

The Direct Impacts of Covid-19 in Norfolk 2020-2021

Introduction

The Director of Public Health's Annual Report is an independent report on health and wellbeing in Norfolk. The report covering both 2020 and 2021 focuses on the core figures for Covid-19 in Norfolk – cases, testing, vaccinations and deaths – and the health protection response to the pandemic.

This document gives more detail on the narration and analysis carried out for that report.

Throughout this document, the data covers the period of March 2020 to January 2022, unless stated otherwise.

Wider impacts of Covid-19, such as the impact on mental health or the economy, are not covered here.

1. Key figures and trends

Key messages

- Norfolk had lower than average case rates of Covid-19. There were 192,139 confirmed cases from March 2020 to January 2022. Around 3% or 5,985 cases were reinfections.
- Norfolk had the 7th highest rate of LFD test uptake in England – around 5.5 million tests were registered locally. Around 3 million PCR tests were taken.
- Norfolk had some of the highest vaccine uptake rates in England. Norfolk was 20th out of 149 local authority areas for third/booster dose uptake by January 2022.
- Norfolk's Covid-19 death rates, taking account of the age of the population, were much lower than the average in England. Up to January 2022, 2,329 people in Norfolk died from Covid-19.

Overall Covid-19 trends in Norfolk

Pandemics usually occur in waves, with peaks of infection of varying sizes, over a period of several years. Covid-19 has followed this pattern in Norfolk. Like in many other places in the UK, infection occurred in three broad waves from spring 2020 through to early 2022.

The first wave was in spring 2020, after Covid-19 first arrived in the UK. The following waves coincided with new variants of concern:

- Alpha, with a peak in winter 2020-21
- Delta, with a prolonged wave in summer 2021 leading into an Omicron peak in winter 2021-22.

The impact of Covid-19 changed over time (Figure 1):

- **In spring 2020**, testing was limited, so the number of cases found was much less than the true number of infections. As no one had had Covid-19 before, there was no immunity built up to protect against disease. There were large numbers of hospitalisations and deaths compared to the number of cases detected by limited testing.

- **In winter 2020-21**, increased infections (with more testing available to find them) led to a large wave, despite restrictions on social mixing. Many people in Norfolk still had no immunity from either a vaccine or previous infection. This is when hospitalisations and deaths peaked.
- **From the summer of 2021**, more people had immunity from vaccinations or previous infections. Even with fewer restrictions, hospitalisations and deaths remained lower compared to the high number of cases.

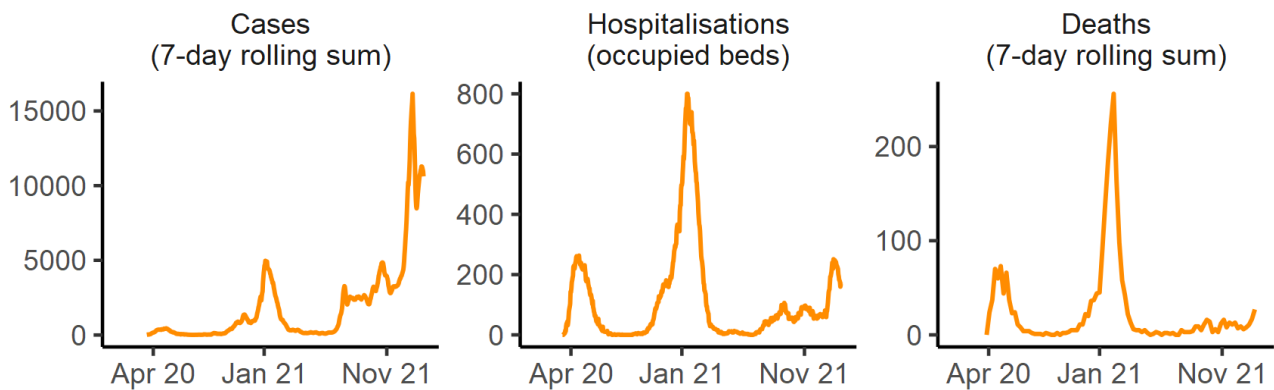


Figure 1: Covid-19 cases, hospitalisations and deaths in Norfolk. Source: gov.uk Covid-19 dashboard

Cases

From March 2020 to January 2022, Norfolk had 192,139 confirmed cases of Covid-19 – around 21% of the population. The true number of infections will likely be much higher, because some people won't have got tested and may not have been aware they had Covid-19¹. An estimated 5,985 cases (3%) were reinfections.

Norfolk's overall case rate was one of the lowest in the country once the size of the local population was taken into account: Norfolk ranked 139th out of 149 upper tier local authorities in England. The overall pattern of cases – i.e., the major waves of the pandemic – was similar to other areas of the country (Figure 2).

¹ A recent report estimated that 71% of the population in England had Covid-19 between April 2020 and February 2022 (Office for National Statistics, 2022). The data used in this annual report only covers confirmed cases – i.e. those found via a Covid-19 test. Comparisons therefore need to be viewed in light of this.

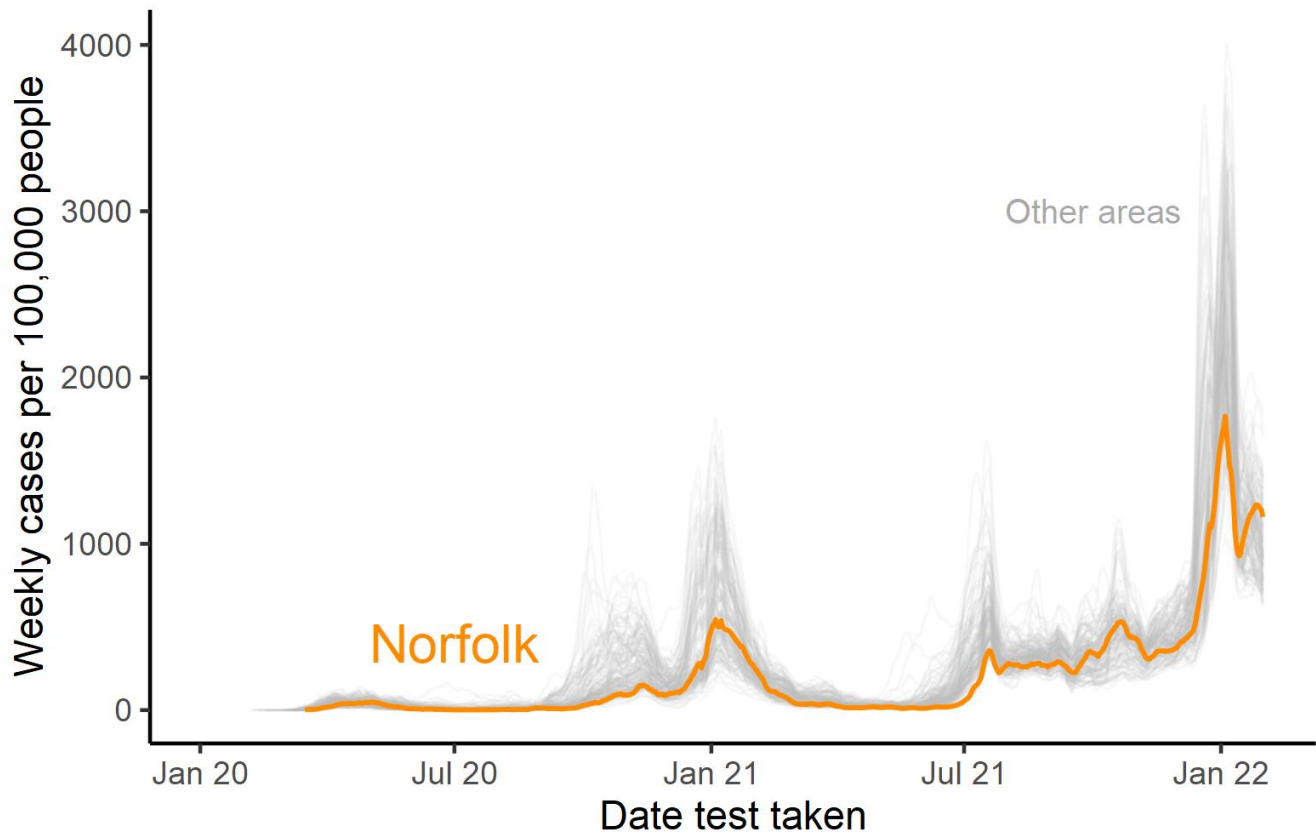


Figure 2: Covid-19 case rates in Norfolk (orange) and other upper-tier local authorities (individual grey lines). Source: gov.uk Covid-19 dashboard

Testing

Testing has been a key tool for finding cases of Covid-19 and for understanding and controlling the spread of the virus. The use of testing changed as the pandemic went on and as more tests became available.

Up to January 2022, Norfolk residents took 2,923,509 PCR² tests³. This meant Norfolk was 90th out of 149 English upper tier local authorities for PCR testing uptake once the size of the population was taken into account.

LFD⁴ tests were the second key type of test to be used widely, especially for people without Covid-19 symptoms. A total of 5,444,302 LFD tests were registered in Norfolk. It is likely that many more LFD tests were taken without the results being registered. Norfolk ranked 7th highest out of 149 local authorities for registered LFD uptake.

In general, local authorities where LFD uptake was higher had lower than average case rates (Figure 3). There are many potential reasons for lower case rates in Norfolk, but high levels of LFD testing could have contributed to this – 51,058 (27%) cases in Norfolk were found using LFD tests, showing the impact of these tests in finding cases so that people could self-isolate to help break chains of transmission.

² PCR: polymerase chain reaction – the gold standard test

³ PCR and LFD data both from <https://coronavirus.data.gov.uk/>

⁴ LFD: lateral flow device – quick tests that can be done at home and show results in 30 minutes or less

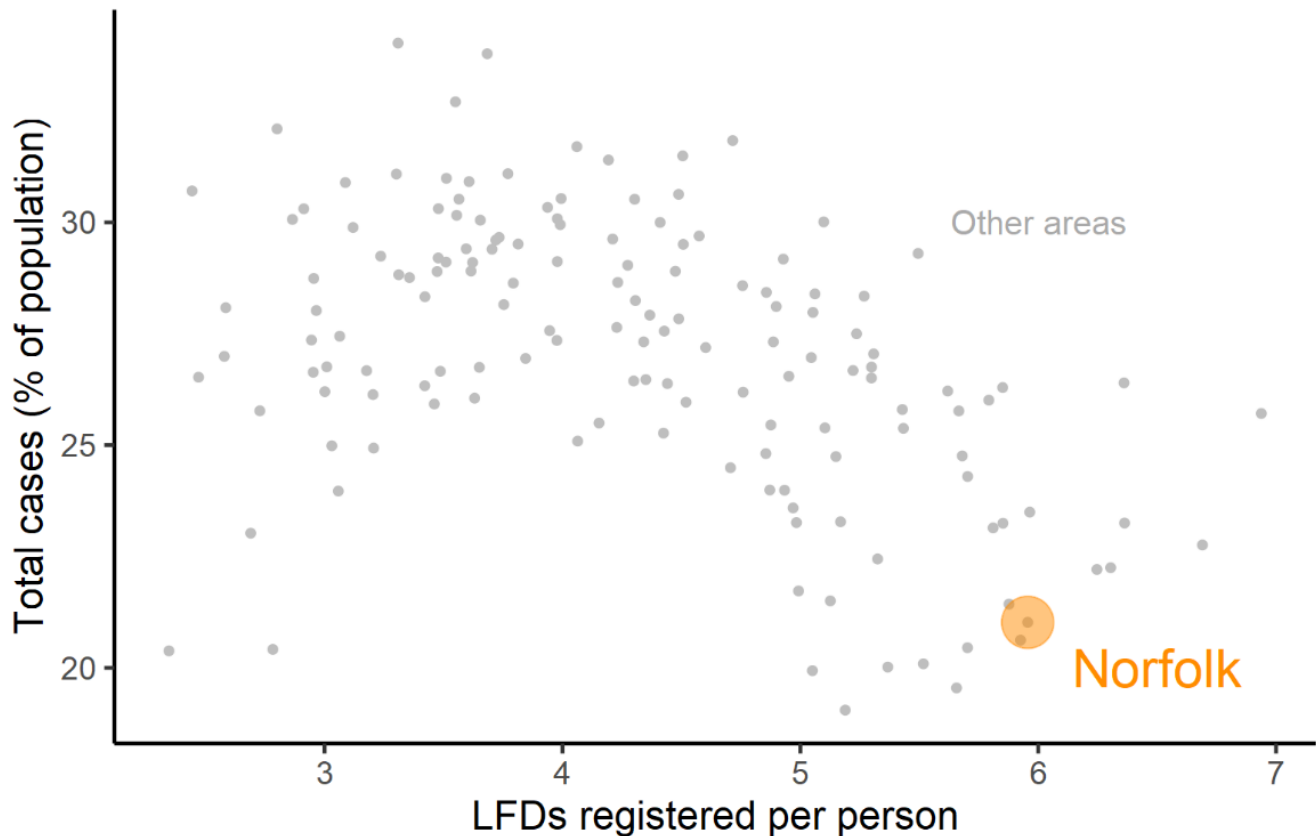


Figure 3: Lateral flow tests in relation to case numbers in Norfolk and other English upper-tier local authorities. Source: gov.uk Covid-19 dashboard

Vaccinations

Vaccines for Covid-19 were first made available in the UK in December 2020 and were delivered by the NHS alongside partners and volunteers. Up to January 2022, of people from Norfolk aged 12 years and older:

- 86.9% had received at least one dose of vaccine
- 82.9% had received at least two doses
- 69.1% had received a third dose or booster⁵.

Of 149 local authority areas, Norfolk had the 20th highest rate of third/booster dose uptake by January 2022 (Figure 4).

⁵ Based on National Immunisation Management System denominator estimates. Note that these uptake estimates and rankings match those used by the UKHSA and the UK Government public Covid-19 dashboard, but will differ from estimates produced by the NHS, which use different population estimates.

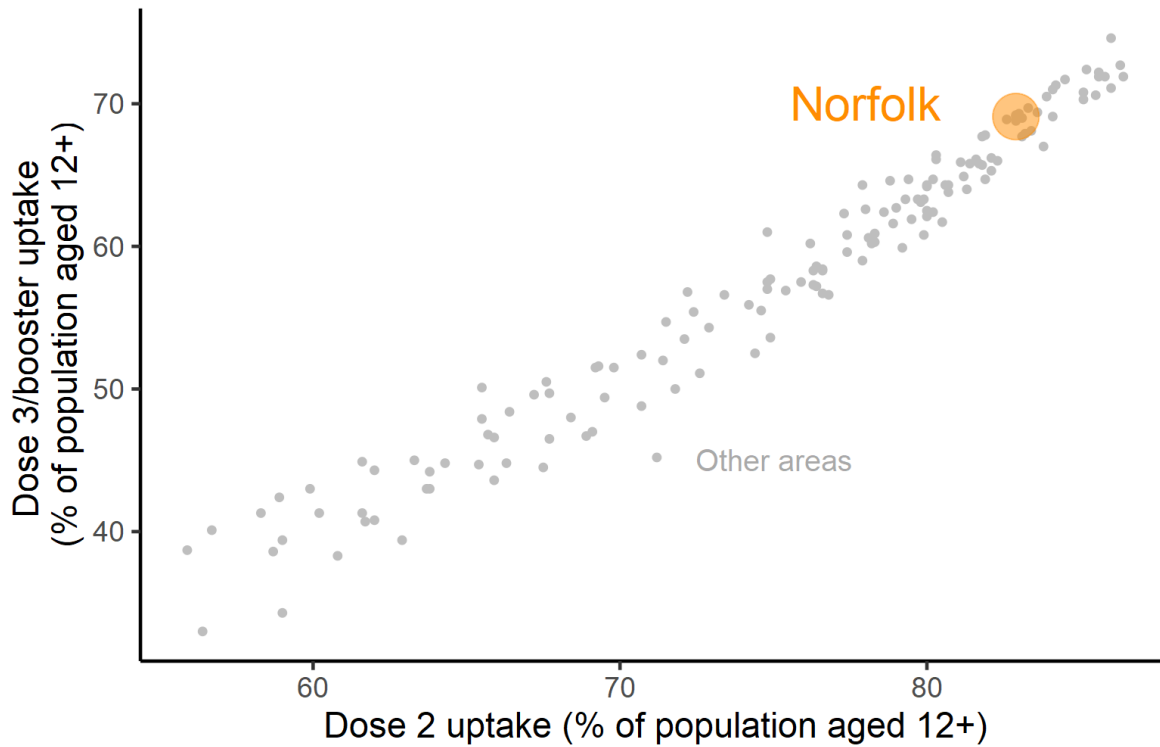


Figure 4: Covid-19 vaccine uptake in Norfolk and other upper-tier local authority areas. Source: gov.uk Covid-19 dashboard

Deaths

Up to January 2022, there were 2,329 deaths due to Covid-19 in Norfolk, which is around 0.25% of the population (Office for National Statistics, 2022). Norfolk was 90th out of 149 English upper tier local authorities in terms of overall death rates due to Covid-19. Figure 5 shows the trend in death rates over the pandemic, with rates lower in the first wave and higher in the second wave.

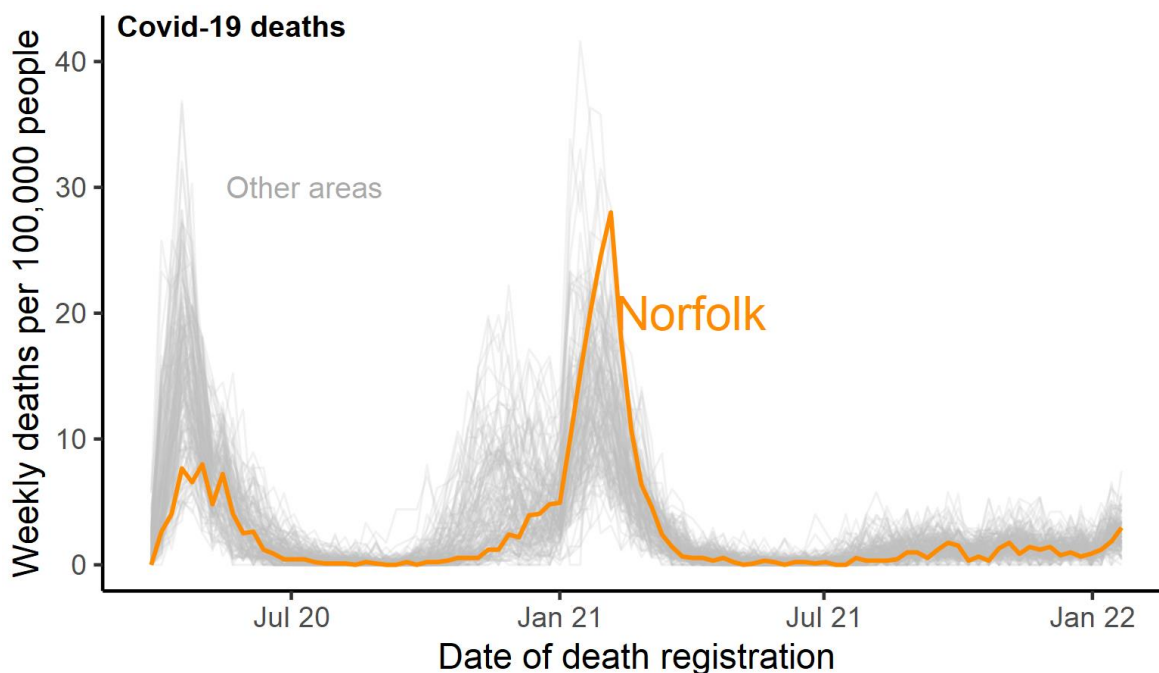


Figure 5: Covid-19 deaths in Norfolk and other upper-tier local authorities. Source: Office for National Statistics

Once the age of the local population is factored in, however, Norfolk had lower death rates than most other local authorities – Norfolk's rate was 123rd out of 149 local authorities (Office for National Statistics, 2021)⁶. Most Covid-19 deaths have been in people aged over 60, and Norfolk has more people in this age group than many other areas.

'Excess deaths' is a term used if deaths at any point exceed the normal rate of deaths in an area (see Box 1 for an explanation). Norfolk had 1,964 excess deaths between March 2020 and January 2022. After taking population size into account, Norfolk's rate was 65th highest out of 149 English upper-tier local authorities (Office for Health Improvement and Disparities, 2022). However, after factoring in the age of the local population, Norfolk's excess death rates were well below average – 110th out of 149 local authority areas. During the pandemic, excess deaths were highest when Covid-19 deaths were also at their highest (see Figure 6).

Death rate definitions

Covid-19 deaths in this report means deaths where Covid-19 was listed as a contributing factor on a death certificate. This is different to another common way of counting Covid-19 deaths: deaths within 28 days of a positive Covid-19 test, which may include deaths not attributed to Covid-19.

Excess deaths are the rate of deaths compared to the average over the past five years for that time period. It includes all deaths, not just those due to Covid-19.

Where both Covid-19 and excess death rates go up, this suggests that Covid-19 is linked to more deaths than might have been expected. Where excess death rates go below zero, this means there were fewer deaths than the five-year average

Box 1: Death rate definitions

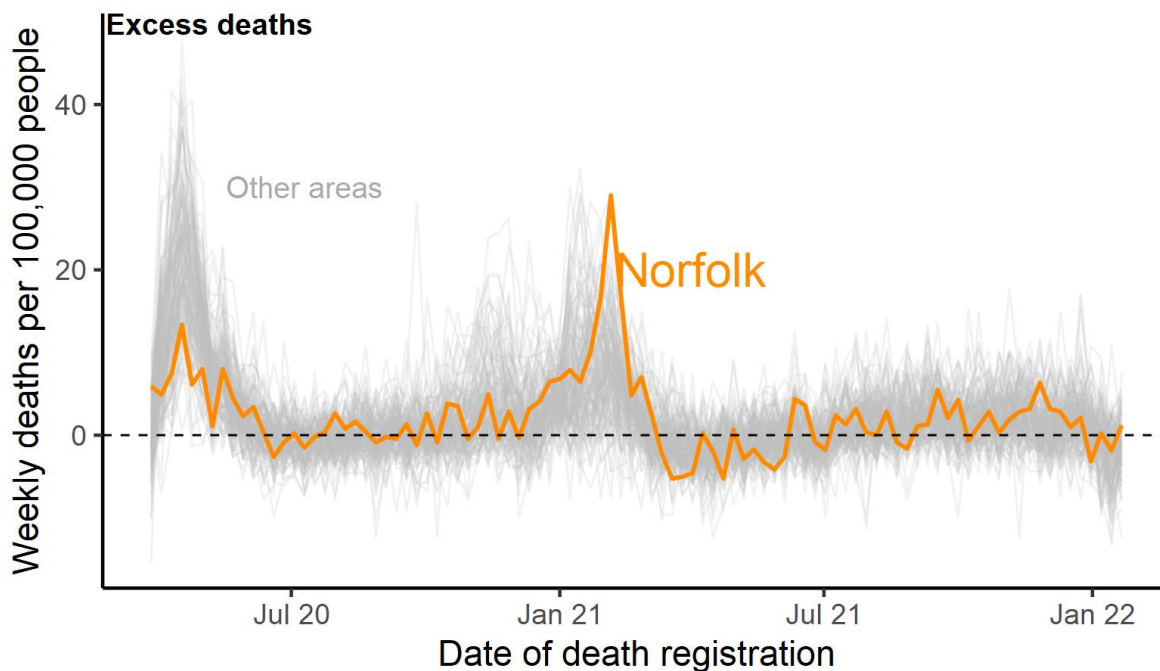


Figure 6: Covid-19 excess deaths in Norfolk and other upper-tier local authorities. Source: Office for National Statistics

⁶ Data available to April 2021 only

2. Covid-19 impact in local areas

Key messages

- Covid-19 case rates varied across the county. In district, borough and city council areas, this ranged from 16% to 24% of the local population having had Covid-19. Great Yarmouth was the highest and North Norfolk the lowest.
- Once age was taken into account, all council areas in Norfolk had lower death rates than the region and England as a whole. Within Norfolk, North Norfolk had the lowest death rates and King's Lynn and West Norfolk had the highest.
- Case rates, vaccine uptake and death rates varied widely between smaller areas within the county. The highest case rates have been in the areas with the lowest vaccine uptake. On average, the highest death rates have been in areas with older populations.

County, district, city and borough council areas

Between March 2020 and January 2022, Norfolk's seven district, city and borough council areas had different overall rates of Covid-19. These ranged from 16% to 24% of the population recording a positive Covid-19 test, compared to 21% for Norfolk overall.

Great Yarmouth had the highest percentage, while North Norfolk had the lowest (Figure 7).

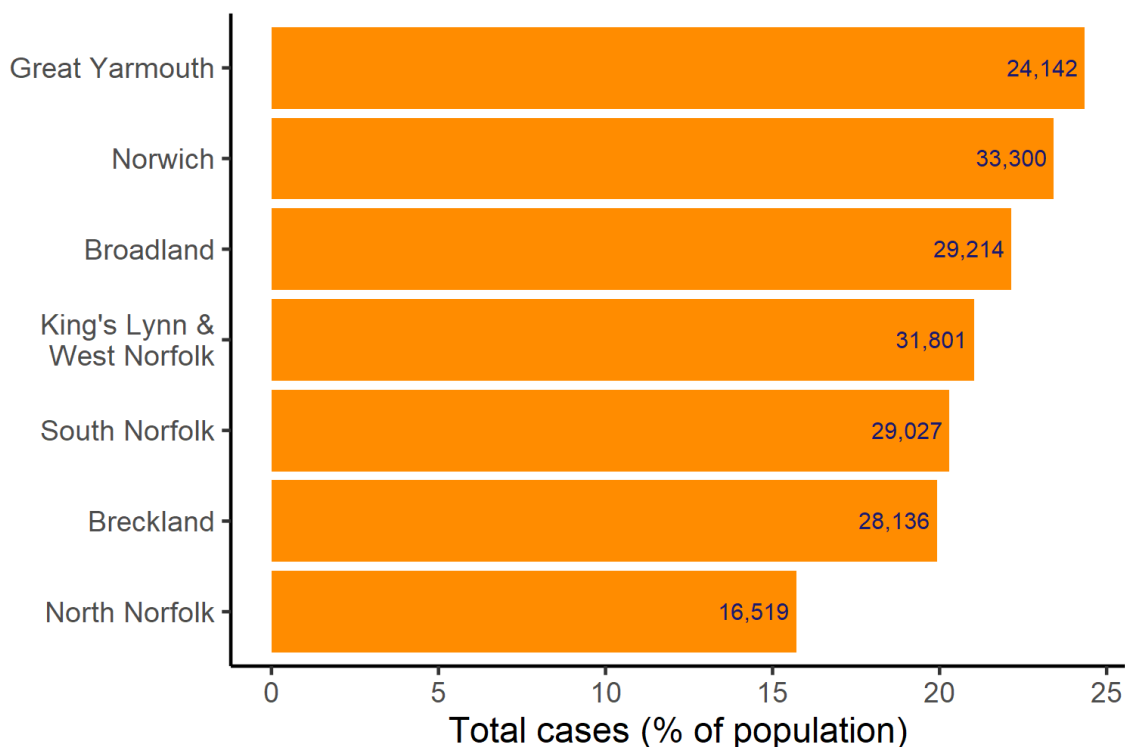


Figure 7: Covid-19 rates and numbers (inset in bars) in Norfolk's lower-tier local authorities.
Source: gov.uk Covid-19 dashboard

Covid-19 deaths followed a different pattern. King's Lynn and West Norfolk had the highest death rate. Norwich had the lowest (Table 1).

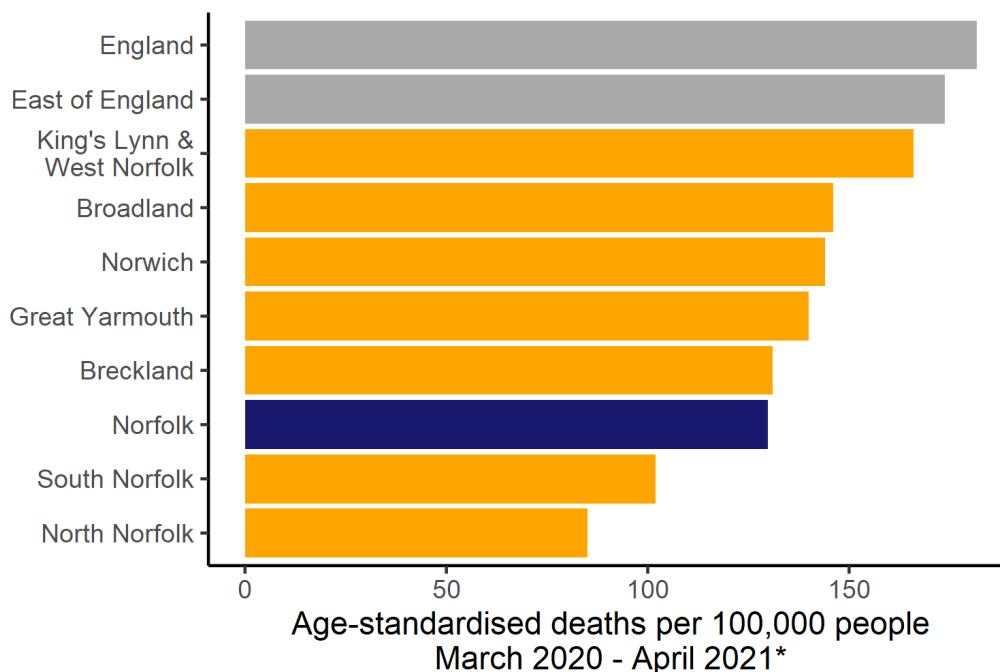
Norfolk JSNA

| | Mar 2020 – Jan 2020 | | | | Mar 2020 – Apr 2021 |
|------------------------------|---------------------|-----------------------------|------------------|---------------------------|---|
| | Number of cases | Case rate (% of population) | Number of deaths | Deaths per 100,000 people | Age-standardised deaths per 100,000 people ^a |
| Breckland | 28,136 | 19.9 | 372 | 263 | 131 |
| Broadland | 29,214 | 22.1 | 365 | 277 | 146 |
| Great Yarmouth | 24,142 | 24.3 | 303 | 305 | 140 |
| King's Lynn and West Norfolk | 31,801 | 21.0 | 487 | 322 | 166 |
| North Norfolk | 16,519 | 15.7 | 256 | 243 | 85 |
| Norwich | 33,300 | 23.4 | 260 | 183 | 144 |
| South Norfolk | 29,027 | 20.3 | 269 | 188 | 102 |
| Norfolk | 192,139 | 21.0 | 2,329 | 255 | 130 |
| East of England | 1,578,436 | 25.2 | 13,549 | 216 | 174 |
| England | 15,007,023 | 26.5 | 116,866 | 207 | 182 |

^aAge-standardised death data are only available to April 2021, hence lower overall values

Table 1: Covid-19 case rates and death rates in Norfolk's local authorities, the East of England and England. Source: gov.uk Covid-19 dashboard (cases) and Office for National Statistics (deaths)

However, once the age of the local population is taken into account, all council areas in Norfolk had lower death rates than both the region and England as a whole. Within Norfolk, North Norfolk had the lowest death rate (Figure 8). (Age can only be taken into account in death rates up to April 2021, due to availability of data for this type of calculation.)



*Age-standardised death data only available to April 2021 (Office for National Statistics, 2021)⁷

Figure 8: Covid-19 rates in Norfolk's local authority areas, East of England and England, March 2020 – April 2021. Source: Office for National Statistics

⁷ This accounts for 89% of all Covid-19 deaths in Norfolk up to January 2022.

Local areas⁸ within Norfolk – cases

Covid-19 case rates also varied between smaller local areas within the county. Areas in Norwich, Great Yarmouth and King's Lynn had some of the highest rates (dark areas in Figure 9). Some of the lowest rates were in parts of North Norfolk, Broadland and South Norfolk. These differences are likely due in part to existing disparities (these are covered later in this report).

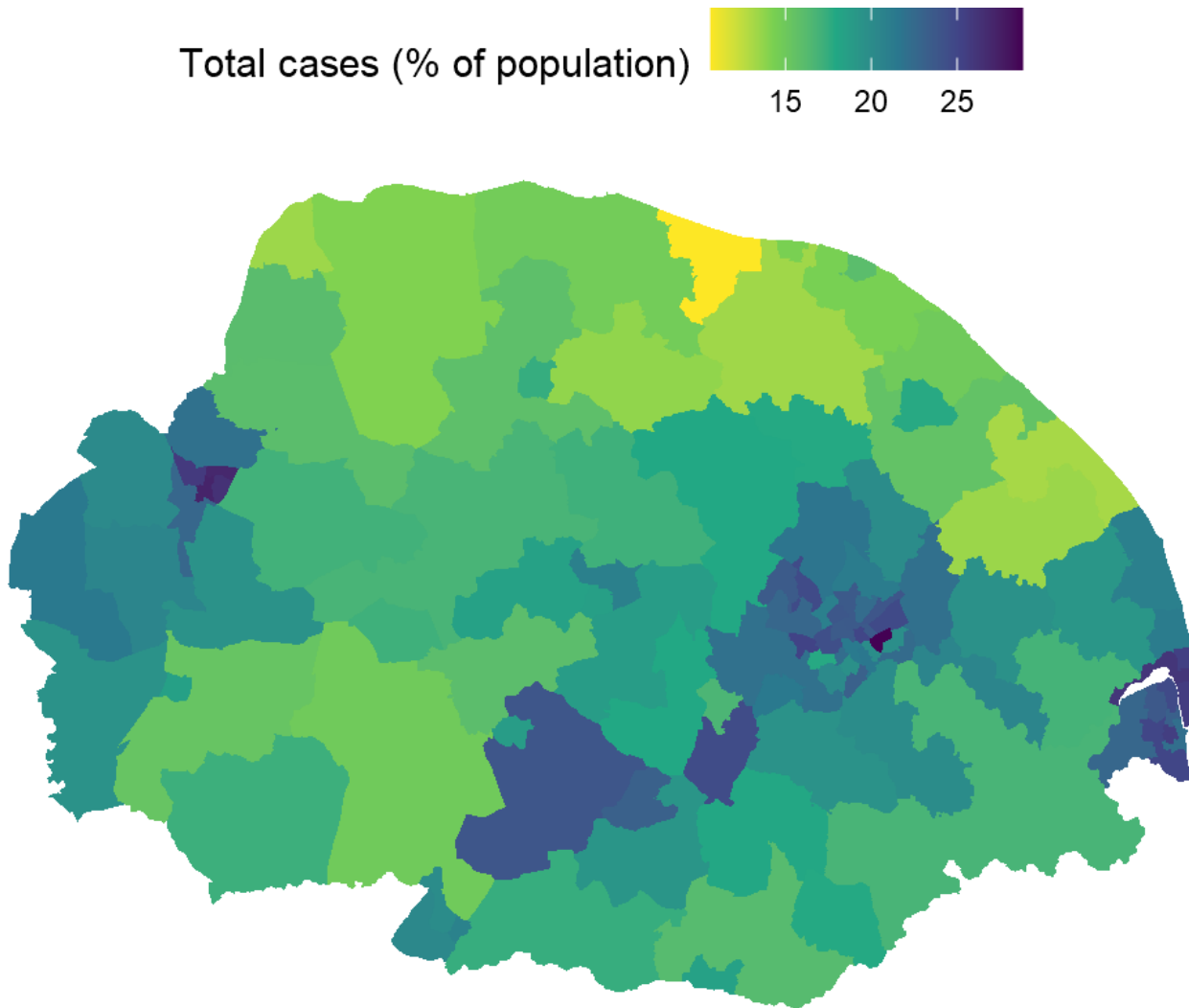


Figure 9: Covid-19 case rates in Norfolk's small local areas (MSOA). Source: gov.uk Covid-19 dashboard

Local areas – vaccination uptake

Vaccination uptake was lowest in parts of Norwich, Great Yarmouth, King's Lynn and Thetford. In general, there is an overlap between areas with lower vaccine uptake and higher cases (Figure 10). This might be in part because the vaccines provide some protection against infection. However, these areas had higher case rates even before the rollout of vaccines, so there may be other causes that contribute both to lower vaccine uptake and to higher case rates such as older or younger populations.

⁸ 'Local areas' here refer to middle super output areas (MSOAs; small areas with an average of ~8,000 residents), with MSA-level data obtained from <https://coronavirus.data.gov.uk/>

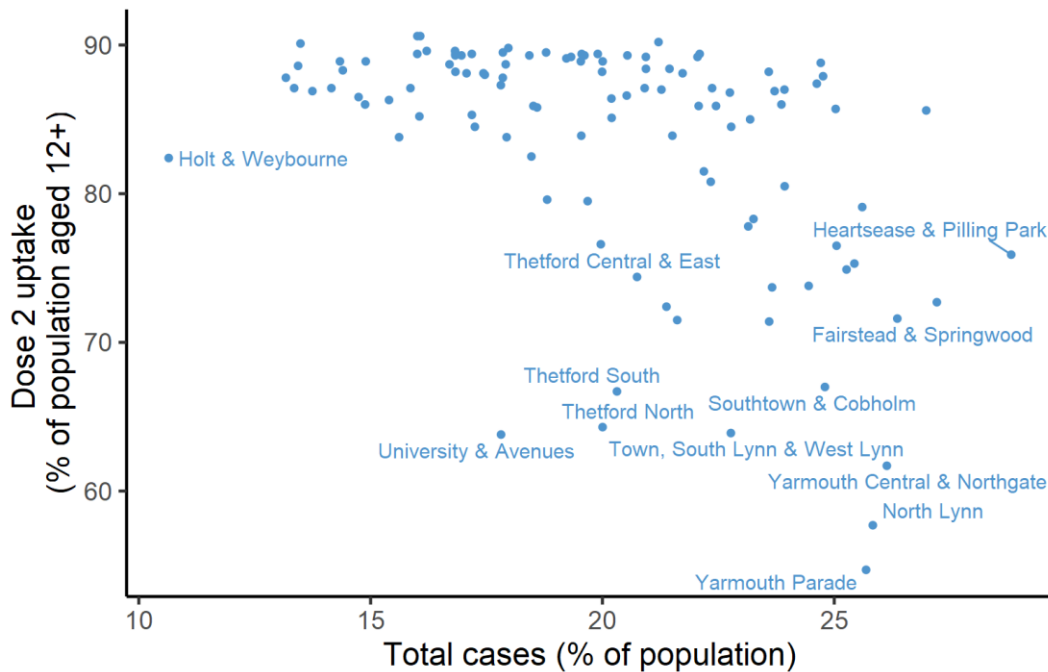


Figure 10: Case rates and vaccination uptake in Norfolk's local areas. Source: gov.uk Covid-19 dashboard

Local areas – deaths

Covid-19 death data for smaller local areas are available until April 2021 (Office for National Statistics, 2021)⁹. The areas with the highest death rates tended to be those that had, on average, older populations (Figure 11). However, there are some areas that had low death rates despite older populations. This suggests that there are other factors at play – some of these are explored further below.

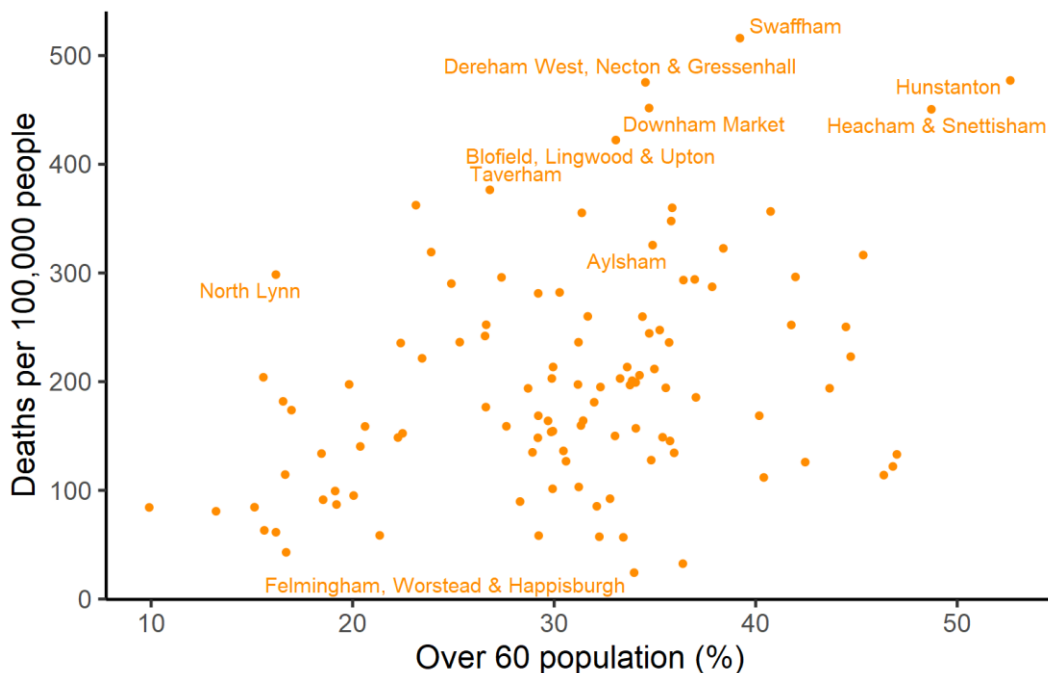


Figure 11: Death rates and over 60 population proportions in Norfolk's local areas. Source: Office for National Statistics

⁹ This accounts for 89% of all Covid-19 deaths in Norfolk up to January 2022.

3. How different groups were affected by Covid-19

Key messages

- Covid-19 has not affected all groups equally, either nationally or locally in Norfolk
- 53% of Norfolk cases were in females, 47% were in males. Secondary school aged children and working age adults had higher case rates than other age groups
- Case rates were highest in people of non-White British or non-White Irish ethnicity
- The 20% most deprived areas in Norfolk had the highest case rates, the lowest vaccination uptake and the highest death rates once age was taken into consideration
- Deaths in care homes made up around 30% of Covid-19 deaths in Norfolk. 11.7% of deaths in care homes were due to Covid-19 compared with 12.8% nationally.
- Based on national figures, around 22,000 people in Norfolk may have long Covid, with around 4,000 of them being affected more severely.

Research into Covid-19

There has been a large amount of research nationally and internationally on the risk factors for infection, severe illness or death from Covid-19. An overview of some of this evidence is provided in Box 2.

Characteristics that increase risk for diagnosis and death from Covid-19

- Females more likely to test positive for Covid-19, males more likely to die compared to females
- Children and working aged people most likely to test positive. Over 80s more than 70 times more likely to die from Covid-19 compared to under 40s
- Higher case and death rates in urban compared to rural areas
- Higher case and death rates in the most deprived areas
- Highest case rates in Black ethnic groups, highest death rates in Black and Asian ethnic groups
- Highest death rates in people working as security guards, drivers, chefs, and in retail, construction, social care and nursing
- More than double the number of deaths in care homes compared to previous years
- Higher risk of death from Covid-19 in people with comorbidities, including diabetes, hypertensive diseases, chronic kidney disease, chronic obstructive pulmonary disease and dementia

Box 2: Summary of research into characteristics that increase risk for diagnosis and death from Covid-19 during the first wave of the pandemic (Public Health England, 2020)

Not all data to show how these factors apply is available for Norfolk. The rest of this section looks at areas where data is available locally.

Age and sex

From March 2020 to January 2022, 53% of Norfolk's Covid-19 cases were in females. This is higher than might be expected given that females form 51% of the Norfolk population.

There were also large differences among different age groups, with the highest rate of reported cases seen in secondary school aged children and working age adults (Figure 12).



Figure 12: Covid-19 case rates in Norfolk by age and sex. Source: UK Health Security Agency

The slight increase in rates in the oldest ages could be due to outbreaks in care homes and higher levels of testing in this age group, especially earlier in the pandemic when only the most severe cases were being identified.

High rates in secondary school age children may also in part reflect higher levels of testing in this age group, along with their parents. Spread of the virus in schools and workplaces will also have played a role for children and working age adults. The slightly higher rates in children under 1 year old is likely affected by higher levels of testing in this age group, particularly in hospital.

Care homes

A total of 8,127 Covid-19 cases were linked to care homes in Norfolk – this included staff, residents and visitors¹⁰. This represents 4.2% of the total number of cases in Norfolk. Most of the cases in care homes occurred in winter 2021 and winter 2022 (Figure 13).

¹⁰ Estimate from UKHSA Second Generation Surveillance System (SGSS) record-level data of Covid-19 cases, based on self-reported recording of care home associations from residents, staff, and visitors

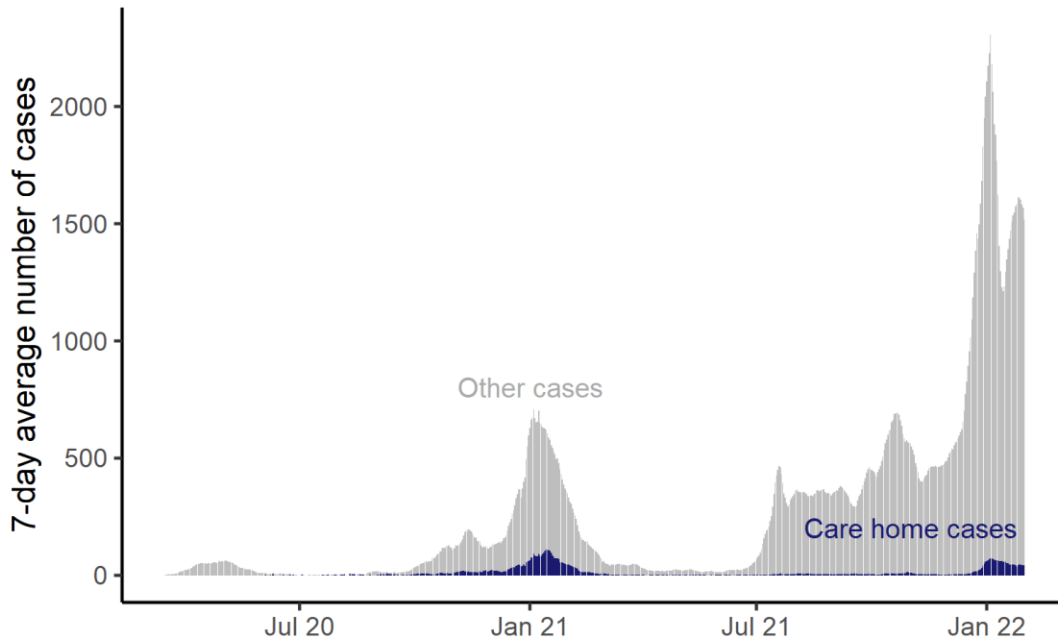


Figure 13: Covid-19 cases in Norfolk linked to care homes compared to non-care home linked cases. Source: UK Health Security Agency

Higher death rates from Covid-19 were seen in care homes across the UK. In Norfolk, up to January 2022, 699 deaths of residents in care homes involved Covid-19 (Office for National Statistics, 2022). This is around 30% of all Covid-19 deaths in Norfolk. Covid-19 deaths as a proportion of all deaths in care homes were slightly lower in Norfolk than in England. From January 2020 to the week ending 28th January 2022, 11.7% of deaths in care homes were due to Covid-19 compared with 12.8% nationally.

Between March 2020 and January 2022, most care home deaths occurred in the first two waves of the pandemic (Figure 14) – 91% of Covid-19 deaths in Norfolk care homes occurred before 1 April 2021.

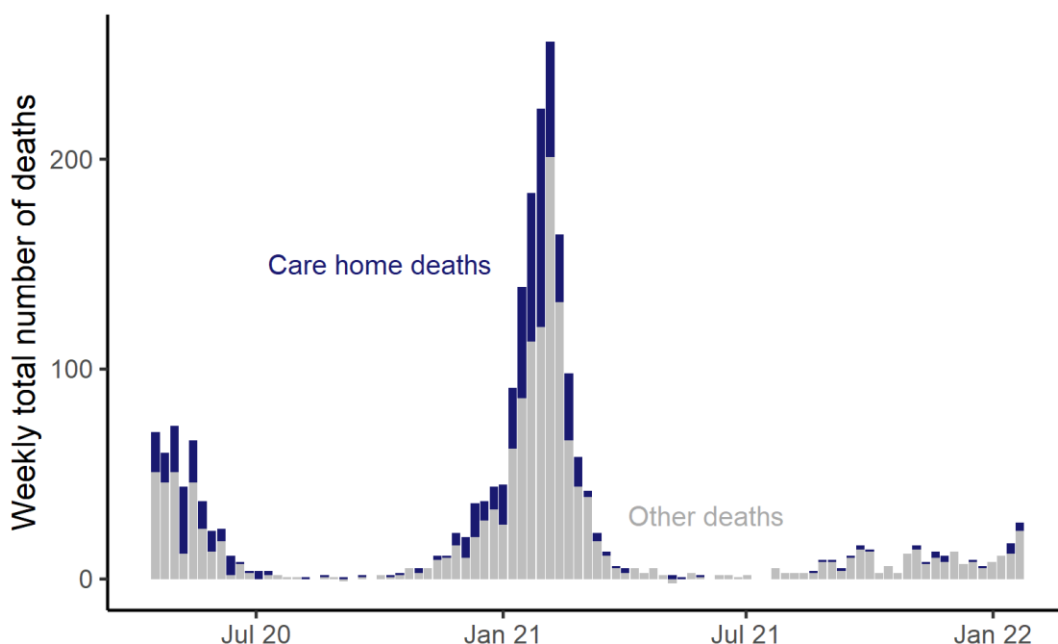


Figure 14: Deaths of residents in care homes in Norfolk. Source: Office for National Statistics

Ethnicity

The vast majority (95.7%) of Covid-19 cases in Norfolk have been in White individuals, who make up 96.5% of the local population¹¹. However, when looking at the percentage of people in different ethnic groups who had Covid-19, the highest rates (Figure 15) were found in:

- 'Other' ethnic groups (i.e. not White, Black, Asian or Mixed ethnicity)
- White groups that are not White British or White Irish
- Black/African/Caribbean/Black British groups

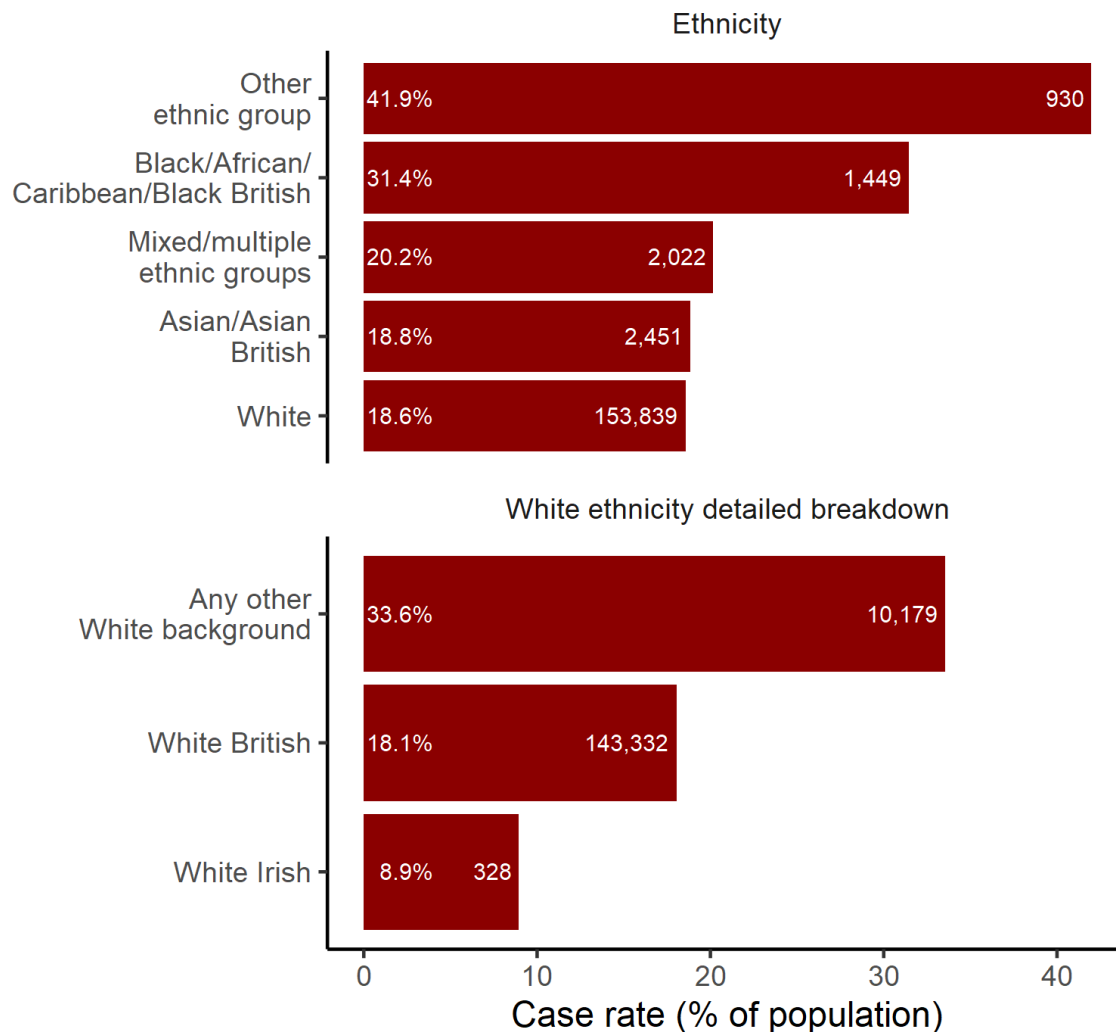


Figure 15: Covid-19 case rates (x axis and percentages in bars) and numbers (inset in bars) by ethnicity, and detailed breakdown for white ethnicities. Source: UK Health Security Agency

Detailed breakdowns for non-White ethnicities are not shown here due to small samples sizes. Norfolk-level ethnicity data on Covid-19 deaths was not available at the time of this analysis.

Deprivation

From March 2020 to January 2022, the 20% most deprived areas in Norfolk had 22.8% of Covid-19 cases – higher than would be expected. The 20% least deprived areas also had higher rates – 21.9%. The middle 60% of areas had below average case rates. So while the impact in terms of

¹¹ Source: UKHSA record-level Covid-19 case data

case rates was largest in the 20% most deprived areas, there was not a straightforward relationship between case rates and deprivation (Figure 16).

There was a clearer relationship between vaccine uptake and deprivation, with lower uptake in the most deprived areas (Figure 16).

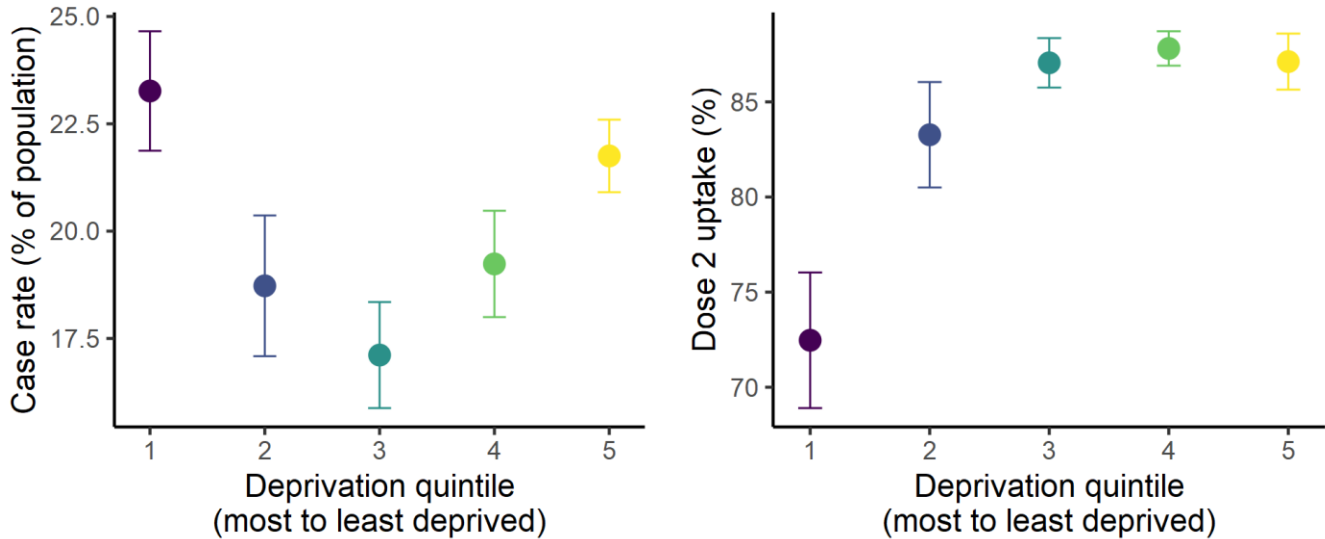


Figure 16: Covid-19 cases and vaccine uptake and deprivation in Norfolk. Points and error bars show the average and 95% confidence limits for each deprivation quintile. Source: gov.uk Covid-19 dashboard (cases and vaccinations) and Office for National Statistics (deprivation data)

Death data compared to level of deprivation in an area is available up to September 2021. After accounting for age, Covid-19 deaths were highest in the 20% most deprived areas of Norfolk (Figure 17). This trend has also been seen at a national level (Office for National Statistics, 2021). There was less difference amongst the 80% less deprived areas.

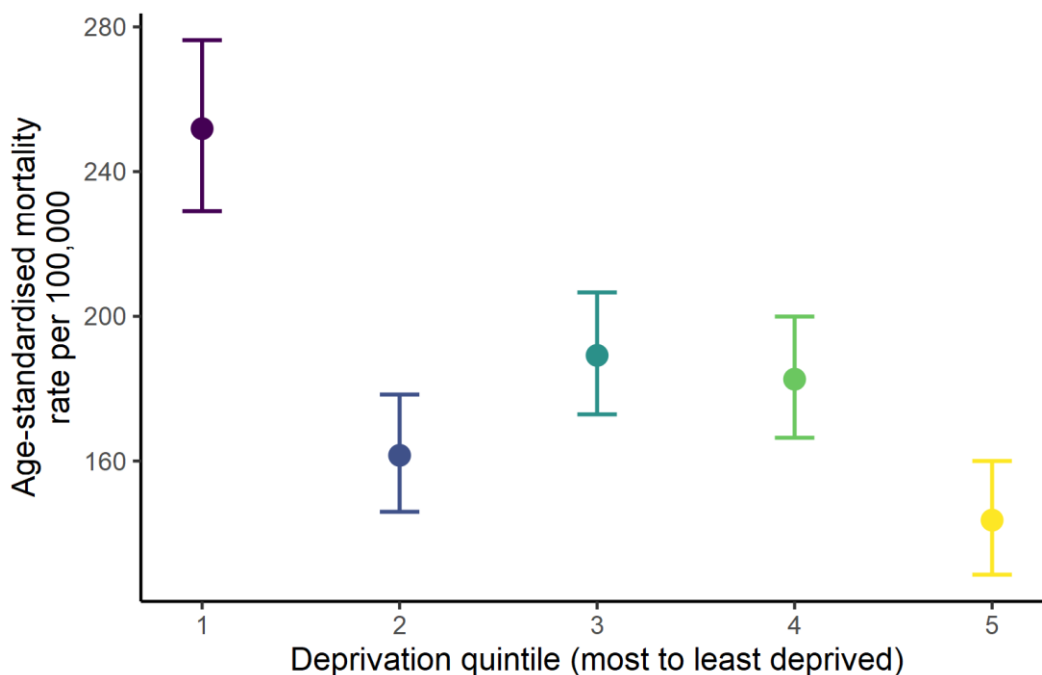


Figure 17: Covid-19 deaths and deprivation in Norfolk. Source: Primary Care Mortality Database

Long Covid

Long Covid is defined as symptoms reported by individuals themselves that last for more than four weeks after a suspected Covid-19 infection (Office for National Statistics, 2022)¹². The most common symptoms reported were fatigue, shortness of breath and loss of smell.

As of 31 January 2022, an estimated 2.4% of the UK population were experiencing long Covid. That could mean around 22,000 people in Norfolk might have long Covid if the same rate applied here.

Nationally, 65% of people with long Covid reported that it affected their day-to-day activities, while 18% said that their activities had been limited 'a lot.' That could mean that around 14,000 people in Norfolk may have moderate impacts and 4,000 people may be impacted more severely, if the national rates applied locally.

Nationally, long Covid prevalence differs between groups, with the highest rates in females, in people aged 35 to 49, and in people living in more deprived areas.

4. References

- Office for Health Improvement and Disparities. (2022). *Excess mortality in England and English regions*. Retrieved from gov.uk: <https://www.gov.uk/government/statistics/excess-mortality-in-england-and-english-regions>
- Office for National Statistics. (2021, May 20). *Deaths due to COVID-19 by local area and deprivation*. Retrieved from ons.gov.uk: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/deathsduetocovid19bylocalareaanddeprivation>
- Office for National Statistics. (2022, April 22). *Coronavirus (COVID-19) Infection Survey technical article: Cumulative incidence of the number of people who have tested positive for COVID-19*. Retrieved from ons.gov.uk: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/articles/coronaviruscovid19infectionsurveytechnicalarticlecumulativeincidenceofthenumberofpeoplewhohavetestedpositiveforcovid19uk/22april2022>
- Office for National Statistics. (2022). *Death registrations and occurrences by local authority and place of death*. Retrieved from ons.gov.uk: <https://www.ons.gov.uk/datasets/weekly-deaths-local-authority>
- Office for National Statistics. (2022). *Number of deaths in care homes notified to the Care Quality Commission, England*. Retrieved from ons.gov.uk: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/datasets/numberofdeathsincarehomesnotifiedtothecarequalitycommissionengland>
- Office for National Statistics. (2022, March 3). *Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK : 3 March 2022*. Retrieved from ons.gov.uk: <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/bulletins/prevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk/3march2022>

¹² Long Covid is defined by the Office for National Statistics as self-reported symptoms persisting for more than four weeks after a suspected Covid-19 infection that are not explained by something else.

Public Health England. (2020). *Disparities in the risk and outcomes of*. London: Public Health England. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf