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[1]. 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[2]. There is a linked chapter which covers immunisations for pre-school children.

Local context

The uptake of school-age immunisations in Bristol is at a similar level to 2023/23 with just some marginal improvement seen. Nationally there is clear evidence of declining uptake of immunisations compared to the levels seen pre-pandemic. 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

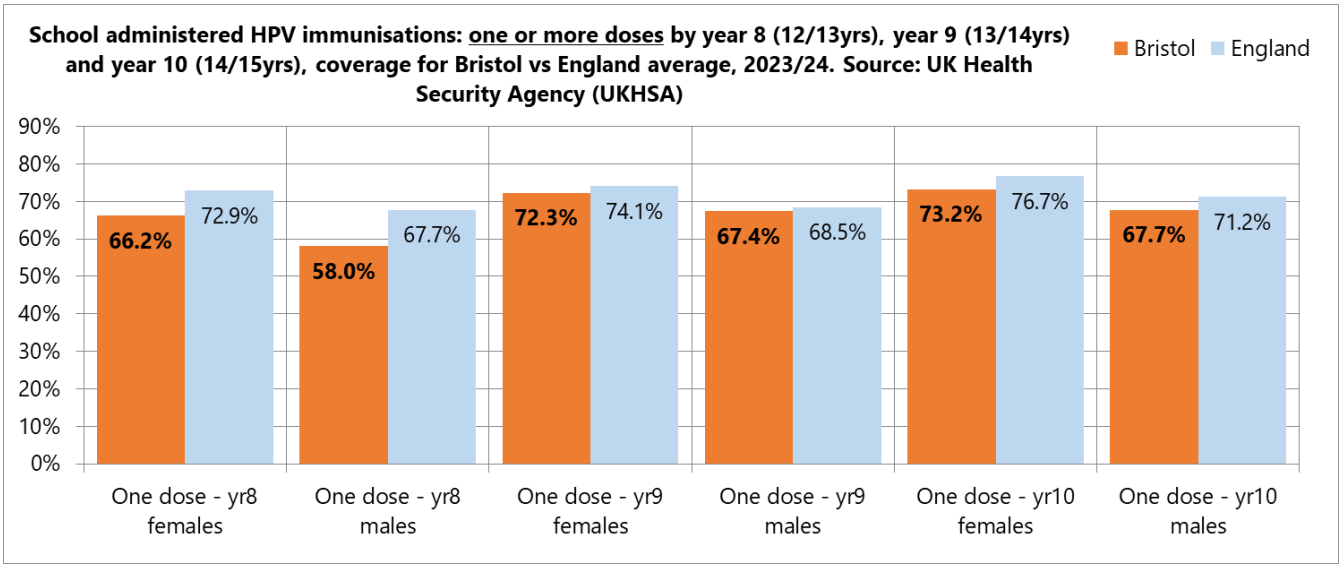
For most immunisations, the WHO states a target of immunising at least 95% of all children because this is the level where 'herd immunity' can be achieved. Herd immunity occurs when a high percentage of the population are vaccinated, making it difficult for a disease to spread because there are so few 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[1]. 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) – Single dose administered in year 8
- Tetanus, diphtheria and polio (Tdv/IPV 3-in-1 booster)
- Meningitis ACWY (MenACWY)

Figure 1: School administered HPV immunisations: population coverage for one or more doses* in year 8, year 9 and year 10, Bristol vs England average, 2023/24. Source: UK Health Security Agency (UKHSA)



**Until September 2023 a first dose of HPV vaccine was administered in year 8 (12/13yrs) and a second dose administered in year 9 (13/14yrs) or year 10 (14/15yrs).*

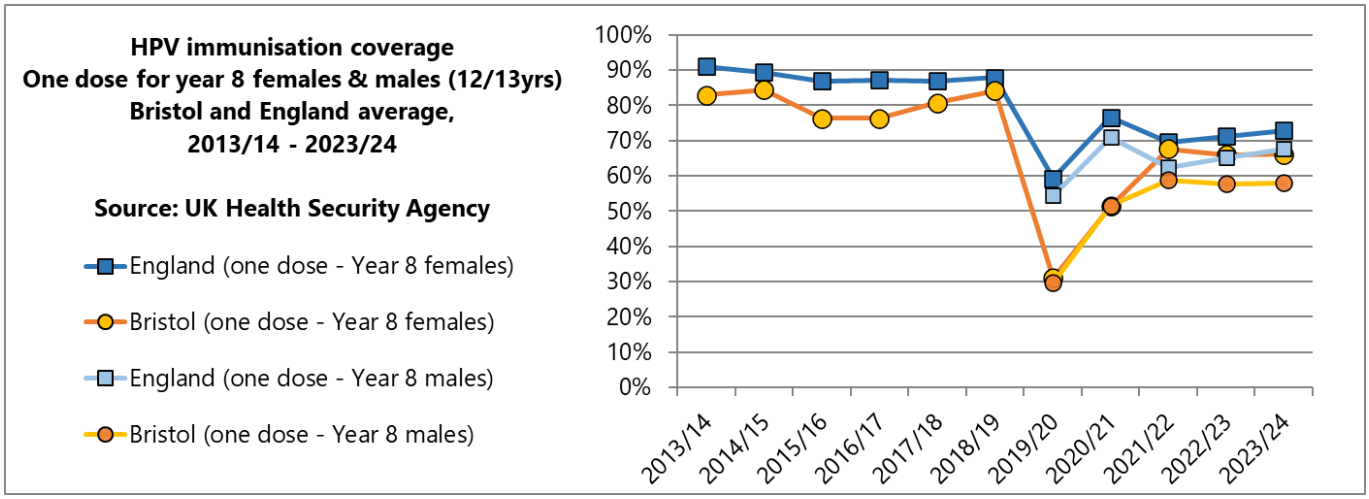
Human papillomavirus (HPV) – Single dose in year 8 (12/13 year olds) – Vaccination against HPV helps protect against cancers caused by HPV, including cervical cancer, some mouth and throat (head and neck) cancers and some cancers of the anal and genital areas. It also helps protect against genital warts[2]. 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. Prior to September 2023, a first dose was normally given in year 8 (12/13yrs) and a second 6 to 24 months later (typically in year 9 or 10). With effect from September 2023 the programme has changed to a single vaccination to be administered in year 8 based on new guidance from the Joint Committee on Vaccination and Immunisation (JCVI). JCVI had undertaken a review of evidence that concluded a single vaccination offered protection comparable to the two dose schedule.

Statistics for the latest year reported (2023/24), shown in figure 1 show that population coverage of the HPV vaccination in Bristol, in all year groups (8 to 10) was lower than the national average, most notably so in year 8. In 2023/24, one dose HPV vaccination coverage for year 8 females in Bristol was 66.2% and 58.0% for males, slightly higher than the equivalent coverage in 2022/23 but lower than the national averages of 72.9% (females) and 67.7% (males). Figure 2 on the following page shows the trends over time in one dose uptake for female pupils since 2013/14 and male pupils since 2019/20. After a considerable recovery in uptake rates to 2021/22 after the delivery of the programme in schools in 2019/20 and 2020/21 was heavily impacted by the pandemic, the improvement in uptake rates in Bristol appear to have stalled someway short of their pre-pandemic levels where we can make those

comparisons (for female pupils only). The one dose uptake rates for female pupils locally and nationally are still well below their peak in 2018/19 (Bristol year 8 females = 84.2%).

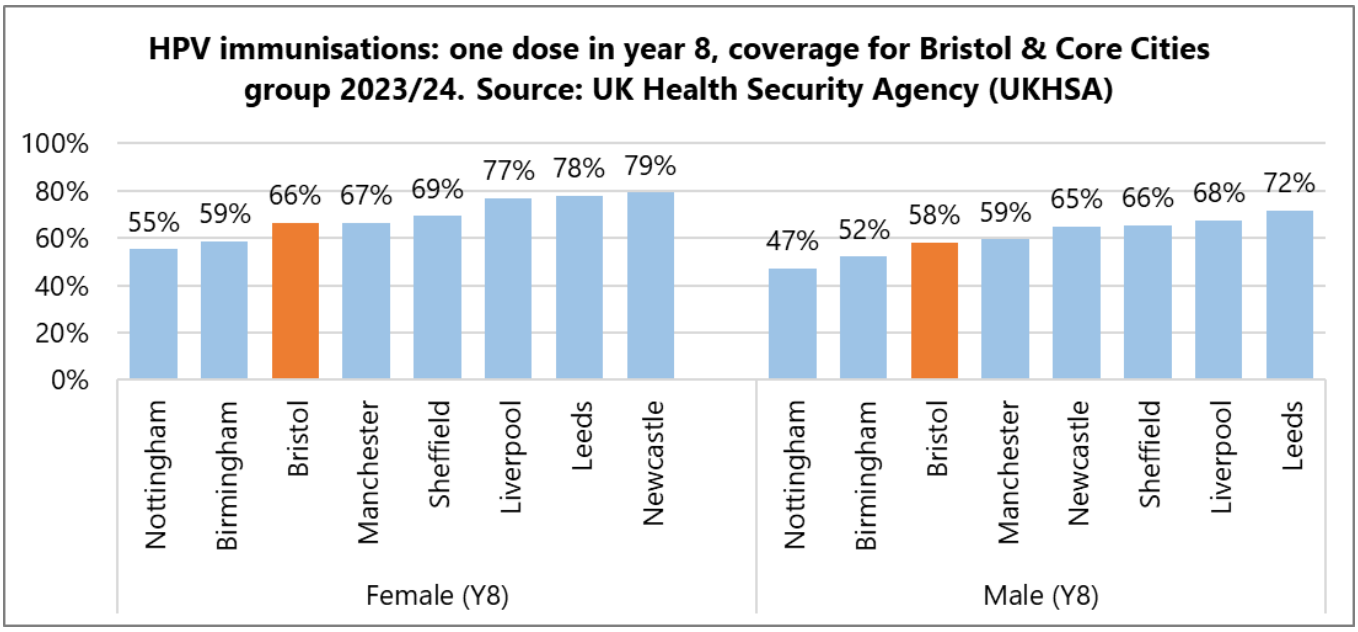
Figure 2: HPV one dose in year 8* coverage, Bristol and England averages, 2013/14 - 2023/24 (2019/20 onwards for male pupils). Source: UK Health Security Agency



One or more doses uptake increases by year 10 to 73.2% for Bristol females and 67.7% for Bristol males, but this is around 2% lower than the local uptake reported in 2022/23 and well below the equivalent national averages.

Bristol's single dose HPV vaccination uptake in year 8 in 2023/24 was slightly below the average for the Core Cities comparator group, and some way short of the best coverage levels achieved by cities in the group (see figure 3 below).

Figure 3: HPV immunisations: first dose in year 8*, coverage for Bristol & Core Cities group 2023/24. 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 2023/24, year 9 uptake in Bristol was 63.5%, well below the national average of 71.7%, but a slight improvement over the 2022/23 Bristol uptake level of 63.4%. Coverage in year 10 was 63.9% in Bristol, compared to a national average of 72.7%. Prior to 2019/20, uptake rates had been improving for a number of years, but just 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 uptake rates locally and nationally are yet to recover fully. 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 6 overleaf shows that Bristol's uptake by year 10 is towards the lower end of the range of uptake achieved among the Core Cities group.

Figure 4: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in years 9 and 10, Bristol and England averages, 2023/24. Source: UK Health Security Agency (UKHSA).

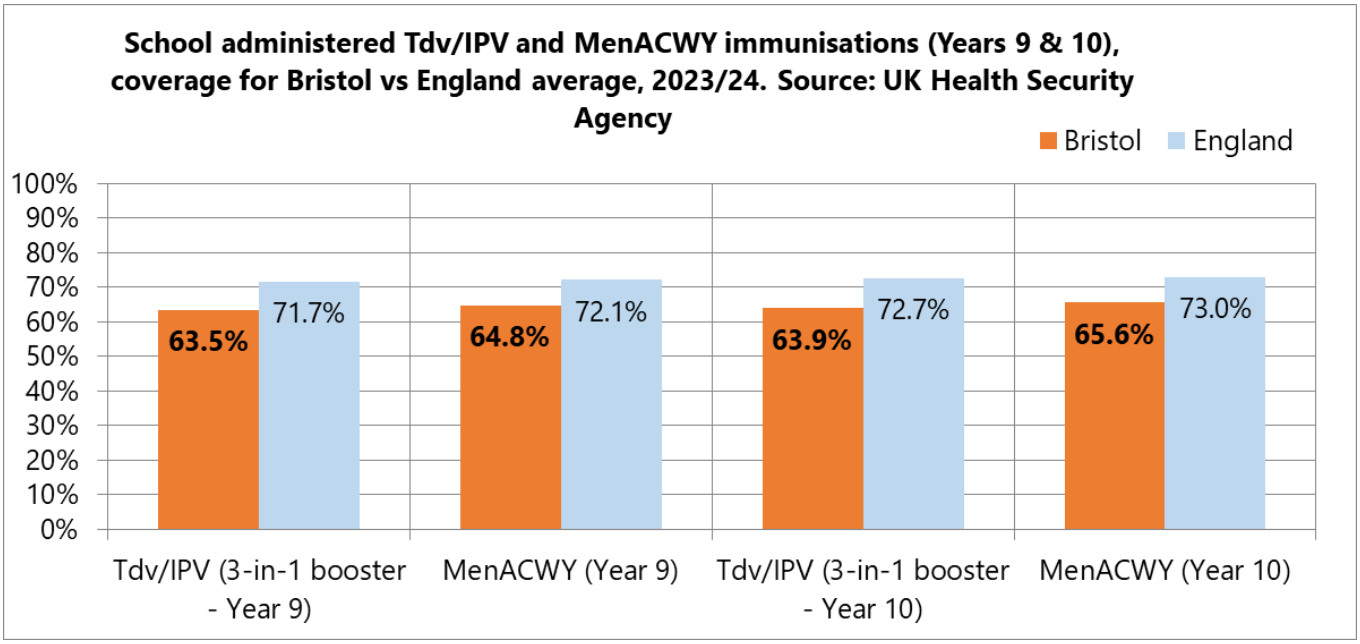


Figure 5: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in year 9, Bristol and England averages, 2015/16 - 2023/24. Source: UK Health Security Agency (UKHSA)

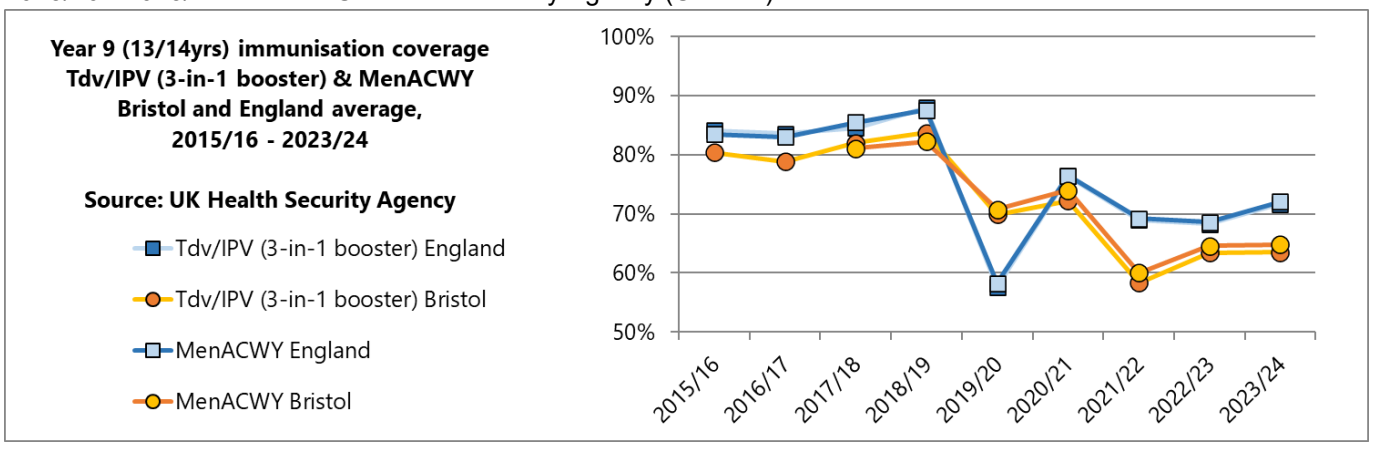
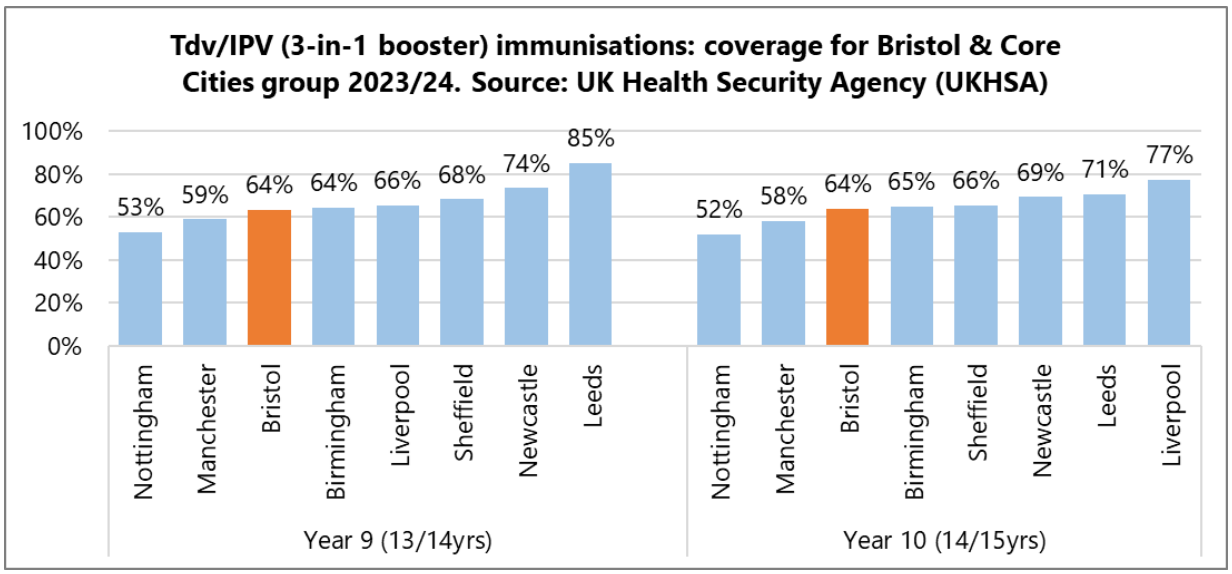
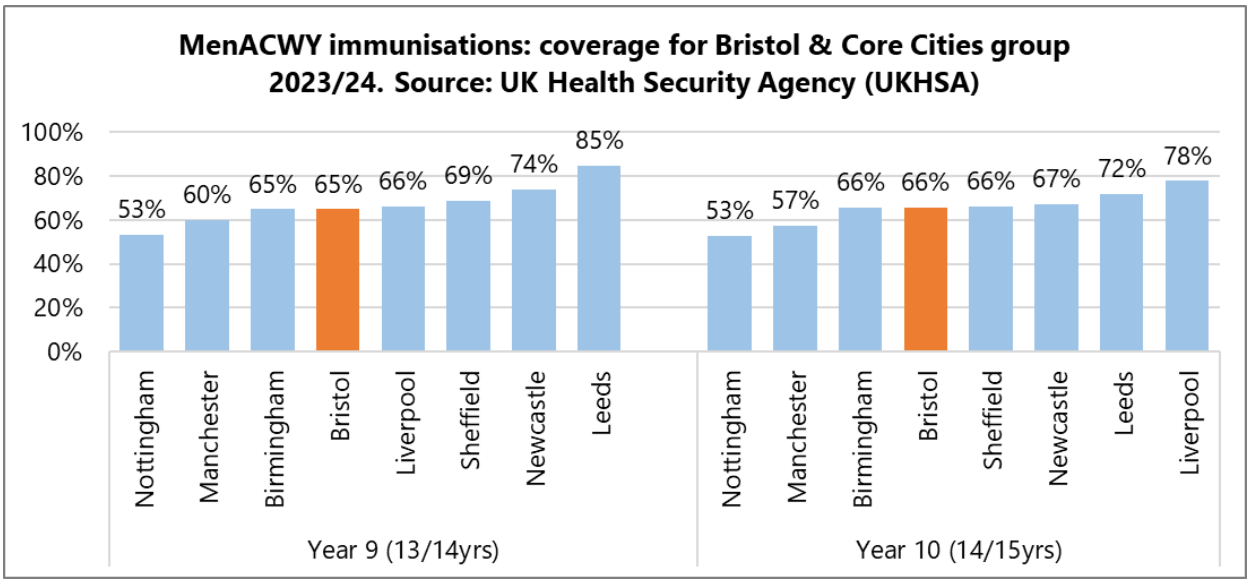


Figure 6: Tdv/IPV (3-in-1 booster) vaccination coverage in year 9 and year 10, Bristol and Core Cities group, 2023/24. Source: UK Health Security Agency (UKHSA)



Meningitis ACWY (MenACWY) – This is a single dose vaccination, 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 2023/24, year 9 uptake in Bristol was 64.8%, well below the national average (72.1%) but a slight improvement on the 2022/23 Bristol uptake (64.6%). Coverage for year 10 was 65.6% in Bristol, compared to a national average of 73.0%. Comparisons to the Core Cities group are subject to the same caveat described for the Tdv/IPV vaccination already, with Bristol's uptake quite typical of the group but some way short of the highest levels reported by Leeds and Liverpool.

Figure 7: MenACWY vaccination coverage in year 9 and year 10, Bristol and Core Cities group, 2023/24. 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. Uptake rates for school administered vaccinations remain well below their pre-pandemic levels.

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) vaccination coverage in adolescents in England: 2023 to 2024: https://www.gov.uk/government/statistics/human-papillomavirus-hpv-vaccine-coverage-estimates-in-england-2023-to-2024

5) Press release: HPV vaccination programme moves to single dose from September 2023: https://www.gov.uk/government/news/hpv-vaccination-programme-moves-to-single-dose-from-september-2023

6) Td/IPV vaccine coverage for the NHS adolescent vaccination programme in England, academic year 2023 to 2024: https://www.gov.uk/government/publications/school-leaver-booster-tdipv-vaccine-coverage-estimates

7) Meningococcal ACWY (MenACWY) vaccine coverage for adolescents in England, academic year 2023 to 2024: https://www.gov.uk/government/publications/meningococcal-acwy-immunisation-programme-vaccine-coverage-estimates

Date updated: April 2025 **Date of Next Update:** April 2026