The Role of Socio-Economic Position in explaining Mortality: Evidence from Flu Epidemics

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Research questions

- ▶ Importance of deaths from respiratory diseases such a flu-like illnesses

- ▶ Socio-economic drivers of flu-related mortality

- ▶ Trends in aging societies?

Challenges

- ▶ Death triggered by flu-like illnesses not necessarily recorded as such

- ▶ Large datasets with both health and socio-economic outcomes are scarce

What we do

- ▶ Relate overall death and flu cases recorded by French physicians (network monitoring flu epidemics)

- ▶ Use first names to create large data set with joint distribution of mortality and predicted earnings (SES)

Data

- Death registers (1985-2019): records each death in France with names, date, municipality of death and birth information

- # of flu cases (per 100,000 inhabitants) per region and week (1985-2019)

- Labor force surveys (1982-2019) with first names, birth info, education, occupation, wages, partner's info, and father SES

Death rate vs flu incidence

$$deaths_{month,region} = \alpha + \beta flu_{m,r}$$
$$+ \ temperature_{m,r} + RegionFE + YearFE + MonthFE + \epsilon_{m,r}$$

fig/decade2000_allages.jpg

Name-specific death rate (40 most common names, 75% of birth cohort 1920-1929, women)

$a(t) = a_{0;birth,region}(t) \exp(namesFE)$

Name-specific death rate against SES (40 most common names, 75%)

`fig/bs_bc1920_sexe1.pdf`

Differential mortality effect of flu across SES quartiles

We estimate for each birth cohort (by decade) and gender (1910-1919, men):

$$\theta(week) = \theta_{0,birth,name}(w) \exp\left(temperature_{w,r} + RegionFE\right)$$

$$\exp\left(\sum_Q \beta_{Quartile(name)} Flu_{w-1,region} \times \mathbf{1}\left(Quartile(name)\right)\right)$$

fig/tempbidsa.pdf