Blip or dip?
A closer look at recent UK mortality trends and future projections

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Agenda

- What has happened to mortality trends in recent years
  - E&W population
  - International comparisons
  - E&W cause of death
  - Winter and flu related deaths
  - E&W population by subgroup

- Reasons for the slowdown

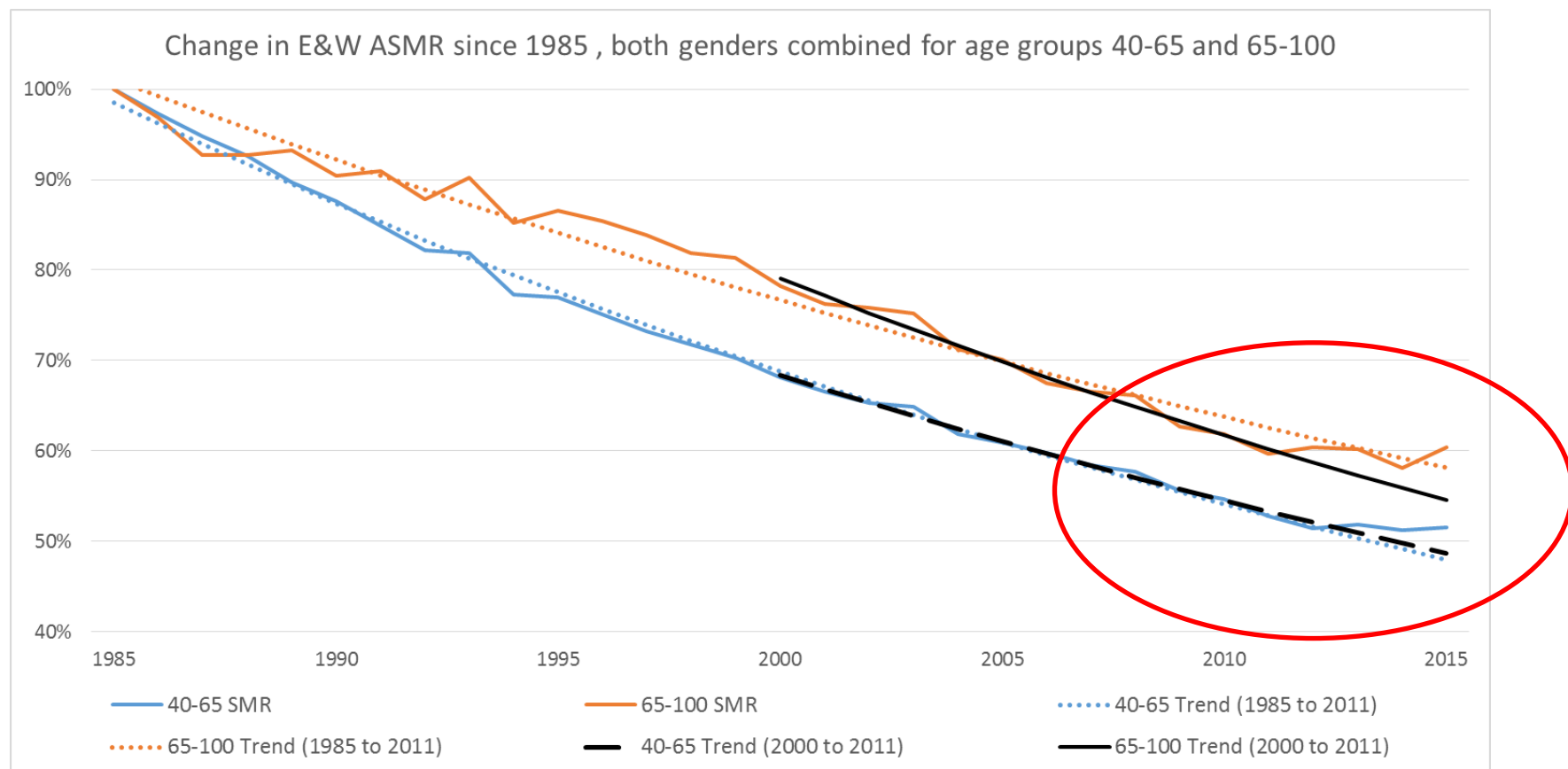- What this means for the next 5 to 10 years

Mortality trends in recent years

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Recent mortality trends: England & Wales

Change in E&W ASMR since 1985 , both genders combined for age groups 40-65 and 65-100

Legend:
- 40-65 SMR
- 65-100 SMR
- 40-65 Trend (1985 to 2011)
- 65-100 Trend (1985 to 2011)
- 40-65 Trend (2000 to 2011)
- 65-100 Trend (2000 to 2011)

Source: RGA analysis of ONS data

SMR calculated using 2013 European Standard Population and 50/50 male/female

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Recent mortality trends

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Recent mortality trends

~~Blip or~~ Dip

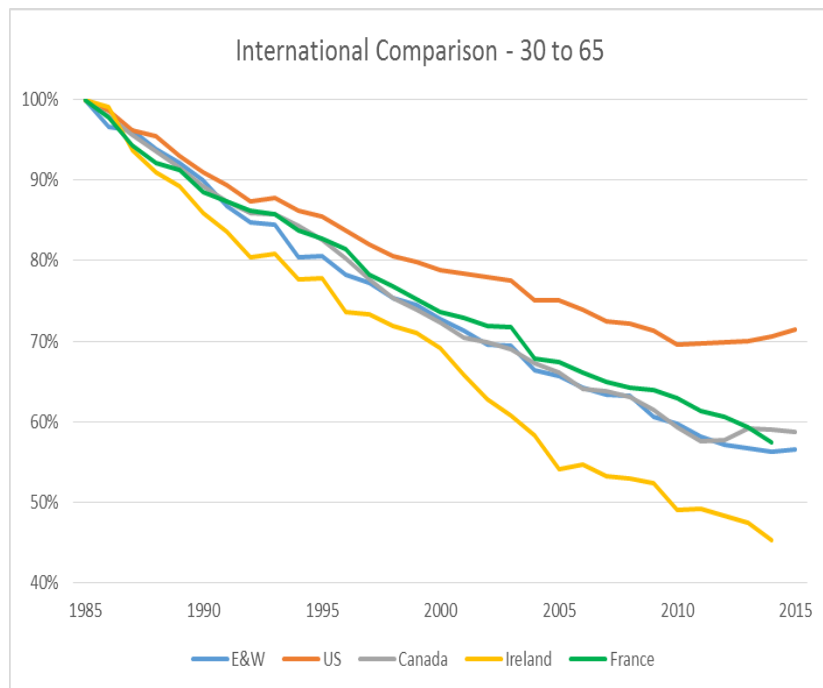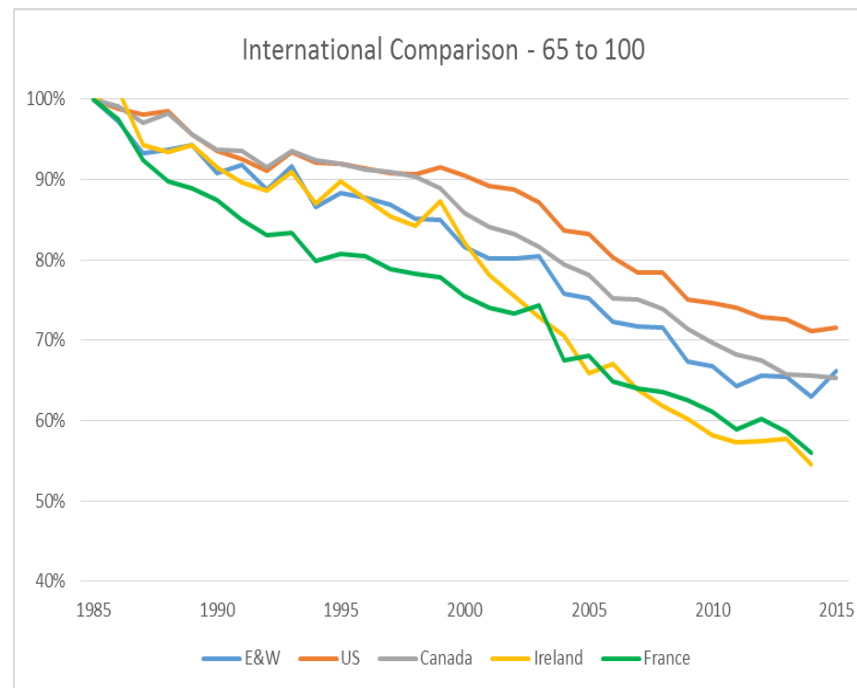## New question: But for how long?

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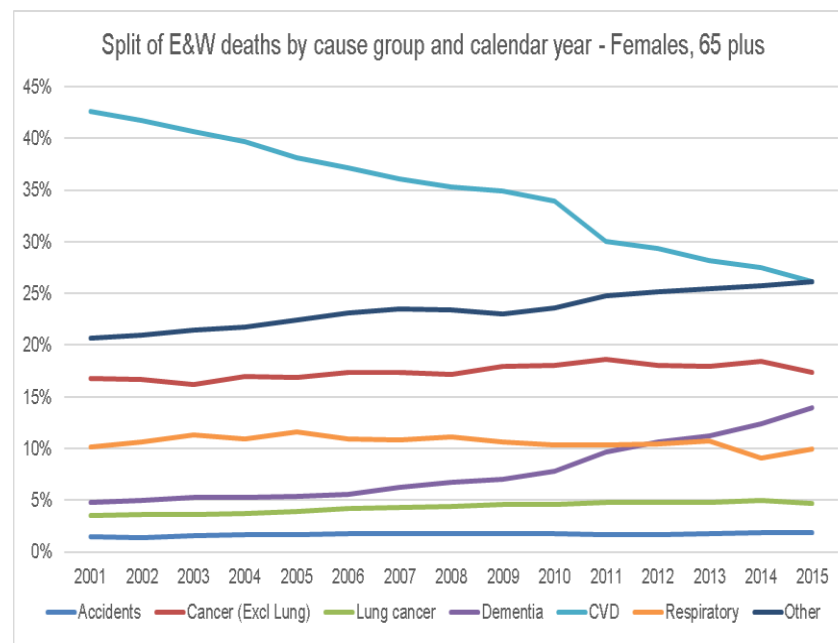# Recent mortality trends – Other countries

Ages 30-65

International Comparison - 30 to 65
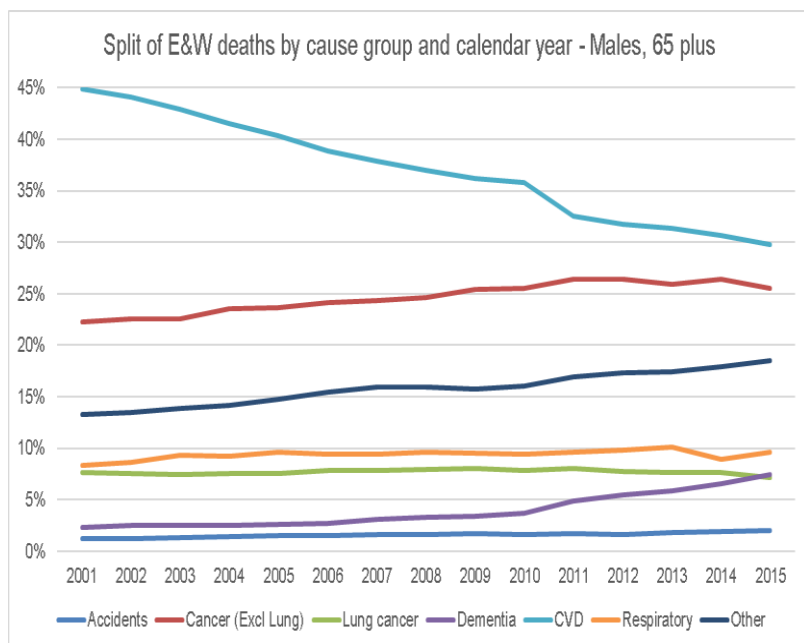
Ages 65-100

International Comparison - 65 to 100

Source: HMD data, RGA analysis

Recent mortality trends – E&W cause of death

Split of E&W deaths by cause group and calendar year - Males, 65 plus

Split of E&W deaths by cause group and calendar year - Females, 65 plus
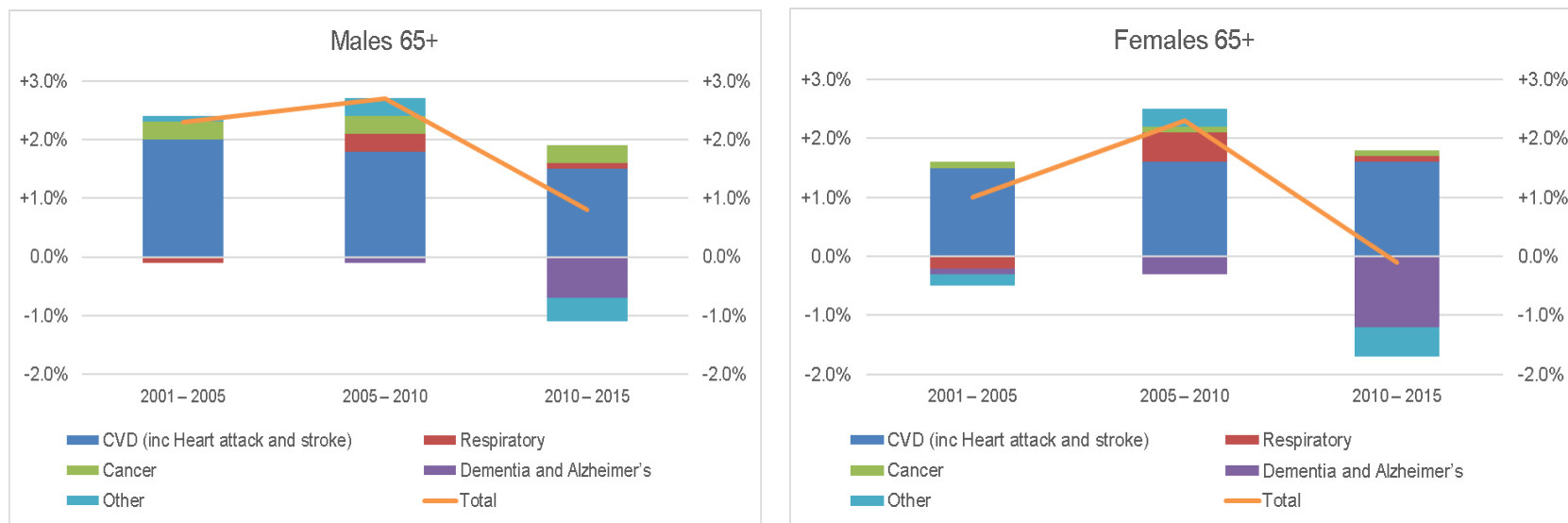
Accidents — Cancer (Excl Lung) — Lung cancer — Dementia — CVD — Respiratory — Other

Source: ONS data, RGA analysis

Recent mortality trends – E&W cause of death

Annualized mortality improvements by key cause of death group by calendar year period and gender – Ages 65 plus
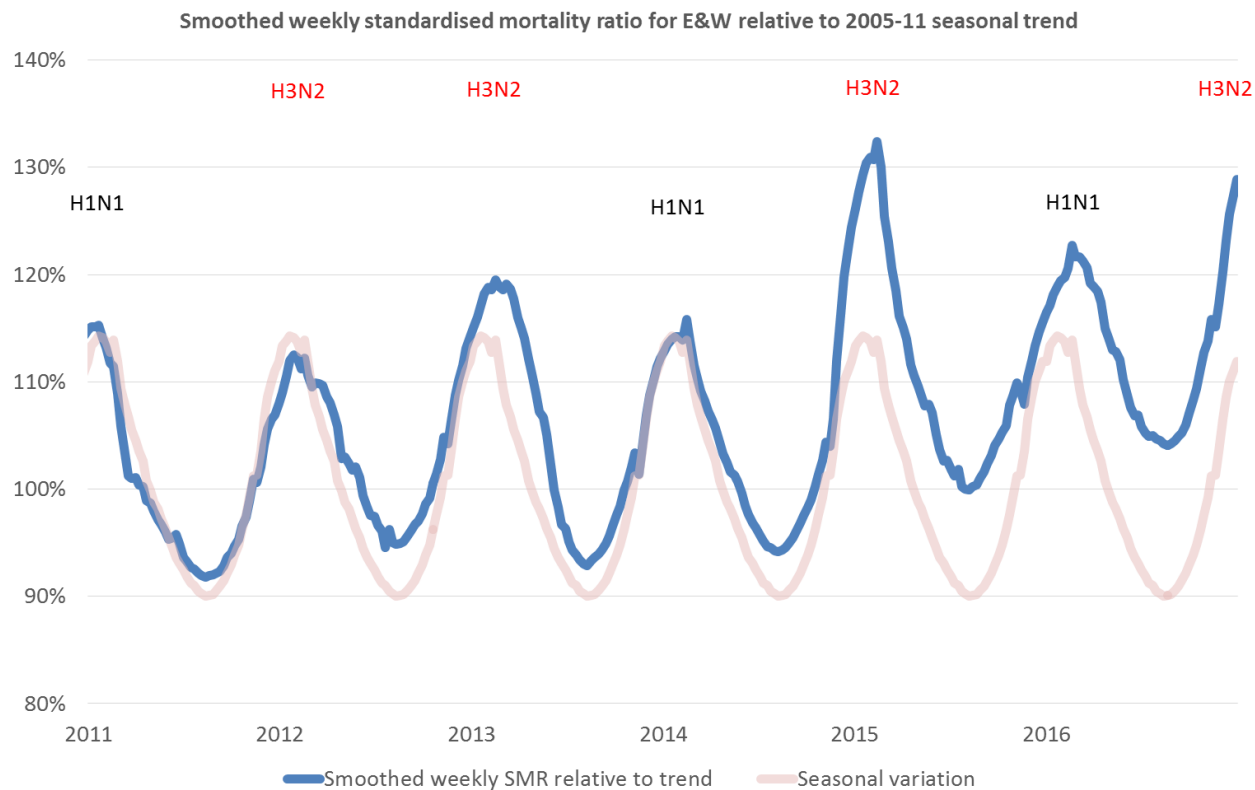

	Percentage of all deaths for 65+ age group as at 2015					
	CVD	Respiratory	Cancer	Dementia	Other	Total
Males	30%	10%	33%	7%	20%	100%
Females	26%	10%	22%	14%	28%	100%

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Recent mortality trends: Winter mortality

Smoothed weekly standardised mortality ratio for E&W relative to 2005-11 seasonal trend

Sources: ONS data, CMI

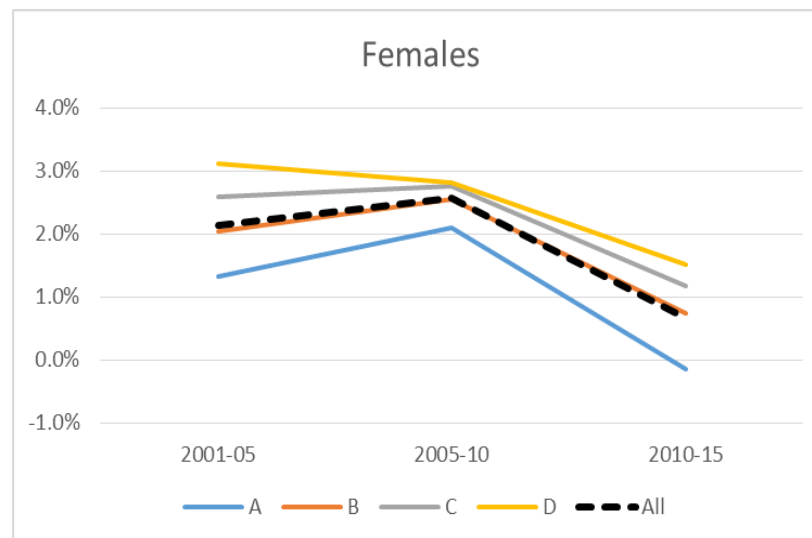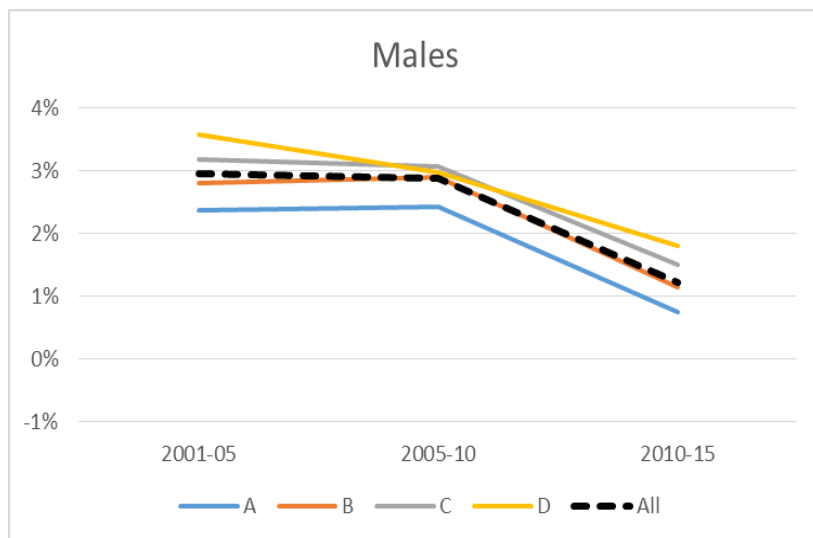# Recent mortality trends: By population subgroup

- Financial liabilities in pension schemes and insurance companies will tend to be skewed towards the higher socioeconomic groups

- RGA investigated trends by socioeconomic group in England & Wales using population data between 2001 and 2015

- Exposure & death data split by:

  - Age

  - Gender

  - Lower super output area (LSOA) – Approx 35,000 in E&W

- Mapped each LSOA to various indices linked to socioeconomic status

- Results shown are based on splitting data into four groups of increasing affluence (A – lower SEG, D – higher SEG)

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Recent mortality trends: By population subgroup

Mortality improvements for ages 60-89 by socioeconomic group, calendar year period and gender

Population % by group			
A	B	C	D
28%	29%	26%	18%

Source: ONS data, RGA analysis

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Recent mortality trends: Summary

- Definite slowdown in E&W trends since 2011

- It has been seen in other countries too

- Cause of death analysis:

  – Decrease in CVD trends, level cancer trends, deterioration in dementia

  – True results obscured by death certificate coding changes and increased diagnosis rates of dementia

- Increased excess winter deaths in recent years:

  – 2015 – very high deaths, influenced by ineffective flu vaccine

  – 2015 and 2017 - high excess winter deaths

  – However high all year mortality in 2015 and 2016

- Lower socioeconomic groups have been harder hit than the better off
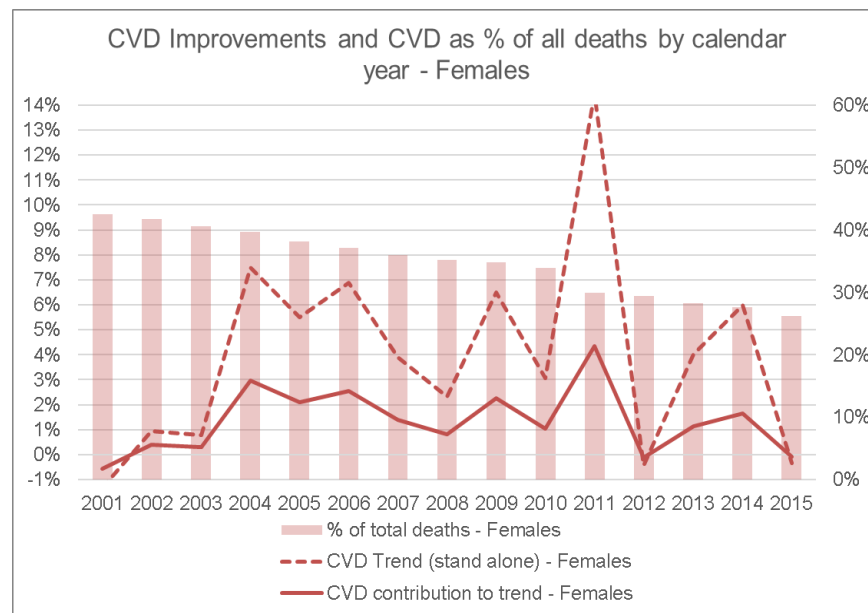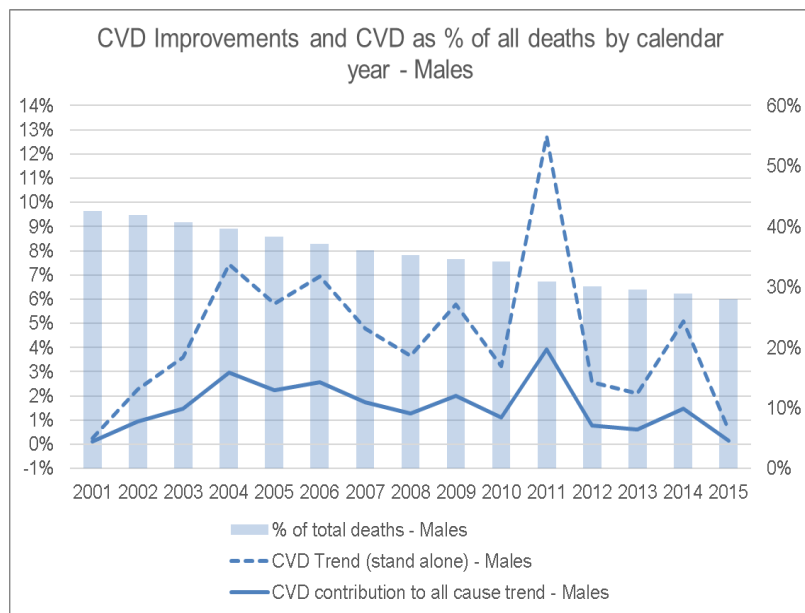
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Reasons for the slowdown

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Reasons for slowdown: Reducing influence of CVD

Source: ONS data, RGA analysis

Reasons for slowdown: Reducing influence of CVD

Smoking prevalence in Great Britain by gender and calendar year

Percentage of English population group with BMI > 30 (all ages) by calendar year and gender
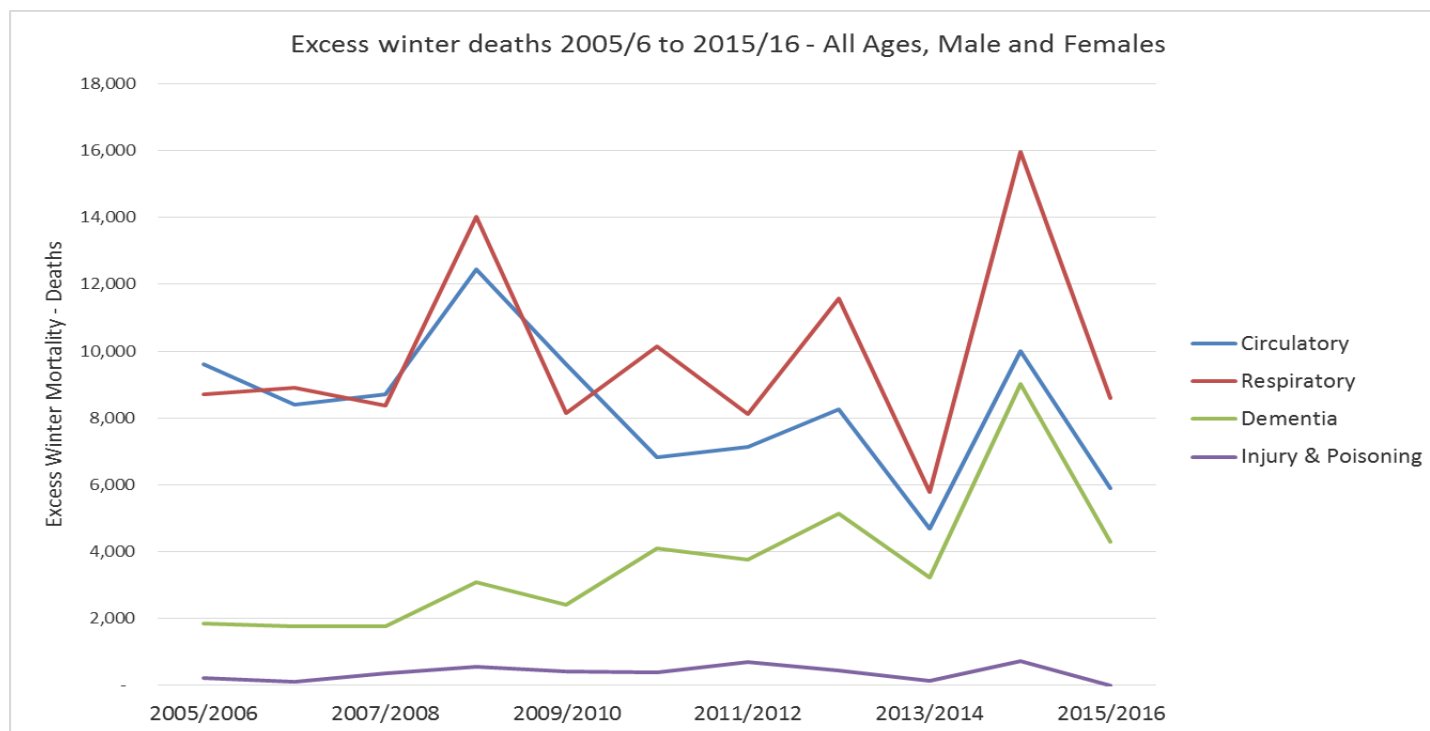
Source: Smoking statistics – Cancer Research UK, BMI statistics: Health Survey for England

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Reasons for slowdown: Excess winter deaths

Excess winter deaths 2005/6 to 2015/16 - All Ages, Male and Females

Excess winter deaths =   Excess deaths between December and March compared to the average occurring in the preceding August to November and following April to July
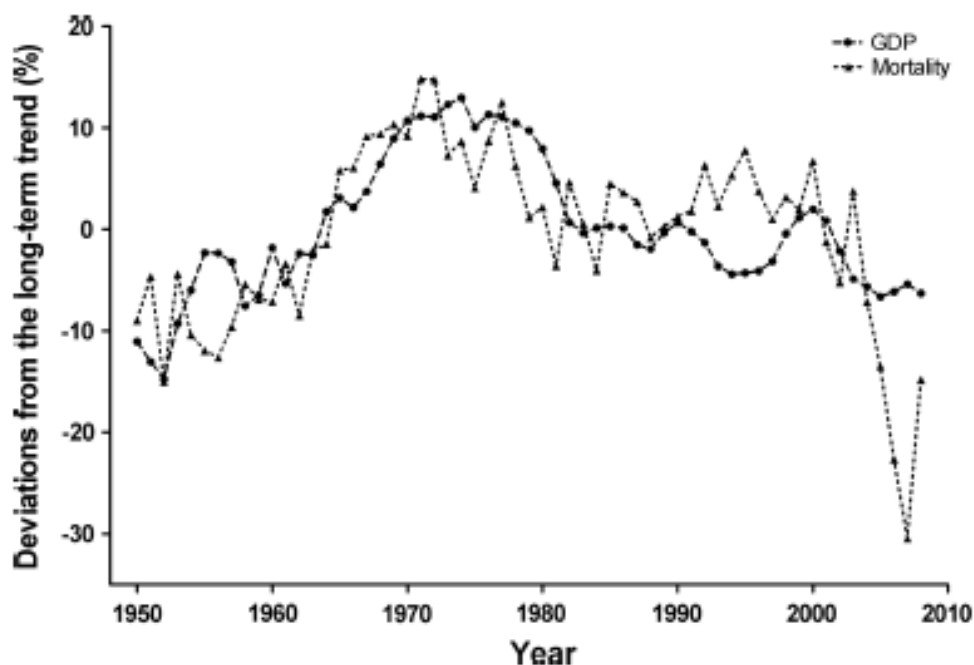
Source: ONS

Reasons for slowdown: Pro-cyclicality of mortality

Netherlands, 1950-2008, percentage deviations in GDP and mortality from fitted trend

Rolden et al (2013), Old age mortality and macroeconomic cycles, Journal of Epidemiology and Community Health,
http://dx.doi.org/10.1136/jech-2013-202544

Reasons for slowdown: Impact of recession

Possible links between recession, unemployment and mortality
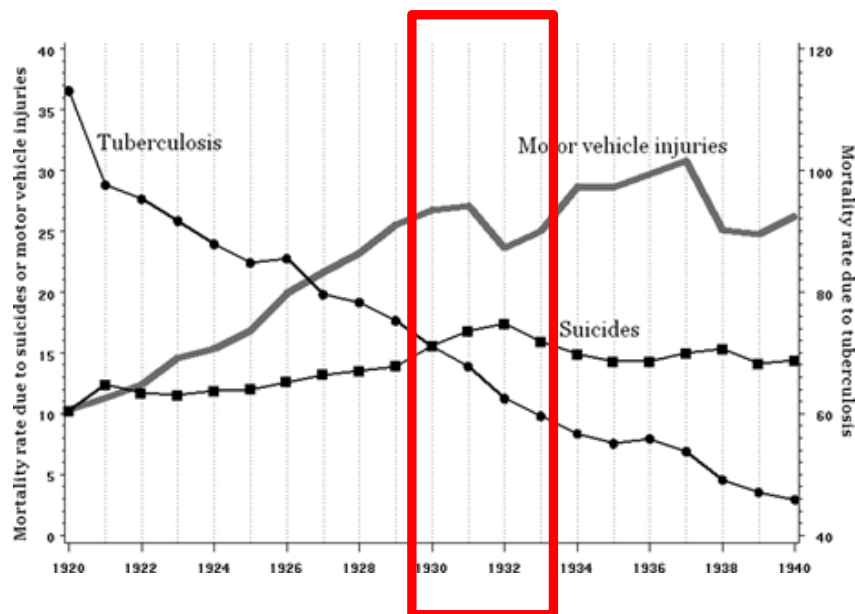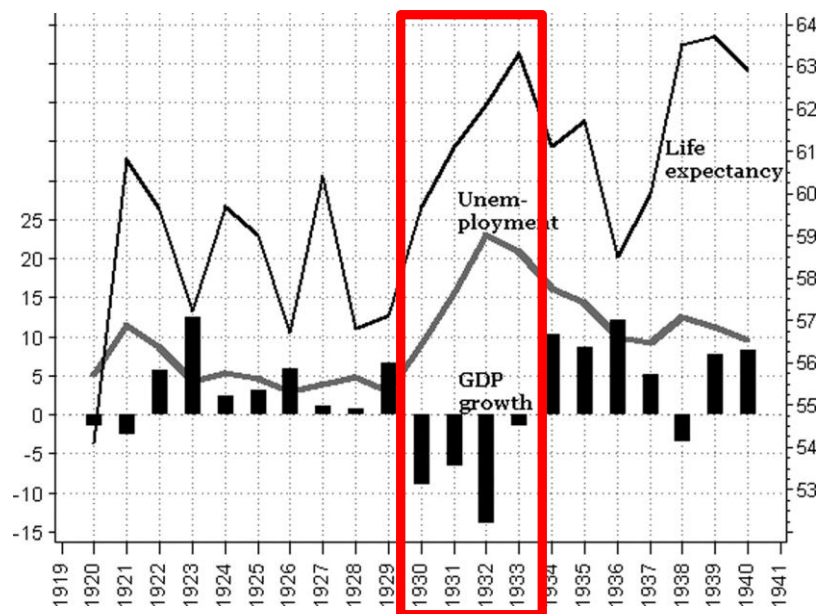
- Need to look beyond averages

- Mental health

- Suicides

- Healthy behaviors

  – Smoking

  – Alcohol use

- Motor vehicle accidents

- Unpaid social care

Reasons for slowdown: Impact of stimulus response

The Great Depression in the US

Granados and Roux (2009), Life and death during the Great Depression, PNAS 17290-17295, http://dx.doi.org/10.1073/pnas.0904491106
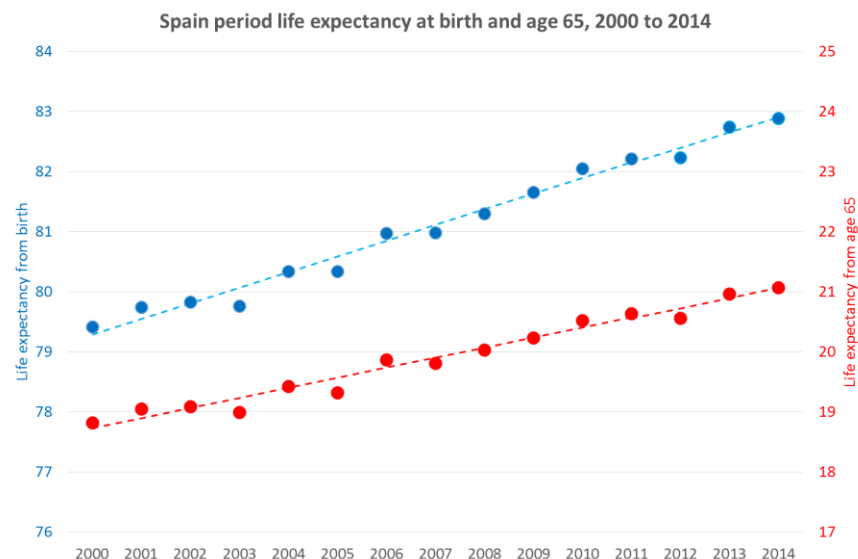
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Reasons for slowdown: Impact of policy response
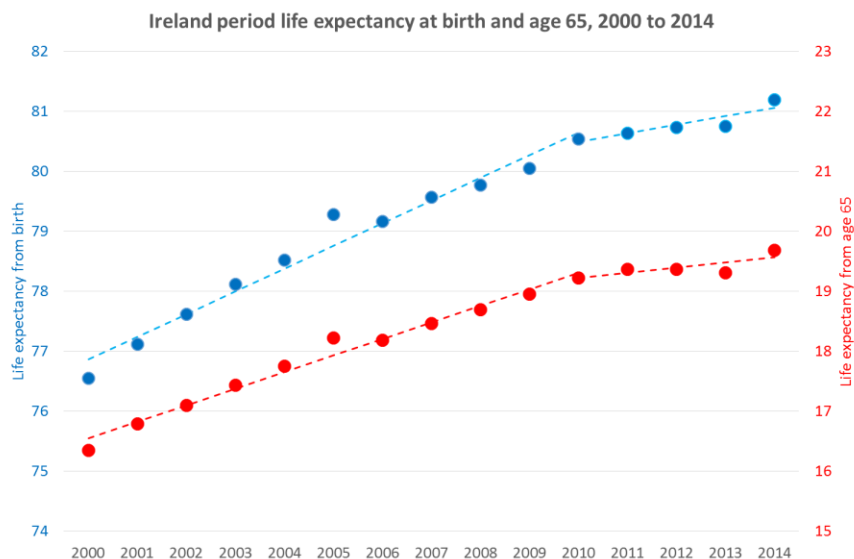
Other examples from The Body Economic

- Great depression in US, 1930s

  – States that had more New Deal spending gained better health

- Soviet Union breakup, early 1990s

  – Experience of Russia vs Belarus

- East Asian financial crisis, late 1990s

  – Experience of Thailand vs Malaysia

Stuckler and Basu (2013), The Body Economic – Why Austerity Kills, Basic Books

Reasons for slowdown: Impact of austerity

But it's not as simple as 'austerity increases mortality'

Ireland period life expectancy at birth and age 65, 2000 to 2014

Spain period life expectancy at birth and age 65, 2000 to 2014
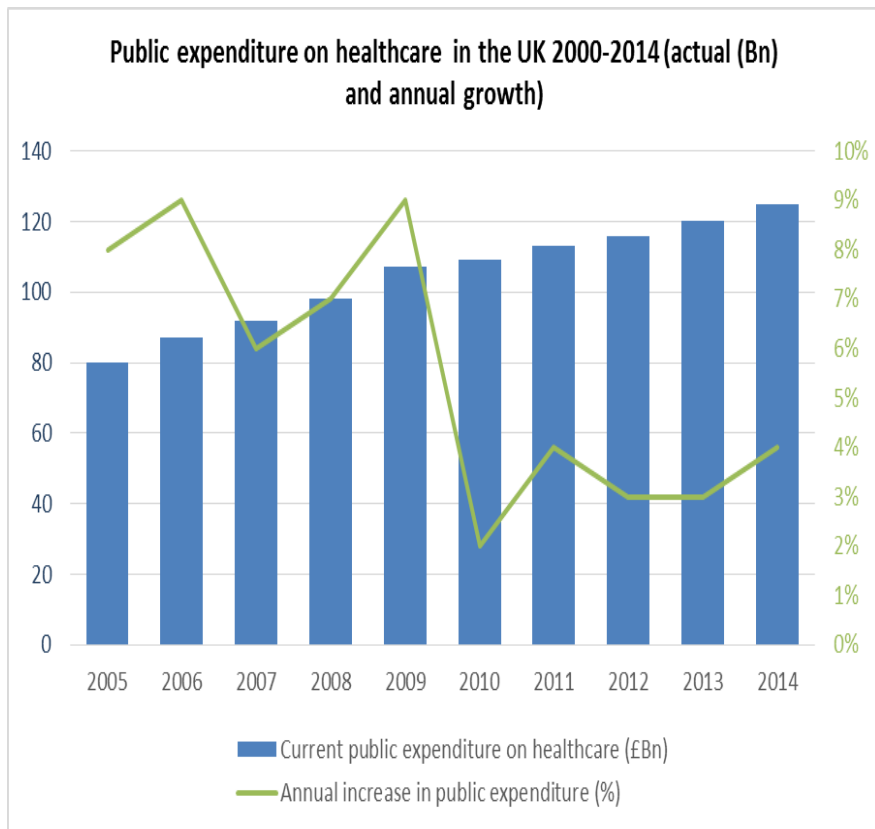
Own calculations based on data from HMD (www.mortality.org)

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Reasons for slowdown: Impact of austerity UK

Public expenditure on healthcare in the UK 2000-2014 (actual (Bn) and annual growth)

Legend: Current public expenditure on healthcare (£Bn); Annual increase in public expenditure (%)

Comparing NHS spending on people by age
Spending for patients increases as they get older
Relative cost in £
Source: IFS
BBC
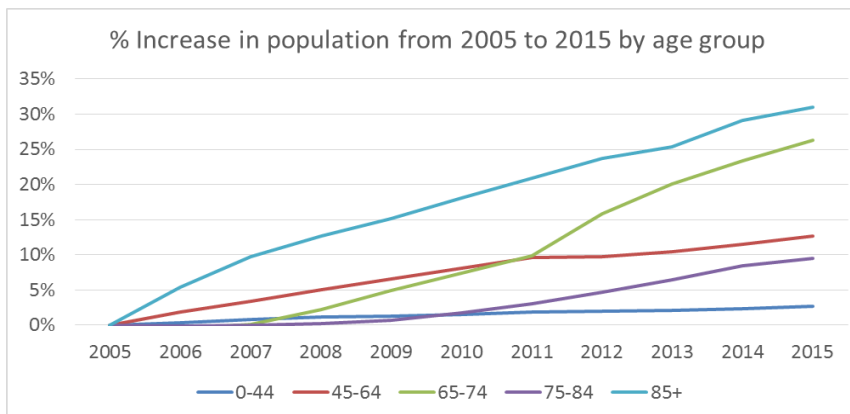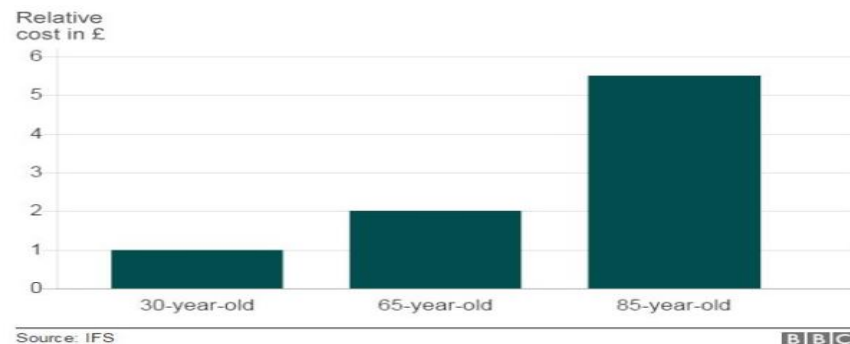
% Increase in population from 2005 to 2015 by age group
Legend: 0-44, 45-64, 65-74, 75-84, 85+
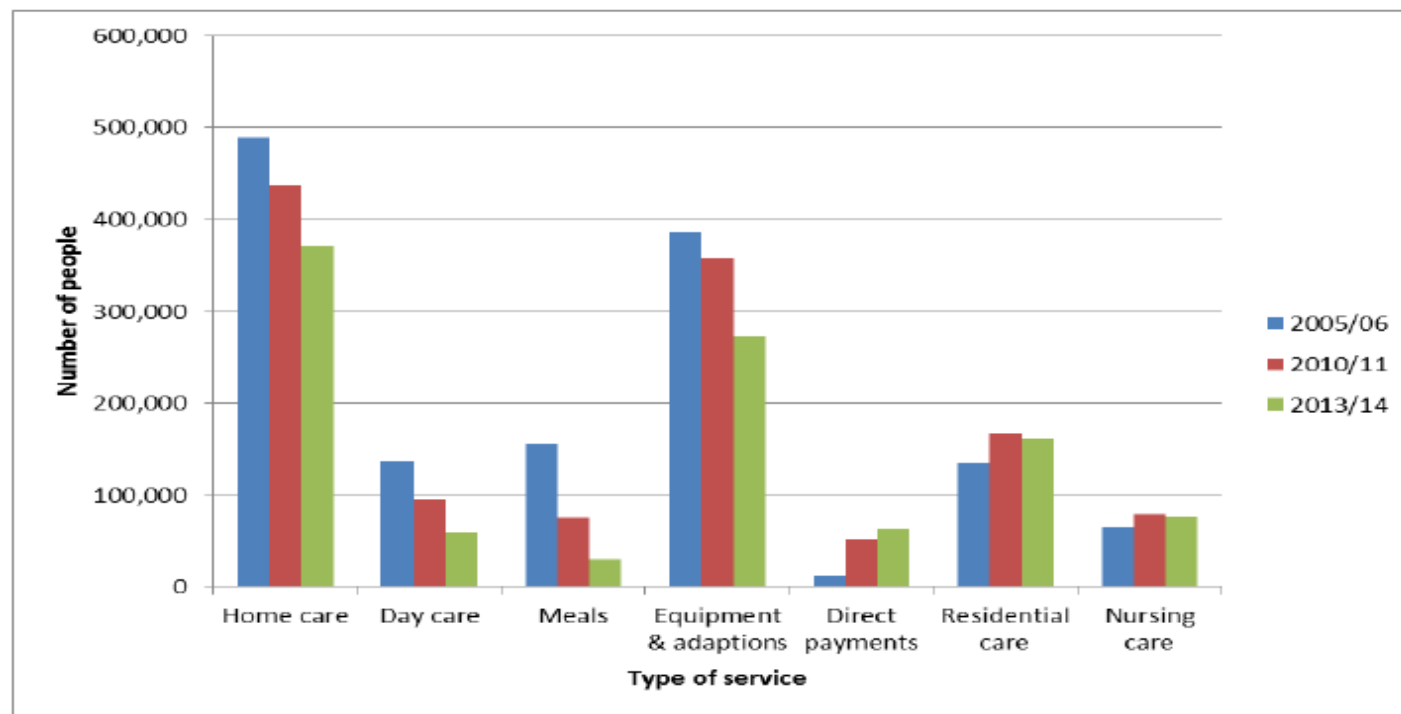
Sources: ONS, BBC (via IFS)

Reasons for slowdown: Impact of austerity UK

Number of older people supported by social services department by type of social care support, England, 2005/06 to 2013/14

Source: Age UK via NHS Digital
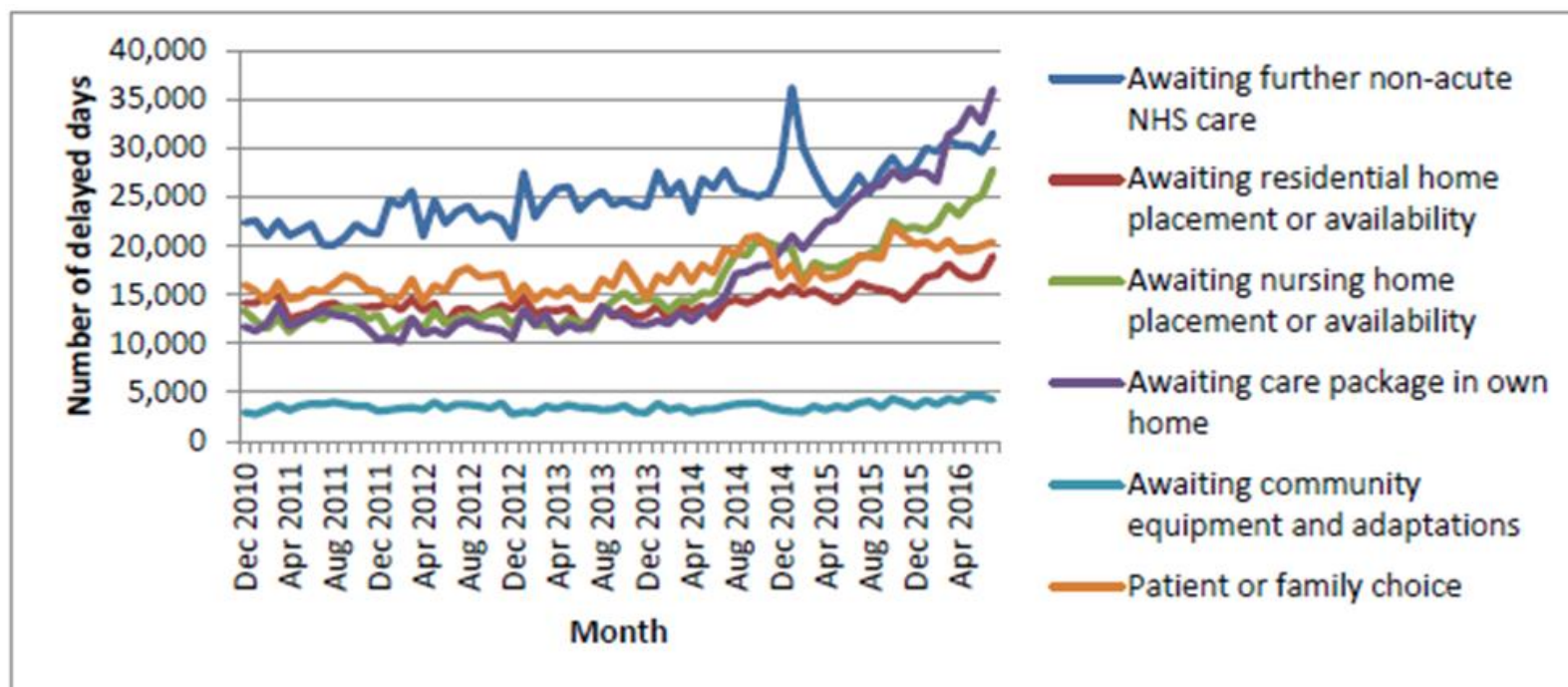
Reasons for slowdown: Impact of austerity UK

Number of monthly delayed days by reason amongst people of all ages, England, August 2010 – July 2016

Source: The Health and Care of Older People in England 2016, AgeUK. Data: NHS England

Reasons for slowdown

- Reducing influence of CVD trends ➤ Gradual reduction

- Excess winter deaths ➤ Contributor but not root cause

- Recession ➤ Short lived, relatively minor

- Austerity ➤ Most likely culprit

So how should this be allowed for when projecting trends over the next 5 to 10 years?
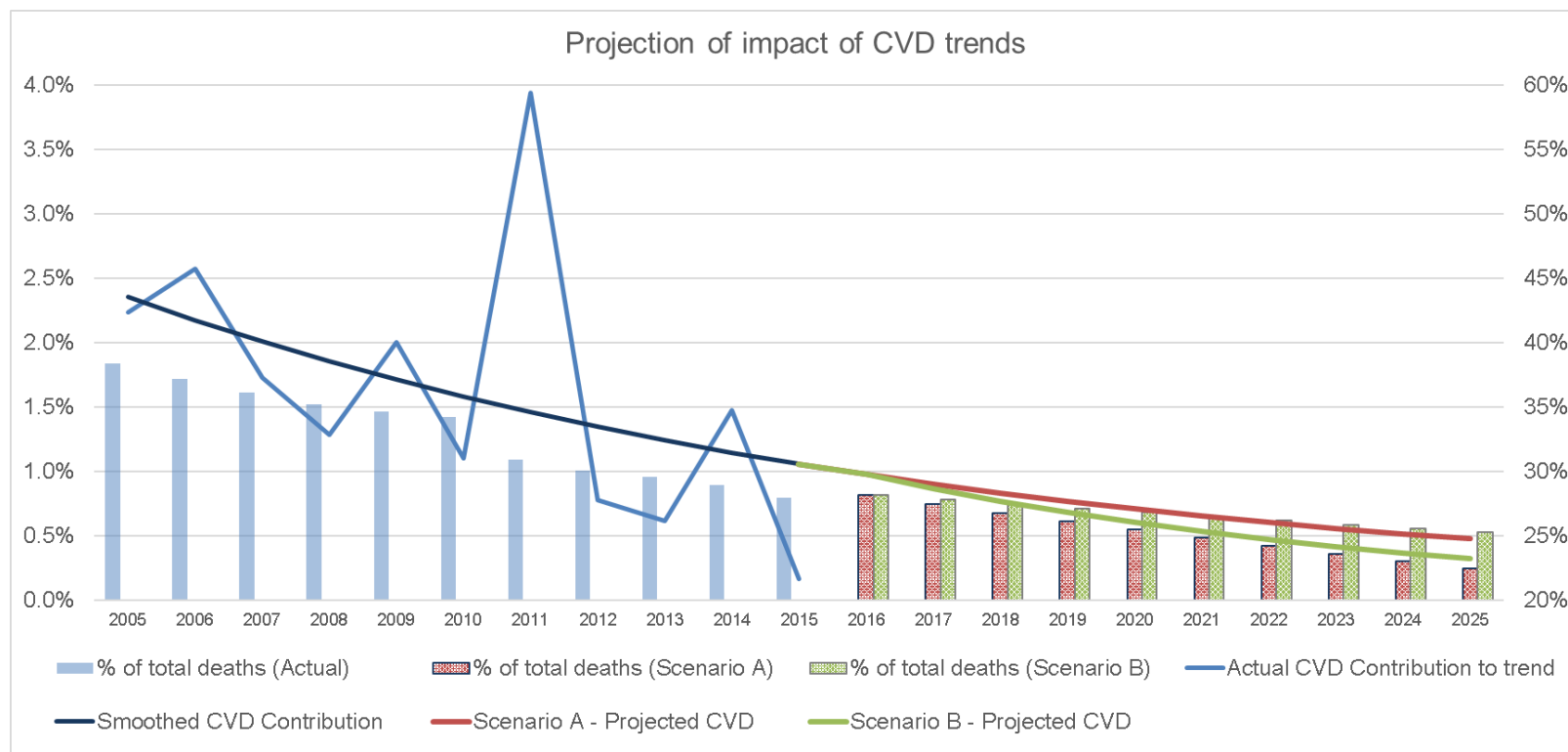
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Trends over the short to medium term

Trends in the next 10 years: Reducing CVD trends

Projection of impact of CVD trends

Legend:
- % of total deaths (Actual)
- % of total deaths (Scenario A)
- % of total deaths (Scenario B)
- Actual CVD Contribution to trend
- Smoothed CVD Contribution
- Scenario A - Projected CVD
- Scenario B - Projected CVD

Projections are for illustration purposes only

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Trends in the next 10 years: Austerity

Health and social care

- Health care

  - NHS 'Five Year Forward View' set out options to close an estimated £30 billion funding gap in 2020/21

  - Option chosen requires 2% pa productivity improvements across NHS secondary care

  - Non-NHS spending on health will fall by over 20%

  - £100 million for A&E departments in 2017/18 to help manage winter demand

- Social care

  - "… however great the pressures are in the NHS, they are even greater in social care…"

  - Budget 2017: £2 billion additional funding

  - Green paper later in 2017

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Trends in the next 10 years: Austerity & socioeconomic

Will we see continuing divergence between socioeconomic groups?
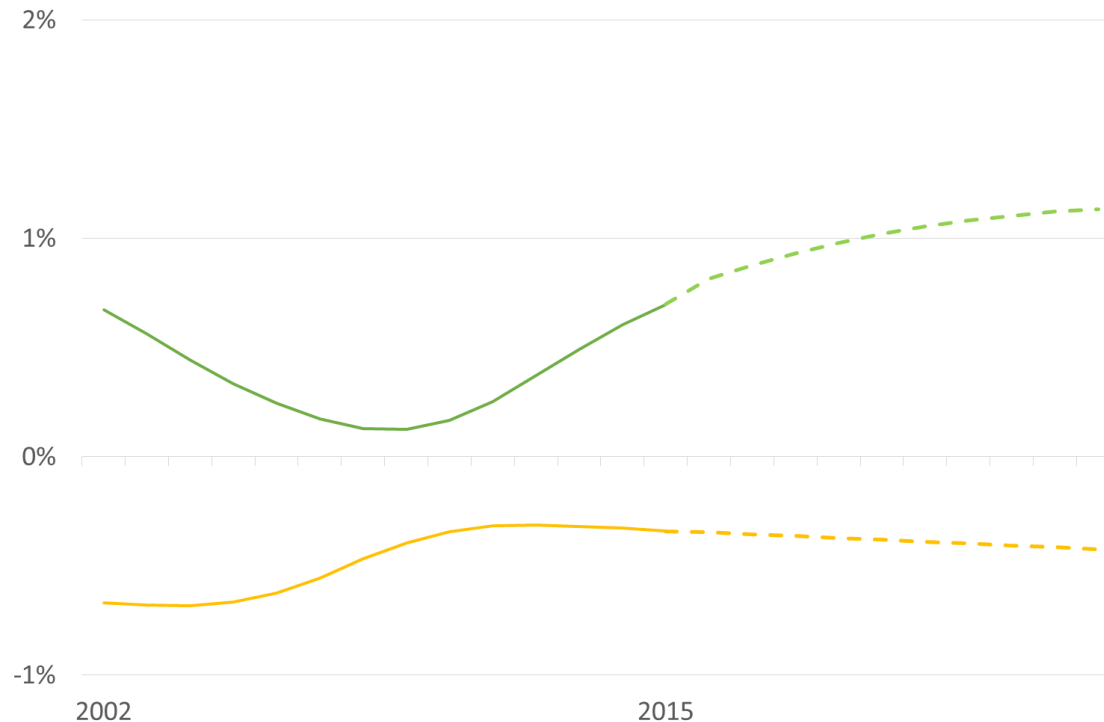
Trends in the next 10 years: Other

- Migration

- Technology

- Medical advances

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Summary

- We have been expecting a slowdown in CVD improvements

  – Smoking cessation

  – Impact of obesity

- However there will be positive drivers from medical advances and technology

- Health service will struggle to cope with spikes in demand

- Social care services at a "tipping point"

- How these issues are addressed will significantly affect mortality trends over the next ten years

- Understanding the socioeconomic mix of liabilities is key

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Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

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