

Summary of neonatal hepatitis B immunisation in Wales – 2023

Background

This report summarises uptake and timeliness of the first three doses of hepatitis B immunisation and uptake trends in babies born to hepatitis B positive mothers during 2023 who were notified to the Public Health Wales Health Protection Team. Uptake and timeliness of the dose of hepatitis B immunisation due at 12 months and serology in babies born to hepatitis B positive mothers in 2022 are also presented.

Hepatitis B infection can be passed from an infected mother to her baby during birth. Babies infected in this way are very likely to become chronically infected, so can infect others. The risk of infection at birth can be reduced by over 90% by timely vaccination.

From 1st August 2017 all babies became eligible for the hexavalent ('6 in 1') vaccine that includes hepatitis B and replaced the '5 in 1' (DTaP/IPV/Hib combined diphtheria, tetanus, pertussis, inactivated polio and *Haemophilus influenzae* type B vaccine) vaccine scheduled at 2, 3 and 4 months of age. These babies should receive doses of monovalent Hepatitis B vaccine at birth and at 1 month of age, the '6 in 1' vaccine as scheduled at 2, 3 and 4 months and monovalent vaccine at 12 months, a total of six doses of Hepatitis B containing vaccine. For the purpose of monitoring whether at risk babies are protected from Hepatitis B, this report focuses on uptake and timeliness of hepatitis B containing vaccine at 0, 1, 2 and 12 months.

The data presented in this report were extracted from the Public Health Wales Tarian case and incident management system on 30th December 2024, following a move from the Public Health Wales Neonatal Hepatitis B database. The database was developed to assist the Health Protection Team in the monitoring and follow up of hepatitis B immunisation of babies born to hepatitis B infected mothers and to provide a source for statistics on uptake and timeliness of hepatitis B immunisation in this group.

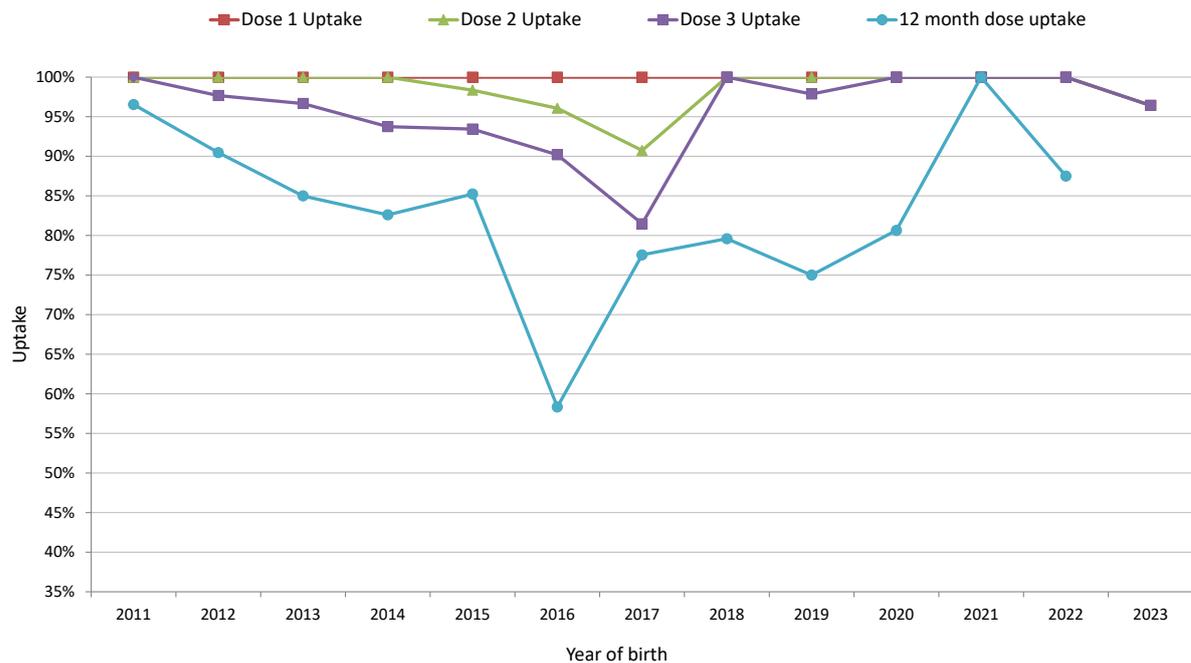


Table 1. Uptake and timeliness of neonatal hepatitis B immunisation in Wales, babies born to hepatitis B positive mothers and resident in Wales during 2022 and 2023

	Year of birth	Immunisation Required	Immunisation Received		Immunisation Received on time	
		(n)	(n)	(%)	(n)	(%)
HBIG^{1,2}		0	0	-	0	-
Dose 1²	2023	28	27	96	27	100
Dose 2³		28	27	96	18	67
Dose 3⁴		28	27	96	16	59
Dose 4⁵	2022	24	21	88	10	48

¹ Hepatitis B Immunoglobulin. Not required for all neonates.
² Recommended to be given on the day of birth or the next day
³ Recommended interval: within 25 - 36 days after dose 1
⁴ Recommended interval: within 25 - 36 days after dose 2
⁵ Recommended interval: within 334 – 396 days of birth

Figure 1. Trends in uptake (%) of hepatitis B immunisations¹ in babies born to hepatitis B positive mothers from 2011 to 2023.



¹Uptake timeliness of the dose due at 12 months for babies born in 2023 was not available at this time at the time which data were extracted for this report.

Table 2. Trends in the timeliness of hepatitis B immunisations in babies born to hepatitis B positive mothers from 2011 to 2023.

Percent received on time	Year of birth												
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Dose 1 ¹ (%)	100	100	100	100	98	98	98	100	100	100	100	100	100
Dose 2 ² (%)	50	70	55	58	53	51	61	60	51	50	40	40	67
Dose 3 ³ (%)	67	48	64	56	56	52	61	85	63	63	64	60	59
Dose at 12 months ^{4,5} (%)	61	60	71	68	46	36	53	74	64	72	65	48	-

¹The timely interval for dose 1 is on the day of birth or the next day, for the purpose of this report.

²The timely interval for dose 2 is between 25 and 36 days after dose 1, for the purpose of this report.

³The timely interval for dose 3 is between 25 and 36 days after dose 2, for the purpose of this report.

⁴The timely interval for due at 12 months is between 334 – 396 days after birth, for the purpose of this report

⁵ Uptake timeliness of dose due at 12 months for babies born in 2023 is not available at this time.

Findings

1. During 2023, 32 babies born to hepatitis B mothers were reported to the Health Protection Team, six more than in 2022. Four babies are not included in this report because they were lost to follow up.
2. Hepatitis B immunoglobulin (HBIG) is recommended to be administered to babies born to highly infectious mothers. HBIG was indicated for 0% (0/28) of neonates born to hepatitis B positive mothers in Wales during 2023, compared to 12% (n=3) in 2022.
3. Uptake of the first dose of hepatitis B immunisation was 96% in 2023, a decrease from 100% the previous year, with 100% of the neonates receiving their first dose on time (on their day of birth or the next day) (Table 1).
4. Uptake of the second dose of hepatitis B immunisation was 96% in 2023, a decrease compared to 2022. Sixty-seven per cent of the babies received their second dose between 25 and 36 days after their first dose, an increase compared to 2022 (Table 1).
5. Uptake of the third dose of hepatitis B immunisation was 96%, a decrease compared to 2022. Fifty-nine per cent of the babies received their third dose between 25 and 36 days after their second dose (Table 1).
6. Uptake of the fourth dose of hepatitis B immunisation was 88% in babies born to hepatitis B positive mothers in 2022, a decrease compared to babies born in 2021 (100%). Forty-eight percent of the babies received their fourth dose between 334 and 396 days of birth a decrease compared to 65% of babies born in 2021.
7. Of the babies born to hepatitis B positive mothers and resident in Wales in 2022, 58% (14/24) were serologically tested for hepatitis B surface antigen by 18 months of age. None of the babies tested were found to have acquired hepatitis B infection.

Discussion

The report contains information on the first three doses of hepatitis B vaccination for babies born during 2023 as well as information on the 12 month dose of the schedule and serological testing for babies born during 2022. All of these babies born during 2023 should have received their first, second and third doses of hepatitis B vaccine and the 12 month dose of the vaccine and tested for serology if born during 2022, by the time data for this report were extracted (30th December 2024).

96% of babies received the first dose of the hepatitis B immunisation schedule, and all those who received the first dose were vaccinated on time. 96% of babies received their second dose of vaccine, with 67% of babies receiving their second vaccine dose on time, an increase compared to 2022. The proportion of babies receiving their third dose decreased to 96%. In 2023, 59% of babies received their third vaccine dose on time. The proportion of babies who received their vaccination dose due at 12 months on time decreased compared to the previous year at 48% from 65%.

Following the introduction of the hexavalent combination vaccine (DTaP/IPV/Hib/HepB) in the routine childhood vaccination schedule, this report shows an increase in the uptake of the second, third and fourth scheduled vaccine doses in babies at high risk of chronic hepatitis B infection. This follows a long-term downward trend in uptake between 2011 and 2017. Babies who do not complete the full immunisation course or who receive hepatitis B immunisation doses late could be at risk of developing hepatitis B infection. The proportion of babies serologically tested decreased to 58% compared 88% of babies born in 2021. Testing serology is essential to determining whether infection from hepatitis B was effectively prevented.

Of the 28 babies born during 2023, three received their second dose of hepatitis B vaccine as part of the new hexavalent combination vaccine (DTaP/IPV/Hib/HepB) in the routine childhood vaccination schedule.

For more information on the introduction of the hexavalent ("6 in 1") vaccine including hepatitis B into the routine immunisation schedule see <https://gov.wales/sites/default/files/publications/2019-07/hepatitis-b-immunisation-for-babies-born-on-or-after-1-august-2017.pdf>

For more information on neonatal hepatitis B immunisations consult 'The Green Book' at <https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book>

Quarterly coverage figures for neonatal hepatitis B immunisations are available from the [COVER - National childhood immunisation uptake data - Public Health Wales \(nhs.wales\)](#)

Report prepared by Public Health Wales Vaccine Preventable Disease Programme and Communicable Disease Surveillance Centre with the Health Protection Team.