Vaccine coverage estimates for the meningococcal ACWY (MenACWY) adolescent vaccination programme in schools across England, in 2018/19; and for the GP-based catch-up programme, to end of August 2019

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Key points

- 140/152 Local Authorities (LAs) returned complete vaccine coverage data for the MenACWY vaccination programme for Year 9 students (born between 1 September 2004 to 31 August 2005). Of those 140 LAs, 135 delivered the programme exclusively in schools and five delivered the programme in schools and GP practices.

- 12 LAs that did not submit data, or were unable to provide accurate estimates for vaccine coverage in Year 9 will provide MenACWY vaccine coverage figures for this cohort when they are in Year 10 in 2019/20.

- Average vaccine coverage for the LAs that delivered the MenACWY vaccine to Year 9 students in 2018/19 was 88.0% compared to 86.2% in 2017/18, 83.6% in 2016/17 and 84.1% in 2015/16.

- All 152 LAs returned vaccine coverage data for MenACWY vaccination for Year 10 students in 2018/19 (born between 1 September 2003 to 31 August 2004). 144 LAs delivered the programme exclusively in schools, 7 delivered the programme in schools and GP practices, and one through GP practices only.

- For 59 LAs, Year 10 vaccine coverage was calculated using the 2017/18 Year 9 denominator and an updated numerator; for 45 LAs the 2017/18 Year 9 data was carried over to 2018/19 unchanged, all other LAs either updated both denominator and numerator or did not have any data for Year 9 in 2017/18 due to Year 10 delivery.

- Average Year 10 coverage for the MenACWY vaccine up to the end of August 2019 was 86.7% compared to 84.6% in 2017/18, 82.5% in 2016/17 and 77.2% in 2015/16.

- This report presents updated vaccine coverage for cohorts born between 1 September 1996 and 31 August 1999 who were eligible for the GP catch up programme.
Introduction

Meningococcal A, C, W and Y (MenACWY) immunisation was added to the national immunisation programme in August 2015 following advice from the Joint Committee on Vaccination and Immunisation (JCVI) in response to the rising number of meningococcal W (MenW) cases [1,2].

The objective of the MenACWY immunisation programme when it commenced in 2015 was to immunise all adolescents in school Years 9 to 13 before they complete academic Year 13. This was met through replacing the routine adolescent MenC booster given in school years 9 or 10 with the MenACWY vaccine from September 2015, and through a series of school and general practice (GP) catch-up campaigns targeting older adolescents. The first of these MenACWY vaccination catch-up campaigns started in August 2015, targeting those born between 1 September 1996 to 31 August 1997. A second GP based catch-up campaign started in April 2016, targeting those born between 1 September 1997 to 31 August 1998. The final catch-up campaign started in April 2017 for those born between 1 September 1998 to 31 August 1999. Although all individuals in the age cohorts are eligible, individuals attending higher or further education settings after leaving school are at higher risk of acquiring meningococcal disease. All these cohorts will remain eligible for MenACWY vaccination up to their 25th birthday and can be vaccinated at their GP.

In 2015/16, the first academic year of the MenACWY schools vaccination programme, two groups of adolescents were offered the vaccine in schools: approximately half of adolescents in Year 9 and 10 as part of the routine programme, and adolescents in Year 11 as part of the catch-up campaign.

In 2016/17, the MenACWY vaccine was offered to two groups as part of the routine programme: approximately half of adolescents in Year 10 and 11 (who were in Year 9 and 10 in 2015/16 and were not offered the vaccine), and adolescents in Year 9 in the majority of Local Authorities (LAs). The vaccine was also offered through general practice to Year 13 students and opportunistically to anyone born after 1 September 1996.

In 2017/18, the transition to routinely offer MenACWY vaccine programme to Year 9 students was achieved in the majority of LAs, with only 15 LAs still offering the routine programme to Year 10 students (who were in Year 9 in 2016/17 and were not offered the vaccine). In 2018/19, nine of the LAs offering a Year 10 programme in 2017/18 transitioned to additionally offer the vaccine to Year 9 students in 2018/19 resulting in 146 LAs offering the programme to Year 9 students.
This is the fourth report of the MenACWY school based immunisation programme and updates 2017/18 data reported in January 2019 [3]. This report also updates the coverage estimates for the GP based catch-up cohorts published in May 2018 [4].

Full details on public health management of meningococcal disease in the UK can be found here.

Methods

Data for the school level collection were collected by data providers, and screening and immunisation teams aggregated the school coverage by 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\(^1\) website.

The target population for the programme is defined by school age cohorts born between 01 September 2003 and 31 August 2005. 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 have ever received one dose of MenACWY vaccine by 31 August 2019.

**Table 1. MenACWY routine school vaccine cohorts 2018/19**

<table>
<thead>
<tr>
<th>School year in 2018/19</th>
<th>Age in 2018/19</th>
<th>Dates of birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>14-15 years old</td>
<td>1 Sep 2003 – 21 Aug 2004</td>
</tr>
<tr>
<td>9</td>
<td>13-14 years old</td>
<td>1 Sept 2004 – 31 Aug 2005</td>
</tr>
</tbody>
</table>

Full details of the data collection process and definitions can be found at Adolescent Vaccine Coverage: User Guidance.

For older catch-up cohorts, Public Health England (PHE) uses GP practice level MenACWY vaccine coverage data automatically uploaded via participating GP IT suppliers to the ImmForm\(^1\) website on an annual basis. Data are then validated and analysed by PHE to check data completeness, identify and query any anomalous results and describe epidemiological trends. MenACWY vaccine coverage data were collected for the target birth cohorts (Table 2).

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\(^1\) 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.
Table 2. MenACWY GP based catch-up cohorts 2018/19

<table>
<thead>
<tr>
<th>Catch-up cohort</th>
<th>Age in 2018/19 (financial year)</th>
<th>Denominator</th>
<th>Numerator</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>21-22</td>
<td>number of patients registered in a GP practice born between 1 September 1996 to 31 August 1997</td>
<td>number of patients in the denominator who have received a MenACWY vaccine by 31 August 2019</td>
</tr>
<tr>
<td>Second</td>
<td>20-21</td>
<td>number of patients registered in a GP practice born between 1 September 1997 to 31 August 1998</td>
<td>number of patients in the denominator who have received a MenACWY vaccine by 31 August 2019</td>
</tr>
<tr>
<td>Third</td>
<td>19-20</td>
<td>number of patients registered in a GP practice born between 1 September 1998 to 31 August 1999</td>
<td>the number of patients in the denominator who have received a MenACWY vaccine by 31 August 2019</td>
</tr>
</tbody>
</table>

Vaccine coverage is calculated as the total number of patients who have received the vaccination (numerator) as a percentage of the number of patients registered (denominator).

**Participation and data quality**

Data for all 152 LAs was provided in the adolescent ImmForm survey. The completeness of the data entered varies by LA. Caveats describing participation and data quality issues are included within the data tables associated with this report.

LA level data for the school level collection were validated and analysed by PHE to check data completeness. PHE queried LAs that had a change in coverage of more than 5% compared to coverage achieved in 2017/18 and queried LAs with a change in denominator of more than 10% compared to the provisional denominator. Provisional denominators were the Year 9 denominator in 2017/18 for LAs with Year 9 delivery and the Year 10 denominator in 2017/18 for LAs with Year 10 delivery. Any denominator or coverage which was more than 15% higher or lower than last year’s was caveatied in the data tables. The LA level data were aggregated by NHS Local Team (LT) and at the national level. National vaccine coverage only represents the percent vaccinated with MenACWY in LAs that delivered the programme and denominators for areas that did not provide data are not included in the survey calculations.

MenACWY vaccine coverage data for all three GP based catch-up cohorts were available from the four GP IT suppliers for September 2018 to August 2019, representing 96.9% (6,608/6,821) of GP practices in England.
Results

Programme delivery

- 59 LAs carried over the 2017/18 Year 9 denominator and updated the numerator for Year 10 in 2018/19
- in 45 LAs the 2017/18 Year 9 data was carried over to Year 10 2018/19 unchanged
- in 33 LAs, both the numerator and denominator were updated from the Year 9 data in 2017/18
- 5 LAs continued offering MenACWY in Year 10 only
- 3 LAs successfully transitioned to offer MenACWY from Year 10 students in 2017/18 to Year 9 students in 2018/19 (delivering two school years)
- 7 LAs paritally transitioned to a Year 9 programme in 2018/19 with both Year 9 and 10 students offered the vaccine, but were unable to provide accurate estimates for the Year 9 cohort. Both Year 9 and 10 students were offered MenACWY vaccine during this transitioning year

Year 9 vaccine coverage

- 147/152 (96.7%) LAs offered the routine MenACWY vaccination in Year 9 in 2018/19 (142 in schools, five in schools and GP practices)
- MenACWY coverage in Year 9 students reported in 140 of these LAs in Year 9 was 88.0%, compared to 86.2% in 2017/18, 83.6% in 2016/17 and 84.1% in 2015/16
- coverage ranged from 62.5% (Middlesbrough LA) to 96.8% (Wokingham LA)
- six LAs not offering MenACWY vaccine to Year 9 in 2018/19 will offer it to Year 10 students in 2019/20
- 10.0% (14/140) of LAs achieved coverage of less than 80%, 49.3% (69/140) of LAs achieved coverage between 80- 90%, and 40.7% (57/140) of LAs achieved coverage of 90% or above
- compared with Year 9 in 2017/18, Year 9 denominator estimates in one LA increased by >20% in 2018/19
Year 10 vaccine coverage

- All 152 LAs reported coverage for the routine cumulative MenACWY vaccination in Year 10 (combined Year 9 2017/18 and Year 10 2018/19) in 2018/19 (144 in schools, 1 in GP practices and 7 in schools and GP practices)

- National MenACWY coverage in Year 10 students was 86.7% compared to 84.6% in 2017/18, 82.5% in 2016/17 and 77.2% in 2015/16 coverage ranged from 60.7% (Isle of Wight LA) to 97.2% (Reading LA)

- 19.7% (30/152) of LAs achieved coverage less than 80%, 44.7% (68/152) achieved coverage between 80 – 90%, and 35.5% (54/152) achieved coverage of 90% or above

- for the Year 10 estimates, denominator size increased by >20% in one LA in 2018/19 compared with the denominator in 2017/18; this was due to the inclusion of private schools in the denominator that were previously omitted

- one LA had a decrease in denominator size by >15% compared with the denominator for this cohort in 2017/18, this was because no denominator was available for faith schools and so coverage is likely overestimated in this LA

- the Year 10 cohort denominator for England increased by 8.6% compared to 2017-18 when this cohort was in Year 9. This is thought to be due to the inclusion of large LAs that delivered the programme in Year 10 in 2018/19 and to large increases in denominator in individual LAs

GP based catch-up coverage

- coverage for the first catch-up cohort (those born 1 September 1996 to 31 August 1997, offered vaccine from August 2015) was 38.7% at the end of August 2019 compared to 39.5% at end of March 2018. This birth cohort would be aged 21-22 during the 2018/19 academic year

- coverage for the second catch-up cohort (those born 1 September 1997 to 31 August 1998, offered vaccine from August 2016) was 36.7% at the end of August 2019 compared to 36.8% at end of March 2018. This birth cohort would be aged 20-21 during the 2018/19 academic year

- coverage for the third catch-up cohort (those born 1 September 1998 to 31 August 1999, offered vaccine from August 2017) was 40.8% at the end of August 2019 compared to 39.8% at end of March 2018. This birth cohort would be aged 19-20 during the 2018/19 academic year

The data tables associated with this report provide vaccine coverage for Year 9 and Year 10 for each LA.
Discussion

Vaccine coverage of MenACWY has increased in both the Year 9 and Year 10 cohorts compared to estimates from 2017/18. Average vaccine coverage for the 2018/19 Year 10 cohort was 86.7% compared to 85.4% in Year 10 in 2017/18. The provisional estimate for Year 9 coverage was 88.0% compared to 86.2% in Year 9 in 2017/18. The Year 9 cohort will be evaluated again at the end of the 2019/20 academic year (Year 10) to provide more complete data. All LAs provided data for the Year 10 cohort compared to 98.7% (150/152 LAs) in 2017/18.

Coverage for the MenACWY vaccine programme in adolescents in England is broadly comparable to Scotland, Wales and Northern Ireland (see table of UK data associated with this report) although the denominator in Scotland, Wales and Northern Ireland represent the entire population for each age cohort, whereas the figures in England for Year 9 only represent areas that successfully submitted data on ImmForm. Therefore, coverage figures presented in this report exclude missed cohorts, which causes overestimation of coverage. Coverage figures may also exclude vaccines given in general practice causing underestimation of coverage. However, the number of areas unable to provide accurate estimates in the report is small and so should have a limited impact on national vaccine coverage estimates.

Although students who miss their opportunity to be vaccinated at school can receive the vaccine at their GP surgery, it is not possible for many LAs that offer a predominately school-delivered programme to include these data in their return. Consequently, whilst some areas present data that includes vaccinations given in both schools and GP settings, other areas have only presented data that includes school-delivered vaccinations, resulting in an underestimation in vaccine coverage. However, the number of adolescents receiving the vaccine in primary care because they missed the opportunity at school is likely to be small and so should have a limited impact on national vaccine coverage estimates.

As with other adolescent vaccination programmes delivered through schools in England, the highest coverage is achieved in the younger cohorts [5, accepted paper pending]. The MenACWY adolescent programme continues moving to a universal school delivery model with the majority of LAs offering the vaccine in Year 9.

As they are usually offered together, MenACWY vaccine coverage reported for Year 9 and 10 is similar to Td/IPV vaccine coverage reported for the same schools years (Year 10 86.0%, Year 9 87.6%) [5]. The February 2018 ‘Vaccine Update’ issue shares examples of best practice for improving uptake in routine childhood programmes, including MenACWY coverage in schools [6]. It is encouraging that the MenACWY
programme is gradually transitioning to the **recommended Year 9 delivery** of MenACWY nationally with nine LAs having moved in 2018/19 and further areas have indicated that they will do so in the next year.

Collecting accurate data for this vaccine programme is challenging, particularly when attempting to provide follow-up estimates for cohorts over two academic years and where there are multiple delivery models which could result in either over or under estimates of coverage. Many areas that commissioned a Year 9 delivery carried over the denominator to Year 10 in 2018/19 and added any additional vaccines administered to the numerator, potentially overestimating vaccine coverage. Additionally, 45 LAs were unable to update data submitted last year and carried over the 2017/18 Year 9 denominator and numerator which could in underestimated coverage if any additional students were vaccinated but unrecorded in 2018/19. As a result, it is difficult to determine if there is improvement in coverage over time for each cohort.

Vaccine coverage for the first, second and third GP based catch-up cohorts were 38.7%, 36.7 % and 40.8% respectively by August 2019. This is a change from coverage reported in March 2018 by an increase of 1.0 percentage points (third catch-up cohort), decrease of 0.1 percentage points (second catch-up cohort) and a decrease of 0.8 percentage points (first catch-up cohort). Decreases in coverage can occur because individuals move in and out of England, and because the data for each birth cohort includes anyone registered with a GP in this age group at the time of extraction. The individuals included in a birth cohort will therefore change with successive data extractions, and it is not possible to provide updated figures for individuals comprising the “original” catch-up cohorts. Coverage figures are therefore difficult to interpret because they are affected by changes in the denominator. Nevertheless, the relatively stable coverage figures across cohorts between 2018 and 2019 suggest no major increase in coverage. These individuals were turning either 20, 21 or 22 in the 2018/19 academic year and many of them will still be attending university or other educational or vocational institutions, where they are at highest risk and have been specifically targeted in communication campaigns. Vaccine coverage estimates for the catch-up cohorts relate to all eligible individuals in the birth cohort registered at GP practices, so this will also include those not attending university or other educational or vocational institutions.

Efforts should be made locally to catch-up missing cohorts and cohorts with low coverage. Opportunities for vaccination in primary care and at university freshers’ events are important. All individuals remain eligible for the MenACWY vaccine until they are 25.

The school survey will be repeated in September 2020 to collect coverage data for MenACWY vaccine delivered to Year 9 and 10 students in 2019/20.
References


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