



Public Health
England

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COVER programme: guide to submitting data v02.00

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Executive summary

The **COVER programme** is a long established vaccine coverage collection that has been running since 1987. Public Health England (PHE) is responsible for the data collection in England and, in collaboration with the Public Health Wales, Public Health Agency Northern Ireland and Public Health Scotland, collates UK immunisation coverage data from Child Health Information Systems (CHISs) for children aged one, 2 and 5 years of age.

The ability to reliably measure vaccine coverage plays an essential role in evaluating the success of a vaccination programme, identifying susceptible populations for further interventions and informing future vaccine policy decisions.

COVER data for local authority responsible populations and general practices are extracted from CHISs and submitted to PHE. CHIS providers should use the most recent **COVER information standard (DCB0089)**, approved for publication by the Department of Health under **section 250 of the Health and Social Care Act 2012**, to provide a standardised output for COVER reporting. The Data Coordination Board (DCB), a sub-group of the Digital Delivery Board, provided assurance that this information standard meets the requirements of the Act and is appropriate for the use specified in the specification document.

The COVER Information Standard ensures that all data outputs are in line with the current UK vaccination programme schedule, reporting geographies and Public Health Outcomes Framework requirements.

This COVER programme guide provides user level guidance on how to submit quarterly and annual COVER data in line with the updated Information Standard using the following content:

- what geographies need to be submitted and why (Section 2)
- when COVER data submissions are required (Section 3)
- what local checks should be done prior to submission (Section 4)
- which indicators are required to be submitted and how are they defined (Sections 5 and 6)
- how to submit COVER data (Section 7)

Further information, timetables, guidance and the latest publications can be found on the **COVER website**.

1. Introduction

1.1 What is the COVER programme?

The COVER programme (Cover of Vaccination Evaluated Rapidly) is a quarterly data collection that started in 1987 with the aim of providing more timely and accurate vaccine coverage data than were available through annual collections.

The quarterly collection expanded in 1995 to evaluate childhood immunisation coverage across the UK, and to take on the collection of annual coverage data for England alongside the collection of the fourth quarterly return.

Public Health England (PHE) is responsible for the data collection in England and, in collaboration with the Public Health Wales, Public Health Agency Northern Ireland and Public Health Scotland, collates UK immunisation coverage data from Child Health Information Systems (CHISs) for children aged one, 2 and 5 years of age.

1.2 Why is the COVER programme important?

The ability to reliably measure vaccine coverage plays an essential role in evaluating the success of a vaccination programme, identifying susceptible populations for further interventions and informing future vaccine policy decisions.

This is dependent on having an accurate estimate for the eligible population (denominator) and a robust method of ascertaining the number of those eligible individuals who have received a particular vaccine dose (numerator). The COVER programme monitors immunisation coverage for all children who reach their first, second or fifth birthday during each evaluation quarter.

This information is promptly fed back to local level, creating the opportunity to improve coverage and to detect changes in vaccine coverage quickly. Local vaccine coverage data is used for performance management; local risk assessment and responding to community outbreaks of vaccine-preventable diseases. COVER monitors whether age dependent vaccinations have been given in a timely manner and promotes equal access to care services by providing coverage data for all geographical areas.

These data are also used by the Medicines and Healthcare Products Regulatory Agency (MHRA) and in combination with data on adverse outcomes are used to monitor Vaccine Safety.

1.3 Is the COVER data collection mandated?

This collection has received approval from the Data Coordination Board (DCB), a sub-group of the Digital Delivery Board. The COVER information standard can be found [here](#).

1.4 How has the COVER programme changed?

From 2019/20, the collection of COVER data transferred from PHE to NHS Digital's [Strategic Data Collection Service \(SDCS\)](#) and merged with the current SDCS practice-level vaccine coverage collection (formally collected via the Child Immunisation Unify2 data collection).

These practice-level data have previously been made available at CCG-level quarterly and at practice-level annually as [management information](#) by NHS England.

The analysis and reporting of the quarterly COVER report remains with PHE, and the annual vaccine coverage report is published as a joint PHE/NHS Digital report. From 2019/20 the quarterly and annual COVER reports include both local authority and GP level coverage (experimental data). An updated [COVER information standard](#) covering the new collection was published on February 2020.

In 2020 the number of doses of pneumococcal vaccine (PCV) offered in the first year of life changed from 2 doses to one dose for all children born on or after 1 January 2020.

From June 2020, quarterly and annual COVER programme local authority and GP level datasets submitted to the SDCS portal will use a modified data collection template which includes an additional field to capture the number children who have received the first dose of PCV vaccine (PCV1) by the first birthday.

For children who were eligible for 2 primary doses under the previous schedule (that is, those born prior to 1 January 2020), each dose will be reported separately (PCV1 and PCV2). For children eligible for a single primary dose, only PCV1 will be reported.

1.5 What is an Information Standard (ISN)?

An information standard is defined in the Health and Social Care Act 2012 as: 'a document containing standards that relate to the processing of information'.

Information Standards Notices (ISNs) announce new or changes to information standards published under section 250 of the Health and Social Care Act 2012.

The COVER Information standard ensures that all data outputs are in line with the current UK vaccination programme schedule.

1.6 How is COVER data produced?

Standardised age-specific COVER data for local authority responsible populations are extracted from Child Health Information Systems (CHISs) at local authority and GP practice levels.

CHIS providers use the COVER information standard to generate these data which are submitted to SDCS using the same standard template.

1.7 What is the Public Health Outcomes Framework?

The Public Health Outcomes Framework (PHOF) sets out a high-level overview of public health outcomes, at national and local level, supported by a broad set of indicators. An interactive web tool makes the PHOF data available publicly.

This allows local authorities to assess progress in comparison to national averages and their peers, and develop their work plans accordingly.

Age specific population vaccination coverage in England at local authority level for vaccine programmes collected through COVER are included in the PHOF (<https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>).

2. What geographies are COVER data collected by?

a. Upper Tier Local Authority (LA) responsible population

The collection of quarterly and annual age-specific vaccination coverage data extracted from CHISs at Local Authority (LA) (upper tier) is by RESPONSIBLE population only. Although collection by resident population is a requirement for the Public Health Outcomes Framework since April 2013, it has been agreed that it is not feasible under the current IT infrastructure.

Upper Tier LA responsible population definition:

All children registered with a GP whose practice forms part of the LA, regardless of where the child is resident.

AND

Any children not registered with a GP, who are resident within the LA statutory geographical boundary

Note that children resident within the LA geographical area, but registered with a GP belonging to another LA are the responsibility of the other LA. Providers should list all GP practice codes whose practice forms part of the data submission for each LA.

b. General Practice (GP) level

GP level population definition:

All children registered with a GP regardless of where the child is resident.

Note: children not registered with a GP, but registered on the CHIS, should still be included in the GP level dataset for that CHIS using a 'not registered' practice code. They should be assigned to a CCG based upon their place of residence.

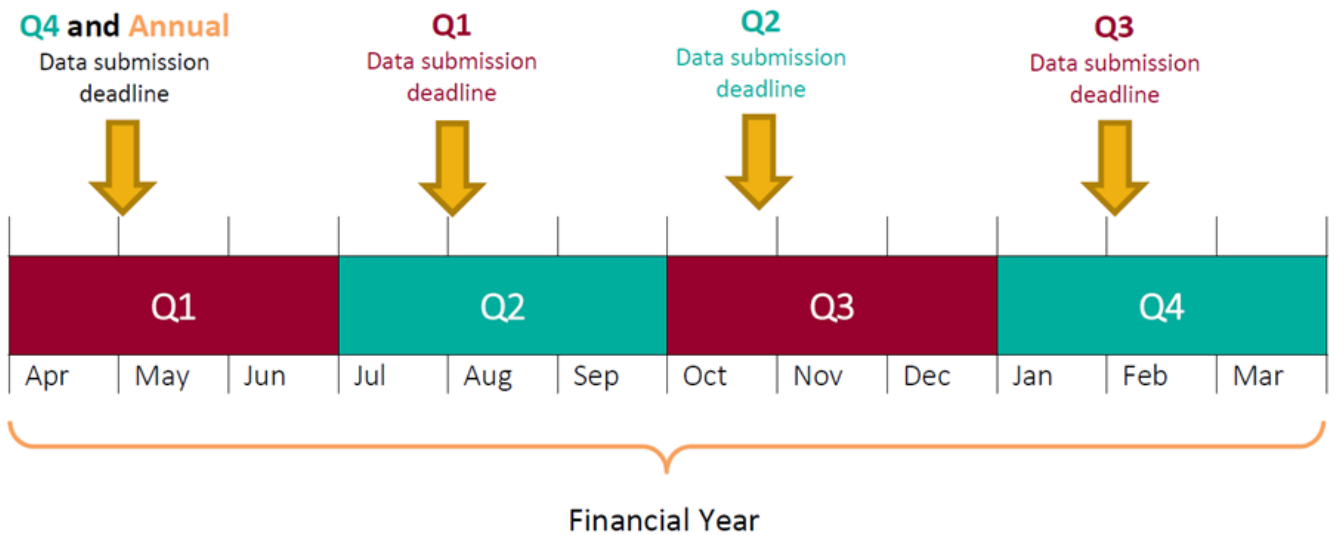
3. What time periods are data collected for?

Data is collected quarterly throughout each financial year followed by an annual collection (April to March).

Typically, the data submission deadline for a financial quarter will be around 5 weeks later, for example, Quarter 1 of 2017/18 (April to June 2017) was required to be submitted by the 4 August 2017.

Important dates and submission deadlines can be found on the [COVER website](#).

Figure 1: COVER data collection schedule



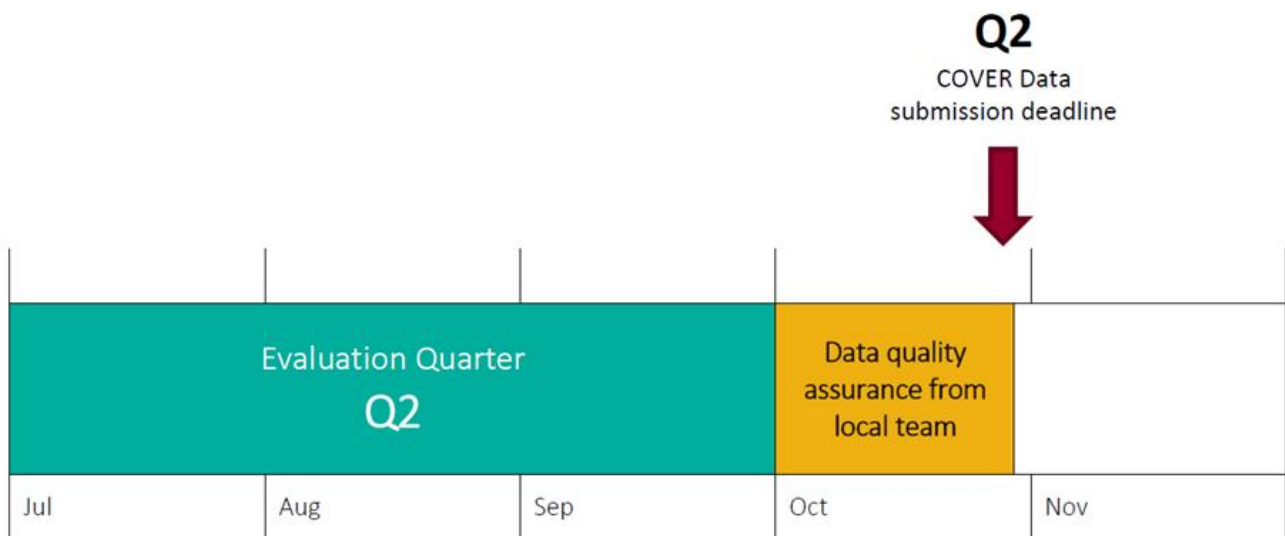
4. Local data checks prior to submission

It is recommended that both local authority and GP COVER data are sent to the appropriate NHS England screening and immunisation team for data quality assurance (check data for substantial inaccuracies and perform comparisons to previous quarter's performance) prior to the data submission deadline.

This offers an opportunity to detect data quality issues earlier and rectify them prior to submission.

Data providers are encouraged to include details of any factors that they are aware of that may explain anomalies in their submission to limit the number of enquires the COVER team need to follow-up post submission (see Section 8 below).

Figure 2 : Example timeline for quarter 2 pre-submission checks



5. Which indicators need to be submitted?

The indicators described below in Figure 3 are in line with the **COVER specification** and line numbers and lettering refer to specific information in the specification document.

Figure 3: Indicators included in the COVER data submission, for all age cohorts and risk groups.

Vaccine	Dose/ type	Cohort		
		12 months	24 months	5 years
Routine Immunisations				
DTaP/IPV/Hib(HepB) ¹	3 doses	Line 2(a)	Line 4(f)	Line 6(k)
PCV1	1 dose	Line 2(b)		
PCV2	2 doses	Line 2 (c)		
Rota	2 doses	Line 2(d)		
MenB	2 doses	Line 2(f)		
MMR	First dose		Line 4(g)	Line 6(l)
MMR	Second dose			Line 6(o)
Hib/MenC	Booster		Line 4(h)	Line 6(n)
PCV	Booster		Line 4(i)	
MenB	Booster		Line 4(j)	
DTaP/IPV	Booster			Line 6(m)
Immunisations for those at risk				
BCG	1 dose	Line 2(e)		
HepB ²	3 doses	Line 8		
HepB ²	4 doses		Line 11	
HepB ³	5 doses	Line 9		
HepB ³	6 doses		Line 12	

¹DTaP/IPV/Hib/HepB replaced DTaP/IPV/Hib from October 2017 (that is, offered to children born from August 2017)

²babies born <1 August 2017

³babies born ≥1 August 2017

6. Vaccine coverage calculation definitions

Figure 4: 12 month cohort

12 month		Denominator			
		Line 1	LA / GP responsible population	The total number of children for whom the upper tier LA / GP is responsible reaching their first birthday during the evaluation dates	
12 month		Vaccination / ISN Reference		Dosage definition	Numerator definition
		Line 2	(a) DTaP/IPV/Hib/HepB ¹	Child received 3 doses before their first birthday. If child received primary immunisations outside UK then 3 doses of each: DTP or DTaP, IPV or OPV, Hib before first birthday, plus HepB if born after first August 2017	Of those children who reached their first birthday within the evaluation dates, the number that completed a course of DTaP/IPV/Hib/HepB vaccine.
			(b) PCV1	Child received 1 dose before their first birthday	Of those children who reached their first birthday within the evaluation dates, the number that received 1 dose of PCV
			(c) PCV2	Child received 2 doses before their first birthday	Of those children who reached their first birthday within the evaluation dates, the number that received 2 doses of PCV ²
			(d) Rotavirus	Child received 2 doses before 24 weeks old	Of those children who reached their first birthday within the evaluation dates, the number that received 2 doses of Rotavirus vaccine before 24 weeks old
(e) MenB	Child received 2 doses of MenB before their first birthday		Of those children who reached their first birthday within the evaluation dates, the number that received 2 doses of MenB vaccine before their first birthday		

Figure 5: 24 month cohort

24 month		Denominator		
24 month	Line 3	LA / GP responsible population	The total number of children for whom the upper tier LA / GP is responsible reaching their second birthday during the evaluation dates	
		Vaccination / ISN reference	Dosage definition	Numerator definition
24 month	Line 4	(f) DTaP/IPV/Hib/HepB ¹	Child received 3 doses before their second birthday; if child received primary immunisations outside UK then 3 doses of each: DTP or DTaP, IPV or OPV before second birthday, plus HepB if born after first August 2017	Of those children who reached their second birthday within the evaluation dates, the number that completed a course of DTaP/IPV/Hib/HepB vaccine
		(g) MMR1 dose	Child received 1 dose of MMR on or after their first birthday and before their second birthday (that is, excludes MMR given before first birthday)	Of those children who reached their second birthday within the evaluation dates, the number that received 1 dose of MMR vaccine according to definition
		(h) Hib/MenC Booster	Two definitions apply: (A) Child received a dose of combined Hib/MenC vaccine on or after their first birthday and before second birthday or (B) Child received 1 dose of DTaP/IPV/Hib(+/-HepB) and 1 dose of MenC, both given on or after first birthday and before second birthday (that is, children completing primary course after first birthday)	Of those children who reached their second birthday within the evaluation dates, number that received Hib/MenC booster according to definition (A) or (B)
		(i) PCV Booster	Child received 1 dose of PCV vaccine on or after their first birthday (irrespective of the number of doses before that age) and before their second birthday	Of those children who reached their second birthday within the evaluation dates, the number that received PCV vaccination according to definition

		(j) MenB Booster	<p>Two definitions apply:</p> <p>(A) Child received 3 doses of MenB before their second birthday</p> <p style="text-align: center;">or</p> <p>(B) Child received 2 doses of MenB after their first birthday</p>	<p>Of those children who reached their second birthday within the evaluation dates, the number that received the MenB vaccine according to definition (A) or (B)</p>
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Figure 6: 5 year cohort

Denominator				
5 year	Line 5	LA / GP responsible population	The total number of children for whom the upper tier LA / GP is responsible reaching their fifth birthday during the evaluation dates	
	Vaccination / ISN Reference		Definition	Numerator
5 year	Line 6	(k) DTaP/IPV/Hib(HepB) ¹	Child received 3 doses before their fifth birthday; if child received primary immunisations outside UK then 3 doses of each: DTP or DTaP, IPV or OPV before second birthday, plus HepB if born after first August 2017	Of those children who reached their fifth birthday within the evaluation dates, the number that completed a course of DTaP/IPV/Hib(HepB) vaccine
		(l) MMR 1 dose	Child received 1 dose of MMR vaccine on or after their first birthday and before their fifth birthday (that is, exclude MMR given before first birthday)	Of those children who reached their fifth birthday within the evaluation dates, the number that received 1 dose of MMR according to definition.
		(m) DTaP/IPV Booster	Child received a fourth dose of Diphtheria/Tetanus/Pertussis/Polio containing vaccine - given from 3 years 4 months and before fifth birthday.	Of those children who reached their fifth birthday within the evaluation dates, the number that received a fourth dose of Diphtheria/Tetanus/Pertussis/Polio containing vaccine according to definition.
		(n) Hib/MenC Booster	Two definitions apply (A) Child received one dose of combined Hib/MenC vaccine on or after their first birthday and before fifth birthday or (B) Child received 1 dose of DTaP/IPV/Hib(HepB) and 1 dose of MenC, both given on or after first birthday and before fifth birthday (that is, children completing primary course after first birthday)	Of those children who reached their fifth birthday within the evaluation dates, number that received Hib/MenC booster according to either definition (A) or (B)

		(o) MMR 2 doses	Child received 2 doses of MMR vaccine on or after their first birthday and before their fifth birthday (that is, excludes MMR given before first birthday)	Of those children who reached their fifth birthday within the evaluation dates, the number that received 2 doses of MMR vaccine according to definition.
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¹DTaP/IPV/Hib/HepB replaced DTaP/IPV/Hib from October 2017 (that is, offered to children born from August 2017)

²for children born <1 January 2020 only

Figure 7: Immunisation of high risk groups

Vaccination / ISN Reference		Definition	Numerator	
For those at risk	Line 2	(d) BCG	Used to calculate BCG coverage only for areas that are offering a universal neonatal BCG programme. Child received one dose of BCG vaccine before their first birthday.	Of those children who reached their first birthday in the evaluation dates, the number that received one dose of BCG vaccine
	Line 7	Hepatitis B 12 months denominator	Of those children who reached their first birthday within the evaluation dates, the number with maternal Hepatitis B status positive (HBsAg +ve - mother is Hepatitis B surface antigen positive)	
	Line 8	Hepatitis B 12 months numerator for babies born <1 August 2017 (now obsolete)	Child received 3 rd dose of monovalent Hep B vaccine before their first birthday.	Of those children who reached their first birthday in the evaluation dates with maternal HBsAg +ve, the number that received 3 doses of monovalent Hep B vaccine
	Line 9	Hepatitis B 12 months numerator for babies born ≥1 August 2017	Child received fifth dose of a Hep B-containing vaccine before their first birthday.	Of those children who reached their first birthday in the evaluation dates with maternal HBsAg +ve, the number that received 5 doses of a Hep B-containing vaccine*
	Line 10	Hepatitis B 24 months denominator	Of those children who reached their second birthday within the evaluation dates, the number with maternal Hepatitis B status positive (HBsAg +ve - mother is Hepatitis B surface antigen positive)	
	Line 11	Hepatitis B 24 months numerator for babies born <1 August 2017 (now obsolete)	Child received fourth dose of monovalent Hep B vaccine before their second birthday.	Of those children who reached their second birthday in the evaluation dates with maternal HBsAg +ve, the number that received 4 doses of monovalent Hep B vaccine
	Line 12	Hepatitis B 24 months numerator for babies born ≥1 August 2017	Child received sixth dose of a Hep B-containing vaccine before their second birthday	Of those children who reached their second birthday in the evaluation dates with maternal HBsAg +ve, the number that received 6 doses of a Hep B-containing vaccine*

* monovalent HepB or DTaP/IPV/Hib/HepB

7. How do I submit?

Both GP and LA level data should be submitted via NHS Digital's Strategic Data Collection Service (SDCS) portal using a single reporting template for GP and LA data, using the appropriate definitions and the values defined in Section 6.

To access the data collection template and then upload it to the SDCS portal, you need to register with SDCS. Please contact SDCS at data.collections@nhs.net to register and notify COVER at cover@phe.gov.uk.

The SDCS general collection guidance can be found here:

<https://digital.nhs.uk/services/strategic-data-collection-service-sdcs/strategic-data-collection-service-for-general-collections---user-guidance>

The COVER team also maintain an email distribution list for information and updates. To receive these emails, please contact us at cover@phe.gov.uk.

8. PHE data quality procedures

Post-submission, the COVER team undertakes data quality checks which include a comparison to previous quarter's data using a data validation criterion (Figure 8).

Data that falls outside of these criteria will be queried by the COVER team. Where necessary, a caveat will need to be provided by data providers to include in the final publication tables to explain any data quality issues.

To limit the number of enquires the COVER team need to follow-up, data providers are encouraged to include details of any factors that they are aware of that may explain anomalies in their submission (for example, change of CHIS supplier).

Figure 8: Local Authority data validation criteria

Value type	Criteria	Comparison
Coverage value	+/- 5%	Previous quarter
Denominator value	+/- 10%	Previous quarter

After submission to SDCS the following validations will apply specifically to the GP practice submissions. These may be queried by the COVER team with the data provider:

- data submitted by more than one provider for the same GP practice
- data submitted for closed or inappropriate practices (that is, practices not providing services for children)
- no data submitted from open practices
- unregistered patient data that has not been assigned to the CCG of residence
- comparisons will be made between the age cohort denominators and the practice list size and large differences may be queried

9. Revisions policy

Any revised/late quarterly submissions received within 3 months of their original submission date will be amended in the COVER table.

Submissions received later than this will not be amended.

The annual return provides the definitive data, published as National Statistics, and a final opportunity for quarterly data submitted during the year to be corrected.

10. Feedback

The COVER team are continuously improving data procedures and presentation.

If you would like to provide feedback on any aspect of this document or broader aspects of the COVER programme, such as the website, please email us at cover@phe.gov.uk.

11. Contact information for data submission and collection queries

For SDCS enquiries please contact:

- data.collections@nhs.net
- enquiries@nhsdigital.nhs.uk
- tel: 0300 303 5678

SDCS guidance page is available [here](#)

For general enquiries please contact:

- cover@phe.gov.uk
- tel: 020 8327 6522
- <https://www.gov.uk/government/collections/vaccine-uptake>

Glossary

CHISs	Child Health Information Systems
COVER	Cover of Vaccination Evaluated Rapidly
DCB	Data Coordination Board
GP	General Practice
ISN	Information Standard Notice
LA	Local Authority
PHE	Public Health England
PHOF	Public Health Outcomes Framework
SDCS	Strategic Data Collection Service