



**BRIEFING PAPER**

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# Childhood Immunisation Statistics

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## Summary

In line with World Health Organisation (WHO) targets it is expected that 95% coverage is reached for all routine childhood immunisations in the UK by age 5. UK vaccination coverage rate by age 5 were above 95% in 2019/20 for the diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b vaccine (DTaP/IPV/Hib '5 in 1') primary, but below the target in all other areas. Vaccine coverage in England at five years was below that of other UK countries for all vaccinations.

### 2019/20 vaccination coverage by age 5

	Diphtheria, Tetanus, Polio, Pertussis, Hib <i>primary</i>	Diphtheria, Tetanus, Polio, Pertussis, Hib <i>booster</i>	Measles, Mumps, Rubella (MMR1) <i>1st dose</i>	Measles, Mumps, Rubella (MMR2) <i>2 doses</i>	Hib/MenC <i>booster</i>
England	95.2%	85.4%	94.5%	86.8%	92.5%
Wales	97.1%	92.6%	96.6%	92.1%	94.9%
Scotland	97.8%	91.9%	96.7%	91.5%	95.9%
Northern Ireland	96.9%	91.9%	96.2%	90.3%	95.5%
<b>United Kingdom</b>	<b>95.6%</b>	<b>86.4%</b>	<b>94.8%</b>	<b>87.5%</b>	<b>92.9%</b>

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

MMR vaccination rates have shown the most fluctuation over time. The substantial decline in rates from the late 1990's to around 2003/04 is likely to be due to controversy around the link between MMR and autism. Once such a link was discredited vaccination rates improved until recent years.

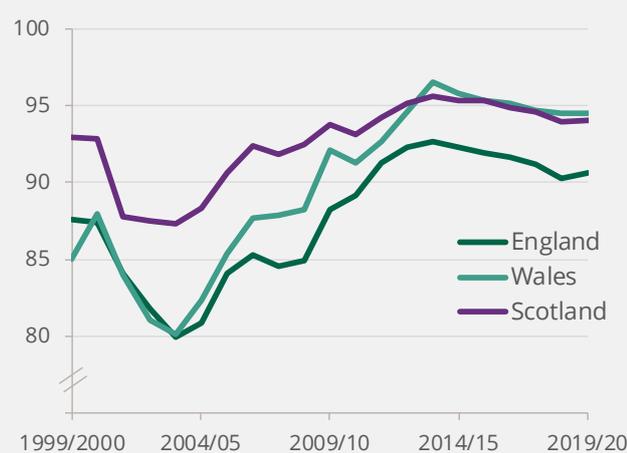
MMR immunisation rates by age 2 have fallen since 2013/14 and currently stand at 91% in England and just under 95% in Wales and Scotland.

Levels of vaccine coverage show substantial geographical variation. At regional level, London has lower

levels of vaccination coverage than all other regions while the North East tends to have highest levels. Available international data shows that the UK ranks in the bottom 25% of OECD nations in terms of childhood immunisation coverage.

### MMR immunisation by 2nd birthday

% of children



Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

## Introduction

The European Region of the World Health Organization (WHO) currently recommends that on a national basis at least 95% of children are immunised against diseases preventable by immunisation and targeted for elimination or control (specifically, diphtheria, tetanus, pertussis, polio, Hib, measles, mumps and rubella).

Accordingly, there is an expectation that UK coverage for all routine childhood immunisations evaluated up to five years of age achieve 95%. This note reports on vaccinations that are given to children up to five years of age.

The report covers five main childhood vaccination programmes:

- Measles, Mumps and Rubella (MMR)
- Diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b vaccine (DTaP/IPV/Hib '5 in 1')
- Pneumococcal Conjugate Vaccine (PCV)
- Combined Hib/MenC vaccine
- Meningitis B vaccine

Data is presented for constituent countries of the UK and at regional and local authority level in England.

It is worth noting that there are some concerns about the quality of data for London areas. Caution may need to be exercised when comparing London areas with others.

The majority of data in this briefing is sourced from NHS Digital's [Childhood Vaccination Coverage Statistics](#). More details local level data over time, including local area maps can be accessed from their useful [Childhood Immunisation Interactive Dashboard](#).

# 1. Measles, Mumps and Rubella (MMR)

The MMR triple vaccine has been used in the UK since 1988. Children are scheduled to receive a first dose of MMR vaccine (MMR1) after their first birthday and a second dose between three years four months and five years.

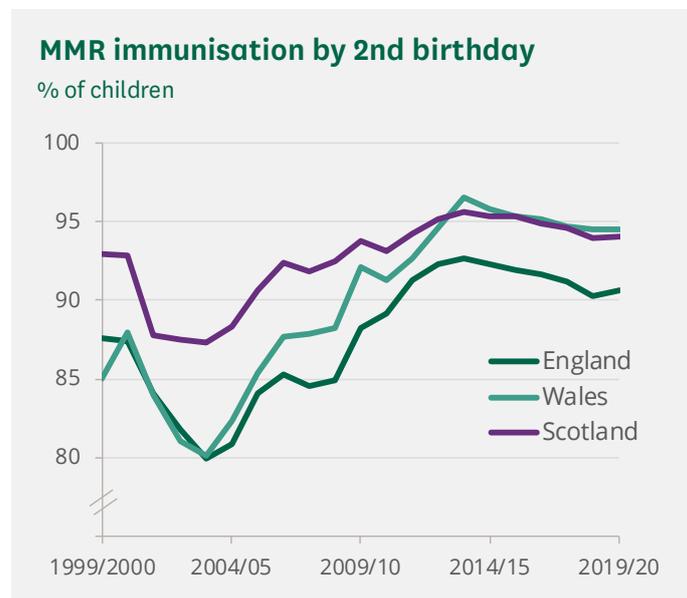
## 1.1 National data

The chart opposite shows trends in the proportion of children in England, Scotland and Wales<sup>1</sup> immunised against MMR by their second birthday (i.e. receiving the first dose).

Vaccination rates fell year-on-year in England between 1997/98 and 2003/04. A particularly significant decline was observed between 2000 and 2004, which can arguably be attributed to deterioration in public confidence about the safety of MMR.

In February 1998, Wakefield et al suggested a link between the MMR vaccine and the development of autistic spectrum disorders in children<sup>2</sup>. By 2002 controversy about the safety of MMR had escalated to the point where it was the most heavily discussed science story in the opinion, editorial and letters pages of the UK national press.

The Wakefield study was discredited, and MMR uptake began to recover between 2003/04 and 2013/14. Rates then fell year on year before rising slightly in 2019/20. In England, coverage for this vaccine is now at 90.6% while for Scotland and Wales, rates in 2019/20 were just below the 95% target. Northern Ireland had a 92.2% coverage rate for MMR update by age two in 2019/20.



Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

<sup>1</sup> Comparable data for Northern Ireland is not available back to 1997-98.

<sup>2</sup> *Lancet* 2004;363:750

Some children may not receive their first dose of MMR vaccine by age two, but this may be addressed at a later stage. Vaccination rates for the first dose of MMR at age 5 were above 95% in Wales, Scotland and Northern Ireland and just below target on England (94.9%).

The proportion of children receiving their first and second dose of MMR vaccine is below the 95% threshold for all constituent countries of the UK, with the lowest rate being observed in England (86.8%).

<b>MMR Immunisation</b>			
2019/20			
	First dose		First and second dose
	By age 2	By age 5	
England	90.6%	94.5%	86.8%
Wales	94.5%	96.6%	92.1%
Scotland	94.0%	96.7%	91.5%
Northern Ireland	92.2%	96.2%	90.3%
<b>United Kingdom</b>	<b>91.1%</b>	<b>94.8%</b>	<b>87.2%</b>

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

## 1.2 Regional and local authority data

In 2019/20, the North East had the highest rates of MMR vaccination and London had the lowest.

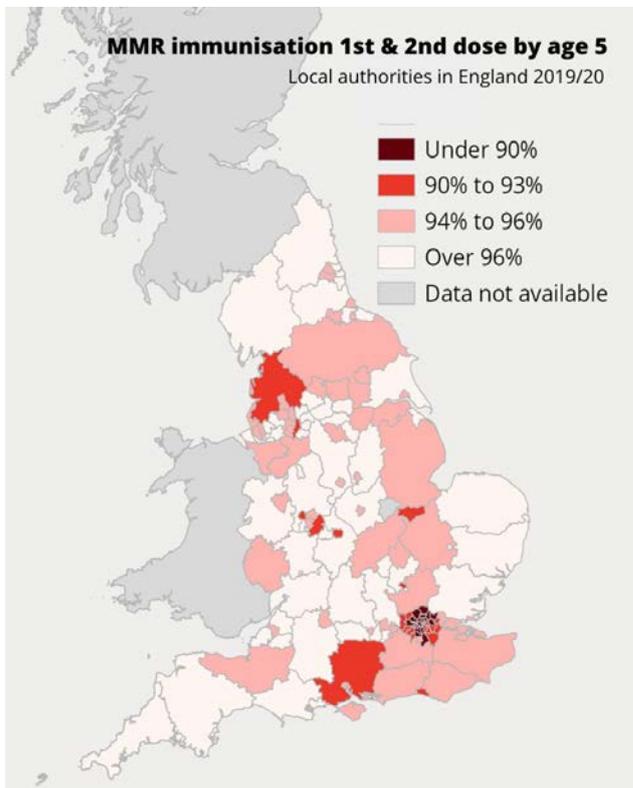
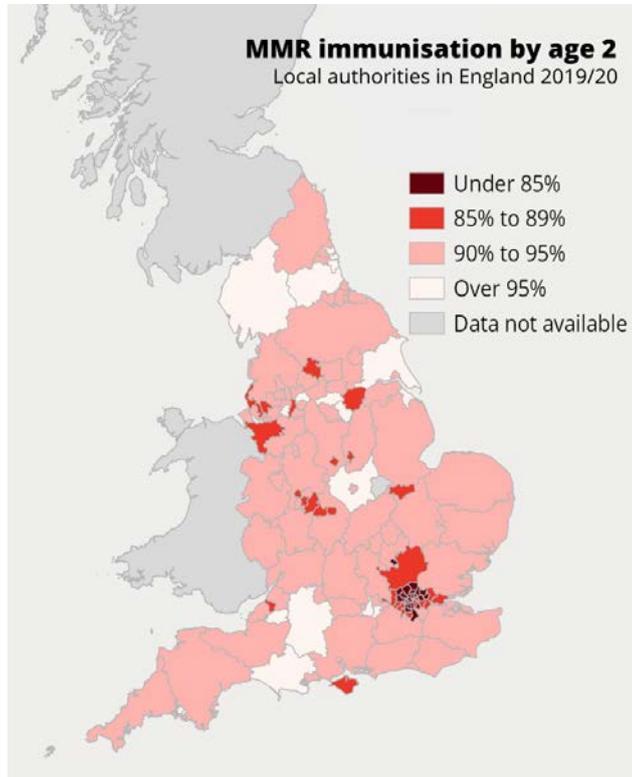
<b>MMR Immunisation</b>			
2019/20			
	First dose		First and second dose
	By age 2	By age 5	
North East	95.1%	96.8%	92.0%
North West	91.9%	95.1%	88.1%
Yorkshire and the Humber	92.6%	95.8%	89.8%
East Midlands	92.3%	95.9%	88.0%
West Midlands	90.3%	95.0%	86.1%
East of England	91.7%	95.8%	89.3%
London	83.6%	89.8%	76.9%
South East	92.7%	95.0%	89.1%
South West	93.3%	96.4%	91.5%
<b>England</b>	<b>90.6%</b>	<b>94.5%</b>	<b>86.8%</b>

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

This regional variation was reflected in local authority rates as shown in the maps and tables below.

**MMR: 1st dose by age 2**

Five highest	
Sunderland	97.6%
North Tyneside	96.9%
County Durham	96.8%
South Tyneside	96.7%
Cumbria	96.5%
Five lowest	
Hackney	77.1%
Kensington & Chelsea	77.2%
Enfield	79.2%
Camden	79.7%
Brent	79.9%



**MMR: 1st & 2nd dose by age 5**

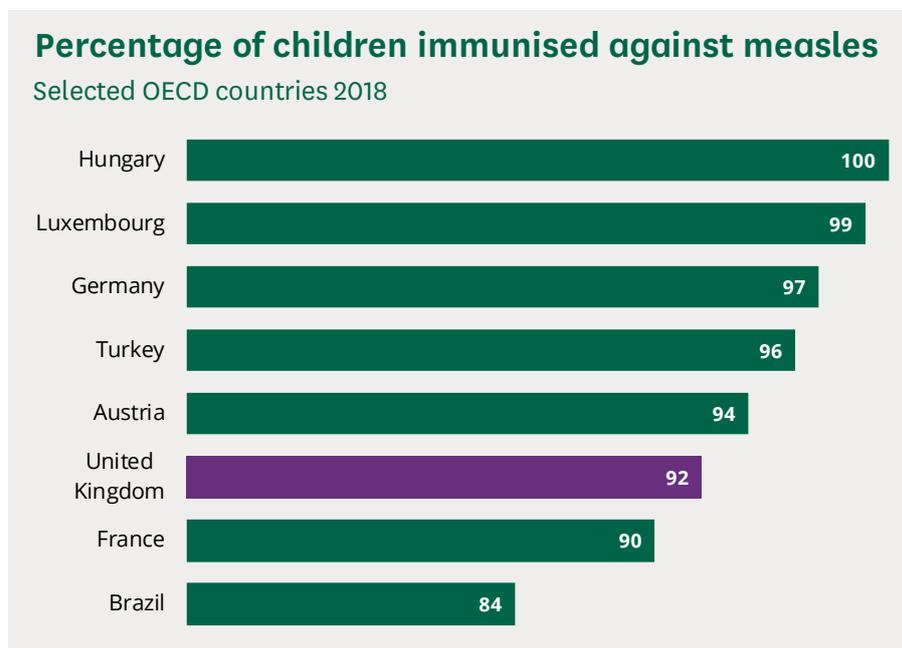
Five highest	
North East Lincolnshire	98.2%
County Durham	98.1%
Northumberland	98.0%
Barnsley	98.0%
Leicestershire	97.8%
Five lowest	
Westminster	84.4%
Kensington & Chelsea	85.2%
Camden	86.3%
Haringey	86.9%
Hammersmith & Fulham	87.9%

## 1.3 International comparisons

The Organisation for Economic Cooperation and Development (OECD) publish an indicator for each OECD nation on the proportion of children aged around 1 year who are immunised against measles.

The latest data available is for 2018, when the UK's measles immunisation rate was reported as 92%. This rate was associated with a rank of 28 out of the 36 OECD member countries.

The UK was among 16 other countries whose measles immunisation rate fell below 95%. The highest rate (100%) was observed in Hungary and Estonia had the lowest rate of 87%.



Source: [OECD Child vaccination rates](#)

## 2. The '5 in 1' Vaccine (DTaP/IPV/Hib)

Children are scheduled to receive a primary course of three doses of diphtheria, tetanus, pertussis, polio and *Haemophilus influenzae* type b vaccine (DTaP/IPV/Hib '5 in 1') at eight, twelve and sixteen weeks and then a booster dose of DTaP/IPV vaccine three years after completion of the primary course (Hib is boosted as part of the Hib/MenC vaccine given after the first birthday).

### 2.1 National data

The table below shows comparable figures for constituent countries of the UK from 2009/10 to 2019/20. Over this period coverage rates in England have not reached the recommended 95% coverage, while all other nations have consistently met this target, with the exception of Northern Ireland in 2018/19 and 2019/20.

Rates in England fell year on year between 2013/14 and 2018/19, when the rate of 92.1% was the lowest observed since 2009/10. Although rates in Wales and Scotland have also fallen compared with 2009/10, they remain above 95%.

#### 5 in 1 immunisation by first birthday

	England	Wales	Scotland	Northern Ireland
2009/10	93.6%	97.8%	97.4%	96.2%
2010/11	94.2%	97.5%	97.0%	96.0%
2011/12	94.7%	97.6%	97.4%	96.4%
2012/13	94.7%	96.5%	97.4%	97.6%
2013/14	94.3%	96.7%	97.5%	97.5%
2014/15	94.2%	96.6%	97.4%	96.8%
2015/16	93.6%	96.6%	97.2%	97.2%
2016/17	93.4%	96.3%	96.8%	97.0%
2017/18	93.1%	95.9%	96.5%	96.2%
2018/19	92.1%	95.4%	95.8%	94.5%
2019/20	92.6%	95.8%	96.2%	94.4%

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

Coverage for the 5 in 1 combined vaccine is reported again at 24 months to monitor any improvement in the proportion of children completing their primary course after their first birthday. In England in 2019/20, 93.8% of children had received the 5 in 1 vaccine at 24 months. An improved rate but still below the 95% threshold.

Children should also receive a DTaP/IPV (diphtheria, tetanus, pertussis, polio) pre-school booster from between three years and four months of age and five years of age. Booster coverage was lower England than any other nation and at 85.4% it was almost 10 percentage points lower than the 95% target.

<b>5 in 1 immunisation</b>			
2019/20			
	12 months	24 months	DTaP/IPV booster
England	92.6%	93.8%	85.4%
Wales	95.8%	96.5%	92.6%
Scotland	96.2%	96.6%	91.9%
Northern Ireland	94.4%	95.8%	91.9%
<b>United Kingdom</b>	<b>93.0%</b>	<b>94.2%</b>	<b>86.4%</b>

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

## 2.2 Regional and local authority data

In 2019/20, all regions except London had over 90% '5 in 1' coverage by one year of age and the North East had over 95% coverage. By two years old coverage in London increased to 90.6% and four regions had coverage over 95%: the North East, Yorkshire and the Humber, East Midlands and the South West.

As with MMR data, regional variation was reflected at local authority level with London areas being among those with lowest levels of coverage and North Eastern areas among the highest.

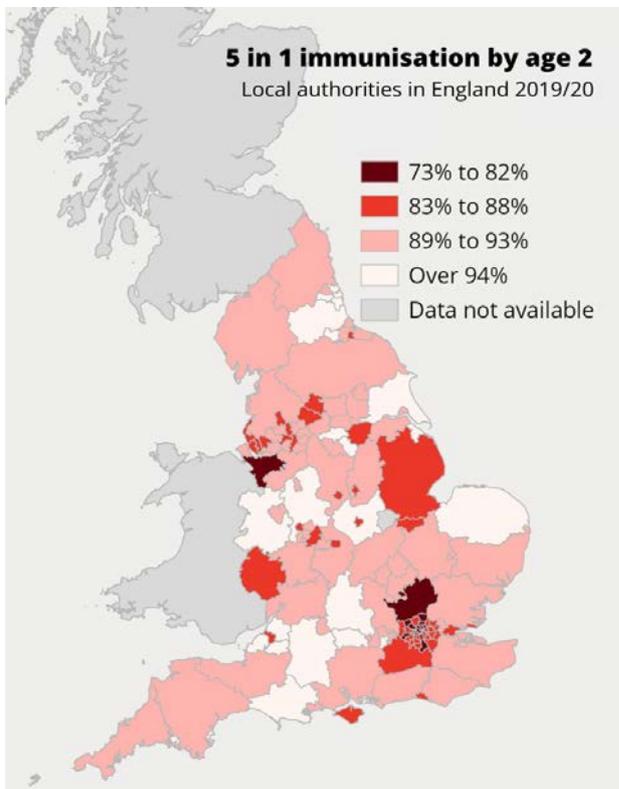
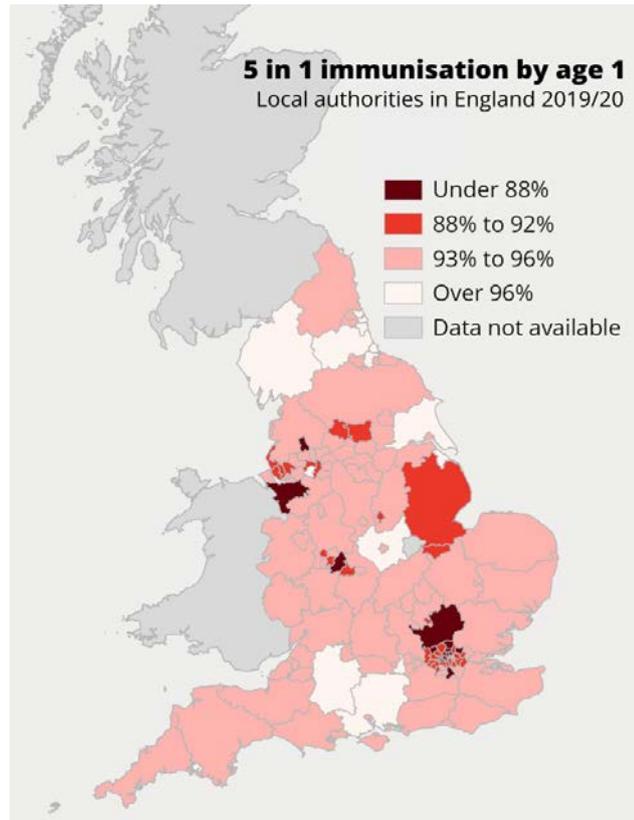
### 5 in 1 immunisation by age 1

Five highest

Sunderland	98.5%
County Durham	97.8%
South Tyneside	97.7%
North Tyneside	97.1%
East Riding of Yorkshire	97.1%

Five lowest

Hackney	73.6%
Kensington & Chelsea	82.6%
Westminster	84.1%
Camden	84.9%
Cheshire West & Chester	85.1%



### 5 in 1 immunisation by age 2

Five highest

Sunderland	98.7%
South Tyneside	98.1%
North Tyneside	98.0%
East Riding of Yorkshire	98.0%
County Durham	98.0%

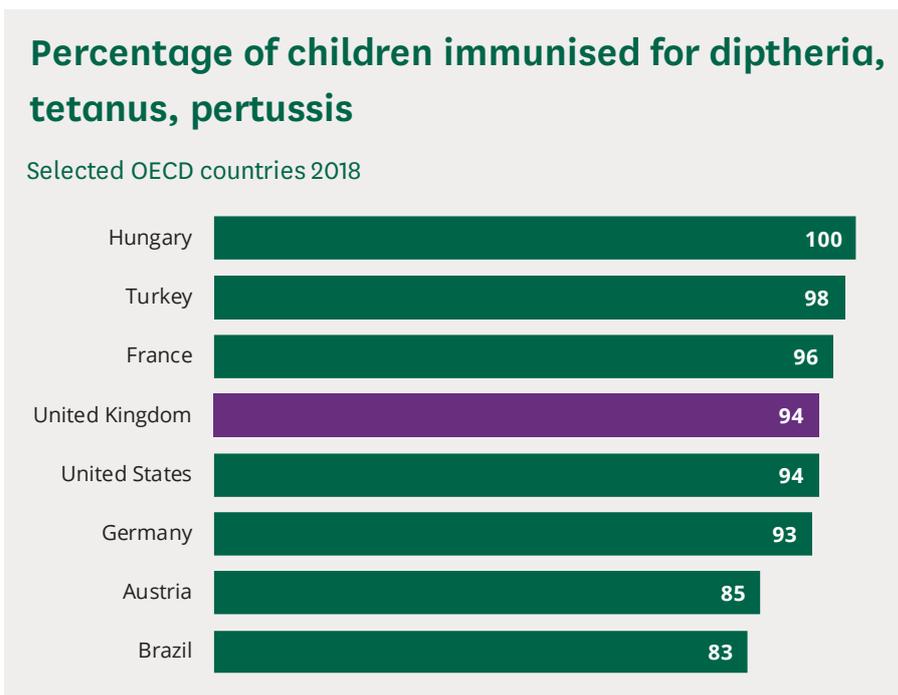
Five lowest

Hackney	80.1%
Kensington & Chelsea	83.2%
Westminster	85.2%
Hammersmith & Fulham	87.6%
Lambeth	87.9%

## 2.3 International comparisons

OECD data on the percentage of children immunised against diphtheria, tetanus and pertussis at age one, reports a UK rate of 94% for 2018. The UK ranked 22nd out of the 36 OECD nations and was among 14 countries with rates below 95%.

The highest rate (100%) was observed in Hungary and Luxembourg and Austria had the lowest rate of 85%.



Source: [OECD Child vaccination rates](#)

## 3. Pneumococcal Conjugate Vaccine (PCV)

PCV was introduced into the routine immunisation programme in September 2006 and is offered at eight and sixteen weeks of age with a booster dose after the first birthday.

### 3.1 National data

In 2019/20 coverage in England was below 95%, while Scotland and Wales had rates above 95%. Coverage in England was below 95% each year over the past decade. Other nations of the UK had coverage above 95% each year, with the exception of Northern Ireland where rates fell below 95% in 2018/19 and 2019/20.

#### PCV immunisation by first birthday

	England	Wales	Scotland	Northern Ireland
2009/10	92.9%	97.5%	97.2%	96.0%
2010/11	93.6%	97.3%	97.0%	95.7%
2011/12	94.2%	97.4%	97.4%	95.8%
2012/13	94.4%	95.9%	97.4%	97.5%
2013/14	94.1%	96.2%	97.5%	97.4%
2014/15	93.9%	96.3%	97.4%	96.6%
2015/16	93.5%	96.4%	97.1%	97.1%
2016/17	93.5%	96.2%	96.8%	97.0%
2017/18	93.3%	95.9%	96.8%	96.4%
2018/19	92.8%	95.5%	96.3%	94.8%
2019/20	93.2%	95.9%	96.9%	95.0%

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

### 3.2 Regional and local authority data

In 2019/20, all but one region of England achieved 90% coverage or more and coverage in the North East was over 95%. Coverage in London was 89.2%. As the map overleaf shows, the highest rates of PCV immunisation coverage tended to be in local authorities in the North East and lowest levels were found in London areas

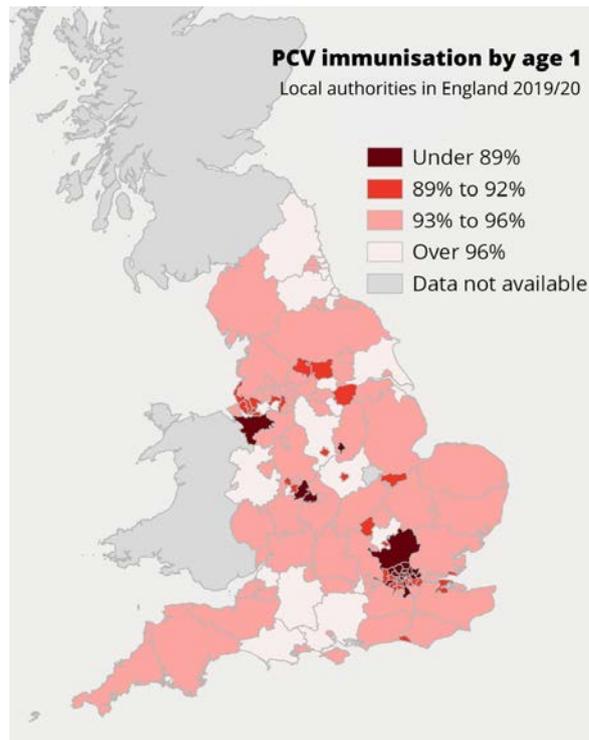
### PCV immunisation by age 1

Five highest

Sunderland	98.7%
South Tyneside	97.9%
County Durham	97.8%
North Tyneside	97.5%
East Riding of Yorkshire	97.3%

Five lowest

Hackney	74.8%
Kensington & Chelsea	84.0%
Westminster	84.5%
Camden	85.8%
Haringey	86.4%



## 4. Hib/MenC vaccine

In September 2006, a combined Hib/MenC vaccine was introduced into the immunisation programme and children are currently offered this vaccine after their first birthday.

### 4.1 National data

In 2019/20, 90.5% of children in England were reported to have received the combined Hib/MenC vaccine as measured at two years. Rates were higher for other countries of the UK but were below 95% in all cases. Rates in England did not exceed 95% in any year over the past decade, while other nations of the UK did exceed the target in at least four separate years.

Hib/MenC immunisation by age 2				
	England	Wales	Scotland	Northern Ireland
2009/10	90.0%	93.9%	94.0%	93.9%
2010/11	91.6%	95.0%	93.9%	93.3%
2011/12	92.3%	95.5%	95.3%	93.7%
2012/13	92.7%	94.4%	95.7%	95.9%
2013/14	92.5%	95.3%	95.7%	96.2%
2014/15	92.1%	95.0%	95.4%	95.0%
2015/16	91.6%	94.7%	95.4%	95.7%
2016/17	91.5%	94.5%	95.0%	95.0%
2017/18	91.2%	94.5%	94.9%	94.6%
2018/19	90.4%	94.2%	94.4%	92.8%
2019/20	90.5%	94.1%	94.3%	92.2%

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

### 4.2 Regional and local authority data

In 2019/20 all regions, except London had Hib/MenC coverage by age 2 of over 90%. The North East had the highest rate at 95.1%. London's rate was 83.6%

Local authority level data is shown in the map overleaf.

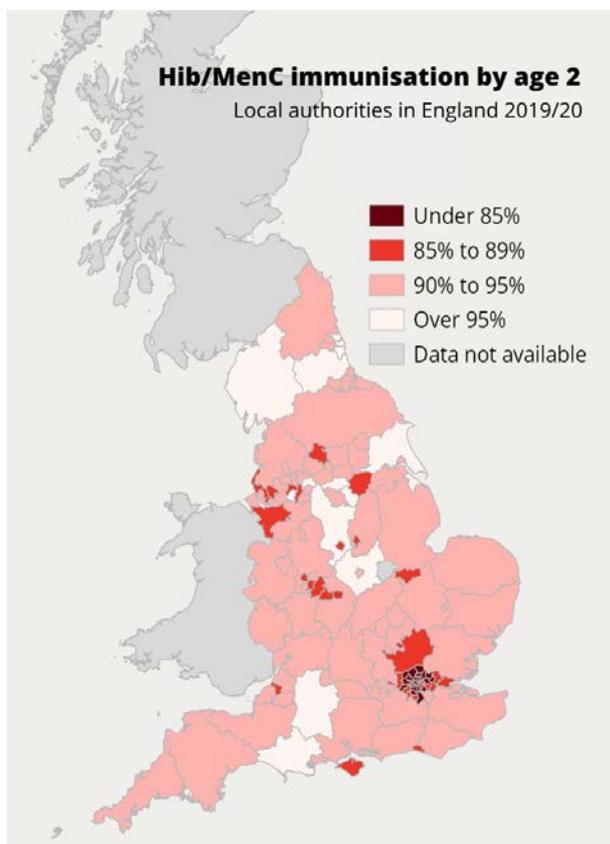
### Hib/MenC immunisation by age 2

#### Five highest

Sunderland	97.9%
South Tyneside	97.1%
Cumbria	96.9%
North Tyneside	96.9%
County Durham	96.9%

#### Five lowest

Hackney	72.2%
Kensington & Chelsea	76.0%
Camden	78.5%
Westminster	79.0%
Enfield	80.1%



## 5. Meningitis B

The Meningitis B vaccine was introduced in September 2015 and is offered at eight and sixteen weeks of age, with a booster on or after the first birthday.

Coverage data was reported for the first time in 2017/18. The table below shows the two available years of data. In 2019/20 the rate for England was 90.5%, lower than all other UK nations.

<b>MenB immunisation</b>			
	2017/18	2018/19	2019/20
England	92.5%	92.0%	90.5%
Wales	95.3%	95.1%	94.1%
Scotland	95.9%	95.4%	94.3%
Northern Ireland	95.8%	94.3%	92.2%
<b>United Kingdom</b>	<b>92.9%</b>	<b>92.5%</b>	<b>91.0%</b>

Source: [NHS Digital Childhood Vaccination Coverage Statistics](#)

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