1.不同城市或者地点(spatial variation) 有不同的情况 We explored the association between influenza death rates, transmissibility and several geographical and demographic indicators for the autumn and winter waves of the 1918–1919 pandemic in cities, towns and rural areas of England and Wales. 然后进行对比，再给出对比的结果。

In parallel, large variations in the 1918–1919 pandemic mortality rates have been reported between different nations and cities in the US, and were linked to differences in socio-demographic conditions and public health interventions ([**Murray *et al*. 2006**](https://royalsocietypublishing.org/doi/10.1098/rspb.2007.1477#bib31); [**Bootsma & Ferguson 2007**](https://royalsocietypublishing.org/doi/10.1098/rspb.2007.1477#bib5); [**Hatchett *et al*. 2007**](https://royalsocietypublishing.org/doi/10.1098/rspb.2007.1477#bib16)). The differences between urban and rural areas and population units of varying size, however, have not been comprehensively analysed.

The 1918–1919 influenza pandemic in England and Wales: spatial patterns in transmissibility and mortality impact.

geographical and demographic patterns

2.Per-head 人均 income 对死亡率的影响 high mortality in poor country.

Estimation of potential global pandemic influenza mortality on the basis of vital registry data from the 1918–20 pandemic: a quantitative analysis

3. here long-range between-state progression The regional spread of infection correlates more closely with rates of movement of people to and from their workplaces (workflows) than with geographical distance.

Synchrony, Waves, and Spatial Hierarchies in the Spread of Influenza

4.