

# JSNA Health and Wellbeing Profile 2024/25

## 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

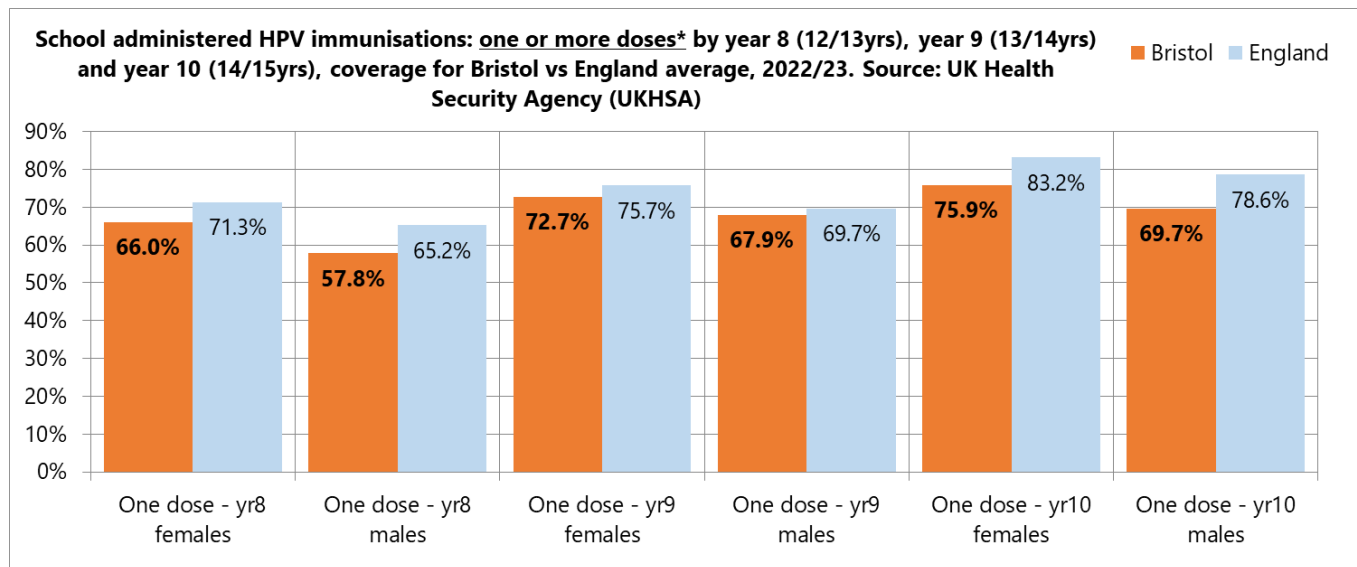
For most immunisations, the WHO states a target of immunising at least 95% of all children because this is the level where 'herd immunity' can be achieved. Herd immunity occurs when a high percentage of the population are vaccinated, making it difficult for a disease to spread because there are so few 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) – 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, 2022/23. Source: UK Health Security Agency (UKHSA)



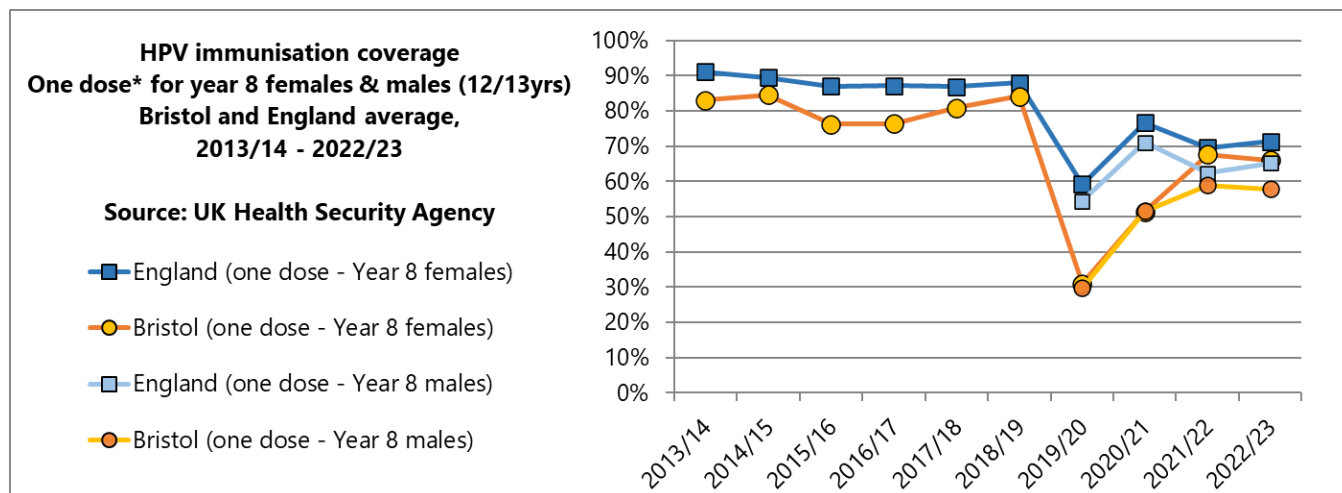
\*Until September 2023 a first dose of HPV vaccine was administered in year 8 (12/13yrs) and a second dose administered in year 9 (13/14yrs) or year 10 (14/15yrs).

**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<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. 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 (2022/23), 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 10. In 2022/23, one dose HPV vaccination coverage for year 8 females in Bristol was 66.0% and 57.8% for males, compared to national averages of 71.3% (females) and 65.2% (males). Figure 2 on the following page shows the trends over time in first 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, it is disappointing to see the rates have declined a little in the year to 2022/23. The first dose uptake rates for female pupils locally and nationally are still well below their peak in 2018/19 (Bristol year 8 females = 84.2%).

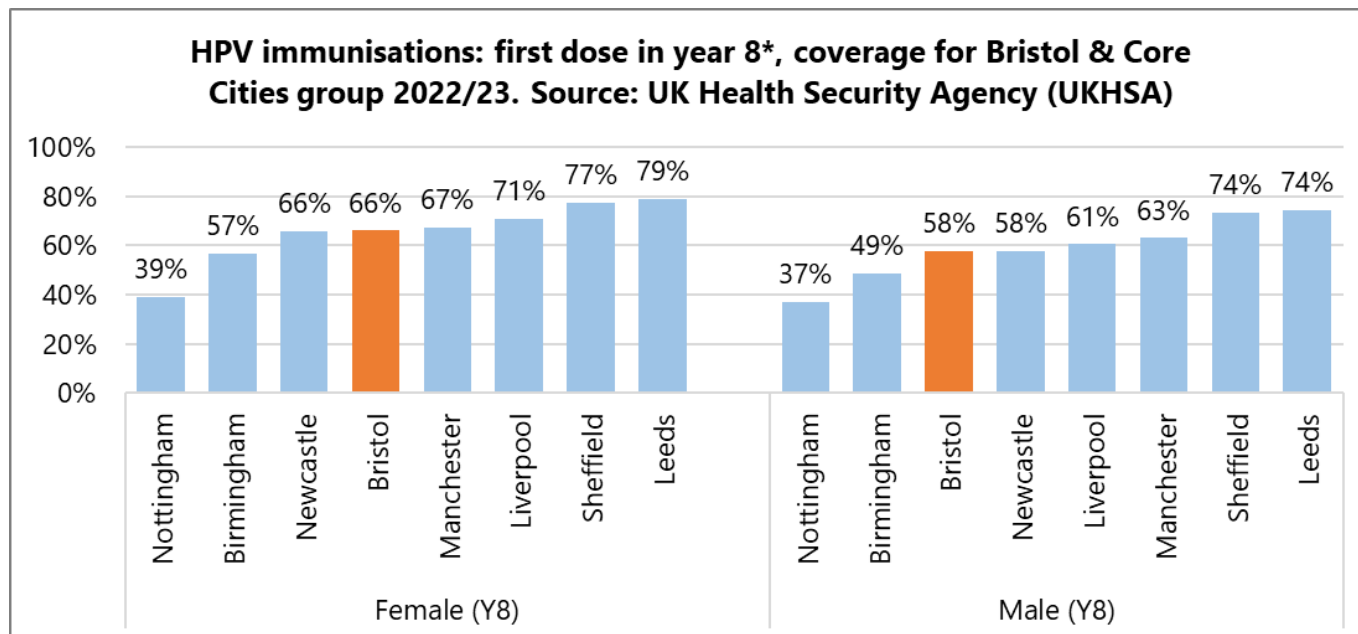
Figure 2: HPV one dose in year 8\* coverage, Bristol and England averages, 2013/14 - 2021/22 (2019/20 onwards for male pupils). Source: UK Health Security Agency



First dose uptake increases by year 10 to 75.9% for Bristol females and 69.7% for Bristol males, also a little lower than the local uptake reported in 2021/22 and well below the equivalent national averages.

Bristol’s first dose HPV vaccination uptake in year 8 in 2022/23 was typical of the Core Cities comparator group, see figure 3 below.

Figure 3: HPV immunisations: first dose in year 8\*, coverage for Bristol & Core Cities group 2022/23. 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 2022/23, year 9 uptake in Bristol was 63.4%, lower than the national average of 68.3%, but an improvement over the 2021/22 Bristol uptake level of 58.3%. Coverage in year 10 was 63.2% in Bristol, compared to a national average of 74.1%. 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. 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 6 overleaf shows that Bristol’s uptake by year 10 is typical of the Core Cities group, albeit towards the bottom of the range.

Figure 4: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in years 9 and 10, Bristol and England averages, 2022/23. Source: UK Health Security Agency (UKHSA).

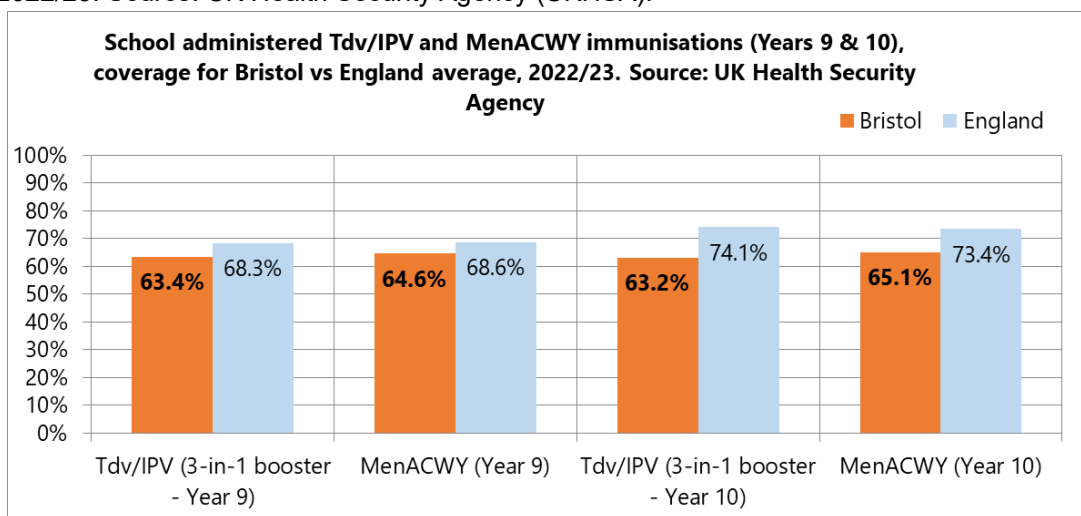


Figure 5: Tdv/IPV (3-in-1 booster) and MenACWY vaccination coverage in year 9, Bristol and England averages, 2015/16 - 2022/23. Source: UK Health Security Agency (UKHSA)

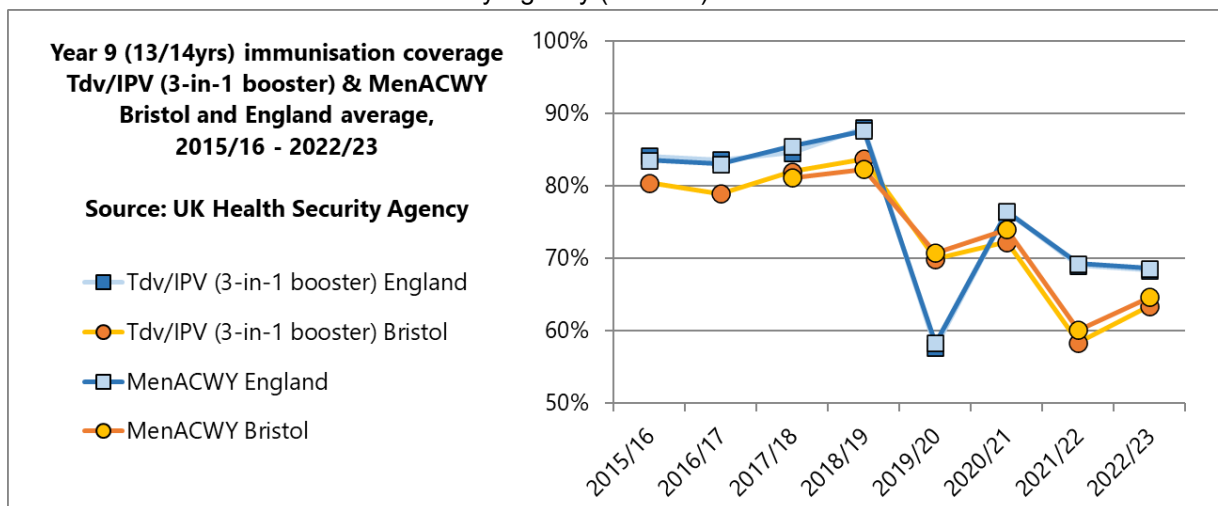
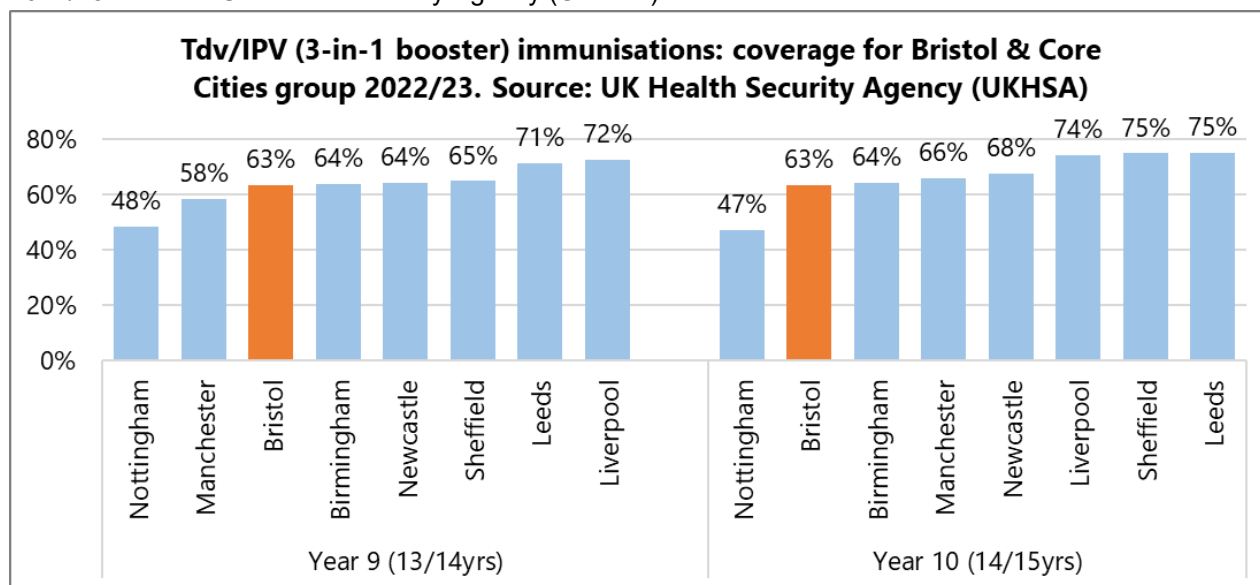
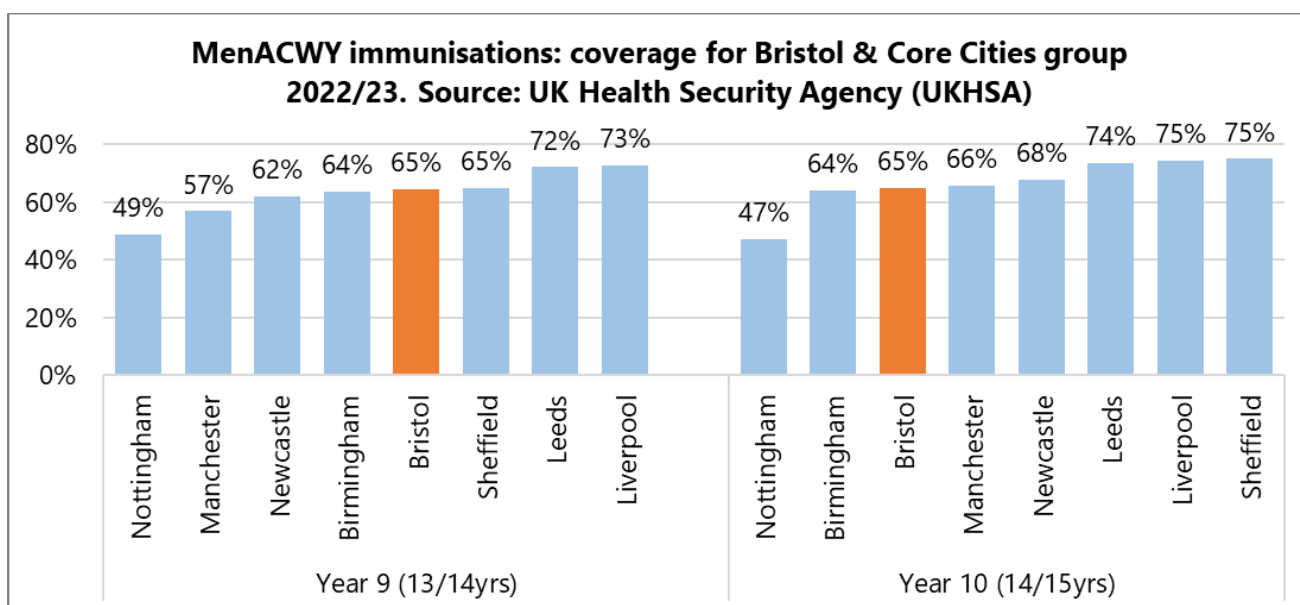


Figure 6: Tdv/IPV (3-in-1 booster) vaccination coverage in year 9 and year 10, Bristol and Core Cities group, 2022/23. Source: UK Health Security Agency (UKHSA)



**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 2022/23, year 9 uptake in Bristol was 64.6%, below the national average (68.6%) but an improvement on the 2021/22 Bristol uptake (60.1%). Coverage for year 10 was 65.1% in Bristol, compared to a national average of 73.4%. 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 Leeds, Liverpool and Sheffield.

Figure 7: 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. 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: 2022 to 2023: <https://www.gov.uk/government/statistics/human-papillomavirus-hpv-vaccine-coverage-estimates-in-england-2022-to-2023/human-papillomavirus-hpv-vaccination-coverage-in-adolescents-in-england-2022-to-2023>
- 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 2022 to 2023: <https://www.gov.uk/government/publications/school-leaver-booster-tdipv-vaccine-coverage-estimates/tdipv-vaccine-coverage-for-the-nhs-adolescent-vaccination-programme-in-england-academic-year-2022-to-2023>
- 7) Meningococcal ACWY (MenACWY) vaccine coverage for adolescents in England, academic year 2022 to 2023: <https://www.gov.uk/government/publications/meningococcal-acwy-immunisation-programme-vaccine-coverage-estimates/meningococcal-acwy-menacwy-vaccine-coverage-for-adolescents-in-england-academic-year-2022-to-2023>

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