

Southampton Strategic Assessment (JSNA)

Health Protection overview

Last updated June 2023

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1. Health Protection overview



Health Protection aims to protect populations and individuals from health threats such as communicable diseases and environmental hazards. Health Protection is relevant to everyone in Southampton, covering childhood vaccinations, excess winter deaths and a number of diseases that can affect anyone at any age. Due to its broad scope, Health Protection can mean slightly different things to different people. In Southampton we have focused on five main areas:

- Gastrointestinal infections
- Immunisations and childhood vaccine preventable diseases
- Respiratory infections
- Hepatitis
- Sexually Transmitted Infections & HIV

We are also monitoring the following Health Protection indicators:

- Acute Lyme disease
- Air pollution mortality
- Antibiotic prescribing
- Excess winter deaths
- Scarlet fever

More information is available in the health protection dashboard below and in the resources section.

2. Gastrointestinal infection

Whilst we normally have millions of friendly bacteria living in our gut that help to keep us healthy (known as the microbiome), we can get gastrointestinal infections when certain types of microorganisms ('bugs' or germs) enter the gut. Gastrointestinal infections can also be referred to as bowel infections, stomach bugs or gastroenteritis. You can get a gastrointestinal infection by drinking contaminated water or eating contaminated food, or by having contact with another person who has the infection. Gastrointestinal infections can be caused by viruses (e.g. norovirus), bacteria (e.g. salmonella) or parasites (e.g. giardia). In Southampton, recent rates of gastrointestinal infections have been similar or lower than the national average.

Campylobacter infection - is often caused by Campylobacter bacteria on raw or undercooked poultry and is frequently associated with undercooked barbecued foods. It can also be found on other meat, seafood or untreated water. People usually recover on their own although some need antibiotic treatment. In 2017, Southampton had 66.5 cases of Campylobacter per 100,000 people, significantly lower than the national average of 96.6 cases per 100,000 people.

Cryptosporidium - is a microscopic parasite that causes the diarrhoeal disease cryptosporidiosis. This is very rare in Southampton, with just four cases recorded between 2015 and 2017.

Giardia - is a tiny parasite (germ) that causes the diarrheal disease giardiasis. Giardia is found on surfaces or in soil, food, or water that has been contaminated with faeces from infected people or animals. In 2017, there were 6 cases of Giardia in Southampton (2.4 per 100,000 people). This is significantly lower than the national average of 8.5 cases per 100,000 people.

Listeria - Listeriosis is a rare infection caused by bacteria called listeria. It usually goes away on its own but can cause serious problems for some people. If you get listeriosis while you're pregnant, there is a risk it could cause miscarriage or stillbirth. In babies, older people and people with a weakened immune system, it can sometimes lead to serious and life-threatening problems such as sepsis or meningitis. Listeria is very rare in Southampton, with 2 cases recorded between 2013 and 2018.

Salmonella - is caused by the bacteria salmonella. There are many different kinds of salmonella bacteria. The bacteria are passed from faeces of people or animals to other people or animals. Contaminated foods are often animal based. They include beef, poultry, seafood, milk or eggs. However, all foods, including some unwashed fruits and vegetables can become contaminated. In 2017, there were 12.6 cases of salmonella in Southampton per 100,000 people, similar to the national average of 15.7 cases per 100,000 people.

Shigella - is a type of bacteria that can cause severe diarrhoea, most often in children. Shigella is found in the faeces of infected people, in food or water contaminated by an infected person and on surfaces that have been touched by infected people. Southampton had 2.8 cases of Shigella per 100,000 people in 2017, similar to the national average of 3.5 cases per 100,000 people.

E. coli - Shiga toxin-producing Escherichia coli (STEC) - is a group of E. coli bacteria that produce powerful toxins, which can cause severe illness. Anyone can get a STEC infection. Young children and the elderly are more susceptible to developing serious infection, but healthy older children and young adults can also become seriously ill. This is uncommon in Southampton, with 6 cases recorded in the 5 years between 2014 and 2018. This equates to 0.5 cases per 100,000 people in Southampton, significantly lower than the national average of 1.2 cases per 100,000 people.

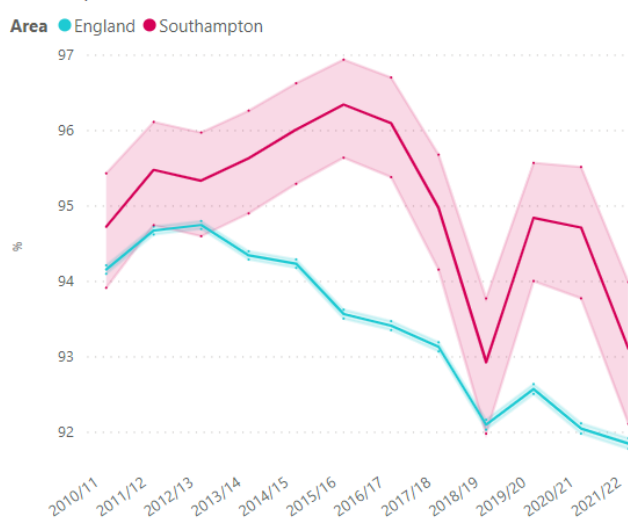
Typhoid - is a bacterial infection that can spread throughout the body, affecting many organs. Without prompt treatment, it can cause serious complications and can even be fatal. It is caused by a bacterium called Salmonella Typhi, which is related to the bacteria that causes salmonella food poisoning. In 2018, Southampton had 0.8 cases of Typhoid per 100,000 people, similar to the national rate of 0.6 cases per 100,000 people.

More information is available in the health protection dashboard below and in the resources section.

3. Immunisation and childhood vaccine preventable diseases

Vaccines are the most effective way to prevent many infectious diseases. Increasing the uptake of vaccines, especially among high-risk groups, should also contribute to easing winter pressure on health care services and hospitals. Vaccination coverage is the best indicator of the level of protection a population will have against vaccine preventable diseases. Coverage is closely related to levels of disease. Monitoring vaccine coverage identifies possible drops in immunity before increases are seen in disease rates. For most childhood vaccines, national and local coverage is significantly lower than target (95%) and is on a downward trajectory.

Population vaccination coverage: Dtap IPV Hib (1 year old), England, Southampton: 2010/11 to 2021/22



Dtap / IPV / Hib - the combined DTaP IPV Hib is the first in a course of vaccines offered to babies to protect them against diphtheria, pertussis (whooping cough), tetanus, haemophilus influenzae type b (an important cause of childhood meningitis and pneumonia) and polio (IPV is an inactivated polio vaccine).

The vaccine is offered to babies when they are two, three and four months old. In the financial year 2021/22, 93.1% of Southampton’s babies had received all 3 doses before their first birthday. This is significantly worse than the target of 95% but significantly better than the national average of 91.8%.

The take-up of this vaccine has been decreasing nationally since 2012/13 and in Southampton since 2015/16 (except for a resurgence in 2019/20 and 2020/2021, potentially due to the COVID-19 pandemic). In 2021/22 Southampton’s coverage was significantly lower than it was in 2015/16.

Flu vaccine - influenza (also known as flu) is a highly infectious viral illness spread by droplet infection. The flu vaccination is offered to people who are at greater risk of developing serious complications if they catch flu.

The [annual flu programme](#) sets out the national flu vaccine uptake ambitions each year. In 2021 to 2022 flu season, the national ambition was to achieve at least a 75% uptake amongst people deemed to be 'at-risk' with poorer outcomes from flu. In Southampton, 2021/22 coverage was 52.5%, similar to the national average of 52.9%.

For primary school children, in the same period, the target was 70% coverage. Southampton's coverage was at 48.9% in 2021, significantly lower than the national average of 57.4% and is on a three year decline from 60.8% in 2019.

Amongst two to three year olds, the flu letter target was also 70%. In 2021/22 Southampton had a coverage of 48.1% in this age group, significantly worse than the national average of 50.1%. This has been on an upward trend locally and nationally.

For people aged 65 and over, the flu letter target was a coverage of 85% in 2021 to 2022. Southampton missed this target by 3% in 2021/22 with a coverage of 82.0%, similar to England's average (82.3%). Coverage in this age group has increased significantly in the years since 2019/20.

Hepatitis B (HBV) - infants born to hepatitis B virus (HBV) infected mothers are at high risk of getting HBV infection themselves. Babies born to infected mothers are given a dose of the hepatitis B vaccine after they are born. This is followed by another four doses (at 4, 8, 12 and 16 weeks (8, 12 and 16 week doses as part of the routine childhood immunisations) and a booster dose at 12 months. Around 20% of people with chronic Hepatitis B will go on to develop scarring of the liver (cirrhosis). This can take 20 years to develop and around 1 in 10 people with cirrhosis will develop liver cancer. In 2021/22 Southampton had 100% coverage of Hepatitis B vaccine among babies born to HBV affected patents.

Hib / MenC booster – is a single injection given to one year old babies to boost their protection against Haemophilus influenzae type b (Hib) and meningitis C. The Hib and MenC booster increase the protection a child gets from the first course of Hib vaccine when they are 8, 12 and 16 weeks old, and the MenC vaccine when they are 12 and 16 weeks. This boosted immunity lasts into adulthood.

In 2021/22, the coverage in Southampton by the age of two years old was 91.3%, significantly better than the England average of 89.0%. There has been a steady decline in take-up nationally since 2012/13. Southampton saw a decrease between 2016/17 and 2018/19 but has been steadily increasing since then. Despite this recent resurgence, the current coverage in Southampton is similar to 2010/11 levels and is significantly lower than its peak in 2016/17 (94.6%).

By age five years old, the coverage in Southampton was 92.6% in 2017/18, similar to the national average of 92.4%.

Invasive Meningococcal Disease (IMD) - is a major cause of meningitis and septicaemia. The disease often has a rapid progression, with an 8 to 15% case-fatality ratio. The highest incidence occurs in young children, with a second disease peak among adolescents and young adults.

IMD is an important health protection issue due to the severity of the disease, especially in young children and teenagers. Meningococcal infection is vaccine preventable through routine immunisation. High rates of invasive meningococcal disease should prompt review of the causes e.g. an outbreak, poor uptake of vaccination among risk groups. IMD is very rare in Southampton, with zero cases recorded between June 2020 and June 2021 possibly due to less mixing during some of the COVID-19 pandemic.

Measles - is a highly infectious, vaccine preventable, viral infection which can cause serious disease, especially in infants, pregnant women and immunocompromised individuals. Measles cases are very rare in Southampton, with 7 cases recorded between 2012 and 2018.

Mumps - is a vaccine preventable, viral infection which can occasionally cause severe complications, including swelling of the ovaries (oophoritis), swelling of the testes (orchitis), aseptic meningitis and deafness. In Southampton, except for a small peak in 2013 (63 cases) mumps is rare, in 2018 there were 3 reported cases in total. This equates to 1.2 cases per 100,000 people, similar to the national average of 1.9 cases per 100,000 people.

Rubella – is a vaccine preventable uncommon viral infection that normally causes mild or no symptoms and although rare can be harmful during pregnancy.

Children can be protected from Measles, Mumps and Rubella with the combined Measles, Mumps and Rubella vaccine. The first MMR vaccine is given to children, as part of the routine vaccination schedule, usually within a month following their first birthday. A booster is received around three years four months of age before starting school.

In Southampton, 2021/22, the number of two year olds receiving one dose was 91.7%, significantly better than the national average (89.2%). Coverage in England has been declining since 2013/14 and current coverage in Southampton is significantly lower than a peak in 2014/15 (95.7%).

For one dose, coverage by age five years, was 93.9% in 2021/22, similar to the national average of 93.4%. This has been in decline for 5 consecutive years in Southampton and nationally.

Coverage by age five years (two doses) was 88.1% in 2021/22, significantly better than the national average of 85.7%. The Southampton and England trend is also decreasing and getting worse.

Pertussis (whooping cough) - is a vaccine preventable bacterial infection which can cause serious and life threatening complications. At highest risk are infants under 6 months of age. However, the

majority of cases occur in individuals aged 15 years and over. Due to being part of the routine childhood vaccination schedule and also being offered from 16 weeks during pregnancy, this is uncommon in Southampton with one case recorded in 2021.

Pneumococcal infections - can be non-invasive such as bronchitis, otitis media or cause invasive disease such as septicaemia, pneumonia and meningitis. Cases of invasive pneumococcal infection usually peak in the winter during December and January. The pneumococcal polysaccharide vaccine (PPV) protects against 23 types of *Streptococcus pneumoniae* bacterium. In 2020/21, the coverage in Southampton was 69.0%, significantly worse than the national average of 70.6%. The trend in Southampton is decreasing and getting worse.

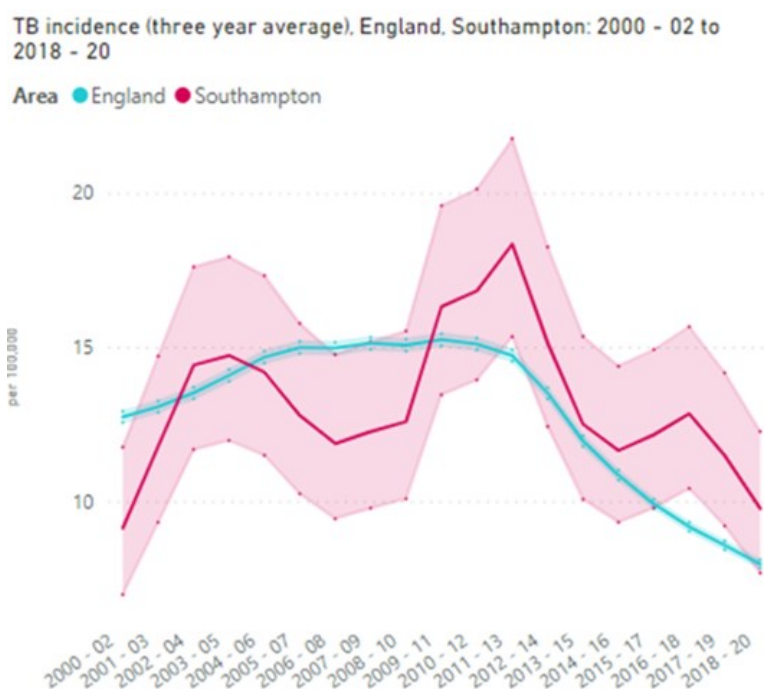
Shingles - is a painful rash that develops on one side of the face or body and is the reactivation of the herpes zoster virus that causes chickenpox. The rash consists of blisters that typically scab over in 7 to 10 days and fully clears up within 2 to 4 weeks. Before the rash appears, people often have pain, itching or tingling in the area where it will develop. In 2010, the UK's Joint Committee on Vaccination and Immunisation (JCVI) recommended that a herpes zoster (shingles) vaccination programme should be introduced for adults aged 70 years, with a catch up programme for those aged 71 to 79 years.

In Southampton, the coverage among 71 year olds in 2019/20 was 54.2%, significantly better than the national average of 48.2%.

More information is available in the health protection dashboard below and in the resources section.

4. Respiratory Infections

Respiratory infections are bacterial or viral infections in the sinuses, throat, airways or lungs. In Southampton, recent rates of respiratory infections have been similar to the national average.



Legionnaires' disease - is a lung infection you can get from inhaling droplets of water (aerosols), suspended in the air, containing the bacteria. It is usually caught in places like hotels, hospitals or offices where the bacteria have got into the water supply as well as from air conditioning systems, humidifiers and hot tubs. It is less common to catch it at home. The disease is uncommon, but it can be very serious. It is very rare in Southampton with no recorded cases in 2015 or 2016.

Tuberculosis (TB) - is a bacterial infection spread through inhaling tiny droplets from the coughs or sneezes of an infected person. It mainly affects the lungs, but it can affect any part of the body, including the abdomen, glands, bones and nervous system. TB is a potentially serious condition, but it can be cured if it is treated with antibiotics. In the three year period 2018 to 2020 there were 9.8 cases per 100,000 people in Southampton, this is similar to the England rate 8.0 cases per 100,000 people.

More information is available in the health protection dashboard below and in the resources section.

5. Hepatitis

Hepatitis is the term used to describe inflammation of the liver. It's usually the result of a viral infection or liver damage potentially caused by drinking alcohol. There are several different types of hepatitis. Some types of hepatitis are short lived without any serious problems, while others can be long-lasting (chronic) and cause scarring of the liver (cirrhosis), loss of liver function and in some cases liver cancer.

Hepatitis B - is a liver infection that is spread through blood, semen and vaginal fluids. The chance of getting hepatitis B in the UK is low. Vaccination is the best way to prevent hepatitis B. In the UK, the hepatitis B vaccine is given to babies as part of the 6-in-1 vaccine from two months of age. Adults only need to get the vaccine if they're at high risk, for example: when travelling to a high-risk country, having liver or kidney disease, having HIV or if your job puts you at risk of infection. The infection usually only lasts for a few months, but some people can have hepatitis B long-term. Hepatitis B is very rare in Southampton with 3 new cases recorded in 2018.

Hepatitis C - is a virus that can infect the liver. If left untreated, it can sometimes cause serious and potentially life-threatening damage. With modern treatments, it is usually possible to cure the infection and most people with it will have a normal life expectancy. In 2019, it is estimated around 118,000 people in the UK had chronic hepatitis C. Infection occurs when a person comes into contact with the blood of an infected person. In Southampton, in 2017, the incident rate was 14.7 new cases per 100,000 people of hepatitis C, statistically similar to the national average of 18.4 new cases per 100,000 people.

More information is available in the health protection dashboard below and in the resources section.

6. Sexually Transmitted Infections (STIs)

STIs can be a consequence of poor sexual health, with efforts focused on reducing the incidence and prevalence as well as the onward transmission of STIs among the population, especially within high-risk groups.

Chlamydia – is the most frequently diagnosed STI in England, with rates of infection substantially higher in young people aged 15 to 24. Chlamydia is effectively treated with antibiotics. In Southampton, in 2021, 13.5% of young people (aged 15 to 24 years) were screened for chlamydia, with a detection rate of 1,579 cases per 100,000 people aged 15 to 24. A high detection rate of chlamydia is not necessarily bad. Public Health England recommends a detection rate of at least 2,300 cases per 100,000 population, as it would likely result in a continued reduction in the prevalence of chlamydia. Screening and detection rates have been falling in Southampton and nationally.

Genital warts – Genital warts are a common sexually transmitted infection caused by a virus called Human Papilloma Virus (HPV). This virus is passed on through direct skin-to-skin contact with

someone who has HPV on their skin. There is no cure for genital warts, symptoms can clear up by themselves, but further outbreaks can occur. Southampton had a genital warts diagnosis rate of 70.8 cases per 100,000 population in 2021, significantly higher than the England average of 50.0 cases per 100,000 population.

Genital herpes – Genital herpes is a sexually transmitted infection caused by a virus called herpes simplex virus (HSV). There are 2 different types of the virus (type 1 and type 2), both of which can affect the genitals. It can also sometimes cause problems if it's caught for the first time either very early or very late in pregnancy. Similar to genital warts, those diagnosed with herpes can experience outbreaks or recurrent episodes that require treatment. In Southampton, in 2021, had a first episode genital herpes diagnosis rate of 47.9 cases per 100,000 population, similar to the national average of 38.3 cases per 100,000 population.

Gonorrhoea – is a STI caused by bacteria called *Neisseria gonorrhoeae* or gonococcus and can usually be treated with a course of antibiotics. In 2021, Southampton had a gonorrhoea diagnosis rate of 77.1 cases per 100,000 population, lower but not significantly than the England average of 90.3 cases per 100,000 population.

More information is available on the [sexual health](#) page.

7. Human immunodeficiency virus (HIV)

HIV is a virus that damages the cells in a person's immune system and weakens their ability to fight everyday infections and diseases. Whilst there is currently no cure for HIV, there are very effective drug treatments, antiretroviral therapy (ART), that enable most people living with HIV to live a long and healthy life. In 2021, Southampton had a new HIV diagnosis rate of 10.3 cases per 100,000 people, significantly higher than the national diagnosis rate of 4.8 cases per 100,000 people.

Early diagnosis of HIV is vital to effective treatment, with later diagnoses associated with poorer health outcomes. Late HIV diagnoses remain high across the UK. In Southampton between 2017-19, 37.3% of people first diagnosed in the UK were classified as having a late diagnosis; lower but not significantly than the England average of 43.4%.

More information is available in the health protection dashboard below and in the resources section.

8. Other Health Protection Indicators

Air pollution mortality - poor air quality is a significant public health issue, especially in Southampton (as a busy city with an active container port, international airport and cruise and or ferry terminals). There is strong evidence that air pollution can cause or contribute to the development of coronary heart disease, stroke, respiratory disease, and lung cancer. It exacerbates asthma and has a contributory role in mortality. In 2020, 6.1% of Southampton's deaths were attributed to air pollution, higher than the national average of 5.6% and the second highest among our ONS comparators.

Acute Lyme disease - is a bacterial infection that can be spread to humans by infected ticks. People are most likely to encounter ticks when doing activities in the countryside or other green spaces such as woodland, some urban parks or gardens, where ticks are most common, such as in Southampton's neighbouring forest areas. In 2021, Southampton residents had 4.4 cases per 100,000 people, significantly higher than England 1.5 cases per 100,000 people. The rates of acute Lyme disease by local authority are likely to be an underestimate of the true incidence in England as cases may be diagnosed clinically and treated without laboratory confirmation.

Scarlet fever - is an infection caused by a contagious bacterial called Group A Streptococcus that mostly affects young children. It is easily treated with antibiotics. In 2016, Southampton had 381.1 cases per 100,000 people, significantly higher than the national average of 229.5 cases per 100,000 people. Rates of scarlet fever have been increasing year on year in Southampton and nationally with an exceedance across the country seen in 2022/23.

Excess Winter Deaths - the number of excess winter deaths depends on seasonal temperatures and the level of disease in the population (also how well equipped people are to cope with the drop in temperature). Most excess winter deaths are due to circulatory or respiratory diseases, with the majority occur amongst the elderly population. Mortality during winter increases more in England and Wales compared to other European countries with colder climates, suggesting that many more deaths could be preventable in England and Wales. In Southampton during the winter of 2019/20, there were 7.4% excess winter deaths in Southampton, lower than the national average of 17.4%, but not significantly lower. More information is available on the [mortality](#) page.

Antibiotic prescriptions - antibiotics treat infections caused by bacteria. The overuse of antibiotics, especially taking antibiotics when they're not the correct treatment, promotes antibiotic resistance. It is estimated that around one-third of antibiotic use in people is not needed nor appropriate. Southampton has a relatively low level of antibiotic prescription of 0.6 per STAR PU, lower than the national average of 0.7 and the lowest of all our ONS comparators.

STAR PU is an adjusted rate that removes confounding effects of age and sex in the comparison of prescribing between different geographical areas. This method allows for more accurate comparison of prescribing. In this specific indicator, a higher value is associated with increased prescribing.

9. Resources

9.1 Health Protection Dashboard

This dashboard presents a range of data related to Health Protection. Data in this dashboard is compiled from a range of publicly available sources, accessed through data tools from the Office for Health Improvement & Disparities (OHID).

[Health protection dashboard](#)

9.2 NHS - Vaccinations and when to have them

Information on vaccines and when you need to have them.

NHS - [NHS vaccinations and when to have them](#)

9.3 NHS - Antibiotic resistance

Antibiotics are no longer routinely used to treat infections. This is because many infections are caused by viruses, so antibiotics are not effective. Antibiotics are often unlikely to speed up the healing process and can cause side effects. The more antibiotics are used to treat trivial conditions, the more likely they are to become ineffective for treating more serious conditions

NHS - [Antibiotic resistance](#)

9.4 UKHSA - Concern over drop in HPV vaccine coverage among secondary school pupils

UK Health Security Agency (UKHSA) report on the routine adolescent human papillomavirus (HPV) immunisation programme for 2021 to 2022, which is primarily delivered in schools, shows that coverage in year 8 and year 9 pupils is yet to return to pre-pandemic levels.

UK Health Security Agency - [Concern over drop in HPV vaccine coverage among secondary school pupils](#)

9.5 UKHSA – Annual flu programme

Seasonal influenza (flu) is an unpredictable but recurring pressure that the NHS faces every winter. Vaccination offers the best protection.

UK Health Security Agency – [Annual flu programme](#)

9.6 UK Health Security Agency - High Consequence Infectious Diseases (HCID)

Guidance and information about high consequence infectious diseases and their management in England.

UK Health Security Agency - [High Consequence Infectious Diseases \(HCID\)](#)

9.7 JCVI - Joint Committee on Vaccination and Immunisation

JCVI holds 3 main meetings a year, usually held on the first Wednesday of February, June and October. The draft minute of each meeting will be uploaded to the JCVI Box account within 6 weeks of the meeting.

JCVI - [Joint Committee on Vaccination and Immunisation](#)

9.8 ONS - Excess mortality during heat-periods: 1 June to 31 August 2022

Joint analytical article between the Office for National Statistics (ONS) and UK Health Security Agency (UKHSA) on deaths during heat-periods in 2022.

ONS - [Excess mortality during heat-periods: 1 June to 31 August 2022](#)

9.9 ONS - Excess deaths in England and Wales: March 2020 to December 2022

Number of excess deaths, including deaths due to coronavirus (COVID-19) and due to other causes. Including breakdowns by age, sex, and geography.

ONS - [Excess deaths in England and Wales: March 2020 to December 2022](#)