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for Public Health
Research and Policy

BEST INVESTMENTS FOR HEALTH EQUITY ACROSS THE LIFECOURSE: SCOTLAND & "rUK" COMPARED

INRICH Conference, Barcelona,

June 17, 2016

**John Frank, Director and members,
Scottish Collaboration for Public Health
Research & Policy (www.scphrp.ac.uk)
University of Edinburgh;
Professor Emeritus
University of Toronto.**

CASE STUDY: Health Inequalities by SES IN Scotland

Steepest in Western Europe – and largely not declining (even in absolute terms) since UK devolution began 15 years ago, despite strong policy aspirations for reduction

Last 30 years: rise in mortality inequalities in teens/young adults, due to “external causes”:

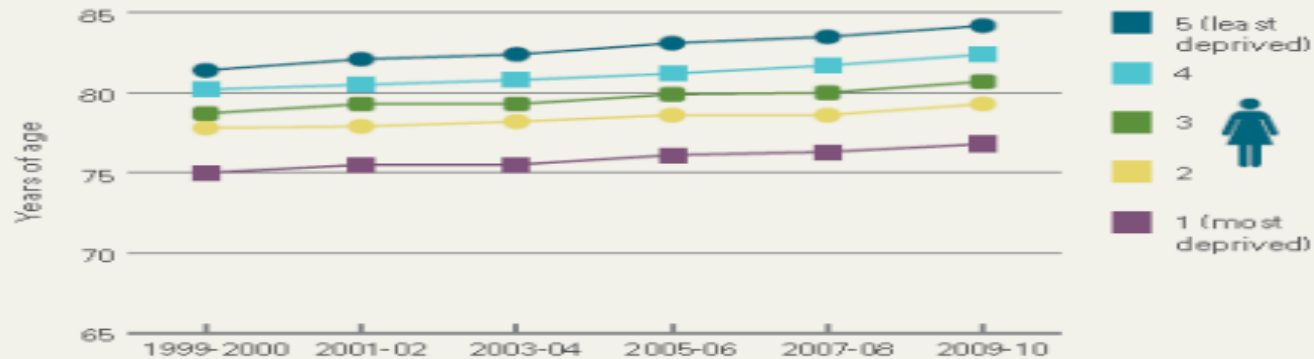
- drugs/alcohol/
- violence/ self-harm

(i.e. conditions related to mental health & strongly influenced by local “culture”/social env’t) – seen initially in males, then in females 10 years later – “Two Scottish paupers’ graveyards (for the young: filling up fast; for the old: stable demand)”

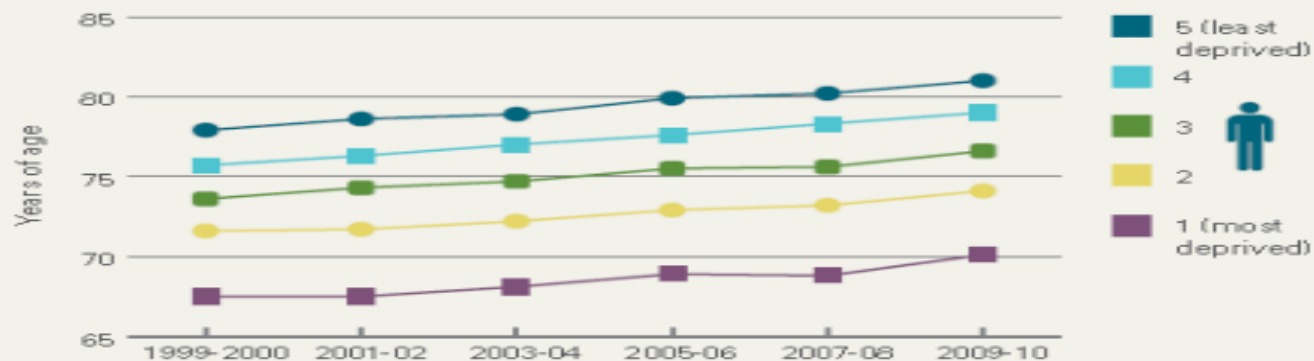


Average life expectancy at birth, 1999-2000 to 2009-10
 Average life expectancy has increased but people in the least deprived areas still live longer than people living in the most deprived areas, and the gap has increased for women.

Females



Males

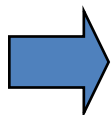


Life expectancy in Scotland
 (By post-codes' Scottish Index of Deprivation) Source: Audit Scotland

Cited in Scottish Parliament Report of the Health and Sport Committee, Jan. 5, 2015, 1st Report, Session 4: SP Paper 637

How Do Scotland's Inequalities Compare to the EU's When Individually-Assigned SES is Analysed? All-Cause Mortality Results from Scottish Longitudinal Study --

Popham & Boyle, 2010 -- commissioned by SCPHRP: www.scphrp.ac.uk)

SES
"x" = 

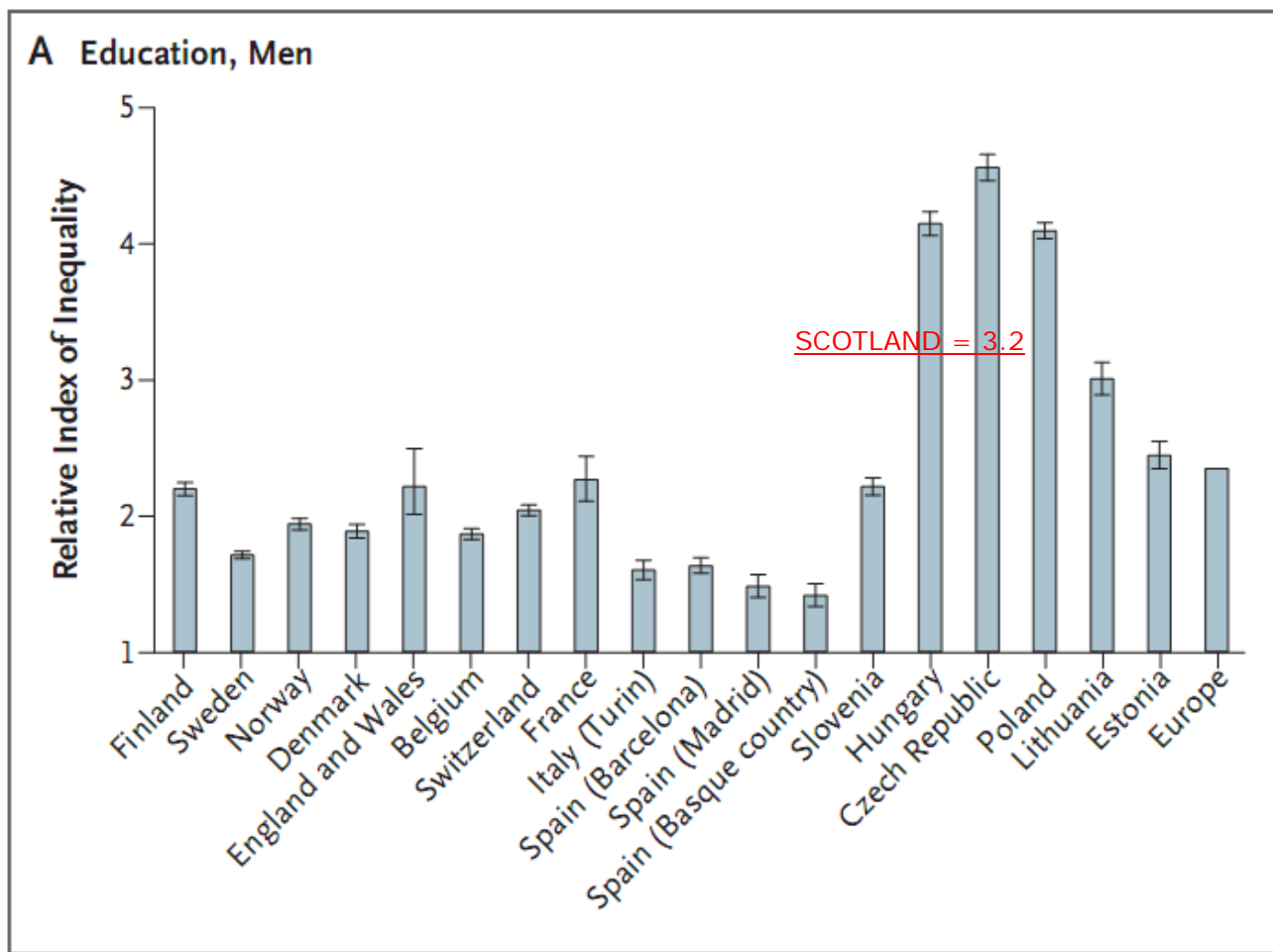
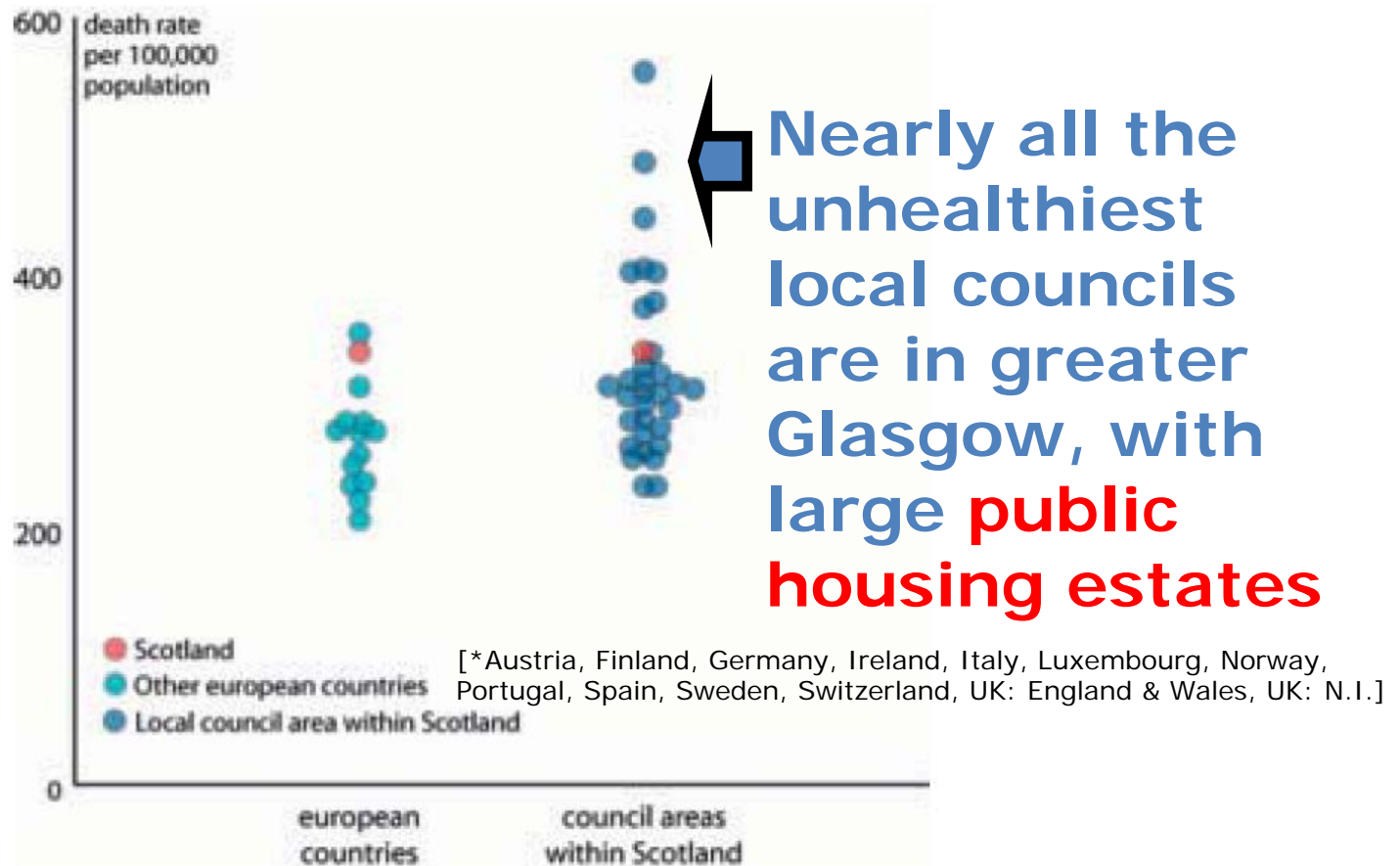


Figure 1 The Scottish education relative index of inequality (red line) for all-cause mortality in men 1991 to 1999 plotted against results for Europe (from Mackenbach *et al.* 2008)

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.

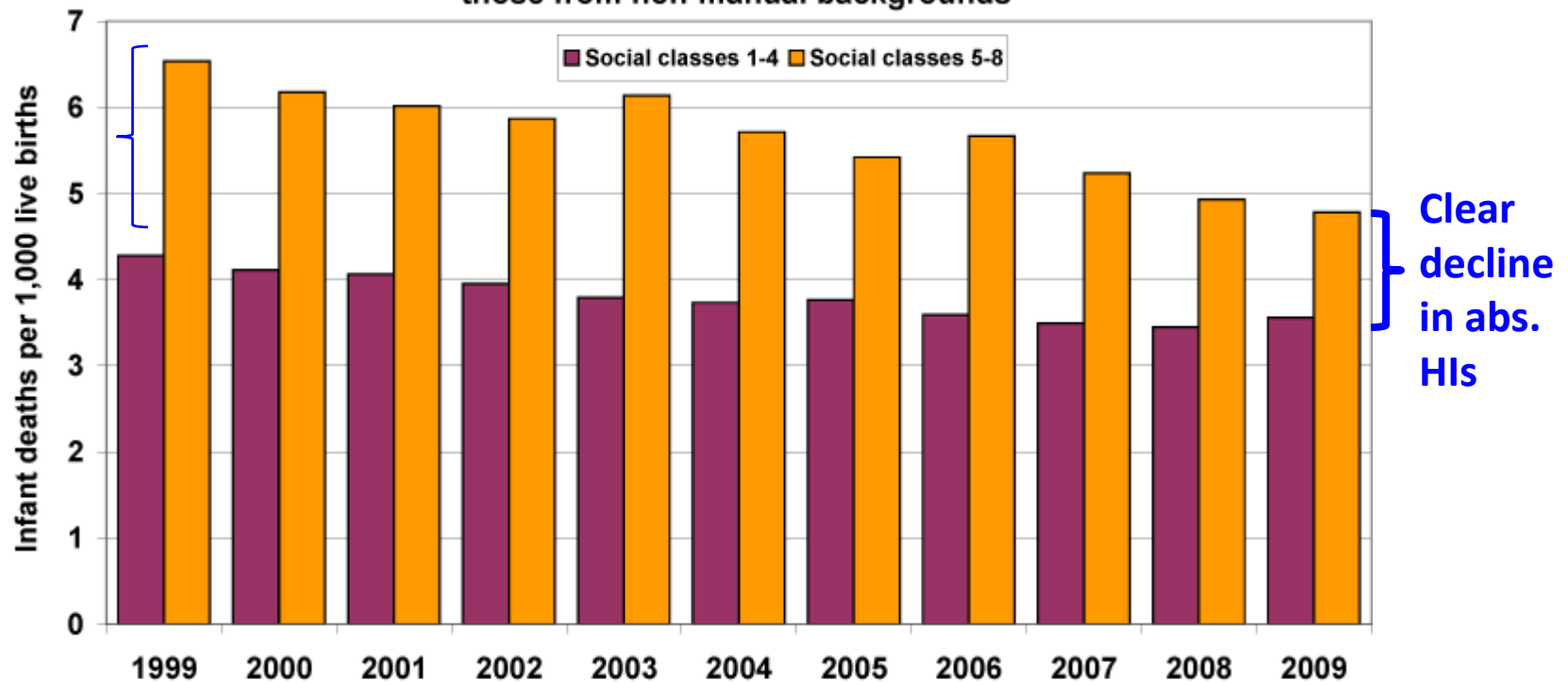
1. INVESTMENTS IN EARLY LIFE

A. UNIVERSALLY ACCESSIBLE (FREE), STRONGLY PROMOTED, AND HIGH-QUALITY FAMILY PLANNING, PRE- AND PERI-NATAL CARE (INCLUDING EFFECTIVE BREAST FEEDING PROMOTION AND SUPPORT)

SCOTLAND HAS ACHIEVED WORLD-CLASS LEVELS OF EARLY LIFE MORTALITY, BUT LAGS BEHIND ON ITS SES INEQUALITIES, BREAST-FEEDING RATES AND THE DRIVERS OF LOW-BIRTHWEIGHT (ESPECIALLY PREMATURITY) --- WITH ONE IMPORTANT POSITIVE EXCEPTION...

England and Wales: Infant Mortality Rates by SES, 1999-2009

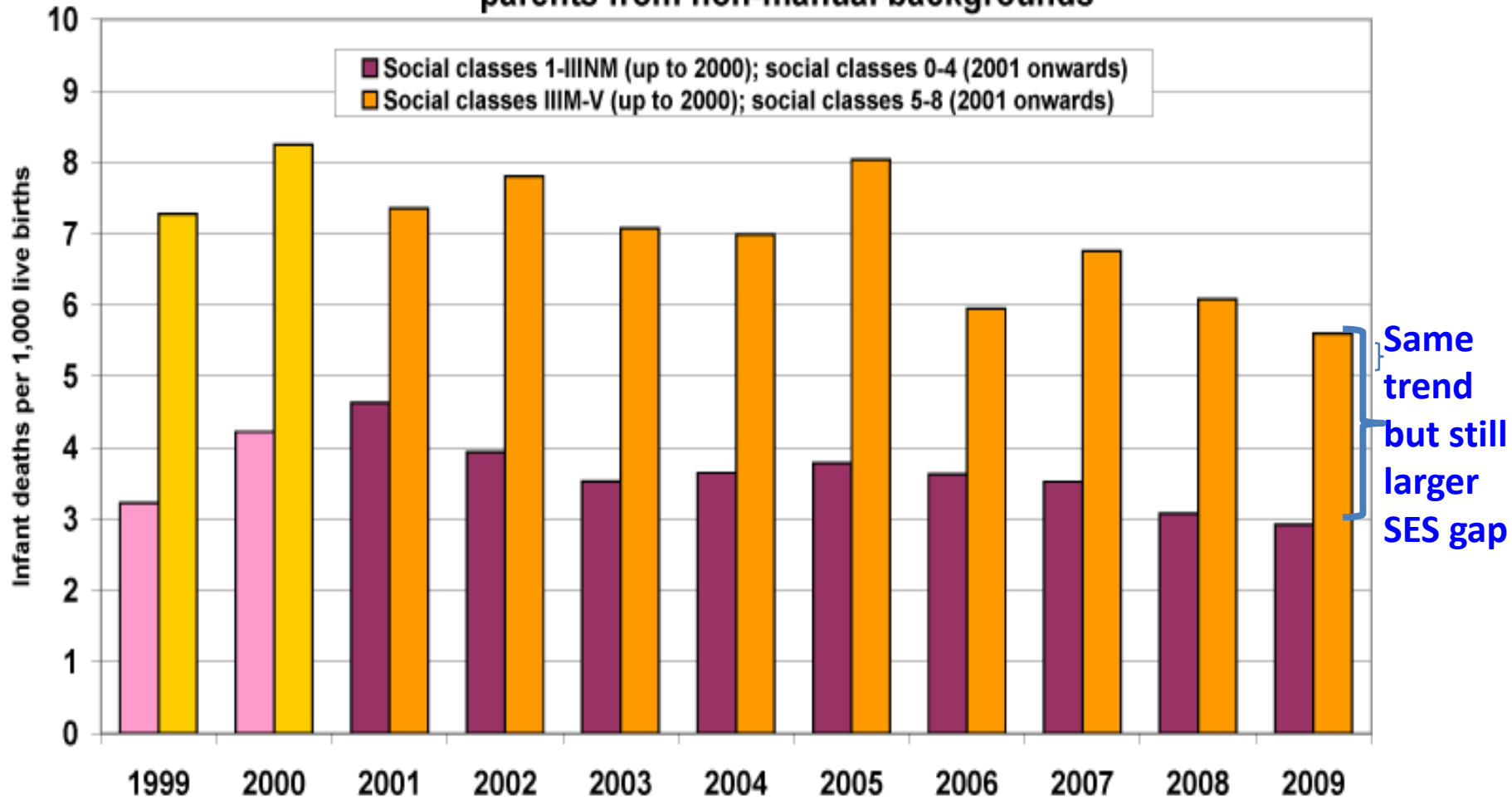
Although down by a fifth on a decade ago, infant deaths are still 35% more common among those from manual backgrounds than among those from non-manual backgrounds



Source: Child mortality statistics, ONS; England & Wales; updated Mar 2011

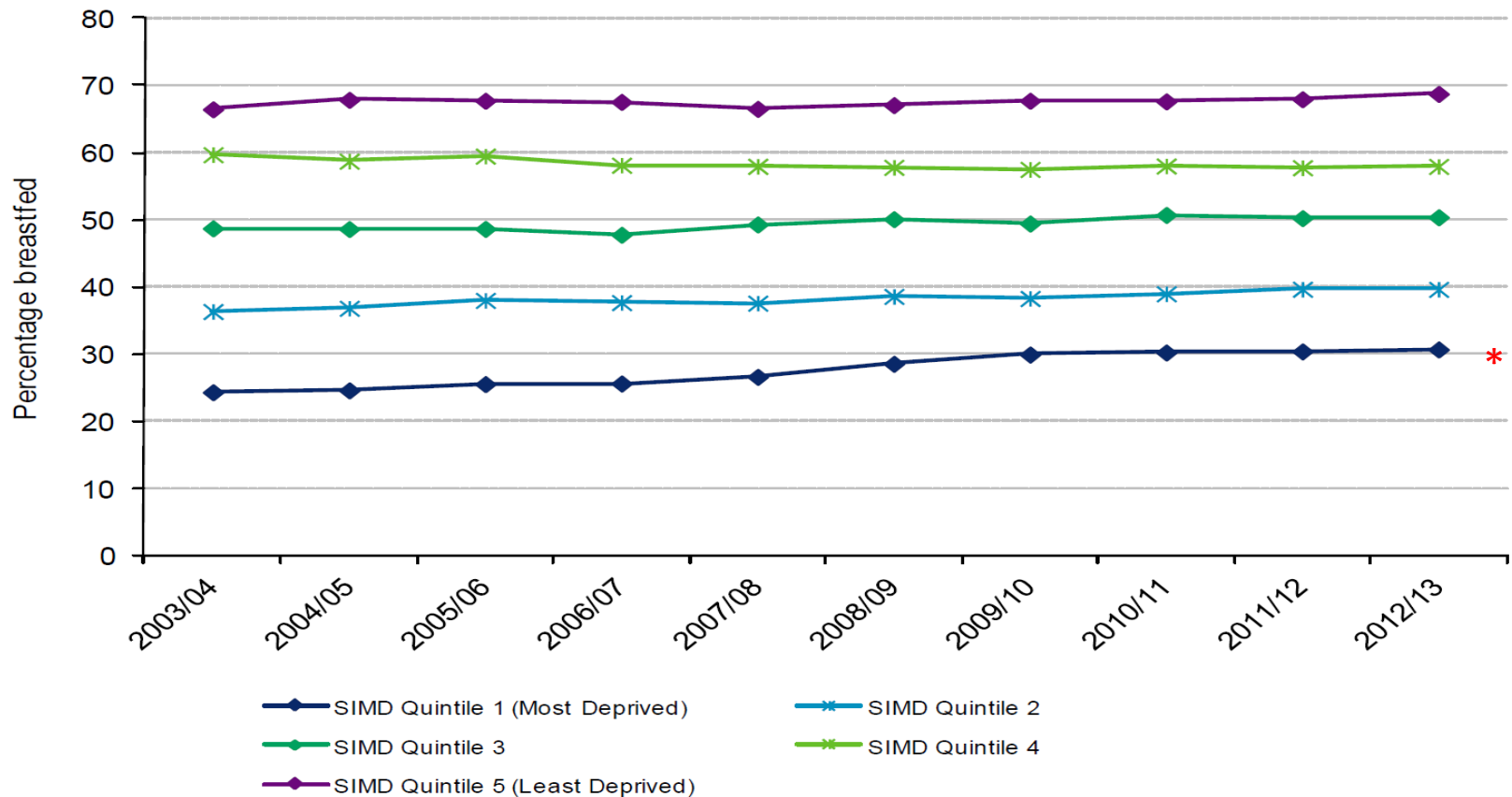
Scotland: Infant Mortality Rates by SES, 1999-2009

Children born to parents from manual backgrounds are around twice as likely to die in their first year of life as those born to parents from non-manual backgrounds



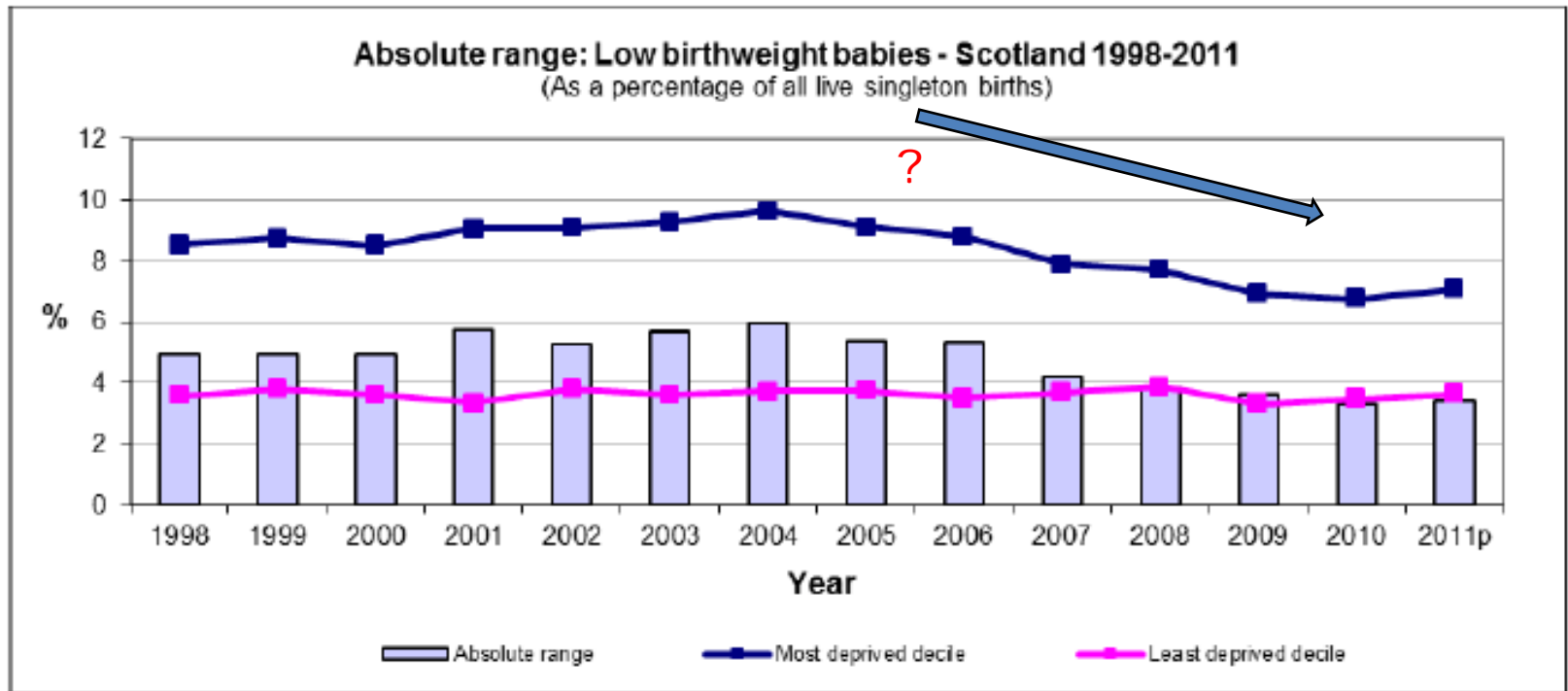
Source: General Registrar Office for Scotland; updated Aug 2010

Any Breastfeeding (at the 6-8 wk Health Visitor review) by deprivation in Scotland, 2003-13



Source: Healthcare Improvement Scotland (2013)

The Curious Case of Recent LBW Trends in Scotland



OVERALL TRENDS **NOT IMPRESSIVE BEFORE 2006—
INTERNAT'LY TYPICAL – PTB RATES VERY HARD TO
SO... WHAT HAPPENED IN SCOTLAND IN 2006?**

Source: Annual Report of the CMO, Scotland. The Scottish Government & NHS Scotland, Edinburgh. 2013.

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

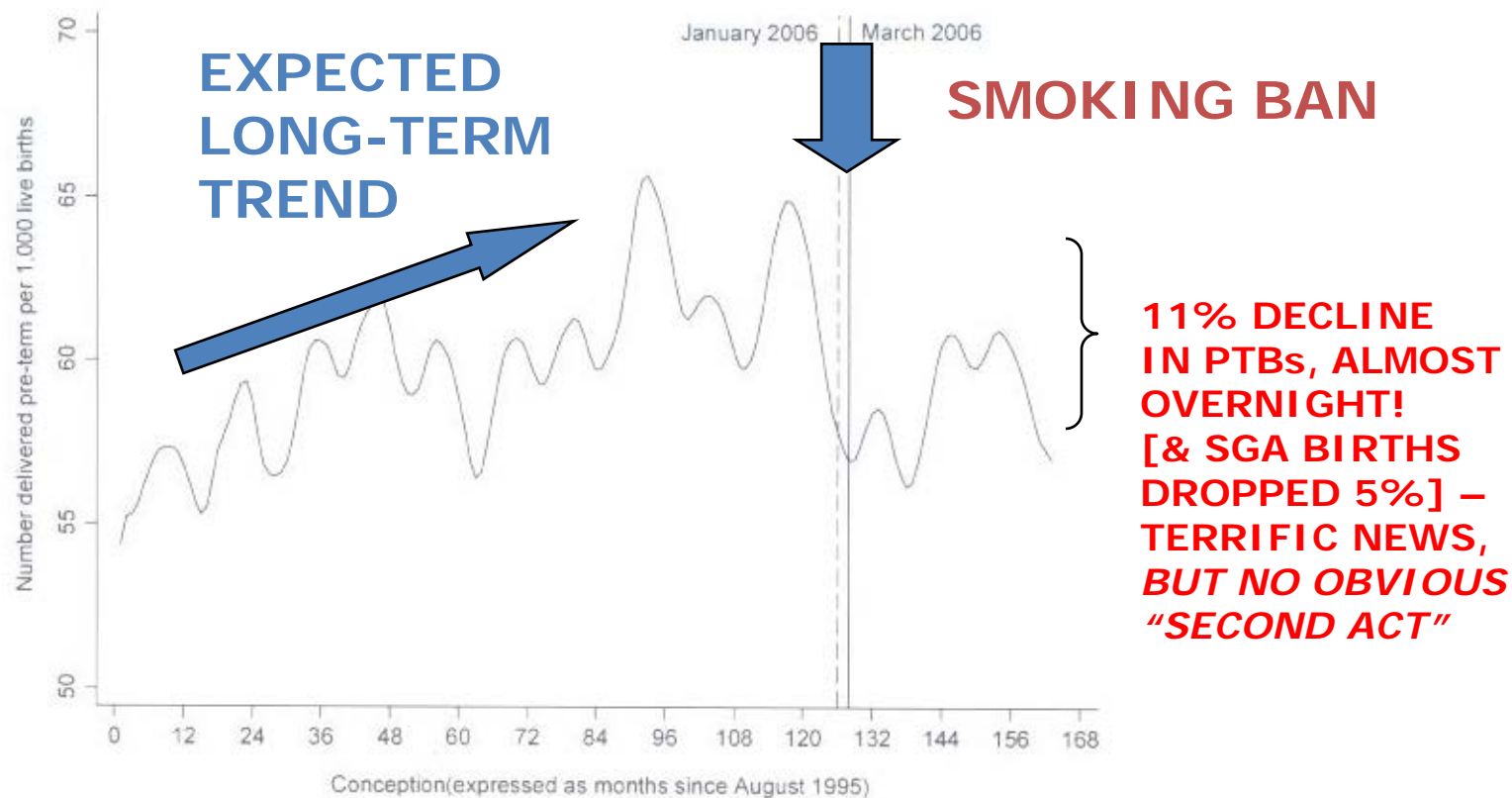


Figure 1. Time trend in the number of infants delivered preterm per 1,000 live births. Time trend smoothed using the Stata loess smoother with bandwidth = 0.1.
doi:10.1371/journal.pmed.1001175.g001



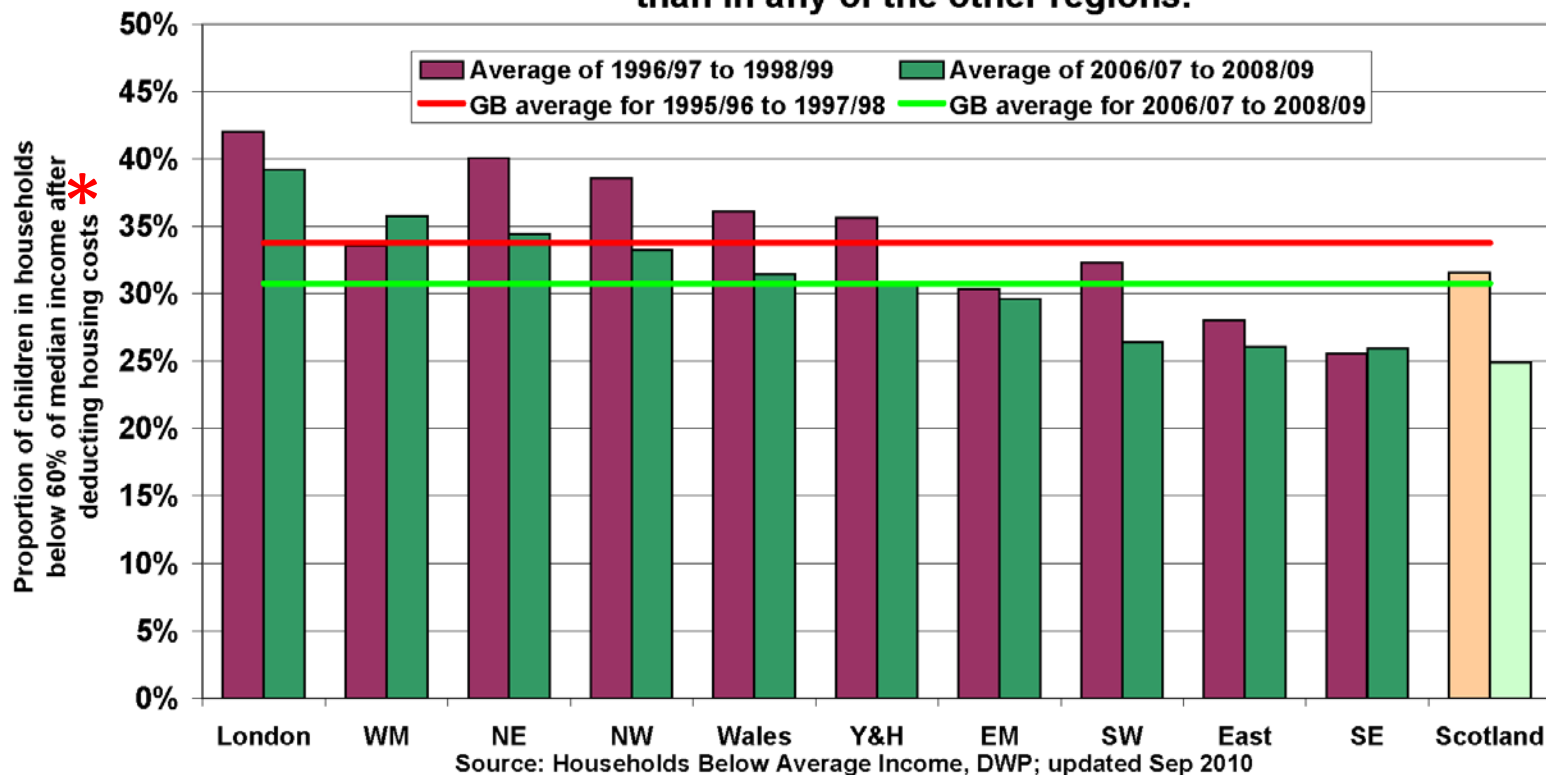
1. INVESTMENTS IN EARLY LIFE (CONT'D)

B. LABOUR MARKET, TAX AND TRANSFER (E.G. PARENTAL LEAVE) POLICIES TO *LIFT ALL PARENTS OF YOUNG CHILDREN OUT OF POVERTY... THIS IS A FEASIBLE POLICY-CHOICE IN MANY NATIONS... ESPECIALLY THOSE WITH LOW CRUDE BIRTH RATES*

SCOTLAND, UNDER UK-LED TAX AND BENEFITS POLICIES, SAW CHILD POVERTY RATES FALL BEFORE 2008, BUT THERE IS AN ARTEFACT -- AND THEY COULD/SHOULD BE MUCH LOWER!

Scotland's child poverty, compared to other regions of the UK

The proportion of children in low-income households in Scotland is now lower than in any of the other regions of Great Britain. This is because the falls over the last decade have been greater in Scotland than in any of the other regions.



- The removal of housing costs “biases” these rates against England

PART 1

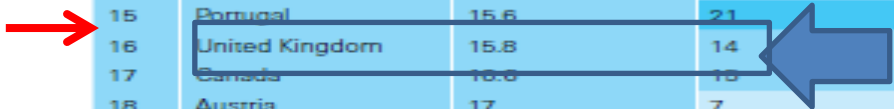
A LEAGUE TABLE OF CHILD WELL-BEING

[Source: UNICEF Innocenti Report, April 2013]

The table below ranks 29 developed countries according to the overall well-being of their children. Each country's overall rank is based on its average ranking for the five dimensions of child well-being considered in this review.

A light blue background indicates a place in the top third of the table, mid blue denotes the middle third, and dark blue the bottom third.

		Overall well-being	Dimension 1	Dimension 2	Dimension 3	Dimension 4	Dimension 5
		Average rank (all 5 dimensions)	Material well-being (child poverty) (rank)	Health and safety (rank)	Education (rank)	Behaviours and risks (rank)	Housing and environment (rank)
1	Netherlands	2.4	1	5	1	1	4
2	Norway	4.6	3	7	6	4	3
3	Iceland	5	4	1	10	3	7
4	Finland	5.4	2	3	4	12	6
5	Sweden	6.2	5	2	11	5	8
6	Germany	9	11	12	3	6	13
7	Luxembourg	9.2	6	4	22	9	5
8	Switzerland	9.6	9	11	18	11	1
9	Belgium	11.2	13	13	2	14	14
10	Ireland	11.6	17	15	17	7	2
11	Denmark	11.8	12	23	7	2	15
12	Slovenia	12	8	6	5	21	20
13	France	12.8	10	10	15	13	16
14	Czech Republic	15.2	16	8	12	22	18
15	Portugal	15.6	21	14	18	8	17
16	United Kingdom	15.8	14	16	24	15	10
17	Canada	16.8	15	27	14	16	11
18	Austria	17	7	26	23	17	12
19	Spain	17.6	24	9	26	20	9
20	Hungary	18.4	18	20	8	24	22
21	Poland	18.8	22	18	9	19	26
22	Italy	19.2	23	17	25	10	21
23	Estonia	20.8	19	22	13	26	24
23	Slovakia	20.8	25	21	21	18	19
25	Greece	23.4	20	19	28	25	25
26	United States	24.8	26	25	27	23	23
27	Lithuania	25.2	27	24	19	29	27
28	Latvia	26.4	28	28	20	28	28
29	Romania	28.6	29	29	29	27	29

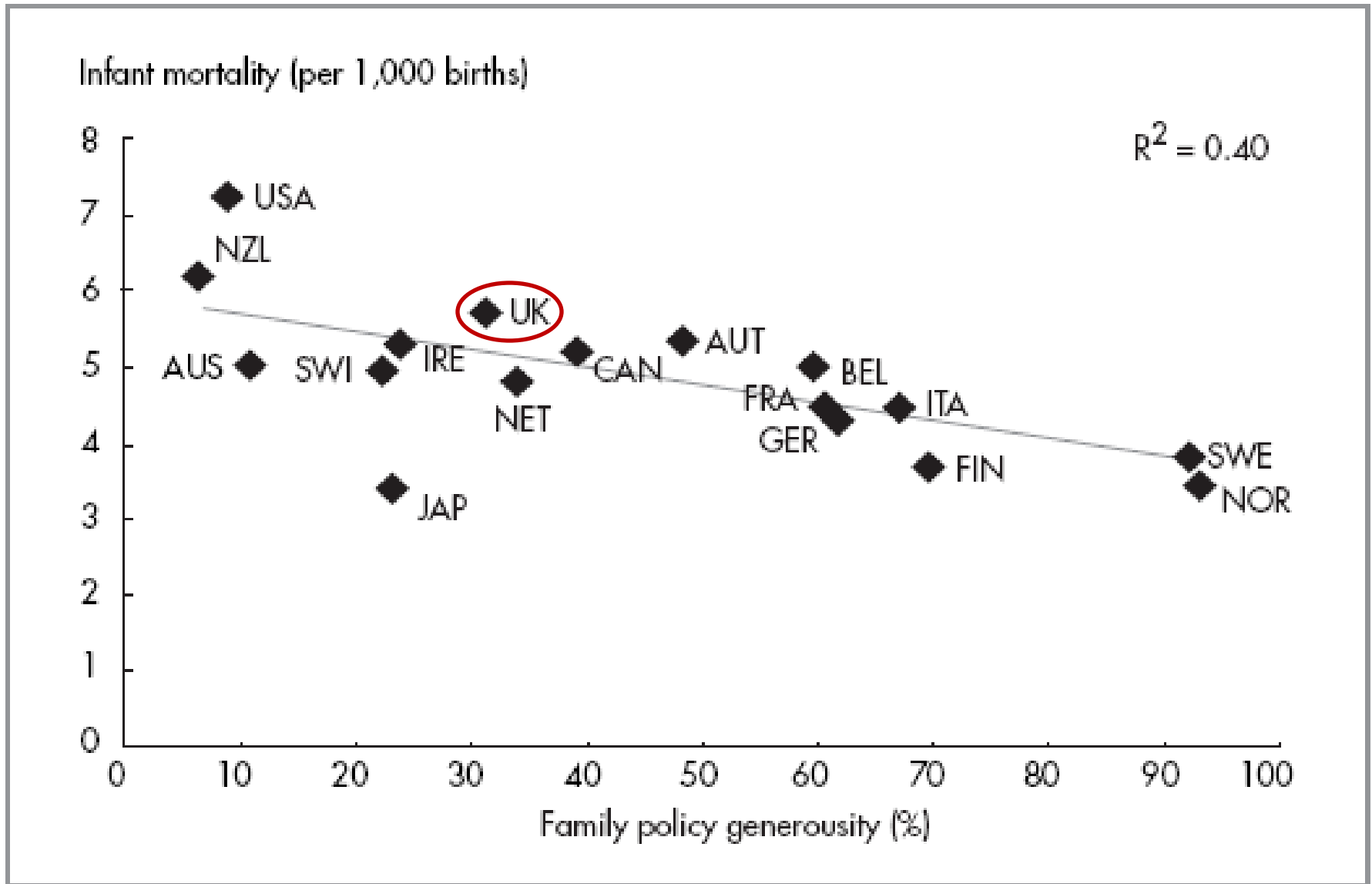


Lack of data on a number of indicators means that the following countries, although OECD and/or EU members, could not be included in the league table of child well-being: Australia, Bulgaria, Chile, Cyprus, Israel, Japan, Malta, Mexico, New Zealand, the Republic of Korea, and Turkey.

Rank	Country	Income	Education	Health	Life satisfaction	M
1	Denmark	4	8	5	3	0
2–	Finland	3	16	6	11	0
2–	Norway	1	23	4	8	0
2–	Switzerland	6	20	3	7	0
5	Austria	11	21	1	9	0
6	Netherlands	8	30	8	1	0
7	Ireland	10	9	20	13	0
8	Estonia	28	3	13	10	0
9	Slovenia	19	11	16	12	0
10	Latvia	32	4	17	6	0
11	Czech Republic	5	13	9	34	0
12	Croatia	26	5	12	23	0
13	Australia	14	24	27	2	0
14–	Germany	12	28	2	29	0
14–	Greece	38	18	11	4	0
14–	Hungary	21	17	18	15	0
14–	United Kingdom	7	25	19	20	0
18	United States	30	10	14	21	0
19	Portugal	33	19	7	18	0
20	Iceland	2	26	31	19	0
21	Romania	41	2	32	5	0
22	Spain	36	12	10	24	0
23	Sweden	16	29	22	17	0
24	Malta	20		30	14	1
25	Lithuania	27	7	25	27	0
26	Canada	24	14	24	25	0
27	Poland	23	6	33	33	0
28	France	13	35	23	28	0
29–	Belgium	22	36	15	30	0
29–	Luxembourg	9	33	29	32	0
31	Slovakia	25	34	21	26	0
32	Italy	35	22	28	22	0
33	Bulgaria	40	32	26	16	0
34	Turkey	29		34	35	1
35	Japan	37	37	35	31	5

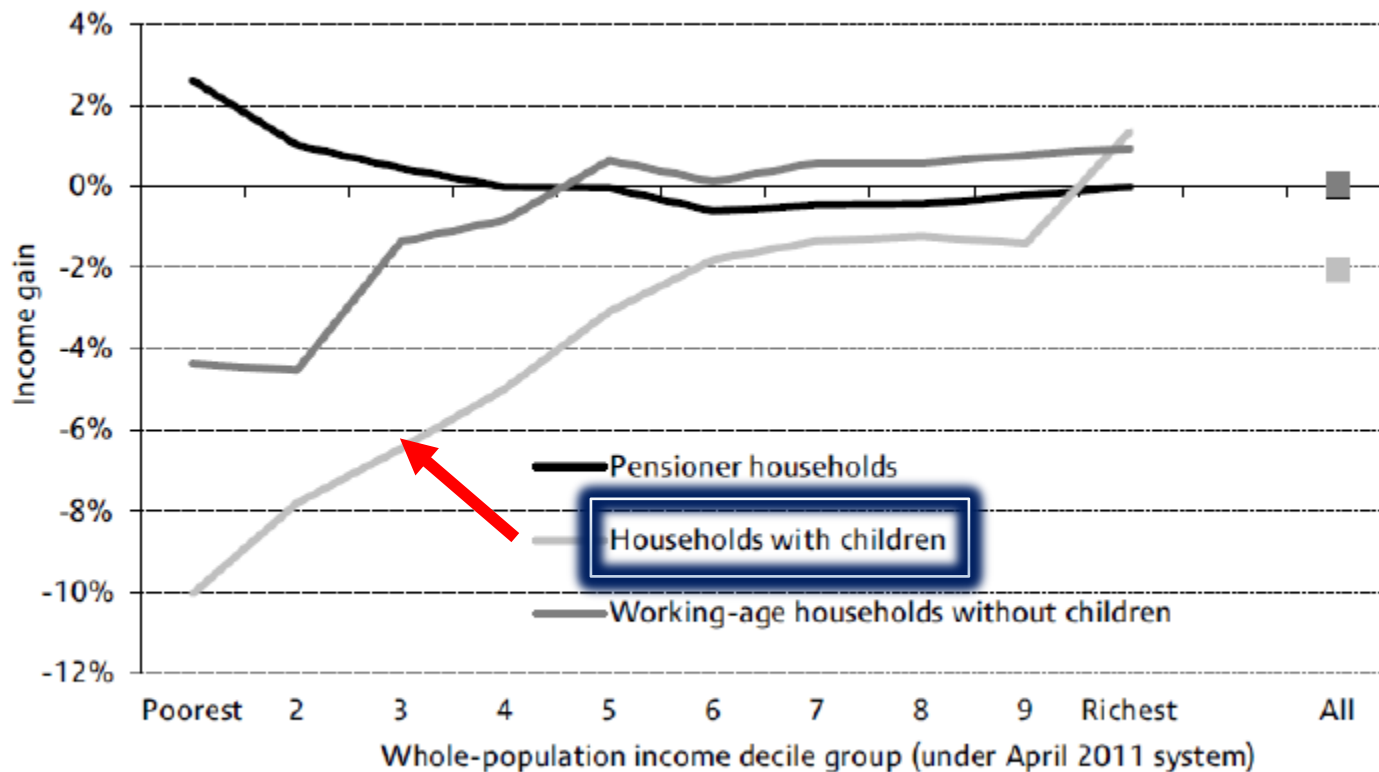
UNICEF Report
card: ranking of
inequality across
different
dimensions
across the OECD
(2013)

Family policy generosity and infant mortality



Source: Lundberg O, 2009

Figure 1: Impact of direct tax and benefit reforms introduced or planned between April 2012 and April 2015 by the UK government



[Source: Cribb et al 2013 [2]]

Cited in Position Statement on ISSOP Position Statement on the impact of austerity on child health and well being of International Society for Social Paediatrics and Child Health (ISSOP): -

http://issop.org/index.php?option=com_phocadownload&view=category&id=2:essop-position-statements&download=236:issop-position-statement_6_on-austerity_2015-07-28.pdf&Itemid=18

1. INVESTMENTS IN EARLY LIFE (CONT'D)

**C. UNIVERSALLY ACCESSIBLE, HIGH-QUALITY, EARLY
CHILDHOOD (AGE 1 TO 2 AND ABOVE)
DEVELOPMENT / EDUCATION
PROGRAMS, LOCATED IN EVERY NEIGHBOURHOOD**

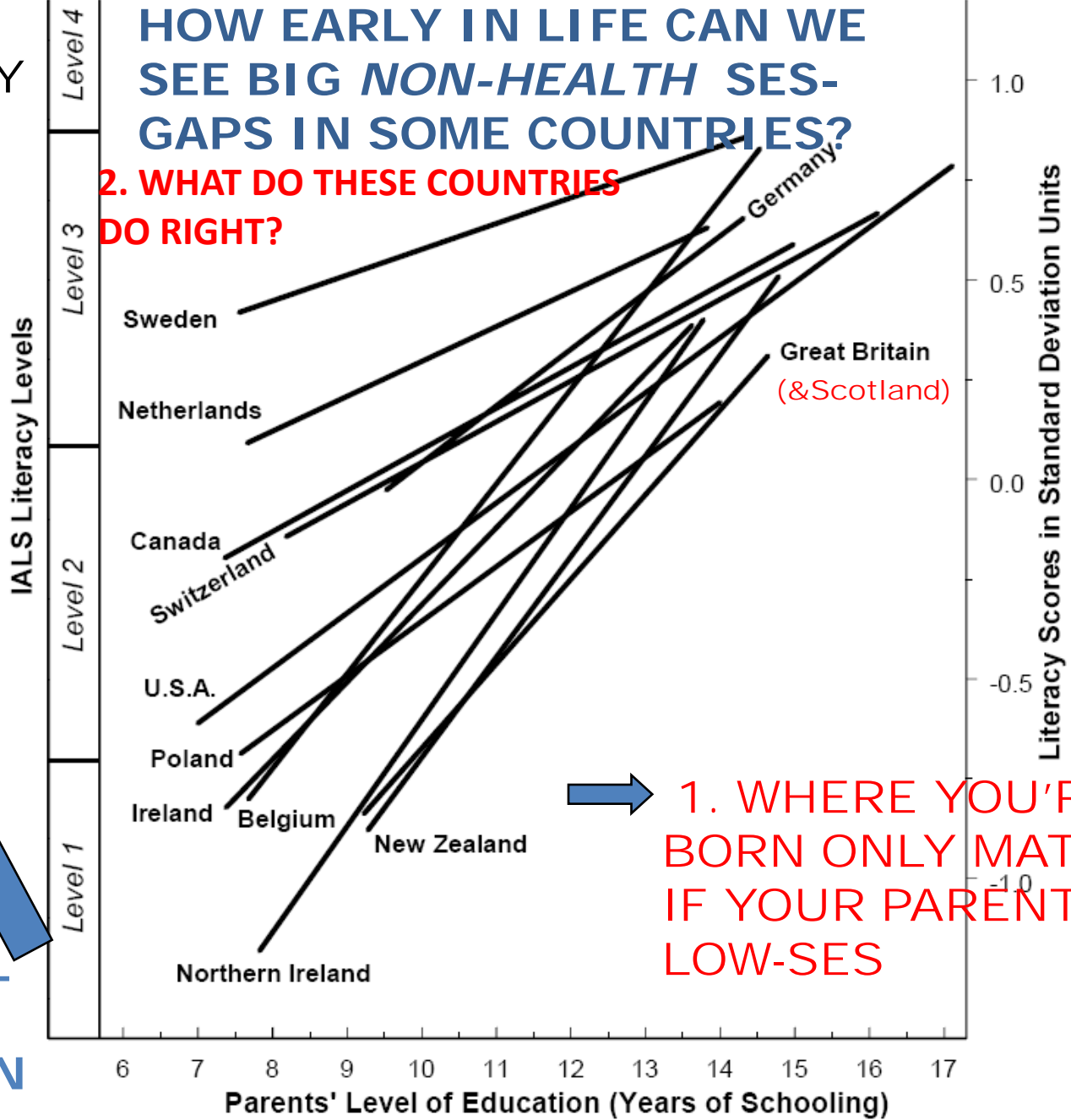
***SCOTLAND HAS TRIED TO RAISE THE BAR ON EARLY
CHILDHOOD EDUCATION, BUT HIGH-QUALITY
PROGRAMMES STILL NOT WIDELY AVAILABLE/
AFFORDABLE, ESPECIALLY BEFORE AGE 4, AND NO
SCOTLAND-WIDE OUTCOME DATA ARE COLLECTED***

SCPHRP EDI PILOT: WOOLFSON ET AL. BMC Pub Hlth 2013; 13:1187

STD'D
LITERACY
TEST
SCORES

HOW EARLY IN LIFE CAN WE SEE BIG NON-HEALTH SES-GAPS IN SOME COUNTRIES?

2. WHAT DO THESE COUNTRIES DO RIGHT?



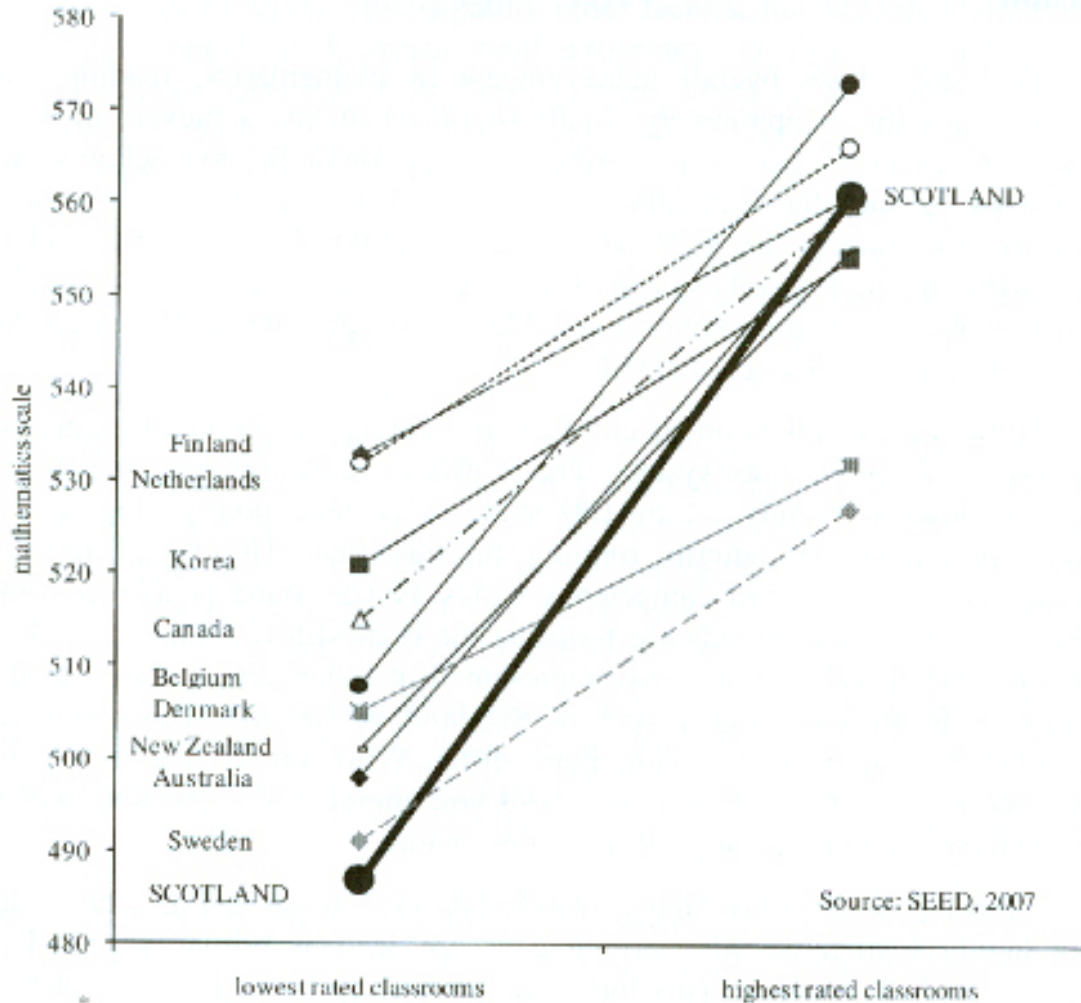
1. WHERE YOU'RE BORN ONLY MATTERS IF YOUR PARENTS ARE LOW-SES

TYPICAL "FAN" PATTERN

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

Differences in best & worst performers (reading)

Figure 3.9 Mean student achievement in best and worst classrooms: comparator nations and Scotland



The steeper the slope, the higher the inequalities in many later outcomes across the lifecycle

Source: SEED, 2007

National

Children should start school at two – Ofsted

Target underachievers in bold move, says Morgan

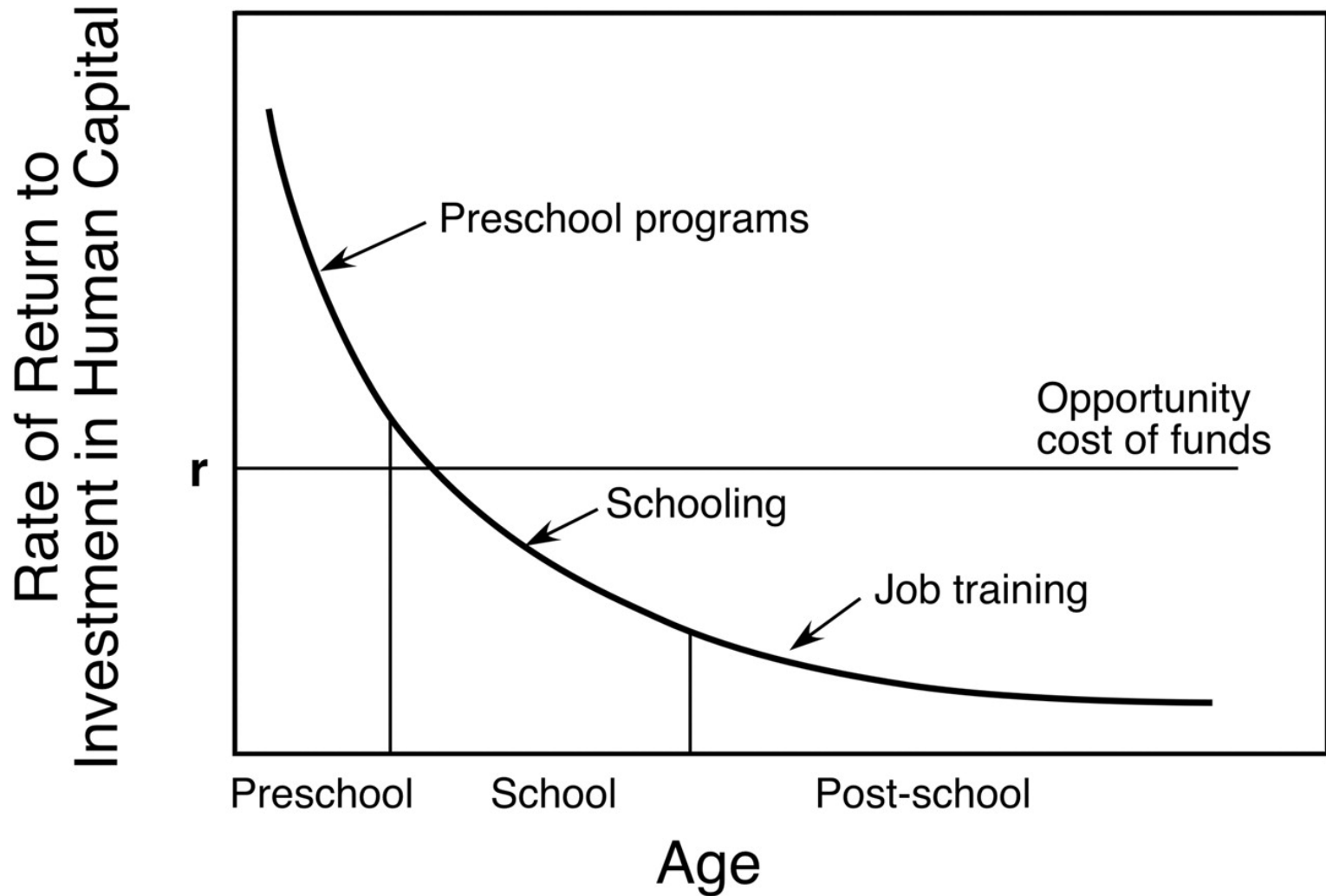
Early start to help children from poorer backgrounds

Richard Adams
Education editor

said, later adding: "I said three to 18, it could be two to 18 as far as I'm concerned."

The comments by Morgan, who became chair of Ofsted in 2011, will fuel controversy about the expansion of schools into supportive roles that were previously the domain of parents. Sir Michael Wilshaw, Ofsted's chief inspector of schools, has previously said that where parents are unable or unwilling to help with their children's education, schools should step in.

RATES OF RETURN TO INVESTMENT IN HUMAN CAPITAL AS FUNCTION OF AGE WHEN THE INVESTMENT WAS INITIATED



1. INVESTMENTS IN EARLY LIFE (CONT'D)

D. SYSTEMATIC SUPPORT (FINANCIAL IF NECESSARY) TO ACHIEVE UNIVERSAL FEMALE & MALE SECONDARY/SUBSEQUENT EDUCATION

SCOTLAND FIRST ACHIEVED THIS FOR PRIMARY EDUCATION OVER 200 YEARS AGO, FAR BEFORE THE REST OF EUROPE, BUT STILL TODAY “NO QUALIFICATIONS” ARE FAR TOO COMMON

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 Are 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.”¹
- “...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.”²

***meaning “who your parents are (and their social class)”**

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.

2. INVESTMENTS IN ALL OF LIFE

- A. ACCESSIBLE, SUSTAINABLE, HIGH-QUALITY AND FREE-AT-POINT-OF-CARE PRIMARY AND SECONDARY HEALTH CARE – WITH STRONG PUBLIC HEALTH SERVICES FOR HEALTH PROMOTION, DISEASE AND INJURY PREVENTION, AND HEALTH PROTECTION.

SCOTTISH NHS IS ARGUABLY “BEST IN UK CLASS,” AT LEAST w.r.t. CLINICAL SERVICES FOR ACUTE/SEVERE PHYSICAL PROBLEMS, ACROSS ALL SES GROUPS; COMPREHENSIVE PREVENTIVE AND CHRONIC CARE SERVICES NOT SO IMPRESSIVE: OVER-RELIANCE ON PHYSICIANS/ UNDER-USE OF NURSE PRACTITIONERS; BUT EQUITY PER SE IS NOT THE NHS’S MAJOR CHALLENGE

COMMONWEALTH FUND 2014 “MIRROR, MIRROR..”REPORT



*

2. INVESTMENTS IN ALL OF LIFE (CONT'D)

B. STRONG ECONOMIC AND MARKETING CONTROLS ON TOBACCO, ALCOHOL, UNHEALTHY FOODS, GAMBLING, AND SIMILAR HAZARDS

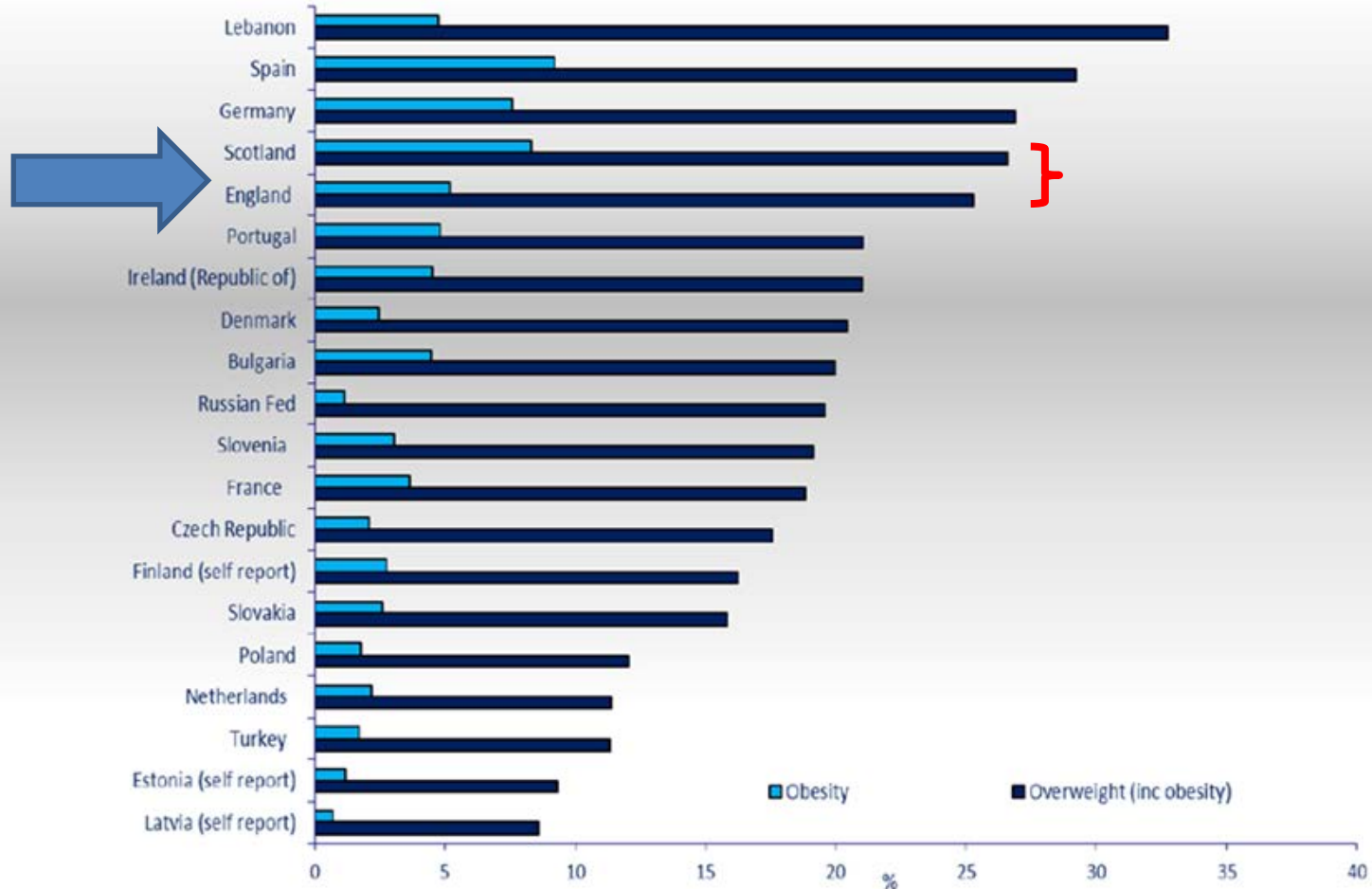
*SCOTLAND HAS DONE BRILLIANTLY ON **TOBACCO** AND TRIED HARD ON **ALCOHOL**, ALTHOUGH THERE IS STILL MUCH TO DO; ON THE DRIVERS OF THE **OBESITY** PANDEMIC, POLICIES SO FAR HAVE BEEN FAR TOO TIMID/ FRAGMENTED TO HAVE MUCH IMPACT*

BUT WOULD THE EU COMMON AGRICULTURAL POLICY AND TRADE AGREEMENTS EVER LET SCOTLAND – OR THE rUK -- DO THE RIGHT THING, IN PUBLIC HEALTH TERMS?

Teenage Overweight Rankings



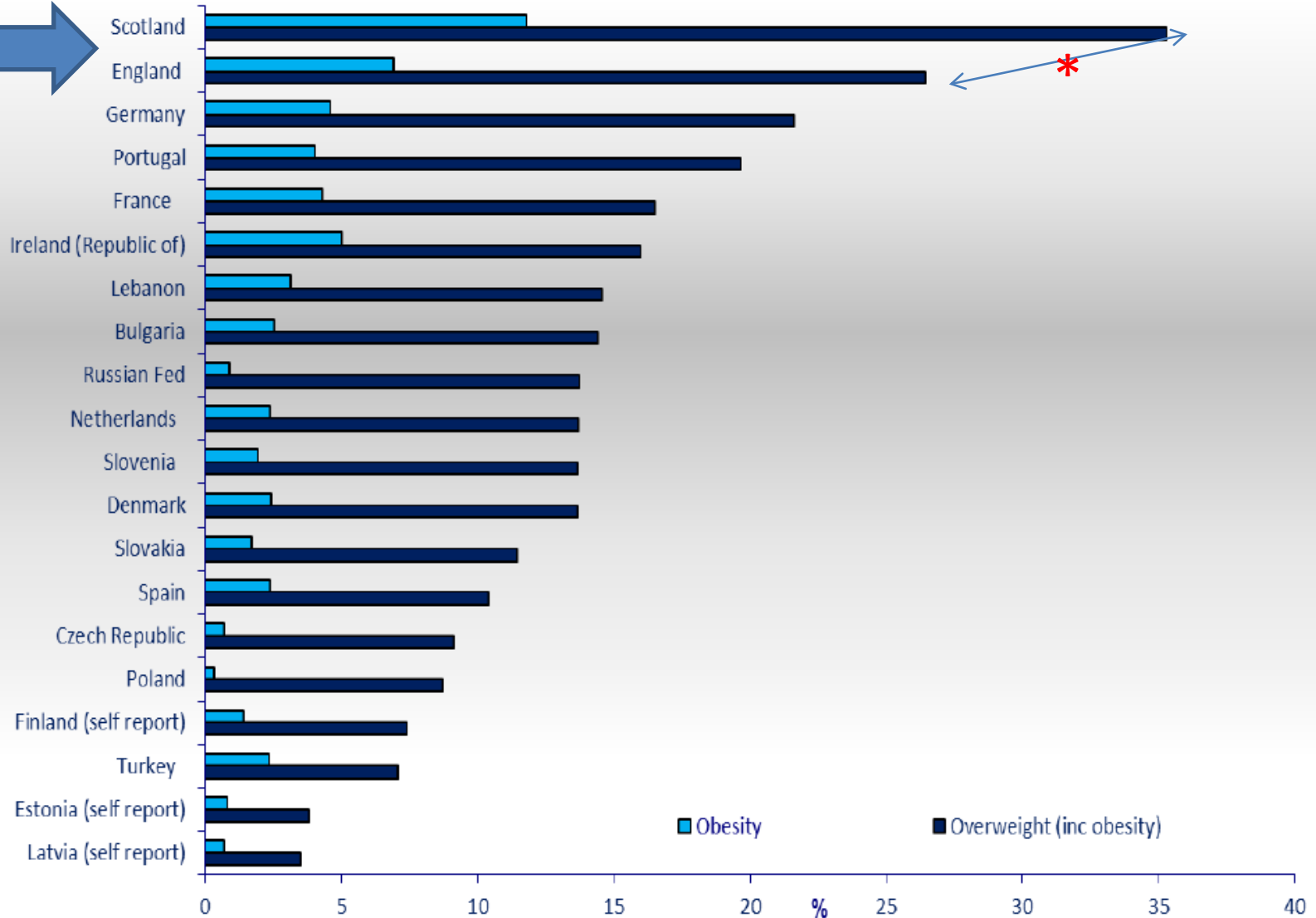
Overweight & Obesity in Post Adolescent European Boys (14-17yrs approx)*



Overweight and obesity defined by IOTF International cut off points. Last update 27th Feb 2012 © London

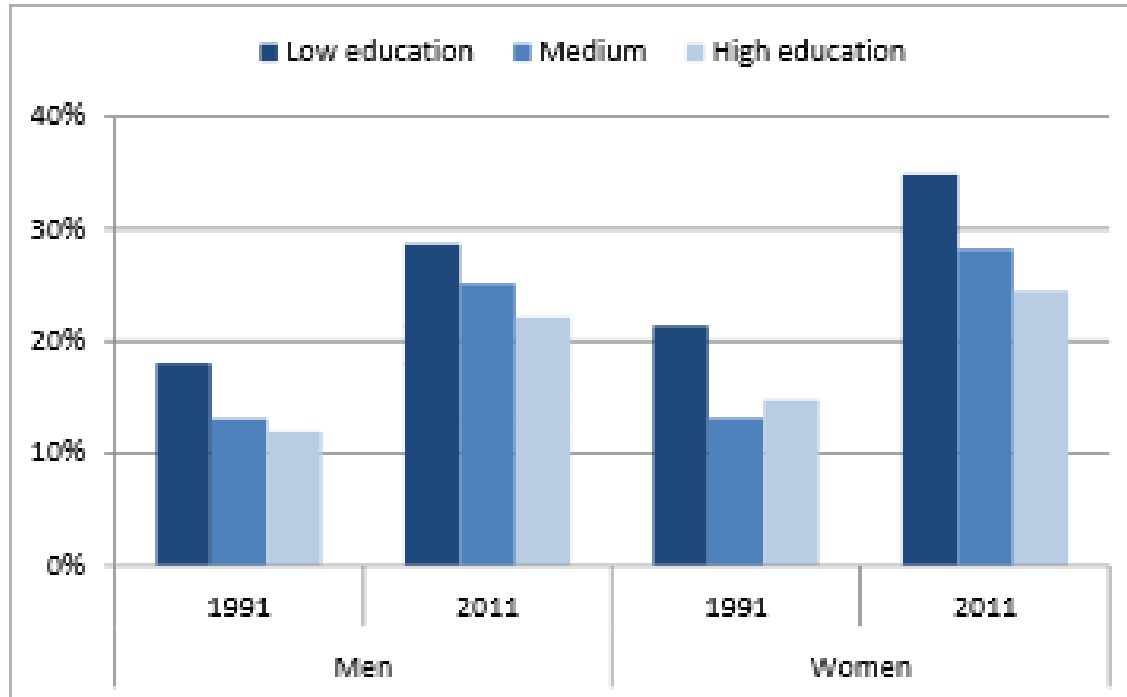


Overweight & Obesity in Post-adolescent (14-17yrs) European Girls



Adult Obesity Prevalence by Education

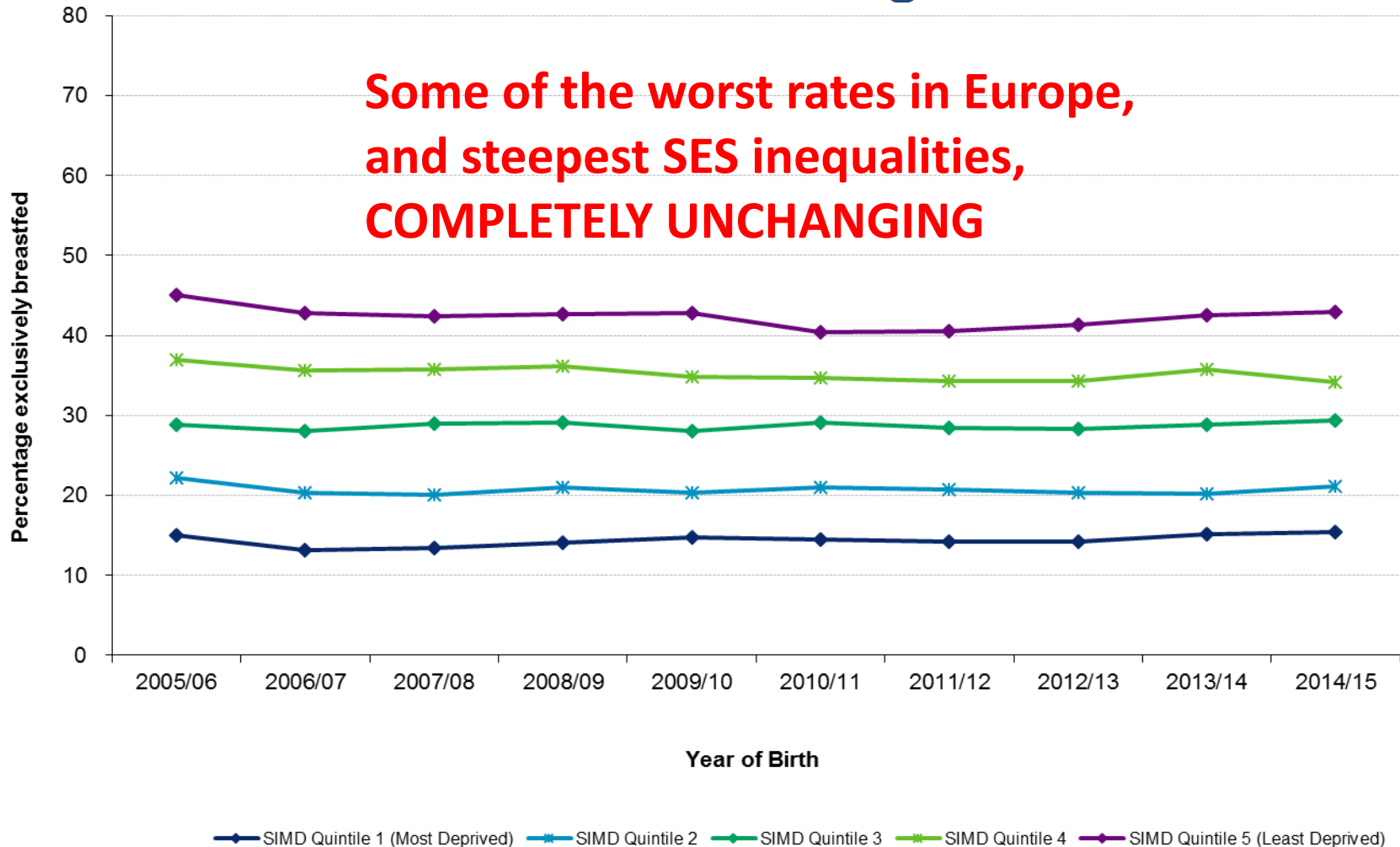
Attained, England, 1991 vs. 2011: **No decline in SES gradient**



SOURCE: <http://www.oecd.org/health/Obesity-Update-2014.pdf>

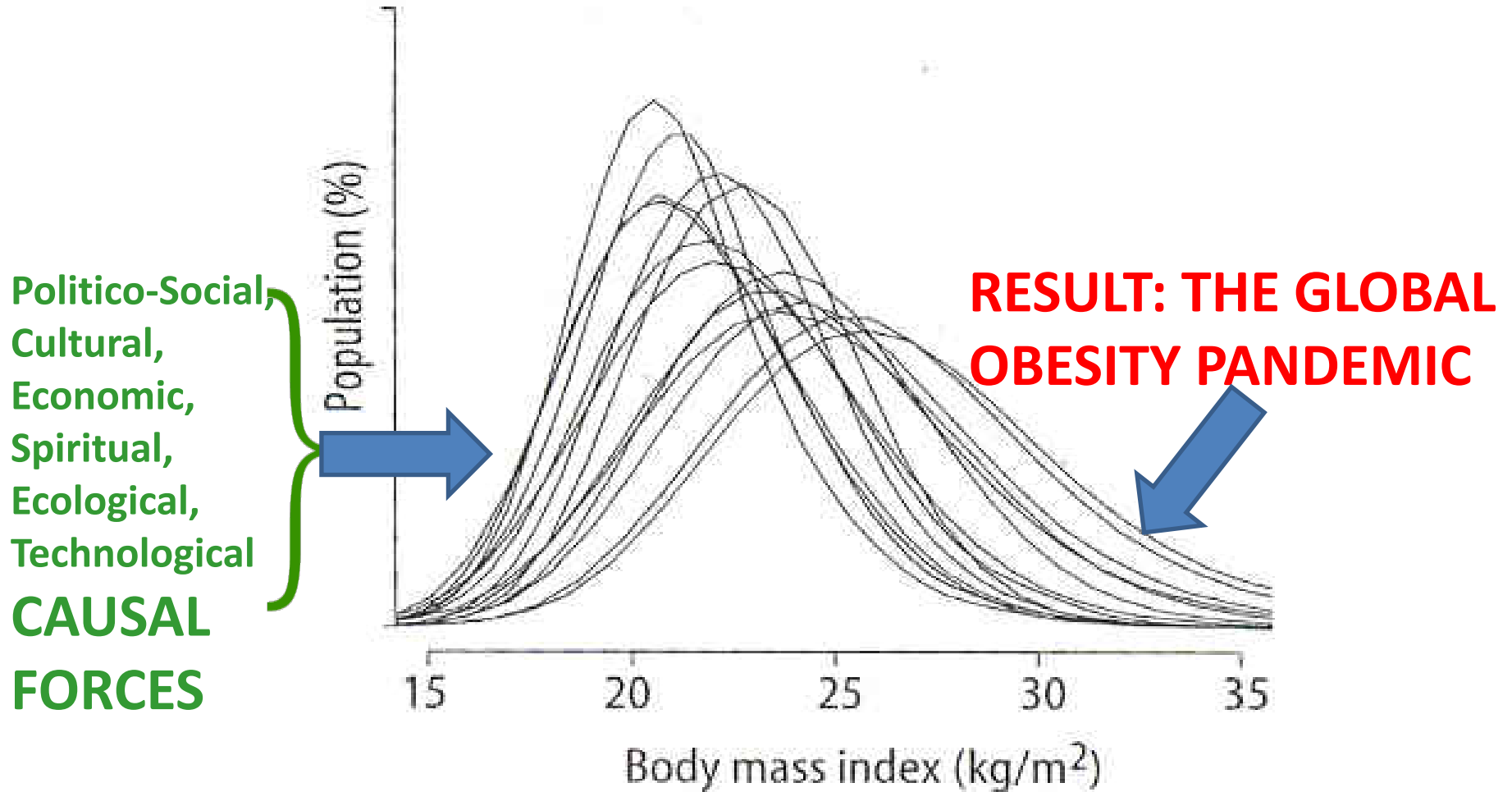
Could this early-life exposure help explain such persistent SES effects on obesity?

Exclusive BF: 6-8 weeks of age in Scotland



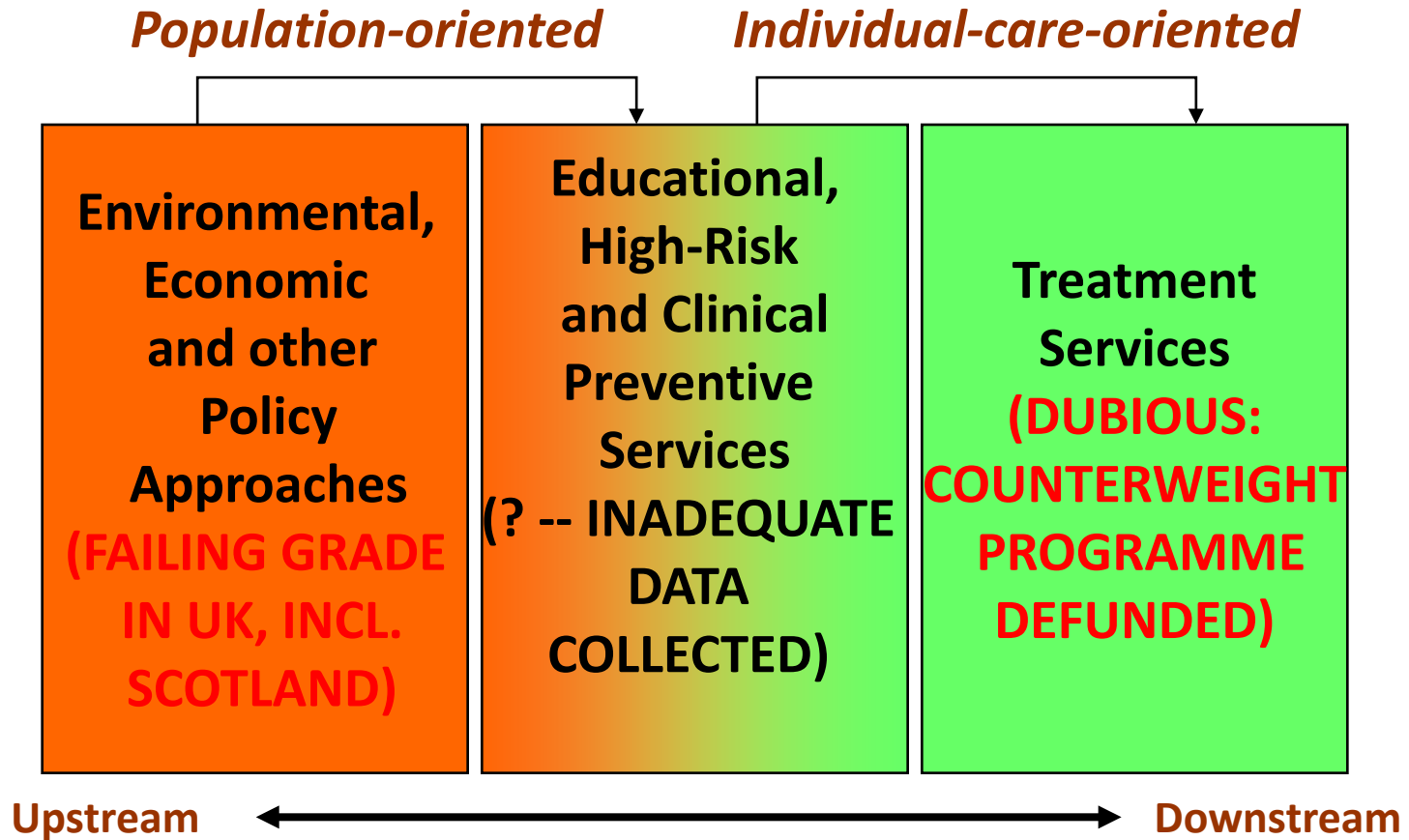
Source: Information Services Division, NSS, Scottish NHS, 2015

The Importance of Upstream Drivers of Risk



Source: The World Health Report : 2002. Reducing Risks, Promoting Healthy Life. Chapter 2, Figure 2.3

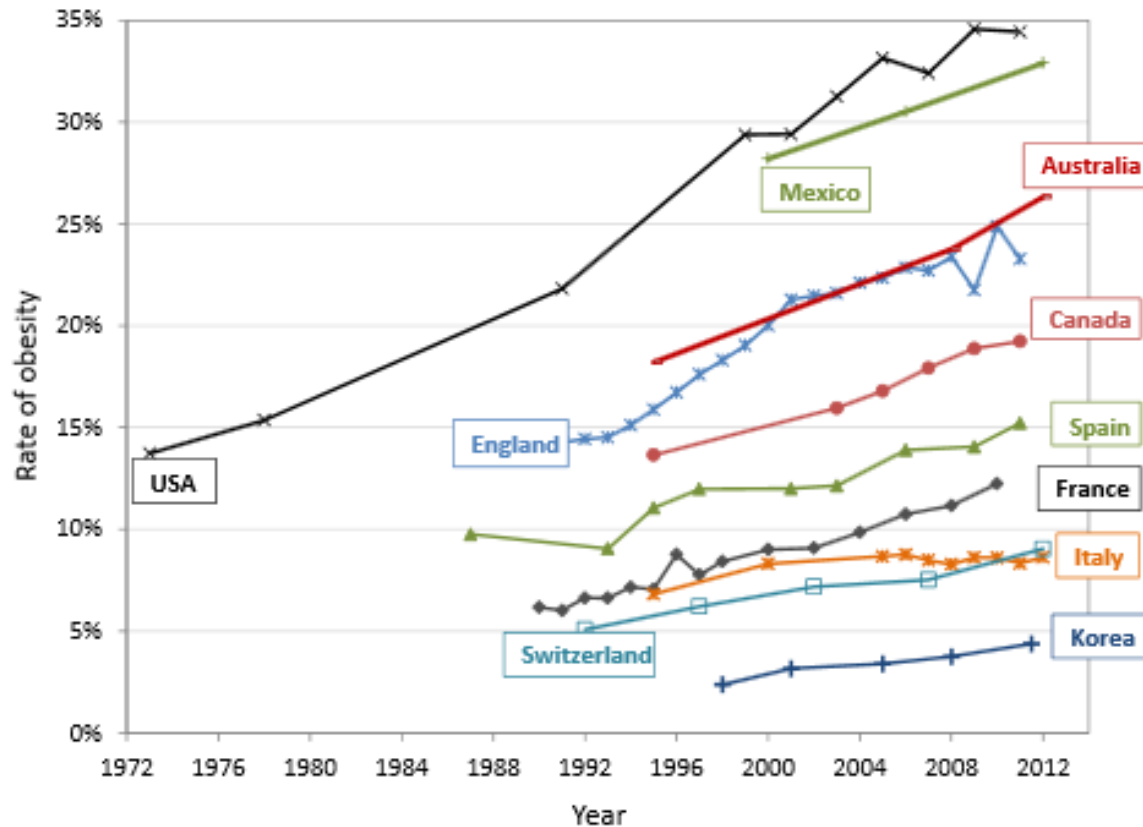
Action on Obesity: Three Complementary Paradigms



Footnote: Obesity Prevalence by Country, 1970s to 2012

A Hypothesis and Proposed Study Design

Figure 2. Obesity rates

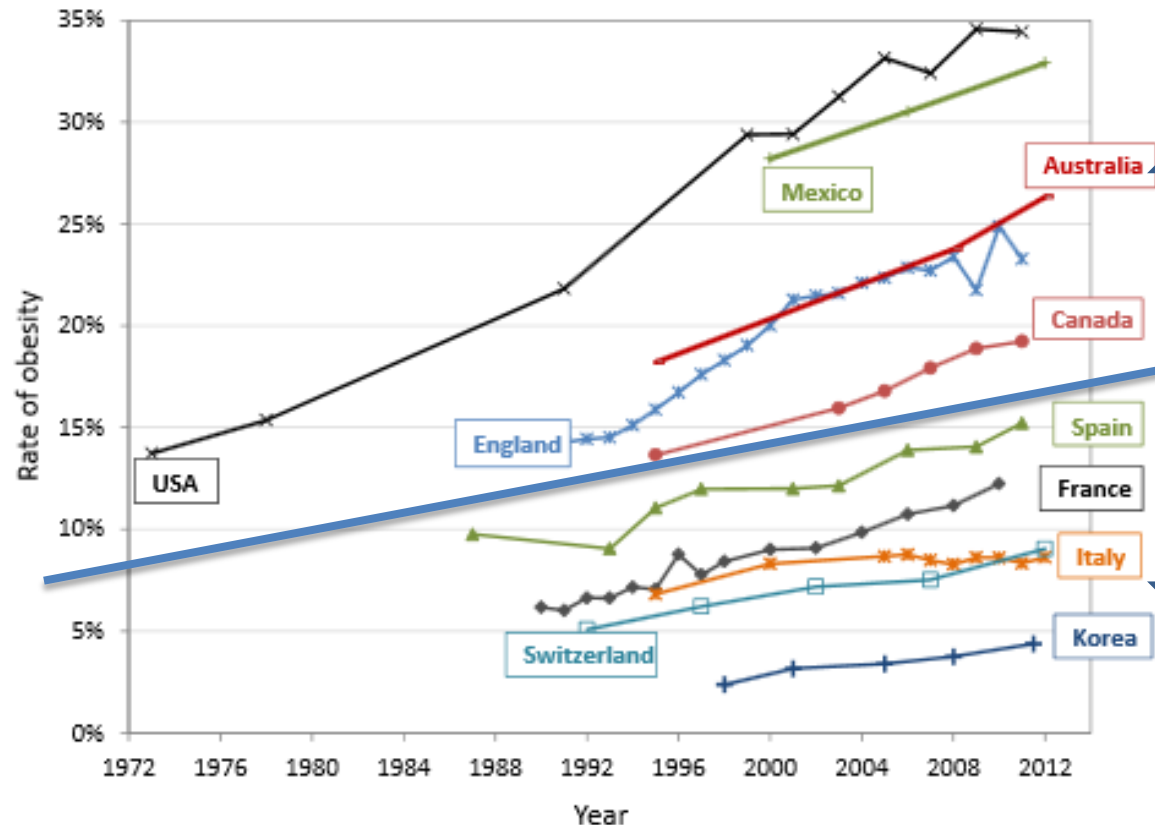


NOTICE ANY
ARCHETYPAL
PATTERNS
HERE?

SOURCE: <http://www.oecd.org/health/Obesity-Update-2014.pdf>

Footnote: Obesity Prevalence by Country, 1970s to 2012 and Proposed Study Design

Figure 2. Obesity rates



Two “cuisine” archetypes of obesity’s “pandemic curve”: a clue to its origins?*

SOURCE: <http://www.oecd.org/health/Obesity-Update-2014.pdf>

*See my “Worldview” commentary in Nature, April 14, 2016

2. INVESTMENTS IN ALL OF LIFE (Final)

**C. GREEN POLICIES FOR SUSTAINABLE AND
EQUITABLE ECONOMIC DEVELOPMENT, INCLUDING
FULL, MEANINGFUL EMPLOYMENT & A
PROGRESSIVE TAX/BENEFITS SYSTEM PROVIDING
ALL WITH AT LEAST A LIVING WAGE**

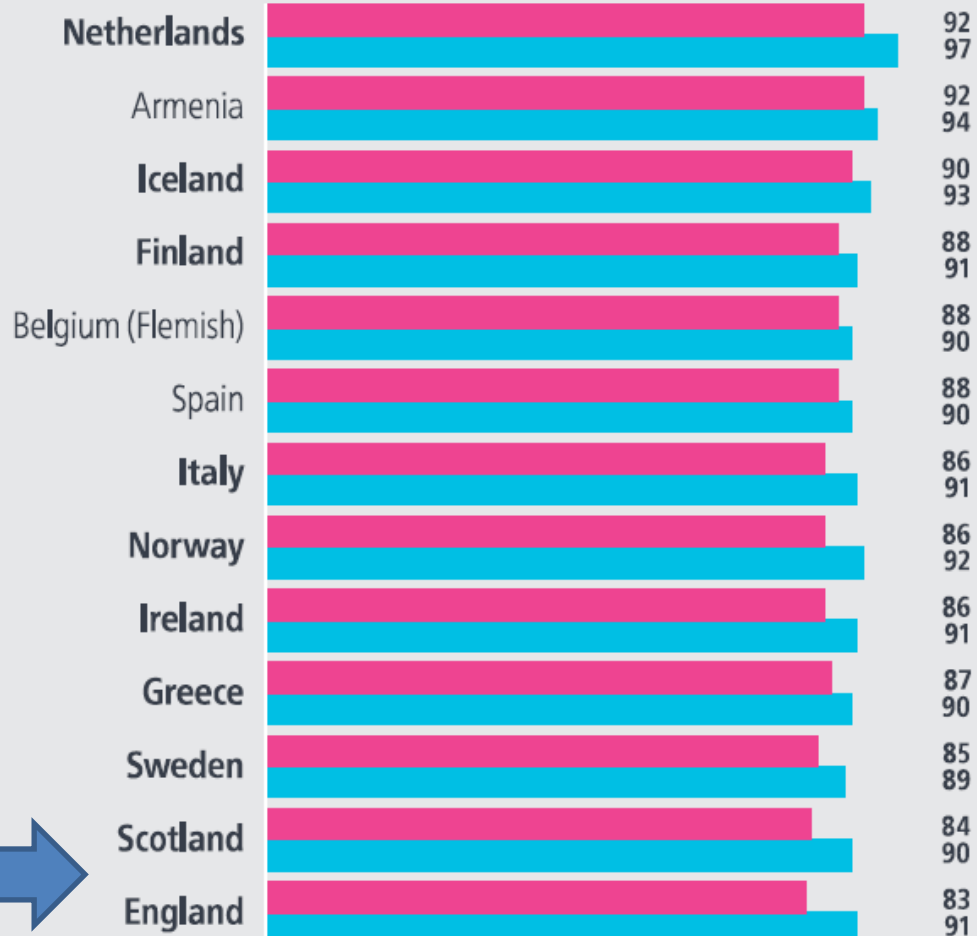
**SCOTLAND HAS AT LEAST ACHIEVED MIDDLING
RANKINGS, AND SMALL INEQUALITIES, FOR
“SATISFACTION WITH LIFE” AMONG EARLY TEENS -
- BUT UK NEET RATES HIGHEST IN OECD, & ADULT
LIFE BRINGS LABOUR MARKET CHALLENGES!**

TEENAGE LIFE SATISFACTION

HBSC survey 2009/2010

13-year-olds who report high life satisfaction

GIRLS (%)
BOYS (%)

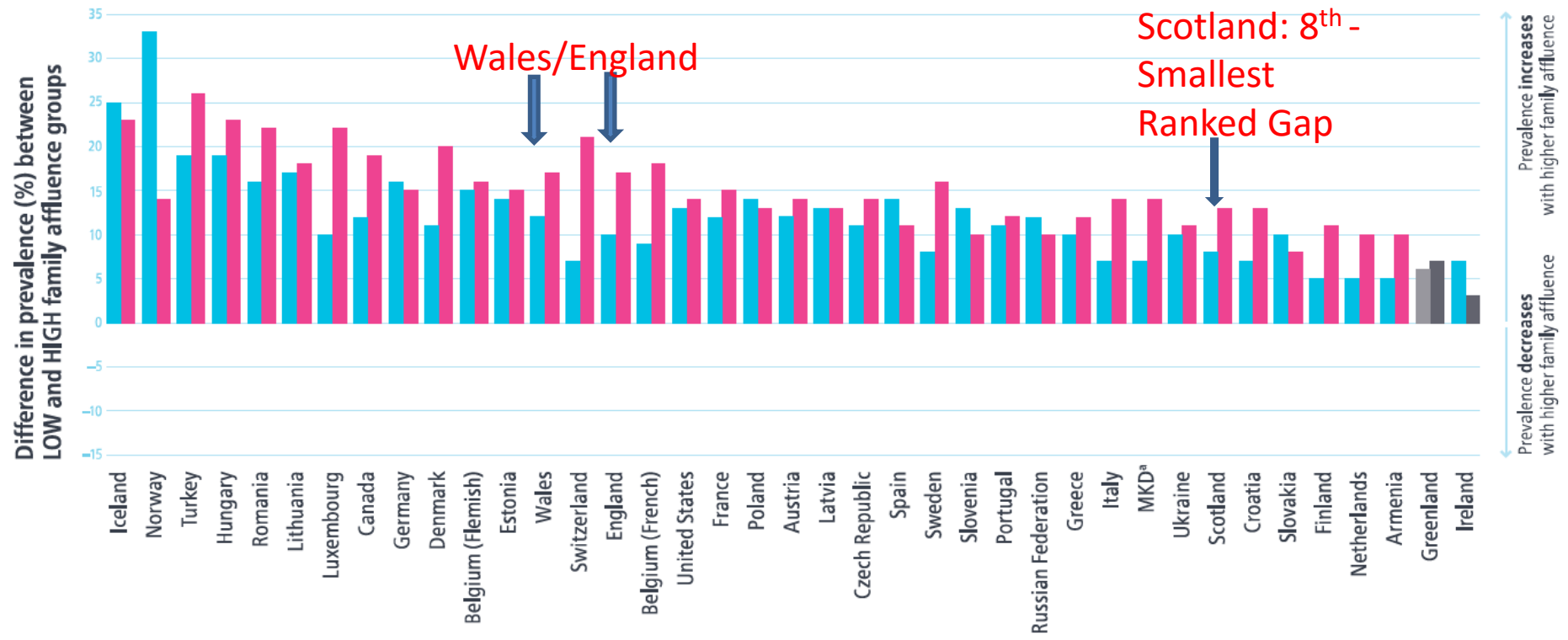


SES INEQUALITIES IN TEENAGE LIFE SATISFACTION

Associations between family affluence and indicators of health, by country/region and gender:
HIGH LIFE SATISFACTION

BOYS
GIRLS

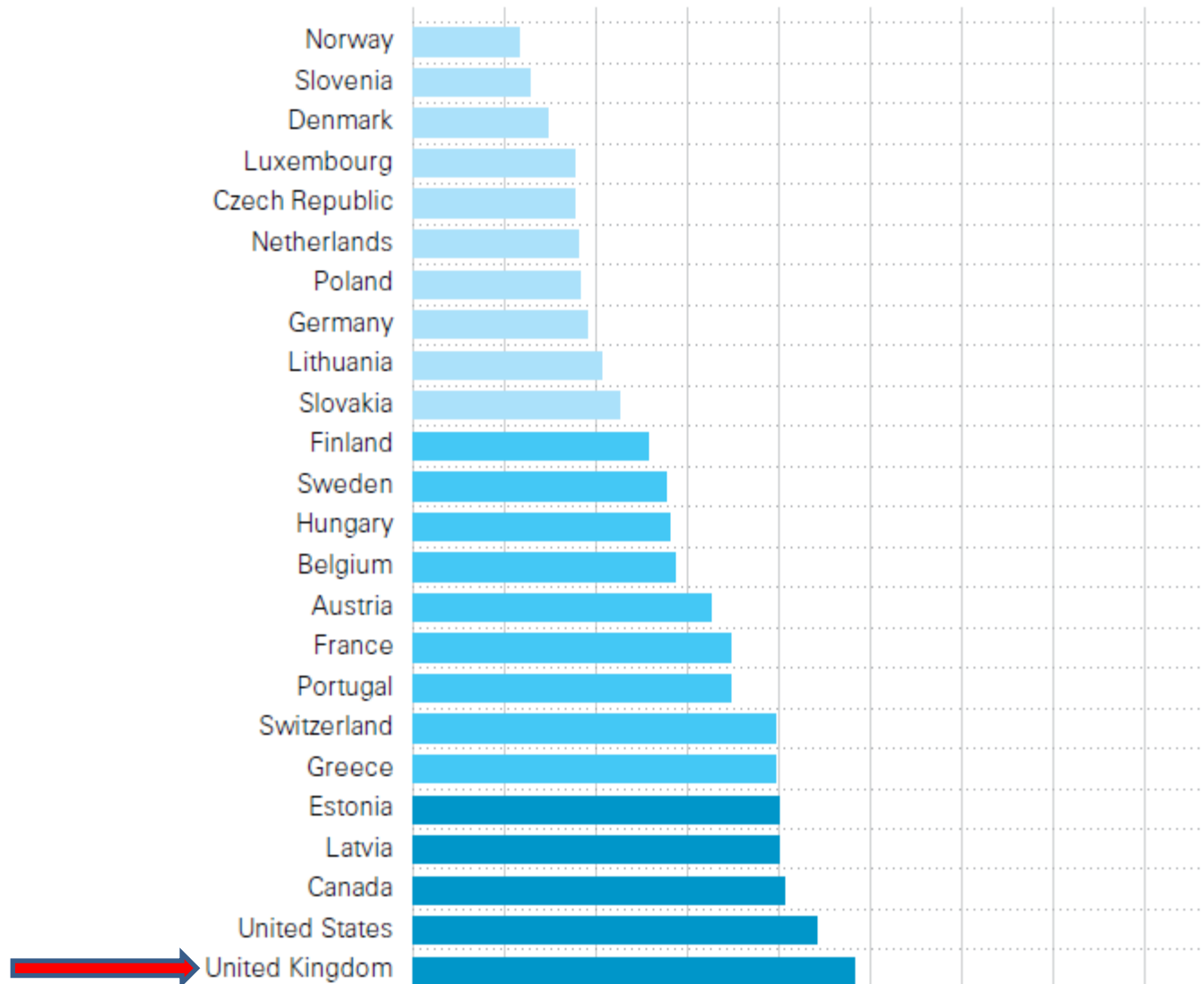
SIGNIFICANT
TRENDS



*The former Yugoslav Republic of Macedonia.

Figure 3.1c NEET rate

% of children aged 15 to 19 not in education, employment or training



Source: UNICEF Office of Research Innocenti Report Card 11 (2013)

OVERALL IMPRESSION: SCOTTISH VS, UK HEALTH EQUITY INVESTMENTS

- EXCELLENT RECENT TIME-TRENDS IN **SOME PERINATAL OUTCOMES (LBW after “Smokefree”), AND TEEN LIFE SATISFACTION (GIVEN THE RECESSION)**
- MUCH ROOM FOR IMPROVEMENT – ESPECIALLY ON: **IMR/BREASTFEEDING; CHILD POVERTY LEVELS AFTER TAXES AND TRANSFERS; EARLY CHILDHOOD EDUCATION; OBESITY (ESP YOUTH); AND YOUTH/OVERALL EMPLOYMENT AT A LIVING WAGE**

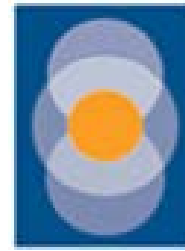
*Did the recent election help? **ARE THESE SORTS OF ISSUES EVEN ON THE TABLE?***



John Frank
Director



SCPHRP



Website - <https://www.scpgrp.ac.uk/>

Twitter - @SCPGRP



Ruth Jepson
Senior Scientific
Advisor

Remit

- Developing novel public health interventions
- Fostering collaboration between government, researchers and the public health community
- Building capacity within the public health community



Larry Doi
Early Years



John McAteer
Adolescence

4 working groups, each a life course stage



Tony Robertson
Working Life



Andrew
Williams
FARR



Michelle
Estrade
Researcher



Renee
Ingram
KTE, office
manager



Sam Bain
Project Co-
ordinator



Catherine
Bromley
PhD
student

Darryl Archibald
Later Life

Useful websites & references

- Scottish Collaboration for Public Health Research and Policy:

www.scphrp.ac.uk

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Thank you