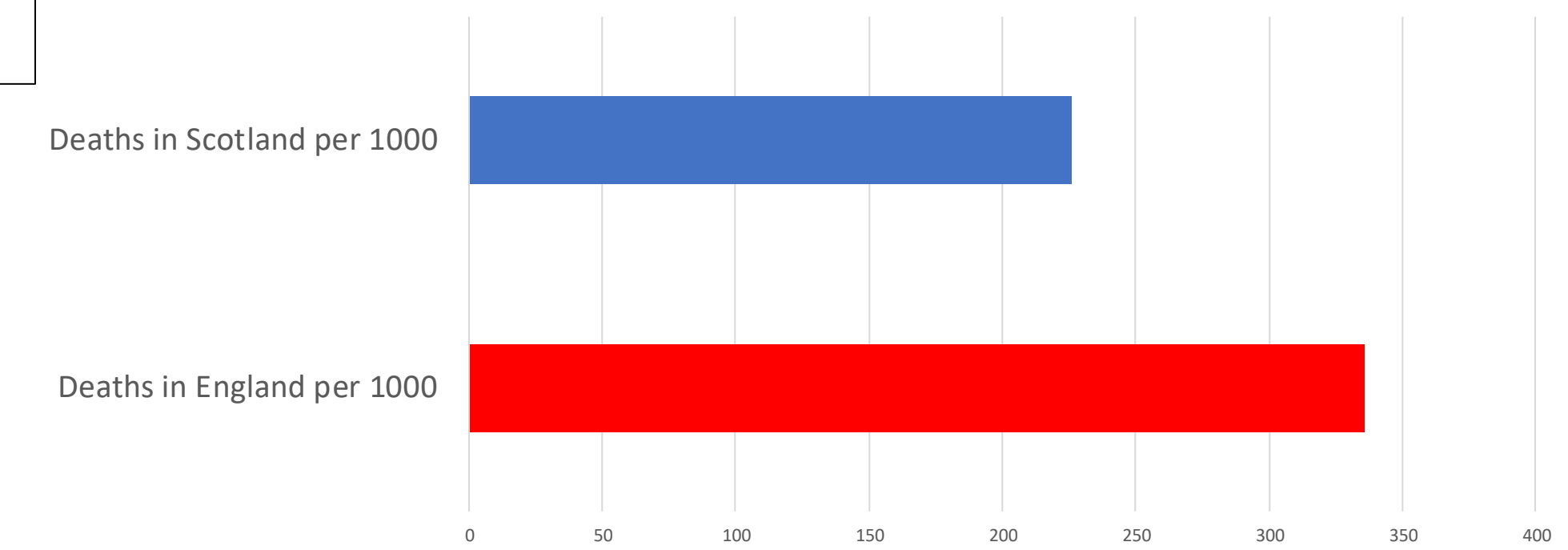


Big Data: COVID-19 -Response to COVID-19: England vs Scotland

Derby College, Joseph Wright Centre
 Callum Keelan
 Isaac Stefanos

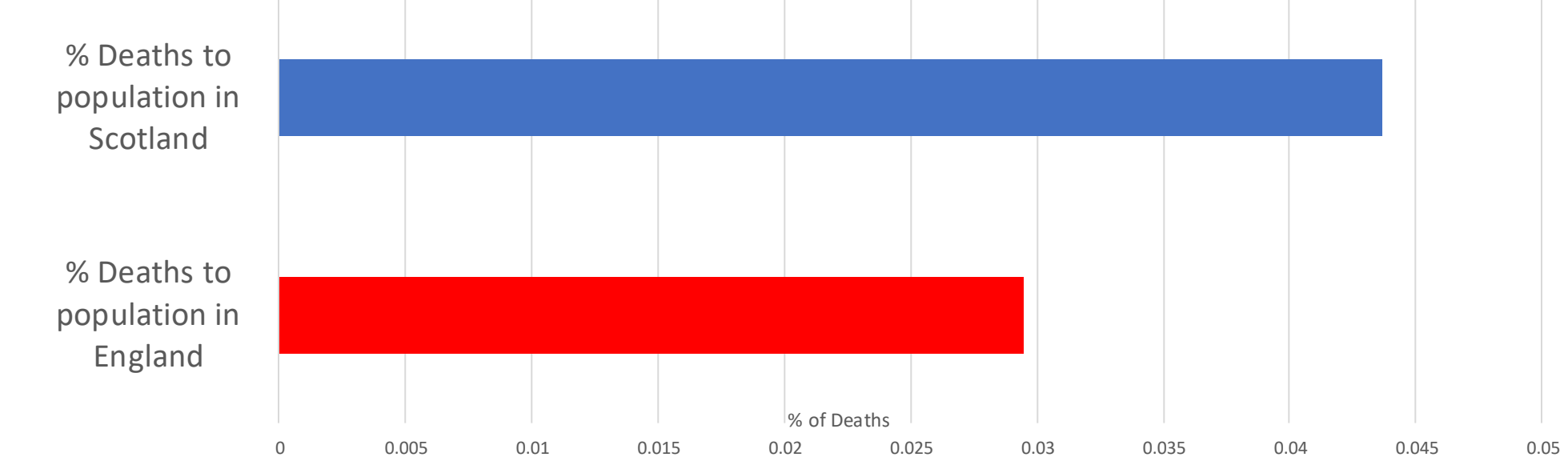
Our aim- Comparison of how different approaches to COVID in Scotland and England affected infection rate and deaths.

Comparison of Deaths per 1000 in England and Scotland



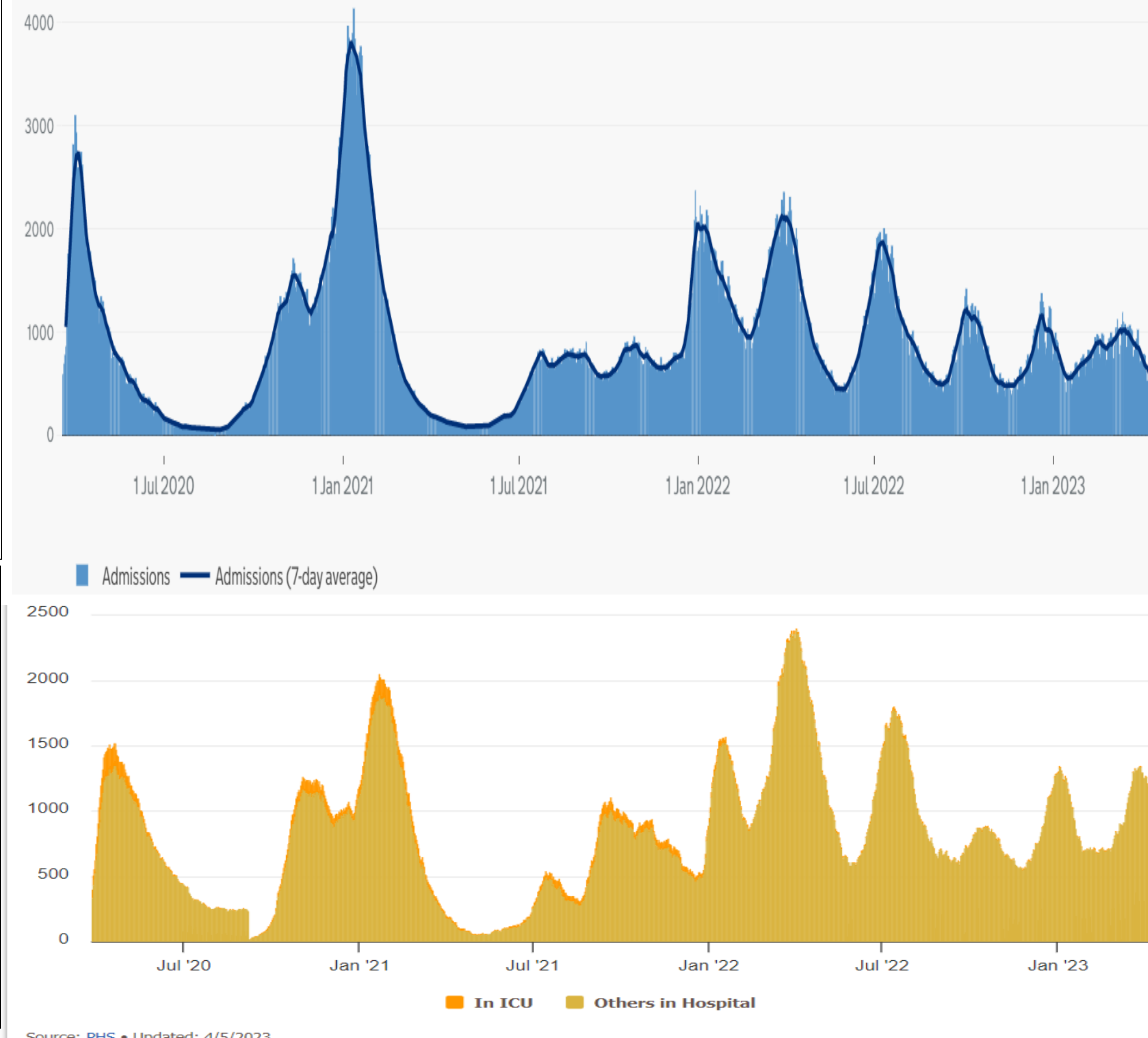
The graph shows the comparison in deaths between England and Scotland. As we can see the deaths for England are considerably higher than the deaths for Scotland. This is most probably because Scotland's population (5.4 million) where as England's Population (56 million). Therefore we expect that approximately there would be 10x more deaths in England however there were 16x more deaths in England.

Difference in % deaths to population in England and Scotland



The graph shows the difference in deaths when in comparison to the population. This gives us a better understanding of which country suffered more deaths for its population. Evidently, Scotland actually suffered more deaths for its population size so even though England had considerably more deaths overall, this clearly demonstrates how raw data can be misleading. The difference in percentage is also quite significant which could show that England had a better approach to Covid-19 than Scotland did and handled the pandemic better. England began vaccinating before Scotland did which could help stop the spread of Covid. When deaths are presented as a percentage of population, this was higher in Scotland.

Graphs to show hospital admissions in England and Scotland



Source: DHC - Unistat - 1/5/2023

Timeline of Covid in England

- 26 March- Lockdown measures legally come into force.
- 10 May- PM announces a conditional plan for lifting lockdown, and says that people who cannot work from home should return to the workplace but avoid public transport.
- 1 June- Re-opening of schools in England.
- 23 June- announces relaxing of restrictions and 2m social distancing rule
- 4 July- first local lockdown comes into force in Leicester and parts of Leicestershire.
- 24th July – face coverings become mandatory.
- 14 September- 'Rule of six' – indoor and outdoor social gatherings above six banned in England. Scotland does not follow these laws.
- 22 September- PM announces new restrictions in England, including a return to working from.
- 8 December – First vaccine administered and in care homes.

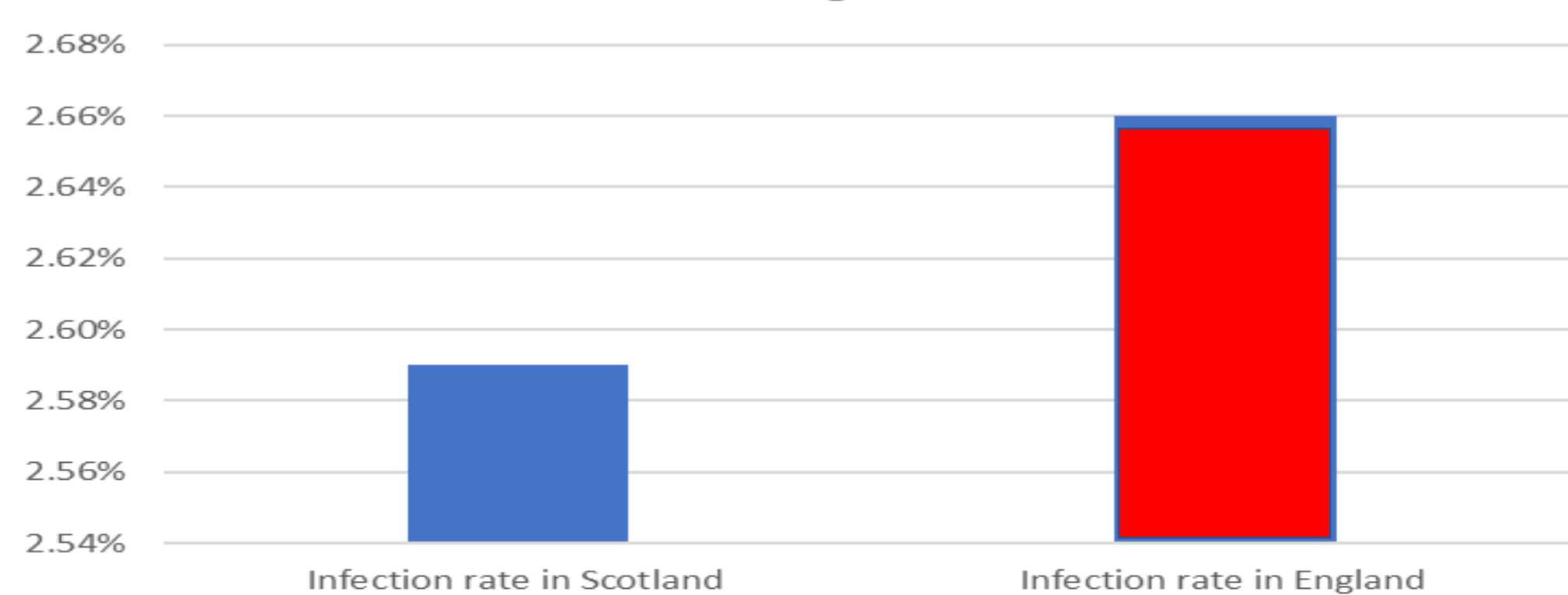
Timeline of Covid in Scotland

- 24th March – Scotland lockdown starts.
- 21st May – Scotland publish a roadmap to get them out of the pandemic. Students will return to school in August.
- 22nd June – face coverings become mandatory on public transport.
- 11th August – Scottish schools reopen fully.
- 25th August – schools started to wear face masks.
- 22nd September – new restrictions on people visiting households and curfew set for pubs and restaurant.
- 15th October – introduce the wearing of face masks is becoming mandatory.
- 14th December – First vaccinations given out in care homes.

From these graphs, it is shown that England has more hospital admissions than Scotland. The graph shows that in July 2020 there is a dip in hospital admissions for both countries. This is possibly explained by Scotland enforcing the introduction mandatory face coverings on public transport and, in England on the 4th July they started to put certain parts of England in a local lockdown starting with Leicester and parts of Leicestershire. In England during March 2021 the government began a phase of coming out of lockdown and from the graph we can see in July 2021 the hospital admissions has a spike perhaps suggesting. England started to ease themselves out of the lockdown too early. The graphs are similar, however it is shown that England have higher peaks than Scotland more often.

Infection rates in England and Scotland

Infection rates in England and Scotland



Infection rate means the probability or risk of an infection in a population. The graph shows the infection rates from March 2020 – March 2023 for the percentage of the population. The infection rate in England is higher than that of Scotland, showing that the virus spread more quickly in England. This could be due to the higher population density or to the different approach of England. England started lockdown two days later than Scotland and also started to relax measures much earlier than Scotland. On the 23rd June 2020 England announced the relaxing of restrictions. At the same time on the 22nd of June Scotland enforced mandatory face masks on transport, clearly showing the stricter approach in Scotland.

In conclusion, England had a higher infection rate, along with more hospitalisations and deaths per 1000. However England has a higher population density allowing the virus to spread more quickly. In comparison, Scotland's population is more widespread, perhaps reflected by the lower infection rate. There was also not a massive difference between laws and regulations, meaning that the population density is perhaps the main cause for more deaths in England.

Timeline of Coronavirus (COVID-19) in Scotland – SPICe Spotlight | Solas air SPICe (spice-spotlight.scot)
<https://www.gov.scot/publications/coronavirus-covid-19-framework-decision-making-scotlands-route-map-through-out-crisis>
<https://coronavirus.data.gov.uk/details/testing?areaType=nation&areaName=Scotland>
<https://coronavirus.data.gov.uk/details/testing?areaType=nation&areaName=England>
 Scotland Coronavirus Tracker (travellingtabby.com)

How did the different government approaches for lockdown in the UK and New Zealand affect the number of covid deaths?

Introduction

The 1st Covid case was confirmed in January 2020. The UK government advised that travellers that came from affected countries to follow the guidelines and began contact tracing which was then later abandoned due to all the errors and problems caused.

Later on, the government added further restrictions as it continued to spread. It led to the PM Boris Johnson announcing the first lockdown in 23rd March 2020.

Across the country, localised lockdowns, social distancing measures, self-isolation laws for those exposed to the virus, rules on face masks were introduced, as well as efforts to expand COVID-19 testing and tracing.

“Non-essential” businesses were closed, people were ordered to stay at home and only permitted to leave for essential purposes only for example, food purchases or medical reasons.

Timeline of UK restrictions

May 10th, 2020: a conditional plan for lifting lockdown was announced for those who cannot work from home, should return to their workplaces. However, were not permitted to use public transport.

June 1st, 2020: schools re-opened in England and non-essential shops reopened on **15th June**. However, 2m social distancing was introduced.

2nd week of August 2020: lockdown restrictions were further eased, allowing indoor theatres, bowling alleys and soft play to reopen.

September 14th, 2020: the ‘rule of six’ was introduced and stated that any indoor and outdoor gatherings above 6 were banned in England.

2nd week of October 2020: new three-tier system of Covid-19 restrictions starts in England, and it was announced that a second lockdown is being put in place to help reduce the strain being put on the NHS in response to an increase in cases.

November 5th, 2020: 2nd lockdown and was in place until December 2nd.

December 2nd, 2020: after 4 weeks. Return to a stricter three-tier system of restrictions.

December 19th, 2020: a new tier 4 system of restrictions was put in place for London followed by other areas later on in the month.

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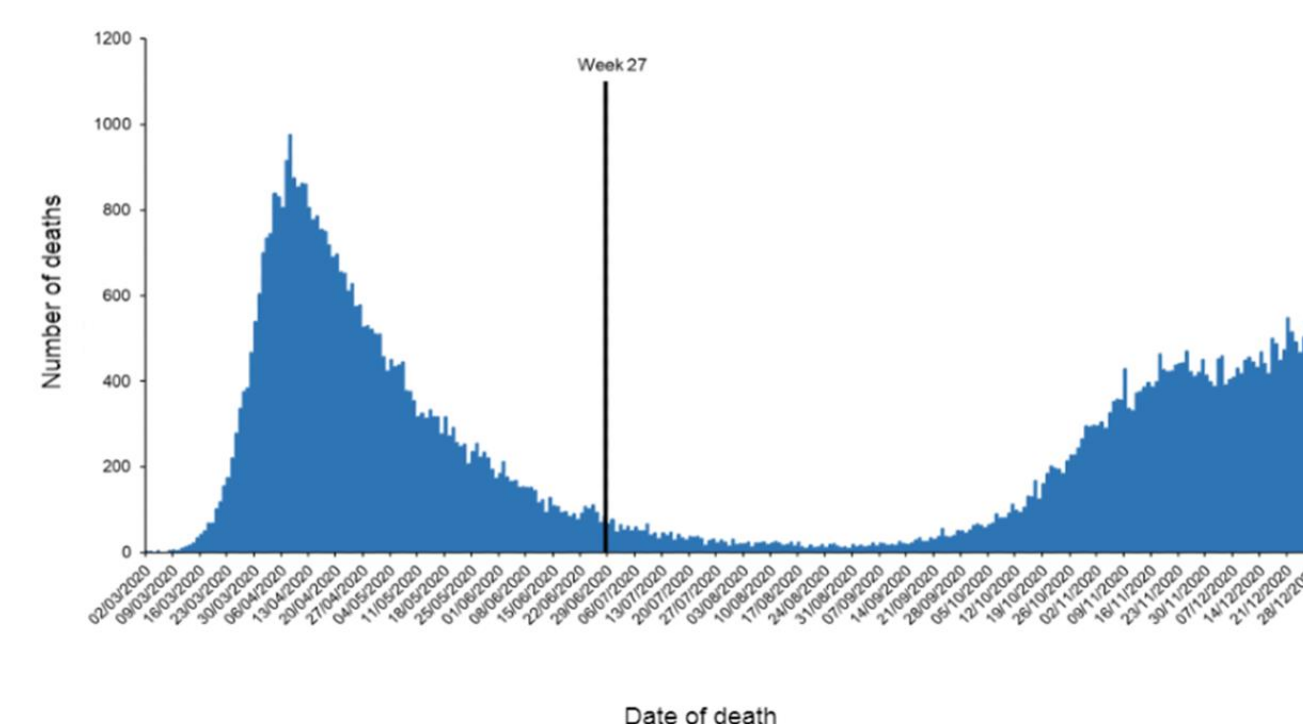
Between January 4th & 6th 2021: England enters their 3rd national lockdown.

February 22nd, 2021: PM published a roadmap for the lifting of the lockdown.

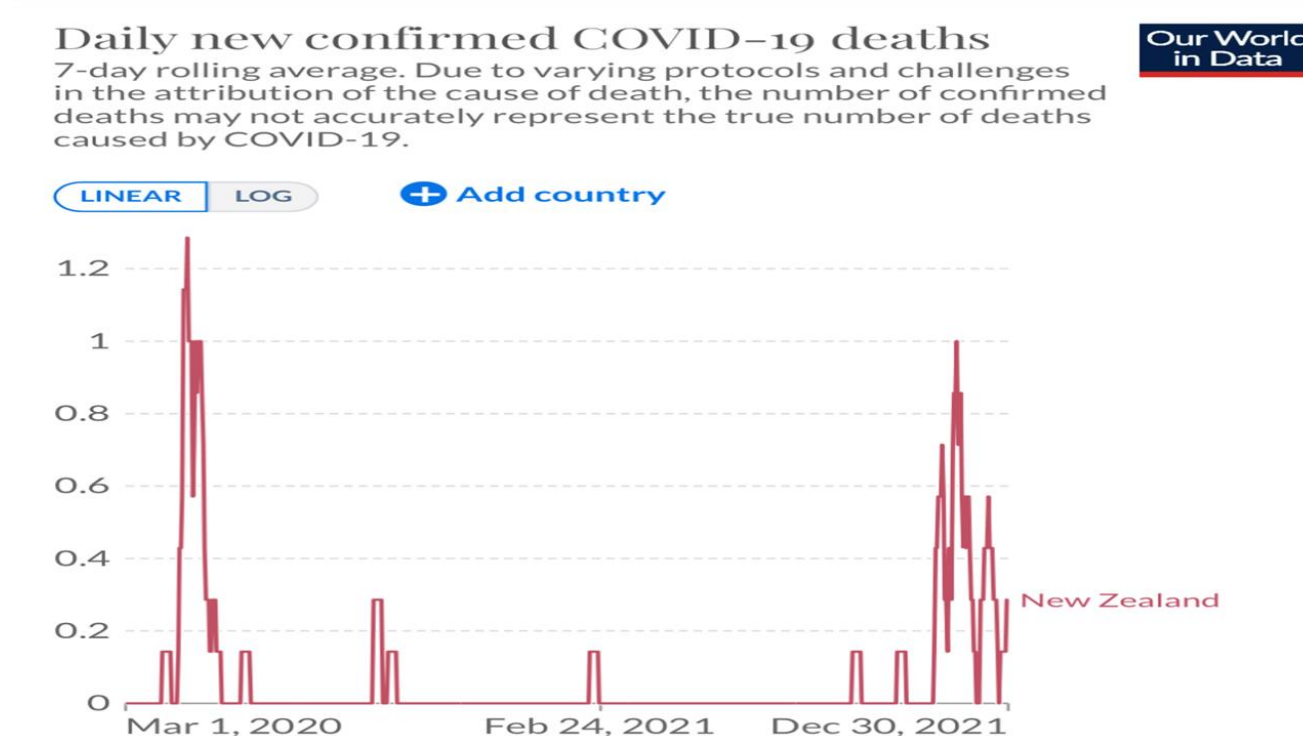
March 8th, 2021: England planned a return to school for primary and secondary school students in England. There were still some guidelines that were followed to keep the spread of Covid to a minimum i.e. masks and social distancing in public areas.

February 24th, 2022 Remaining restrictions were lifted in England under a “living with COVID” plan announced by the government.

Figure 1.a. Number of deaths in laboratory-confirmed cases of COVID-19 by date of death*†



Of all deaths registered in 2020 in England and Wales, 73,766 (12.1%) were due to coronavirus (COVID-19); the age-standardised mortality rate (ASMR) was 126.9 deaths per 100,000 people. The number of deaths (29,435) and the ASMR (619.3 deaths per 100,000 people) for deaths due to COVID-19 were highest in April 2020. Age-specific mortality rates in 2020 were highest among people aged 90 years and over at 2,918.1 deaths per 100,000 people; this was true for both males (3,707.2 per 100,000) and females (2,537.8 per 100,000). The North West of England had the highest ASMR for deaths due to COVID-19 in 2020 at 176.0 deaths per 100,000 people, while the South West of England had the lowest rate at 59.3 deaths per 100,000.



Following the lockdown, the number of cases started to decline, and New Zealand was able to effectively contain the spread of the virus. By June 8, 2020, there were no active cases in the country. However, a small number of new cases were later reported, primarily among returning travellers who were in quarantine.

Timeline of New Zealand restrictions

January 28, 2020: The New Zealand government announces travel restrictions on anyone arriving from or transiting through China due to the COVID-19 outbreak.

February 28, 2020: New Zealand reports its first COVID-19 case, a person who had recently returned from Iran.

March 14, 2020: New Zealand reports its first case of community transmission.

March 23, 2020: New Zealand enters a nationwide lockdown to slow the spread of COVID-19.

April 27, 2020: New Zealand lifts some lockdown restrictions, allowing some businesses to reopen.

May 13, 2020: New Zealand reports no active cases of COVID-19 for the first time since the outbreak began.

June 8, 2020: New Zealand lifts almost all remaining lockdown restrictions, and life returns to near-normal.

August 11, 2020: New Zealand reports a new cluster of COVID-19 cases in Auckland, prompting the government to implement new restrictions in the city.

September 21, 2020: Auckland's COVID-19 restrictions are lifted as the number of cases in the city

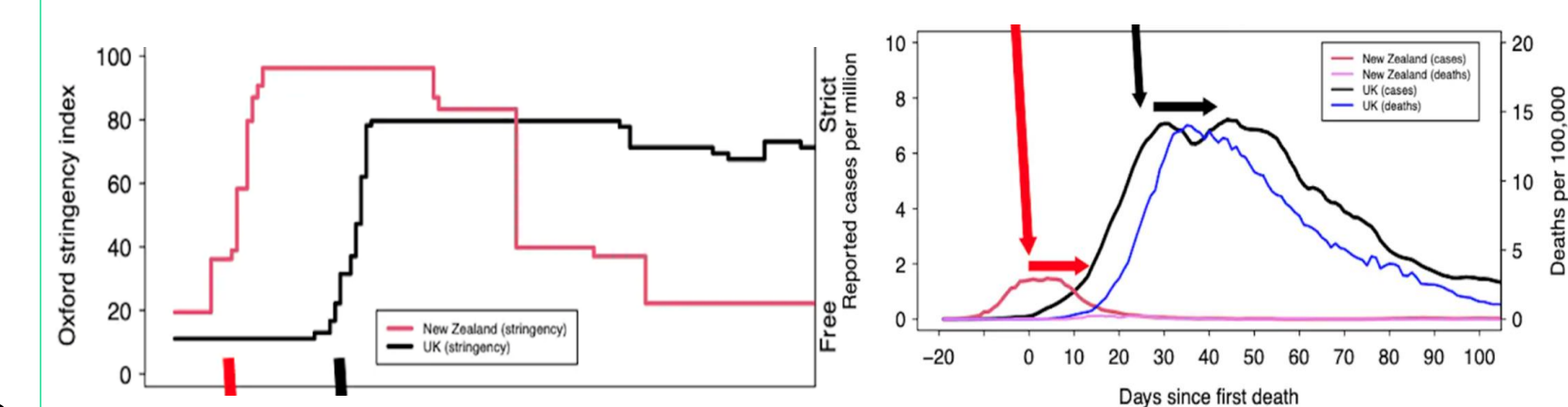
November 18, 2020: New Zealand signs an agreement with pharmaceutical company Pfizer to buy 1.5 million doses of its COVID-19 vaccine

December 14, 2020: New Zealand announces that the Pfizer-BioNTech COVID-19 vaccine has been approved for use in the country

December 14, 2020: New Zealand announces that the Pfizer-BioNTech COVID-19 vaccine has been approved for use in the country.

December 19, 2020: The first shipment of Pfizer-BioNTech COVID-19 vaccines arrives in New Zealand.

December 31, 2020: New Zealand reports a new case of COVID-19 in the community, the first in more than two months.



Due to the quick, stricter response from New Zealand, it allowed them to be less affected by the virus, resulting in no deaths and minimal cases compared to UK showing that they put down restrictions around 20 days later than New Zealand causing it to have a much bigger impact on the population. Graph 1 on column 4 shows the approach on the stringency of the restrictions, New Zealand were able to be free of restrictions much earlier than the UK as they put their restrictions much early on. Graph 2 on column 4 also shows that because the UK had put their restrictions on later, it has caused the UK to still be under strict restrictions. Graph 2 on column 4 shows the results of the different restriction approaches, portraying that because of New Zealand's quick response to the virus they experienced less damage whereas the UK experienced much worse which is shown through the big gap between New Zealand's and the UK data sets.

Conclusion

The data suggests that compared to the UK, the New Zealand approach to Covid restrictions was more effective overall. The implementation of really strict restrictions from the start led to fewer deaths overall compared to the UK. However, compared to New Zealand, the UK is a much larger country with a higher population density. With the UK and London being a major financial and trading hub, it would be difficult to completely close borders as the New Zealand government did.

References

- <https://commonslibrary.parliament.uk/research-briefings/cbp-9068/>
- <https://www.instituteforgovernment.org.uk/sites/default/files/timeline-lockdown-web.pdf>
- <https://www.gov.uk/government/publications/covid-19-reported-sars-cov-2-deaths-in-england/covid-19-confirmed-deaths-in-england-to-31-december-2020-report>
- <https://ourworldindata.org/coronavirus/country/new-zealand#confirmed-deaths>
- <https://www.rnz.co.nz/news/national/437359/timeline-the-year-of-covid-19-in-new-zealand>
- <https://theconversation.com/did-the-covid-lockdowns-work-heres-what-we-know-two-years-on-176623>