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

| Code   | Description                                           |
|--------|-------------------------------------------------------|
| 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

| Code   | Description                                           |
|--------|-------------------------------------------------------|
| 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

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