalities Compare to the EU's When Individually-Assigned SES is Analysed? New **All-Cause Mortality** Results from Scottish Longitudinal Study -- Popham & Boyle, 2010 -- commissioned by SCPHRP)

SES  
"x" =

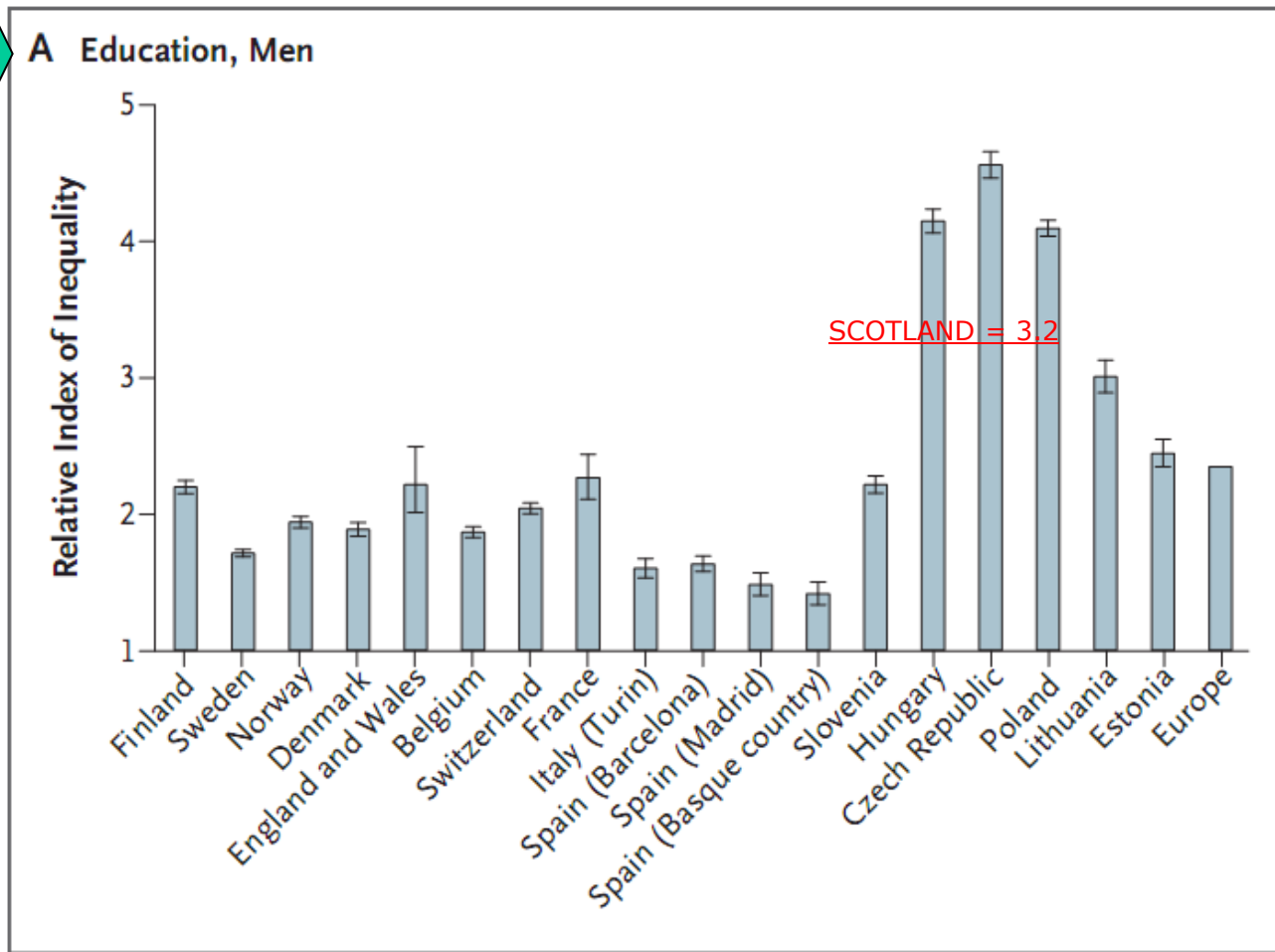
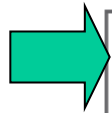


Figure 1 The Scottish education relative index of inequality (red line) for all-cause mortality in men 1991 to 1999 plotted against results for Europe (from Mackenbach *et al.* 2008)

# New SLS All-Cause Mortality Results from Popham & Boyle (2010) commissioned by SCPHRP -- cont)

SES  
"x" =

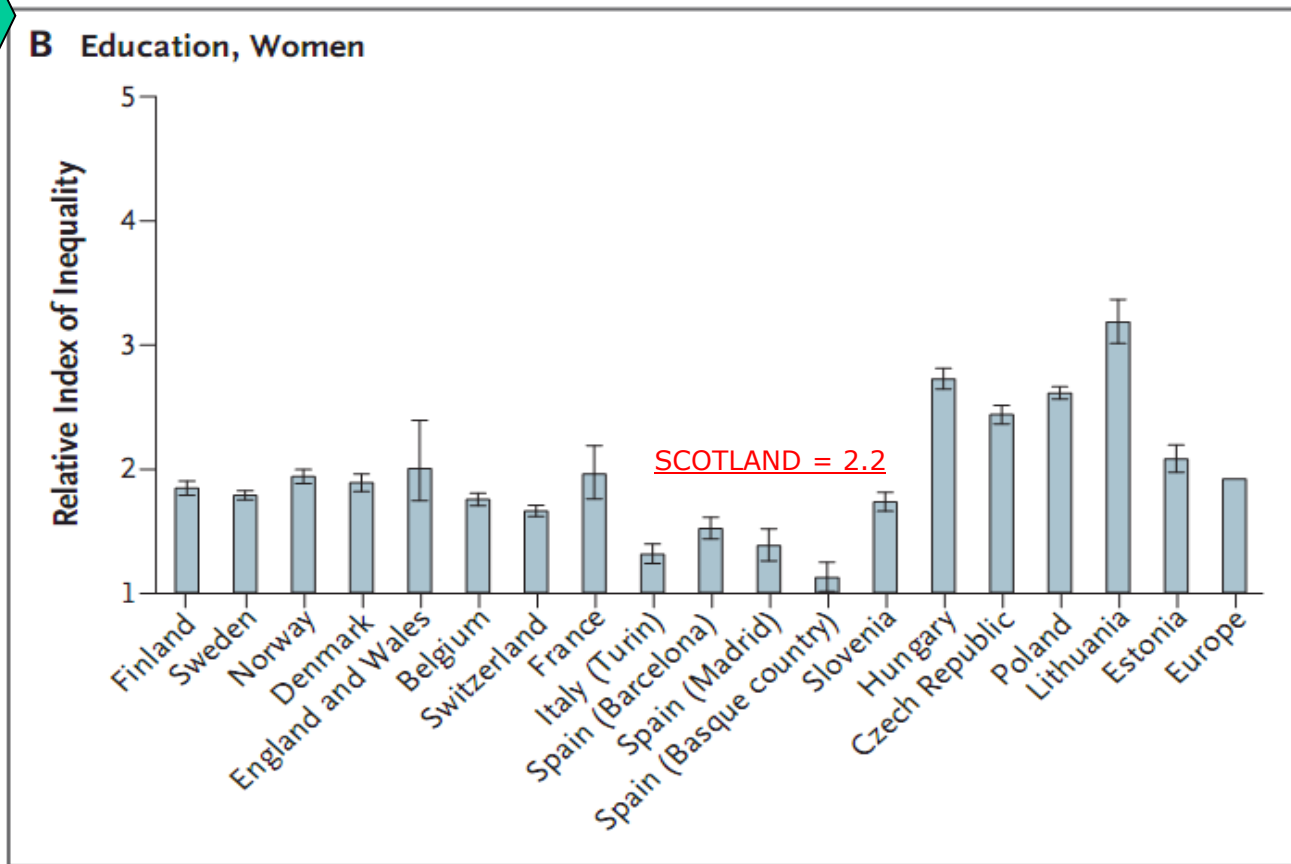


Figure 2 The Scottish education relative index of inequality (red line) for women 1991 to 1999 plotted against results for Europe -- from Mackenbach *et al.* 2008

# New SLS All-Cause Mortality Results from Popham & Boyle (2010) commissioned by SCPHRP – cont'd

SES  
"x" =

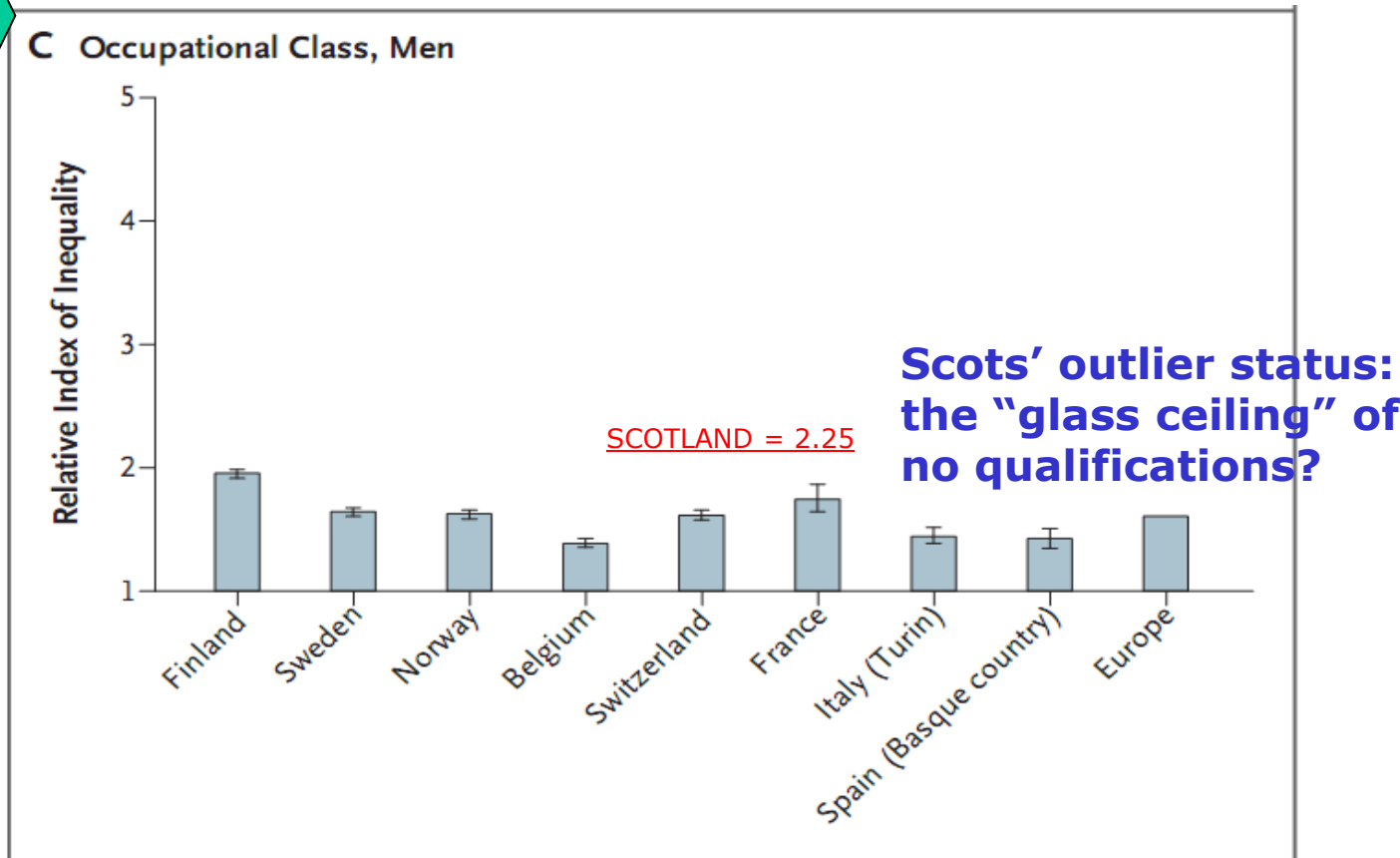


Figure 3 The Scottish occupational class relative index of inequality (red line) for men (aged 30 to 59) 1991 to 1999 plotted against results for Europe -- from Mackenbach *et al.* 2008

# Time-Trends in Health Inequalities: The Example of Modern Scotland

- Some important inequalities are stubbornly resistant to policy/program and practice efforts to reduce them – it is as if lower socioeconomic status confers the same sort of health risks across different eras, even when the specific causes of illness and death change.
- **How are Scottish health inequalities doing recently, given that *many* policies have been aimed at reducing them in the last decade?**

# Scottish HI Indicators in Current Use

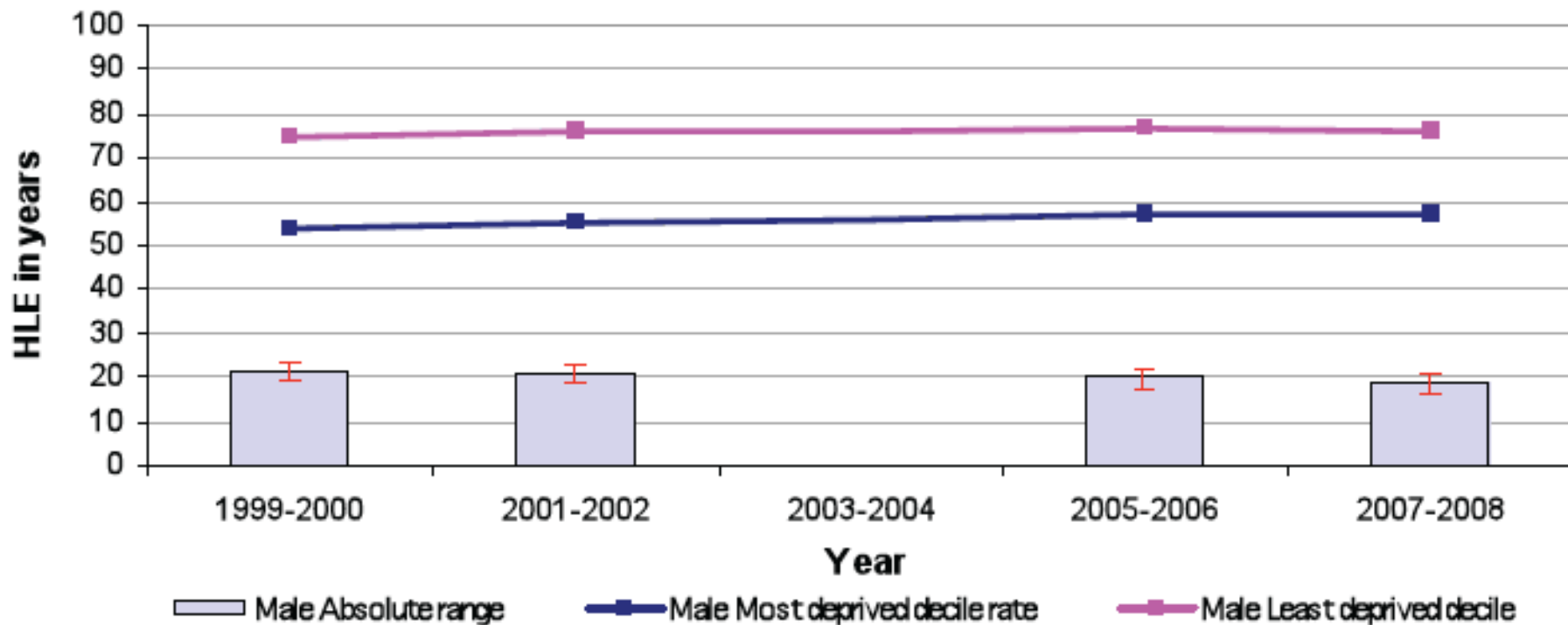
- Recent Scottish analyses of health inequalities' time-trends and patterns, by SES, over the last decade or more, are among the most statistically sophisticated in the world – BUT...
- The rich-poor gaps in about a dozen key Scottish health outcomes appear, over the last dozen years, to be frozen in time (virtually static)...
- While one might conclude – and there is some truth in this – that insufficient policy and program effort has gone into actually reducing the “rich-poor” and “educated-uneducated” gaps in Scottish society, there are compelling reasons to believe that the population health indicators currently in use in Scotland aren't very responsive to *any feasible PH* interventions likely to be actually carried out.

[Frank J and Haw S. The Milbank Quarterly 2011;89 (4):658-93.  
Frank J and Haw S. The Milbank Quarterly 2013;91(1):193-201.]



# Absolute Range: Healthy Life Expectancy (Males)

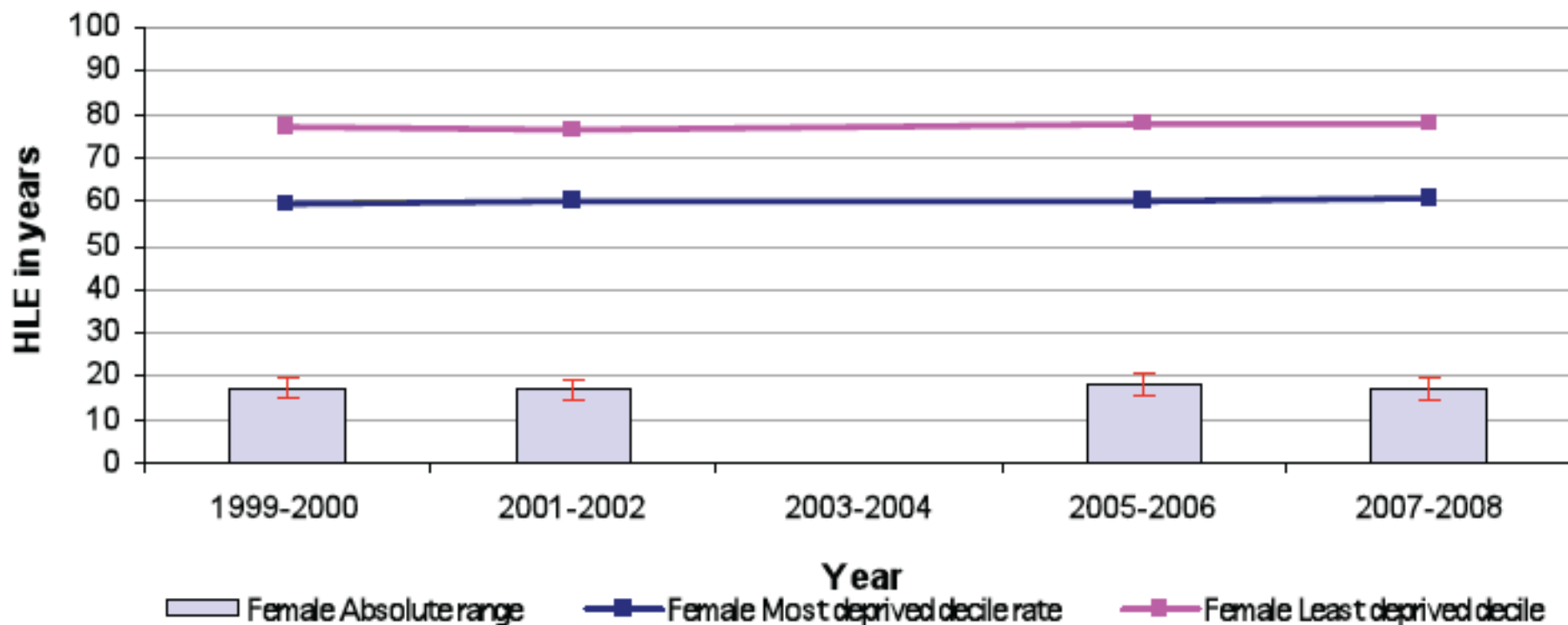
**Absolute range: Healthy Life Expectancy - Males - Scotland 1999/2000-2007/2008 [Data not available for 2003/2004]**



Source: Scottish Government Health Analytical Services (2010) Long-term monitoring of health inequalities

# Absolute Range: Healthy Life Expectancy (Females)

**Absolute range: Healthy Life Expectancy - Females - Scotland 1999/2000-2007/2008 [Data not available for 2003/2004]**



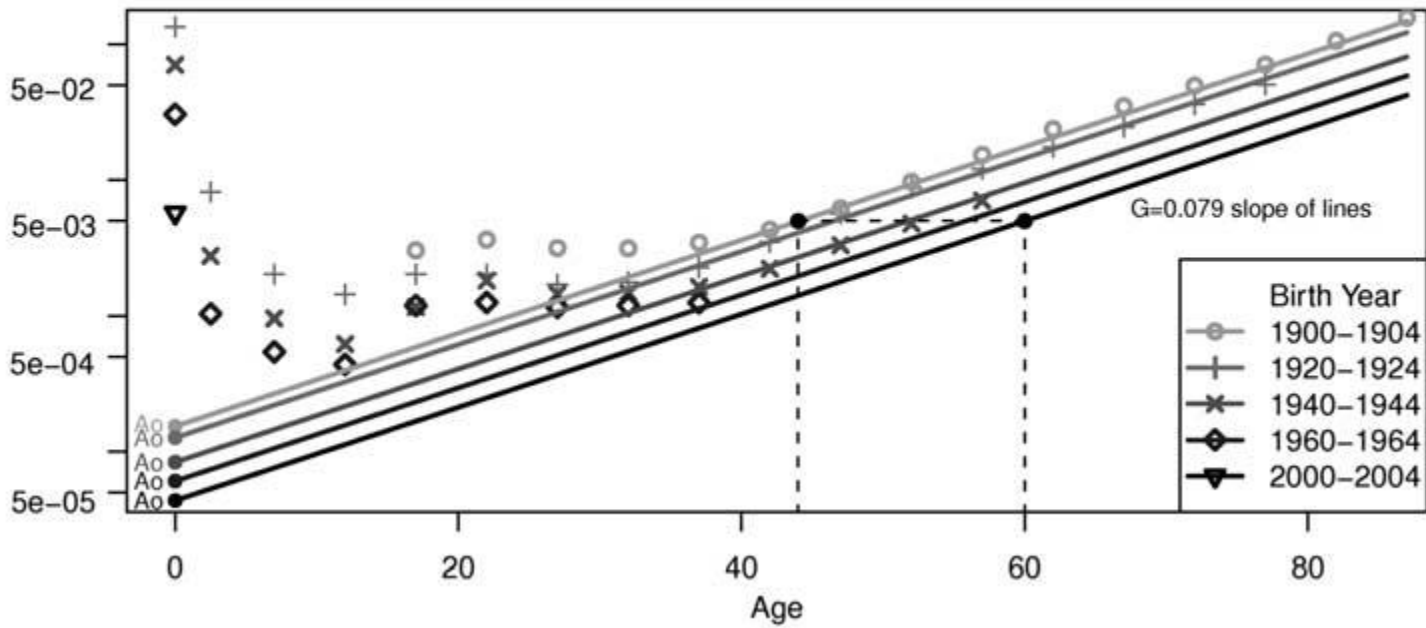
Source: Scottish Government Health Analytical Services (2010) Long-term monitoring of health inequalities

# Why are major causes of mortality – and many other routinely collected health outcomes -- are no longer very sensitive to societal changes, in the short run?

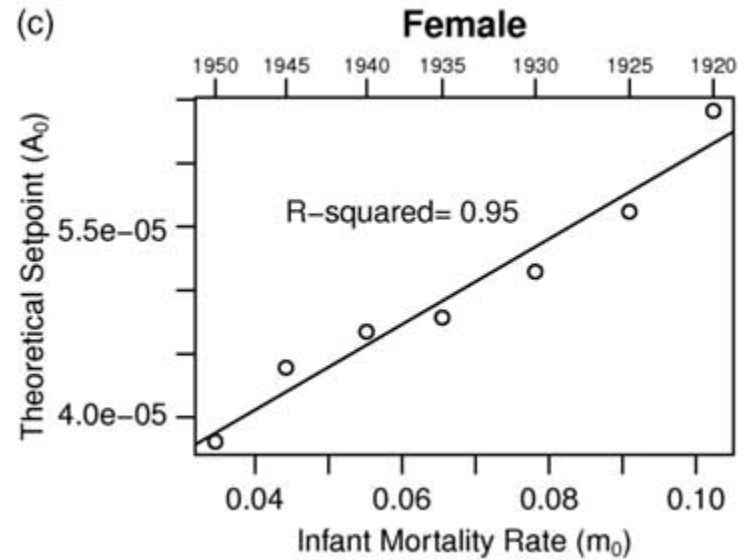
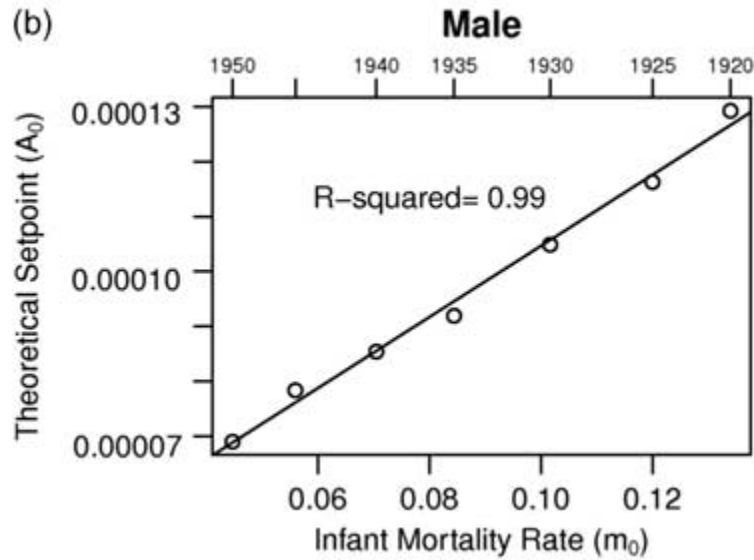
- Many epidemiologists now believe: “Improved medical care – and indeed most deliberate health policies and programs – at least in developed countries, now only reduce broad categories of mortality rather slowly, and all-cause mortality very slowly,” *because*:
  - Life expectancy, and even all-cause mortality rates, appear to be subject to “*epidemiological momentum / inertia*:” they are hard to shift quickly, largely because *deaths occur mostly among the elderly*, where chronic disease with *lifelong roots*, and *competing risks*, matter!
- Some other routinely collected outcomes, such as low birth-weight rates and hospitalization rates, suffer from other serious flaws.

(a)

Age-Specific Mortality Rate by Birth Year (Log scale)



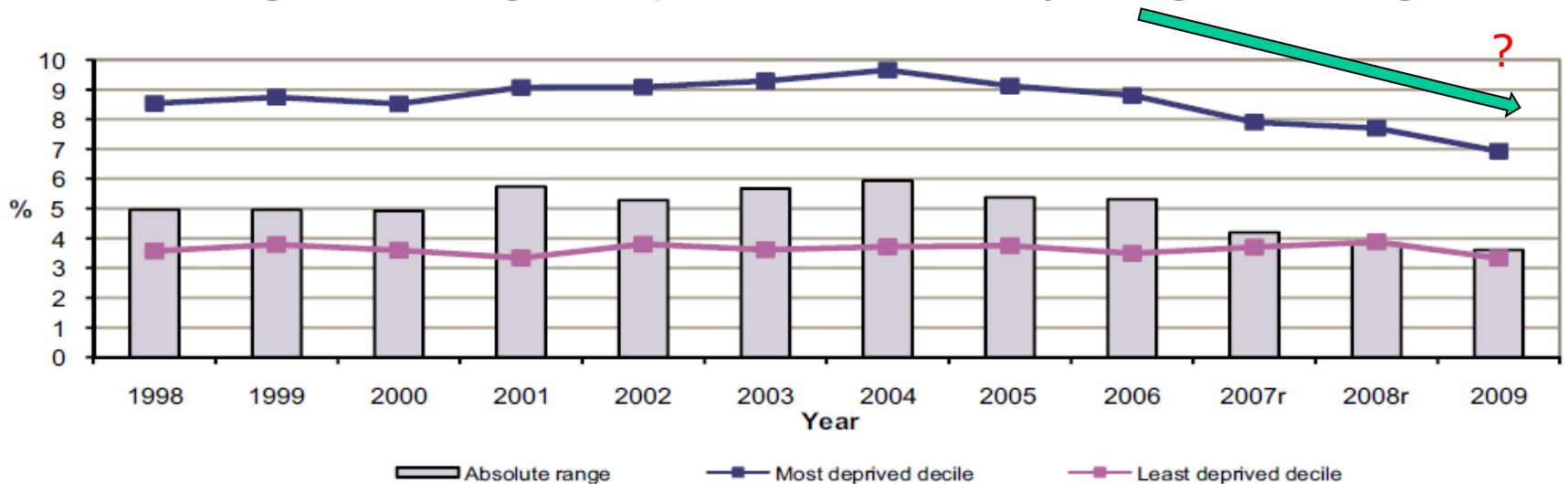
Source: Meza R et al. J Dev. Orig. Hlth. Dis. 2001 doi:  
10.107/S2040174410000218



Source: Meza R et al. J Dev. Orig. Hlth. Dis. 2001 doi: 10.1017/S2040174410000218

# What about early-life disparities? – the curious case of LBW (=prevalence at birth: <2500 g.)

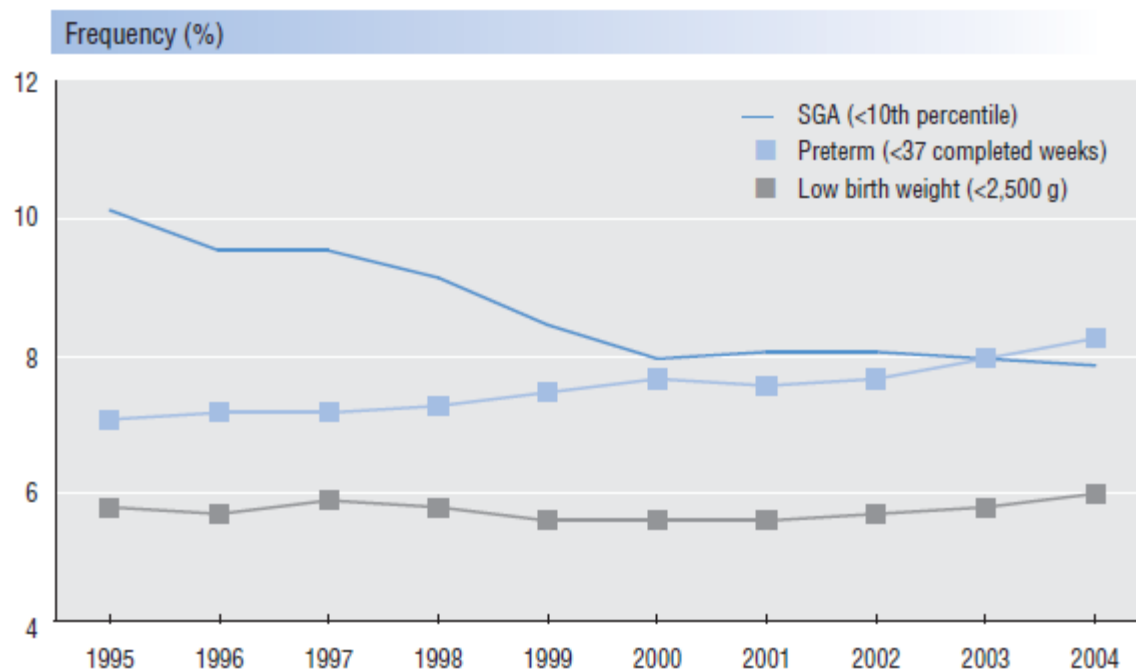
Figure 6: Absolute range: Low birthweight babies, Scotland 1998-2009 (as a percentage of all live singleton births)



Q: How to explain the complete plateau-ing of high-SES LBW rates? A: LBW= (SGA +true Pre-Term) Births, and these are moving in opposite directions int'lly, so LBW now very stable.

**Source: Annual Report of the CMO, Scotland. The Scottish Government & NHS Scotland, Edinburgh. 2011.**

# Rates of small-for-gestational-age (SGA) live birth, preterm birth and low birth weight\* *Canada (excluding Ontario), \*\* 1995-2004*



**OPPOSING  
TRENDS IN PTB  
& SGA RATES,  
SO...**

**LBW VERY  
STABLE  
OVER TIME**

Source: Statistics Canada. Canadian Vital Statistics System, 1995-2004.

\*Live births with unknown gestational age or birth weight, gestational age <22 weeks or >43 weeks, and multiple births were excluded for SGA rate calculations.

\*\* Data for Ontario were excluded because of data quality concerns.

**Source: Canadian Perinatal Health Report, 2008. Public Health Agency of Canada, Ottawa.**

# Weakness of LBW as a Perinatal Health Indicator

- There are two opposing secular trends in birth-weight in developed countries, at differing BW ranges, for differing reasons, LEADING TO VERY STABLE LBW RATES OVERALL:
  - a) increased LBW induction/caesareans, resulting from modern OB management of foetal risk, in ever-older mothers (at higher SES levels) or continuing patterns of high-risk, such as low age and smoking (in lower SES mothers) leading to higher LBW rates, *at 32-34 weeks*;
  - b) long-term secular trends towards heavier *full-term* babies, likely due to changing maternal anthropometry/nutritional status (Kramer MS et al. Why are babies getting bigger? Temporal trends in foetal growth and its determinants. J Pediatr 2002;141:538-9.)

*All these phenomena vary by SES -- so "crude" LBW rates/trends by SES are almost un-interpretable*



# BUT, IN 2006 IN SCOTLAND, "SMOKEFREE" LEGISLATION UNEXPECTEDLY HAD A BIG IMPACT ON BOTH CAUSES OF LBW!

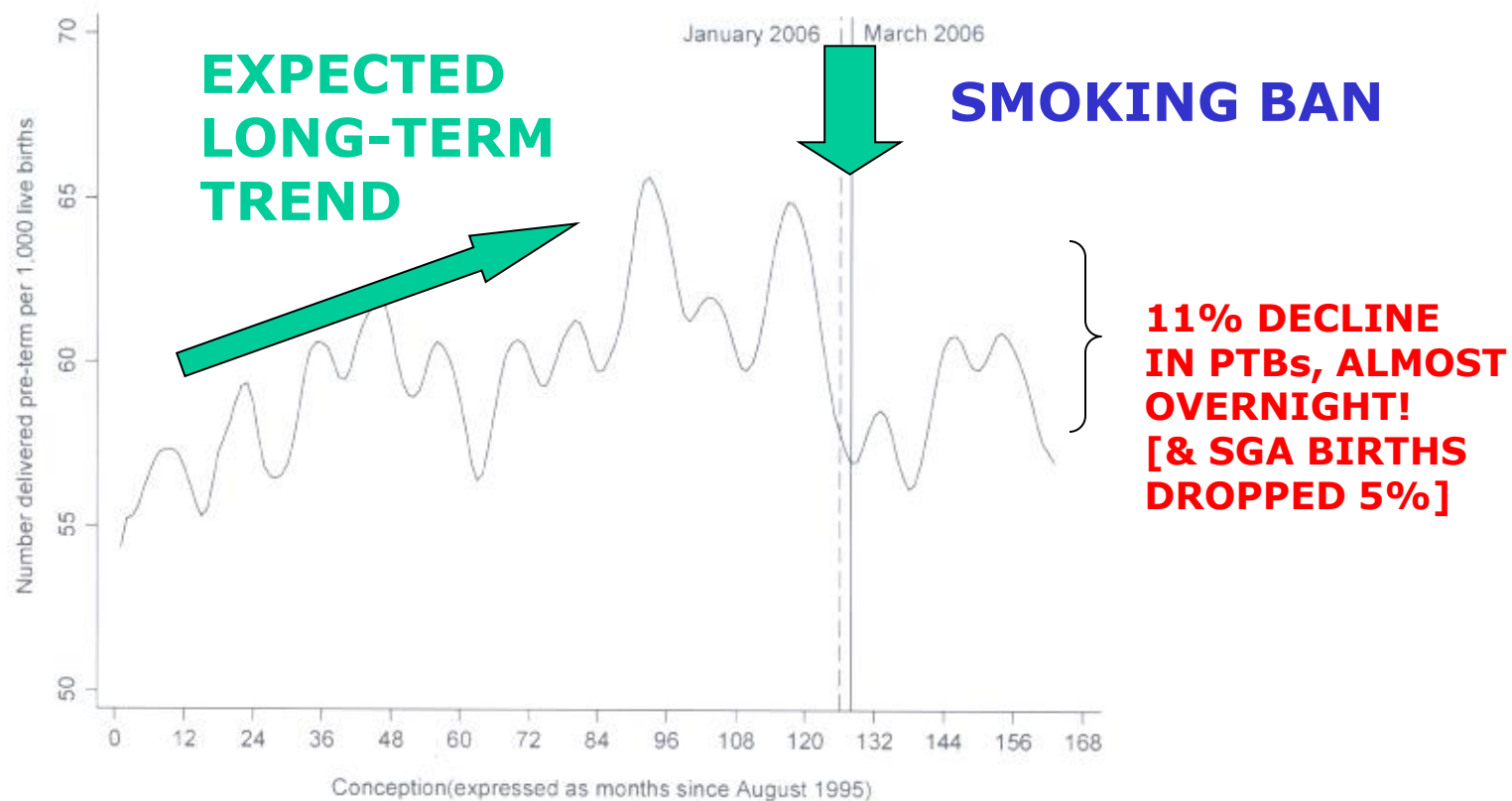
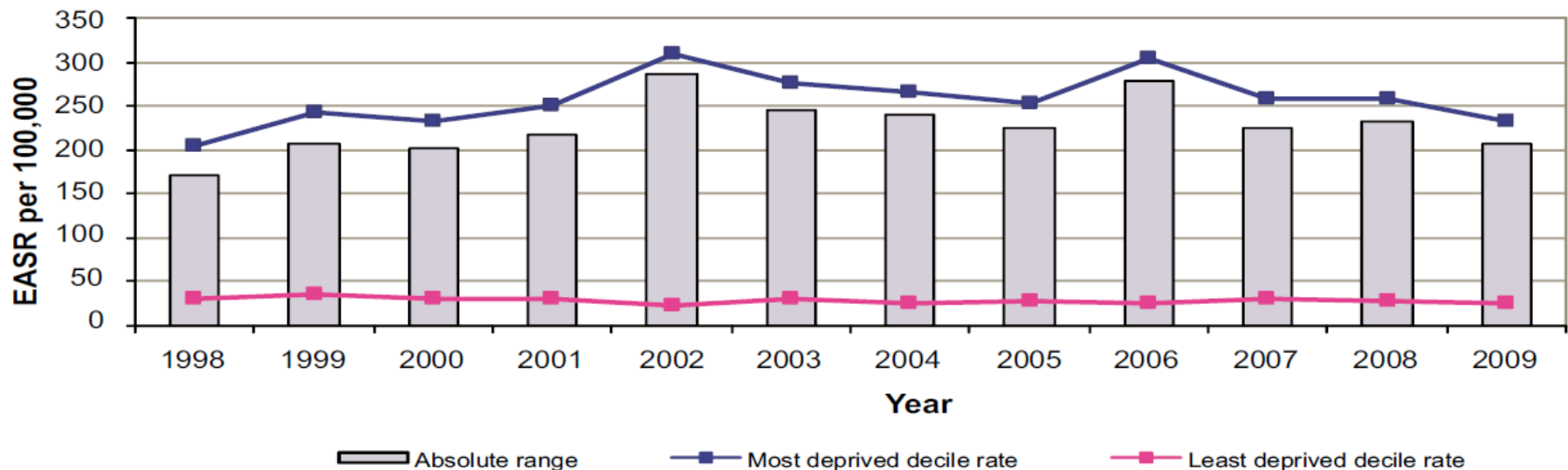


Figure 1. Time trend in the number of infants delivered preterm per 1,000 live births. Time trend smoothed using the Stata loess smoother with bandwidth = 0.1.  
doi:10.1371/journal.pmed.1001175.g001



# Absolute Range: Alcohol-Related Mortality 45-74y – Scotland 1998-2008 (European Age-Standardised Rates per 100,000)

**Figure 11: Absolute range: Alcohol related mortality 45-74y, Scotland 1998-2009  
(European age-standardised rates per 100,000)**



**Question:** Are the poorest drinkers dying more often, or are more heavy drinkers just dying in the poorest places (after losing house and job)??

**Source: Annual Report of the CMO, Scotland. The Scottish Government & NHS Scotland, Edinburgh. 2011.**

# Alcohol-related mortality amongst those aged 45-74y by Income-Employment Index: Scotland 2006

(European Age-Standardised Rates per 100,000)



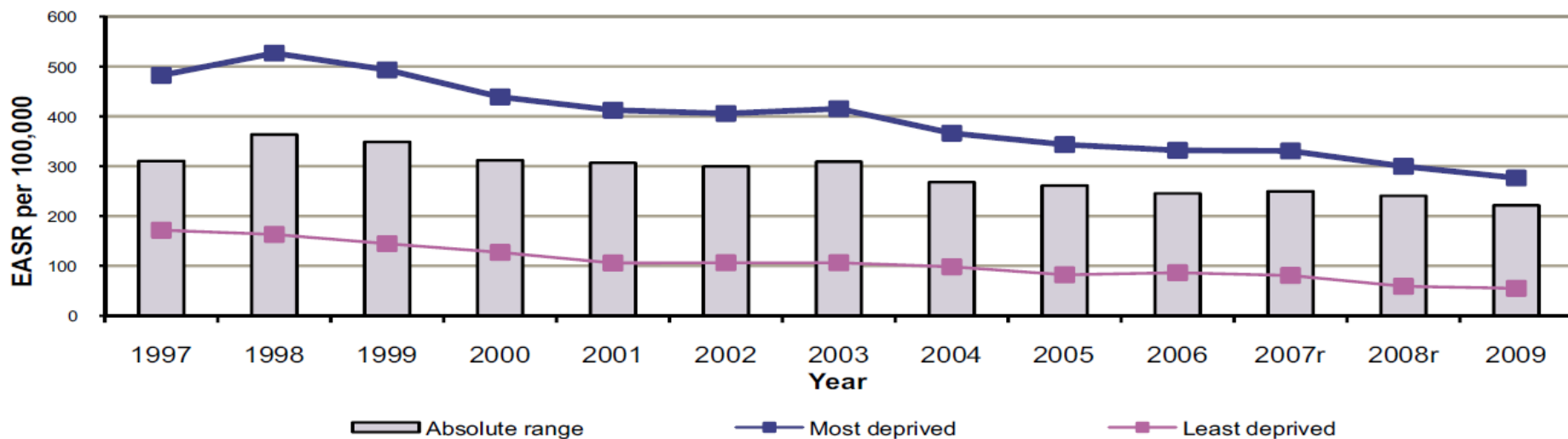
- Unlike most Scottish inequalities, the SES gradient is non-linear: the burden is concentrated among the very poor, suggestive of “reverse causation” –i.e. chronicity of alcoholic illness in this age-group → low SES: downward social mobility

Source: Scottish Government Health Analytical Services (2008) Long-term monitoring of health inequalities

# Absolute Range: CHD Mortality, 45-74 years, Scotland 1997-2008

(European Age-Standardised Rates per 100,000)

**Figure 8: Absolute range: CHD mortality 45-74 years, Scotland 1997-2009**  
(European age-standardised rates per 100,000)

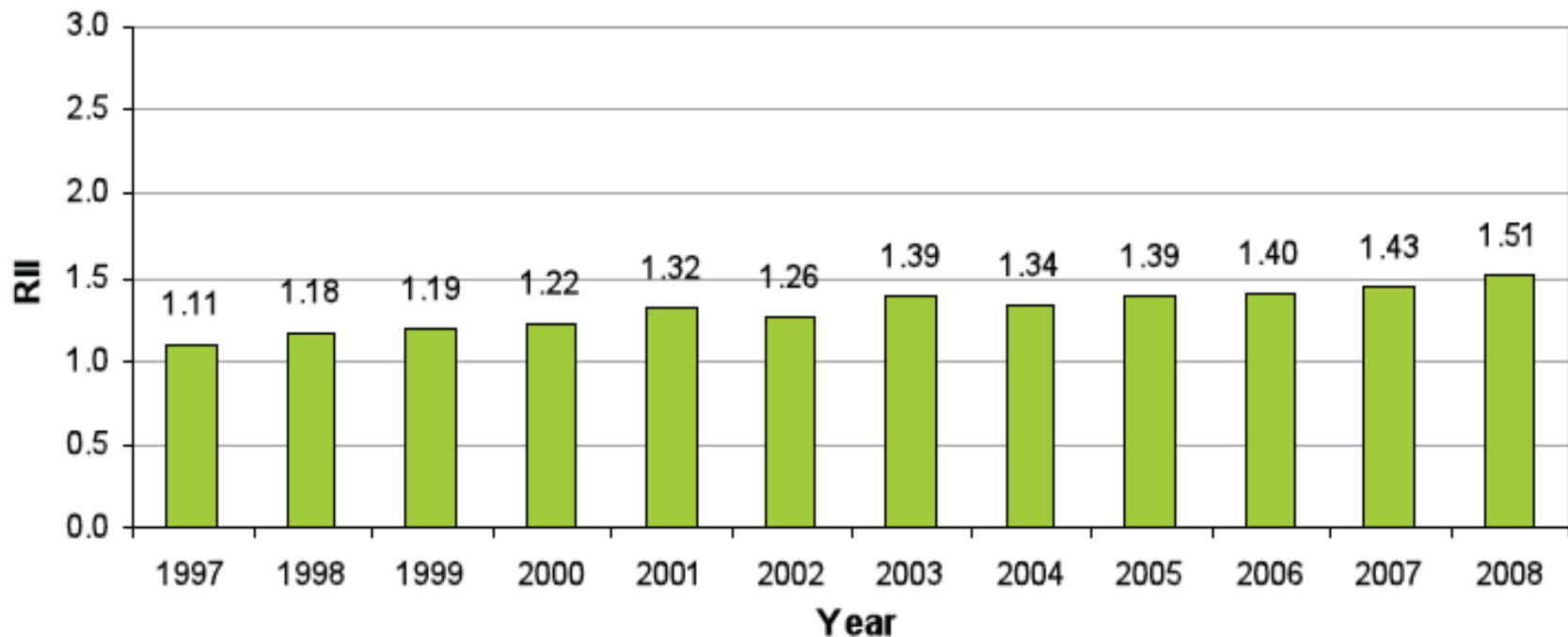


The cup is half-full: all SES group's rates have come down, equally. But the trend in the Relative Index of Inequality doesn't show that..

Source: Annual Report of the CMO, Scotland. The Scottish Government & NHS Scotland, Edinburgh. 2011.

The RII has steadily increased over time – illustrating a disadvantage of the RII (when adverse outcomes are improving)

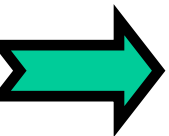
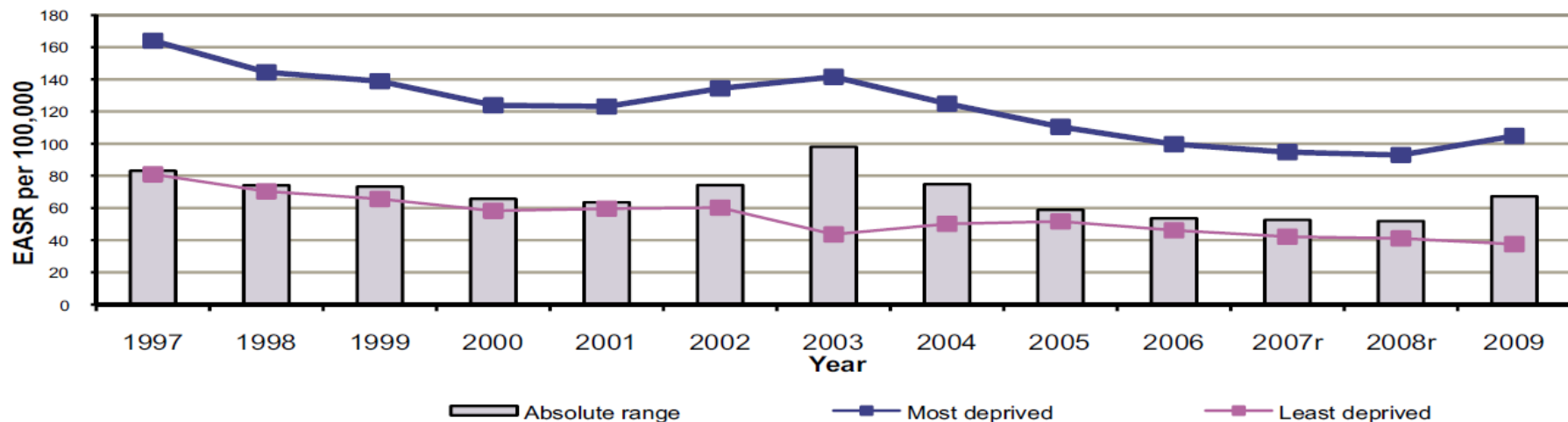
**Relative Index of Inequality (RII): CHD mortality 45-74y - Scotland 1997-2008**  
(RII = SII divided by population mean rate)



SES gap not decreasing *proportionately* faster than overall rate: RII goes up over time – and the Minister is unhappy (“Why should our record look bad if things are improving?”)

# Absolute range: First-ever hospital admissions for heart attack <75y – Scotland 1997-2008 – i.e. those “arriving alive”

**Figure 7: Absolute range: Hospital admissions for heart attack <75y, Scotland 1997-2009**  
(European age-standardised rates per 100,000)



Something odd is happening here – why is the ratio of poorest- to richest-decile admitted-alive cases only about 2 or 3 to 1, when for deaths it is closer to 3.5 to 1? Which SES -group’s deaths are occurring before admission more often?

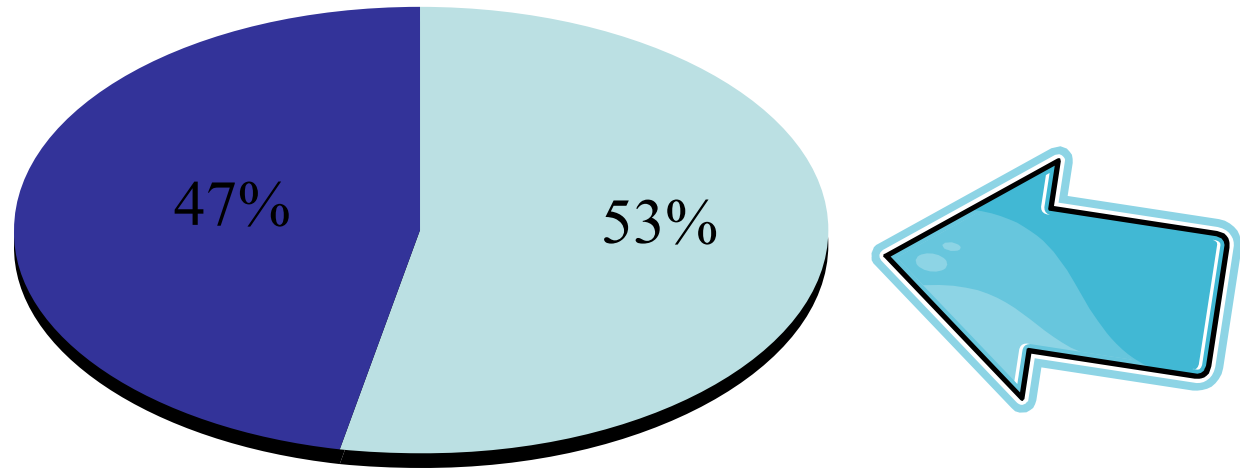
## I.E. Why Might “AMI Arrived-Alive” Studies Show Artificially Small SES Gradients for CHD Hospital Admissions?

- All hospital-based studies omit a substantial fraction of “sudden deaths” dying before admission
- In Scotland, the MONICA Glasgow Study, with a population-based registry that included all CHD deaths (including sudden and untreated) *also* showed:
  - » Only 66% of “coronary death cases” aged 25-64 reached hospital and 2/3 of all deaths were out of hospital, with clear SES gradients in total and out-of hospital mortality, but none in the subset who reached hospital (Morrison et al BMJ 1997;314:541)
  - » 1) Is this an important problem?
  - » 2) Why might poor Scots with AMI die so quickly?

# HOW FREQUENT IS "SCOTTISH SUDDEN DEATH"?

## Total Burden of Incident CHD in Scotland, 2000-4

### Sudden Deaths and AMI admissions



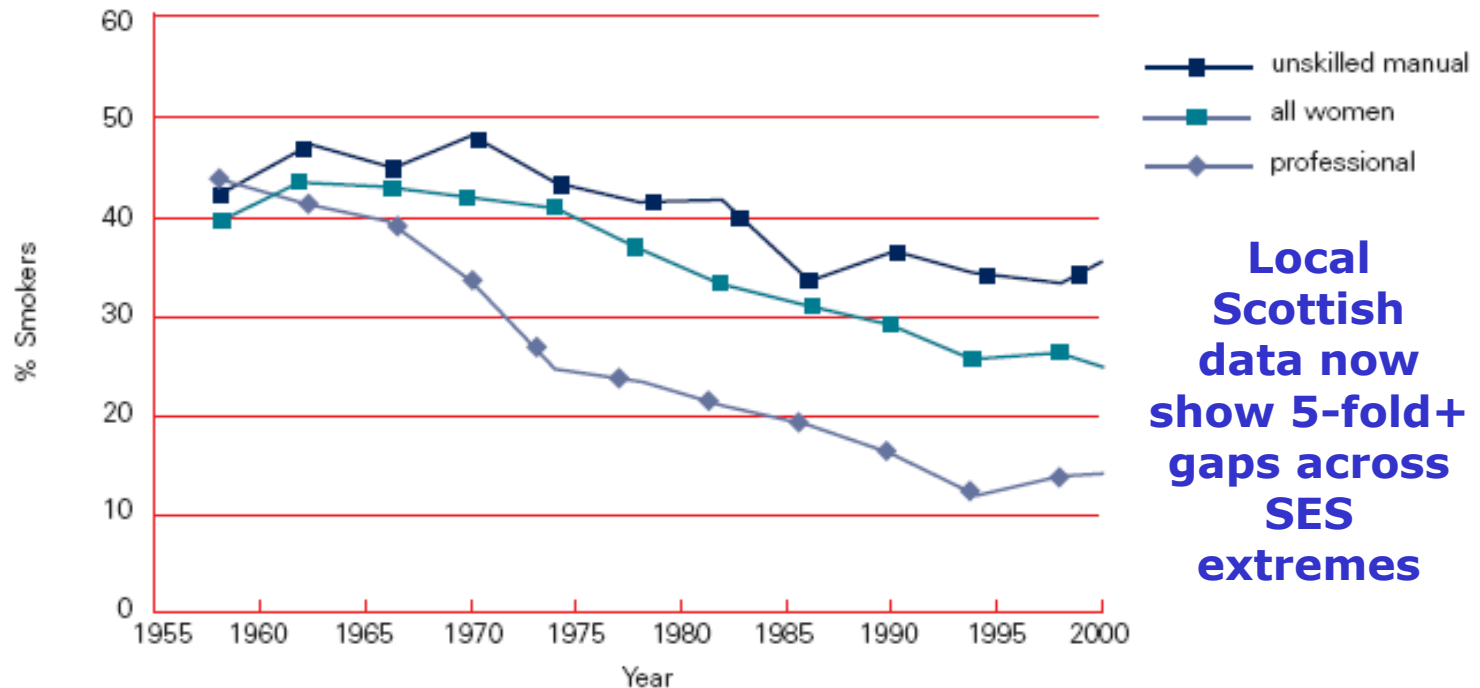
Of 93,701 incident AMI events, 50,075 (53%) resulted in death, of which **42,189 (84%) died within the first day** – ergo, surely prevention is at least as important as care?

Should there be a focused research program on sudden death here? One place to start would be....



# ONE POSSIBLE REASON FOR HIGHER SUDDEN CARDIAC DEATH RATES AMONG POOR SCOTS: TOBACCO EXPOSURE

Figure 3: Cigarette smoking among women aged 16 and over by socio-economic group 1958-2000, Britain



**Local  
Scottish  
data now  
show 5-fold+  
gaps across  
SES  
extremes**

**Source:** Wald and Nicolaides – Bouman, 1993; Bridgewood et al, 2000

Smoking among the proportion of women who smoke has declined sharply but the gap in prevalence between poorer and better off groups is widening

ESRC Seminar Series Mapping the public policy landscape

Developing the evidence base for tackling health inequalities and differential effects

**Source:** <http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre>

# New SLS (2003) Smoking/Obesity Results from Popham & Boyle (2010 -- commissioned by SCPHRP) :Relative Index of Inequality Across EU

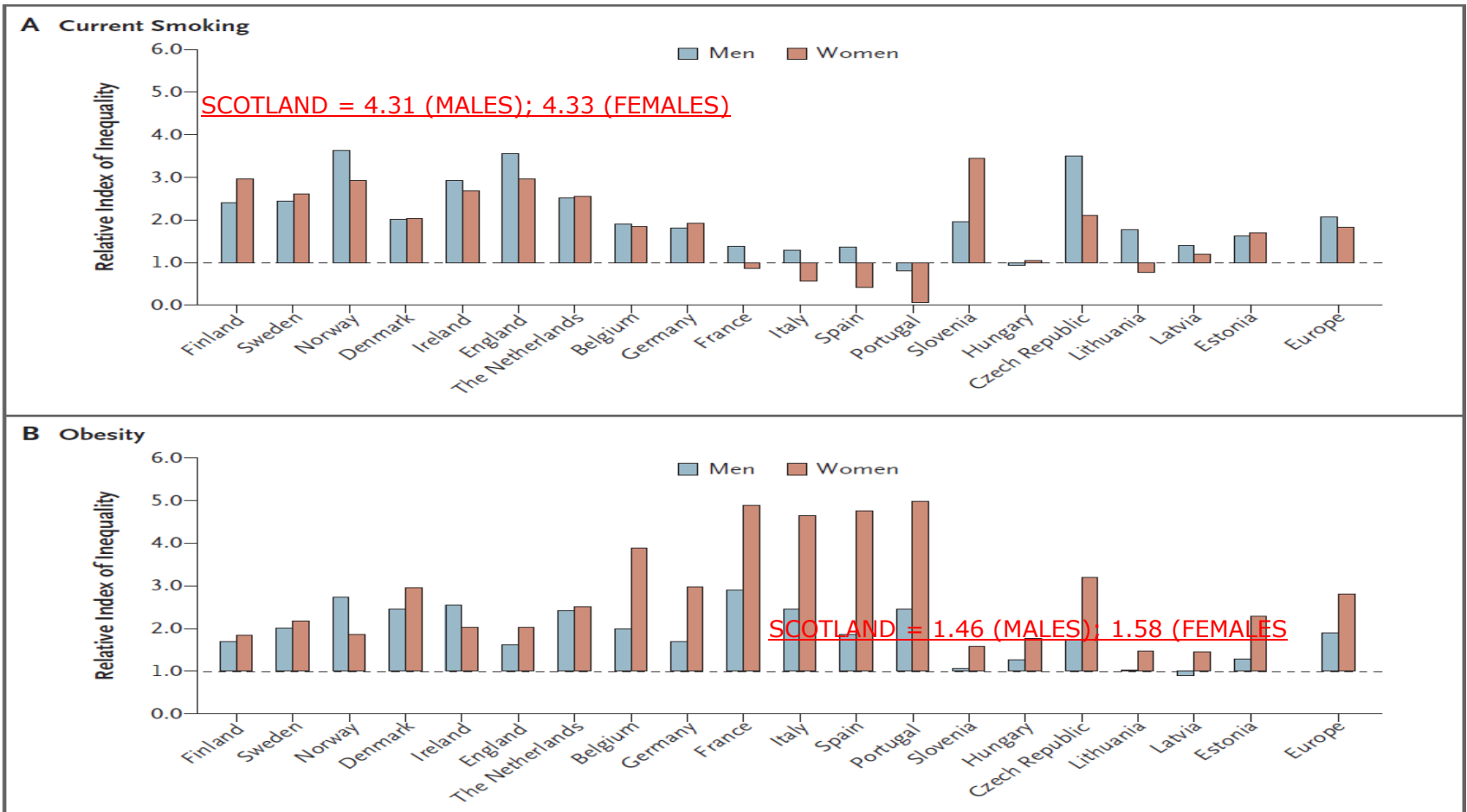
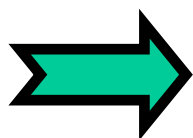
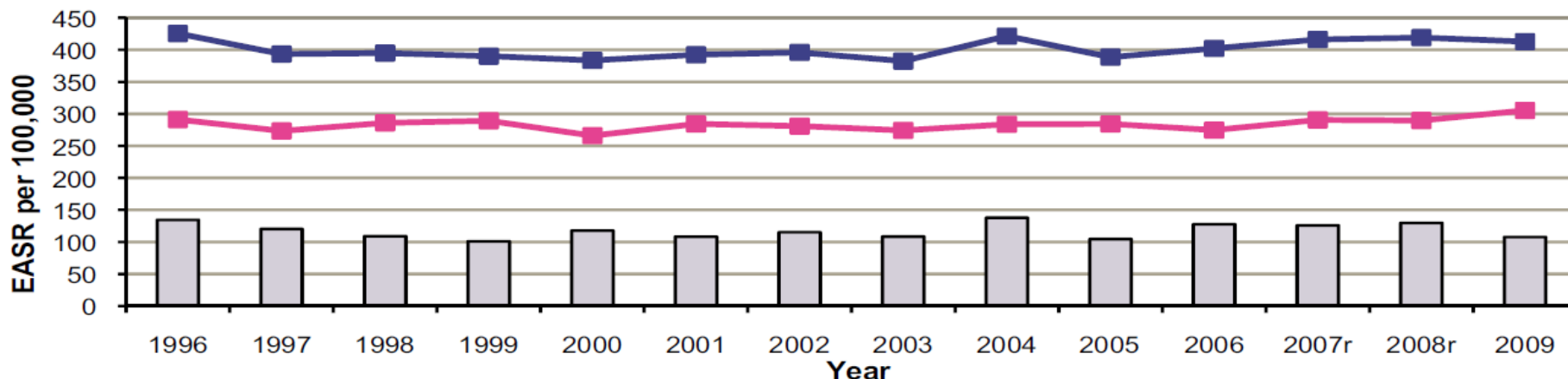


Figure 9 The Scottish education relative index of inequality (red line) for current smoking and obesity plotted against results for Europe from Mackenbach *et al.* 2008

# Absolute Range: Cancer Incidence (all sites) <75y – Scotland 1996-2007

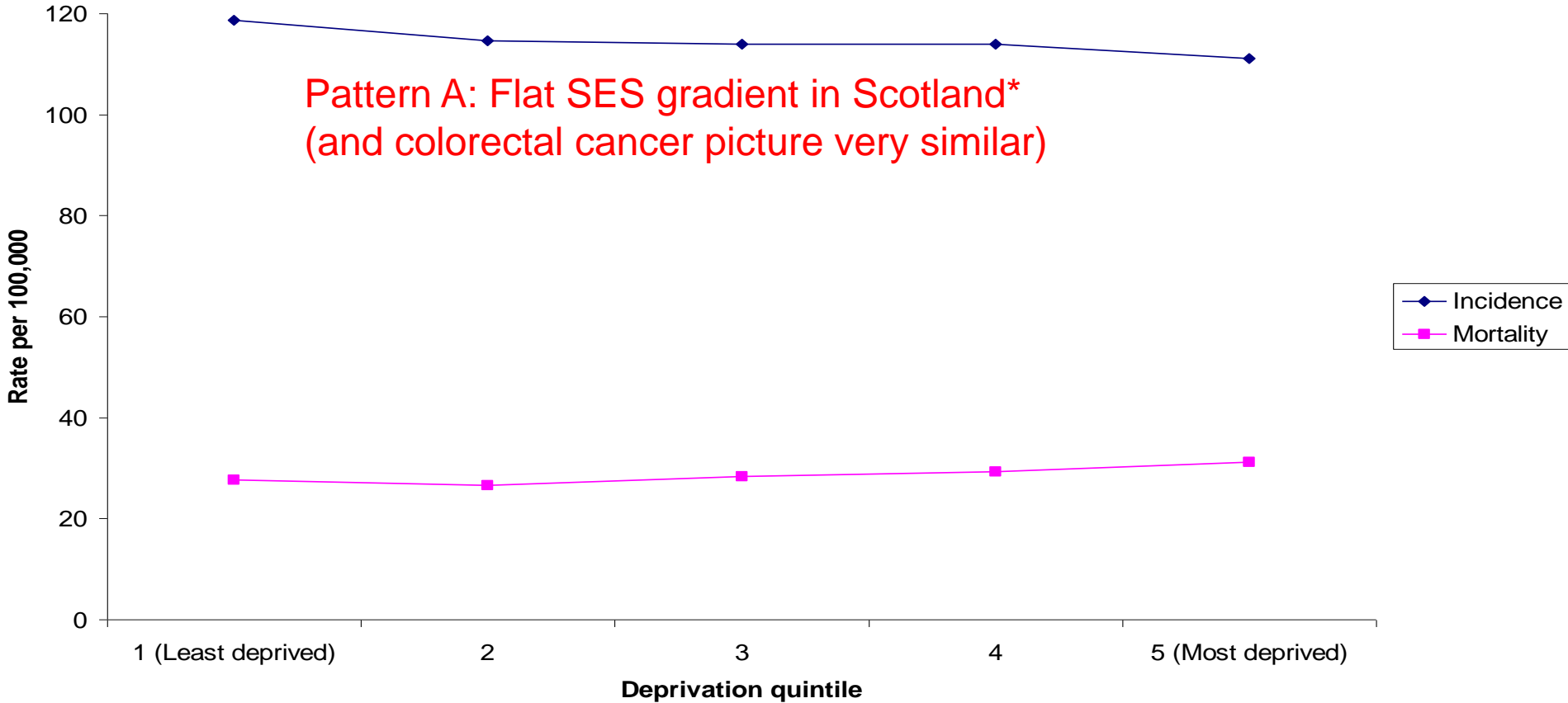
Figure 9: Absolute range: Cancer incidence <75y, Scotland 1996-2009  
(European age-standardised rates per 100,000)



[NO PROGRESS OVERALL -- BUT DOES IT MAKE SENSE TO COMBINE ALL CANCERS IN ONE STATISTIC, WHEN THEY DIFFER SO WIDELY IN THEIR SES GRADIENTS' DIRECTION AND SHAPE?]

**Source: Annual Report of the CMO, Scotland. The Scottish Government & NHS Scotland, Edinburgh. 2011.**

**Cancer of the female breast (ICD-10 C50)**  
**Age-standardised incidence and mortality rates by SIMD 2006 deprivation quintile, females**



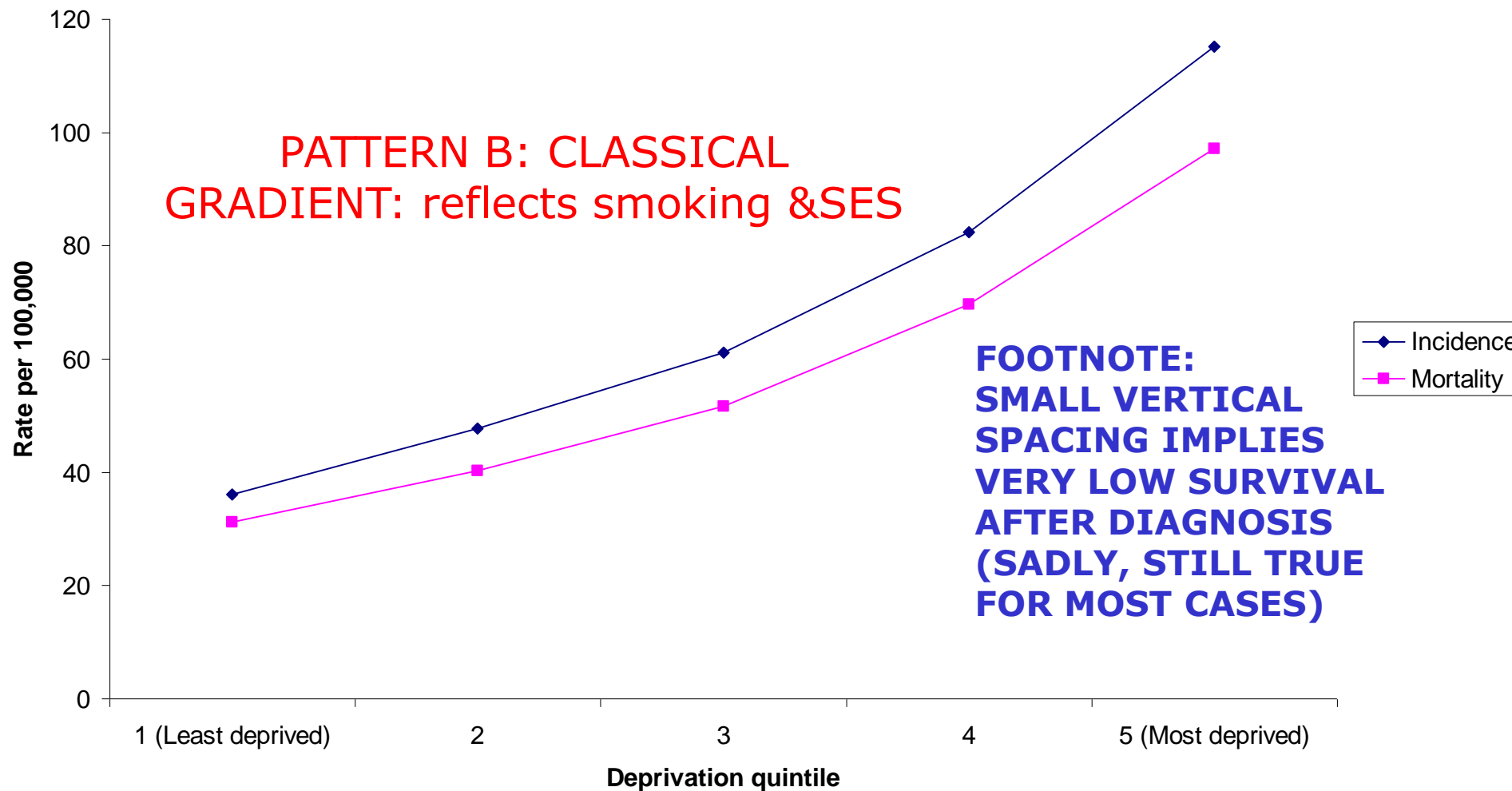
**Pattern A: “flat” (but \*unexpectedly so for breast cancer! -- SES reverse gradient is now 1.3-fold in England: Why is low-SES risk NOT less in Scotland?)**

# Environmental Tobacco Smoke and Breast Cancer

- Meta-analysis of ETS exposure effect on premenopausal breast cancer:
    - OR 1.68 (95% CI 1.31-2.15) for all studies, but
    - OR 2.20 (95% CI 1.69-2.87) for studies with high-quality exposure measures
- Miller MD et al. Preventive Medicine 2007; 44:93-106

**Could Scottish women at lower SES levels have been exposed to so much tobacco smoke, even as non-smokers, that their breast cancer incidence rates show an unexpected elevation, flattening the usual “reverse SES gradient”?**

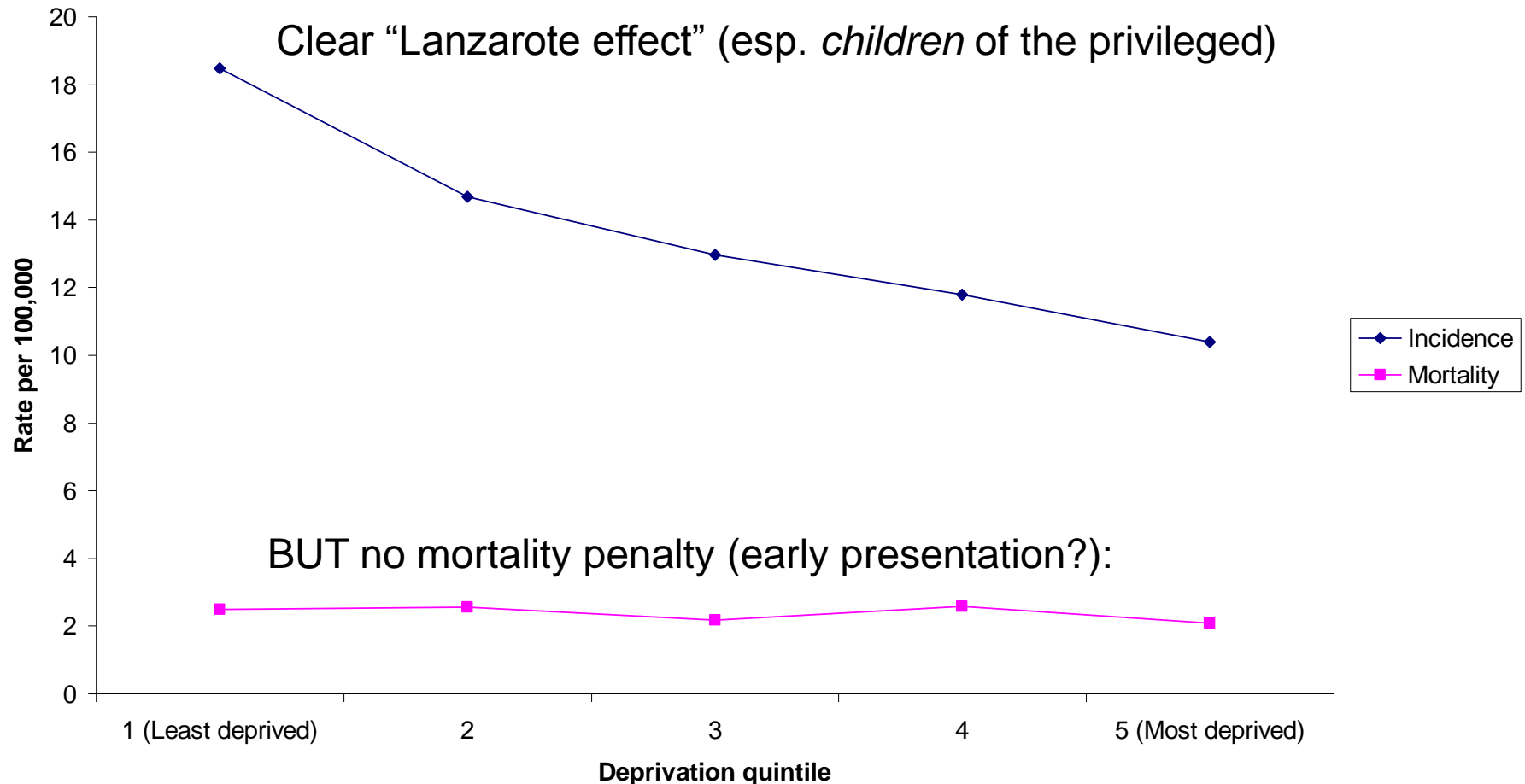
**Cancer of the trachea, bronchus and lung (ICD-10 C33-C34)**  
**Age-standardised incidence and mortality rates by SIMD 2006 deprivation quintile, persons**



# Pattern C: Reverse SES Gradient (Incidence Only)

Malignant melanoma of the skin (ICD-10 C43)

Age-standardised incidence and mortality rates by SIMD 2006 deprivation quintile, persons

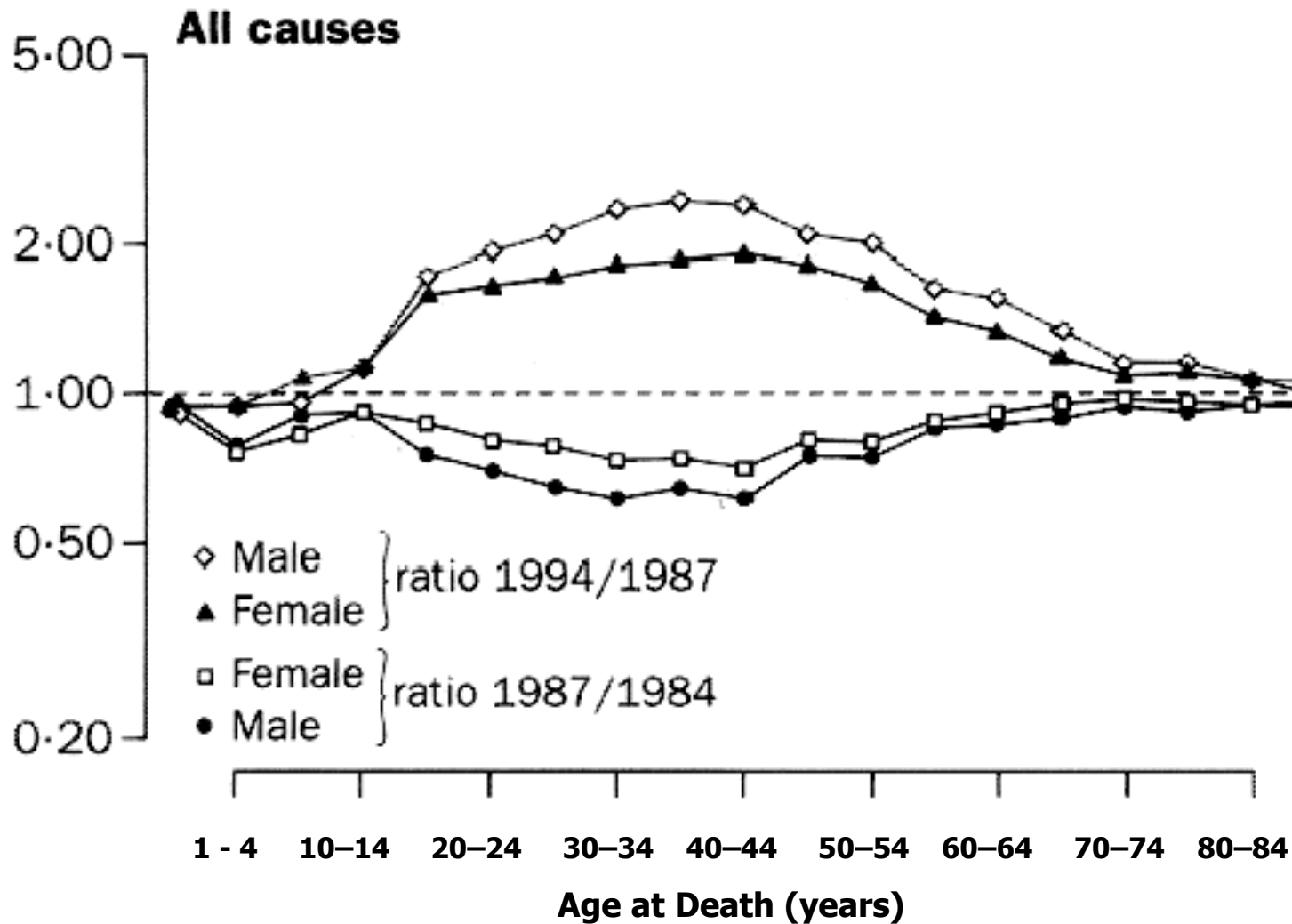


## Aside: Is Cancer Relatively Non-Responsive to Massive Societal Change?

- Historical evidence from the economic collapse of the old Soviet Union, in the 1990s, strongly suggests that *epidemic* psychosocial stressors have no measurable impact on cancer mortality, but ONLY cancer mortality, *within the next few years' time* (although much of the societal change in this case was accompanied by much increased alcohol consumption, and so may not be typical of such crises)

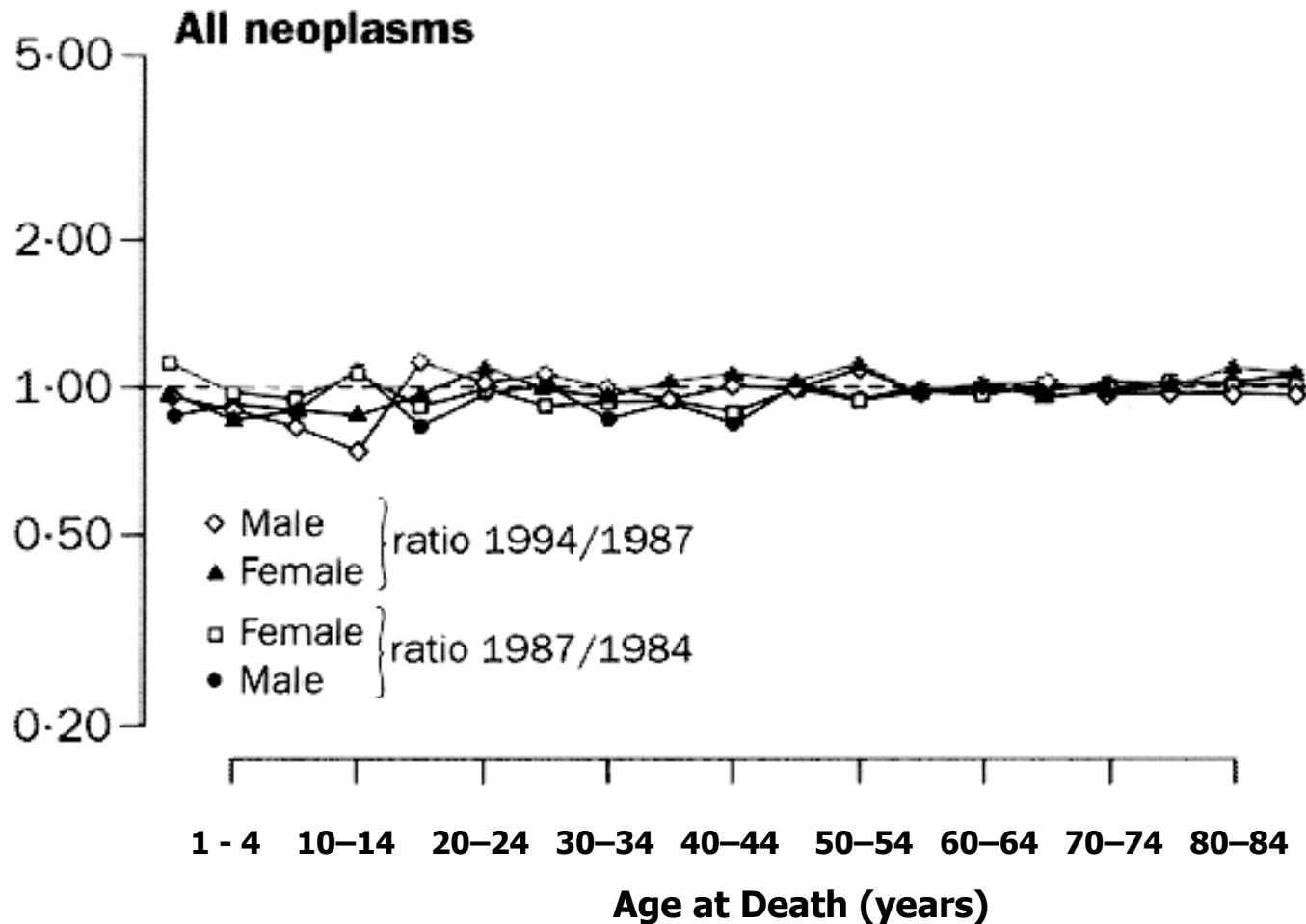


# All-Cause Mortality, USSR, 1984-94



DA Leon et al. Huge variation in Russian mortality rates 1984-94: artifact, alcohol, or what? *Lancet* 1997; 350: 383-88

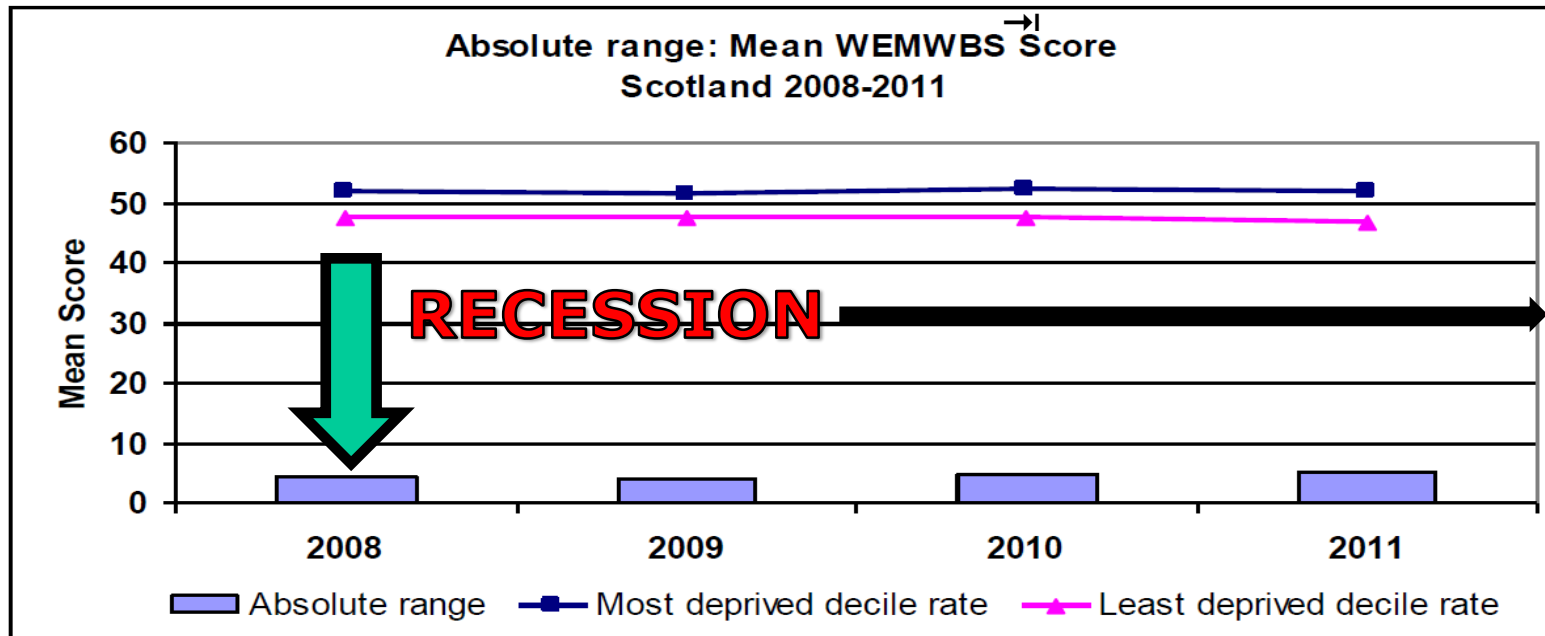
# All Cancer Mortality, USSR, 1984-94



DA Leon et al. Huge variation in Russian mortality rates 1984-94: artifact, alcohol, or what? *Lancet* 1997; 350: 383-88

# What about more functional indices of wellbeing in the entire population (e.g. from surveys)?

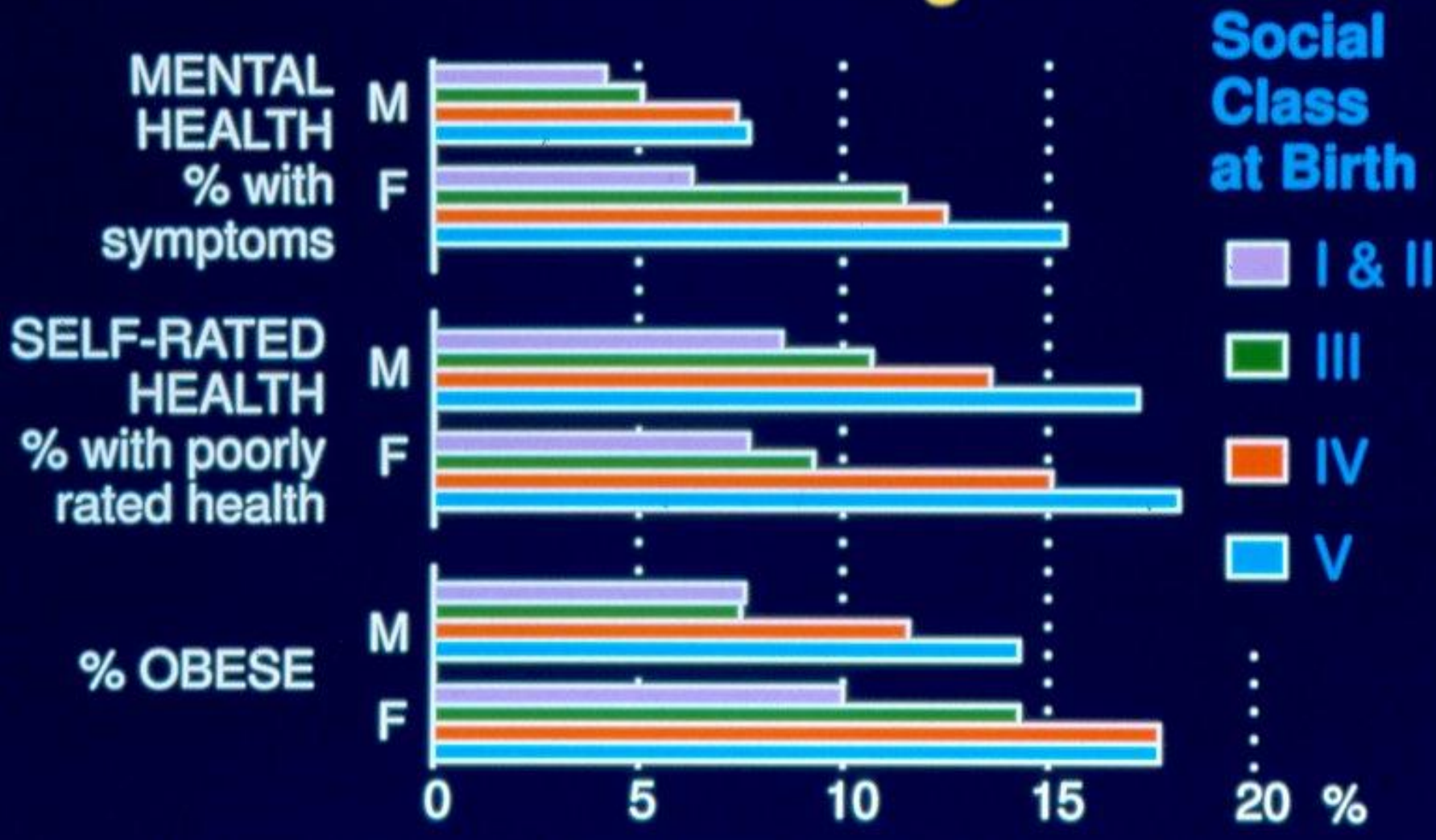
Absolute range over time: Warwick and Edinburgh Mental Health & Well-Being Scale



➡ This will tell how “sensitive to change” this is, but surely unpromising that **stable** interdecile gap = only 10% of pop<sup>n</sup> mean [cf. Newfoundlanders’ self-assessed health status: also Celts!]

# THE LIFECOURSE ORIGINS OF HEALTH INEQUALITIES

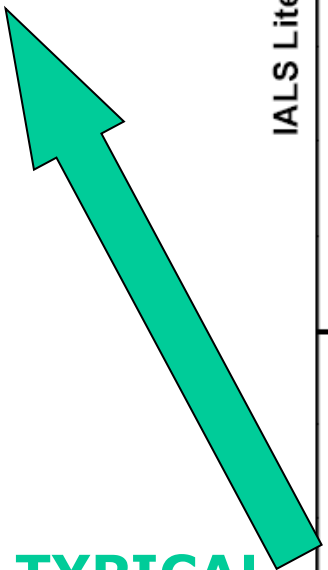
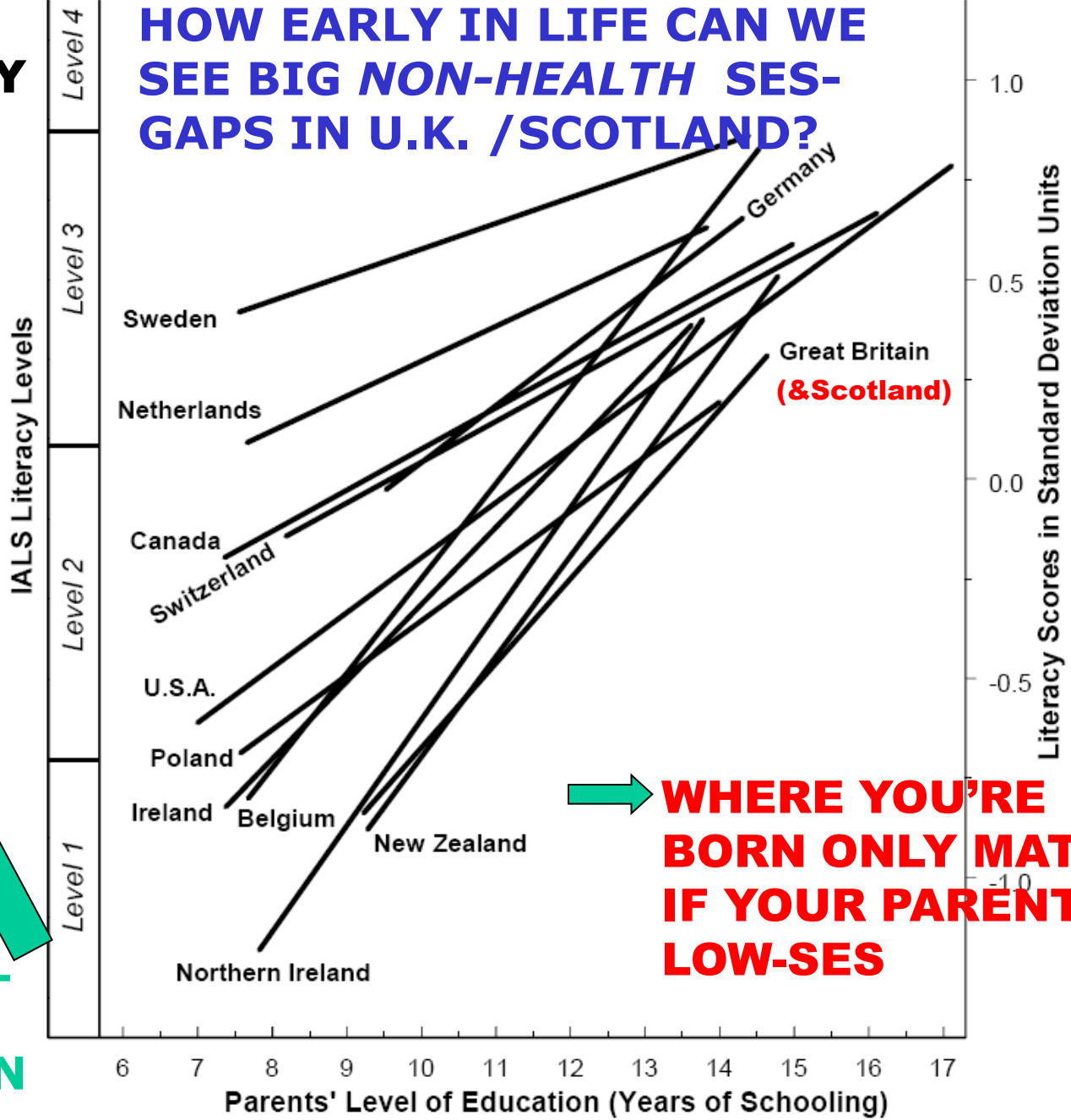
## 1958 British Birth Cohort - At Age 33



Source: Power C, Mathews S. Origins of health inequalities in a national population sample. *Lancet* 1997; 350:1584-89.

**STD'D LITERACY TEST SCORES**

**HOW EARLY IN LIFE CAN WE SEE BIG NON-HEALTH SES-GAPS IN U.K. /SCOTLAND?**



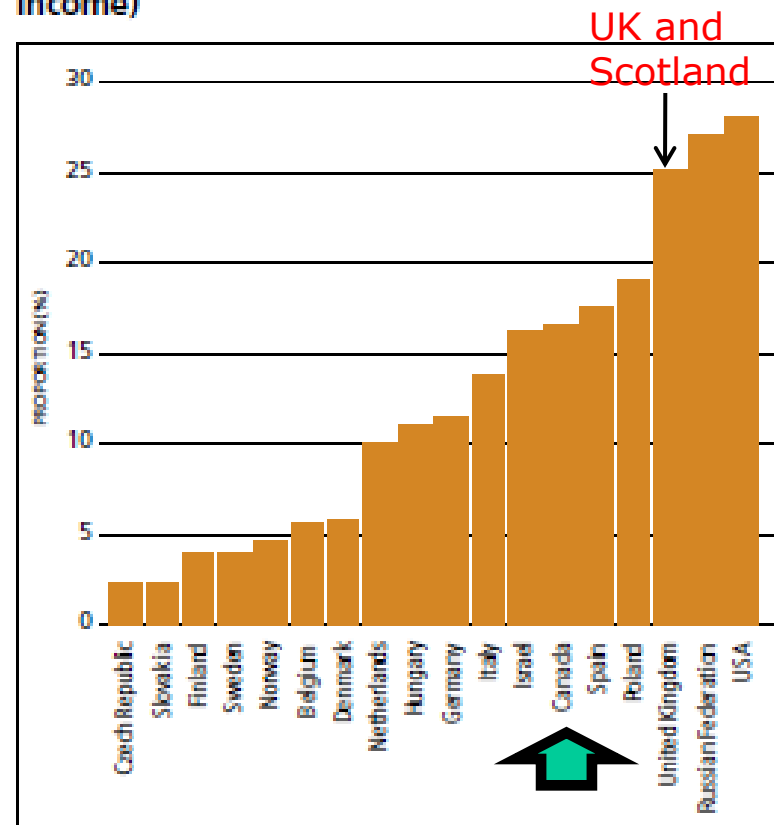
**TYPICAL "FAN" PATTERN**

**WHERE YOU'RE BORN ONLY MATTERS IF YOUR PARENTS ARE LOW-SES**

Literacy Scores for Youth Aged 16-25 years (Statistics Canada & the OECD, 1995). Source: Sloat E, Willms JD. The International Adult Literacy Survey.

# This is exacerbated by the high and increasing proportion of UK children living in poor households

Fig. 3. Proportion of children living in poor households (below 50% of the national average income)



[In comparison, in 1980 less than 8% of UK children were living in poverty]

# Scotland: Media reports (December 2009)

## **“Fifth of Scots have poor literacy”**

- The BBC:
- <http://news.bbc.co.uk/1/hi/scotland/8393805.stm>

## **“Literacy report shows Russell there really is a crisis in education”**

- The Scotsman:
- <http://news.scotsman.com/opinion/Literacy-report--shows-Russell.5883656.jp>

## **“Zero-tolerance approach to poor literacy needed, experts say”**

- The Herald:
- <http://www.heraldscotland.com/news/education/zero-tolerance-approach-to-poor-literacy-needed-experts-say-1.989347>

# Determinants of School Outcomes in Scotland – Why Schools Not to Blame

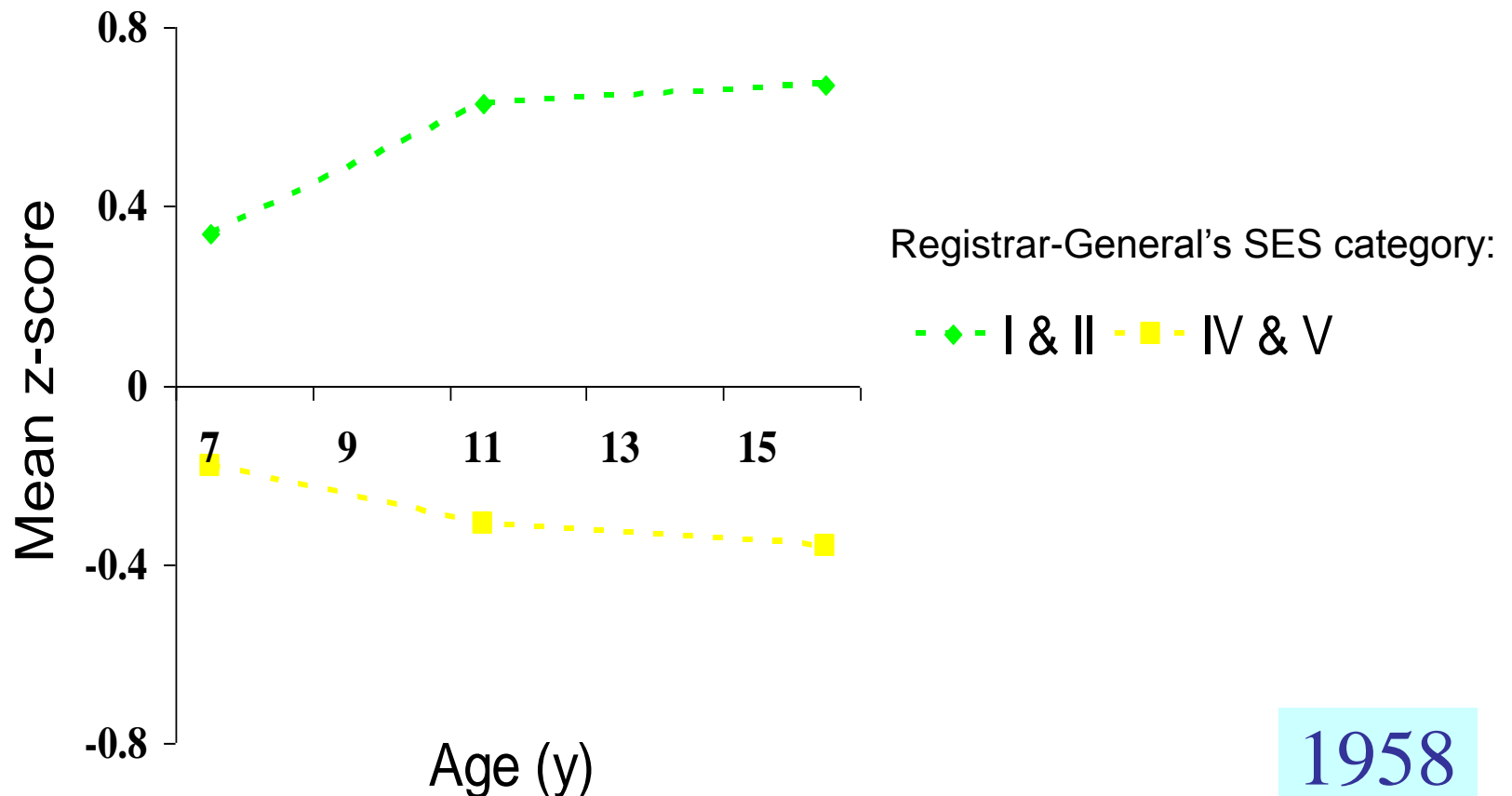
- “While individuals may defy this trend, no school in a deprived area is able to record a similar level of success to that achieved by almost all schools in the most affluent areas.”<sup>1</sup>
- “...but the gaps between them (schools) are far less important than differences between students. In Scotland, **who you are** is far more important than **what school you attend**.”<sup>2</sup>

1. Literacy Commission. A Vision for Scotland: The Report and Final Recommendations of the Literacy Commission. Scottish Labour, December 2009. <http://www.scottishlabour.org.uk/literacy>
2. OECD. Quality and Equity of Schooling in Scotland. Paris: OECD, 2007.

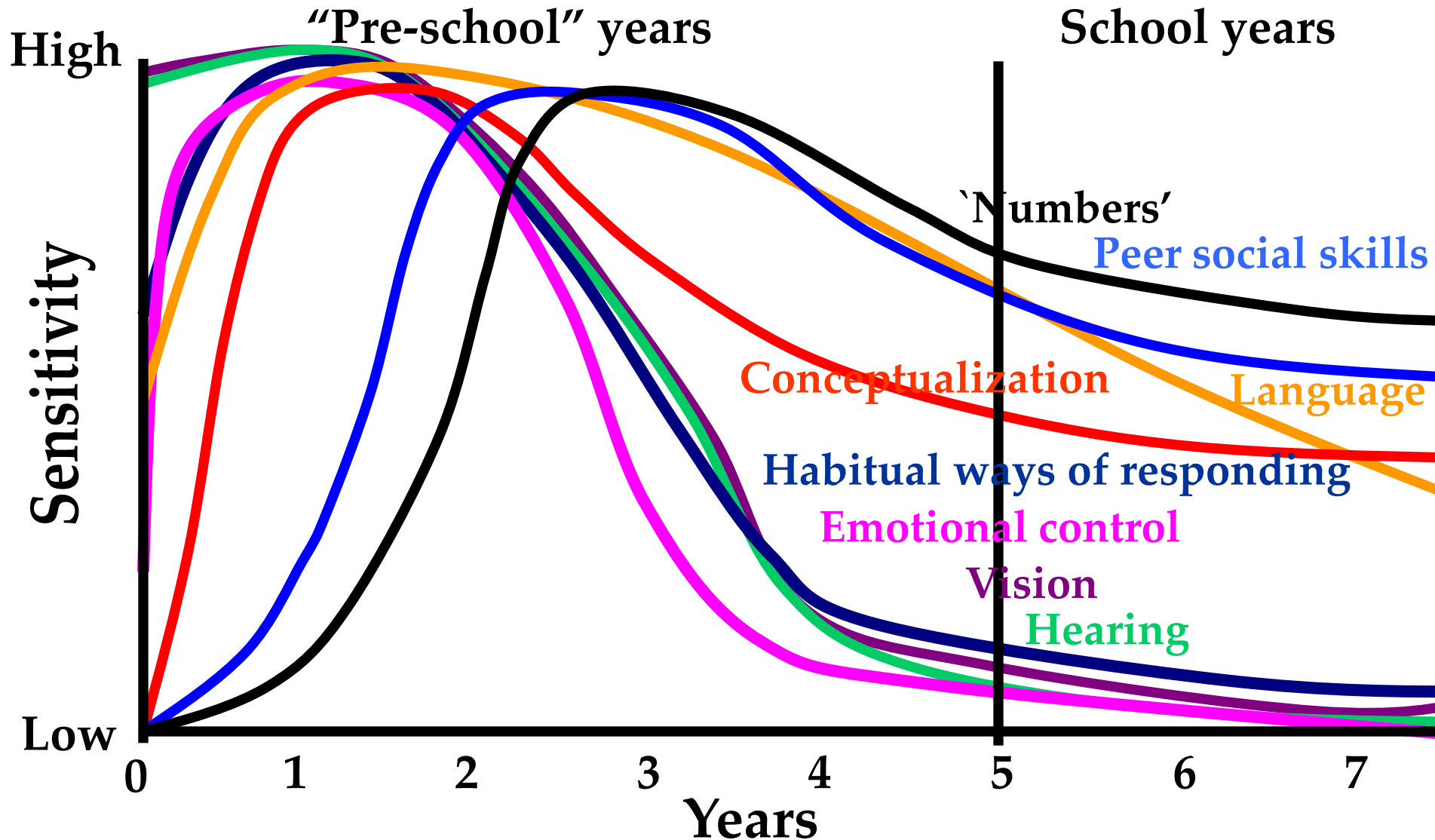


# Cognitive Development\* (7-16y) & Social Origins in the 1958 British Birth Cohort – How Ordinary Schooling Makes The Gradient Worse

*(Because it starts too late in childhood, when privileged children already have a huge head-start! Should we blame the schools?)*



# 'Sensitive periods' in early brain development



Graph developed by Council for Early Child Development (ref: Nash, 1997; *Early Years Study*, 1999; Shonkoff, 2000.)

# Interventions for Promoting Early Child Development for Health

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## An Environmental Scan with special reference to Scotland

Rosemary Geddes MBChB, MMed (PH), FCPHM (SA)

Sally Haw BSc, MFPH

John Frank MD, CCFP, MSc, FRCP (C), FCAHS, FFPH

A report for the Early Life Working Group of the Scottish Collaboration for Public Health Research and Policy (SCPHRP)

Available at: [www.scphrp.ac.uk](http://www.scphrp.ac.uk) (July 2010)

**8-page version: Geddes R et al. Health Policy (2010), doi:10.1016/j.healthpol.2010.08.013**

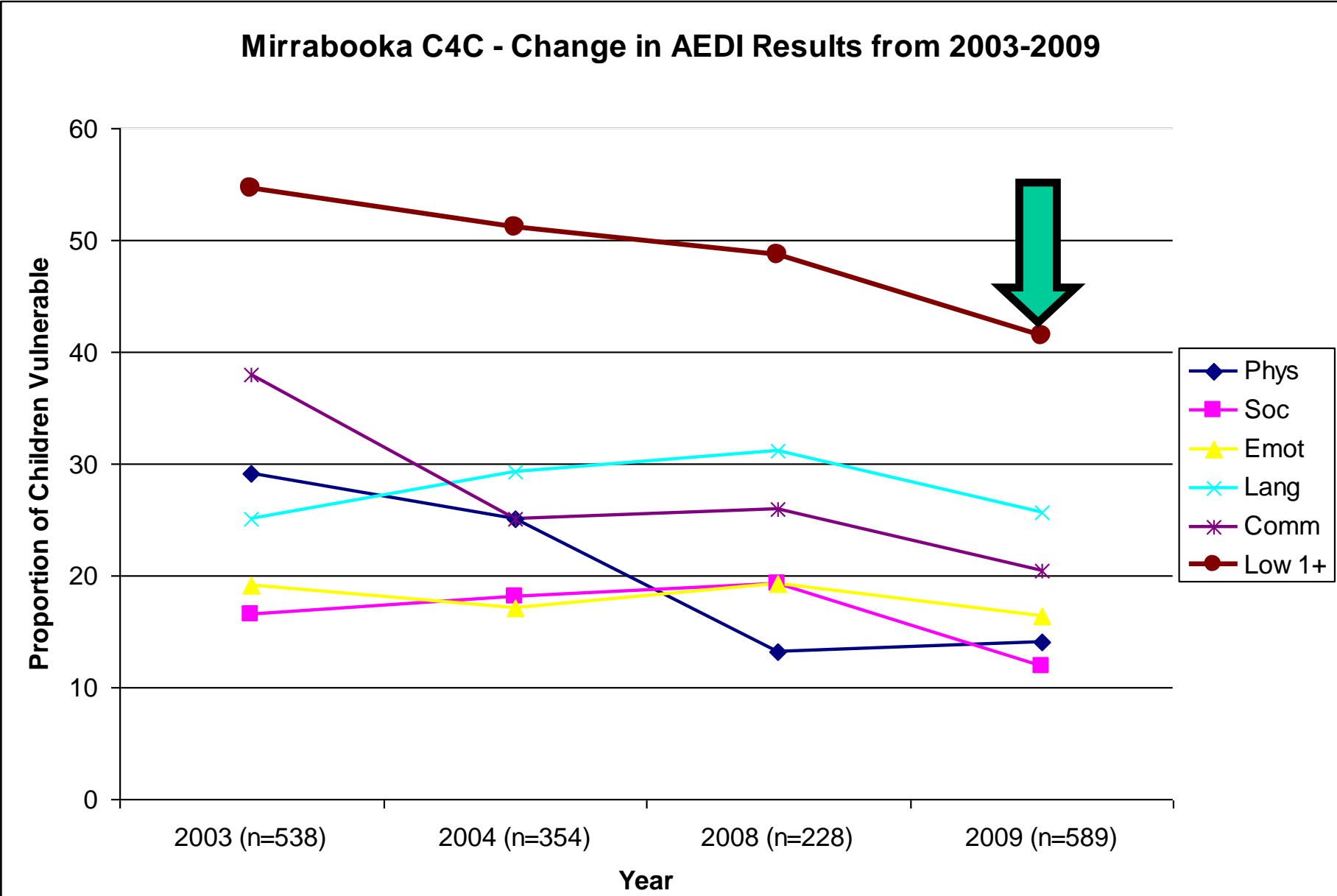
# What Might Be a More Sensitive and potentially REVERSIBLE Indicator Of SES Inequalities in Health and Function, Over the Life-Course?

The teacher-completed EDI, championed by the late Clyde Hertzman et al. at HELP (UBC), gathers **and feeds back** local-area data on five domains of children's cumulative development (after the first few months of school) that predict longer-term school, and thus life, success:

- ❖ Physical health and well-being
- ❖ Social competence
- ❖ Emotional maturity
- ❖ Language and cognitive development
- ❖ Communication skills and general knowledge.

**AND IT CAN BE CHANGED IN <6 YRS!**

# IN MIRRABOOKA (PERTH) AUSTRALIA, INTENSIVE LOCAL ECD PROGRAM DEVELOPMENT REDUCED EDI VULNERABILITY BY 25%

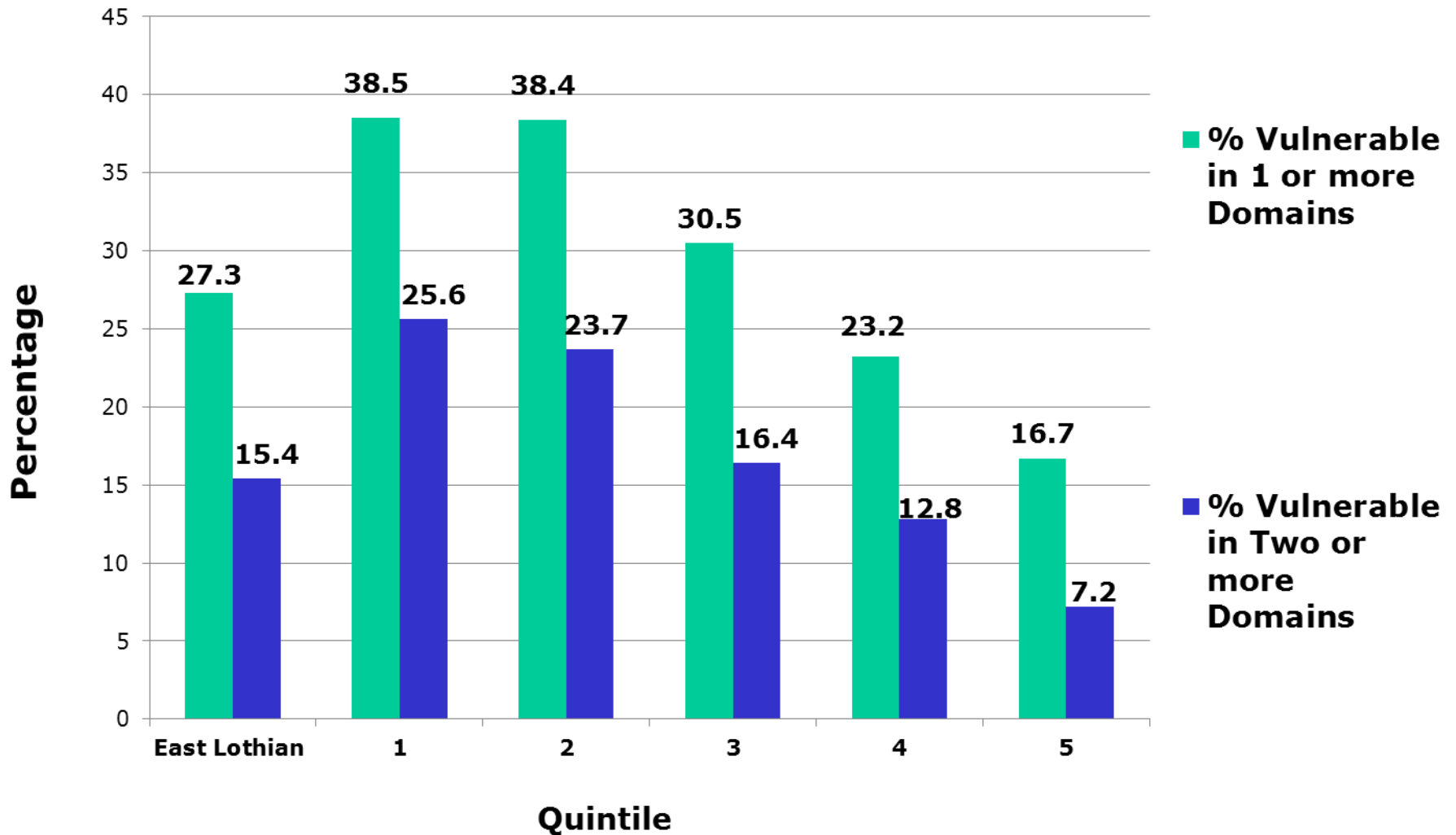


# Outline of SCPHRP EDI pilot in East Lothian (first use of the EDI in the UK?)

- **Phase 1** - Adapt Canadian EDI to Scottish context/school system, feasibility of implementing and test psychometric properties and discriminatory ability in Scotland (2011) ✓
- **Phase 2** - Implement EDI in whole local authority; validity & reliability testing (2012) ✓
- **Phase 3** – Facilitate community use of knowledge from the EDI -> Community action to improve pre-school ECE programs (2012-13) (in progress)
- **Phase 4** – 2<sup>nd</sup> wave of EDI assessment in new cohort of school enterers – 2015?

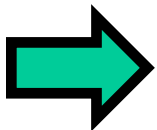
**RESULT: *EDI needs little Scottish adaptation; domain scores exactly 1/2 -way between Australian and Canadian scores***

# 'Overall developmental vulnerability' (% children low on at least one/two EDI domains) of Scots East Lothian P1 children by postcode SES (SIMD) quintile in January 2012: a typical EDI GRADIENT



# TO SUM UP:

- Many if not most current population health indicators -- based mostly on natality, mortality, self-reported morbidity and hospitalization data -- seem **inadequately "sensitive"/responsive to feasible 5-year policy initiatives** to reduce health inequalities, especially those directed at early life (which have the most promise for large, efficient effects from relatively feasible preschool early child development programmes.) **The EDI fits the bill – to a tee.**
- To substantially improve our national health surveillance system will require more comprehensive **record-linkage**, especially across the public service sectors, across "virtual cohorts" of different ages. Ideally, one could then construct a population "**Human Misery Index**" that summed up the descriptive epidemiology, including SES gradients, for all households with one or more members who experienced, in a given year, any of the following:
  - a serious health event or "crossed a key disability threshold"
  - a significant criminal justice or child welfare event
  - entry into social welfare or disability payments, or loss of work
  - forced eviction from housing
  - a failure in the school system
  - your choice of any other administratively routinely collected indicator of human suffering!



**Implementing such holistic measures, of population health status *and* health inequalities, is underway in Scotland – just give us time!**



# SCPHRP Core Mandate and Approach (as established in 2007 by MRC and CSO -- our funders)

- To identify key areas of opportunity for developing *novel public health interventions that equitably address major health problems* in Scotland, and move those forward.
- To foster *collaboration between government, researchers and the public health community to develop a national programme* of intervention development, large-scale implementation and robust evaluation.
- *Build capacity within the public health community for collaborative research* of the highest quality, with maximum impact on policies, programs and practice.

# SCPHRP's Evolution

## 2nd 5 Years

### 1st 5 Years

#### PHASE 1

- SCPHRP Working Groups set up
- 4 Research Fellows hired
- Environmental scans – done & disseminated

Evidence Synthesis;  
Networking &  
Collaborating

#### PHASE 2

- 20 seed grants given, 4 major external grants won
- Renewed Working Groups (May 2012)
- Social media/ new partnerships

Capacity Building for  
Intervention Development

#### PHASE 3

- Four new Programmes/ exemplar projects; > 25 Collaborators
- Working-Group- led intervention development/ pilots (small external grants)

Improving the  
Evidence – Base; Piloting  
Interventions; Influencing  
Policy

#### PHASE 4

- 2<sup>nd</sup> wave of major external intervention grants led by Working Group members, Collaborators & SCPHRP staff/ PDRFs

Embedding in Scotland of  
best-practice KTE  
activities ►  
long-term sustainability

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

# Reflections on the four Working Groups

## Early Years



Credits: Mirror by Arvind Balaraman

## Early to Mid-working Life



## Adolescence and Young Adulthood



## Later Life



# Early Years Portfolio

Project Type	Project Title
Environmental Scan	Environmental Scan: Interventions for Promoting Early Child Development for Health: an environmental scan with special reference to Scotland Rosemary Geddes, SCPHRP
Seed-funding Award	Investigation of observed increases in breastfeeding rates in deprived areas.* Bruce Whyte, Glasgow Centre for Population Health
Seed-funding Award	Setting up Data Linkage System for Children in Glasgow Phil Wilson, University of Glasgow
<b>THREE 2011-13 PILOT/DEMONSTRATION GRANTS: see website</b>	
Commissioned Project	<b>Adaptation and Piloting of the Early Development Instrument (EDI) in Scottish School Enterers</b> Lisa Wolfson, Strathclyde University in collaboration with SCPHRP (Rosemary Geddes, John Frank) and East Lothian local authorities
NIHR Public Health Grant funded	<b>The THRIVE Trial of a Parenting Intervention</b> PI Marion Henderson

# Adolescence & Young Adulthood Portfolio

Project Type	Project Title
Environmental Scan	<p><b>Interventions that address multiple risk behaviours or take a generic approach to risk behaviour in youth</b>            Caroline Jackson, SCPHRP [see: <a href="http://www.scphrp.ac.uk">www.scphrp.ac.uk</a>]</p>
Commissioned Projects	<p><b>Secondary analysis of: 1) Scottish survey data to assess clustering of risk behaviours in 18 yr olds 1990/2003</b>, with MRC SPSHU, Glasgow; <b>2) Comparative national survey data in 15 yr olds, 1998 /2010</b>, with Child and Adolescent Health Research Unit, University of Edinburgh</p>
Seed-funding Award	<p><b>Youth male violence in Scotland: Understanding antecedents, reducing recidivism, and tackling health inequalities</b> Peter Donnelly, St Andrew's University</p>
Seed-funding Award	<p><b>Whole school interventions addressing multiple adolescent risk behaviours in Scotland: a feasibility study</b>            Lyndal Bond, MRC SPSHU, Glasgow  <b>ONE 2011-13 PILOT/DEMONSTRATION GRANT – see website</b></p>
NIHR Public Health Grant Applications (2 grants funded, for over £1 million each, autumn 2011)	<p><b>1) Evaluation of the impact of the Tobacco and Primary Medical Services (Scotland) Act 2010 on diverse smoking outcomes in Scots aged 12 to 17 yrs.</b>            PI: Sally Haw (formerly SCPHRP, now at Stirling University, with Working Group members);</p> <p><b>2) Novel Primary School Intervention to Reduce Risky Behaviours in Teens.</b> PIs Marion Henderson and Danny Wight (MRC SPSHU, Glasgow, with Working Group members)</p>

# Adult Working Life Portfolio

Project Type	Project Title
Environmental Scan	Environmental Scan of Potential Policy Interventions to Tackle Obesogenic Aspects of the Built Environment John Mooney, SCPHRP
Masters Dissertation	Analysis of policies (Scottish/UK/EU) that drive the obesity epidemic/obesogenic environment Martin Higgins, Lothian Health
Commissioned Project	<p><b>Study of Caloric Content of Top-Selling Items at Fast-Food Outlets Near Glasgow Schools:</b>            SCPHRP (John Mooney) in collaboration with MRC SPHSU (Glasgow) and other investigators</p>
<p><b>SCPHRP competitively funded research</b></p>	<p><b>TWO 2011-13 PILOT/DEMONSTRATION Grants funded (cf. website) --to test feasibility of price-incentives for health eating in workplace canteens; one to reduce sickness absence in a large public-sector workforce</b></p>

# Later Life Portfolio

Project Type	Project Title
Environmental Scan	Environmental scan of interventions in primary care/community settings that prevent or delay functional decline in the frail and elderly Helen Frost, SCPHRP [see: <a href="http://www.scphrp.ac.uk">www.scphrp.ac.uk</a> ]
Seed-funding Award	<b>Development of a risk prediction tool for entering a nursing home in those aged 65 and over in a Scottish population*</b> Peter Donnan, University of Dundee
Seed-funding Award	<b>Preventing or delaying disablement amongst older adults: mapping the Scottish landscape to identify promising programmes*</b> Sally Wyke, University of Stirling
Seed-funding Award	Feasibility study of use of direct payments for informal care* Anne Ludbrooke, University of Aberdeen
Commissioned Research	<b>Study to Assess Effect of Nairn General Practice “Anticipatory Care Plan” Intervention on Reducing Institutionalisation in the Elderly</b> Adrian Baker and Paul Leak of Nairn, in conjunction with Josie Evans and Iain Atherton, University of Stirling & Dundee

**TWO 2011-13 PILOT/DEMONSTRATION GRANTS: see website**

\*See website for Project Reports

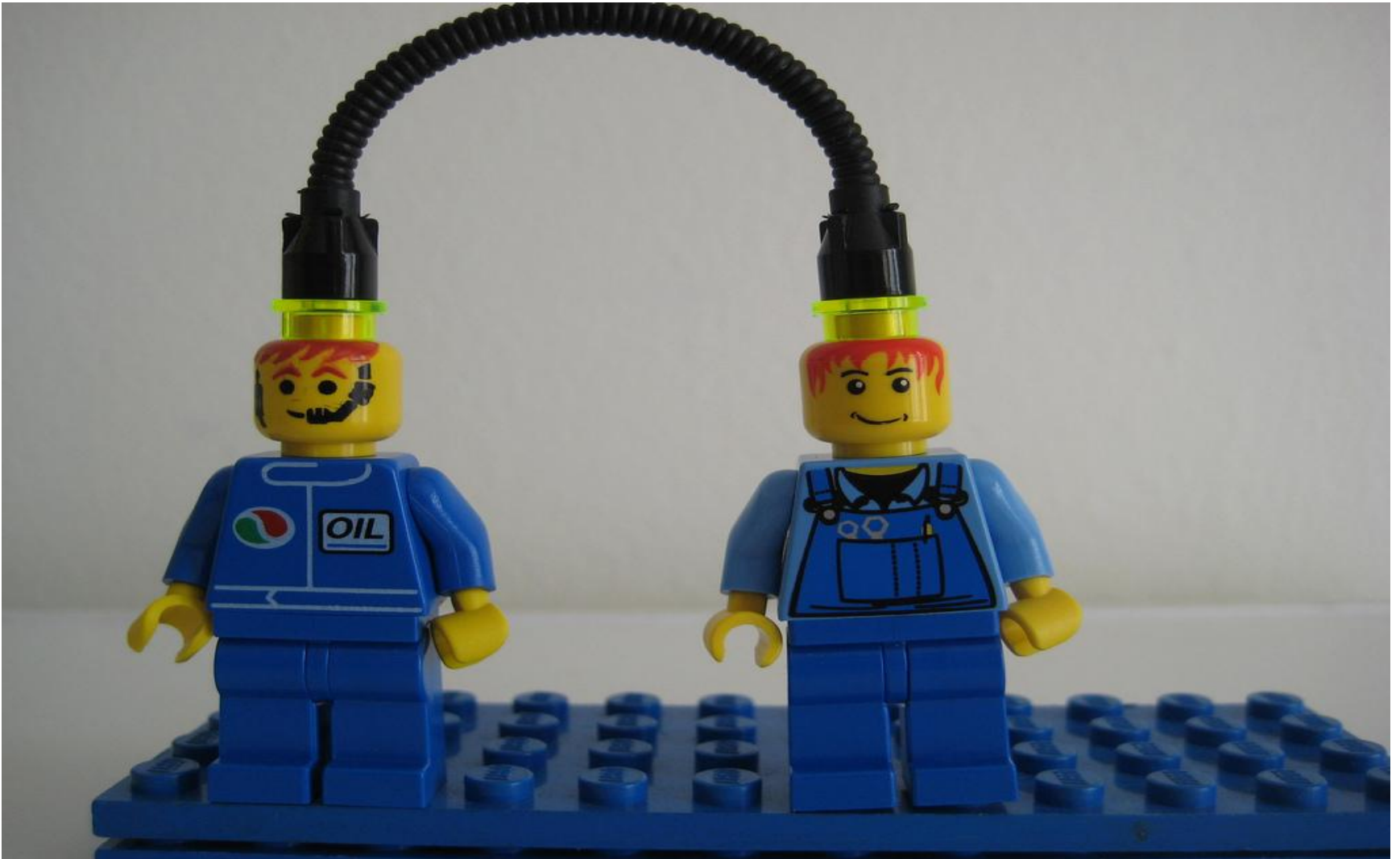
# Working Group Activity Supported by ....

- The Work of the Four Career Development Fellows
  - Environmental scans
- SCPHRP Competitive Seed-funding Awards, 2010-11 (n= 7, at £20K max)
  - Pilot/feasibility studies of PH interventions
  - Development of improved population-level monitoring and record-linkage systems

SCPHRP Competitive Pilot/Demonstration Projects, 2011- 13 (n=8, at £75K max)
- SCPHRP Commissioned Research Grants
- Research Council/NIHR Funding Applications (4 funded so far as a result of WG activity/SCPHRP work): total value ~£10m



# Knowledge Transfer Activities



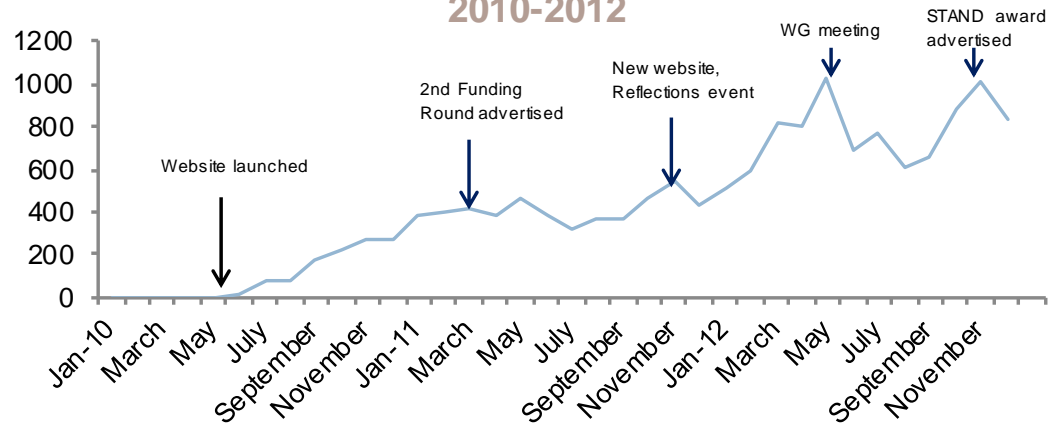
## SCPHRP Special Events (e.g. 2009-10)

Event Type	Event Title
Public Lecture October 2009	<b>Early Childhood Origins of Violent Behaviour: Implications for Preventive Interventions</b> Richard Tremblay, GRIP, Universite de Montreal
Seminar October 2009	<b>Obesity in Scotland: Moving the agenda forward</b> (with key Scottish stakeholders and Harry Rutter, NOO, U.K.)
Public Lecture November 2009	<b>Translating Evidence in a Changing Public Health Environment: A View from Down Under</b> John Lynch, University of South Australia
Public Lecture January 2010	<b>Early Child Development: A Powerful Equaliser</b> Clyde Hertzman, University of British Columbia
Seminar April 2010	<b>Lost in Translation? The Political Realities of Getting Evidence Into Policy</b> -- Allan Best, University of British Columbia
Public Lecture May 2010	<b>PRISMA – an Integrated Service Delivery System for Frail Older People: Implications for Service Delivery in Scotland</b> Rejean Herbert, Université de Sherbrooke
Public Lecture June 2010	<b>Tackling Obesity in the 21st Century: Crafting Society-wide Solutions</b> Shiriki Kumanyika, Univ. Pennsylvania School of Medicine

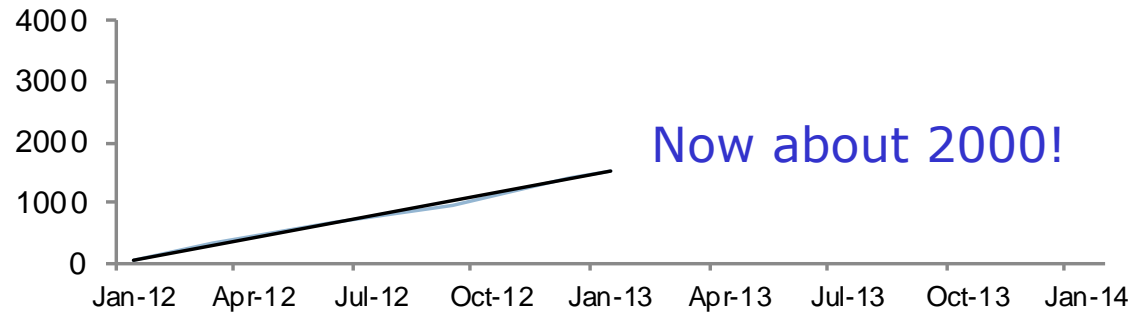
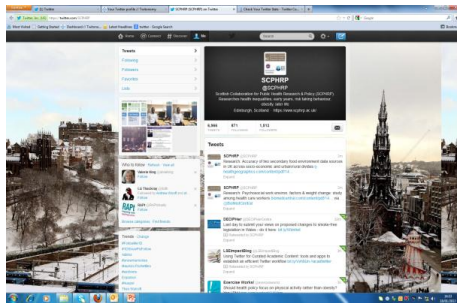
# Online presence – web and social media



## Unique monthly visitors to SCPHRP website 2010-2012



## Number of followers on twitter (@SCPHRP)



# Third Sector Novel Partnership Working

## Young STAND Awards (Scots Tackling Alcohol and Drugs)



New awards scheme that recognises and rewards promising practices in projects working with young people across Scotland.

Joint initiative with Mentor and SCPHRP (with involvement from NHS Health Scotland and Young Scot)

Award focuses on projects with evaluation and youth participation

24 projects have applied. Award ceremony in February. Award will include evaluation advice and support from SCPHRP



## Young People, Mental Health and the Arts



Partnership project between SCPHRP, Royal Lyceum Theatre, Edinburgh, Stirling University and Lisa Nicol, Filmmaker

Symposium at the Lyceum theatre (to coincide with a play on mental health – *Taking over the asylum*)

Film project with Lisa Nicol (to be shown at Symposium) – young people involved in all stages

Research project exploring young people's experience of the film project (SCPHRP)



# Policy Impact

- Expert committee set up in 2010 by the SG Health Finance and Analytical Services Directorates for *NHS Quality Strategy Indicators initiative*
- 14 professionals, serving as technical, policy or clinical leads for reviewing Level 1 Early Years Indicators – *SCPGRP Fellow Dr. Rosemary Geddes agreed to be one of technical leads*
- The leads contributed via email and face-to-face
- **Case Study: NHS Quality Strategy 2010/2011 and Preventative Spending Inquiry by Scottish Parliament** meetings to the key indicators proposed by the Chief Medical Officer, Dr Harry Burns

# Capacity Building



# New CPD Courses Developed and Piloted by SCPHRP (delivered thus far to one NHS-HB PHD, NHS-HS/HAS)

*"Critical Appraisal for Public Health;" "Pitfalls and Tips"*

Six sessions developed (taught by entire SCPHRP team)

Topics:

**RCTs of Screening:** The Example of PSA and Prostate Cancer

**Non-RCT Evaluations of PH Interventions:** The Example of the 2006 Smoke-Free Laws in Scotland

**Meta-Analyses of Environmental Hazard Causation Studies:** The Example of 2nd-Hand Smoke and Breast Cancer

**Complex Studies of Nutrition and Health:** EPIC Cohort Analysis of Fruit/Vegetable Consumption and All Cancers [

**Measuring and Monitoring Health Inequalities by SES:** A two-part session on 1) basic methods and 2) current challenges in Scotland in using routinely collected health statistics for this purpose

**Pitfalls and Tips in Interpreting Measures of Population Health Status:**

Interactive half-day (or two-session) seminar for public health staff

# SCPHRP Traineeships

## **MRC-CSO Career Development Fellows:**

- Helen Frost (Sept 2009)
- Rosemary Geddes (July 2009), replaced by Larry Doi (2012-)
- Caroline Jackson (Sept 2009), replaced by John McAteer (2012-)
- John Mooney (Sept 2009)

## **Associates/Internships/Post-Docs:**

- Martin Higgins (Oct 2009 -) –MSc dissertation on obesity policy-drivers
- Rob Young (July- December 2010) – MRC PhD Studentship on spline analyses of non-linear SES gradients in health outcomes in Scotland
- Katherine Smith (PDF transfer from Bristol to University of Edinburgh: Jan 2011) – ESRC-MRC PDF on tracing the influence of ideas as markers of the science to policy process
- Accredited placement (6 months) for Public Health SpRs – initial SpR Tara Shivaji started January 2011, working on qualitative aspects of EDI pilot in East Lothian (see below)



# Reflecting on the past to build bridges for the future



NATIONAL  
GEOGRAPHIC

Photograph by Jonathan Munshi, 2008 International Photo Contest

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# Lessons Learned

- Learned enormous amount about the rapid review of public health intervention literature
- Work of Working Groups has to build on interests/needs of group members in order to maintain momentum
- There is enthusiasm for developing critical appraisal skills in CPD but busy public health staff find it difficult to prioritise course attendance over their day job: offer other CPD formats? (SCPHRP would need a partner organization!)
- Scottish Government have been generally receptive to our ideas but long-term engagement challenging: nifty ideas “penetrate:”

# Developing a Consensus Process

- We believe that broad **buy-in beforehand** by both senior policy-makers at SG level, and other stakeholders (e.g. LAs/HBs, Voluntary Sector, local community representatives) is essential, if pilots of interventions are to lead to subsequent action. **This takes time and trust.**
  - There is considerable international cynicism about whether a successful pilot – of which Scotland has seen *many* -- can truly lead to fully-funded ramp-up, with robust evaluation by competent researchers
  - To counter this, researchers have to be engaged with policy-makers and practitioners, and vice-versa!
- **SCPHRP is looking at various possible models of further engaging diverse interest groups, in further topic prioritization for 2013-18, for example “deliberative,” “search” and “consensus” processes/conferences – suggestions welcome!**



THE UNIVERSITY of EDINBURGH



CHIEF  
SCIENTIST  
OFFICE

MRC

Scottish Collaboration  
for Public Health  
Research and Policy

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