RECORDED COVID-19 INFECTION DIFFERED FROM OTHER RESPIRATORY ILLNESSES IN SCHOOL-AGED INDIVIDUALS DURING THE COVID-19 PANDEMIC

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WHY DOES THIS MATTER?

Understanding which groups of **school-aged individuals** are most affected by respiratory illnesses, and how these differ by illness type such as colds, 'flu or COVID-19, is important for improving equity of healthcare access and for future pandemic preparedness.

Respiratory illnesses may be recorded in different settings which may be accessed differently by different groups of school-aged individuals:

- through surveillance testing, during routine testing for SARS-CoV-2 (the virus that causes COVID-19) ("SGSS")
- in an individual's GP record, if they seek a GP appointment for their symptoms ("GDPPR")
- in hospitals, if an individual's symptoms are severe enough to require a visit to an A&E department or hospitalisation ("HES")

Healthcare access also varied over time during the COVID-19 pandemic.

RESEARCH QUESTION: How did patterns of recorded respiratory illnesses, including COVID-19, differ during the COVID-19 pandemic over time, and by healthcare setting (also correlating with severity), infection type, and risk factors like age and deprivation?

HOW DID I DO THIS?

SECURE DATA ACCESS

NHS Secure Data Environment

De-identified healthcare records

Ethical approval obtained

STUDY POPULATION

11.6 million school-aged individuals (4-18 years)

Data sources: GP records, COVID-19 surveillance testing, and hospital records from January 2020 to December 2022

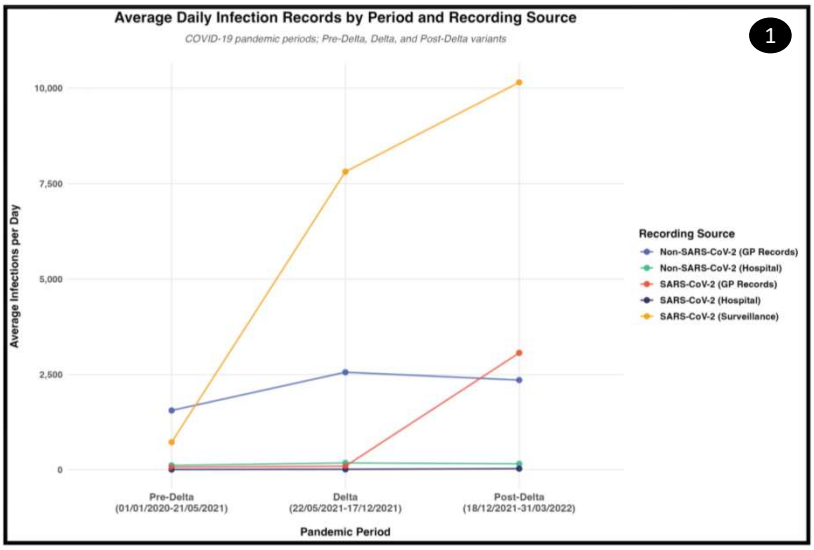
ANALYSIS

Compared infection patterns over time, by age and deprivation

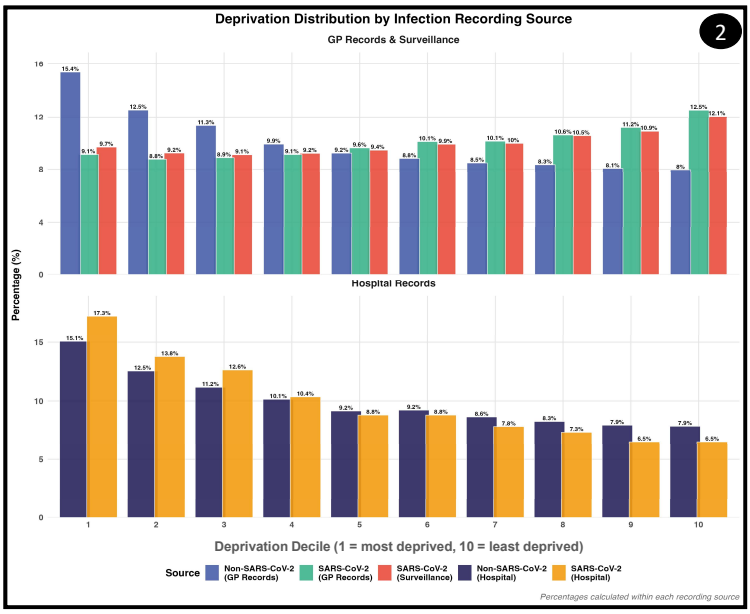
Identified differences between recording systems

Created charts using R and ggplot

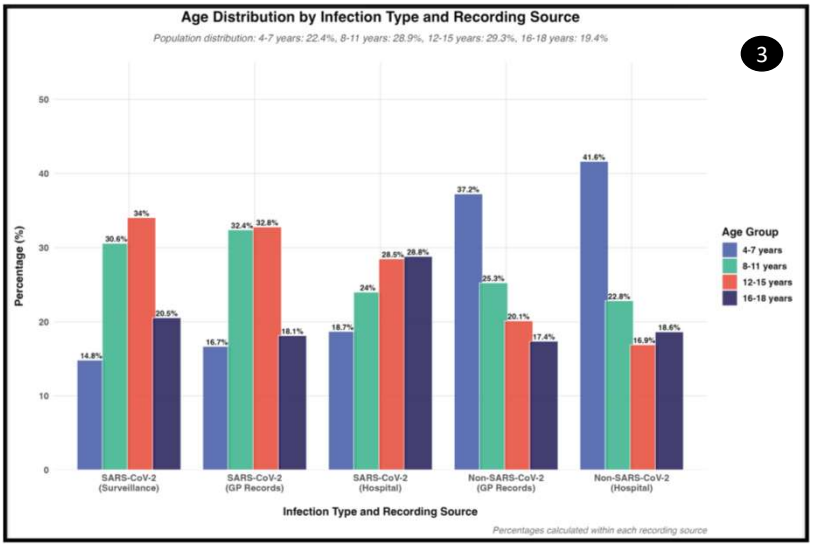
WHAT DID I FIND OUT?



- The rate of COVID-19 infection recorded through surveillance testing and in GP records increased dramatically during the pandemic
- The rate of other respiratory illnesses was lowest during pre-Delta



- Less deprived areas had higher rates of COVID-19 infections recorded through surveillance testing and in GP records than more deprived areas
- The opposite was true for other respiratory illnesses
- More deprived areas has higher rates of hospitalised infection than less deprived areas for both COVID-19 infections and other respiratory illnesses



- Hospitalised COVID-19 infections were disproportionately found in older children (16-18 yrs) compared to younger children (4-7 yrs); 8-15 yr olds had disproportionately higher recorded GP and surveillance infections
- Other respiratory illnesses were disproportionately recorded in those younger

WHAT DOES THIS MEAN?

The findings show that respiratory illnesses, including COVID-19, are not captured equally across different healthcare settings for different respiratory illnesses and for different groups of school-aged individuals.

It is important not to equate data sources. For example, secondary school age children, and those from less deprived areas, may have had higher rates of COVID-19 testing and GP access. However, they did not necessarily experience severe illness at the same rates.

One reason that COVID-19 affected older individuals more than other respiratory illnesses could be because they had no previous immunity against COVID-19, unlike for other respiratory illnesses.

Further research is needed to understand differences in susceptibility versus inequity in healthcare access in different groups.

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- The members of the ELUCIDate team provided valuable insights and feedback.
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