

The pathogenesis paradigm

- u “Health is a complete state of physical, mental and social wellbeing and not merely the absence of disease or infirmity”

WHO 1948



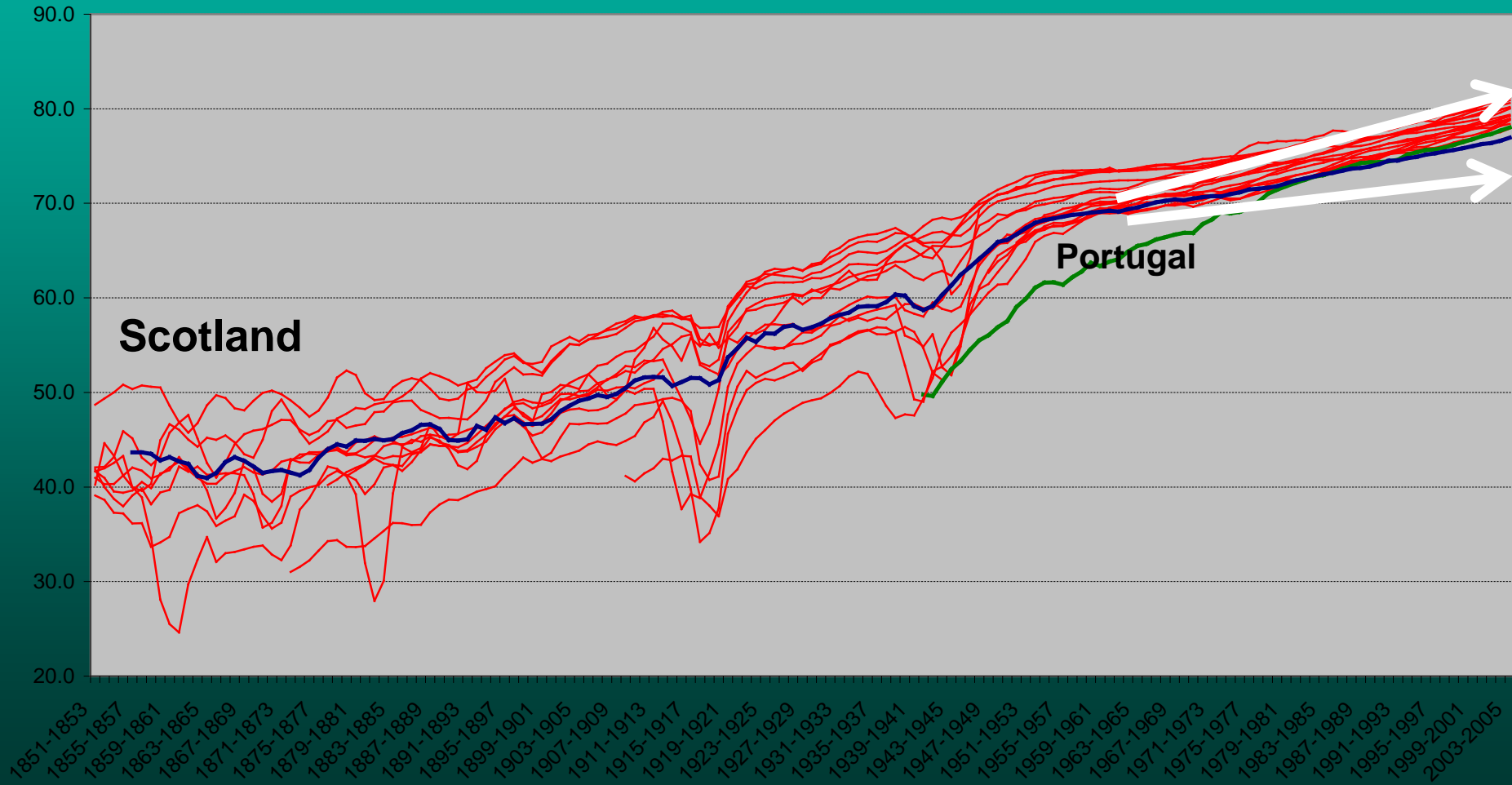
What people believe about Scotland's health

- u The Scots are unhealthy
- u It's because they smoke a lot
- u They eat the wrong kind of food
- u They drink too much
- u If only they adopted healthy habits, they would be healthy
- u **Only ONE of these statements is true!**

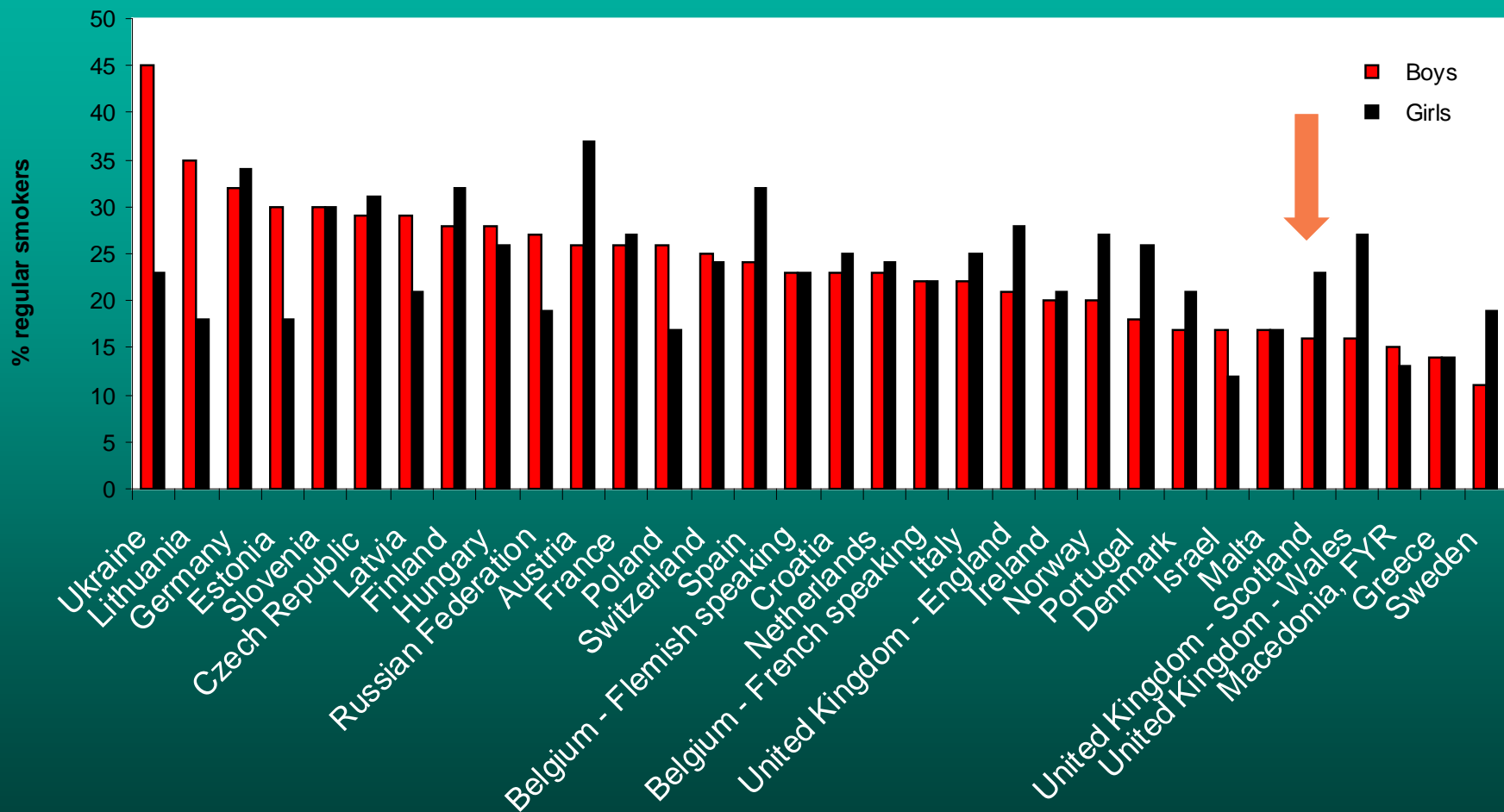
Life expectancy trends

Life expectancy: Scotland & other Western European Countries, 1851-2005

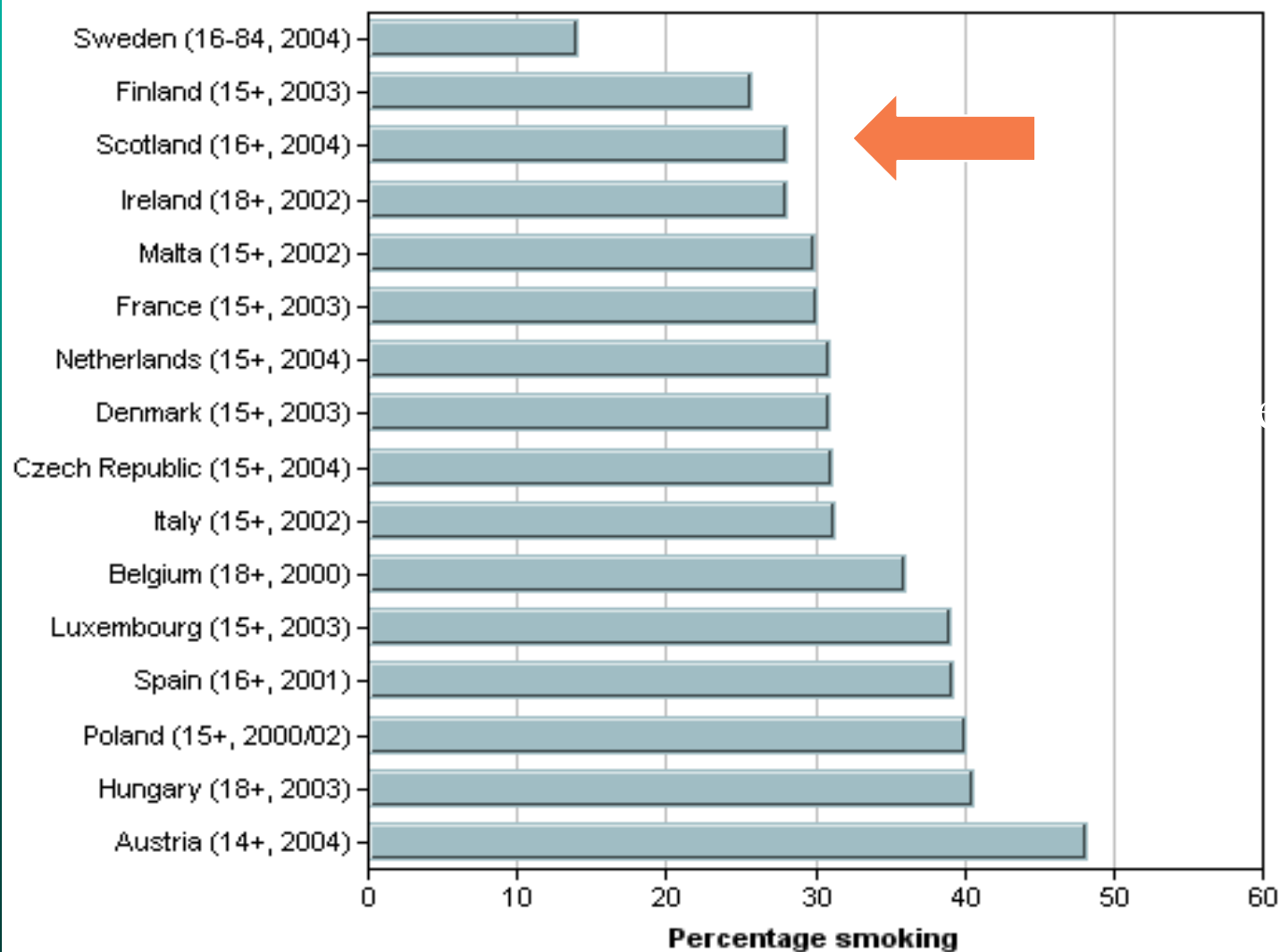
Source: Human Mortality Database



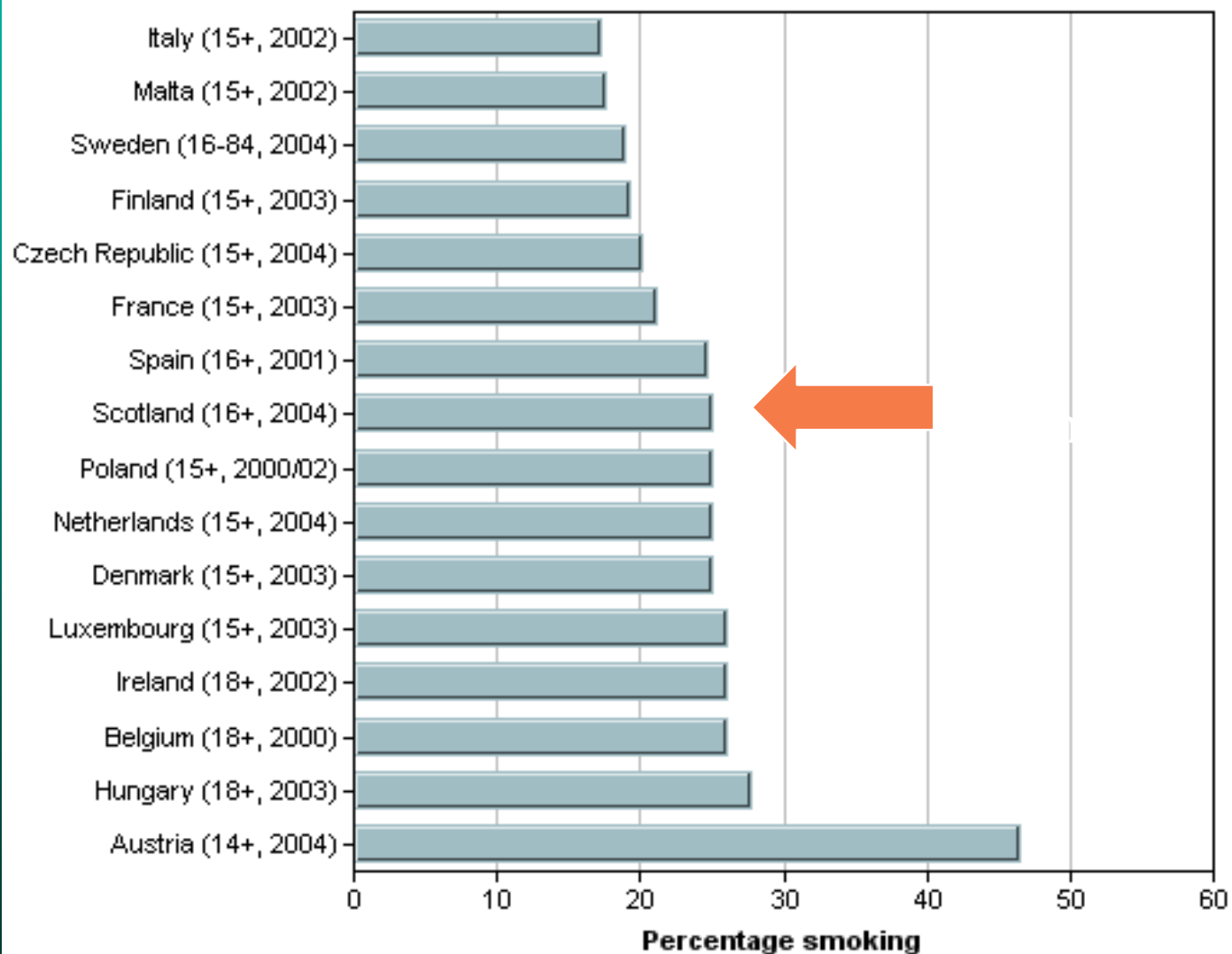
Prevalence of smoking by country, in 15 year olds by sex, 2000/01, Europe



Smoking prevalence - Males

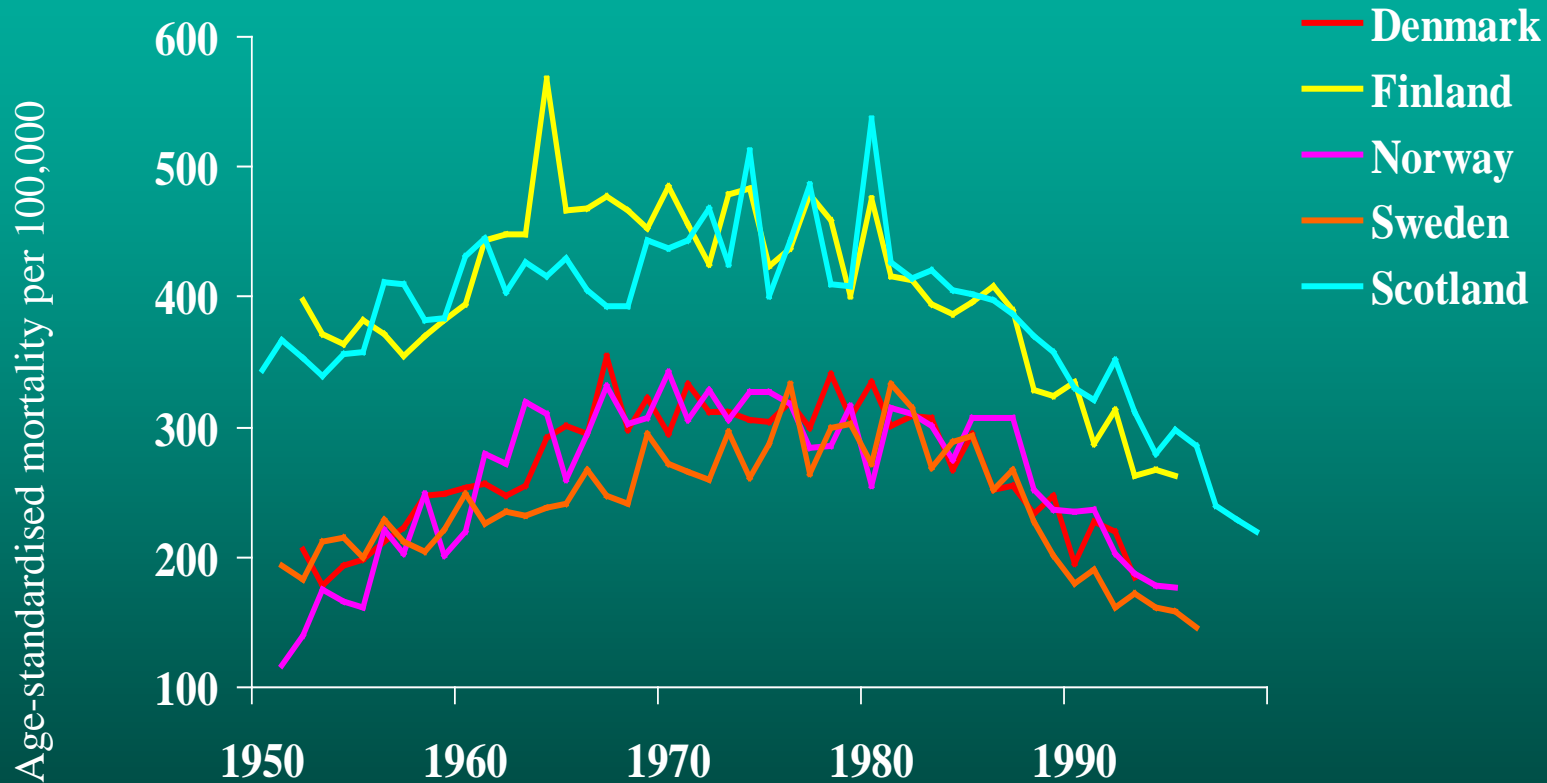


Smoking prevalence - Females



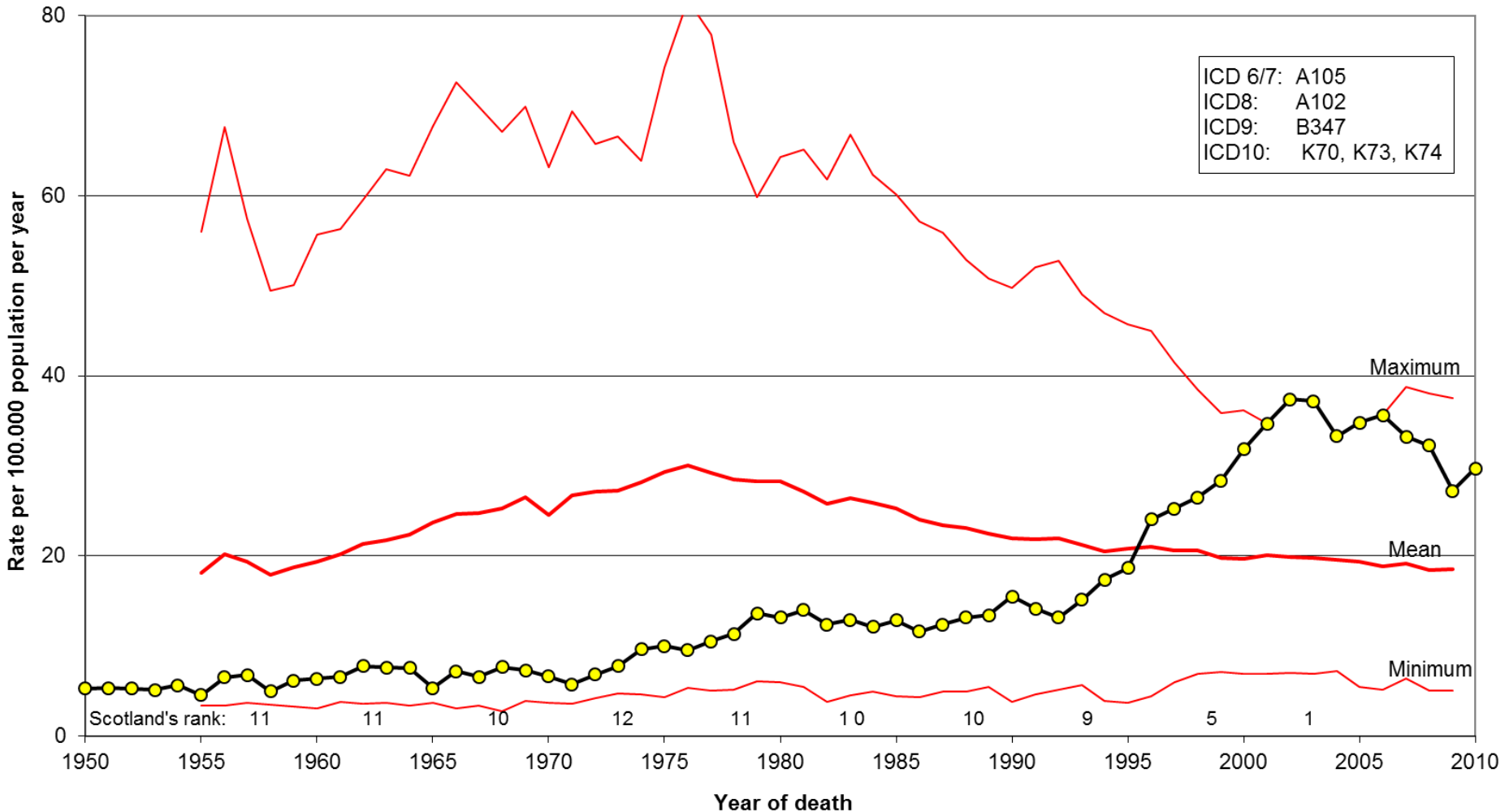
Coronary heart disease mortality

Men aged 15-74 years



Chronic liver disease, including cirrhosis

Figure N1M
Mortality from chronic liver disease, incl. cirrhosis, age standardised rates among men 15-74 years
Scotland in context of maximum, minimum, and mean rates for 16 Western European countries
Source: WHOSIS (April 2012)





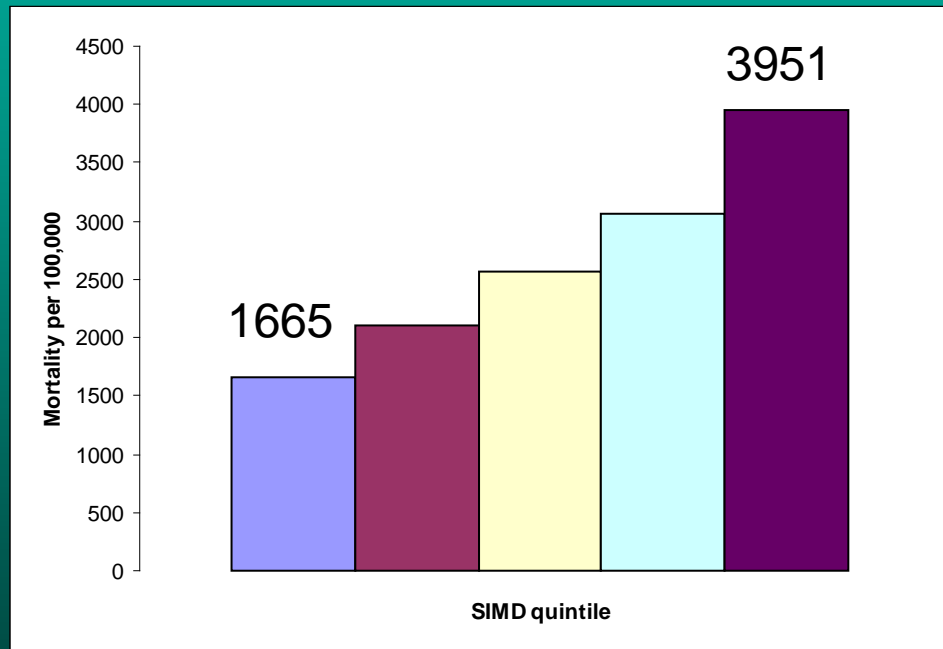
Workers in the 1950s



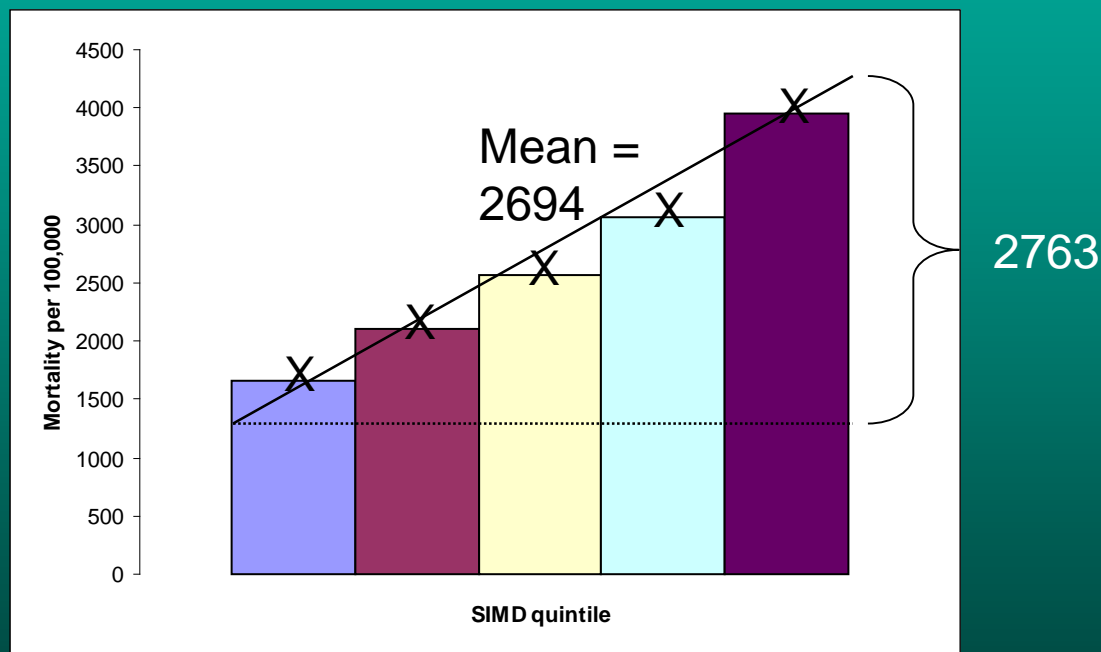
Better housing?



All cause mortality, men 65-69

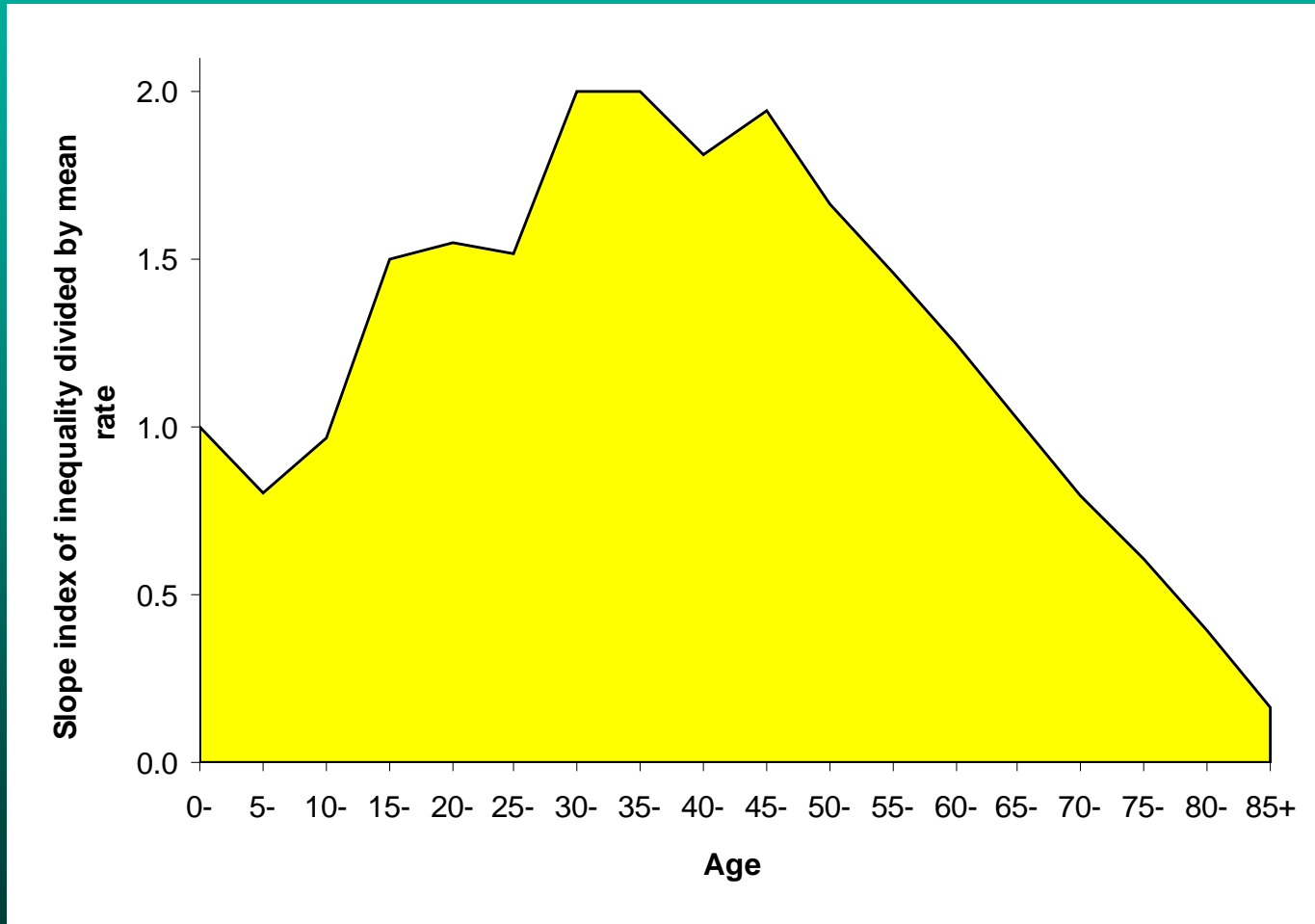


Slope index of inequality

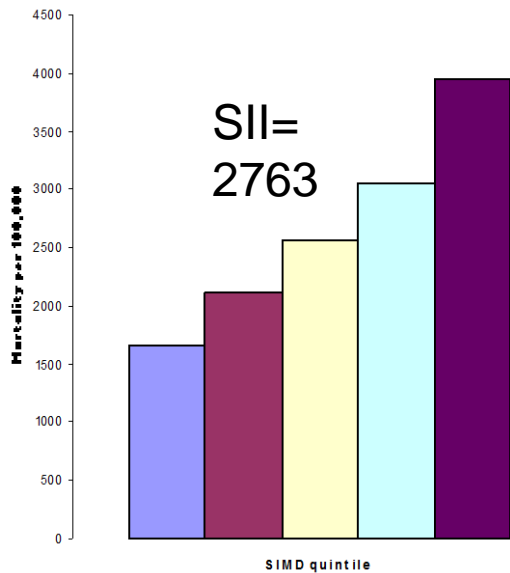


All cause, M65-69
 $2763/2694 = 1.025$

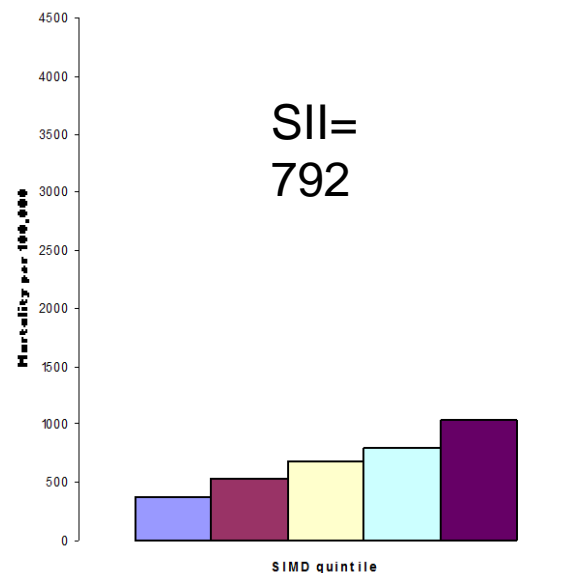
Male inequalities, all causes, all ages



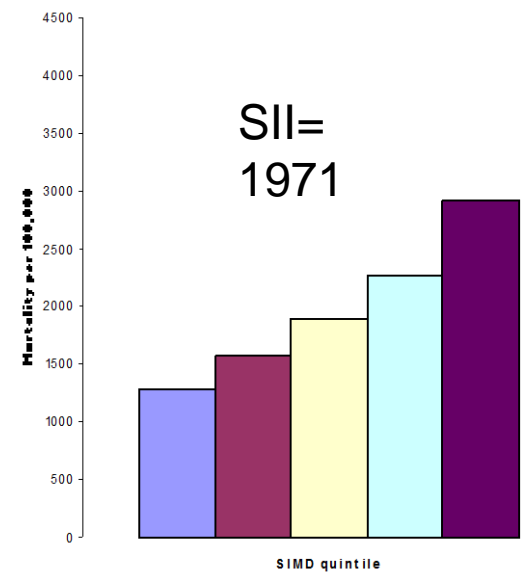
Slope index of inequality breakdown by cause of death



All cause

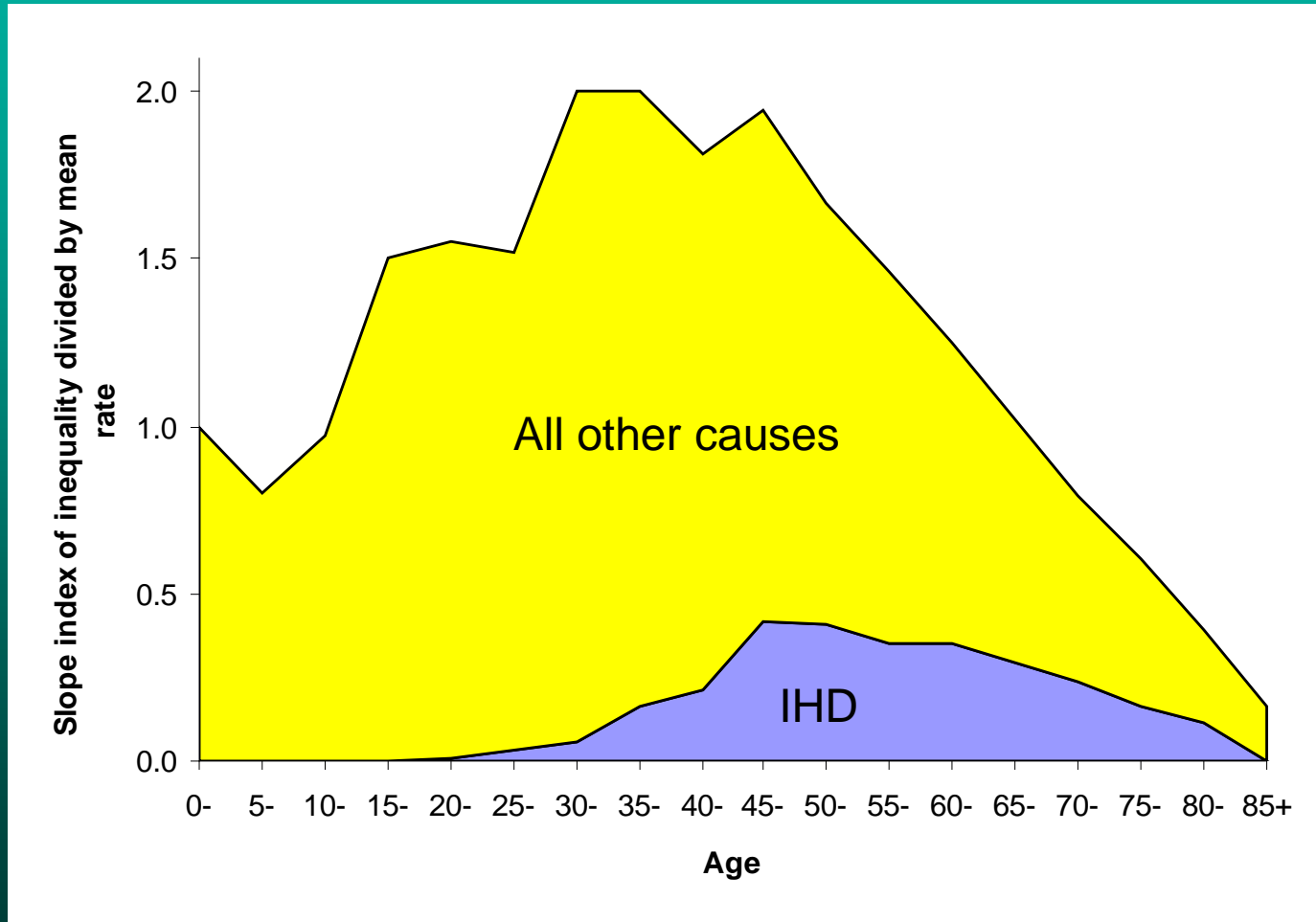


IHD



Other causes

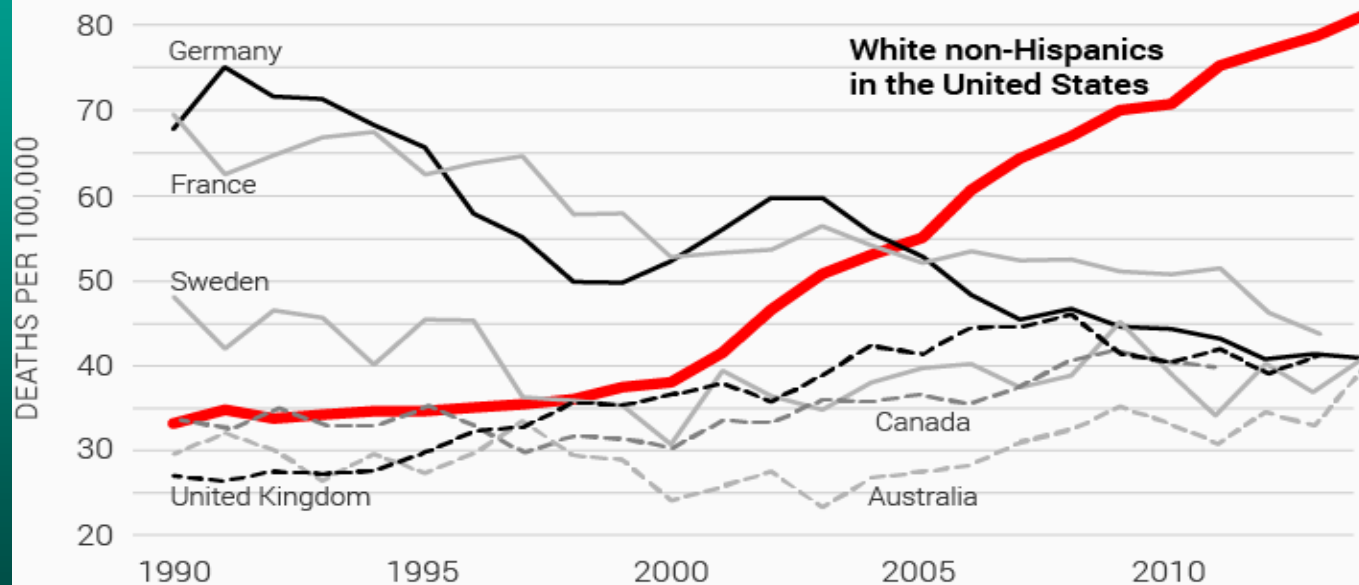
Male inequalities, all ages, by cause



US mortality 1999-2015

Midlife mortality from "deaths of despair" across countries

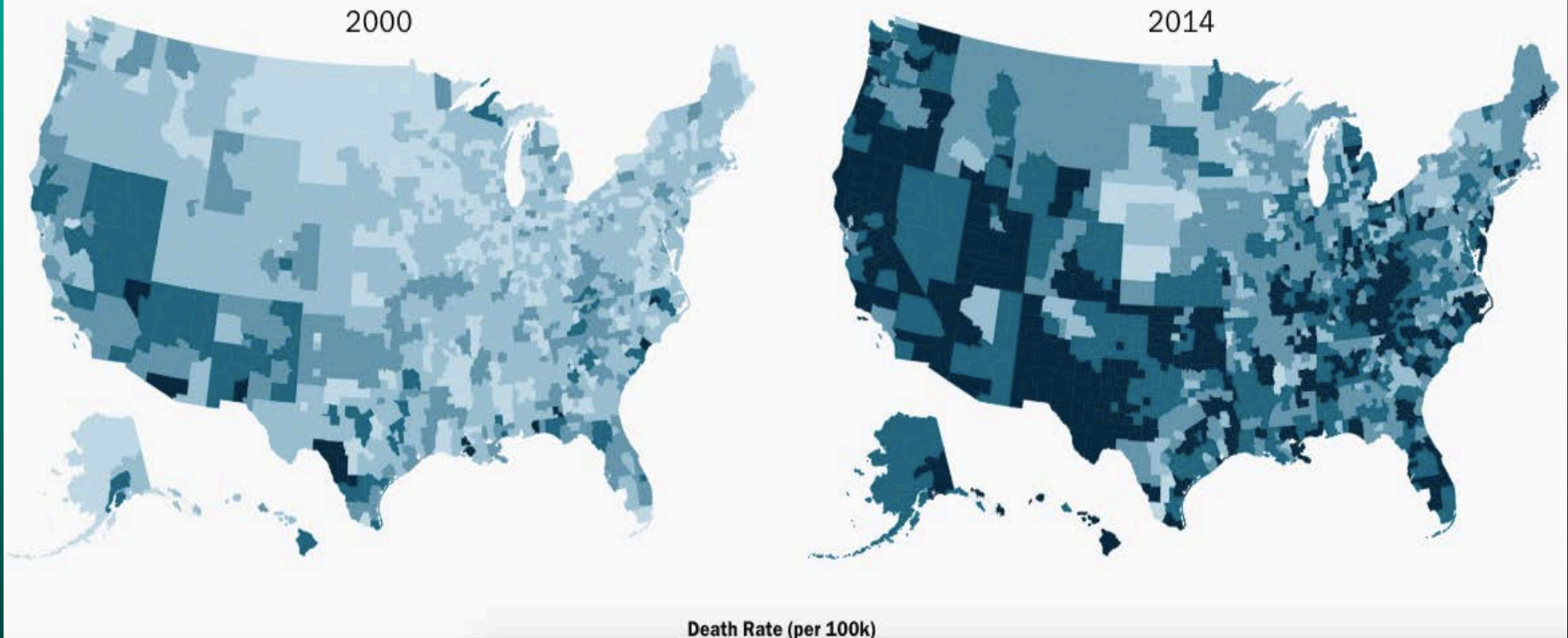
Men and women ages 50-54, deaths by drugs, alcohol, and suicide



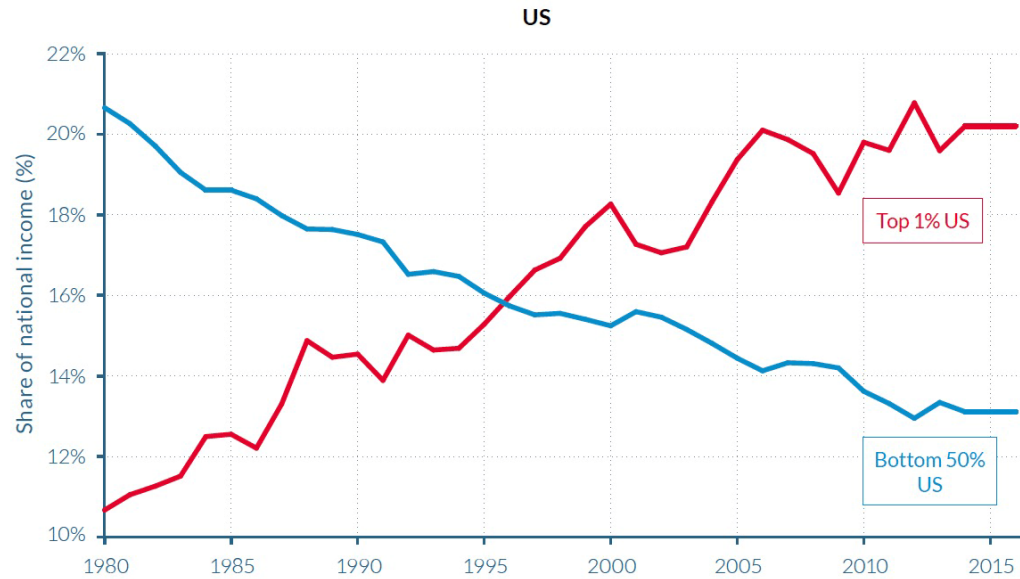
Source: "Mortality and morbidity in the 21st century" by Anne Case and Angus Deaton, Brookings Papers on Economic Activity, Spring 2017.

US mortality 1999-2015

“Deaths of despair” for white non-Hispanics, 2000 and 2014
Ages 45-54, by county*

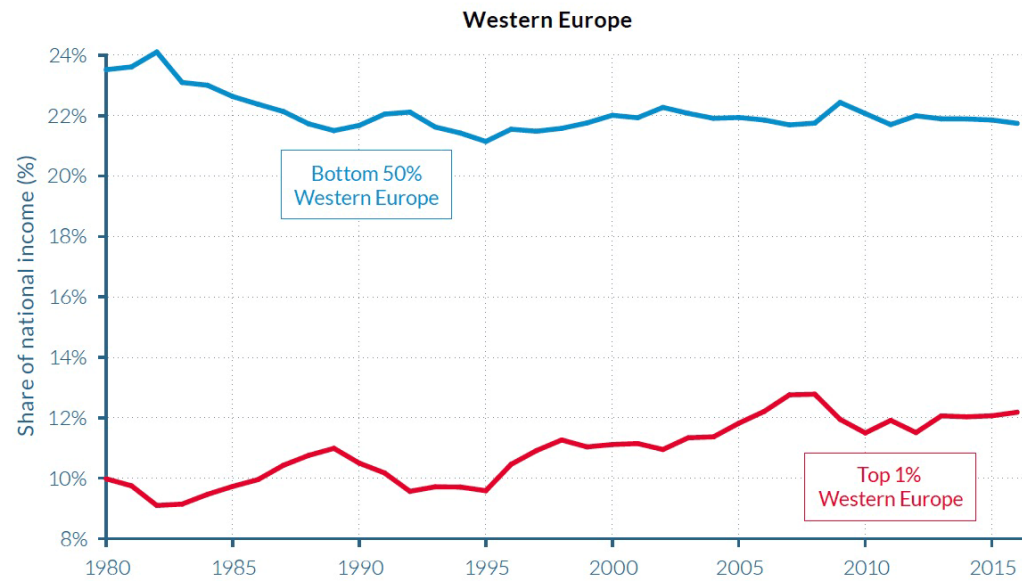


**Top 1% vs. Bottom 50% national income shares in the US and Western Europe, 1980–2016:
Diverging income inequality trajectories**



Source: WID.world (2017). See wir2018.wid.world for data series and notes.

In 2016, 12% of national income was received by the top 1% in Western Europe, compared to 20% in the United States. In 1980, 10% of national income was received by the top 1% in Western Europe, compared to 11% in the United States.



Source: WID.world (2017). See wir2018.wid.world for data series and notes.

In 2016, 22% of national income was received by the Bottom 50% in Western Europe.

So, what causes wellness?

Salutogenesis

An assets approach

Gratitude
(McGullough)

Humour
(Martin)

Self-efficacy
(Bandura)

Hardiness
(Kobasa)

Empathy
(Eisenberg)

Coping
(Lazarus)

Learned resourcefulness
(Rosenbaum)

Cultural capital
(Bourdieu)

Social capital
(Putnam)

Empowerment
(Freire)

Locus of control
(Rotter)

Learned optimism
(Seligman)

Quality of Life
(Lindström)

Resilience
(Werner)

Will to meaning
(Frankl)

Wellbeing
(Diener)

Learned hopefulness
(Zimmerman)

Connectedness
(Blum)

Flourishing
(Keyes)

Ecological system theory
(Bronfenbrenner)

Sence of coherence
(Antonovsky)

Action competence
(Bruun Jensen)

Interdisciplinarity
(Klein)

Attachment
(Bowlby)

Emotional intelligence
(Goleman, Akerjordet et al)

The causes of wellness?

- u Optimistic outlook
- u Sense of control and internal locus of control
- u Sense of purpose and meaning in life
- u Confidence in ability to deal with problems
- u Supportive network of people
- u Nurturing family



For the creation of health....

...the social and physical environment must be:

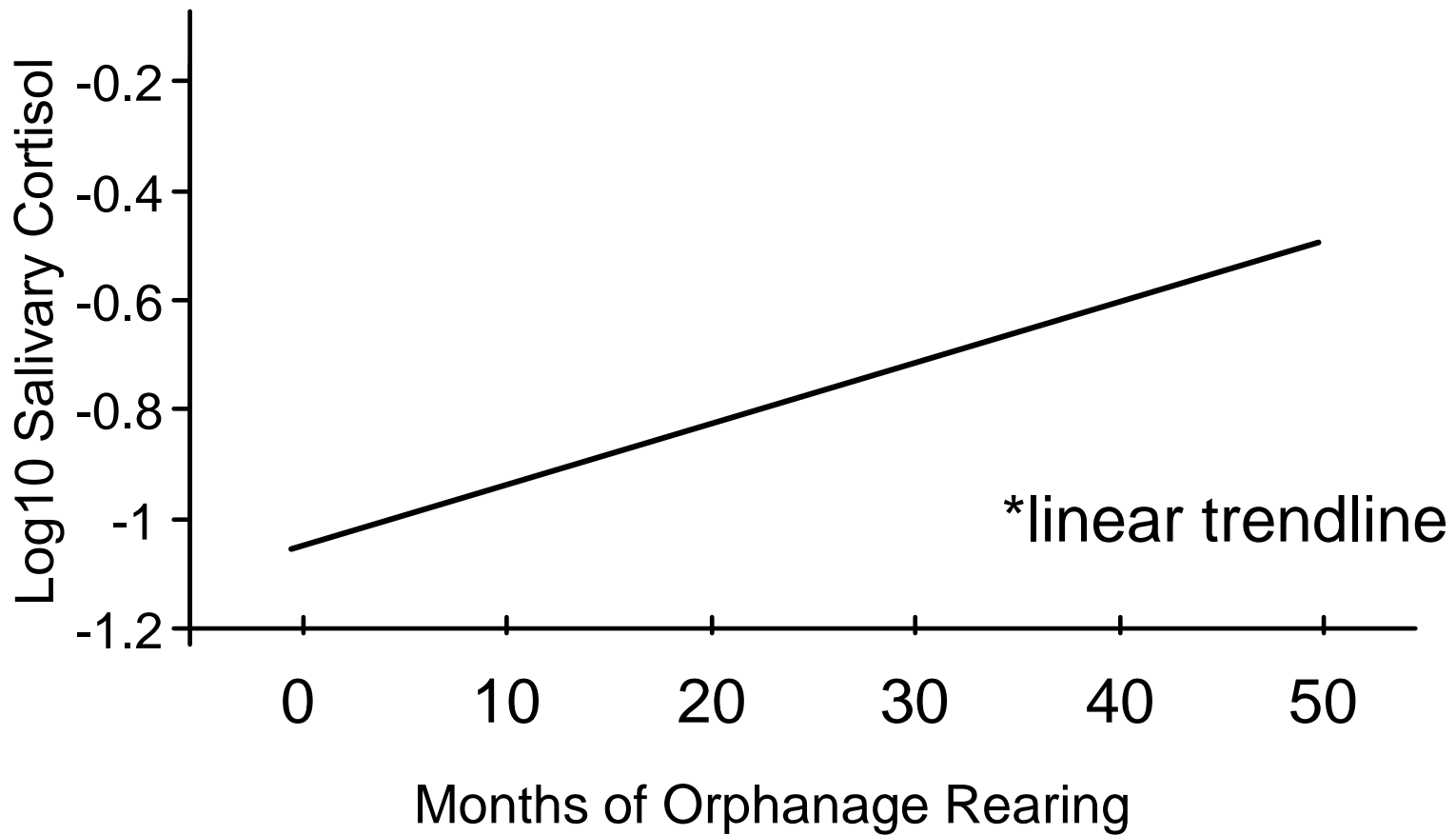
- u Comprehensible

- u Manageable

- u Meaningful

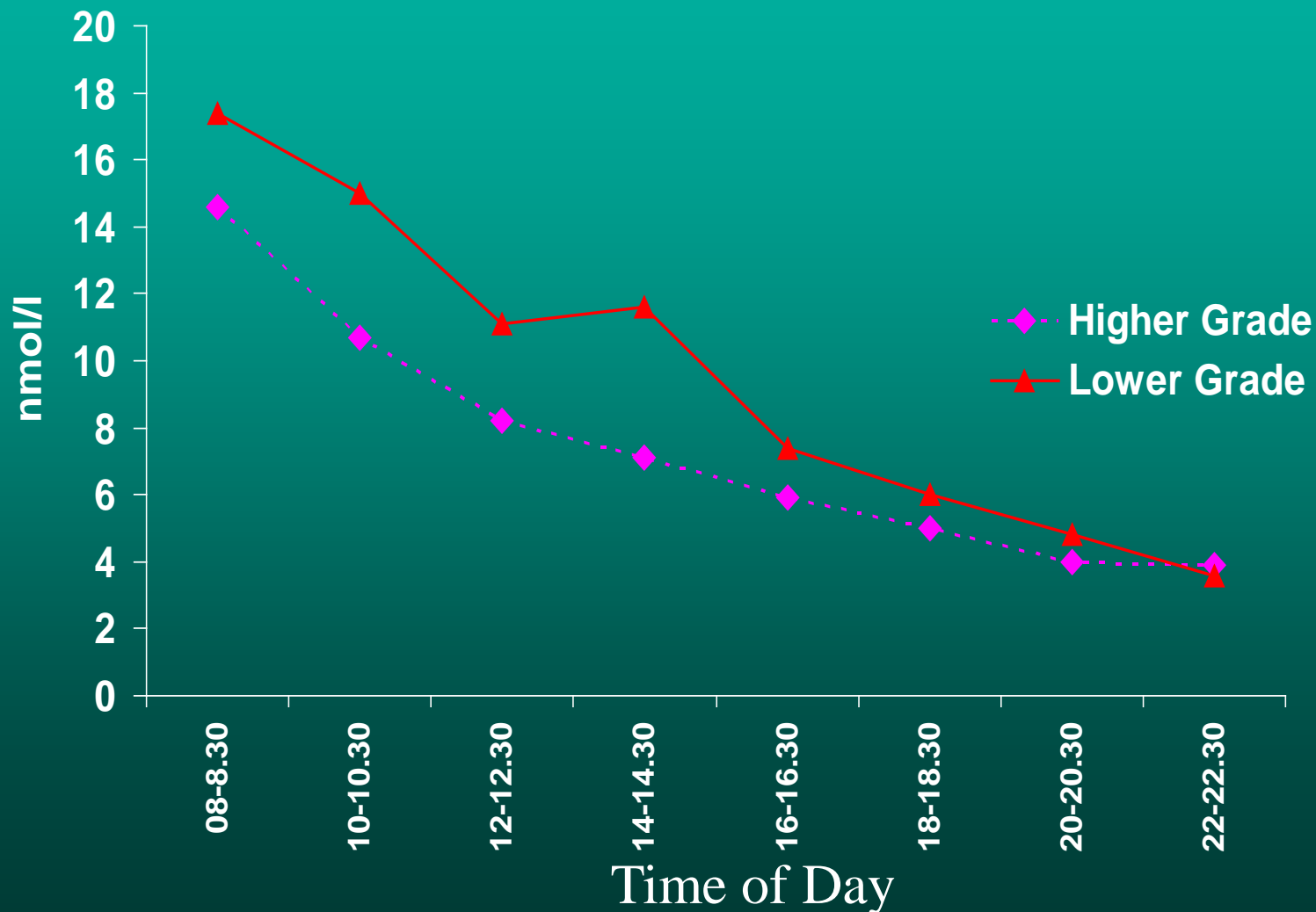
- uor the individual would experience chronic stress

Evening Cortisol Levels Increase with Months of Orphanage Rearing *

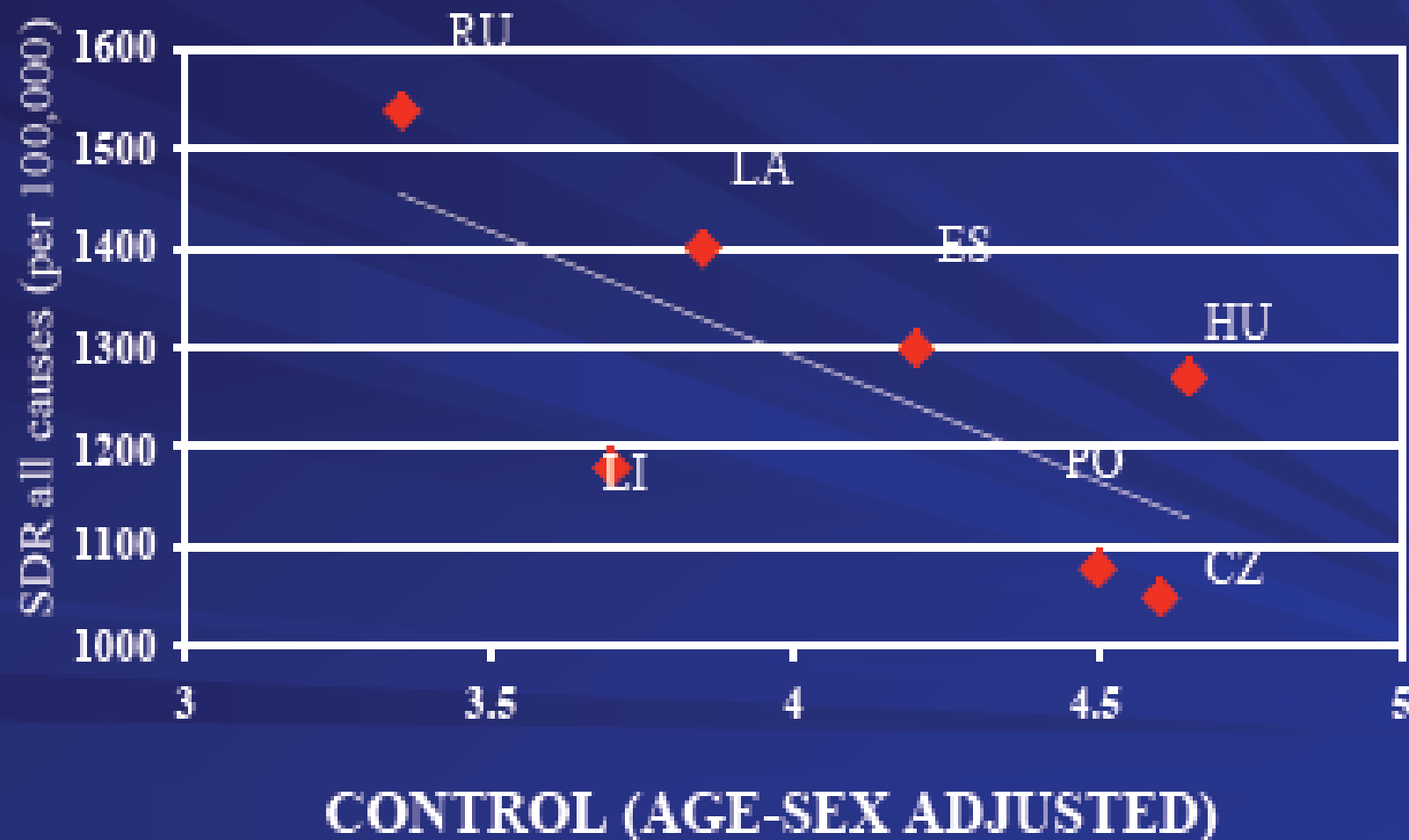


STRESS AND GRADE OF EMPLOYMENT: MEN

Salivary Cortisol



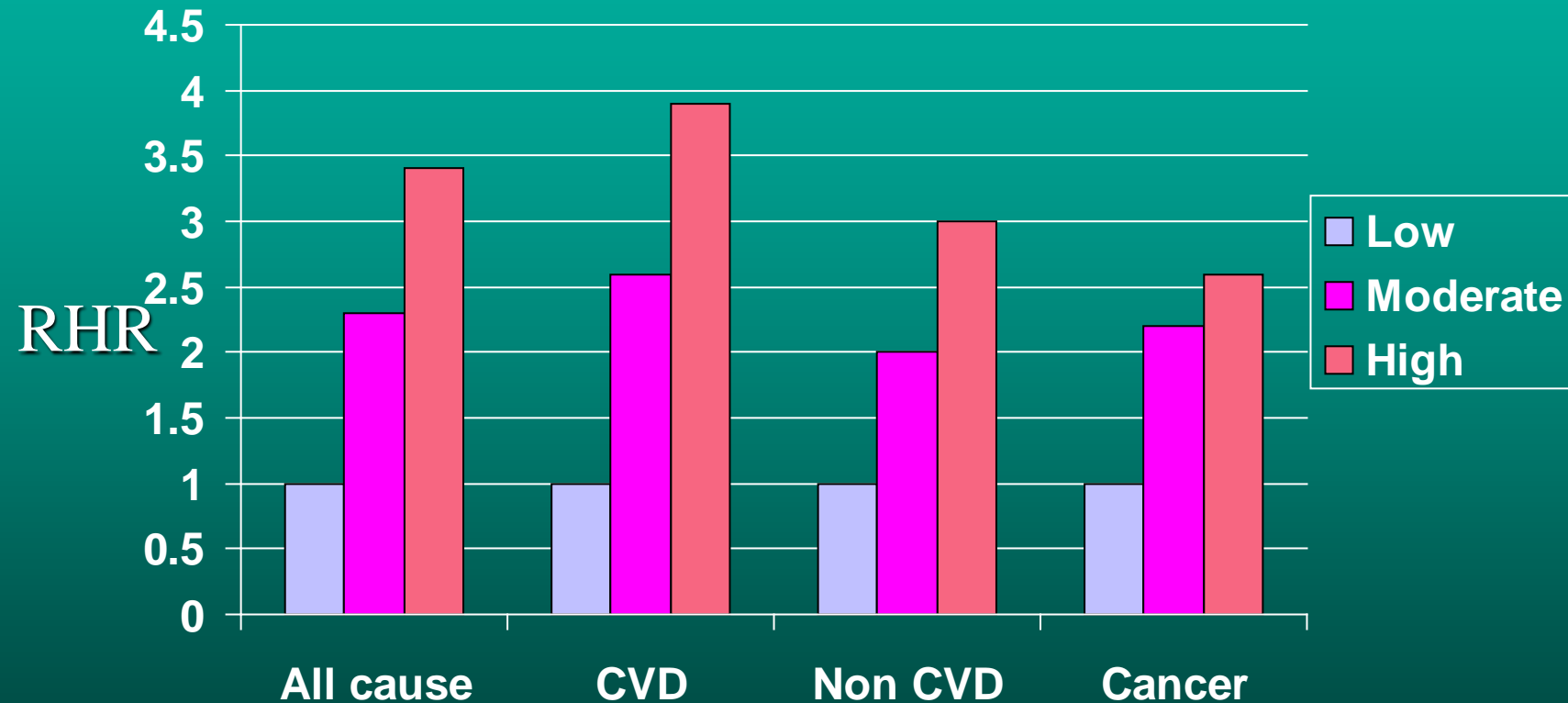
PERCEIVED CONTROL IN NATIONAL SAMPLES AND ALL CAUSE MORTALITY



Pikhart, Bobak et al 2000

Risk of death

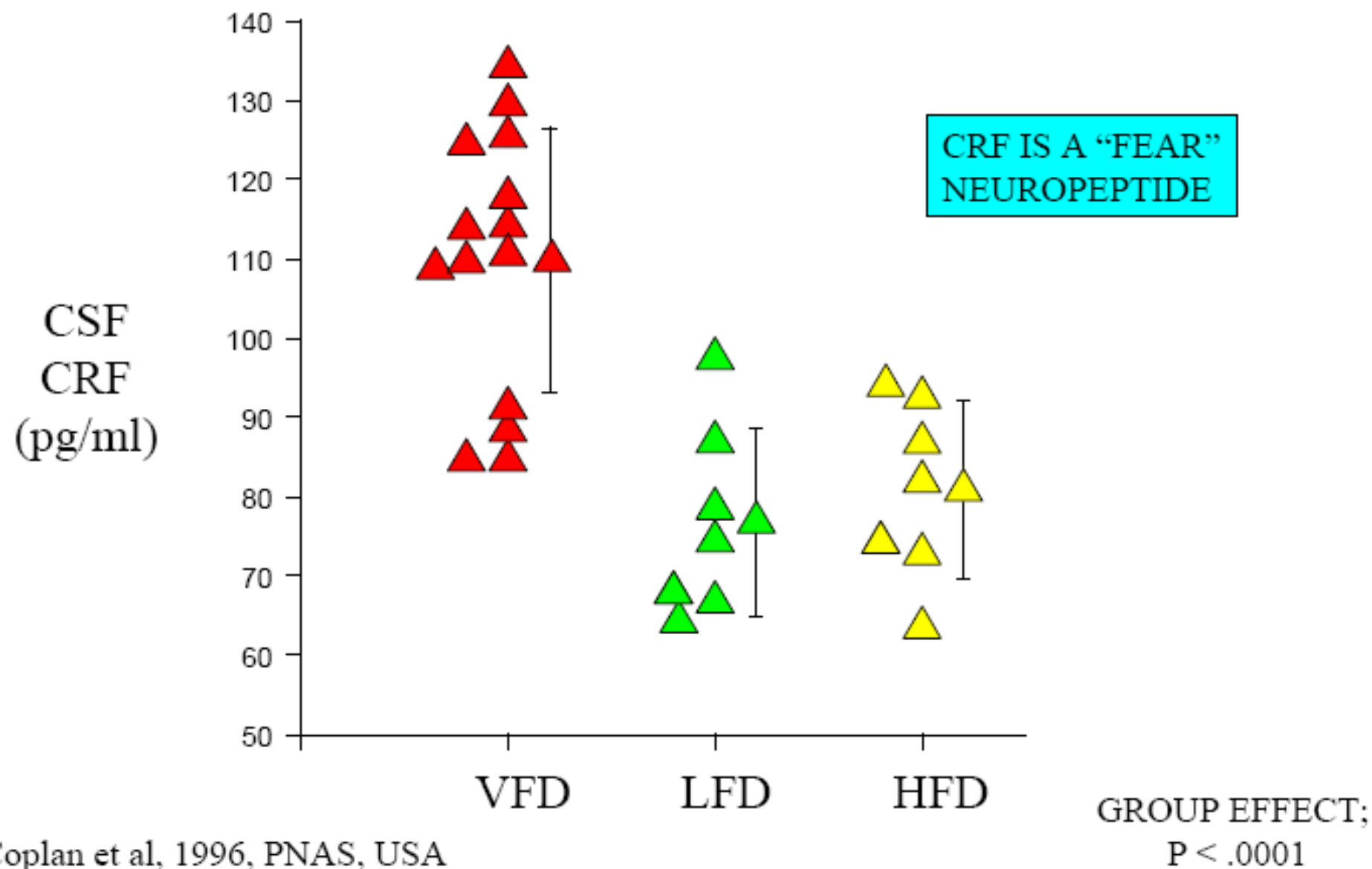
- by level of hopelessness



Everson et al 1996



CSF CRF CONCENTRATIONS IN DIFFERENTIALLY-REARED JUVENILE PRIMATES:



The Human Brain Under Stress: key brain regions

Prefrontal cortex

Executive function, working memory

Atrophy

Hippocampus

Contextual, episodic, spatial
memory

Atrophy

Amygdala

Emotion, fear, anxiety

Hypertrophy.

later atrophy

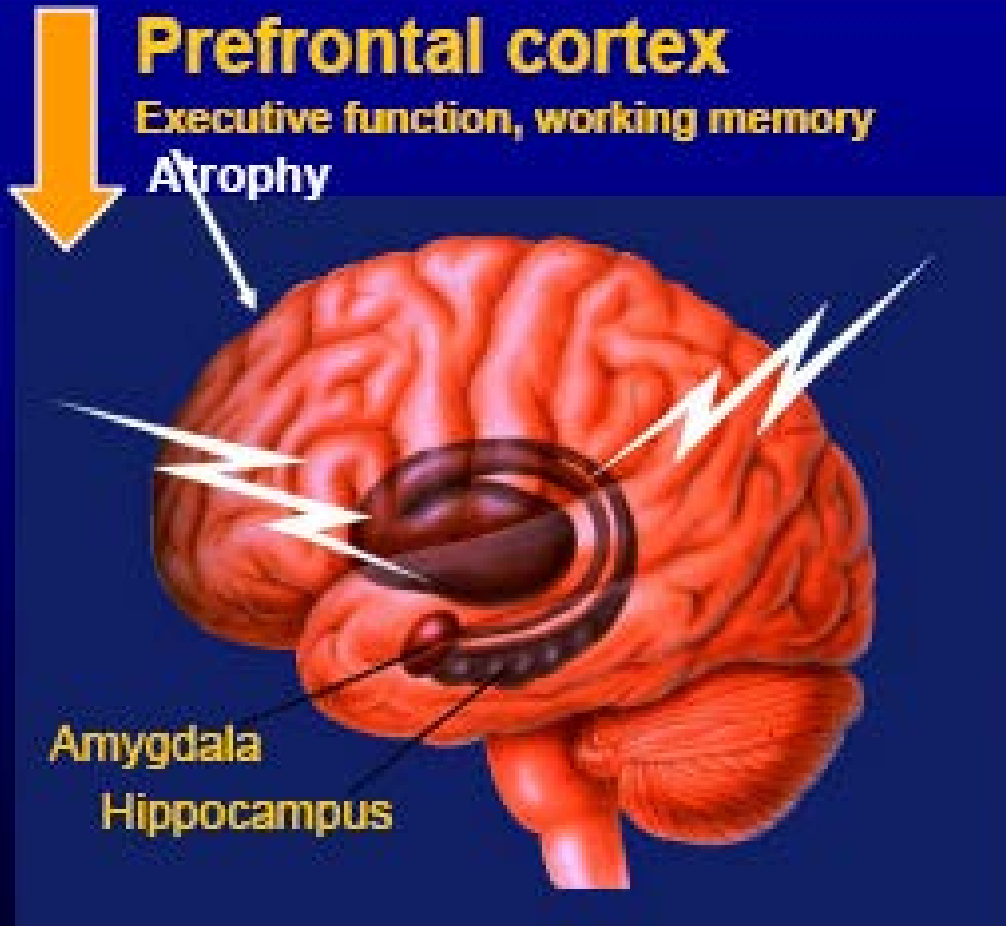


Image size: 1024 x 1024
View size: 1266 x 618
X: 290 px Y: 297 px Value: 430
WL: 715 WW: 1430

H

unnamed
498
SAG FSE T2
TR: 4220.0, TE: 96.4

A

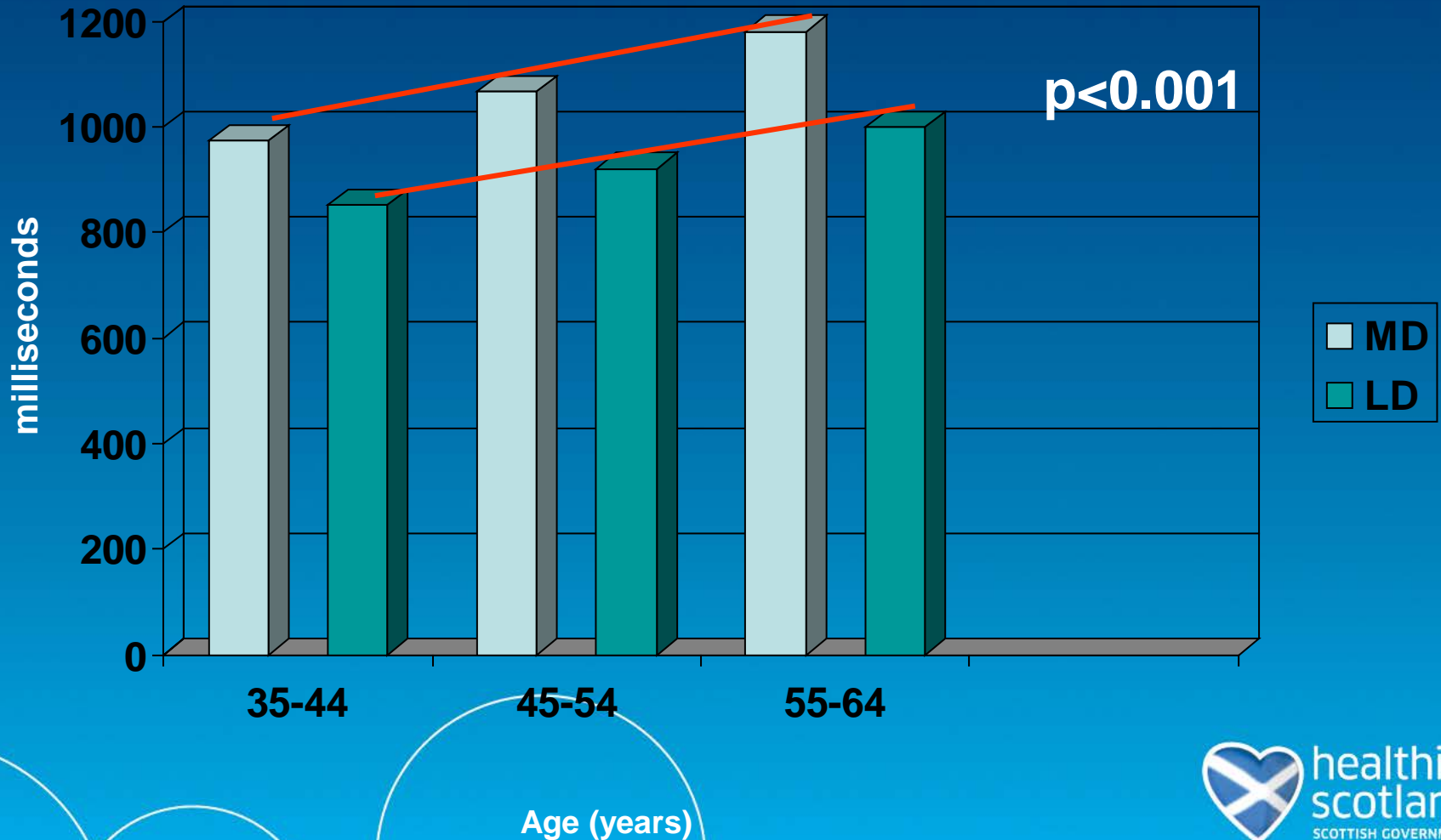


Im: 3/12
Zoom: 178% Angle: 0
Thickness: 3.0 mm Location: -27.8
X: -25.81 mm Y: -63.50 mm Z: 24.90 mm

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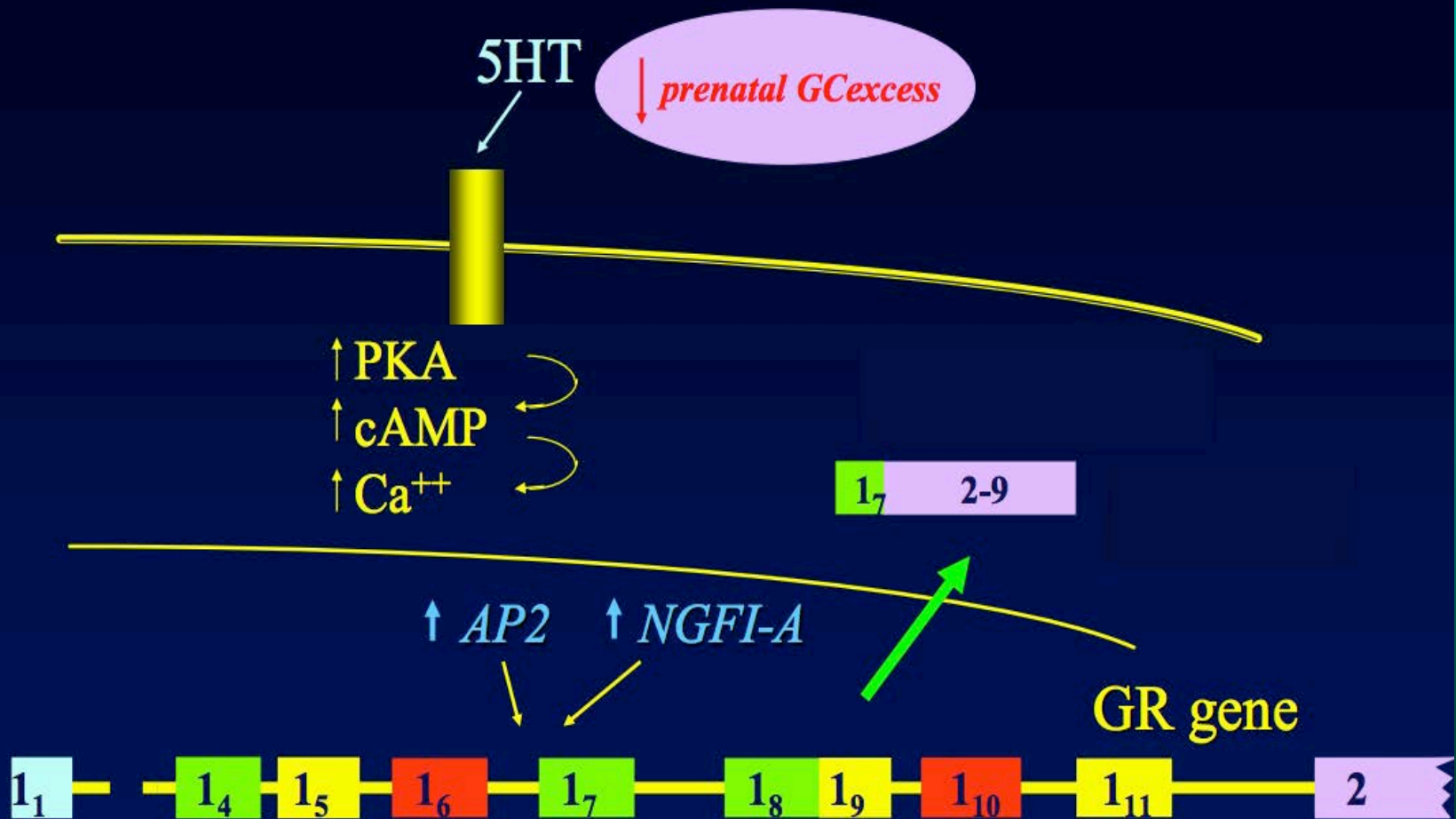
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13/07/2005
Made with OsiriX

pSoBid: Choice reaction time



The molecular biology of a hug

5HT regulates hippocampal GR gene transcription

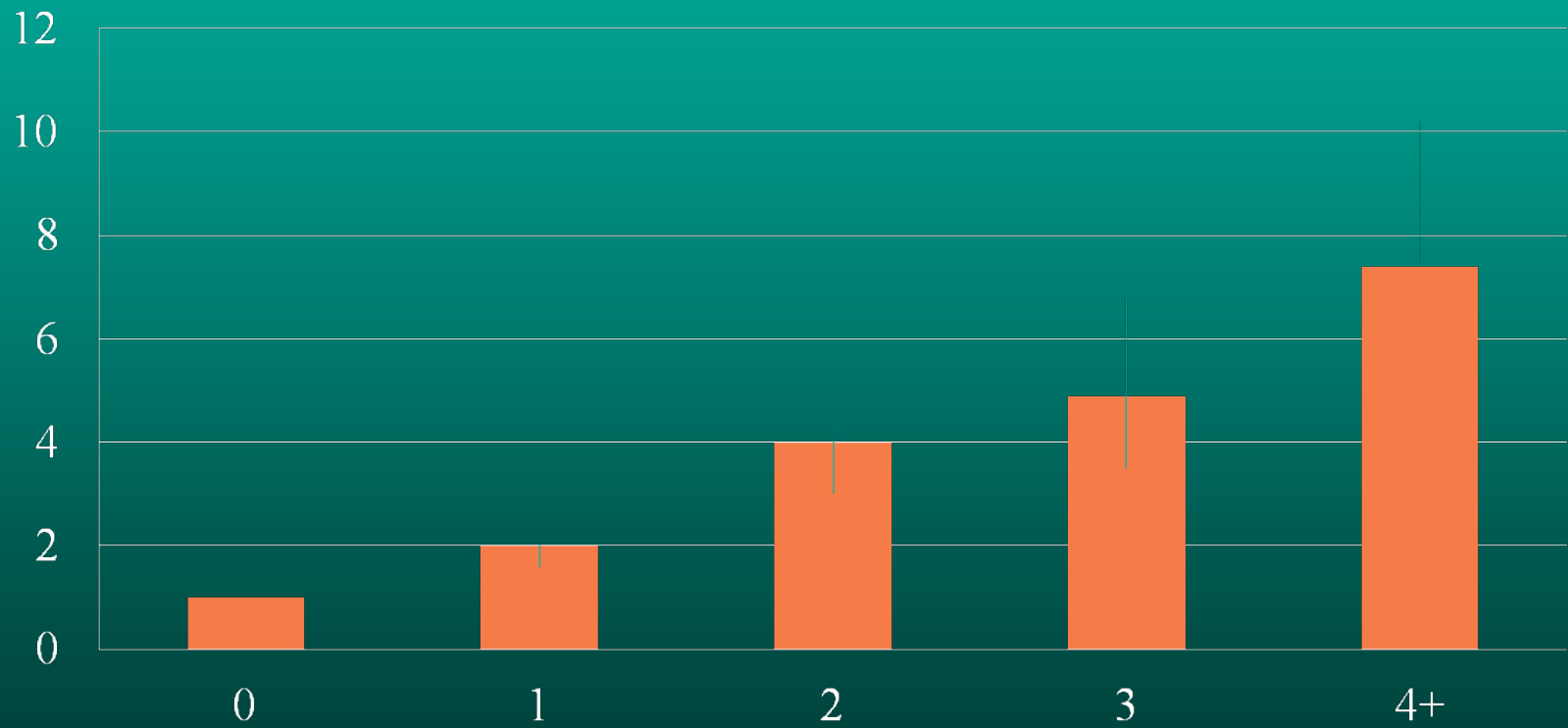


Adverse childhood events study

- u Physical/sexual/emotional abuse
- u Neglect (physical/emotional)
- u Domestic substance abuse
- u Domestic violence
- u Parental mental illness
- u Parental criminality

Adverse childhood events risk of alcoholism

Odds ratio

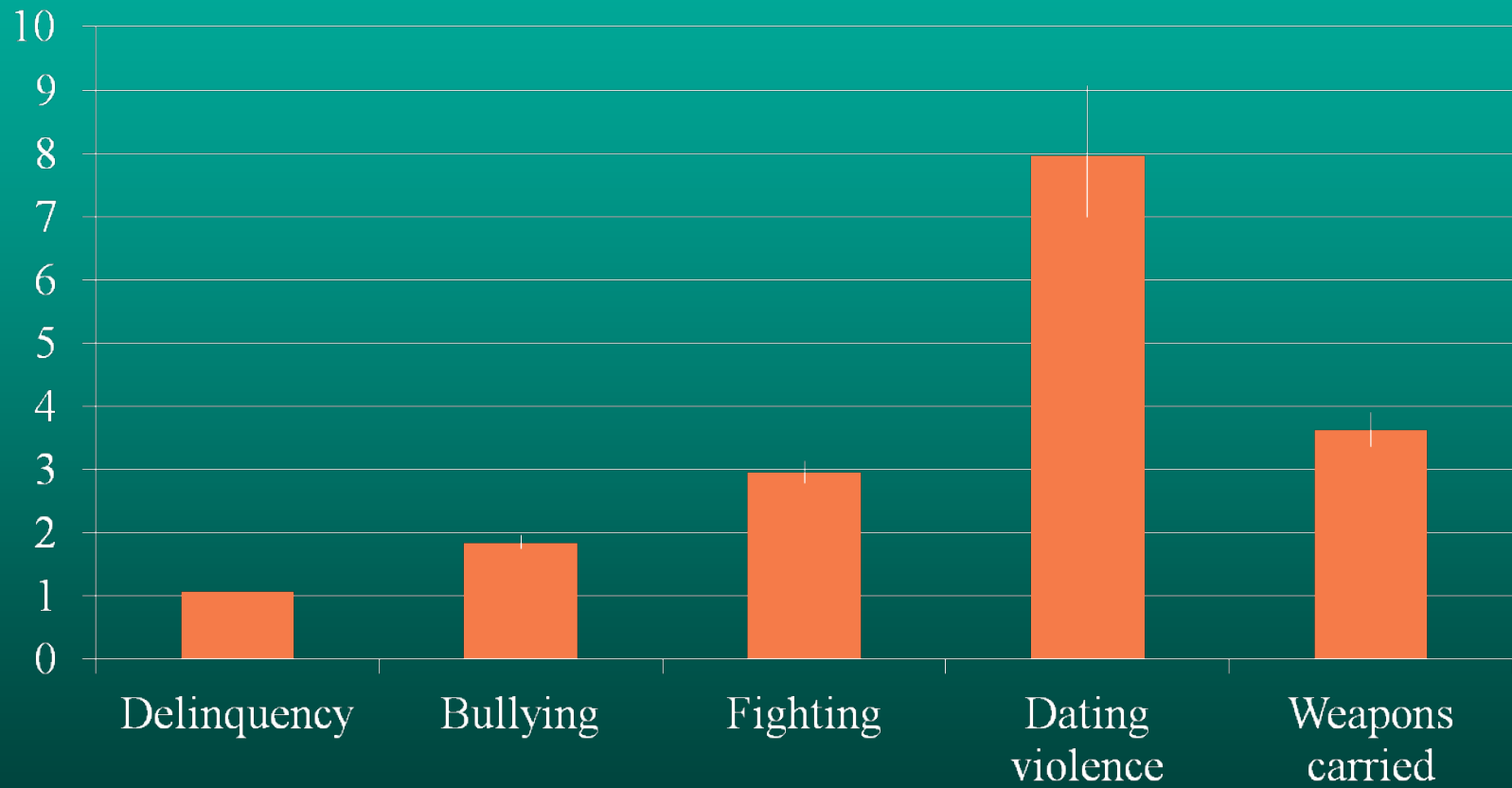


Hillis et al 2011

Adverse childhood events

risk of perpetrating violence

Boys experiencing physical abuse



Duke et al 2010

The Dunedin cohort

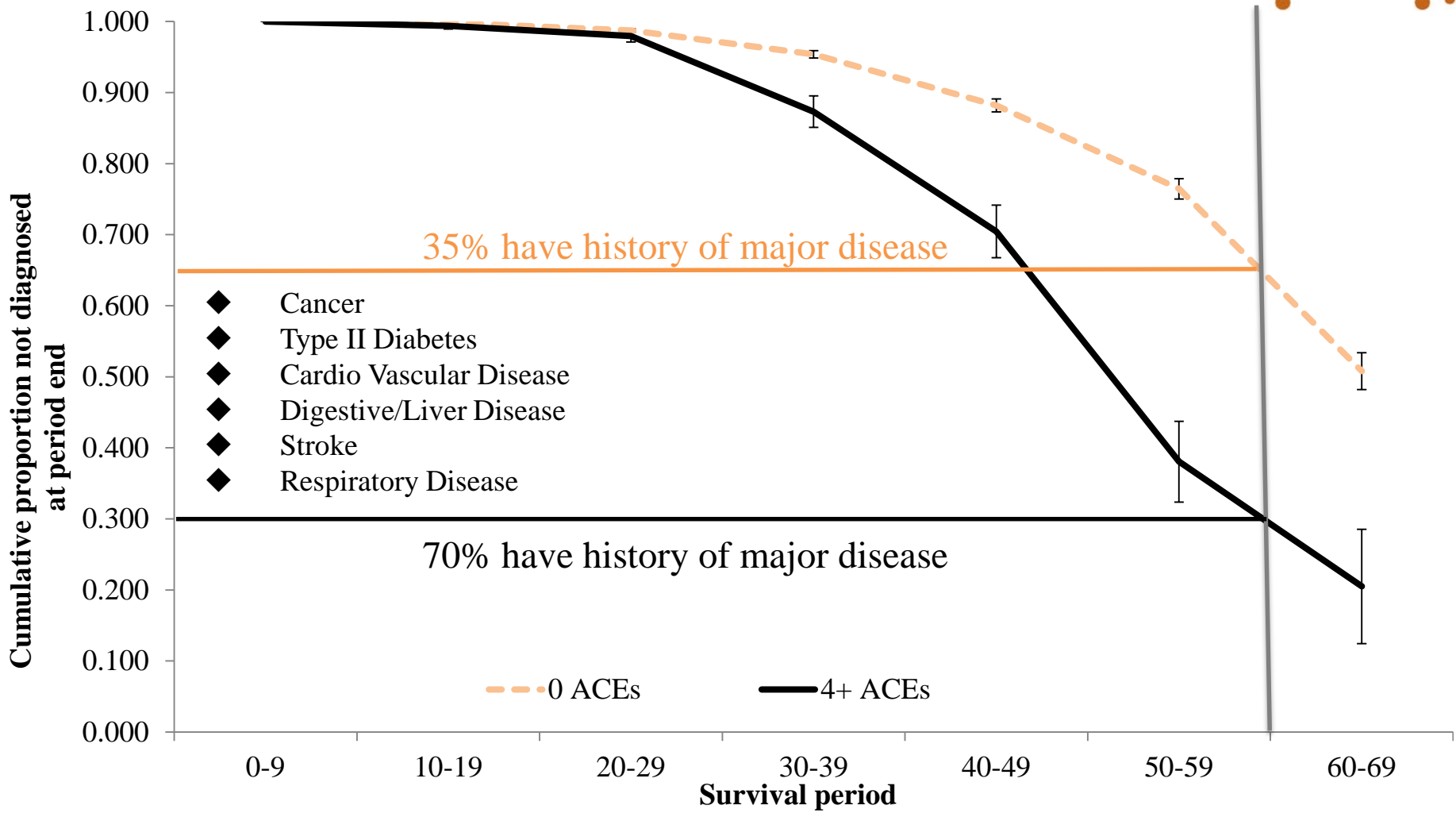
- 1000 children recruited in late 1972/3
- At age 3, “at risk” children identified on the basis of chaotic circumstances, emotional behaviour, negativity and poor attentiveness
- As adults, those “at risk” were more likely to :
 - be unemployed
 - have criminal convictions (especially for violence)
 - been pregnant as a teenager
 - have a substance abuse problem
 - exhibit signs of insulin resistance and metabolic syndrome



Cumulative Proportion of Individuals

not diagnosed with a Major Disease with Age

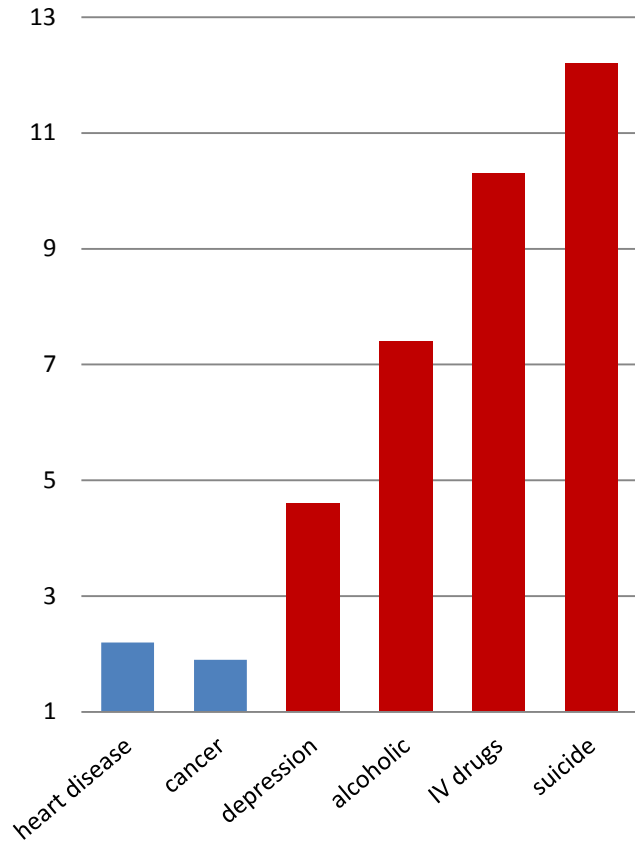
Aged 18 to 69 (n = 3,885) Bellis et al, Journal of Public Health, 2014



Differences are independent of Deprivation

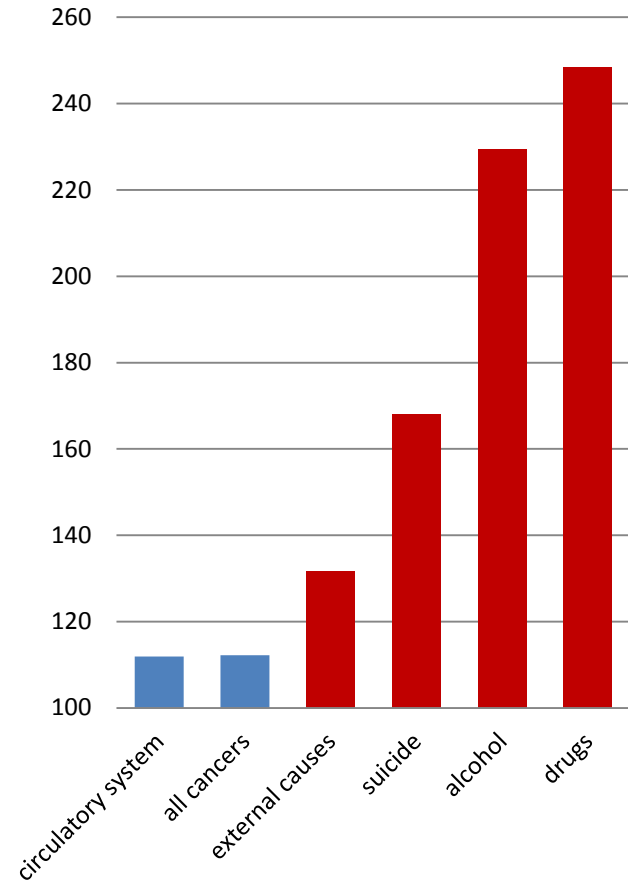
ACE and morbidity

(adjusted odds ratio, 4+ ACE)



Glasgow excess mortality

(cause-specific SMR, compared to Liverpool & Manchester)



Economic cost of child maltreatment

- u “The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is approximately \$124 billion in 2010 dollars. This economic burden rivals the cost of other high profile public health problems, such as stroke and Type 2 diabetes (Fang et al., 2012).”

The cycle of alienation

Initial event

Unequal outcomes

Consequences

Mental
health
problems

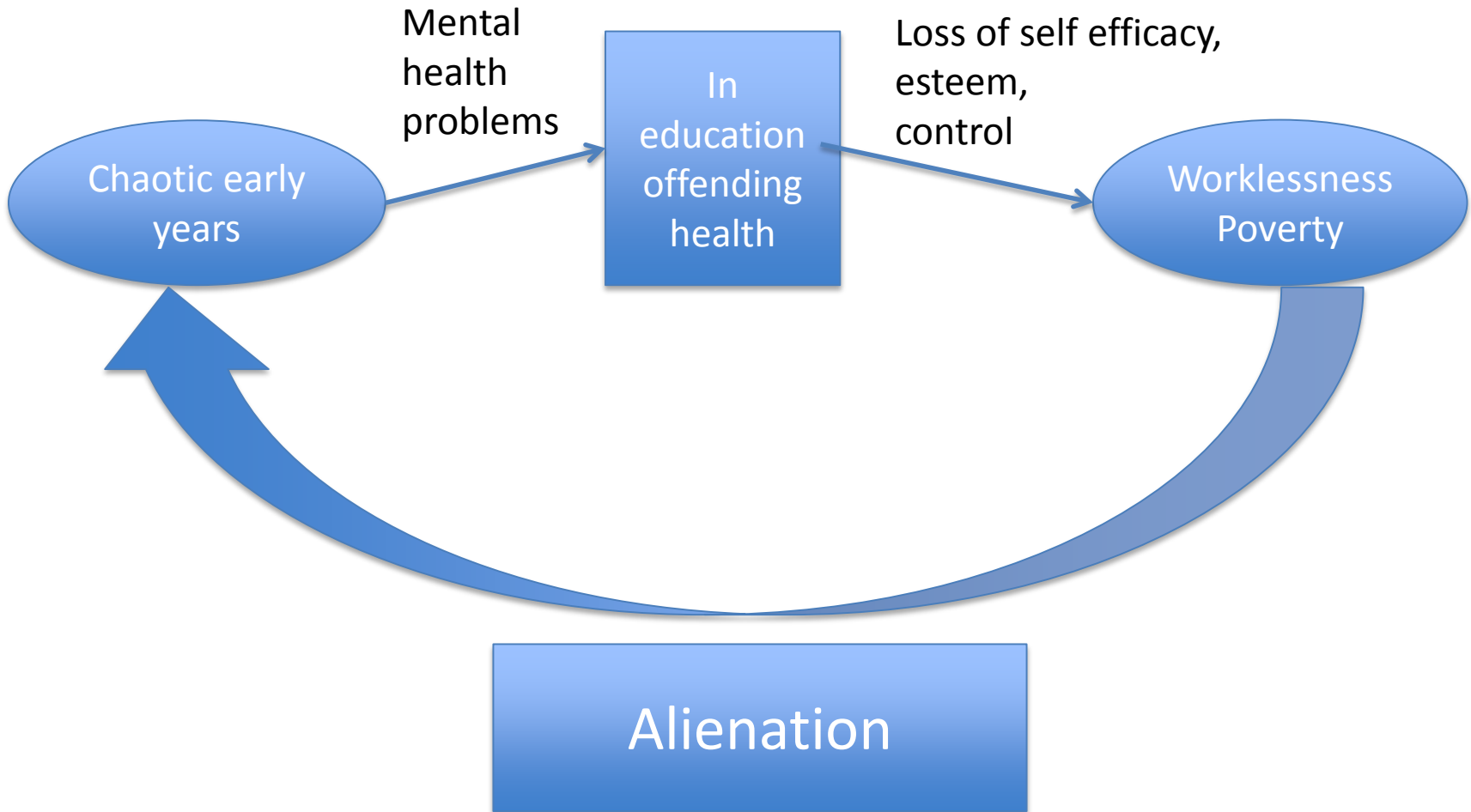
Loss of self efficacy,
esteem,
control

Chaotic early
years

In
education
offending
health

Worklessness
Poverty

Alienation



The Broadway experiment

- u City of London
- u 13 rough sleepers with 4-45 year history
- u Personalised budget (up to £3000)
- u Personalised support
- u “What do you need? What matters to you?”
- u Build trust and sense of control and ability to make choices

The Broadway experiment

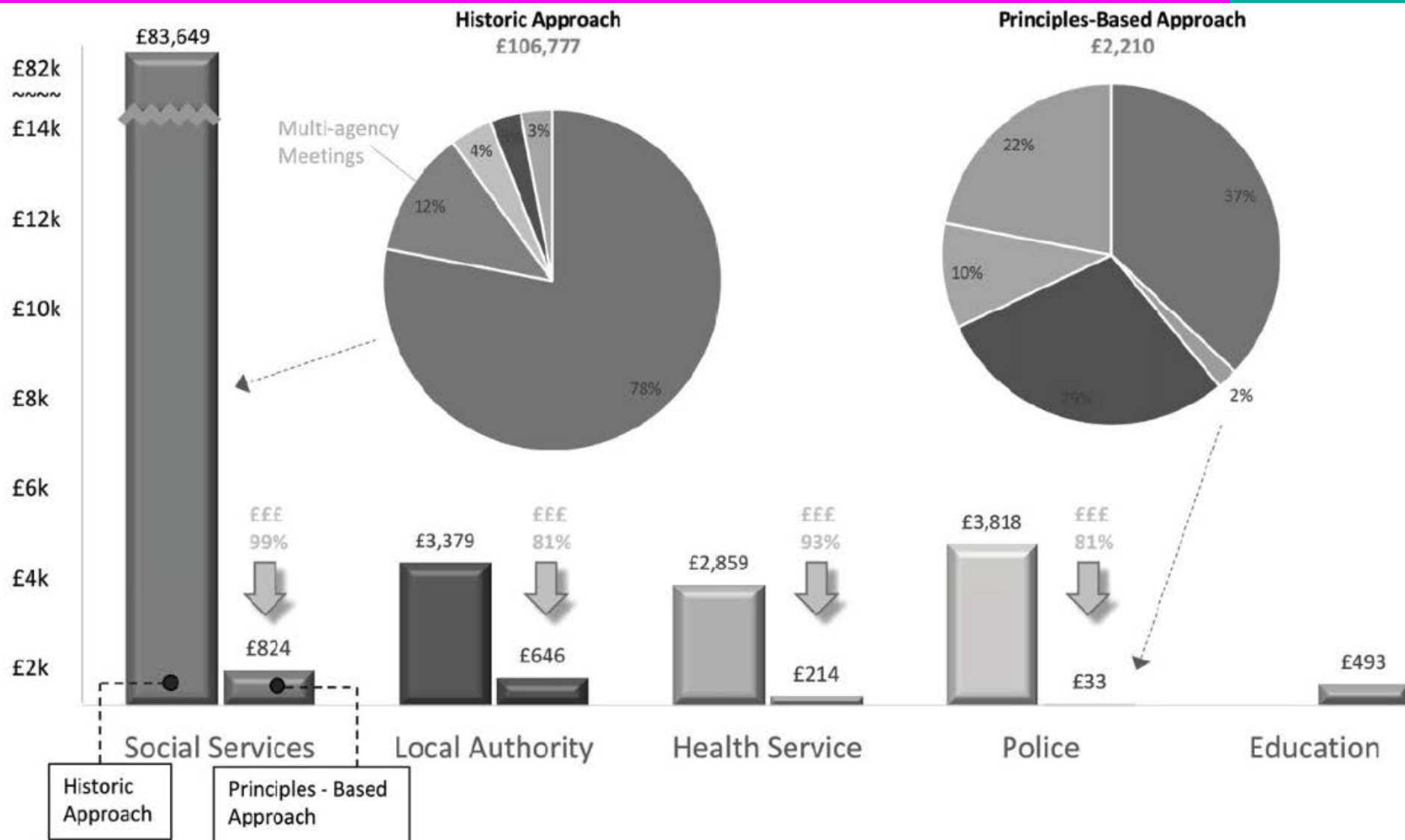
- u “The most efficient way to spend money on the homeless might be to give it to them.”
- u The Economist November 4th2010

Beacon and Old Hill Estate (Falmouth)

- u Between 1996 and 2004....
 - Crime down by 50%
 - Post natal depression down by 70%
 - Unemployment down by 70%
 - Child protection registrations down 65%
 - Teenage pregnancies down from 14% to <1%

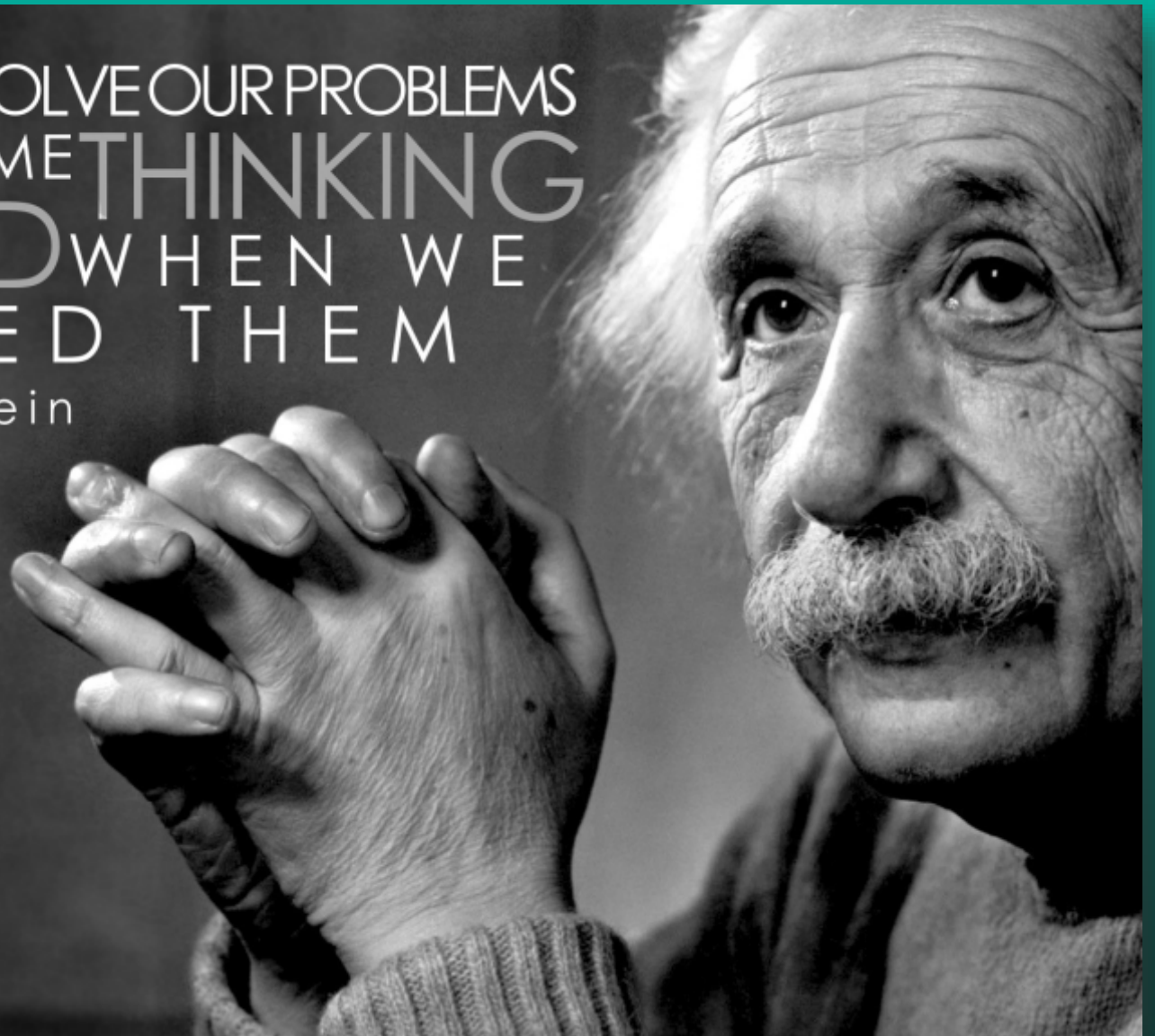
Cost analysis

Comparing historic approach to new approach



WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM

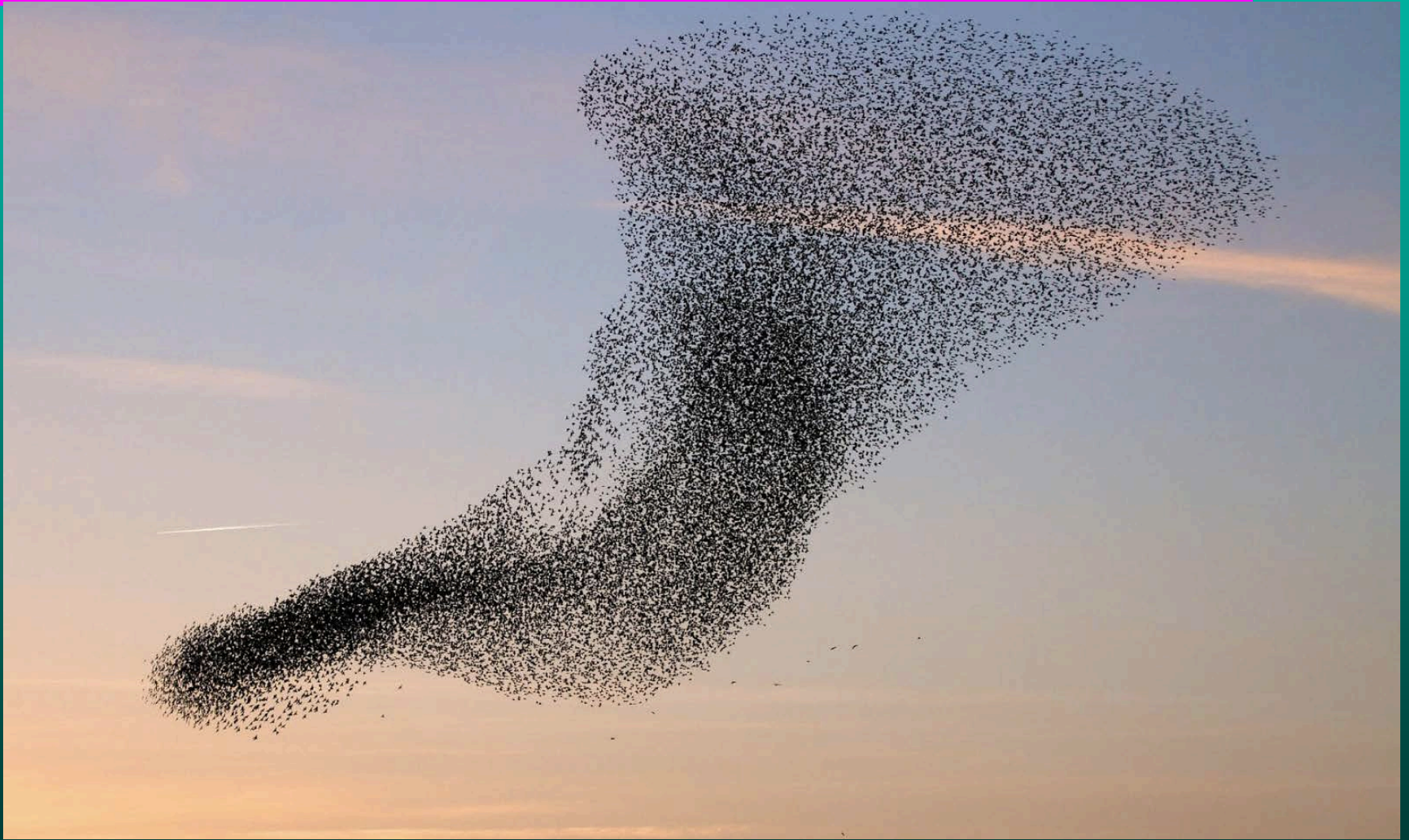
-Albert Einstein



Changing attitudes in Public Services

Existing system	New system
Rational	Normative
Identifies problems/responds to crises	What matters – a good life
Finds solutions, designs services	Looks for strengths
Implements solutions – does things to people rather than with them	Builds support and networks – lets solutions emerge
Run by and for professionals	Run by citizen who “pull” for support
“Customer” – consumer of services	Citizen
Purpose – be efficient, play it safe	Purpose – help build strong citizens and communities

A complex system



Changing complex systems

- u The importance of instability
- u Order generating rules
- u Emergence of solutions
- u Conditioning emergence
- u “Deep structures and archetypes”
- u Paradox and contradiction

The Typical Approach...

Conference Room



Real World

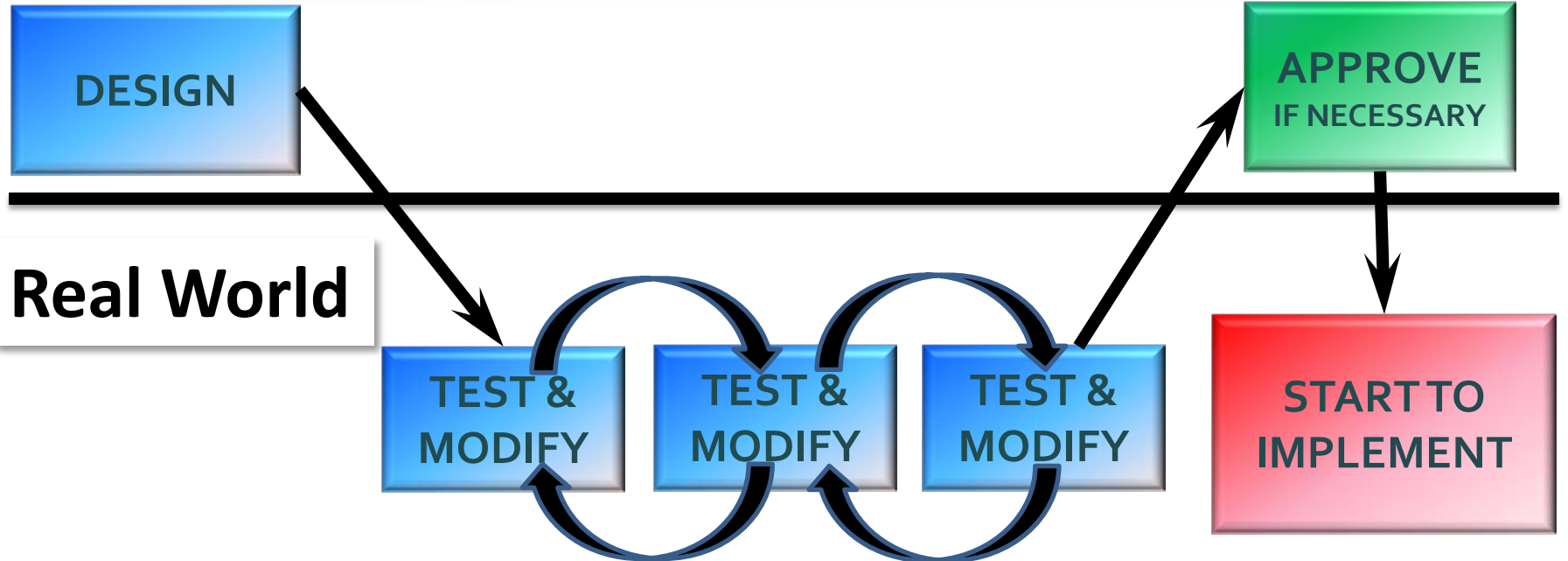


IMPLEMENT



The Quality Improvement Approach

Conference Room

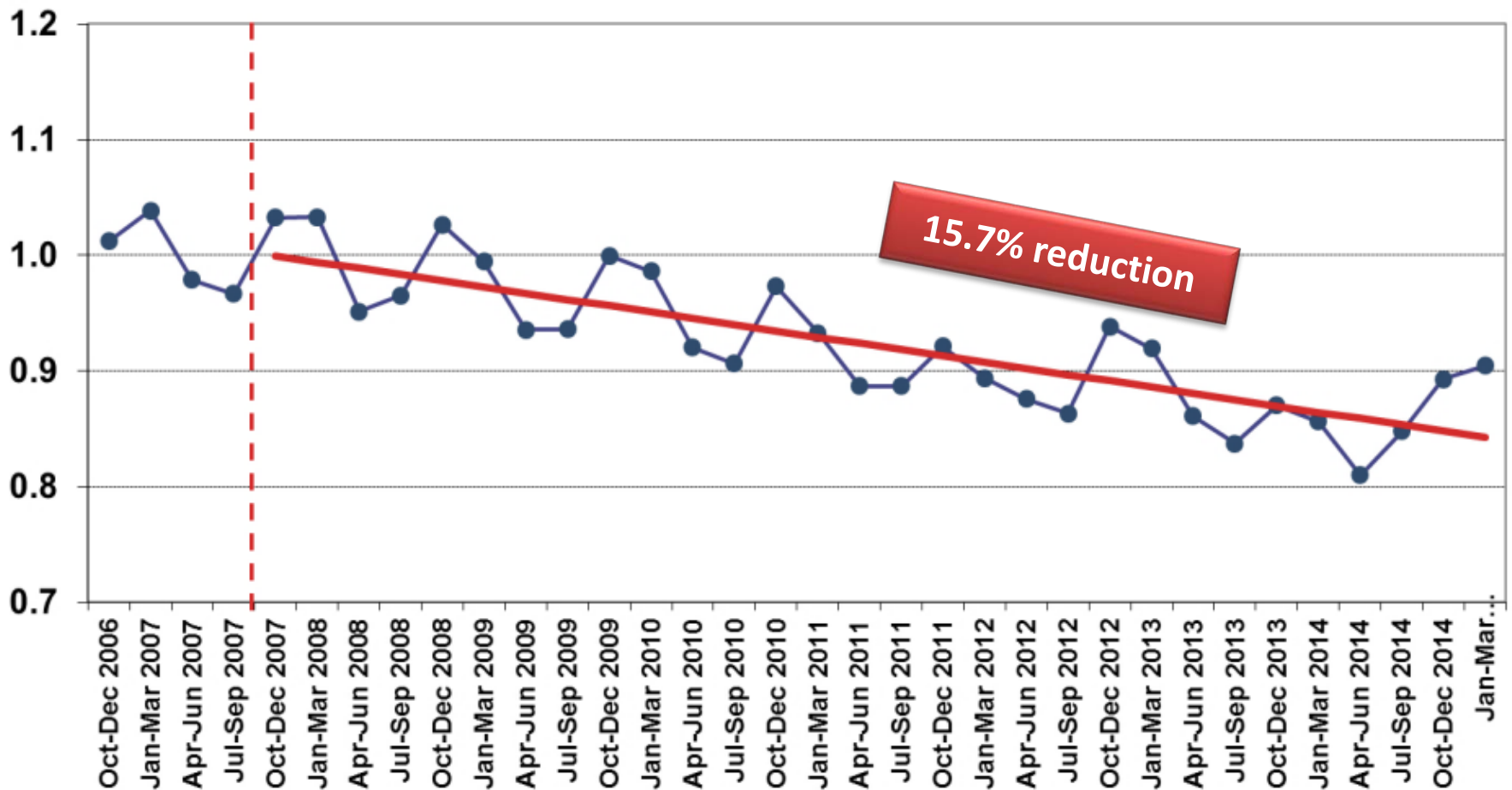


**“You can’t impose anything
on anyone and expect them
to be committed to it”**

Edgar Schein, Professor Emeritus

MIT Sloan School

Hospital Standardised Mortality Ratio October 2006 to March 2015



Large scale change in Early Years..... developing our thinking over time



The Early Years Collaborative - Aims

1. To ensure that women experience positive pregnancies which result in the birth of more healthy babies as evidenced by a reduction of 15% in stillbirths (from 4.9 per 1,000 births in 2010 to 4.3 per 1,000 births in 2015) and infant mortality (from 3.7 per 1,000 live births in 2010 to 3.1 per 1,000 live births in 2015).
2. To ensure that 85% of all children have reached all of the expected developmental milestones at the time of the child's 27-30 month child health review, by end-2016.
3. To ensure that 90% of all children have reached all of the expected developmental milestones at the time the child starts primary school, by end-2017.

Workstream 2

Aim

Primary Drivers

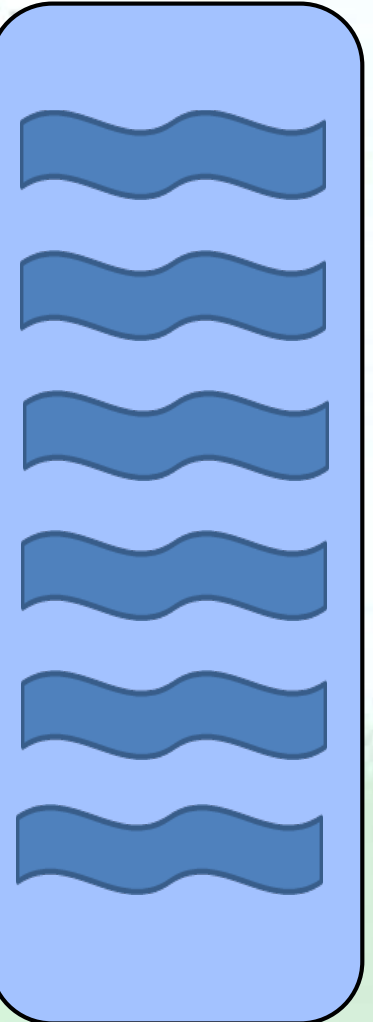
Secondary Drivers

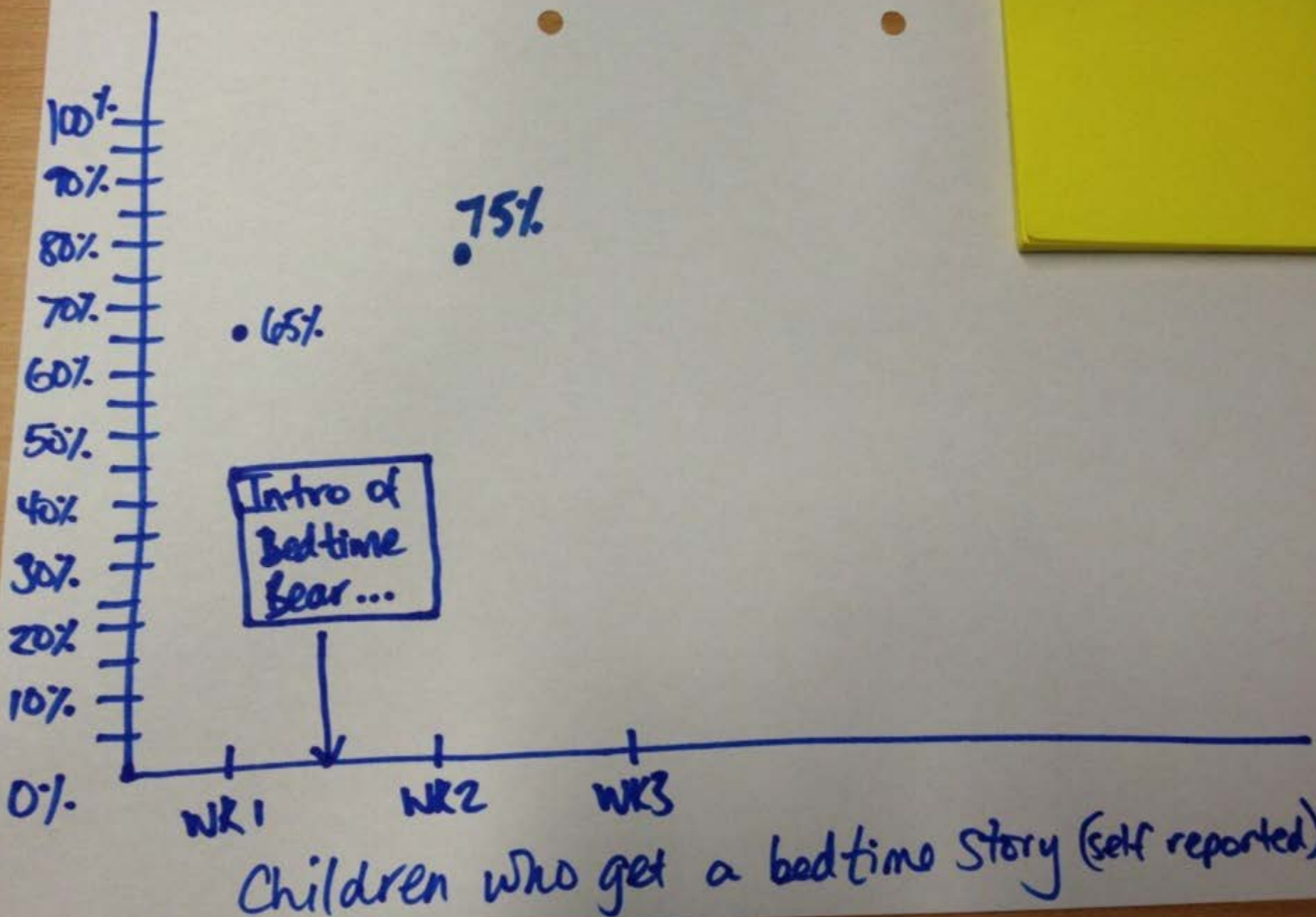
85% of all children have all the developmental skills and abilities **expected of a 27-30 month old** by the end of 2016

Societal Issues

Child's physical & mental health and emotional development

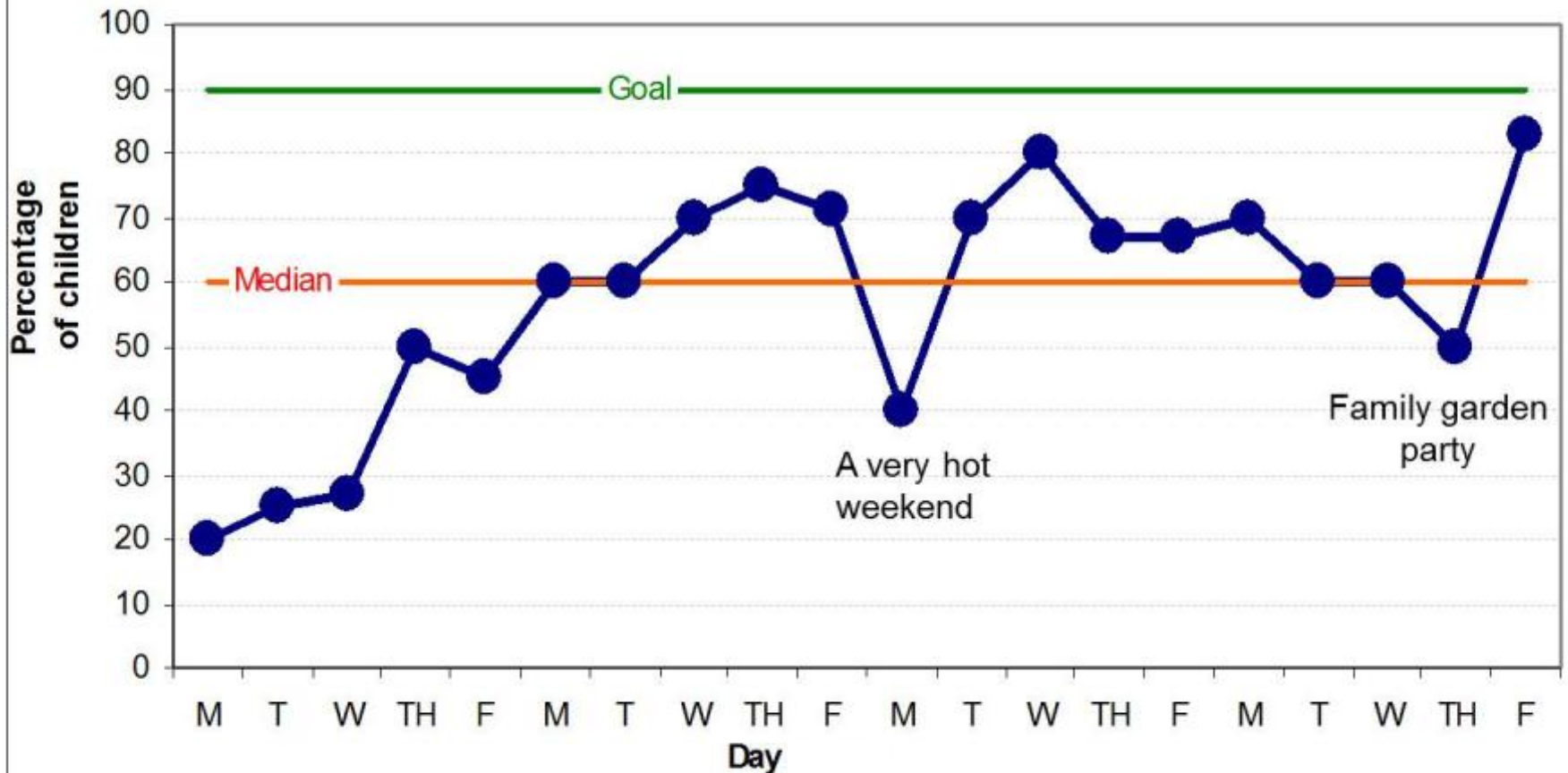
Carer's physical & mental health and skills



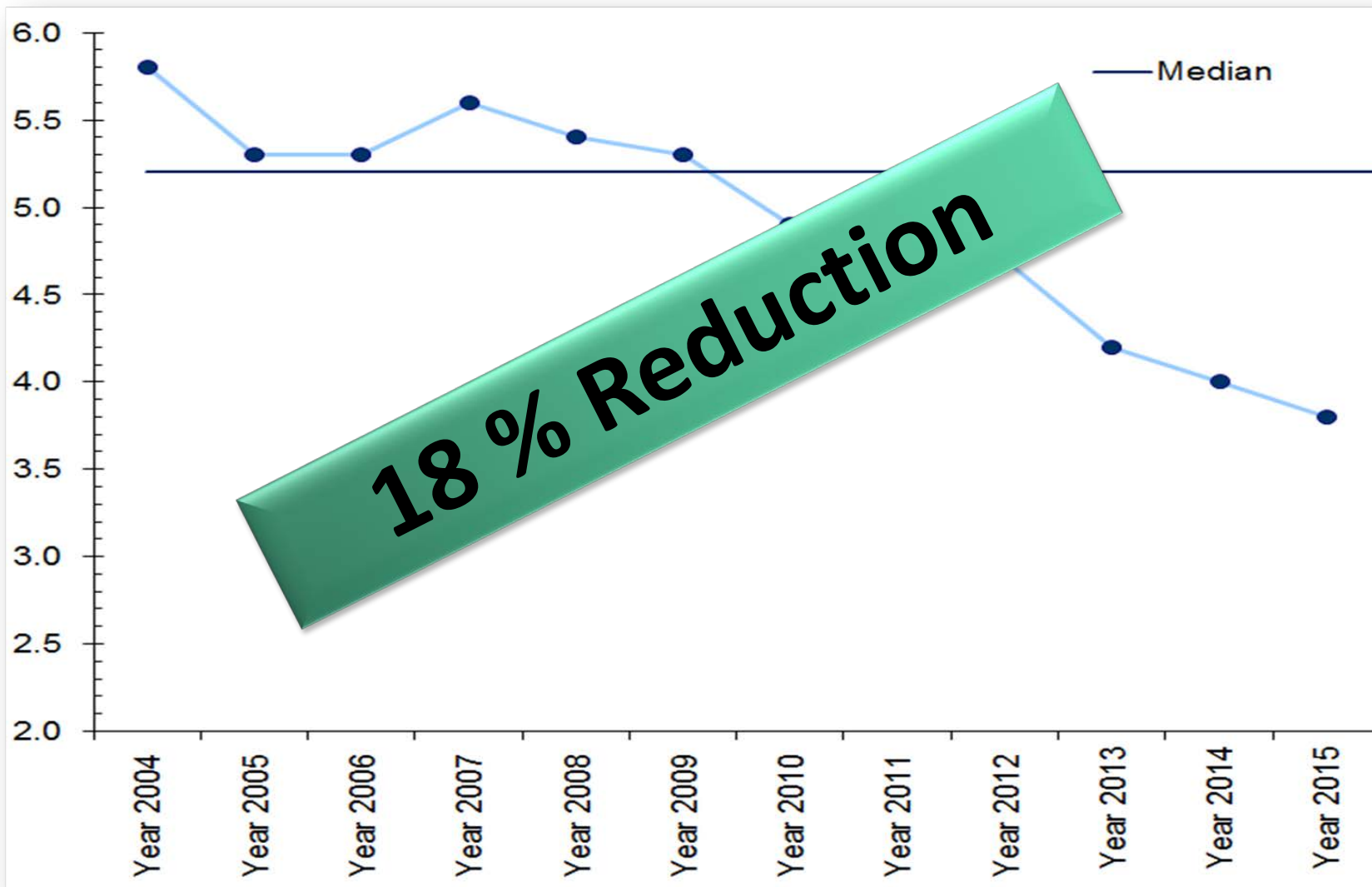


90% of children at Grassmarket nursery school will receive a bedtime story

Children receiving a bedtime story

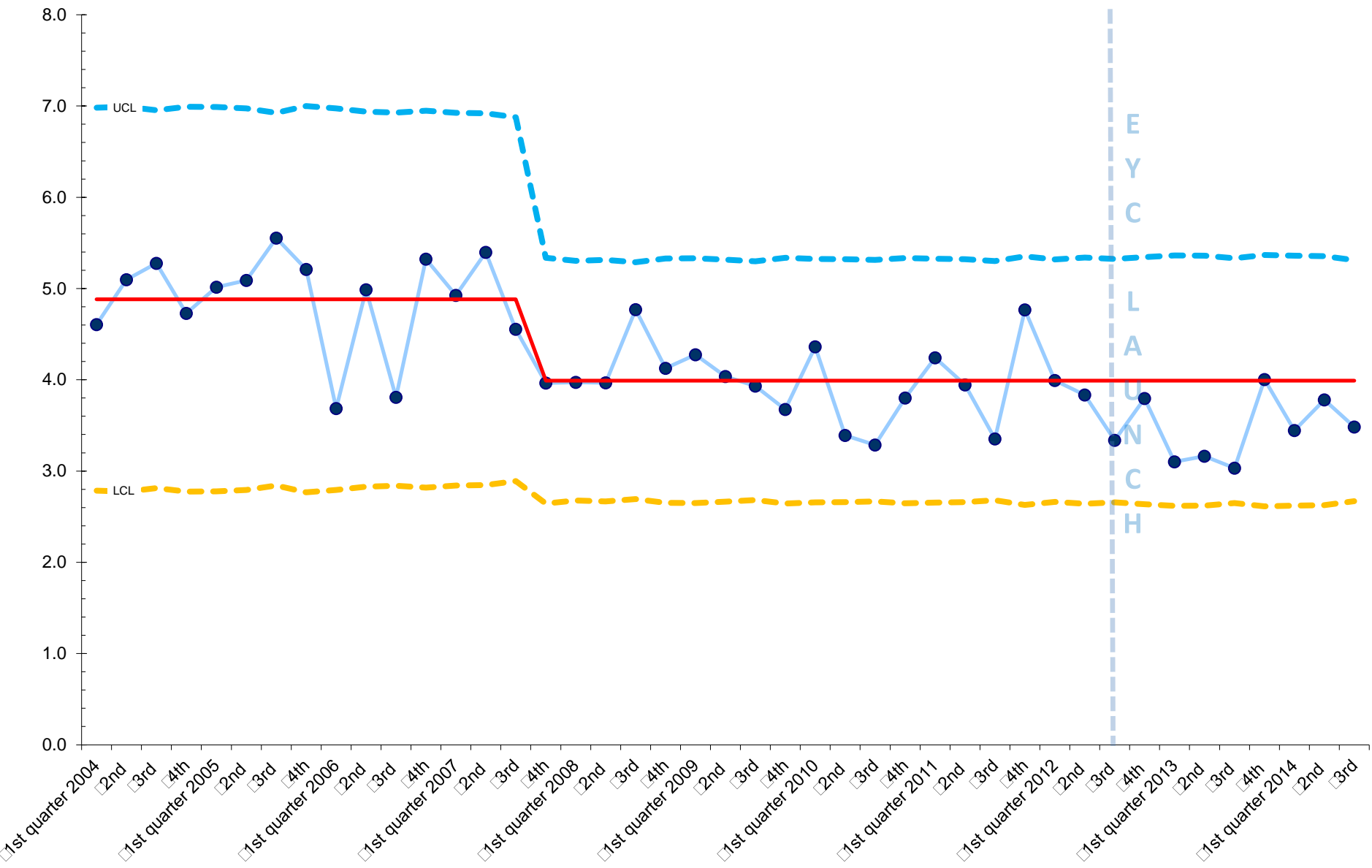


Scottish Stillbirth Rate (per 1000 births) 2000 - 2015

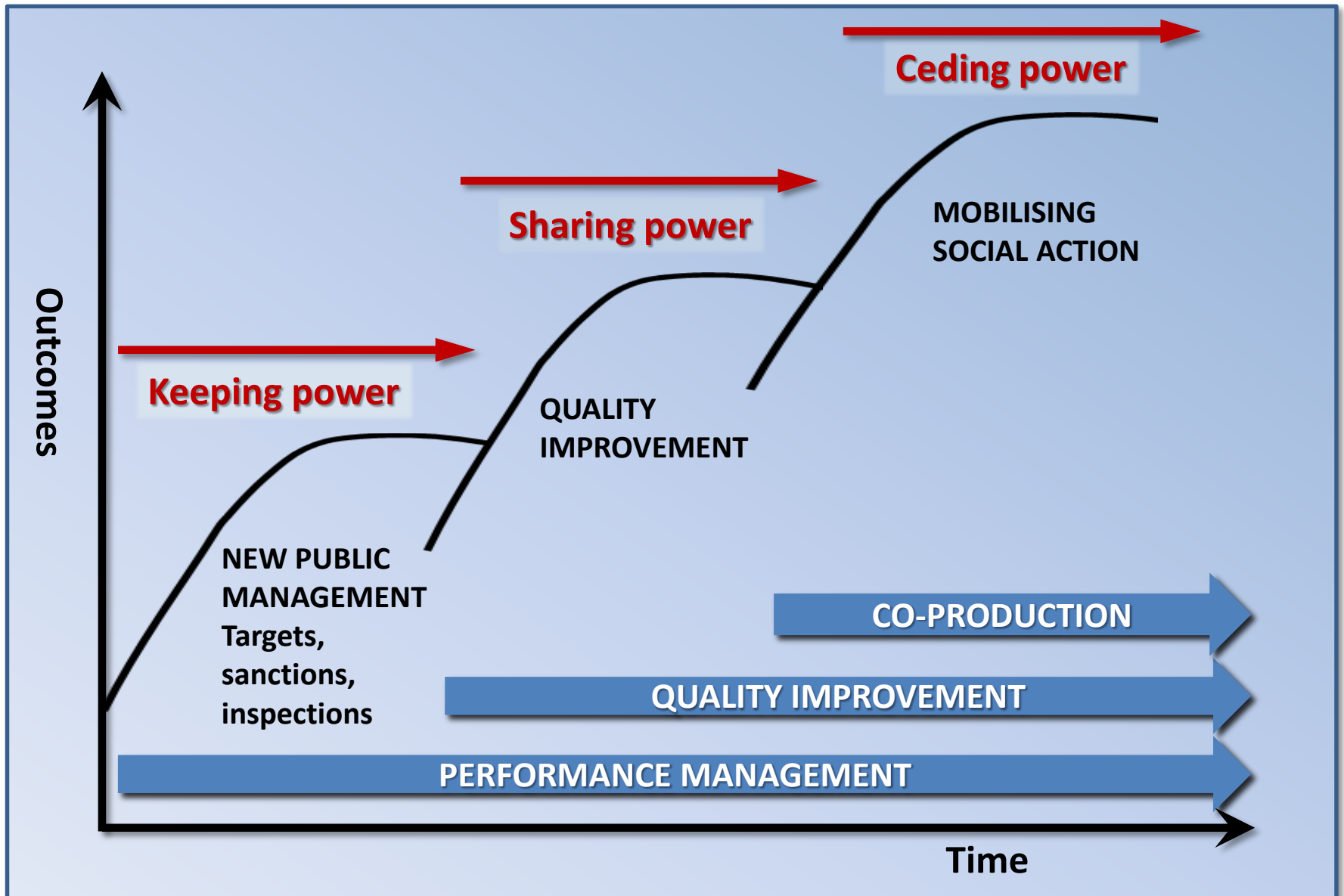


P' Chart for Quarterly Infant Mortality in Scotland, 2004-2014

Rate per 1,000 live births

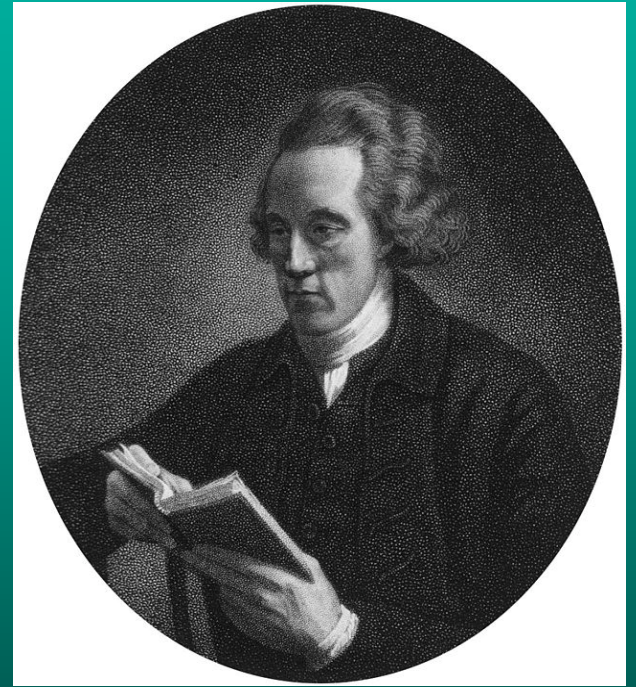


Getting to the Third Curve



Joseph Townsend 1739-1816

- u “Hunger will tame the fiercest animals. “It will teach decency and civility, obedience and subjection ... it is only hunger which can spur and goad the poor on to labour.”



Frederic Ozanam (1813-1853)

- u “The problem which divides people today is not a political problem: it is a social one. It is a matter of knowing which will get the upper hand: the spirit of selfishness or the spirit of sacrifice; whether society will go for ever increasing profit, or for everyone devoting themselves to the common good.”

Jimmy Reid 1971



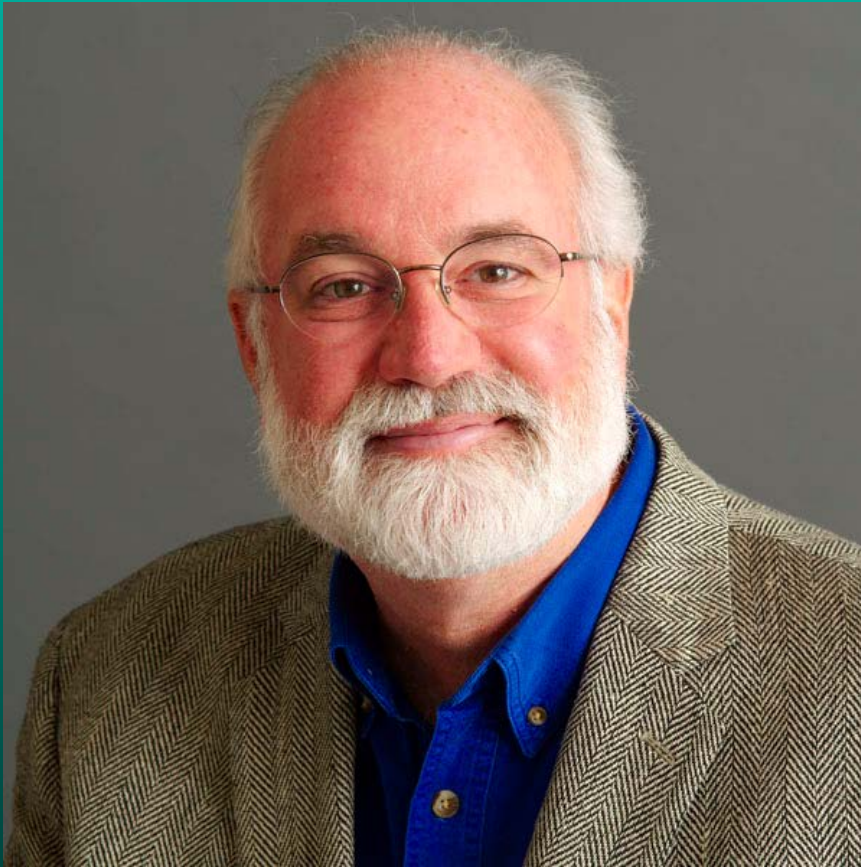
Trade Union leader

**Elected by students as Rector of Glasgow
University**

Rectorial Address

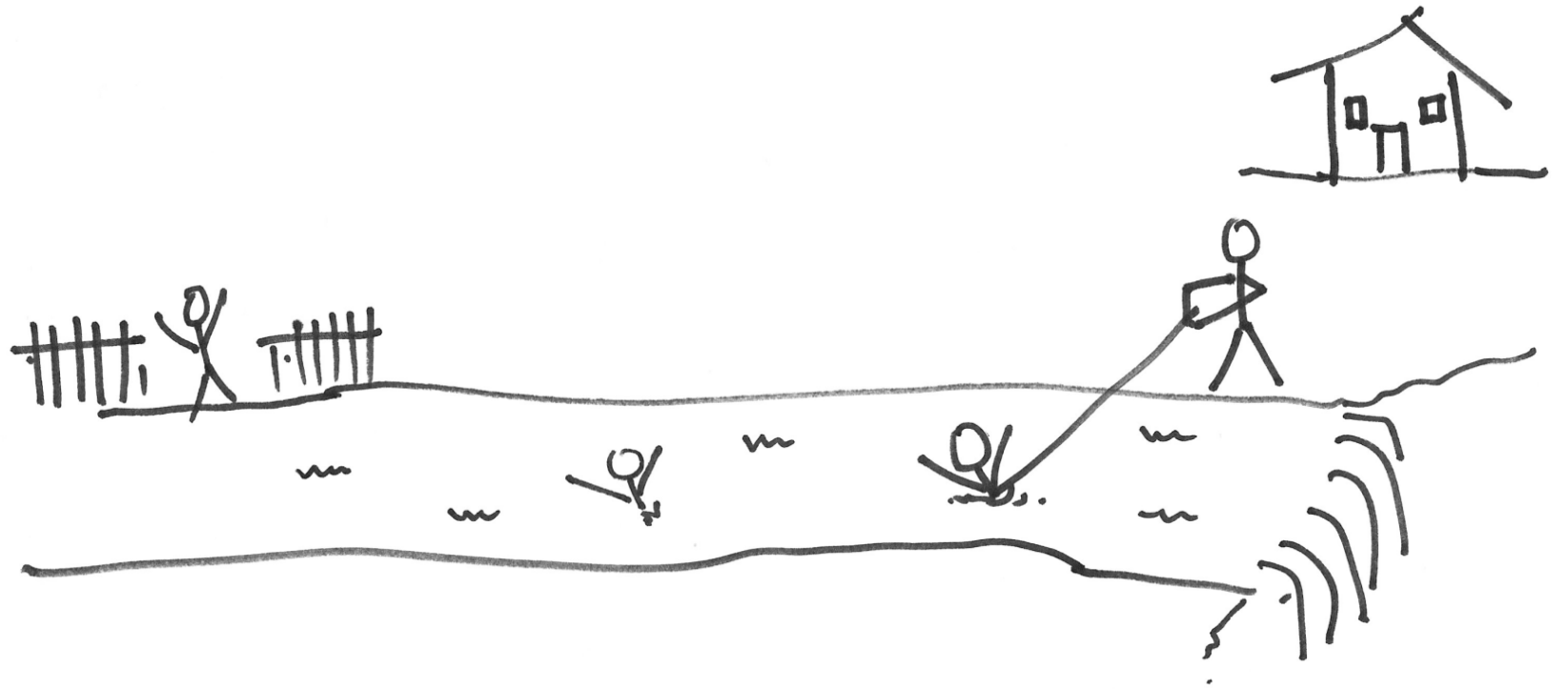
- “Let me right at the outset define what I mean by alienation. It is the cry of men who feel themselves the victims of blind economic forces beyond their control. It's the frustration of ordinary people excluded from the processes of decision making. The feeling of despair and hopelessness that pervades people who feel with justification that they have no real say in shaping or determining their own destinies....”

Fr Greg Boyle – Homeboy Industries



“Here is what we seek: a compassion that can stand in awe at the burdens the poor have to carry rather than one that stands in judgment at how they carry them.”

— Gregory Boyle





Purpose and meaning
Sense of control
Self esteem →
Self efficacy →
Supportive networks
= **Wellbeing**

Ability to choose

Behaviours

Smoking
Obesity
No exercise
Poor diet

Outcomes

Heart Disease
T2 Diabetes
COPD
Lung Cancer

