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Vaccine coverage estimates for the school based tetanus, diphtheria and polio (Td/IPV, 'school leaver booster') adolescent vaccination programme in England, to 31 August 2018

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Key points

- a total of 137/152 Local Authorities (LAs) returned vaccine coverage data for the Td/IPV vaccination programme for Year 9 students (born between 1 September 2003 to 31 August 2004). Of these, 123 LAs delivered the programme in schools, 12 LAs delivered the programme in schools and GP practices, and two areas delivered the programme through GP practices
- average vaccine coverage for the LAs that delivered the Td/IPV booster to Year 9 students in 2017/18 was 85.5%, compared to 83.0% in 2016/17 and 83.5% in 2015/16
- a total of 150/152 LAs returned vaccine coverage data for Td/IPV vaccination for Year 10 students in 2017/18 (born between 1 September 2002 to 31 August 2003). Of these, 136 LAs delivered the programme in schools, eight delivered the programme in schools and GP practices, and six through GP practices
- 27 LAs that did not provide Year 9 data in 2016/17 provided Year 10 data in 2017/18
- Year 10 data for 42 LAs was calculated using the 2016/17 Year 9 denominator and an updated numerator; for 30 LAs the 2016/17 Year 9 data was carried over to 2017/18 unchanged
- average Year 10 coverage for the Td/IPV booster vaccine up to the end of August 2018 was 82.9% compared to 81.7% in 2016/17 and 74.9% in 2015/16
- providers are encouraged to continue to move towards standardising on the recommended Year 9 school delivery model in order to achieve high vaccine coverage

Introduction

Tetanus, diphtheria and polio vaccines are offered at eight weeks, 12 weeks, 16 weeks (primary course), a pre-school booster at three years and four months, and a school leaver booster at 14 years old [1]. The school leaver booster is the fifth dose of tetanus, diphtheria and polio (Td/IPV) vaccine in the routine immunisation schedule and completes the course, providing long-term protection against all three diseases [1-4]. Any missed doses of diphtheria, tetanus and polio vaccines can be caught up at any age observing the appropriate intervals between doses as detailed in [The Green Book](#).

Previously annual Health and Social Care Information Centre (HSCIC, now NHS Digital) KC50 collections from primary care trusts (PCTs) had included number of doses of Td/IPV administered but did not contain reliable denominator data for all PCTs and so were unable to produce coverage estimates. The KC50 returns were suspended in 2012/13 [5]. In 2015/16 and 2016/17 a pilot study collected national vaccine coverage data for the Td/IPV schools based immunisation programme [6]. This data collection has continued in 2017/18 for students in Years 9 and 10 across England [7].

This report is the third vaccine coverage report for the Td/IPV schools based immunisation programme in England and presents updated data for school year 10 and new data for school year 9 in 2017/18.

Methods

Data were collected at school level, aggregated by Local Authority (LA) and, where possible, updated with additional data for adolescents resident in the LA but not linked to any school. The aggregate LA data were manually entered on the ImmForm* website.

The target population for the programme is defined by school age cohorts born between 1 September 2002 and 31 August 2004. This also includes adolescents resident in the LA that are not linked to any school (Table 1). The numerator is defined by the number of adolescents in each cohort who had received a dose of Td/IPV vaccine by 31 August 2018.

Table 1. Td/IPV routine vaccine cohorts 2017/18

School year in 2017/18	Age in 2017/18	Dates of birth
10	14-15 years old	1 Sep 2002 – 21 Aug 2003
9	13-14 years old	1 Sept 2003 – 31 Aug 2004

Full details of the data collection process and definitions can be found in the user guide [Adolescent Vaccine Coverage Collection \(HPV and MenACWY & Td/IPV\) 2017/18 Local Authority Annual Survey Reference guide for NHS England local teams submitting annual vaccine coverage data on ImmForm](#).

Participation and data quality

Caveats describing participation and data quality issues are included within the [data tables](#) associated with this report.

LA level data were validated and analysed by PHE to check data completeness and identify and query any anomalous results. The data were aggregated by NHS Local Team (LT) and at the national level. Vaccine coverage only represents the percent vaccinated with Td/IPV in LAs that delivered the programme and denominators for areas that did not provide data are not included in the survey calculations.

* ImmForm is the system used by Public Health England to record vaccine coverage data for some immunisation programmes and to provide vaccine ordering facilities for NHS England.

Results

Year 9 vaccine coverage

- 137/152 (90.1%) LAs offered the routine Td/IPV vaccination in Year 9 in 2017/18 (123 in schools, 12 in schools and GP practices, and two in GP practices only)
- Td/IPV coverage in Year 9 in 2017/18 in those 137 LAs was 85.5%. This figure excludes LAs that were unable to provide reliable data
- the 15 LAs not offering the routine vaccination to Year 9 in 2017/18 will offer it to Year 10 students in 2018/19
- coverage ranged from 39.6% (Isle of Wight LA) to 97.0% (Wokingham LA). A total of 34/137 (24.8%) of LAs achieved coverage less than 80%, 68/137 (49.6%) LAs achieving between 80 – 90%, and 35/137 (25.5%) achieved coverage of 90% or above
- for the Year 9 estimates, denominator size increased by >10% in 15 LAs in 2017/18 compared with 2016/17. These increases are to the result of more accurate and comprehensive school lists being available

Year 10 vaccine coverage

- 150/152 (98.7%) LAs reported coverage for Td/IPV in Year 10 (combined Year 9 2016/17 and Year 10 2017/18 data) in 2017/18 (136 in schools, six in GP practices, eight in schools and GP practices)
- Td/IPV coverage in Year 10 in 2017/18 in those LAs was 82.9%. This figure excludes LAs with GP/mixed programmes that were unable to provide reliable data. These LAs were also unable to provide reliable Year 9 data in 2016/17
- coverage ranged from 29.6% (Bristol LA) to 100.0% (Isles of Scilly LA). A total of 56/150 (37.3%) of LAs achieved coverage less than 80%, 60/150 (40.0%) LAs achieving between 80 – 90%, and 34/150 (22.7%) achieved coverage of 90% or above
- for the Year 10 estimates, denominator size increased by >10% in nine LAs in 2017/18 compared with 2016/17. These increases are to the result of more accurate and comprehensive school lists being available
- 42 LAs carried over the 2016/17 Year 9 denominator and updated the numerator
- for 30 LAs the 2016/17 Year 9 data was carried over to Year 10 2017/18 unchanged

Discussion

Average vaccine coverage for the 2017/18 Year 9 school delivered programme was 85.5% compared to 83.0% in 2016/17. This estimate should be regarded as provisional as the cohort will be evaluated again at the end of the academic year 2018/19 (Year 10) to provide more complete data. During 2017/18 the participation rate increased for the Year 10 cohort to 98.7% (150/152) LAs. Only two LAs, one offering a GP-only delivered programme and one LA offering a mixed school and GP delivered programme, were unable to make a return.

For the majority of students this will be the fifth and final dose of Td/IPV vaccine. However, it is possible that vaccine coverage is overestimated as some students might have missed one of the initial four doses and may only be receiving a fourth dose of these vaccine antigens. Any missed doses of diphtheria, tetanus and polio vaccines can be caught up at any age observing the appropriate intervals between doses as detailed in [The Green Book](#).

Vaccine coverage of the Td/IPV booster in England is similar to coverage in Scotland, Wales and Northern Ireland (see [table of UK data](#) associated with this report). Please note that the denominator in Scotland, Wales and Northern Ireland represent the entire population for each age cohort, whereas the figures in England represent only the areas that successfully submitted reliable data on ImmForm. The figures presented in this report likely overestimate coverage nationally because they exclude missed cohorts and areas that have mixed models and were unable to provide accurate GP level data, which likely have lower coverage. However, the number of areas unable to provide accurate estimates in the report is small and will have a small impact on vaccine coverage.

It is not possible for many LAs that offer a predominately school-delivered programme to include data on Td/IPV vaccine received in general practice. Consequently some areas presented data that includes vaccinations given in both schools and GP settings while other areas have only presented data that includes school-delivered vaccinations. This would result in an underestimation in vaccine coverage therefore compensating for the known overestimation due to missed cohorts not being included in the analyses.

Achieving high coverage in older adolescents is a challenge. As with other adolescent vaccination programmes delivered through schools in England, the highest coverage is achieved in the younger cohorts [8]. It is possible that more comprehensive and complete data collection will help increase coverage in both Year 9 and Year 10 students. Td/IPV vaccine coverage reported for Year 9 and 10 is similar to MenACWY vaccine coverage reported for the same schools years (Year 10 84.6%, Year 9 86.2%) [8].

It is encouraging that since 2016/17 11 LAs have moved to offering the routine school leaver booster in Year 9 in 2017/18 and further areas have indicated that they will do so in the next year, enabling the programme to gradually move to the **recommended Year 9 delivery** of Td/IPV nationally.

Collecting accurate data for this vaccine programme is challenging, particularly when attempting to provide follow-up estimates for cohorts over more than one academic year and when there are multiple delivery models. Many areas that commission the programme in Year 9 carried over the denominator for Year 10 in 2017/18 and added any additional vaccines administered to the numerator. This could potentially overestimate vaccine coverage. Additionally, 30 LAs were unable to update the data submitted last year and carried over the 2016/17 Year 9 denominator and numerator which could underestimate coverage if any additional students were vaccinated in 2017/18.

This survey will be repeated in September 2019 to collect coverage data for Td/IV vaccine delivered to Year 9 and 10 students in 2018/19.

References

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8. Public Health England (2019). Vaccine coverage estimates for the school based meningococcal ACWY (MenACWY) adolescent vaccination programme in England, 31 August 2018. *HPR 13(3)*.

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