

Trends in Mid-Life Mortality: Is the US an anomaly? Evidence from the UK and Canada

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Overview:

- US mortality trends, including recent focus on mid-life
- American exceptionalism?
- Comparisons with mid-life mortality from UK and Canada



ANOTHER drop in US life expectancy: CDC reveals the death rate rose again in 2017 - driving down lifespan for the third year in a row

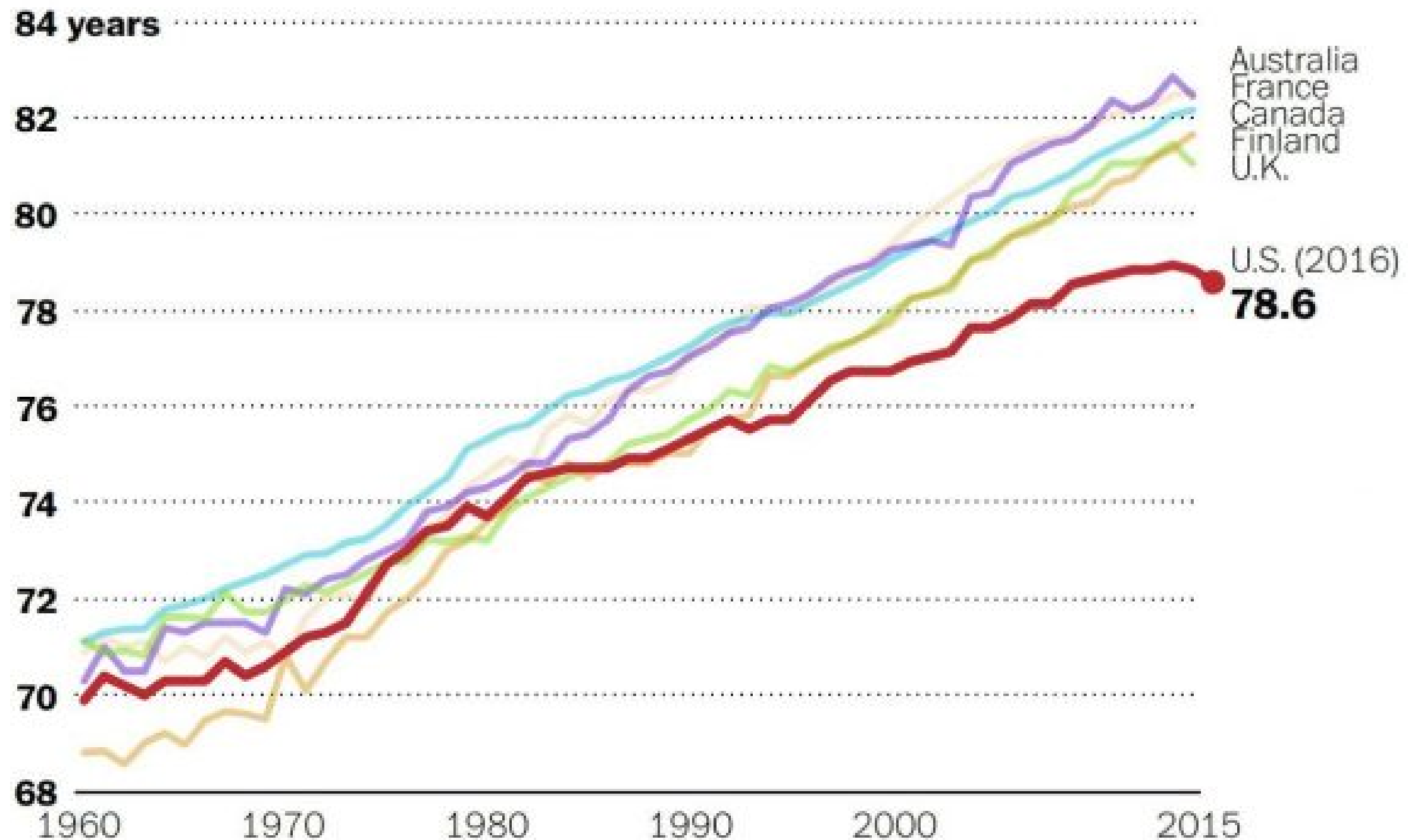
- **Death rates rose for Alzheimer's disease, diabetes, flu and pneumonia, and three other leading causes of death, according to numbers posted online Wednesday**
- **There was little change in the death rate from the nation's No 1 killer: heart disease**
- **In the past, steady annual drops in heart disease death rates offset increases in other causes**
- **Now, all death rates are rising or steady - driving down life expectancy**

By [ASSOCIATED PRESS](#)

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American exceptionalism

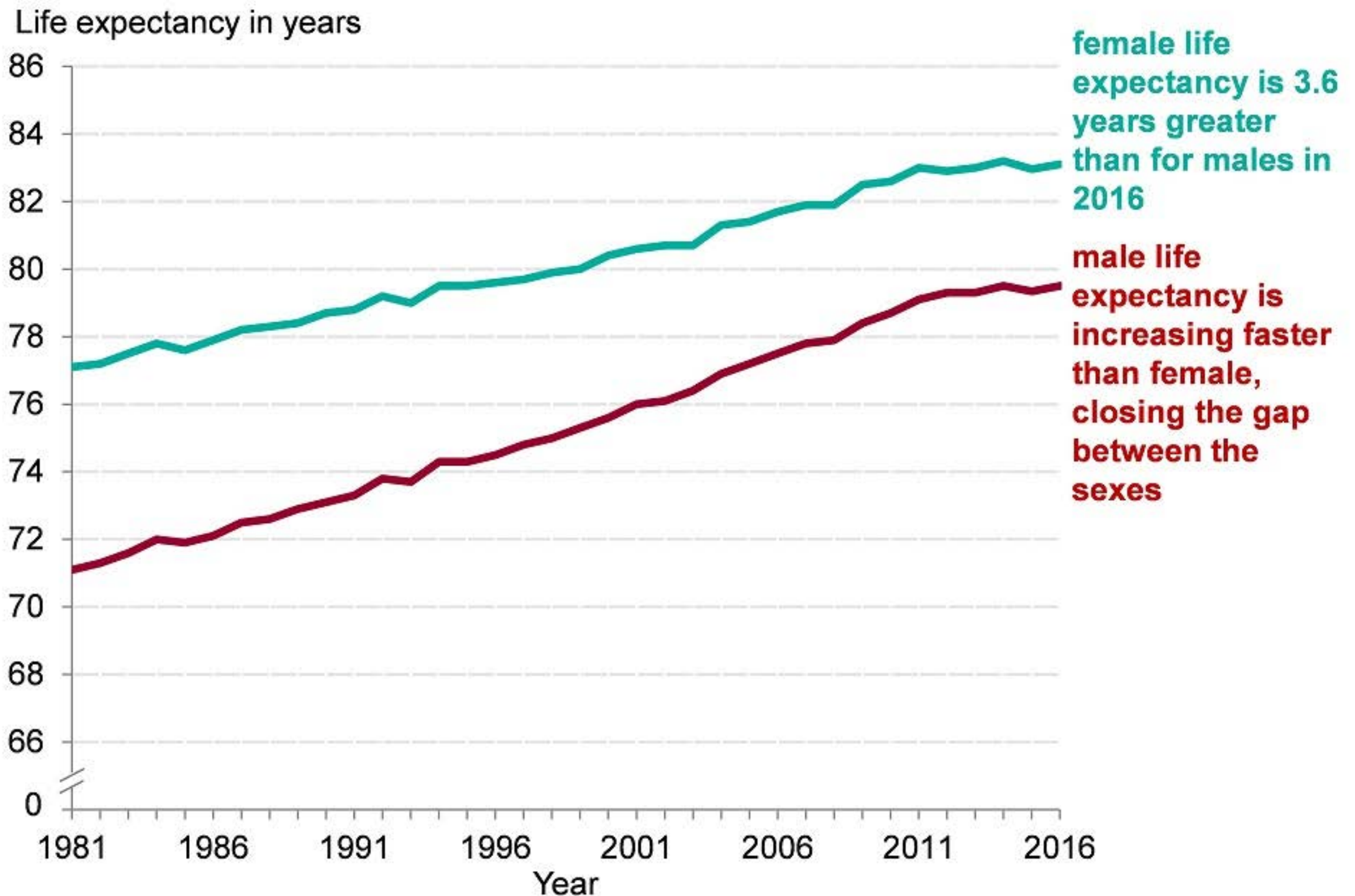
Life expectancy at birth, selected OECD countries



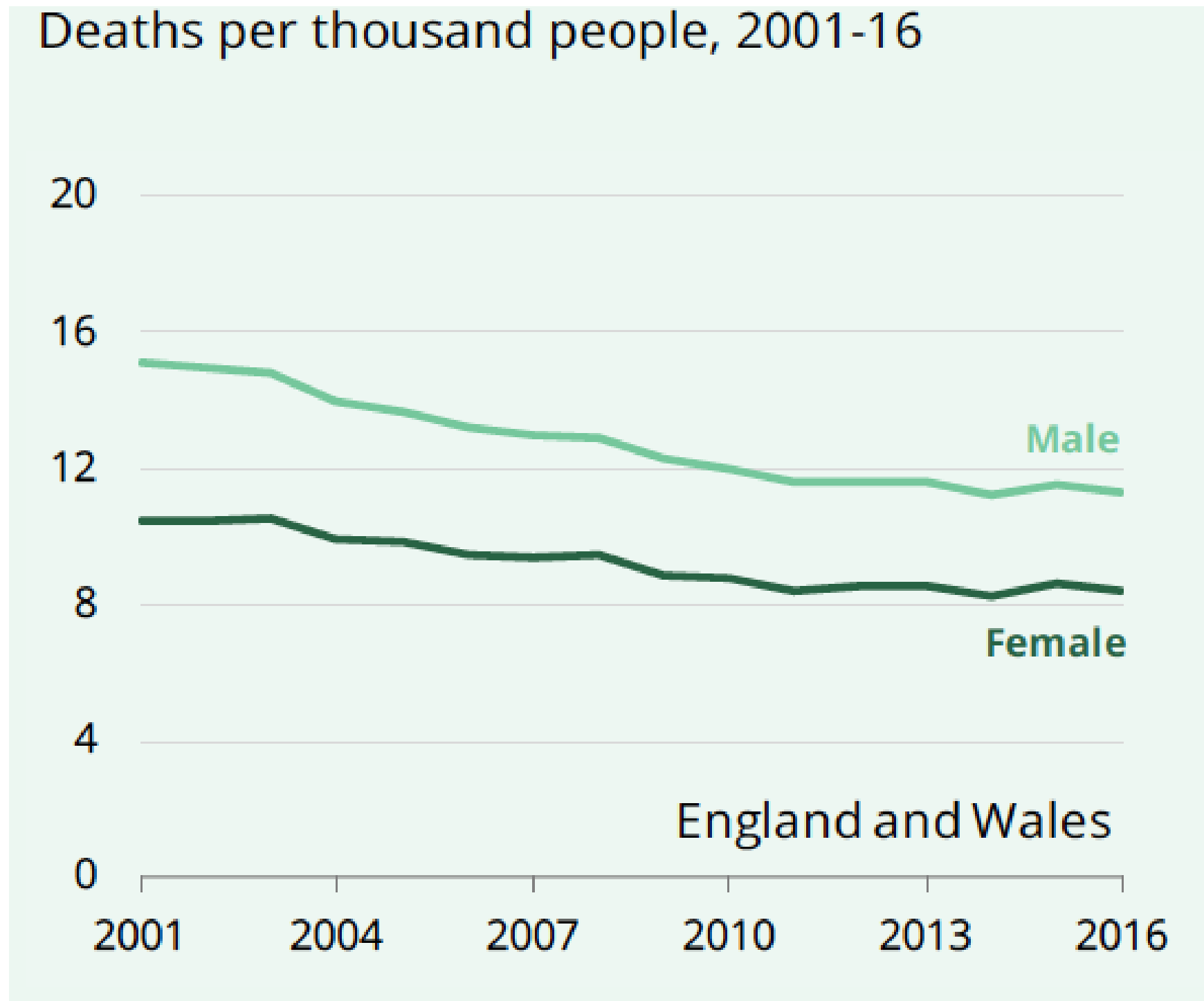
THE WASHINGTON POST

Source: OECD, U.S. Census Bureau

UK:



AGE-STANDARISED MORTALITY RATES

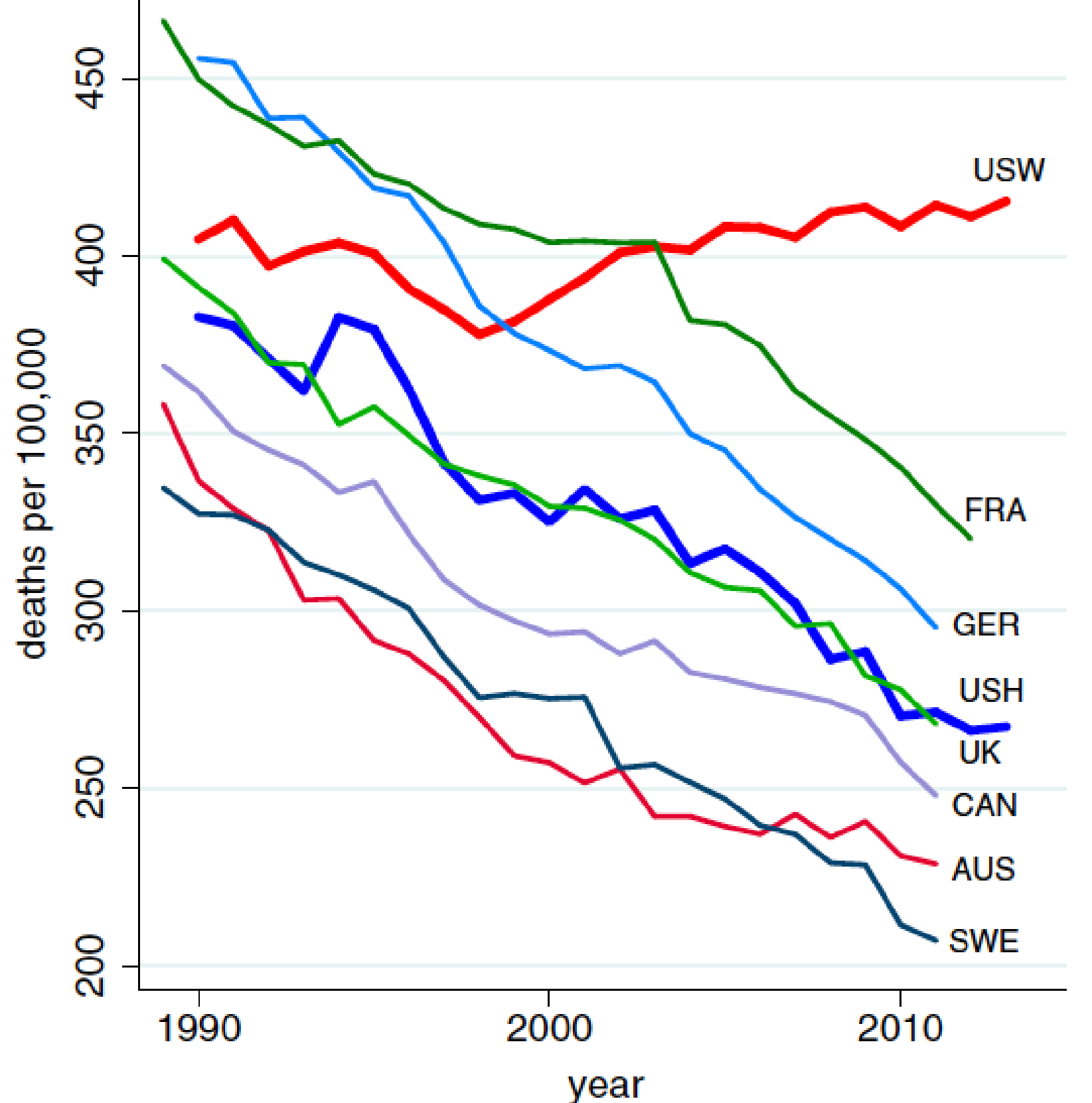


Notes: Rates are standardised to the 2013 European Standard Population.

Sources: ONS, [Deaths registered in England and Wales: 2016](#); NRS, [Age-standardised Death Rates Calculated Using the European Standard Population](#)

**Deaths and age-standardized mortality rate, by province and territory
(Rate)**

	2009	2010	2011	2012	2013
	age-standardized mortality rate per 1,000 population				
Canada	5.2	5.0	4.9	4.9	4.8
Newfoundland and Labrador	6.3	6.2	6.1	6.0	6.2
Prince Edward Island	6.0	5.2	5.6	5.4	5.5
Nova Scotia	5.7	5.6	5.6	5.5	5.6
New Brunswick	5.6	5.3	5.3	5.3	5.3
Quebec	5.1	5.1	5.0	4.9	4.8
Ontario	5.0	4.9	4.7	4.7	4.6
Manitoba	5.8	5.6	5.6	5.6	5.5
Saskatchewan	5.7	5.8	5.7	5.6	5.6
Alberta	5.3	5.0	5.0	5.0	5.0
British Columbia	4.8	4.6	4.5	4.6	4.6
Yukon	7.6	7.8	7.5	6.4	6.4
Northwest Territories	7.0	6.7	6.3	7.0	6.9
Nunavut	11.7	8.7	11.7	9.7	12.0
Note: Age-standardized mortality rates are calculated using the 1991 population of Canada as standard population. Source: Statistics Canada, CANSIM, table 102-0552 . Last modified: 2017-03-09.					

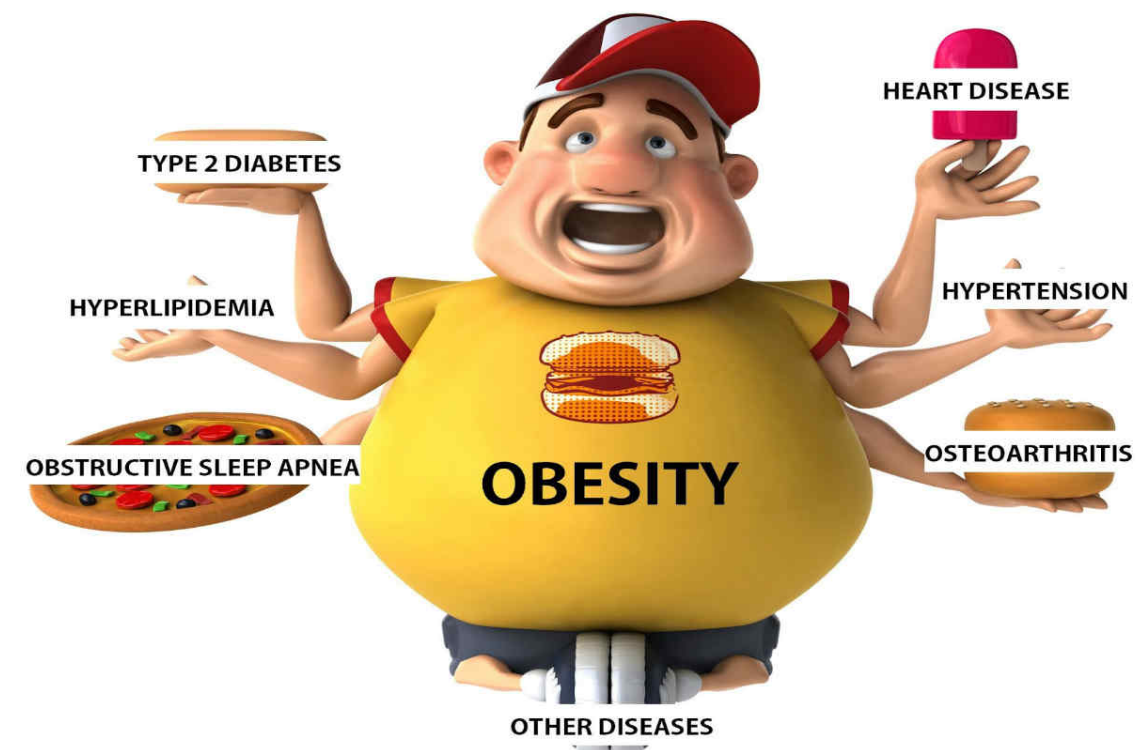


■ Case and Deaton, 2015, Proceedings of the National Academy of Sciences (PNAS)

Fig. 1. All-cause mortality, ages 45–54 for US White non-Hispanics (USW), US Hispanics (USH), and six comparison countries: France (FRA), Germany (GER), the United Kingdom (UK), Canada (CAN), Australia (AUS), and Sweden (SWE).

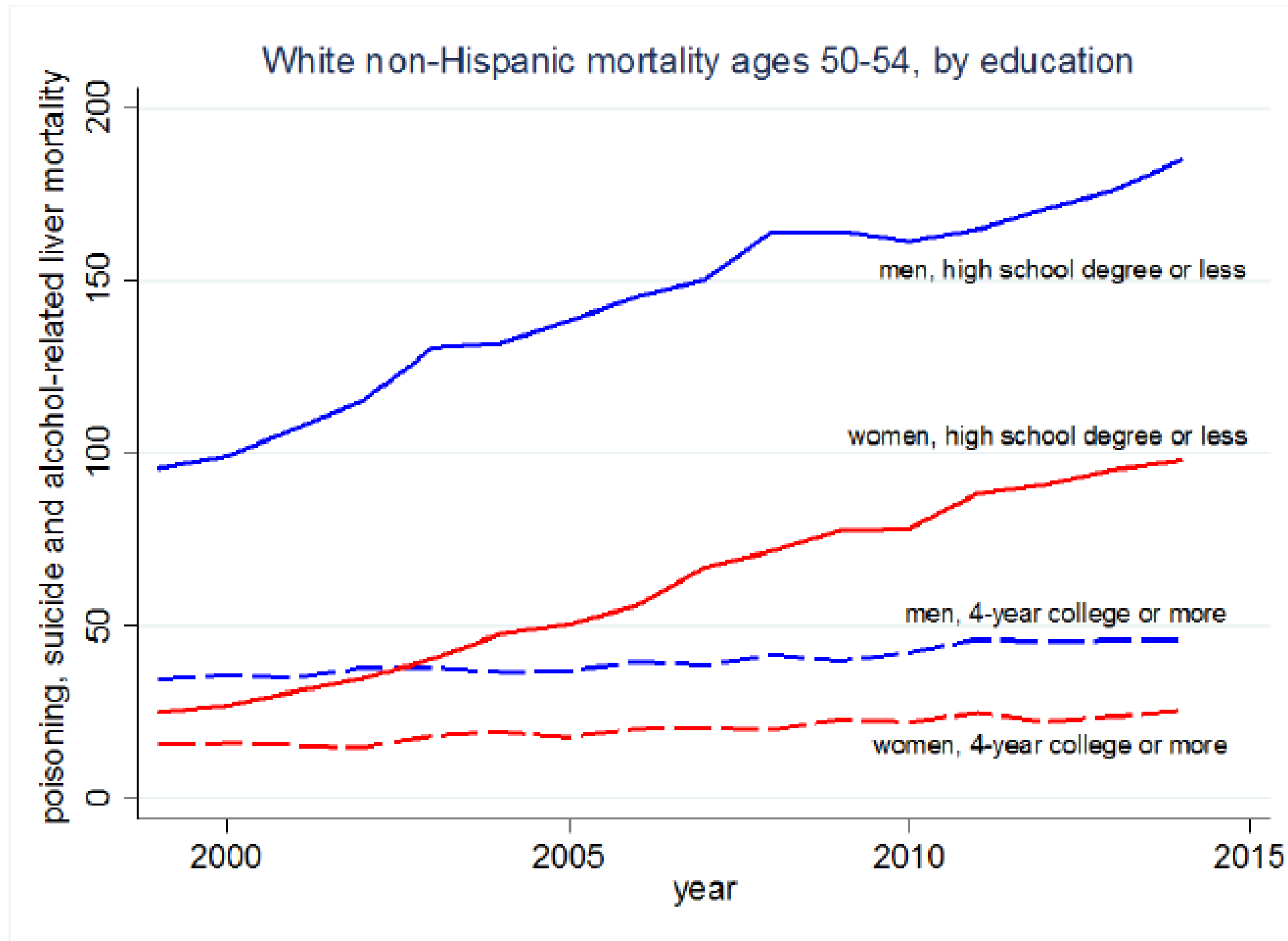
Hypotheses for US Mortality Increases:

- ***Deaths of “Despair”*** – increase in suicide, drug overdose, alcohol related deaths, related to life-course structural deprivation, esp for less educated whites (Monnat, Case and Deaton)
- Period-based opioid epidemic combined with slow down or reversal in improvements in ***metabolic conditions*** (possibly due to obesity epidemic) – Masters, et al, *IJE* 2017



Case and Deaton (2017)

Figure 1.11 Drug, alcohol and suicide mortality



Masters, et al 2017 *IJE*

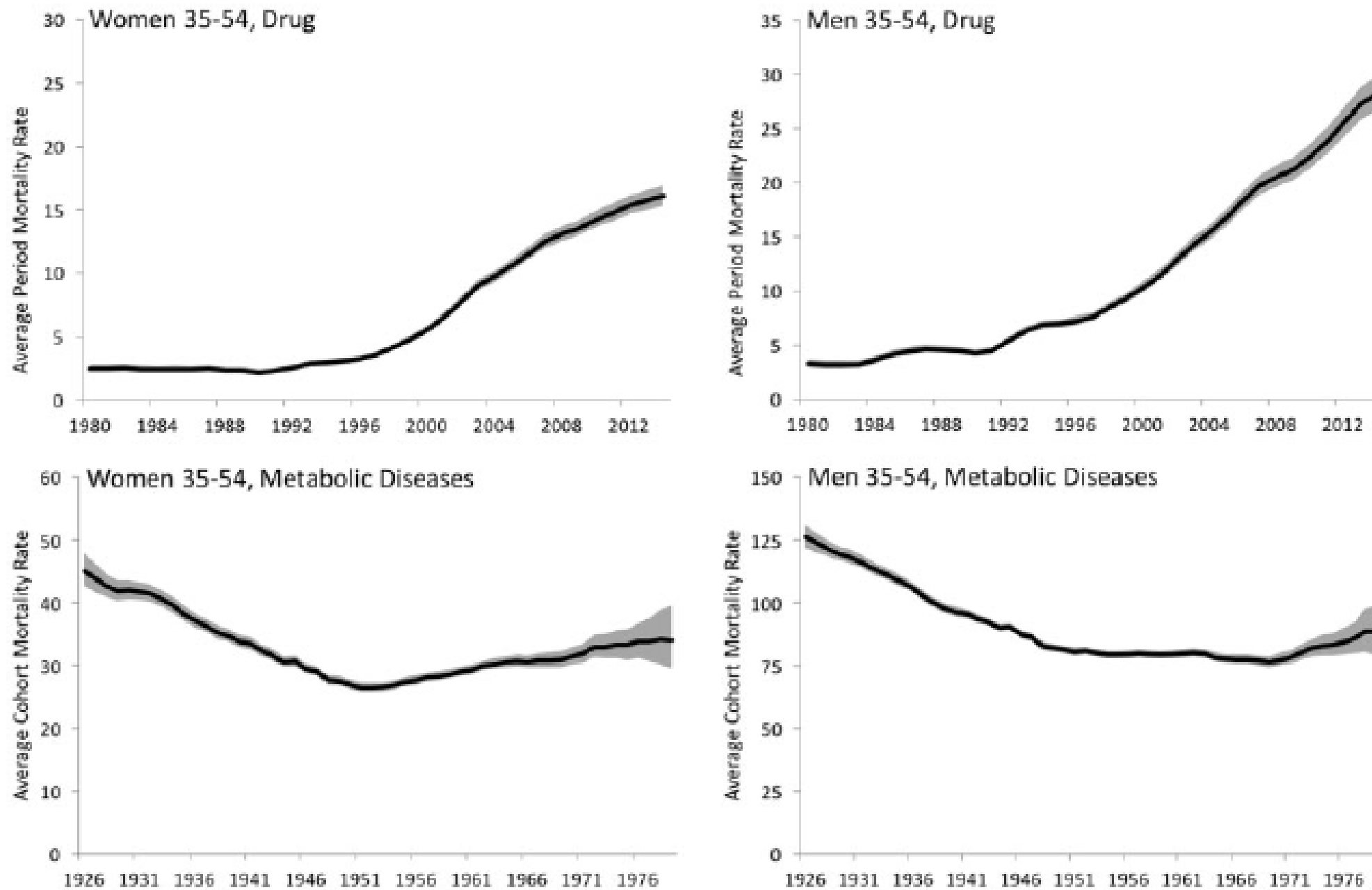


Figure 4. Period-based variation in drug-related mortality and cohort-based variation in metabolic disease mortality among White women and men (right), ages 35–54, 1980–2014. Estimates are 3-year moving averages, and gray areas indicate upper and lower bounds of the 95% confidence interval. Estimates are mortality rates per 100 000 person-years.

- What is going on with mortality in mid-life in Canada and the UK?
- Can this help us shed light on the role of social/political factors, vis a vis more generalized overall trends in mortality?

Data Sources

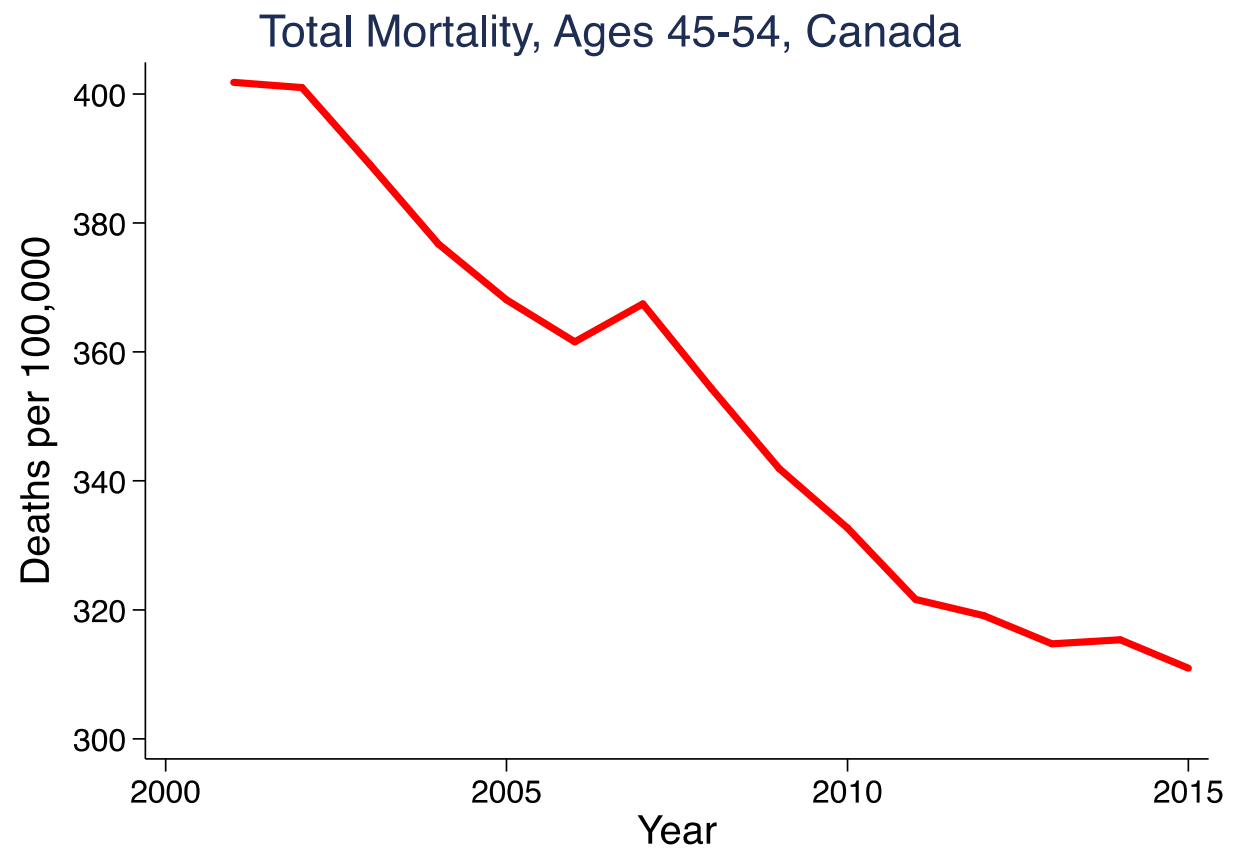
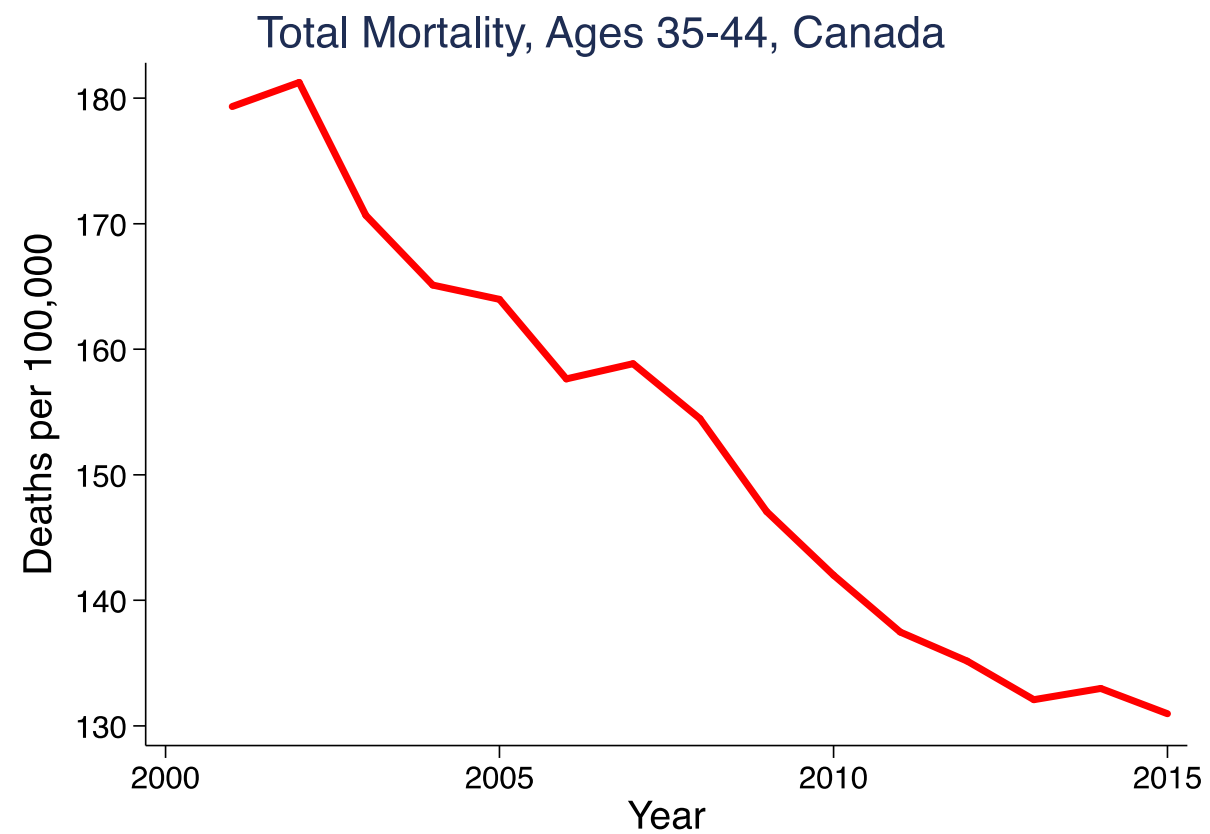
- UK: 21st Century Mortality dataset, England & Wales 2001–16, Office of National Statistics— all registered deaths
- Canada: StatCan, all registered deaths 2001-2015

Analysis: Focus on Ages 35-45, 44-55, and 54-65

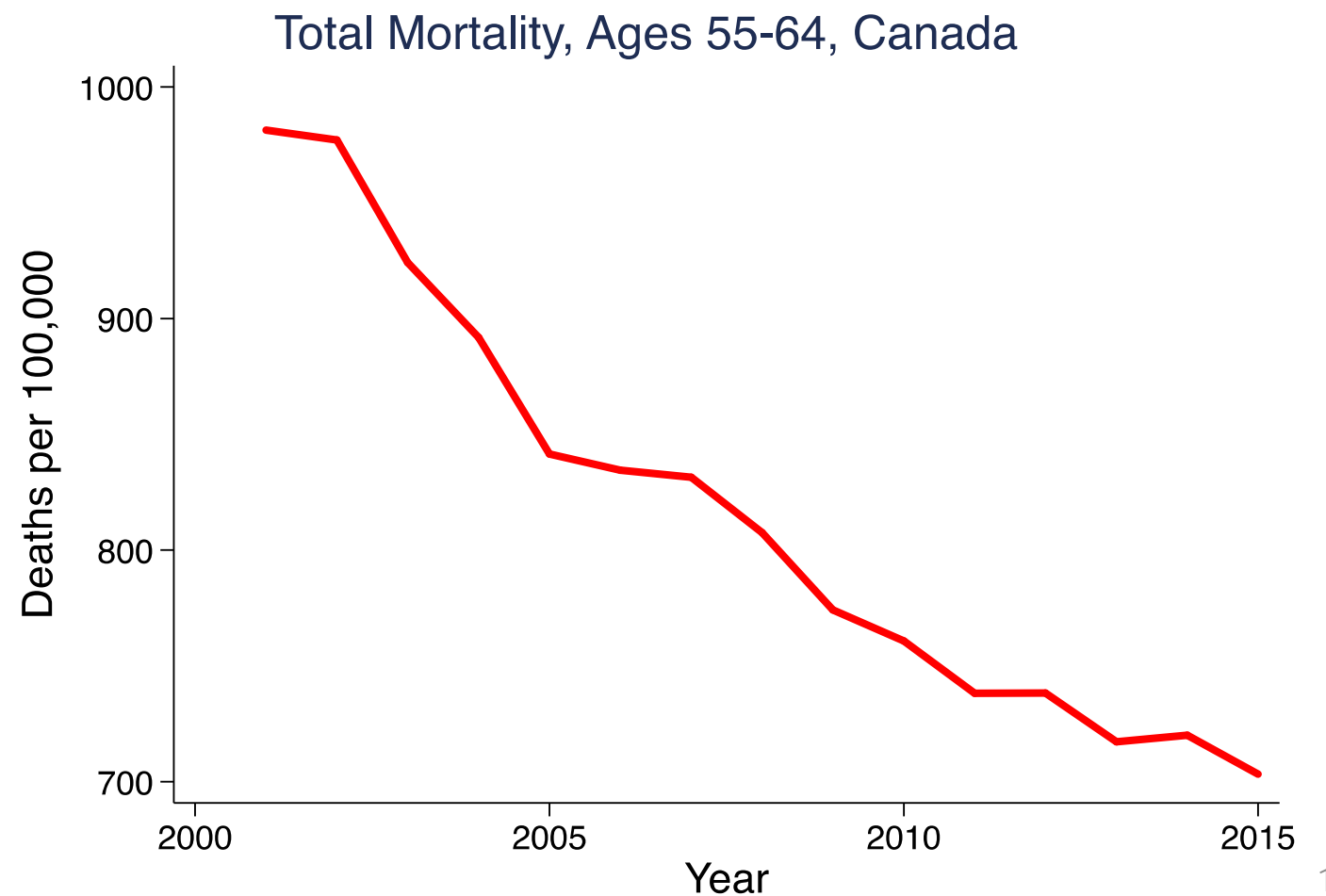
- ***Total*** mortality from all causes

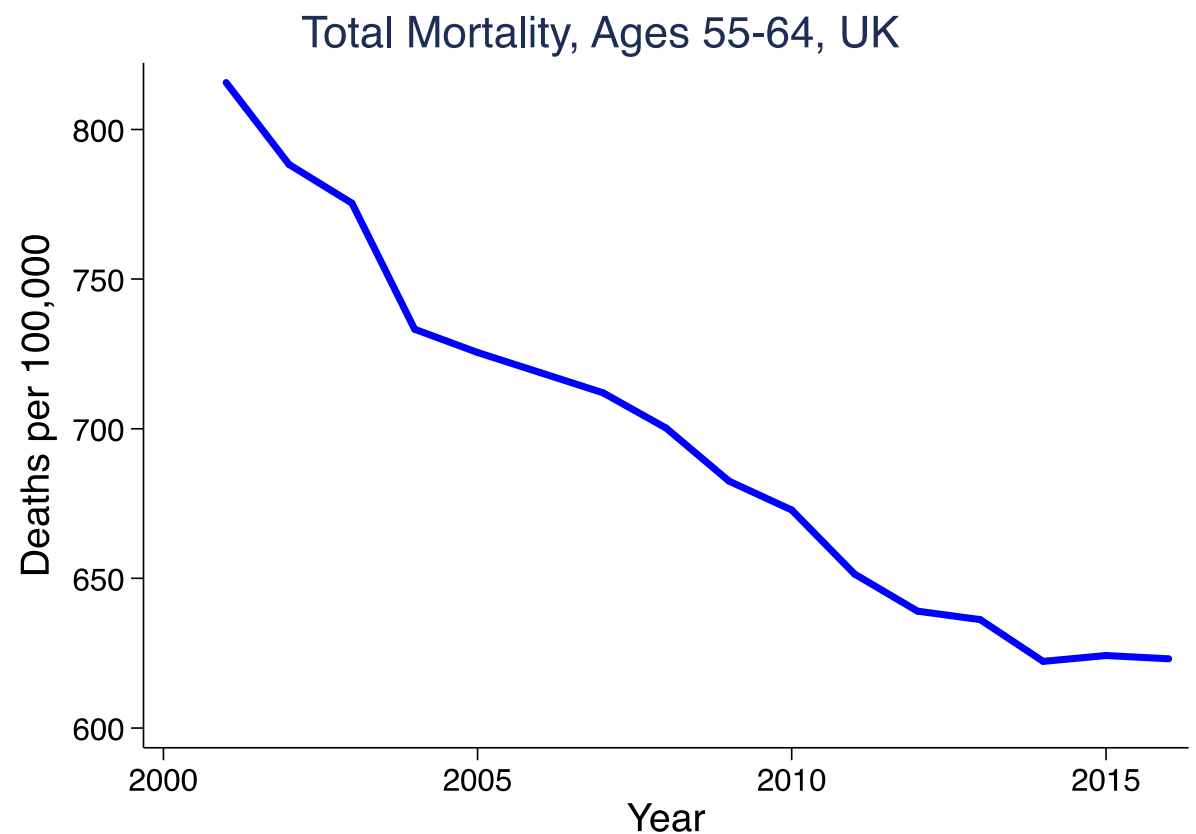
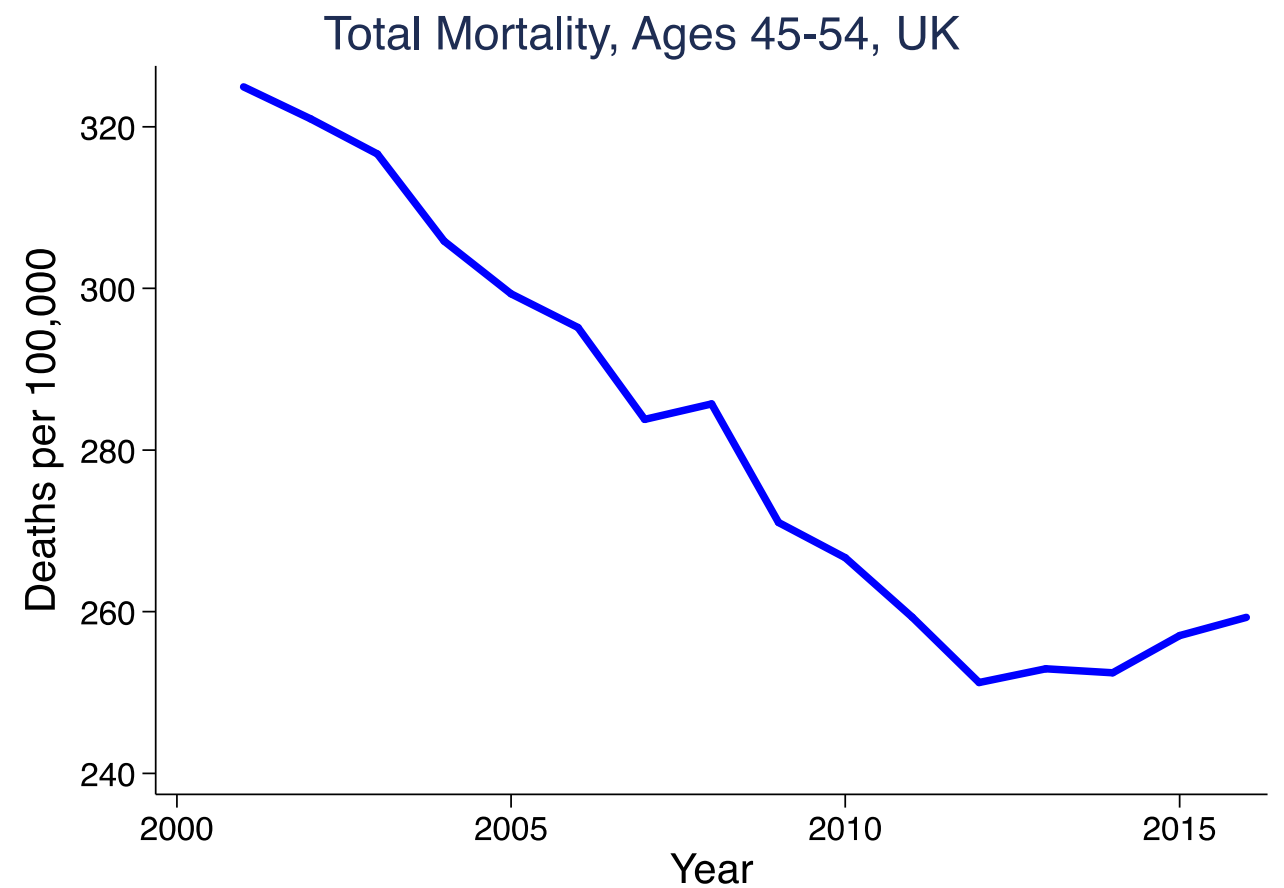
- ***“Despair”*** deaths, suicide, alcohol-related and drug-related

- ***“Metabolic”*** deaths, include deaths caused by diabetes, heart disease, hypertension, or obesity



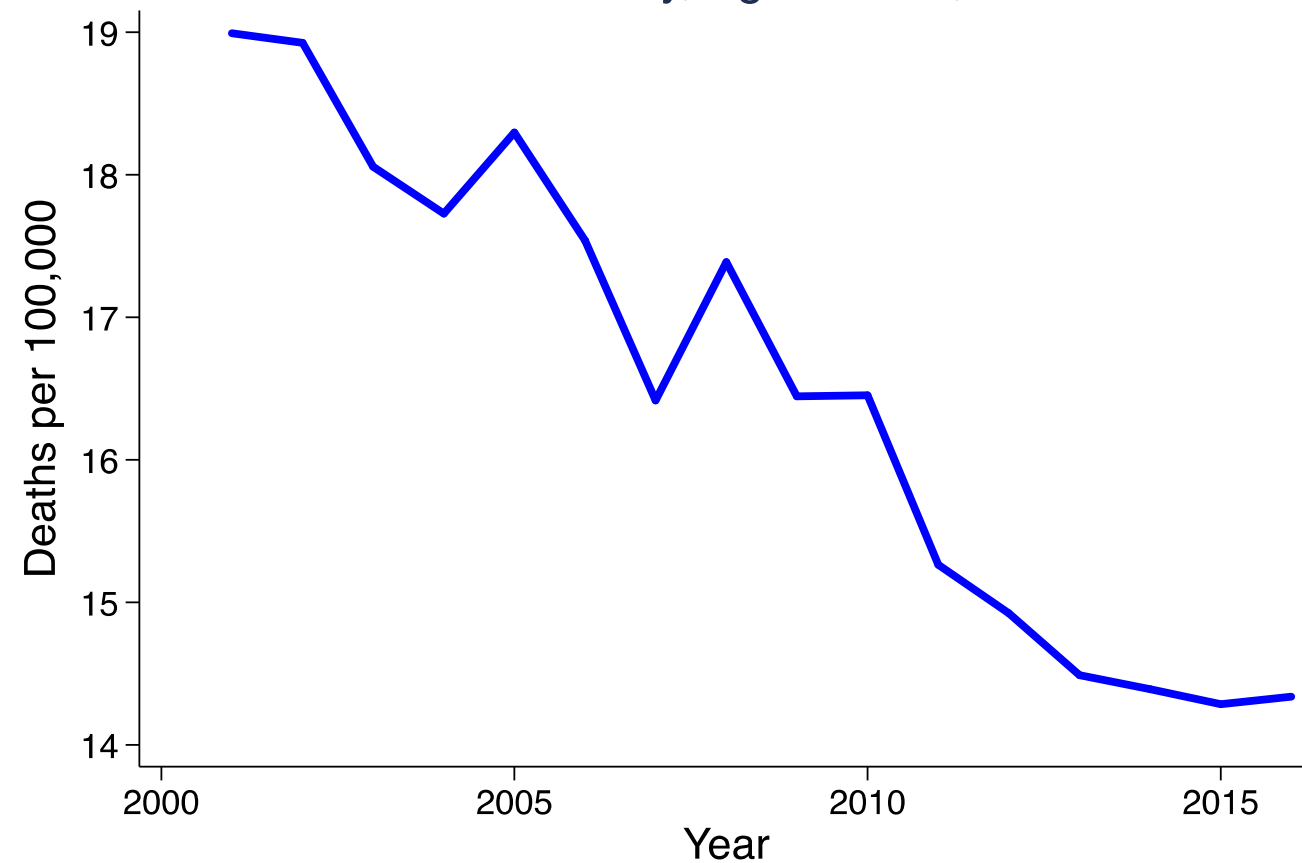
Total Mortality, Canada 2001-2015



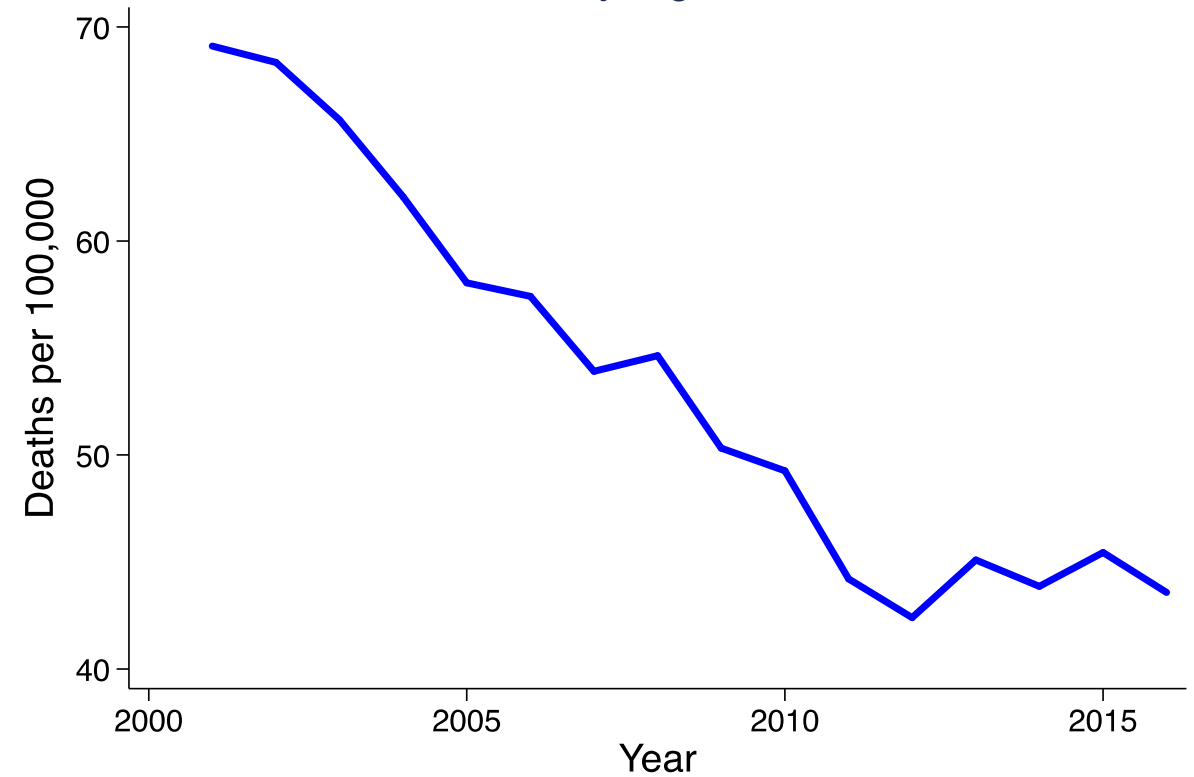


Total Mortality, England & Wales 2001-2015

Metabolic Mortality, Ages 35-44, UK

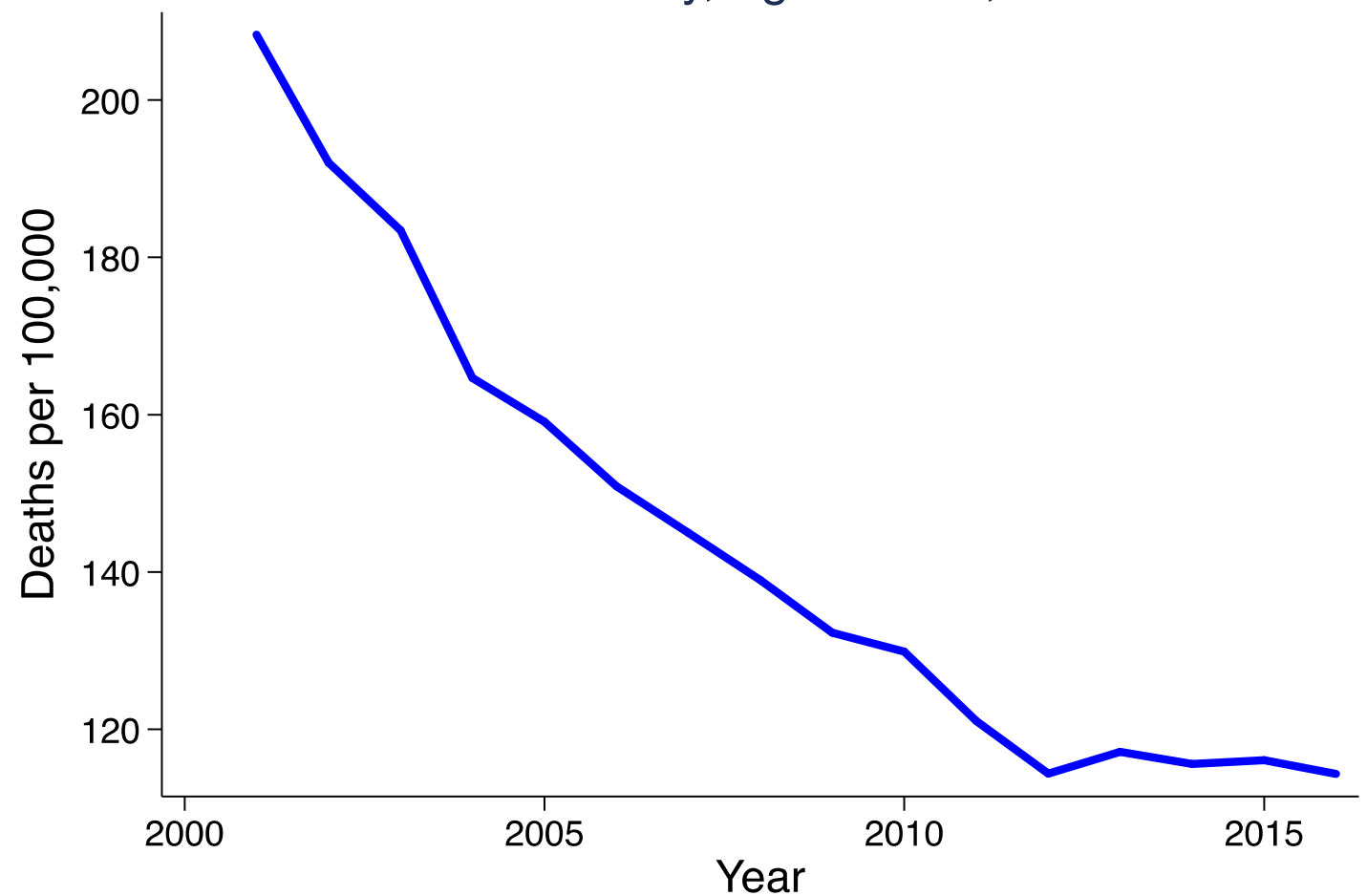


Metabolic Mortality, Ages 45-54, UK

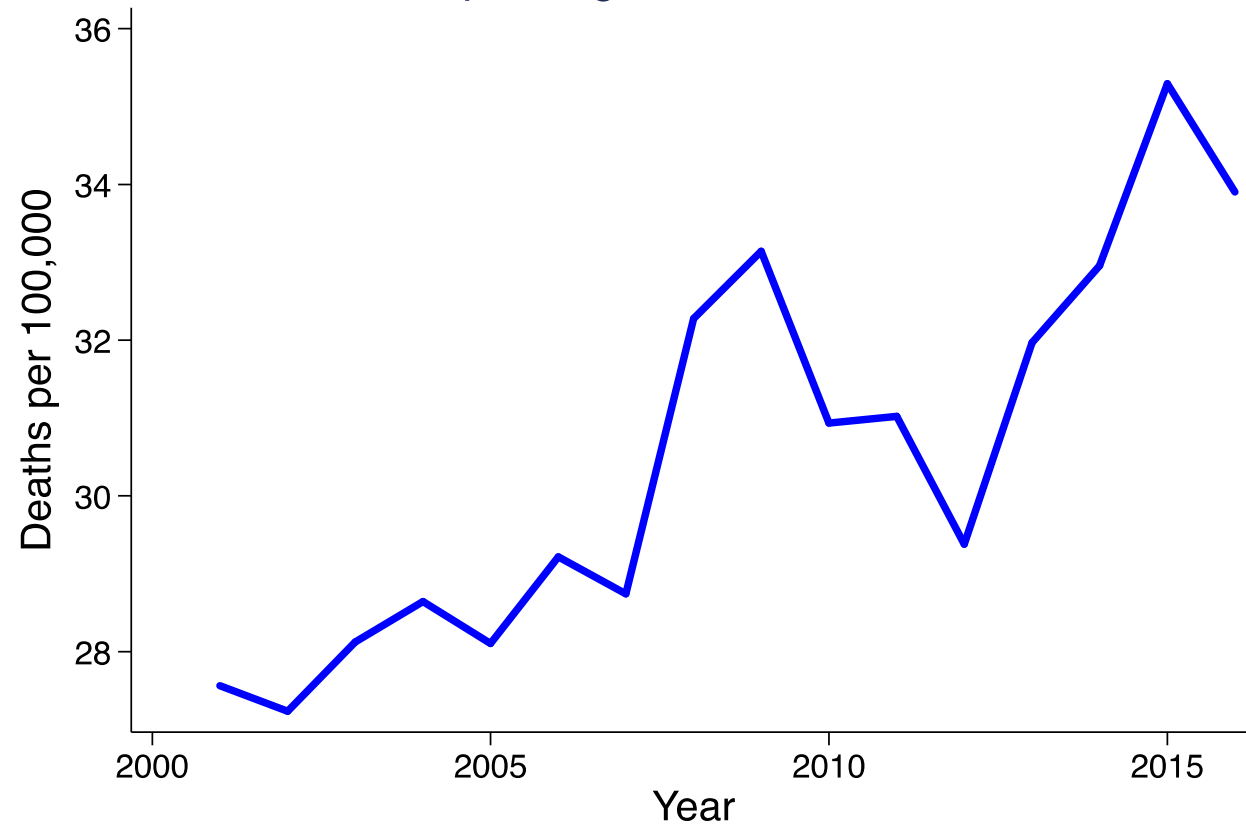


Metabolic Mortality, England & Wales 2001-2015

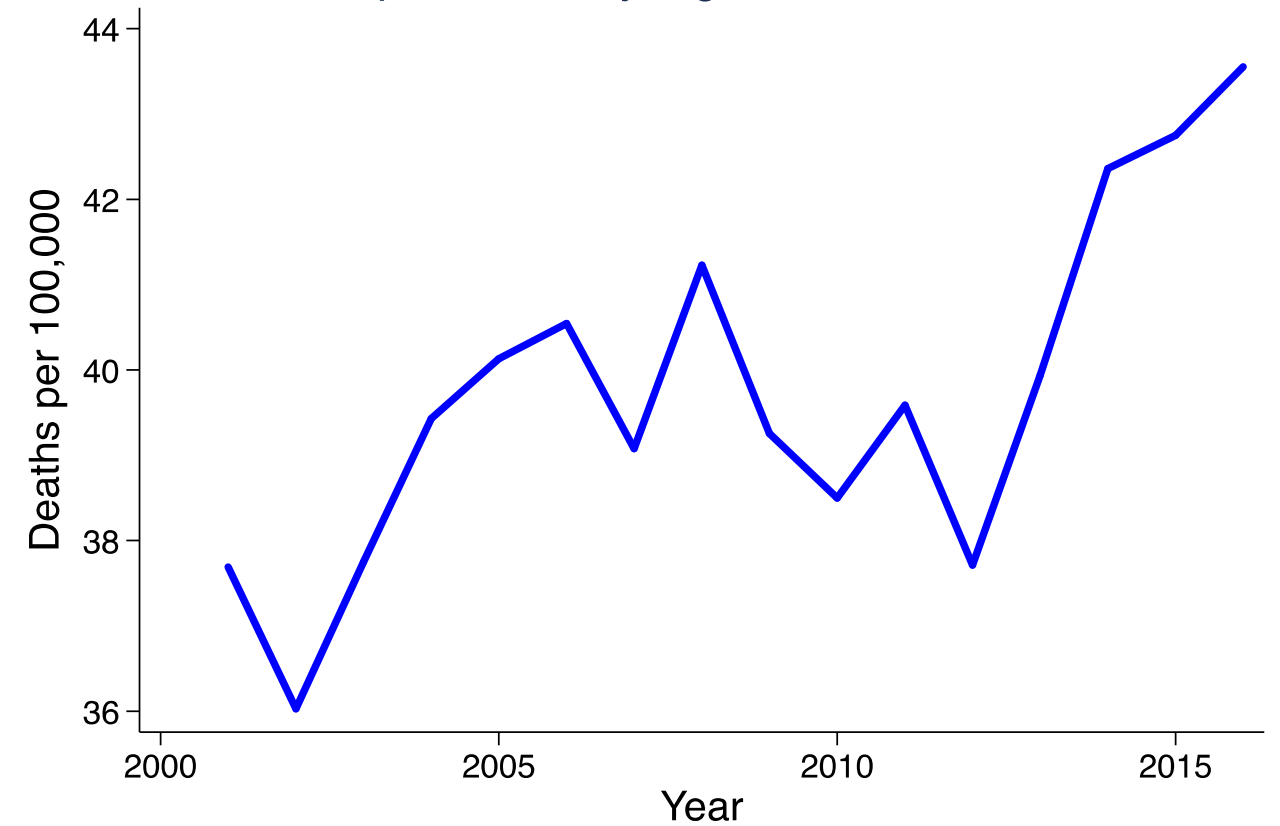
Metabolic Mortality, Ages 55-64, UK



Despair, Ages 35-44, UK

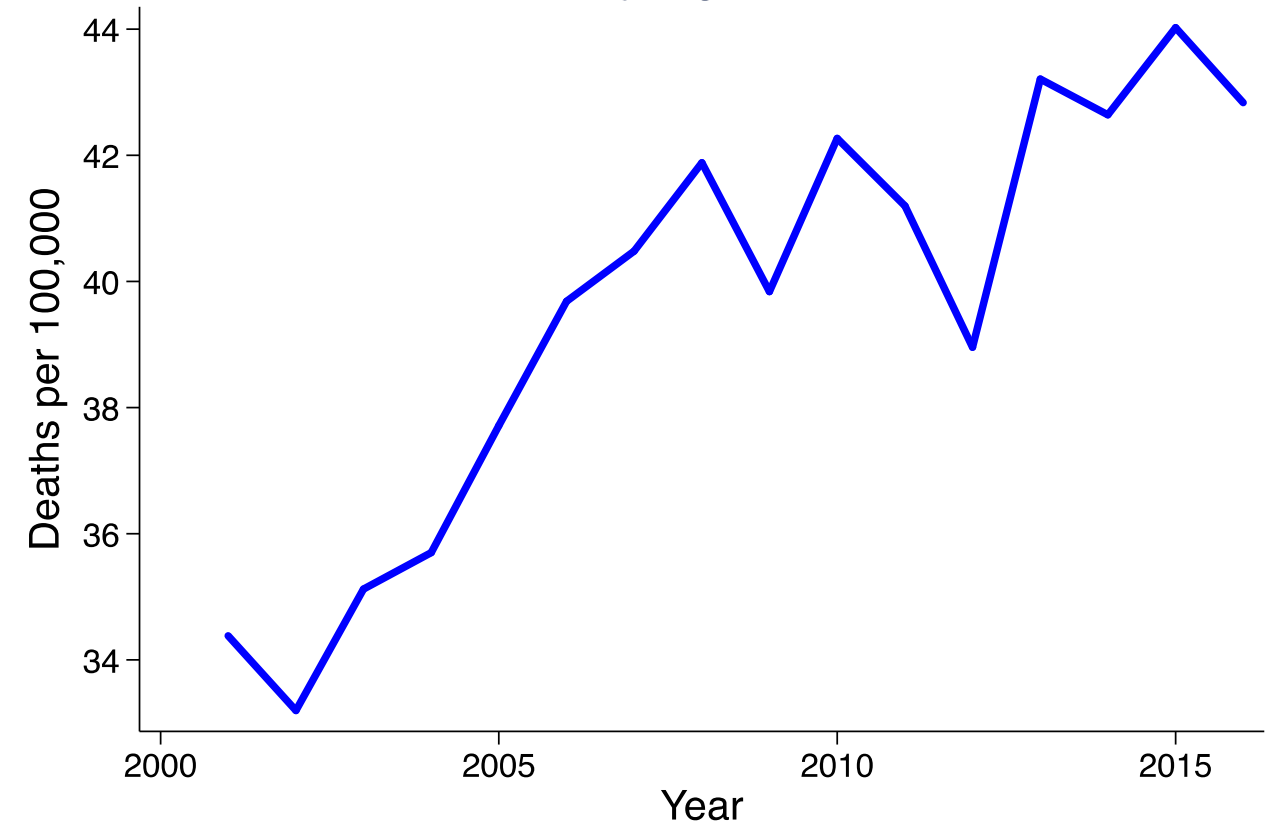


Despair Mortality, Ages 45-54, UK

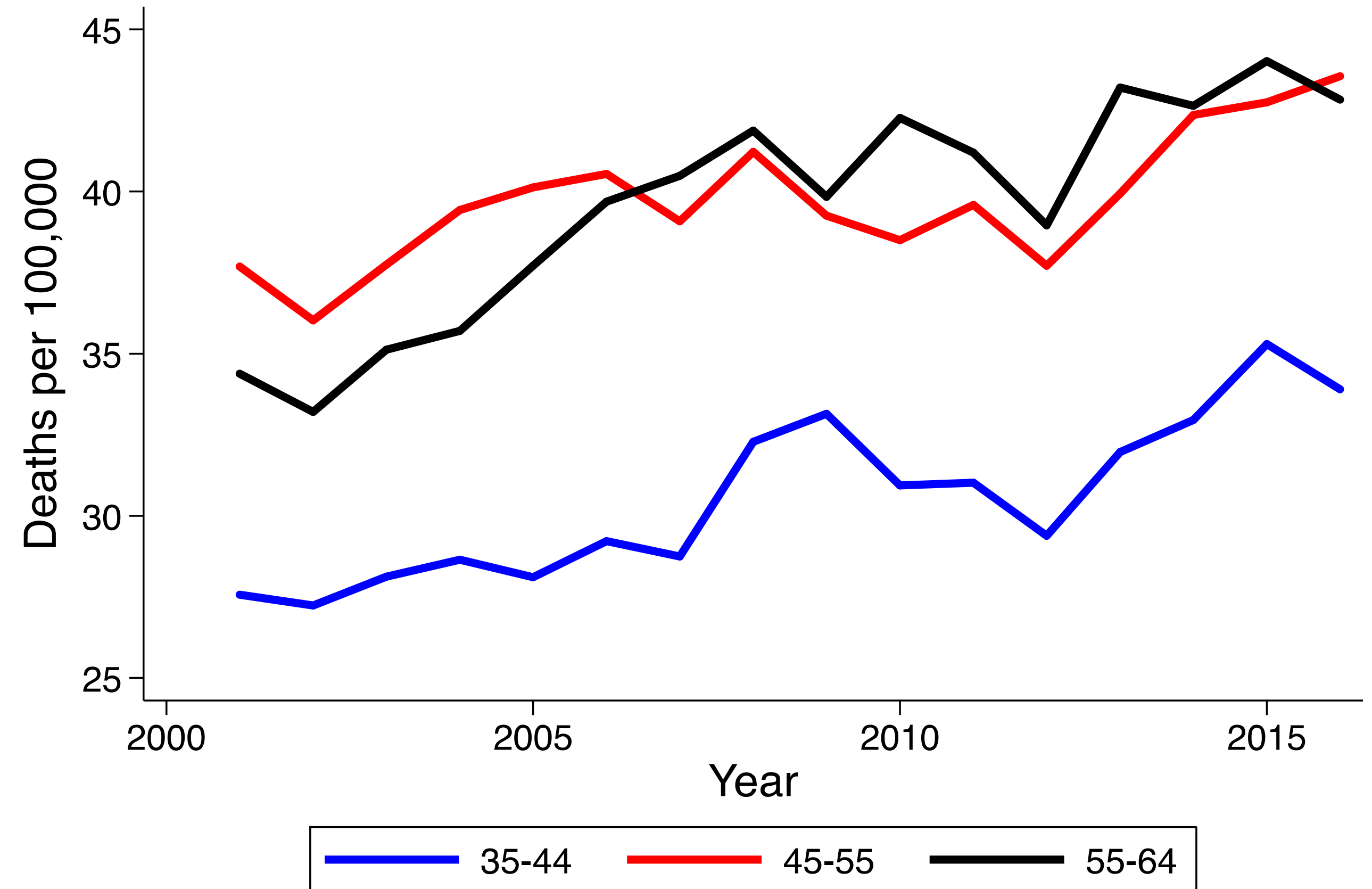


“Despair” Mortality, England & Wales 2001-2015

Despair Mortality, Ages 55-64, UK




Despair Mortality, UK

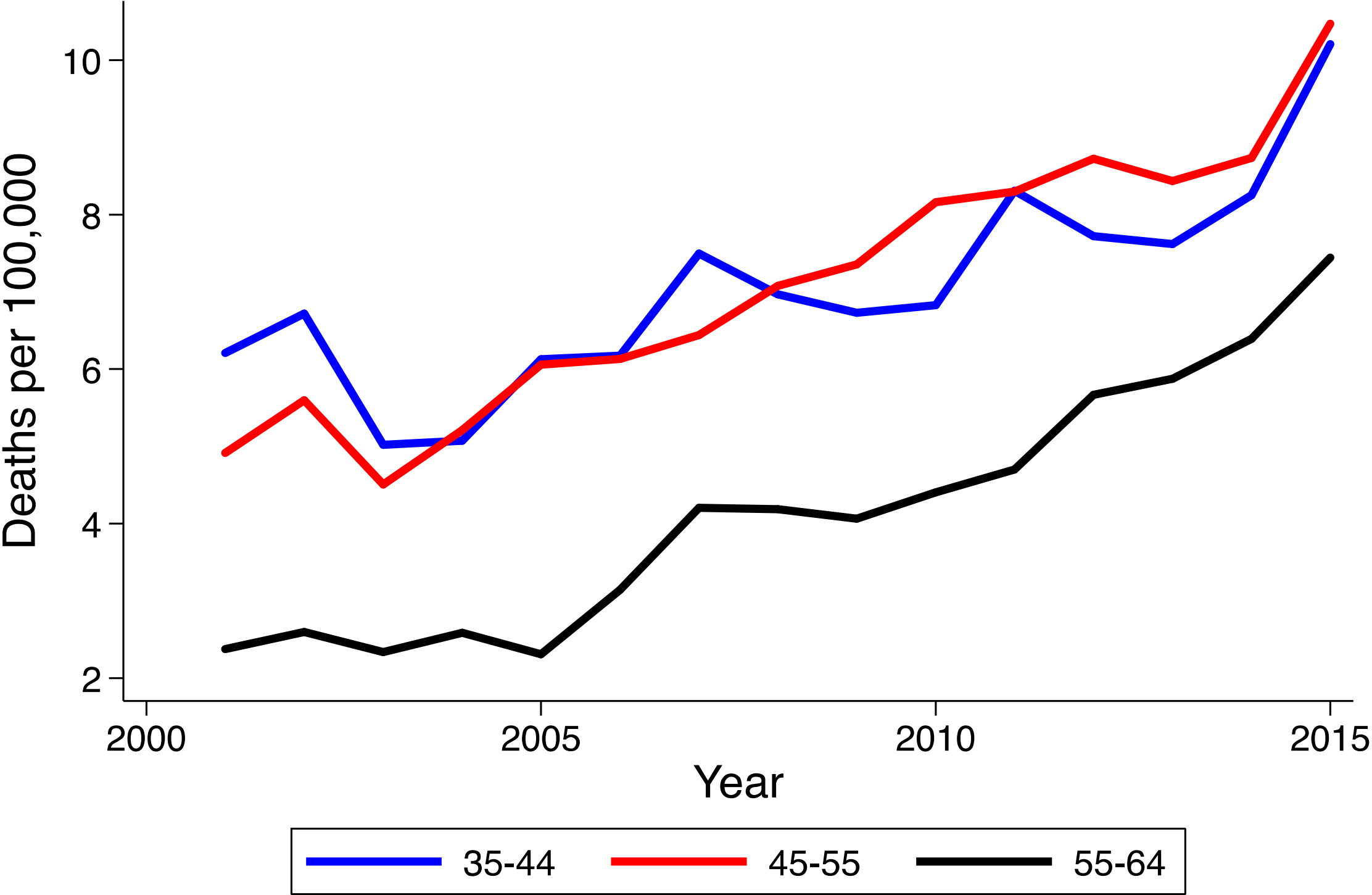


Opioid overdose deaths reach record level in Canada

Newsletter: A deeper dive into the day's most notable stories

 Jonathon Gatehouse · CBC News · Posted: Mar 27, 2018 1:48 PM ET | Last Updated: March 27

Drug Mortality, Canada



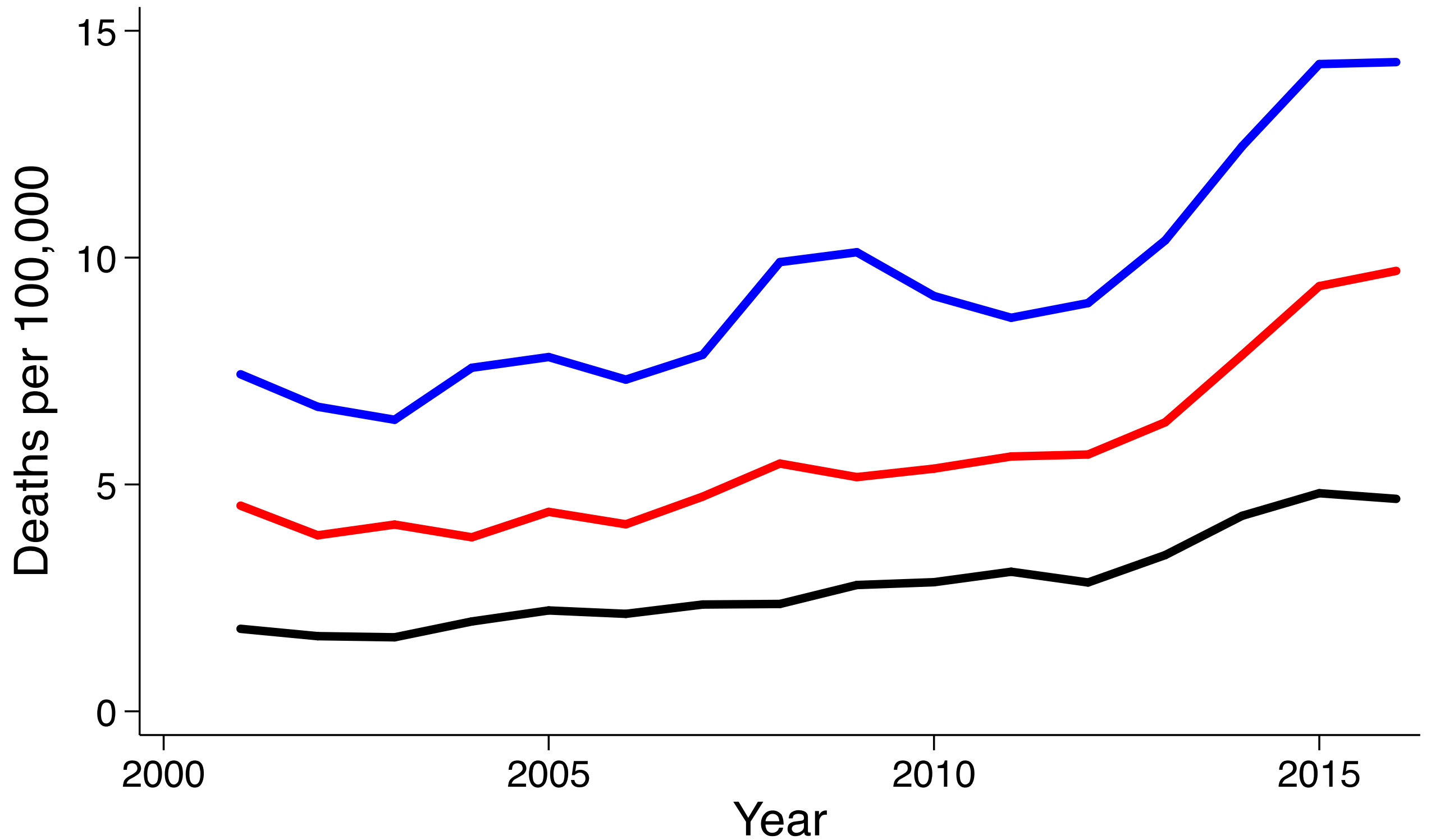
Fentanyl Adds Deadly Kick to Opioid Woes in Britain

By CEYLAN YEGINSU FEB. 4, 2018

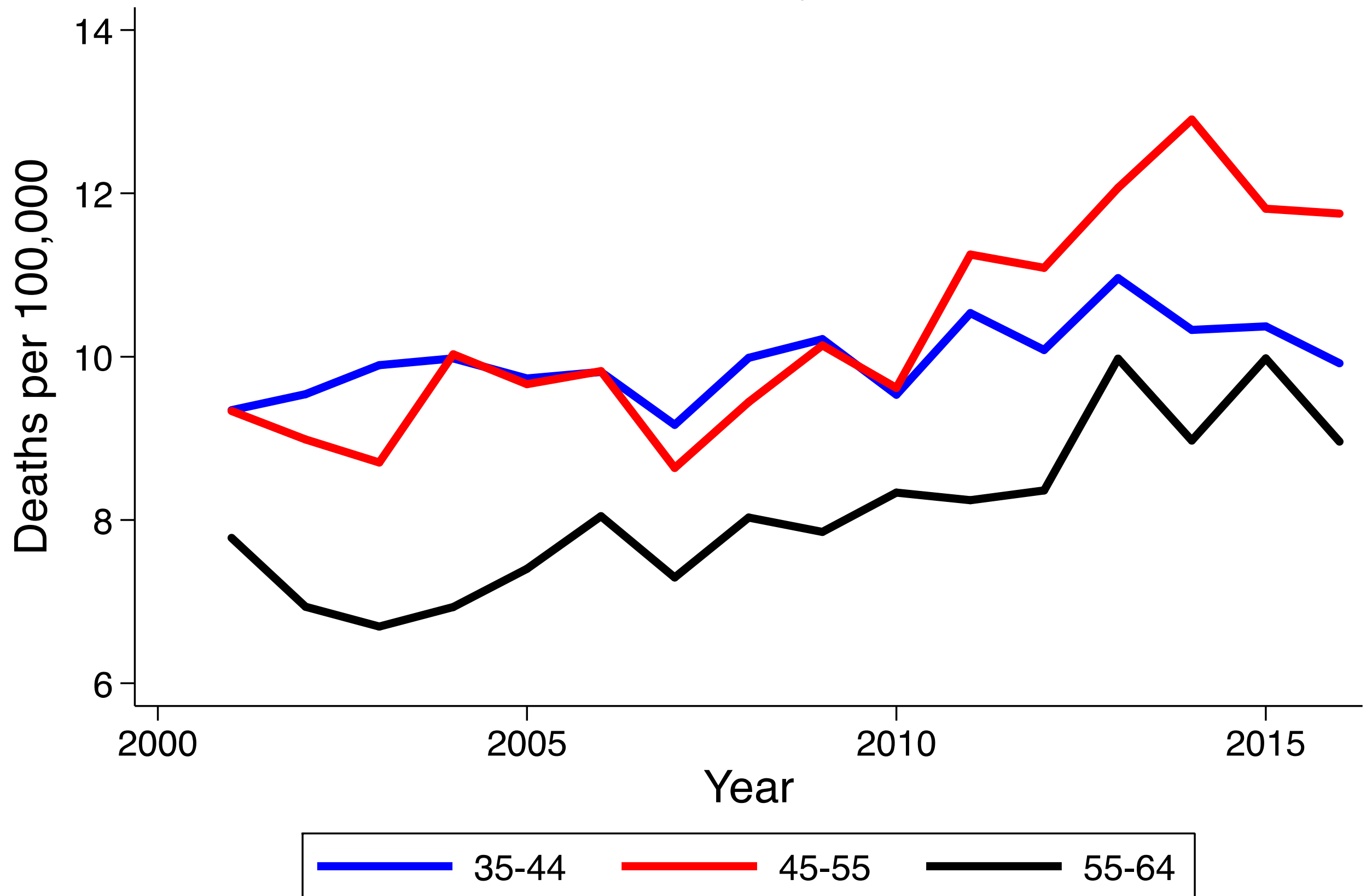


KINGSTON UPON HULL, England — There was something different in the batches of heroin that circulated through this English port city over the summer, but most addicts had no idea what it was until their friends and fellow addicts, 16 in all, had died of overdoses.

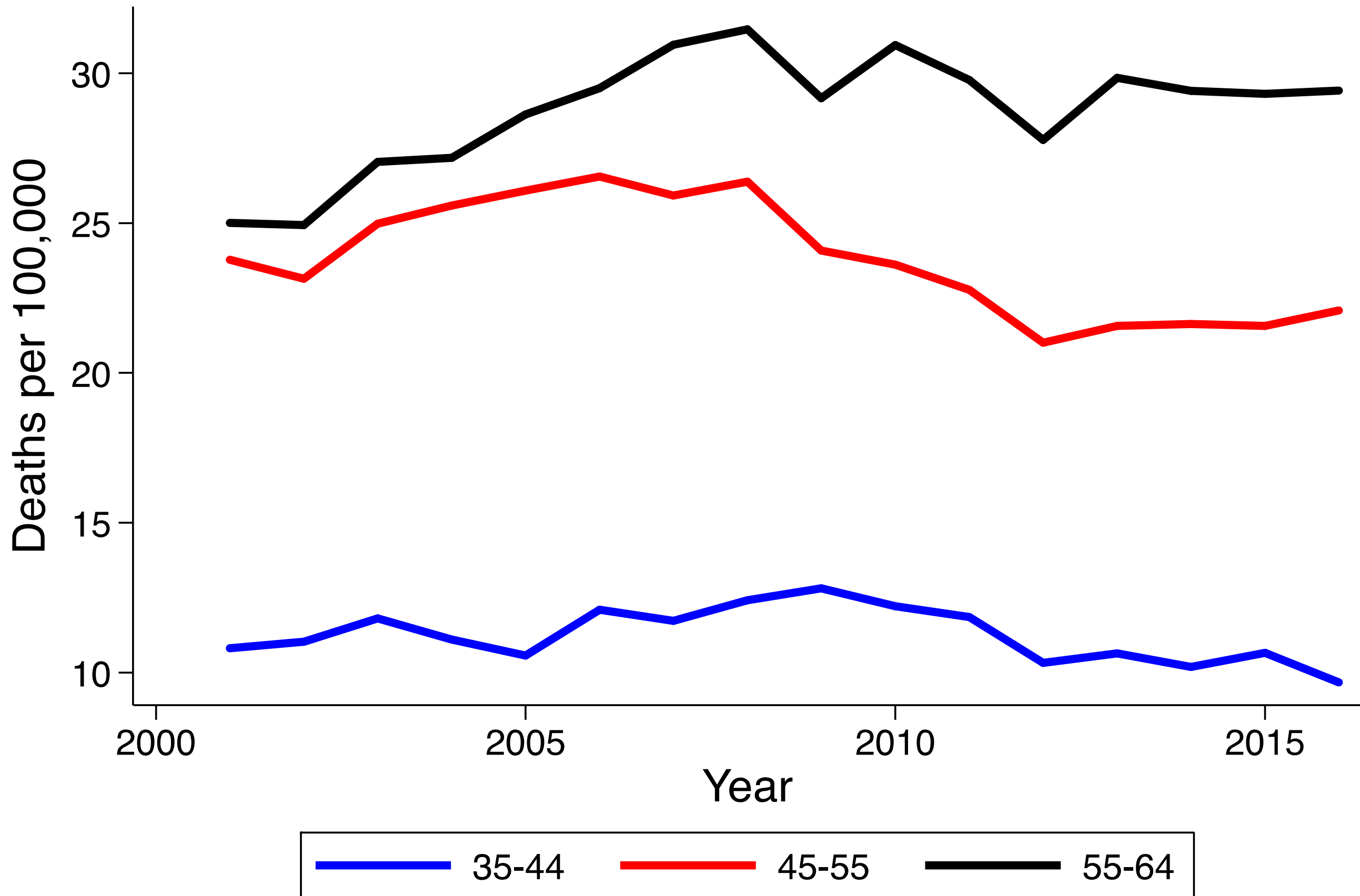
Drug Mortality, UK



Suicide Mortality, UK



Alcohol Mortality, UK



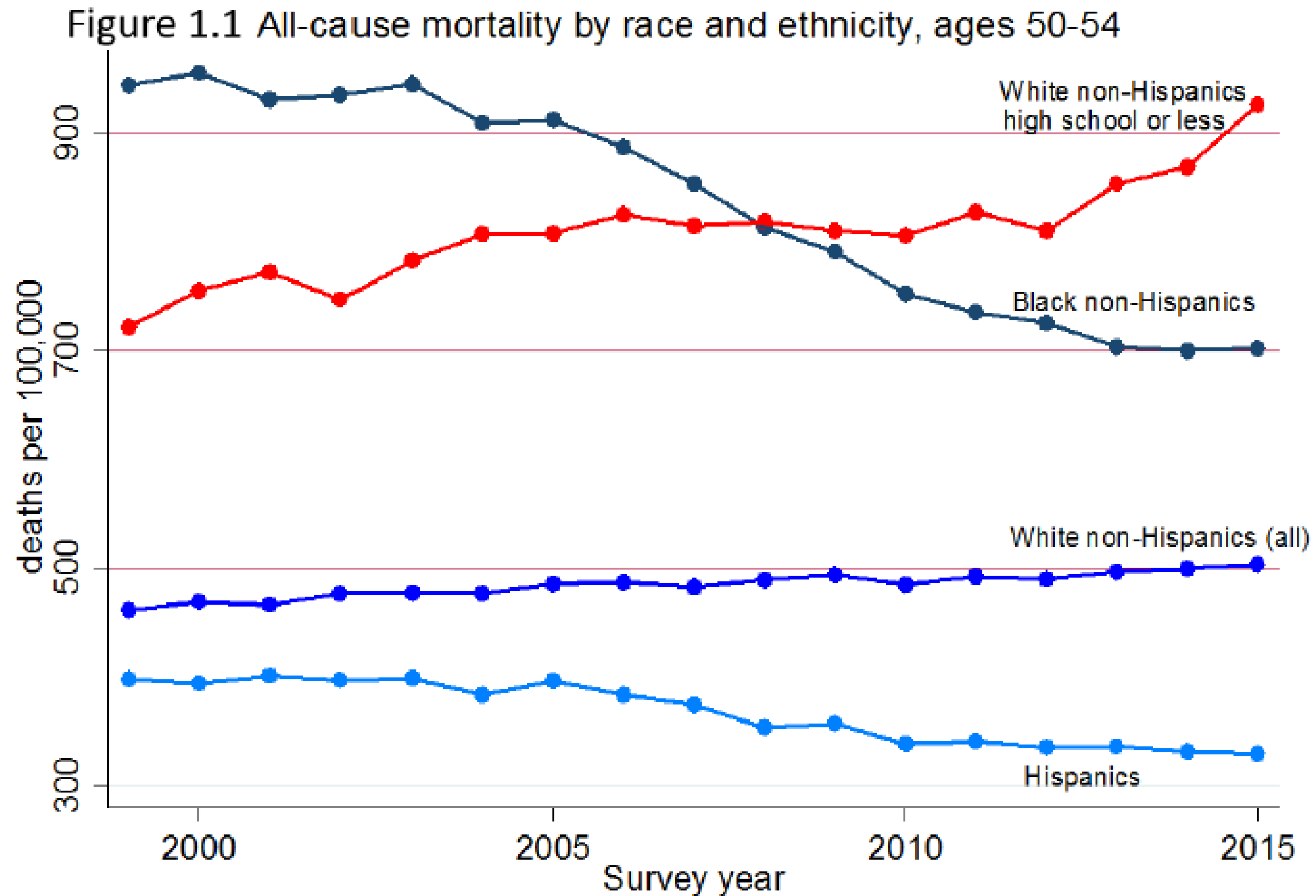
Conclusions:

- Evidence of leveling off and possible increase in overall mid-life mortality in UK (slow down in Canada)
- Some evidence of leveling off of declines in metabolic mortality
- Evidence of increase in “despair” deaths, esp. drug-related in both UK and Canada, though absolute rates far below US

Next steps:

- Remaining causes of death
- Individual linked data to investigate most comparable subgroups to US white population
- How are political, economic, and other contextual factors similar and different across these countries and how is that playing out in population health?

Broken down by age....& race & education



Case and Deaton (Brookings, 2017)