

# JSNA Health and Wellbeing Profile 2023/24

## Childhood Immunisations for School-Age Children

### Summary

Immunisation is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease. Immunisation is a safe and cost effective means to improve the health of populations and globally is estimated to save between 2 and 3 million lives per year<sup>1</sup>. The World Health Organisation (WHO) states that after clean water, vaccination is the most effective public health intervention in the world.

This JSNA chapter covers immunisations routinely administered to school-age children in the UK in accordance with the NHS vaccination schedule<sup>2</sup>. There is a linked chapter which covers immunisations for pre-school children.

### Local context

In comparison to pre-school immunisations, the uptake of school-age immunisations in Bristol is generally improving. However, our rates are still lower than national averages and our core city comparators, in particular for the HPV vaccine.

### National targets and herd immunity

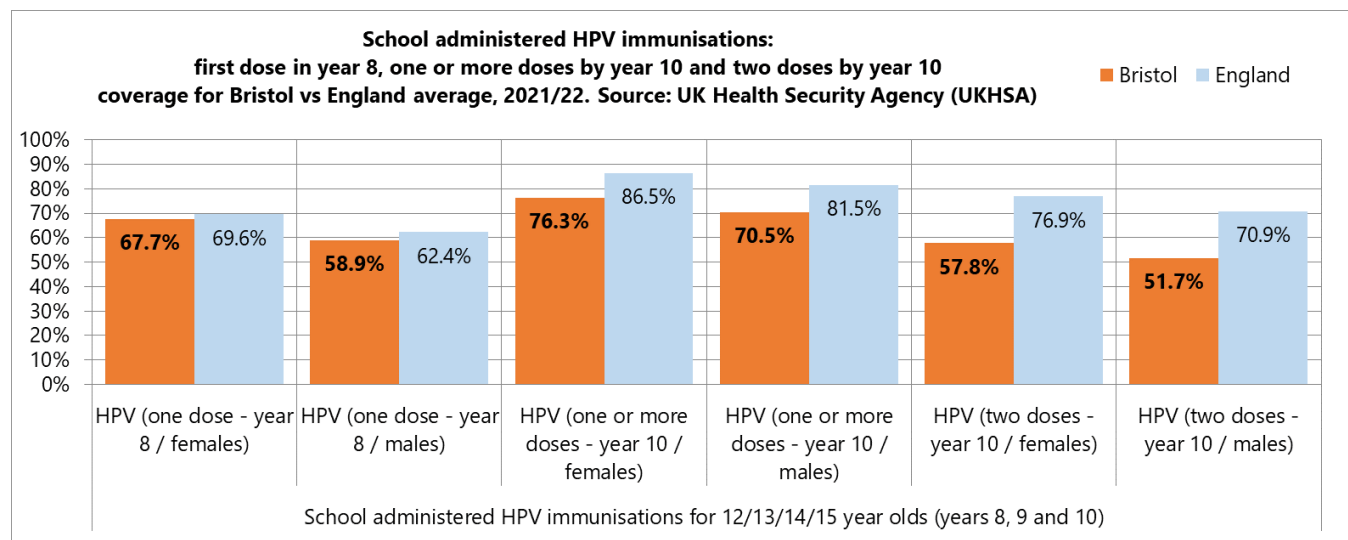
For most immunisations, the WHO states a target of immunising at least 95% of all children because this is the level where 'herd immunity' can be achieved. Herd immunity occurs when a high percentage of the population are vaccinated, making it difficult for a disease to spread because there are so few unprotected people left to infect.

This means that the few people unable to receive vaccinations (e.g. because they are too young or are having treatment for other diseases which prevents them from having vaccinations) can still be protected from catching the disease because there is less of it circulating<sup>1</sup>. In order for immunisation to be effective, it is therefore vital to monitor the coverage levels within the population. Below is the latest data available on school-age immunisation coverage levels for Bristol.

### School administered immunisations

- Human papillomavirus (HPV) –First dose in year 8 (12/13yrs)
- Human papillomavirus (HPV) –Second dose 6m – 24m later (year 9/10 (13/14/15yrs)
- Tetanus, diphtheria and polio (Tdv/IPV 3-in-1 booster)
- Meningitis ACWY (MenACWY)

Figure 1: School administered HPV immunisations: first dose in year 8, one or more doses by year 10 and two doses by year 10 coverage for Bristol vs England average, 2021/22. Source: UK Health Security Agency (UKHSA)



**Human papillomavirus (HPV) – First dose in year 8 (12/13 year olds) and second dose by year 9 or 10 (13/14/15 year olds)** – Vaccination against HPV helps protect against cancers caused by HPV, including cervical cancer, some mouth and throat (head and neck) cancers and some cancers of the anal and genital areas. It also helps protect against genital warts<sup>2</sup>. As the virus is typically spread by sexual contact, including touching, it is important to vaccinate children and young people before they become sexually active if possible, i.e. prior to exposure to the virus.

From September 2019, all year 8 pupils (male and female) were offered the HPV vaccination, the programme having been restricted to females previously. The first dose will normally be given in year 8 (12/13yrs) and a second 6 to 24 months later (typically in year 9 or 10). It is important to have two doses for full protection from HPV.

In 2021/22, one dose HPV vaccination coverage for year 8 females in Bristol was 67.7% and 58.9% for males. These uptake levels are a little below the respective national averages, but represents a considerable recovery since the delivery of the programme in schools in 2019/20 and 2020/21 was heavily impacted by the pandemic, as Figure 2 on the following page (trends in female uptake only) makes very clear. The 2021/22 first dose uptake rates locally and nationally are still well below their peak in 2018/19 (Bristol year 8 females = 84.2%).

First dose uptake increases by year 10 to 76.3% for Bristol females and 70.5% for Bristol males. These levels of coverage are more than 10% below the equivalent national averages. Second dose uptake by year 10 reported in 2021/22 was 57.8% for Bristol females and 51.7% for Bristol males, in each case nearly 20% below the relevant national average.

Bristol's first dose HPV vaccination uptake in year 8 in 2021/22 was typical of the Core Cities comparator group, but Bristol's second dose uptake levels by the end of year 10 were the lowest in the group (see figures 3 and 4 overleaf).

Figure 2: HPV one dose in year 8 (females) coverage, Bristol and England averages, 2013/14 - 2021/22. Source: UK Health Security Agency

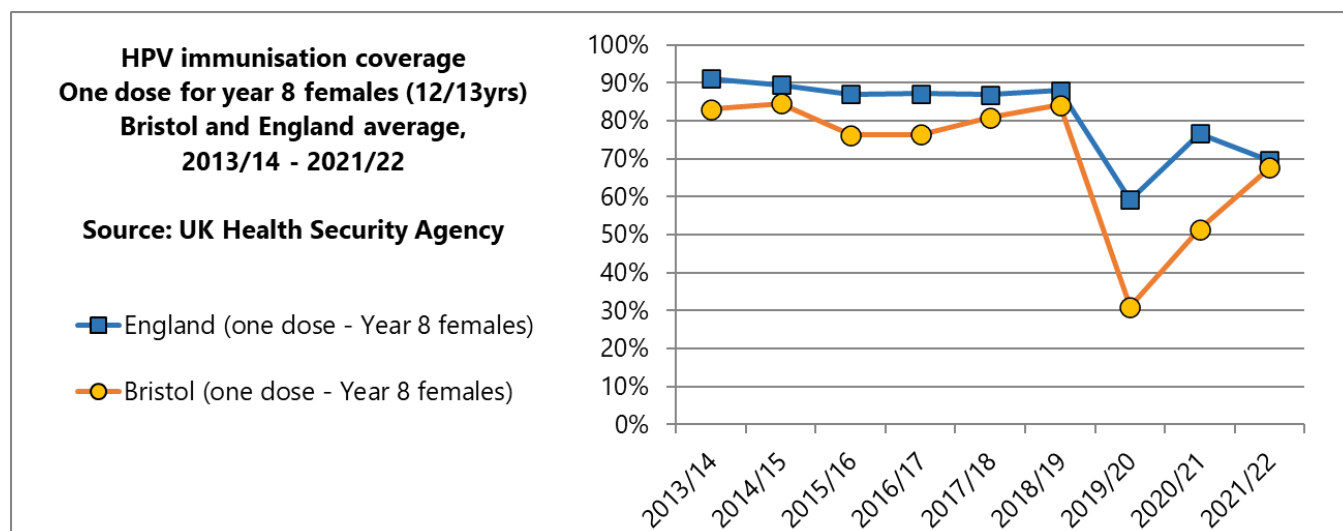


Figure 3: HPV immunisations: first dose in year 8, coverage for Bristol & Core Cities group 2021/22. Source: UK Health Security Agency (UKHSA)

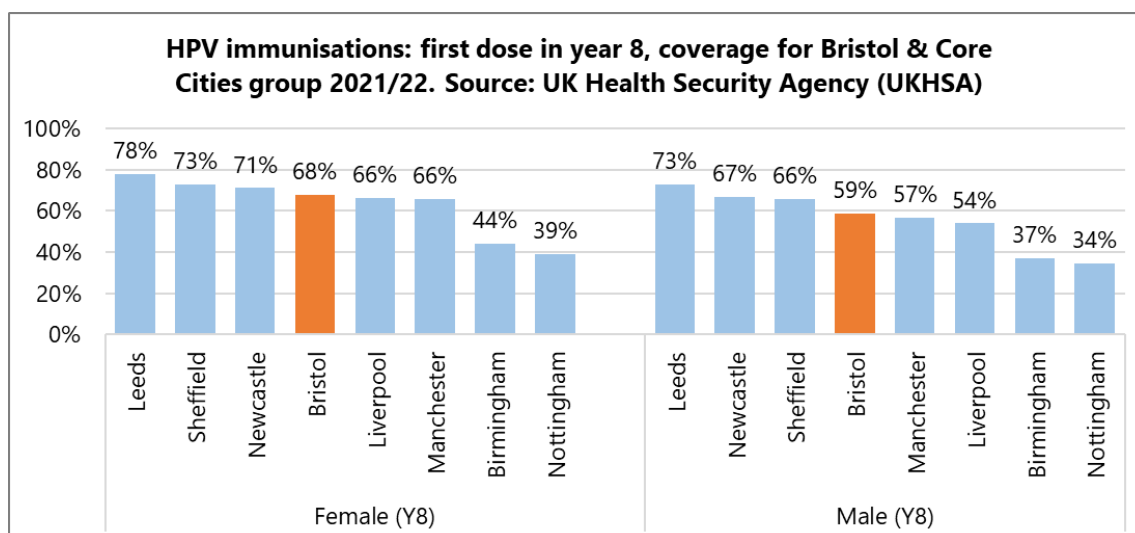
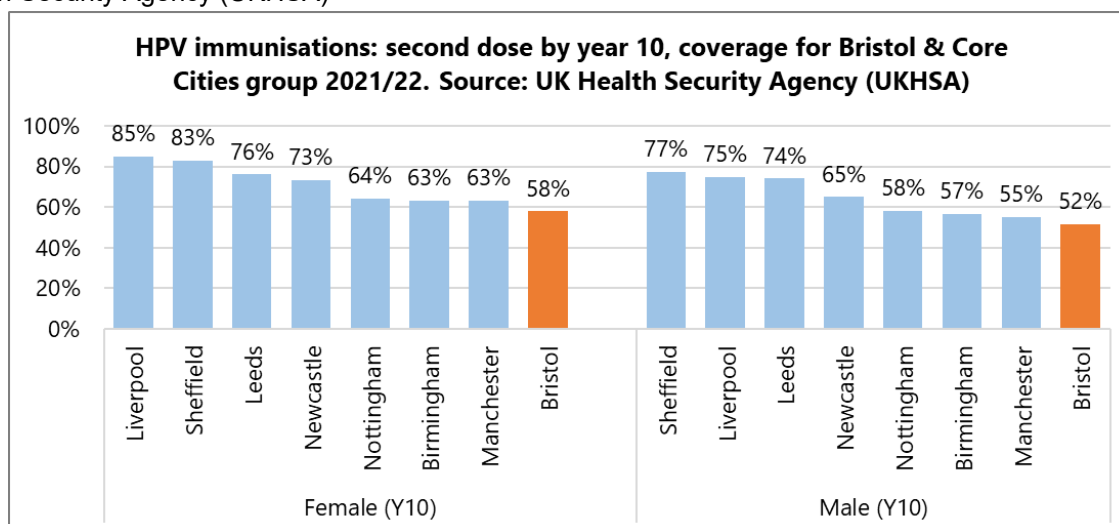


Figure 4: HPV immunisations: second dose by year 10, coverage for Bristol & Core Cities group 2021/22. Source: UK Health Security Agency (UKHSA)



**Tetanus, diphtheria and polio (Tdv/IPV 3-in-1 booster)** – This is a single injection, delivered in year 9 or 10 which boosts protection against tetanus, diphtheria and polio, also vaccinated against in early childhood. In 2021/22, year 9 uptake in Bristol was 58.3%, much lower than the national average of 69.0%. Uptake by year 10 was 72.7% in Bristol, compared to a national average of 79.5%. As observed for the school-administered HPV vaccinations, the disruption to schools and school-nursing services created by the Covid-19 pandemic severely limited the delivery of this programme in 2019/20, and with considerable continuing impacts since. Uptake rates locally and nationally are yet to recover fully. Prior to 2019/20, uptake rates had been improving for a number of years. Comparisons between Bristol and other cities in the Core Cities group are complicated by some local authorities choosing to focus on delivery only in year 9, or in both year 9 and 10, but comparisons for uptake by year 10 are more valid. Figure 7 overleaf shows that Bristol's uptake by year 10 is fairly typical of the Core Cities group, albeit towards the bottom of the range.

Figure 5: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in years 9 and 10, Bristol and England averages, 2021/22. Source: UK Health Security Agency (UKHSA).

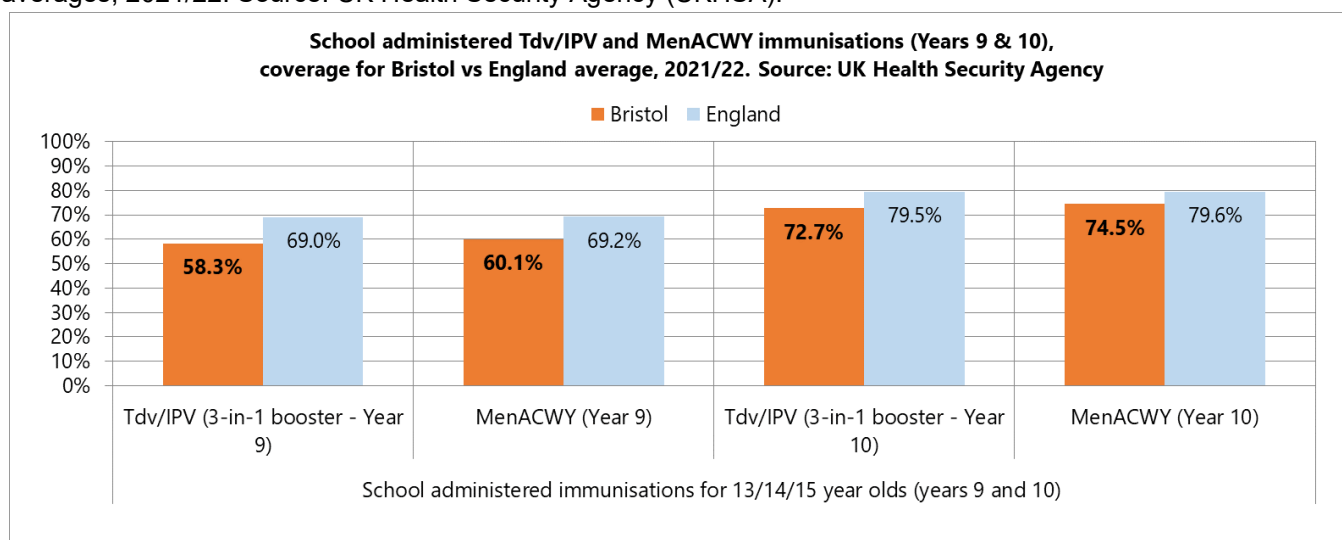


Figure 6: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in year 9, Bristol and England averages, 2015/16 - 2021/22. Source: UK Health Security Agency (UKHSA)

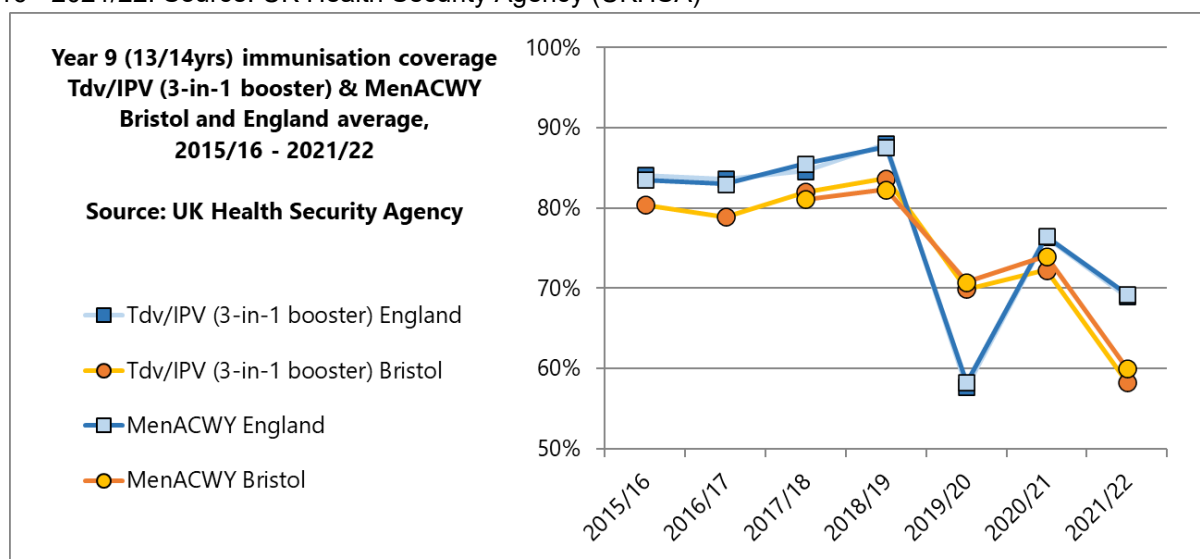
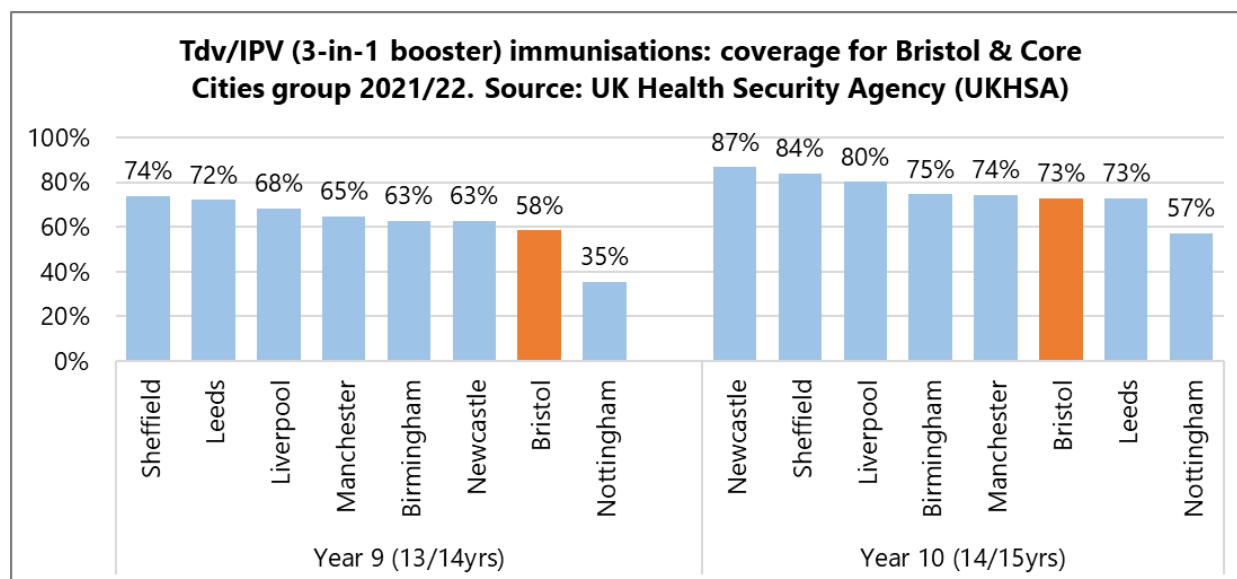
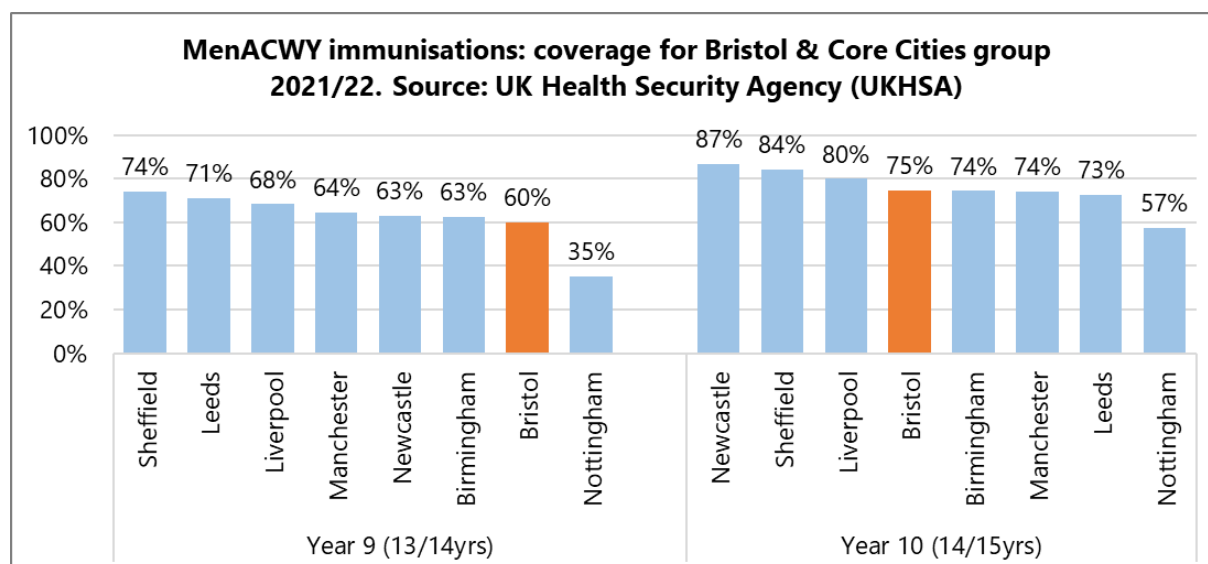


Figure 7: Tdv/IPV (3-in-1 booster) vaccination coverage in year 9 and year 10, Bristol and Core Cities group, 2021/22. Source: UK Health Security Agency (UKHSA)



**Meningitis ACWY (MenACWY)** – This is a single injection, typically delivered in year 9 or 10, at the same time as the Tdv/IPV 3-in-1 booster described previously. It protects against 4 different strains of the meningococcal bacteria that can cause potentially life threatening meningitis and blood poisoning (septicaemia): A, C, W and Y. Trends in uptake for this vaccination, and the impact of the pandemic on delivery, are very similar to those already described for the Tdv/IPV 3-in-1 booster. In 2021/22, year 9 uptake in Bristol was 60.1%, well below the national average (69.2%). Uptake by year 10 was 74.5% in Bristol, compared to a national average of 79.6%. Comparisons to the Core Cities group are subject to the same caveat described for the Tdv/IPV vaccination already, and again Bristol's uptake by year 10 is quite typical of the group but some way short of the highest levels reported by Newcastle-upon-Tyne and Sheffield.

Figure 8: MenACWY vaccination coverage in year 9 and year 10, Bristol and Core Cities group, 2021/22. Source: UK Health Security Agency (UKHSA)



**Covid-19 Impact:**

Due to the COVID school closures, and self-isolation requirements in place once schools had reopened through 2020/21 the school-aged immunisation programme was considerably impacted, resulting in a recovery phase in the 2020/21 academic year to catch-up those immunisations missed at the end of the 2019/20 academic year. Recovery will be ongoing in the 2021/22 academic year to catch-up those immunisations missed during the 2020/21 academic year. This needs to be borne in mind when interpreting the current trends in school-aged immunisations for Bristol.

**Further information / references:**

- 1) World Health Organization. <https://www.who.int/topics/immunization/en/>
- 2) NHS. <https://www.nhs.uk/conditions/vaccinations/nhs-vaccinations-and-when-to-have-them/>
- 3) UK Health Security Agency / Office for Health Improvement & Disparities – Fingertips tool: <https://fingertips.phe.org.uk/>
- 4) Human papillomavirus (HPV) vaccine coverage estimates in England: 2021 to 2022: <https://www.gov.uk/government/statistics/human-papillomavirus-hpv-vaccine-coverage-estimates-in-england-2021-to-2022>
- 5) School leaver booster (Td/IPV): vaccine coverage estimates 2021-2022: <https://www.gov.uk/government/publications/school-leaver-booster-tdipv-vaccine-coverage-estimates>
- 6) Meningococcal ACWY immunisation programme: vaccine coverage estimates 2021 – 2022: <https://www.gov.uk/government/publications/meningococcal-acwy-immunisation-programme-vaccine-coverage-estimates>

**Date updated:** May 2023**Date of Next Update:** May 2024