

Excess cases of influenza suggest an earlier start to the coronavirus epidemic in Spain than official figures tell us: an analysis of primary care electronic medical records from over 6 million people from Catalonia

Supplementary material

Supplementary Table 1. ICD-10 codes used to identify influenza and COVID-19 cases**Influenza**

| | |
|--------|---|
| J10.1 | Influenza due to other identified influenza virus with other respiratory manifestations |
| J10.89 | Influenza due to other identified influenza virus with other manifestations |
| J11.1 | Influenza due to unidentified influenza virus with other respiratory manifestations |
| J11.2 | Influenza due to unidentified influenza virus with gastrointestinal manifestations |
| J11.89 | Influenza due to unidentified influenza virus with other manifestations |
| J10 | Influenza due to other identified influenza virus |
| J11 | Influenza due to unidentified influenza virus |

COVID-19

| | |
|--------|---|
| B34.2 | Coronavirus infection, COVID-19 (with PCR) |
| B97.29 | Coronavirus as the cause of diseases classified elsewhere |
| B97.21 | SARS-associated coronavirus as the cause of diseases classified elsewhere |
| J12.81 | Pneumonia due to SARS-associated coronavirus. |

Supplementary Table 2. ARIMA models fitted

| | | |
|-----------------------|----------------|--|
| Total | ARIMA(1, 1, 2) | $Y_t = 1.86_{t-1}Y_{t-1} + 1.22e_{t-1} - 0.37e_{t-2}$ |
| Age younger than 15 | ARIMA(4, 0, 1) | $Y_t = 432.67 + 1.96Y_{t-1} - 1.17Y_{t-2} + 0.35Y_{t-3} - 1.60Y_{t-4} + 0.59e_{t-1}$ |
| Age between 15 and 64 | RIMA(1, 0, 3) | $Y_t = 759.6 + 0.96 Y_{t-1} + 0.10e_{t-1} - 0.17e_{t-2} + 0.06e_{t-3}$ |
| Age older than 64 | ARIMA(1, 1, 2) | $Y_t = 0.49 Y_{t-1} + 0.70 - 0.27e_{t-2}$ |

Supplementary Figure 1. Observed and expected (with 95% CI) weekly new influenza cases each day after the peak of the 2018-2019 Catalonia influenza season, in the full population and in each age group.

