



UK Health  
Security  
Agency

# Human papillomavirus (HPV) vaccination coverage in adolescent females and males in England: 2020 to 2021

Health Protection Report

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## Main points

From September 2019 the national Human papillomavirus (HPV) vaccination programme became universal with 12 to 13 year old males becoming eligible alongside females. This is the first year where both males and females in year 8 and 9 were offered the HPV vaccine.

HPV vaccine coverage for the priming dose (dose 1) and dose 2 for school year 8 males and females were calculated separately for the 2020 to 2021 academic year, in England.

In September 2020, schools across the UK reopened for general in-person attendance. During the 2020 to 2021 academic year, students were required to stay at home and learn remotely if they tested positive for coronavirus (COVID-19) or if they were a contact of a confirmed COVID-19 case. School attendance rates in England were lower than normal (1), especially when there were outbreaks linked to educational settings and in areas with very high COVID-19 incidence rates. In England, as part of a wider national lockdown in January 2021, schools were closed to all, except children of keyworkers and vulnerable children. From early March 2021, primary schools reopened, with a phased reopening of secondary schools.

All of this led to some disruption of school-based immunisation programme delivery and the impact varied by region and local authority. HPV vaccine coverage in 2020 to 2021 has improved significantly from the low levels reported for the 2019 to 2020 academic year but is still not back up to pre-pandemic levels.

In the 2020 to 2021 academic year HPV vaccine coverage was:

- 76.6% for dose 1 in year 8 females compared with 58.1% in 2019 to 2020
- 82.9% for dose 1 in year 9 females a 24.8% increase from the reported coverage of 58.1% for the same cohort when they were in year 8 in the previous academic year
- 60.2% for dose 2 in year 9 females compared with 63.9% in 2019 to 2020
- 71.0% for dose 1 in year 8 males compared with 53.2% in 2019 to 2020
- 78.2% for dose 1 in year 9 males a 25.0% increase from the reported coverage of 53.2% for the same cohort when they were in year 8 in the previous academic year
- 54.4% for dose 2 in year 9 males

## Background to the HPV vaccination programme

On the advice of the Joint Committee on Vaccination and Immunisation (JCVI), a HPV national vaccination programme was introduced in 2008, to protect adolescent females against cervical cancer. At that time, a 3-dose schedule was offered routinely to secondary school year 8 females (aged 12 to 13) alongside a catch-up programme targeting females aged 13 to 18 (2).

In September 2014 (3) the programme changed to a 2-dose schedule based on evidence that showed that antibody response to 2 doses of HPV vaccine in adolescent females was as good as 3 doses. The UK Health Security Agency (UKHSA) recommended the following:

- the first dose can be given at any time during school year 8
- the minimum time between the first and second dose should be 6 months
- for operational purposes a 12-month gap between the 2 doses is recommended, that is, the first HPV vaccine dose should be offered in year 8 (aged 12 to 13) and the second dose should be offered in year 9 (aged 13 to 14), as this reduces the number of HPV vaccination sessions required in school
- however, local needs should be considered when planning the programme

In England, the decision on when to offer the 2 HPV vaccine doses is made by NHS England and Improvement (NHSEI) commissioned providers and so some areas offer both doses in year 8 and others offer HPV dose 1 in year 8 and HPV dose 2 in year 9.

From September 2019 (4), 12 to 13 year old males became eligible for HPV immunisation alongside females, based on JCVI advice (4). This is the first year that males in year 9 have been offered the HPV vaccine.

In order to evaluate the roll-out of the HPV vaccine to males the vaccine coverage collection was changed to monitor coverage in males and females separately.

Extending the HPV vaccination programme to males has added resilience to the UK vaccination programme against fluctuations in vaccine uptake and to some extent is likely to mitigate the impact of the COVID-19 pandemic.

## Impact of COVID-19 pandemic on HPV programme delivery since March 2020

On 23 March 2020, all educational settings in England were advised to close by the UK Government as part of COVID-19 pandemic measures. Although the importance of maintaining good vaccine uptake was impressed, operational delivery of all school-aged immunisation programmes was paused for a short period of time as a consequence of school closures limiting access to venues for providers and children who were eligible for vaccination.

The NHSEI central public health commissioning and operations team rapidly established an Immunisation Task and Finish Group, with regional NHSEI and PHE representation. The group was established to:

- assess the impact of COVID-19 on all immunisation programmes, including school-aged programmes
- develop technical guidance and a plan for restoration and recovery of school-aged programmes, once education settings were re-opened

From 1 June 2020 some schools partially re-opened for some year groups for a mini summer term. NHSEI published clinical guidance for healthcare professionals on maintaining immunisation programmes during COVID-19 ([6](#)), and the Department of Education published further guidance ([7](#)) which led to schools allowing vaccination sessions to resume on site. NHSEI-commissioned, school-aged immunisation providers were able to implement their restoration and recovery plans to commence catch-up during the summer of 2020. This included delivery of programmes in school and community settings following a robust risk assessment and in line with UK Government Public Health COVID-19 guidance. The aim was to ensure that those eligible for HPV vaccination had been offered at least one dose of vaccine in line with [JCVI recommendations](#) with the second dose scheduled at a later date.

In September 2020, schools across the UK reopened for general in-person attendance. During the 2020 to 2021 academic year, students were required to stay at home and learn remotely if they tested positive for COVID-19 or if they were a contact of a confirmed COVID-19 case and so school attendance rates in England were lower than normal ([1](#)), especially in areas with very high COVID-19 incidence rates. In England, as part of a wider national lockdown in January 2021, schools were closed to all, except children of keyworkers and vulnerable children. From early March 2021, primary schools reopened, with a phased reopening of secondary schools.

Although this led to some disruption of school-based immunisation programme delivery in the 2020 to 2021 academic year, NHSEI Regional Public Health Commissioning teams worked with NHSEI-commissioned school-aged immunisation providers to maintain the delivery of the routine programme and catch-up. As the routine programme is commissioned for a school-aged

cohort rather than a school-based cohort, providers were able to build on existing arrangements such as community-based clinics in place for home school children. A wide variety of local arrangements were established to ensure programme delivery continued effectively and safely in the school and community premises, during the term time and school breaks.

## Methods and previous data collections

Full details of the cohort definitions and methodology can be found in the 2020 to 2021 HPV vaccine coverage [user guide](#) for data providers.

Data providers must use updated data sources (that is, school rolls for all types of schools or units plus children schooled at home or Child Health Information Systems) to identify all eligible females and males in the locality for the academic year. The 2020 to 2021 HPV vaccine coverage was calculated based on the total number of eligible females or males in the target population who had received dose 1 and/or dose 2 of the HPV vaccine for the academic year. Historical annual HPV vaccine coverage reports from academic year 2008 to 2009 to academic year 2020 to 2021 and associated data tables can be found on the [UKHSA website](#).

2020 to 2021 was the first year that the data collection tool had the capability to capture dose 1 and dose 2 vaccine coverage for both males and females in both the year 8 and year 9 birth cohorts.

For the 2020 to 2021 academic year an optional field was added for data providers to include vaccine coverage estimates for the year 10 female cohort. The aim was to attempt to update the coverage reported for the 2019 to 2020 academic year and assess the impact catch-up activities to date have had on improving the low vaccine coverage reported in some areas in the 2019 to 2020 academic year.

Local authority level HPV vaccine coverage data up to 31 August 2021 was manually uploaded by data providers to the [ImmForm \(5\)](#) website retrospectively, from 1 September 2021 to 1 October 2021. For the purpose of this report, City of London and Hackney local authorities are counted as one local authority because their data is submitted together on ImmForm.

## Results

This report presents annual HPV vaccine coverage data for the seventh year (2020 to 2021) of the 2-dose schedule. The 2020 to 2021 academic year marks the first year the HPV vaccine was offered to males in school year 8 (aged 12 to 13) and year 9 (aged 13 to 14).

The adolescent HPV immunisation programme is a school-based programme, with alternative provision in place for children who are not in mainstream schools. However only data providers covering 59 of 150 local authorities were able to submit data on vaccines given outside of the school setting. Full data tables are available by NHS England Regions, local team (LT) and local authority.

HPV vaccine coverage of the priming dose for year 8 females in 2020 to 2021 (born 1 September 2007 to 31 August 2008) was 76.6% in England, 18.5 percentage points higher than 2019 to 2020. Coverage by LT ranged from 67.5% (East) to 86.2% (South East (Hampshire, Isle of Wight and Thames Valley)).

HPV vaccine coverage of the priming dose for year 8 males in 2020 to 2021 (born 1 September 2007 to 31 August 2008) was 71.0% in England, 17.8% higher than coverage reported in 2019 to 2020. Coverage by LT ranged from 62.5% (East) to 82.1% (South East (Hampshire, Isle of Wight and Thames Valley)). National coverage for year 8 males was 5.6 percentage points lower than coverage in year 8 females this academic year. All LTs had vaccinated a greater number of females, with the greatest difference of 8 percentage points in the North Midlands.

HPV vaccine coverage in England for females completing a 2-dose HPV schedule by year 9 (born 1 September 2006 to 31 August 2007) was 60.2%. This is 3.7 percentage points lower than the 63.9% achieved in 2019 to 2020. Two-dose coverage in year 9 females ranged from 33.7% (London) to 77.4% (South East (Hampshire, Isle of Wight and Thames Valley)) by LT in 2020 to 2021.

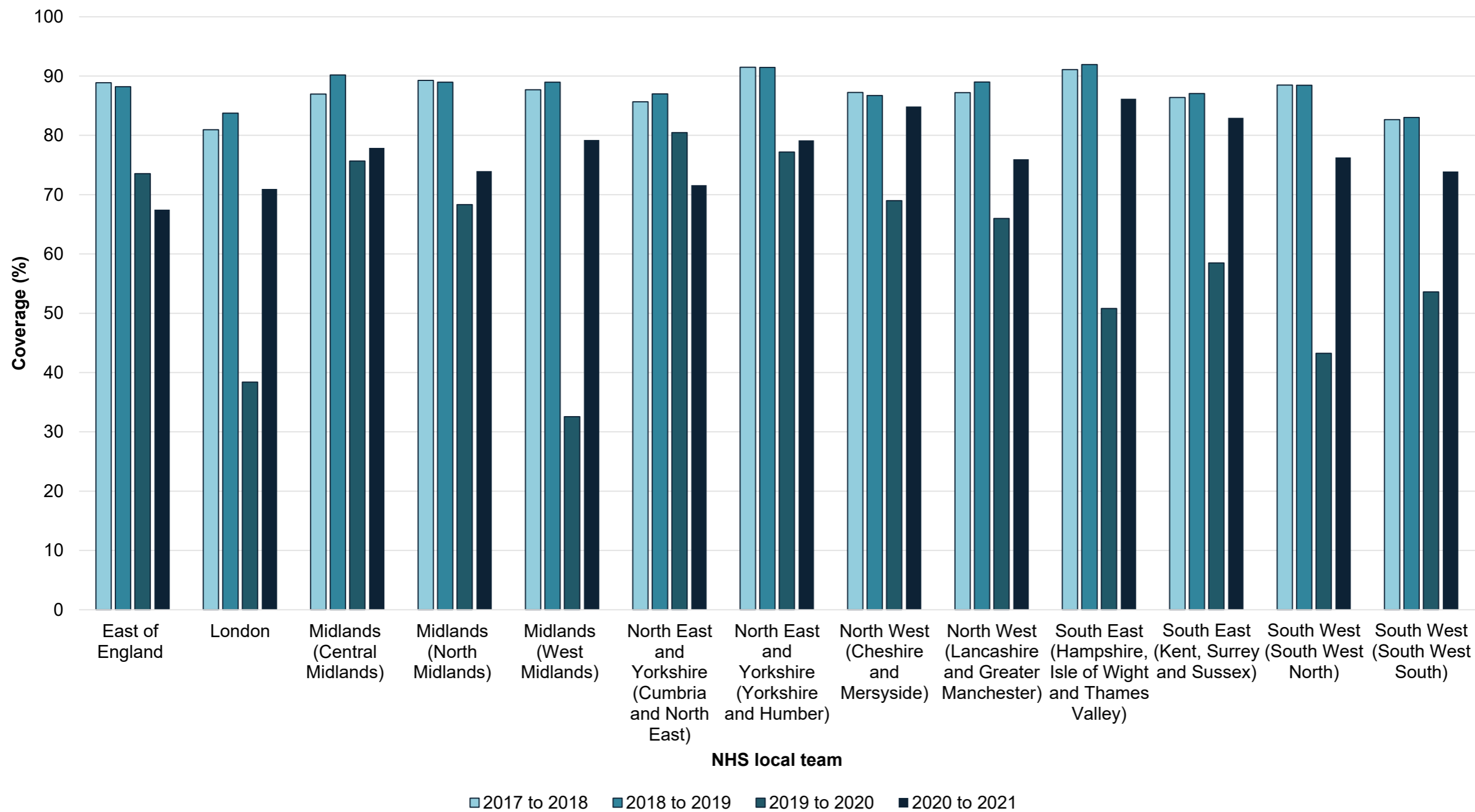
HPV vaccine coverage in England for males completing a 2-dose HPV schedule by year 9 (born 1 September 2006 to 31 August 2007) was 54.4%. Coverage in academic year 2020 to 2021 by LT ranged from 31.7% (South West (South West North)) to 72.1% (South East (Hampshire, Isle of Wight and Thames Valley)). HPV vaccine coverage in England for the priming dose in year 9 males in 2020 to 2021 was 78.2%. This is a 25% increase from the reported coverage of 53.2% for the same cohort when they were in year 8 in the previous academic year.

Data providers were asked to report an updated cumulative coverage for dose 1 and 2 in year 10 females to assess the impact of catch-up in 2020 to 2021. Data providers covering 84 out of 150 local authorities provided a return however only 47 passed validation tests and are included in this analysis. Coverage for HPV dose 1 in year 10 girls in these areas increased by 0.2% (Blackburn with Darwen) to 5.7% (Staffordshire) whereas coverage for dose 2 increased by

0.2% (Blackburn with Darwen) to 87.9% (Wirral). Restricting the analysis to these 47 local authorities, coverage for HPV dose 1 increased by 2.9% in these areas whereas overall coverage for dose 2 increased by 65.0%. This data needs to be interpreted with caution as it is the first time they have been collected and in addition only cover about one third of local authorities.

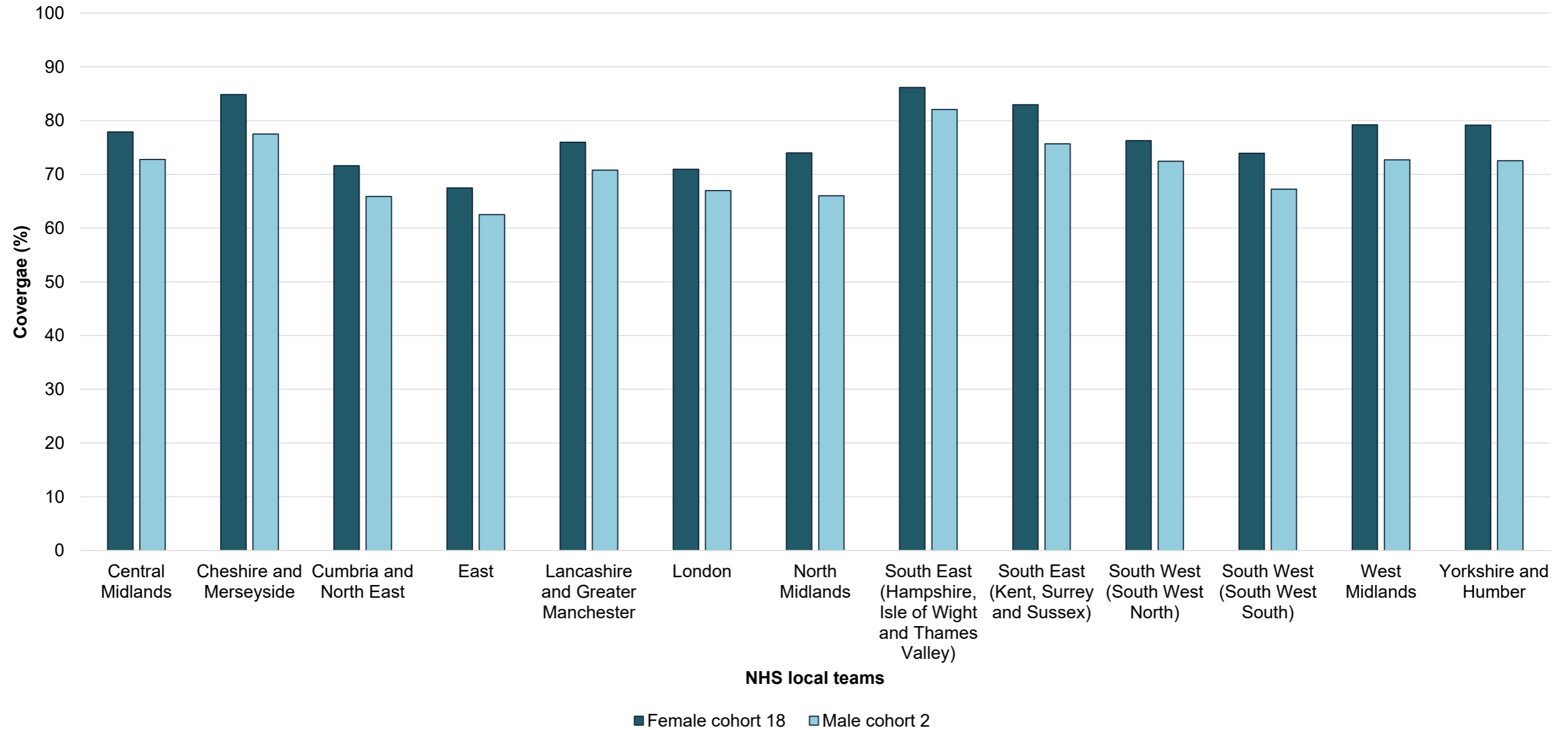


**Figure 1. dose 1 (priming) HPV vaccine coverage by NHS local team for the routine female cohort (year 8) from academic year 2017 to 2018 to academic year 2020 to 2021: England**



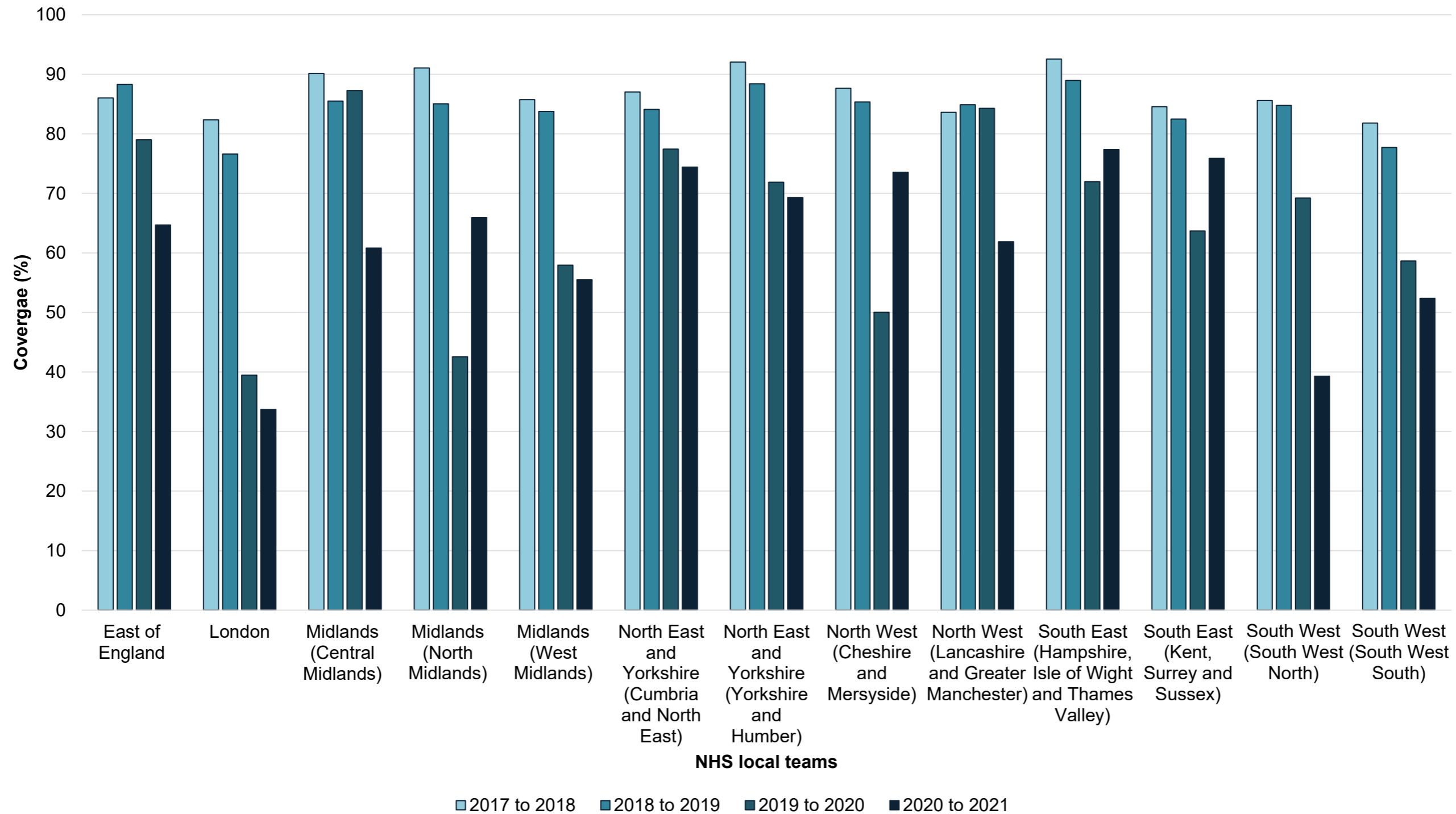
The dose 1 (priming) HPV vaccine coverage for the routine female cohort (year 8) in most Local teams in 2020 to 2021 was higher than coverage reported in the 2019 to 2020 academic year, apart from East of England, North East and Yorkshire (Yorkshire and Humber) and North West (Greater Manchester). Coverage by Local team ranged from 67.5% (East) to 86.2% (South East (Hampshire, Isle of Wight and Thames Valley)).

**Figure 2. dose 1 (priming) HPV vaccine coverage by NHS England local team for the routine female and male cohort (year 8) in academic year 2020 to 2021: England**



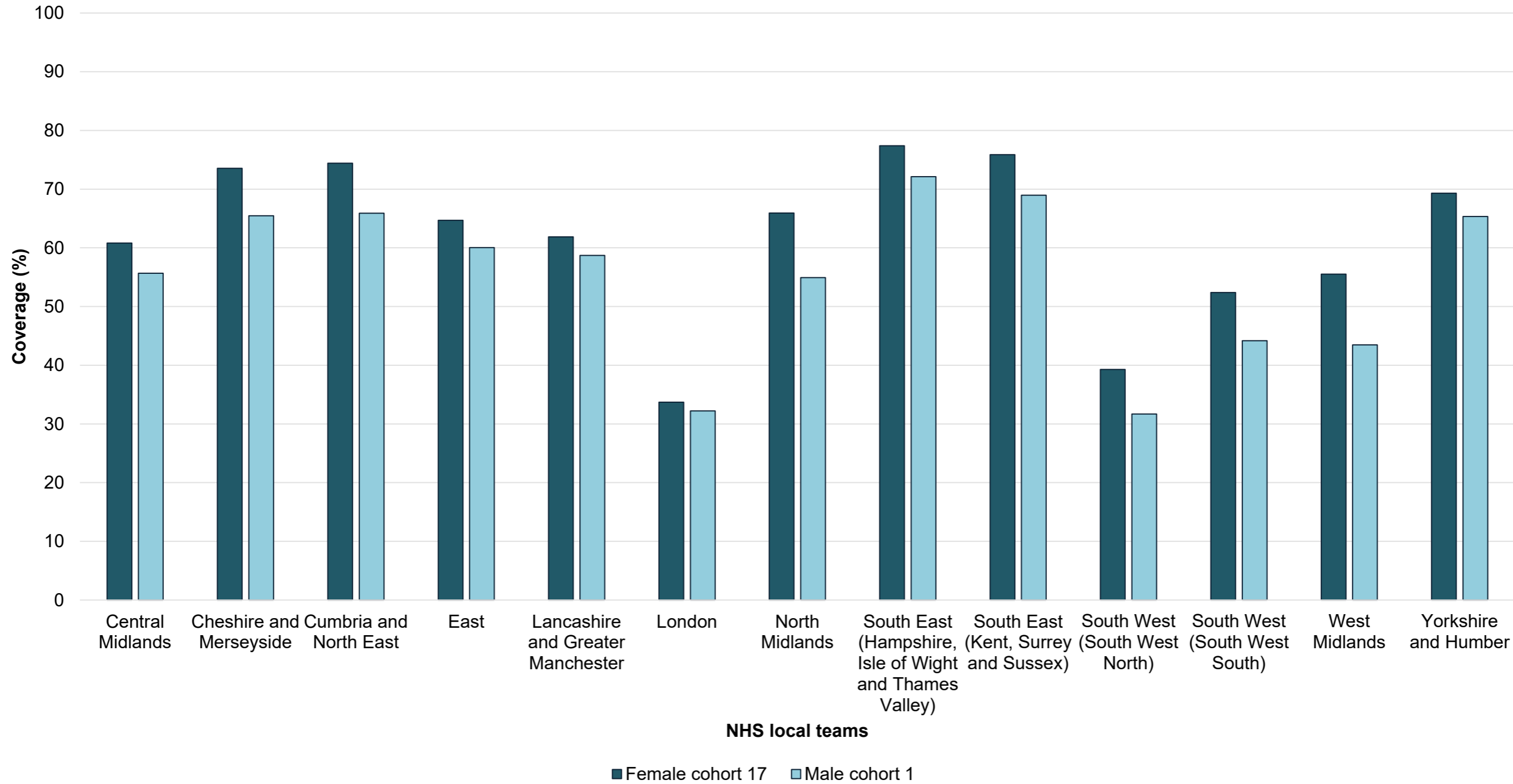
The dose 1 (priming) HPV vaccine coverage for the routine female cohort (year 8) was marginally higher than the dose 1 (priming) HPV vaccine coverage for the routine male cohort (year 8) in all local teams in 2020 to 2021 academic year.

**Figure 3. dose 2 (completed course) HPV vaccine coverage by NHS local team for the routine female cohort (year 9) from academic year 2017 to 2018 to academic year 2020 to 2021: England**



Two-dose coverage in year 9 females ranged from 33.7% (London) to 77.4% (South East (Hampshire, Isle of Wight and Thames Valley)) by Local team in the 2020 to 2021 academic year and remains lower than pre-pandemic levels.

**Figure 4. dose 2 HPV vaccine coverage by NHS England Local Team for the routine female and male cohort (year 9) in academic year 2020 to 2021: England**



The dose 2 HPV vaccine coverage for the routine female cohort (year 9) was marginally higher than the dose 2 HPV vaccine coverage for the routine male cohort (year 9) in all local teams in the 2020 to 2021 academic year.

## Factors affecting HPV vaccine coverage estimates in academic year 2020 to 2021

Despite the challenges posed by the COVID-19 pandemic the routine school-aged HPV immunisation programme was delivered throughout England in the 2020 to 2021 academic year. This was delivered alongside an ongoing offer of catch-up for the cohorts who missed out on their vaccines in the 2019 to 2020 academic year.

NHSEI-commissioned, school-aged immunisation providers covering 5 local authorities (Stoke-On-Trent, Staffordshire, Northampton, Nottinghamshire, Hertfordshire) reported that they were not able to offer the first HPV vaccine dose to all eligible children in school year 8.

Coverage (of 1 and/or 2 doses) may be over or under-estimated for some local authorities due to movement of students in and out of schools during the academic year not being accurately reflected in the denominators and/or numerators for some data providers. Some local authority areas have had a change of NHSEI school-aged immunisation providers during the academic years covered by this survey. This may have temporarily impacted on the delivery of the HPV programme.

An increased denominator (greater than 10%) was observed in 19 local authorities for year 8 females compared with the 2019 to 2020 year 8 female cohort, whereas, this was observed in 9 local authorities for year 9 females compared with the same cohort in 2019 to 2020. Consequently, local coverage in some of these areas may appear to be lower than previous years when the cohort size was smaller.

An increased denominator (greater than 10%) was observed in 20 local authorities for year 8 males compared with the 2019 to 2020 year 8 male cohort.

Reasons for large increases in the denominator include:

- inclusion of private schools, independent schools and home educated that may not have been included last year
- change in local providers that may use different data collection methods
- addition of new schools

A decreased denominator (greater than 10%) was observed in 6 local authorities for year 8 females compared with the 2019 to 2020 year 8 female cohort, whereas, this was observed in 6 local authorities for year 9 females compared with the same cohort in 2019 to 2020. Consequently, local coverage in some of these areas may be slightly inflated where the cohort size was smaller.

A decreased denominator (greater than 10%) was observed in 1 local authority for year 8 males compared with the 2019 to 2020 year 8 male cohort.

Reasons for large decreases in the denominator include:

- movement of children out of local authorities
- changes to boundaries of some local authorities

Although HPV vaccine coverage in 2020 to 2021 has improved significantly from the low levels reported for the 2019 to 2020 academic year it is still not back up to pre-pandemic levels and there are significant regional and local variation. Some of the reported reasons for this are listed here:

- lower attendance rates in schools during high COVID-19 incidence periods
- disruption due to school outbreaks particularly during the June to July 2021 period
- inability to offer school-based vaccination during the January to March 2021 lockdown in some areas with alternative provision being set up for example using drive-through vaccination and community clinics
- the move to an electronic-consent process

## References and notes

1. DfE (2021). 'Attendance in education and early years settings during the coronavirus (COVID-19) pandemic (November)'
2. JCVI (2008). 'Statement on human papillomavirus vaccines to protect against cervical cancer (July)'
3. PHE, DH, NHS England (2014). Tripartite letter
4. JCVI (2018). 'Statement on HPV vaccination (July)'
5. ImmForm is the system used by UKHSA to record vaccine coverage data for some immunisation programmes and to provide vaccine ordering facilities for NHS England.
6. NHSEI (2021) 'Maintaining routine immunisation programmes during COVID-19 (June)'
7. DfE (2020) 'COVID-19 schools operational guidance (July)'

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