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How unequal is health in the UK?

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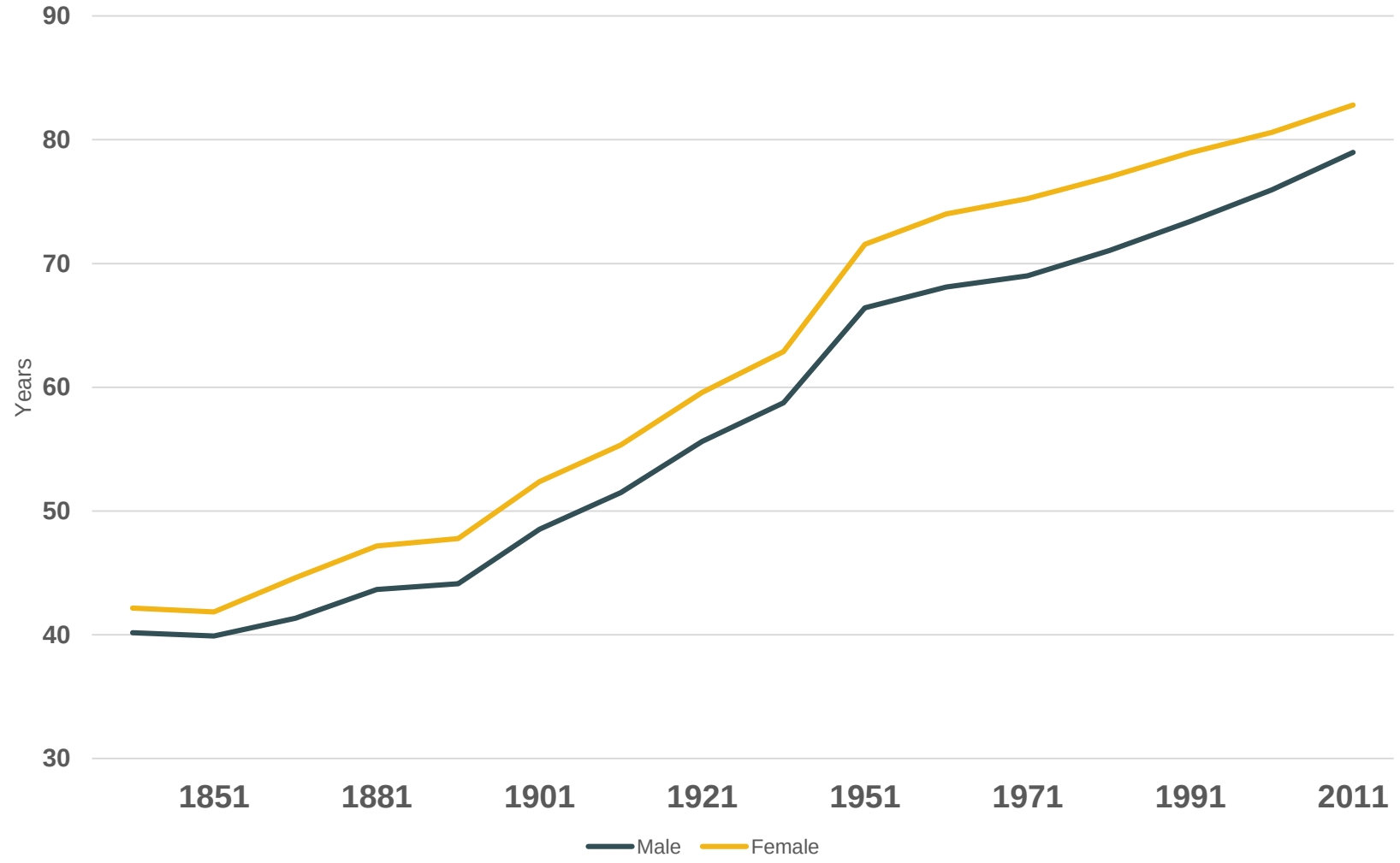
Economic and Social Research Council

This lecture hopes to cover 4 key topics

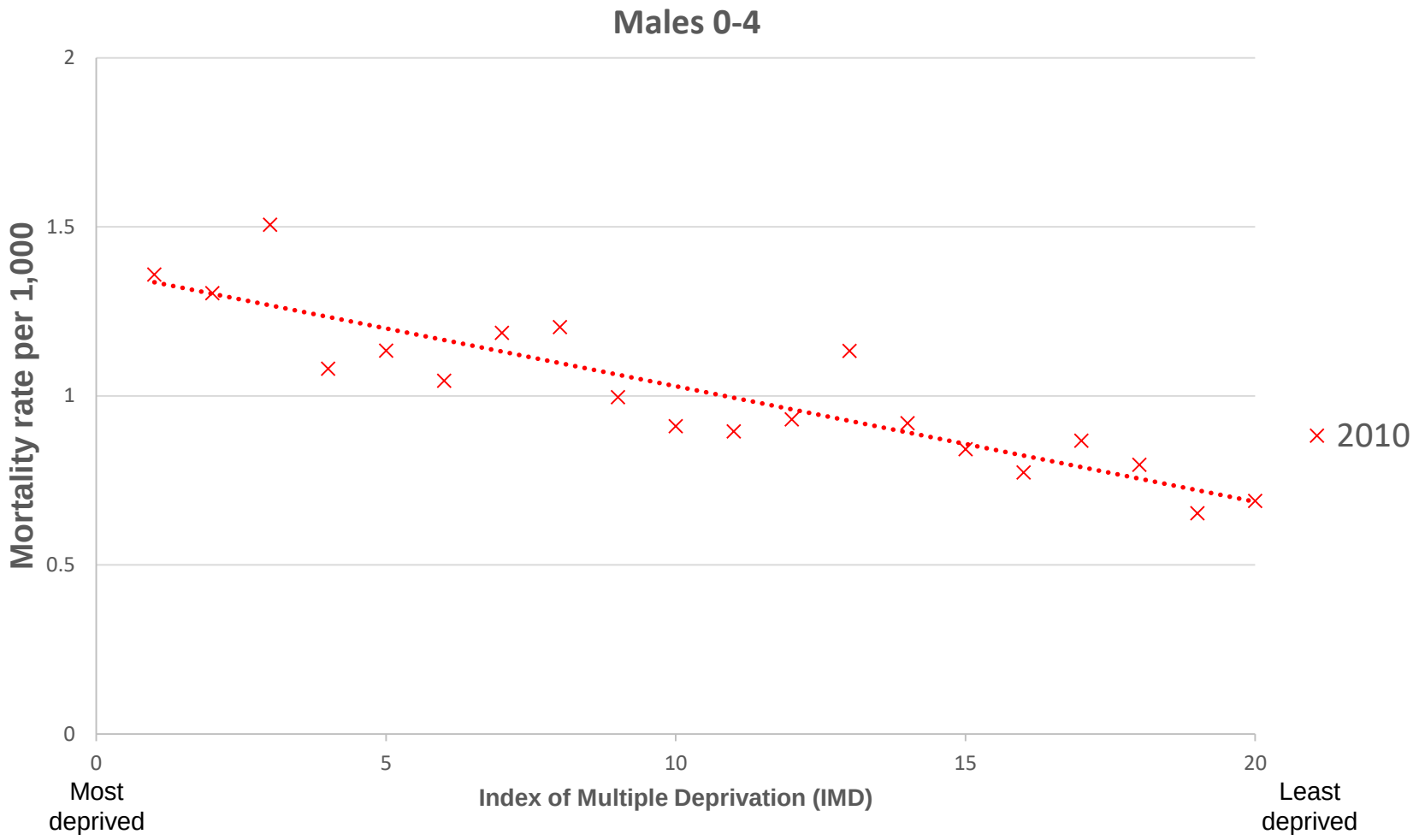
1. What is health inequality and why may it matter?
2. What causes health inequalities and what could be done to help?
3. How can we disentangle causation and correlation: Good health → good income or good income → good health?
4. How may COVID effect the health inequalities in the UK?

What is health inequality and why may it matter?

Life expectancy at birth has increased rapidly over time



Even within England, health varies greatly by deprivation of local areas



What do we mean by health inequality?

- Health inequalities may include differences in **health outcomes, health behaviours** or **access to healthcare** between different population groups
- **Health outcomes:** life expectancy, mortality rates, hospitalisation rates, mental health issues, rate of chronic illness, number of disabilities…
- **Health behaviours:** nutrition and obesity, smoking, drinking…
- **Access to healthcare**: quality of hospitals, number of doctors per area…

Between who?

- **Income groups:** are richer individuals healthier than their poorer neighbours?
- **Neighbourhoods:** are individuals who live in certain areas healthier than other?
- **Educational groups:** are those with higher qualifications healthier?
- **Gender groups:** do different genders suffer differently?
- **Ethnic groups**: are certain groups healthier than others? Are certain groups more vulnerable to health shocks?

Why does health inequality matter?

- Can be considered unfair and undesirable:
  - If they are avoidable
  - If they are socially determined by circumstances beyond individual control
  - However this discussion is not the role of an economist
- Costly to society (negative spillovers)
- Cost effectiveness of programmes that reduce health inequality
- Can indicate or lead to other inequalities

Why may governments intervene to reduce health inequality?

1. Efficiency
   - Individuals may under invest (market failures: e.g. negative spillovers, limited resources)
2. Equity
   - Government may have preference against highly unequal incomes and socio-economic situations
   - Intervene to reallocate resources towards worse off in society

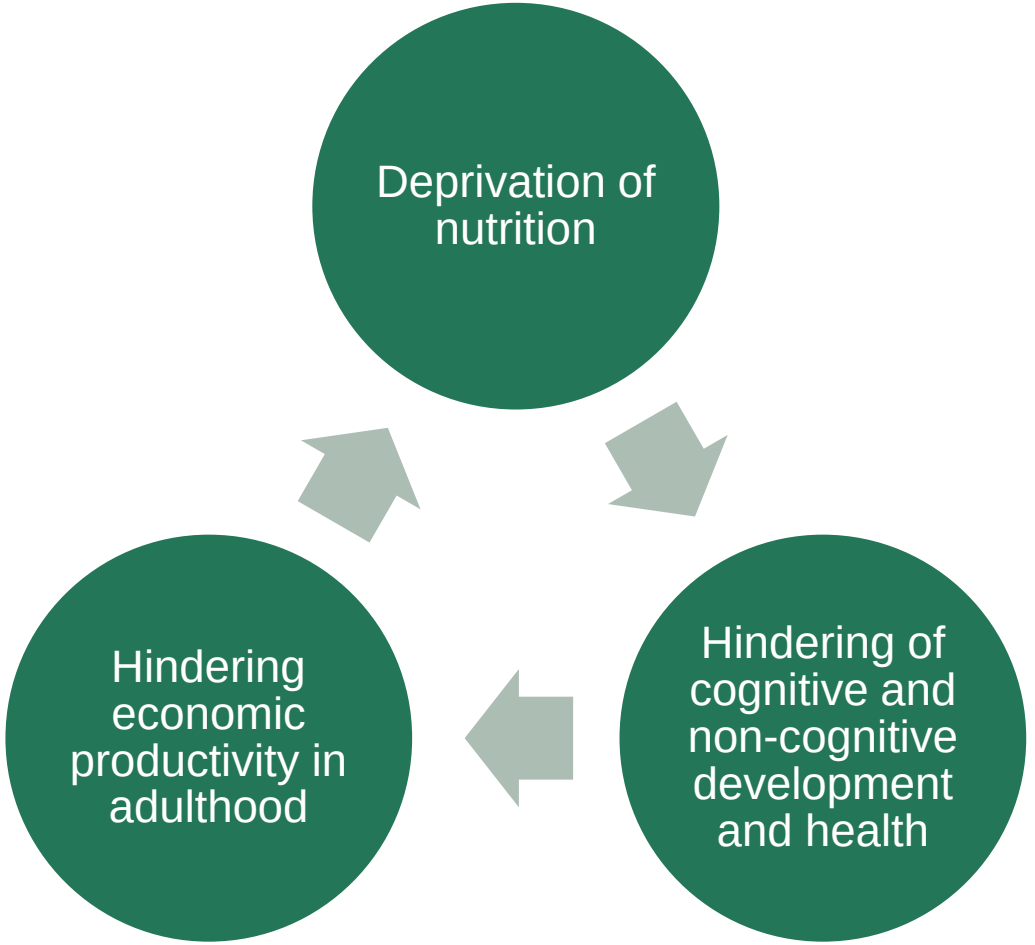
- Is there a trade off?

What causes health inequalities and what could be done to help?

What causes health inequalities?

- **Differing deprivation at early childhood**
  - Nutrition in early years can directly impact health in later years
- **Behavioral risk factors**
  - Smoking, drinking, sleep…
- **Income**
  - Income may directly impact access to healthcare or healthier environments
- **Work**
  - Different work may cause different health risks e.g. manual labor v. office work
- **Environment**
  - Pollution levels or quality of housing

Early childhood development and the importance of health



Example of government policy to reduce the inequalities

Sure Start centres

Aim: improve children's school readiness, health, and social and emotional development and maternal well-being

- Offers families with children under the age of 5 a 'one-stop shop'
  - for childcare and early education,
  - **health information and services,**
  - parenting support,
  - and employment advice

Cattan, Conti, Farquharson, Ginja (2019)

Evaluate overall impacts on health of Sure Start between 1999 and late 2000s

- **Data:** location and opening date of all Sure Start centres combined with data that cover children across England on outcomes e.g. hospitalisations and obesity.
- **Difference-in-difference strategy:** taking advantage of the roll-out dates of the programme

Compare children in the same neighbourhood with more or less access to Sure Start, accounting for permanent differences between neighbourhoods and nationwide differences between years.

What effect are we capturing?

A sure start centre may open in a neighbourhood…

- Parents with young children are allowed to go to the centre
- Some do go and some do not

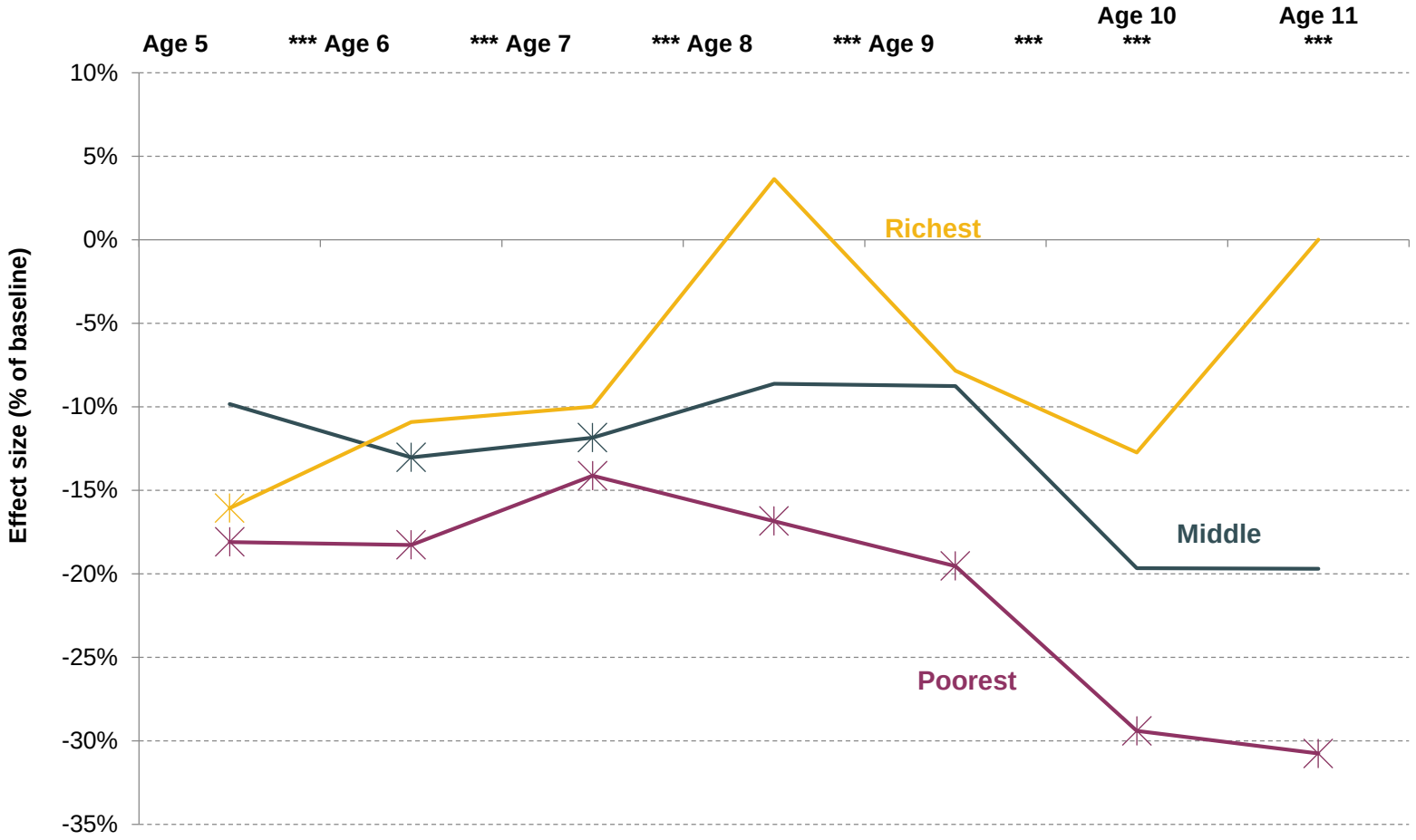
All parents and children in neighbourhood X are considered '**treated**' although not all engaged in the treatment

- Hence we consider it an ***intention* to treat**
- This may lead to an underestimation of the impact of a sure start centre on children who did attend

But ITT effects often correspond to the **policy parameter of interest**

- i.e. what might the government expect to happen if it opens one more centre?

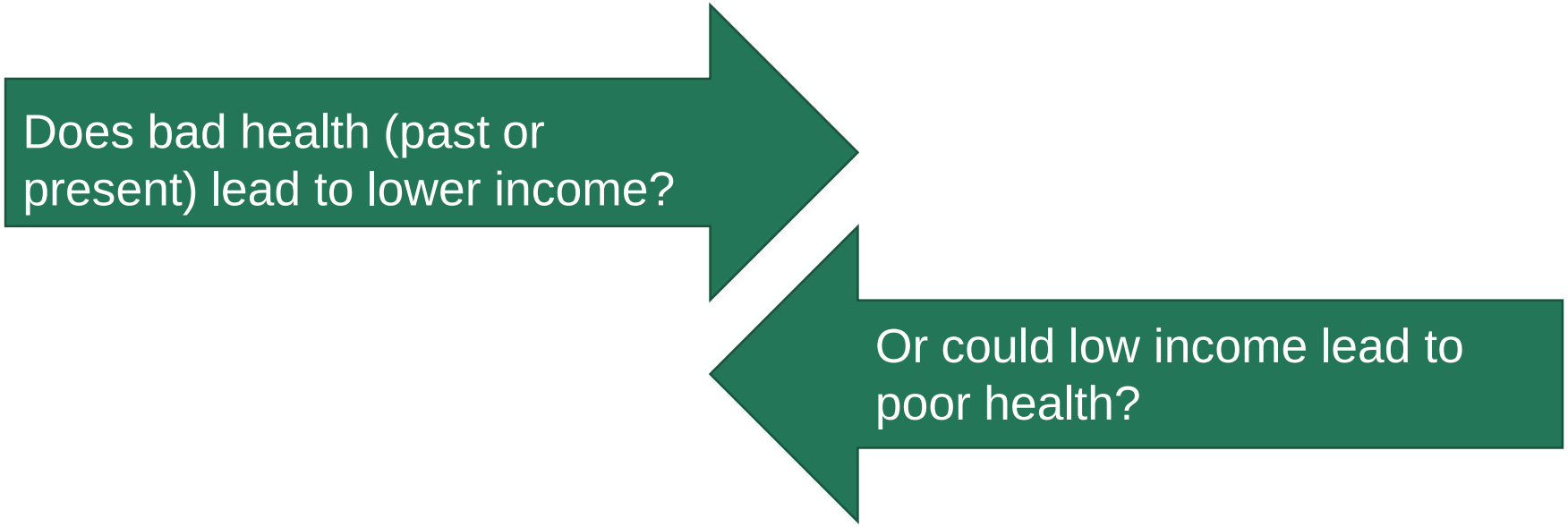
How did it impact probability of hospitalisation for injuries?



Source: Authors' calculations using data from the Hospital Episode Statistics inpatient data (1997–2014) and the Department for Education's data on the roll-out of Sure Start. Based on offering one more centre per thousands kids aged 0-4 in the local authority (Roughly the peak level of average coverage in 2010).

How can we disentangle causation and correlation: Good health → good income or good income → good health?

What is the problem?



- Why is this difficult to work out?
- What techniques can we use to try and separately analyse the impact of health on income and income on health?

Reverse causality

Why might this be a problem?

$$Health_i = \mathrm{B}Income_i + \epsilon_i$$

B shows the **correlation** between health and income
We would expect a positive B. Why?

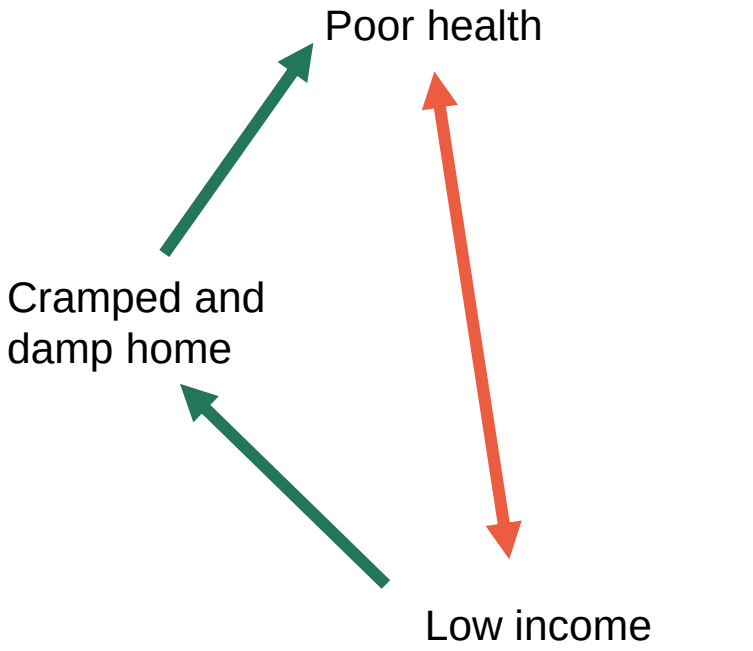
- Those with higher income may be in better health AND those in better health may have higher income

Example

1. Life expectancy as health measure
2. We may observe those with £1000 higher income per year have 0.1 years higher life expectancy
3. Therefore B = 0.1

but it does *not necessarily* tell us the **causal** impact of income on health

Figure: Example of a causality story



Reverse causality

Why might this be a problem?

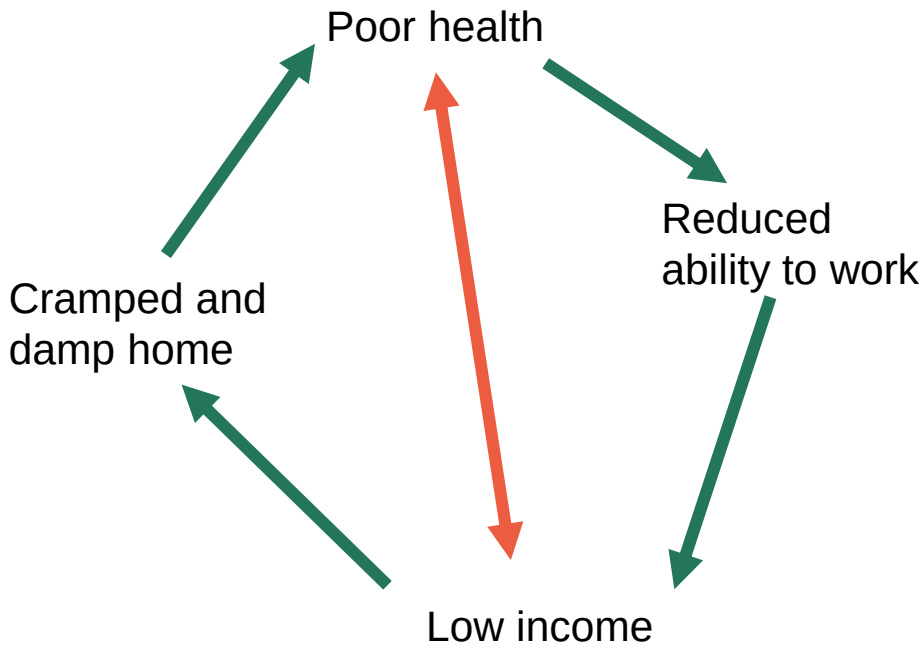
But if bad health is causing low income

- We may overestimate the impact income has on health directly

Is this the only issue?

- There may be **omitted variables** e.g. quality of workspace, education or stress

Figure: Example of a causality and reverse causality story



What does randomised control trial look like in economic research?

An example: reducing health inequalities from differing breastfeeding practices

The issue we want to investigate:

- Women with higher family incomes are more likely to breastfeed than their counterparts (Heck et al. 2006, Oakley et al 2013)
- Breastfeeding may be beneficial for the mother and baby (Heinig 2001, Oddy 2001)
- UK Guidance: exclusively breastfeed for 6 months

Research question:

- How big of an impact does exclusive breastfeeding have on child health outcomes?
- How much of this is because of lower income?
- How can we be sure that the health inequalities aren't due to different factors (e.g. lower income groups may have less healthy diets, or more crowded housing)

What kind of experiment may work?

- Randomly assign half pregnant women with an additional income -> treatment group
- The other half do not receive any income -> control group

How? By hospital or by antenatal care facility

- On average, these groups should be ‘balanced’ (i.e. on average the same by socioeconomic status, age, number of previous children, marital status) before the treatment and so the control group is a valid counterfactual
- Compare mean outcome (e.g. health of children, growth of children) in the treatment group and control group to have a causal impact of the treatment i.e. a pure income treatment

How may COVID effect the health inequalities in the UK?

Could COVID widen health inequalities on a number of dimensions?

Consider two:

- Differing impact of mental health
  - Are those who were already worse in terms of depression or anxiety struggling more now? [Existing inequalities reiterated]
  - Has the increase in mental health issues been even larger for this group? [Exacerbated pre-existing inequalities]

- Varying exposure of COVID by ethnicity
  - Are there differences in deaths between different ethnic minorities?
  - Can these be explained by demographic or geographic differences?

COVID and mental health

Banks and Xu (2020)

Inequality

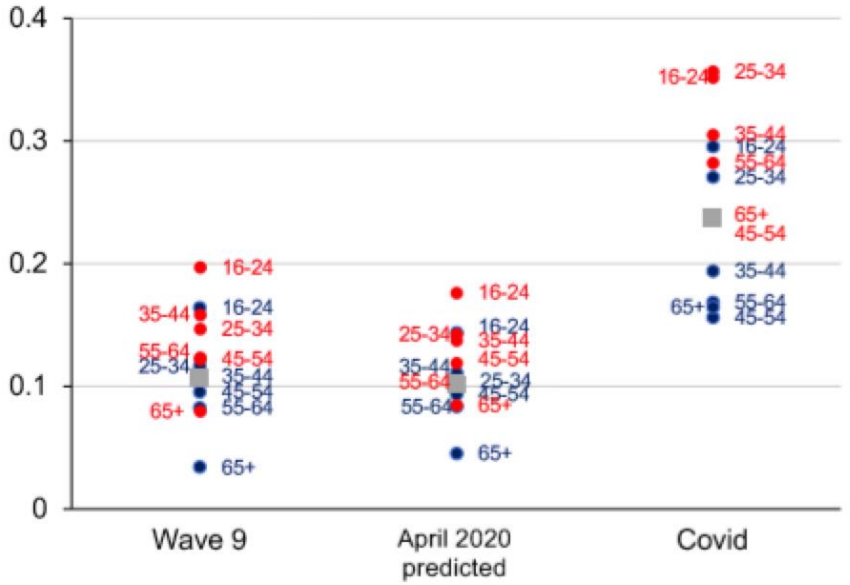
The IFS Deaton Review

Covid-19 has widened inequalities in mental health across gender and age groups and exacerbated pre-existing inequalities.

Groups with poor mental health pre-crisis suffered the largest deterioration in mental health

Young women saw the largest deterioration in mental health as result of Covid-19

Proportion of **men** and **women** with severe problems

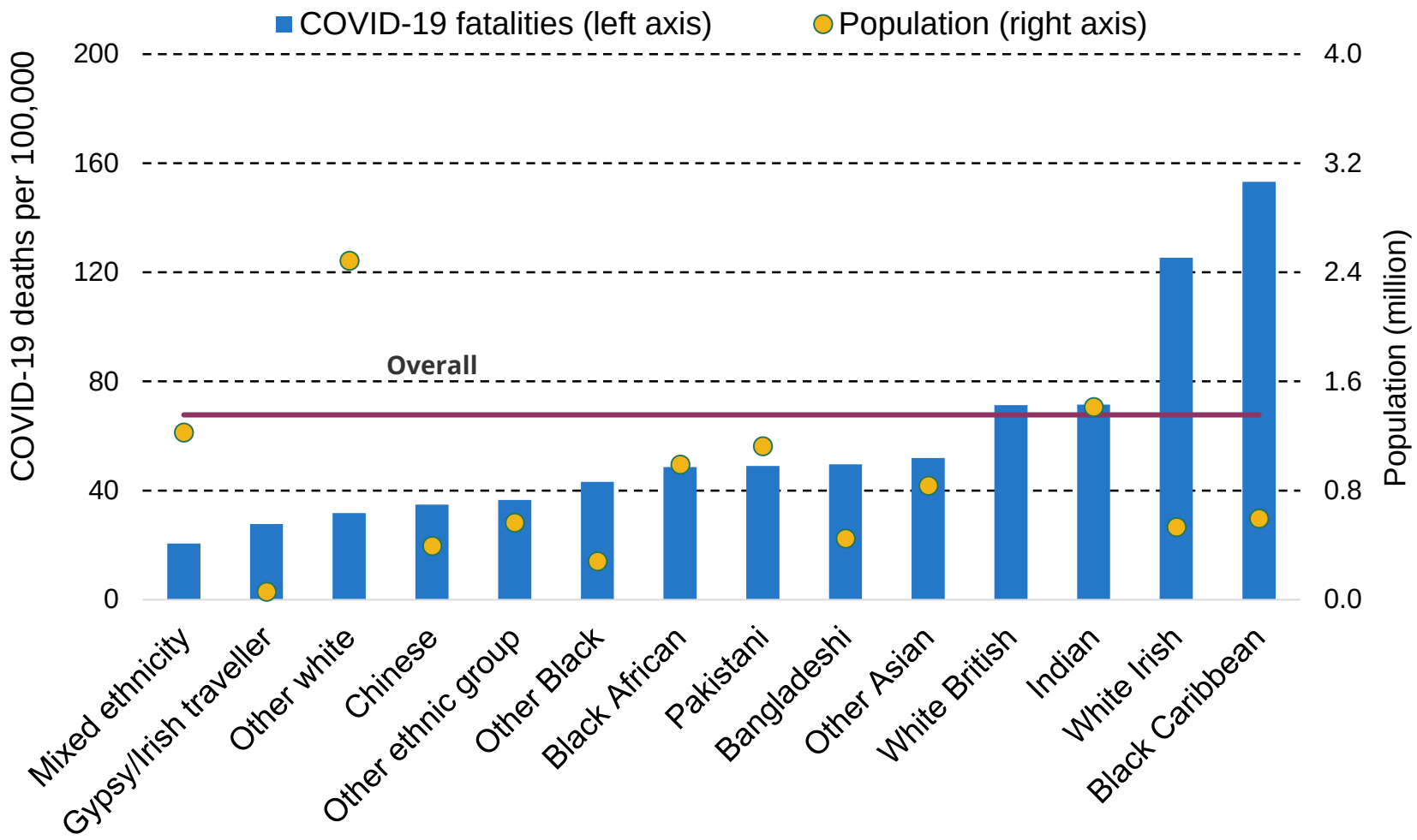


Source: UKHLS Waves 6-9 and April Covid-19 survey

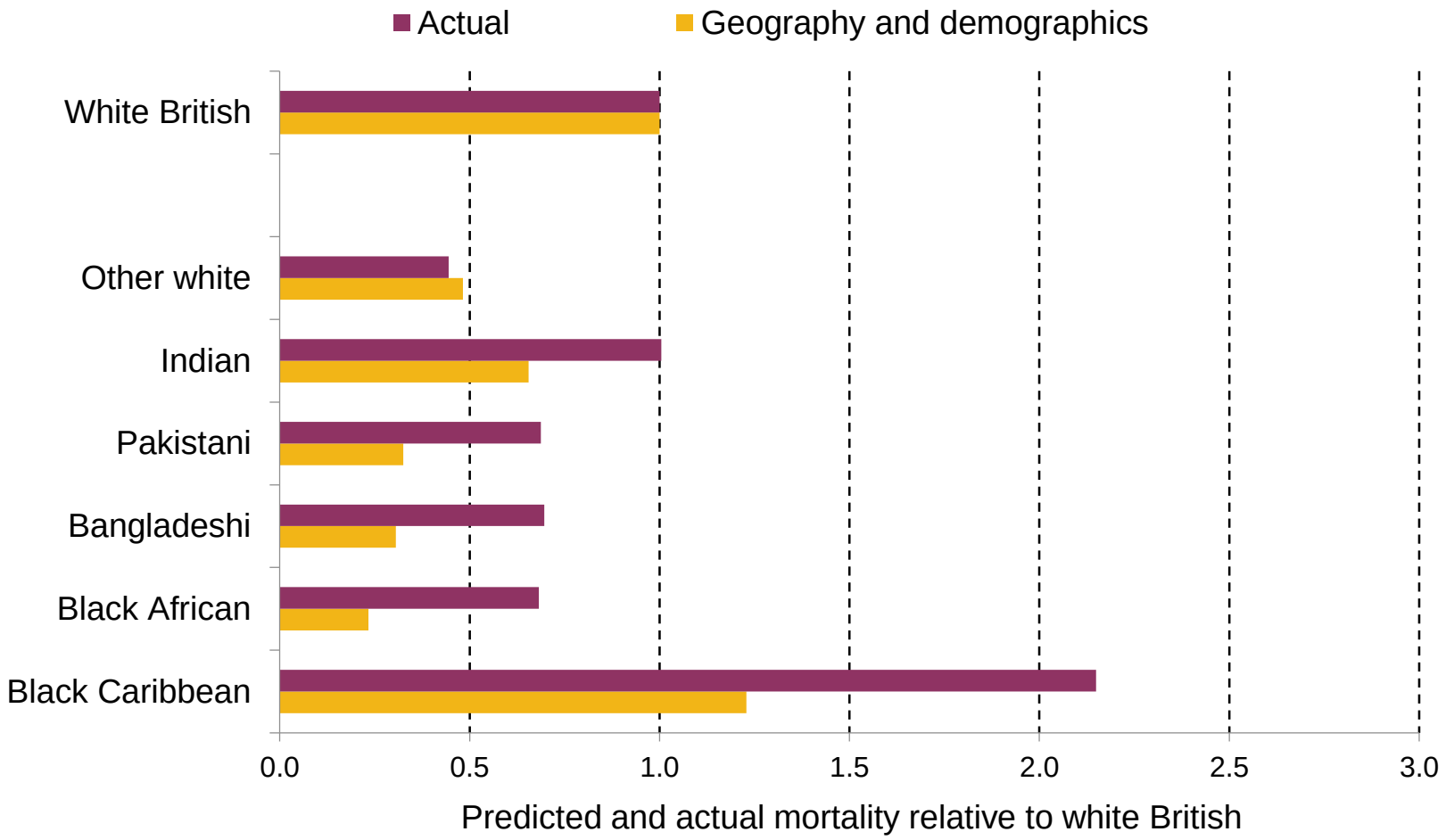
Notes to Figure 4a-4c: Wave 9 refers to January 2017-May 2019. Predicted values based on prediction using full set of controls (model c), with time effects set to April 2020. Values for male age groups indicated in Blue, values for female age groups in red. Grey squares are unconditional averages.

Covid and health inequality by ethnicity

Platt and Warwick (2020)



Can this be explained by geography or demographics?



Summary

- Health inequality is multidimensional
  - Health is a broad measure covering both physical and mental health
  - Inequality can be on a number of dimensions

- Poor health and health inequality can lead to negative outcomes in a number of areas including education, work and other health.

- It is difficult to differentiate the causal mechanisms of health inequality and the causal impacts of health inequality
  - Some work at the IFS addresses this

- COVID is a large health and economic shock that is bound to impact health inequalities

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