Public Health England

NHS

PHE publications gateway number: GW-301

PATIENT GROUP DIRECTION (PGD)

Administration of Hepatitis B recombinant DNA (rDNA) vaccine (adsorbed) to individuals considered at increased risk of exposure to hepatitis B virus, at increased risk of complications of hepatitis B disease, or post potential exposure to hepatitis B virus.

This PGD is for the administration of Hepatitis B (rDNA) vaccine (adsorbed) (HepB vaccine) by registered healthcare professionals identified in Section 3, subject to any limitations to authorisation detailed in Section 2.

Reference no:	HepB PGD
Version no:	v02.00
Valid from:	01 May 2019
Review date:	01 November 2020
Expiry date:	30 April 2021

Public Health England has developed this PGD to facilitate the delivery of publicly funded immunisation in line with national recommendations.

Those using this PGD must ensure that it is organisationally authorised and signed in Section 2 by an appropriate authorising person, relating to the class of person by whom product is to be supplied, in accordance with Human Medicines Regulations 2012 (HMR2012)[1]. **THE PGD IS NOT LEGAL OR VALID WITHOUT SIGNED AUTHORISATION IN ACCORDANCE WITH HMR2012 SCHEDULE 16 Part 2.**

Authorising organisations must not alter, amend or add to the clinical content of this document (sections 4, 5 and 6); such action will invalidate the clinical sign-off with which it is provided. In addition authorising organisations must not alter section 3 'Characteristics of staff'. Only sections 2 and 7 can be amended within the designated editable fields provided.

Operation of this PGD is the responsibility of commissioners and service providers.

INDIVIDUAL PRACTITIONERS MUST BE AUTHORISED BY NAME, UNDER THE CURRENT VERSION OF THIS PGD BEFORE WORKING ACCORDING TO IT.

Practitioners and organisations must check that they are using the current version of the PGD. Amendments may become necessary prior to the published expiry date. Current versions of PHE PGD templates for authorisation can be found from: https://www.gov.uk/government/collections/immunisation-patient-group-direction-pgd

Any concerns regarding the content of this PGD should be addressed to: immunisation@phe.gov.uk

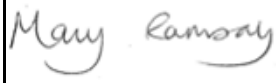
[1] This includes any relevant amendments to legislation (eg 2013 No.235, 2015 No.178 and 2015 No.323).

Change history

Version number	Change details	Date
V01.00	New PHE PGD template	29/03/2017
V02.00	HepB PGD amended to: • include additional healthcare practitioners in Section 3 • include HBvaxPRO® temperature excursion stability • refer to vaccine incident guidelines in off-label and storage sections • include minor rewording, layout and formatting changes for clarity and consistency with other PHE PGDs	12/03/2019

1. PGD development

This PGD has been developed by the following health professionals on behalf of Public Health England:

Developed by:	Name	Signature	Date
Pharmacist (Lead Author)	Elizabeth Graham Lead Pharmacist - Immunisation and Countermeasures, PHE		20/03/2019
Doctor	Mary Ramsay Consultant Epidemiologist and Head of Immunisation and Countermeasures, PHE		15/03/2019
Registered Nurse (Chair of Expert Panel)	David Green Nurse Consultant – Immunisation and Countermeasures, PHE		14/03/2019

This PGD has been peer reviewed by the PHE Immunisations PGD Expert Panel in accordance with PHE PGD Policy. It has been ratified by the PHE Medicines Management Group and the PHE Quality and Clinical Governance Delivery Board.

Expert Panel

Name	Designation
Ed Gardner	Advanced Paramedic Practitioner / Emergency Care Practitioner, Medicines Manager, Proactive Care Lead
Michelle Jones	Senior Medicines Optimisation Pharmacist, NHS Bristol North Somerset & South Gloucestershire CCG
Jacqueline Lamberty	Lead Pharmacist Medicines Management Services, Public Health England
Vanessa MacGregor	Consultant in Communicable Disease Control, Public Health England, East Midlands Health Protection Team
Alison Mackenzie	Consultant in Public Health Medicine, Screening and Immunisation Lead, Public Health England / NHS England South (South West)
Sema Mandal	Medical Consultant Epidemiologist, Public Health England
Gill Marsh	Senior Screening and Immunisation Manager Public Health England / NHS England Lancashire and South Cumbria
Lesley McFarlane	Screening and Immunisation Co-ordinator, NHS England / Public Health England Leicestershire, Lincolnshire and Northamptonshire
Sally Millership	Consultant in Communicable Disease Control, Public Health England, East of England Health Protection Team
Tushar Shah	Pharmacy Advisor, NHS England London Region
Sharon Webb	Programme Manager / Registered Midwife, NHS Infectious Diseases in Pregnancy Screening Programme, Public Health England

2. Organisational authorisations

The PGD is not legally valid until it has had the relevant organisational authorisation.

It is the responsibility of the organisation that has legal authority to authorise the PGD, to ensure that all legal and governance requirements are met. The authorising body accepts governance responsibility for the appropriate use of the PGD.

NHS England and NHS Improvement - Midlands authorises this PGD for use by the services or providers listed below:

Authorised for use by the following organisations and/or services
Primary Care services and all organisations commissioned to, or contracted by, NHS England and NHS Improvement – Midlands to provide immunisation services. Each provider organisation using this PGD should formally adopt it via a signature from the provider's authorised governance lead/s or lead practitioner
Limitations to authorisation
None

Organisational approval (legal requirement)			
Role	**Name**	**Sign**	**Date**
Medical Director NHS England and NHS Improvement - Midlands	**Ken Deacon**		**4/4/19**

Additional signatories according to locally agreed policy			
Role	**Name**	**Sign**	**Date**

Local enquiries regarding the use of this PGD may be directed to: The Screening and Immunisation Teams, NHS England and NHS Improvement - Midlands
Derbyshire/Nottinghamshire ENGLAND.SCRIMMS@nhs.net
Shropshire/Staffordshire PHE.sssit@nhs.net

Section 7 provides a practitioner authorisation sheet. Individual practitioners must be authorised by name to work to this PGD. Alternative practitioner authorisation sheets may be used where appropriate in accordance with local policy but this should be an individual agreement or a multiple practitioner authorisation sheet as included at the end of this PGD.

3. Characteristics of staff

Qualifications and professional registration	Registered professional with one of the following bodies: • nurses and midwives currently registered with the Nursing and Midwifery Council (NMC) • pharmacists currently registered with the General Pharmaceutical Council (GPhC) (Note: This PGD is not relevant to privately provided community pharmacy services) • paramedics and physiotherapists currently registered with the Health and Care Professions Council (HCPC) The practitioners above must also fulfil the Additional requirements detailed below. Check Section 2 Limitations to authorisation to confirm whether all practitioners listed above have organisational authorisation to work under this PGD.
Additional requirements	Additionally practitioners: • must be authorised by name as an approved practitioner under the current terms of this PGD before working to it • must have undertaken appropriate training for working under PGDs for supply/administration of medicines • must be competent in the use of PGDs (see NICE Competency framework for health professionals using PGDs) • must be familiar with the vaccine product and alert to changes in the Summary of Product Characteristics (SPC), Immunisation Against Infectious Disease ('The Green Book'), and national and local immunisation programmes • must have undertaken training appropriate to this PGD as required by local policy and in line with the National Minimum Standards and Core Curriculum for Immunisation Training • must be competent to undertake immunisation and to discuss issues related to immunisation • must be competent in the handling and storage of vaccines, and management of the 'cold chain' • must be competent in the recognition and management of anaphylaxis • must have access to the PGD and associated online resources • should fulfil any additional requirements defined by local policy **THE INDIVIDUAL PRACTITIONER MUST BE AUTHORISED BY NAME, UNDER THE CURRENT VERSION OF THIS PGD BEFORE WORKING ACCORDING TO IT.**
Continued training requirements	Practitioners must ensure they are up to date with relevant issues and clinical skills relating to immunisation and management of anaphylaxis, with evidence of appropriate Continued Professional Development (CPD). Practitioners should be constantly alert to any subsequent recommendations from Public Health England and/or NHS England and other sources of medicines information. Note: The most current national recommendations should be followed but a Patient Specific Direction (PSD) may be required to administer the vaccine in line with updated recommendations that are outside the criteria specified in this PGD.

4. Clinical condition or situation to which this PGD applies

Clinical condition or situation to which this PGD applies	Indicated for the active immunisation of individuals considered at increased risk of exposure to hepatitis B virus, at increased risk of complications of hepatitis B disease, or after a potential exposure to hepatitis B virus in accordance with the recommendations given in Chapter 7 and Chapter 18 of Immunisation Against Infectious Disease: 'The Green Book'.
Criteria for inclusion	**Post-exposure** Individuals who: • are babies born to hepatitis B infected mothers • have been potentially exposed to hepatitis B infected blood or body fluids **Pre-exposure** Individuals who: • have chronic liver disease (for instance those who have severe liver disease, such as cirrhosis of any cause, or have milder liver disease and may share risk factors for acquiring hepatitis B infection, such as individuals with chronic hepatitis C) • receive regular blood or blood products (for example individuals with thalassaemia, haemophiliacs, or carers who administer such products) • inject drugs or those who are likely to progress to injecting (see Chapter 18) • are sexual partners, children, or other close family or household contacts of people who inject drugs (PWID) • change sexual partners frequently, are men who have sex with men (MSM) or commercial sex workers • are household, close family or sexual contacts of an individual with hepatitis B infection • are members of a family adopting children from countries with a high or intermediate prevalence of hepatitis B • are, or are close family or household of, short-term foster carers who receive emergency placements • are, or are close family or household of, permanent foster carers who accept a child known to be hepatitis B infected • are inmates of custodial institutions in the UK, including those on remand • are resident in accommodation for those with learning disabilities • are adults or children attending day care, schools and centres for those with learning disabilities and, based on local risk assessment, are at risk of frequent percutaneous exposure (such as biting or being bitten)
Criteria for exclusion[2] Continued over page **Criteria for exclusion**	Individuals for whom no valid consent has been received. Individuals who: • have had a confirmed anaphylactic reaction to a previous dose of hepatitis B containing vaccine or to any components of the vaccine • are known to have markers of current (HBsAg) or past (anti-HBcore) hepatitis B infection

[2] Exclusion under this PGD does not necessarily mean the medication is contraindicated, but it would be outside the PGDs remit and another form of authorisation will be required.

(continued)	• are on haemodialysis, renal transplantation programmes or have chronic renal failure (See HepB Renal PGD) • require HepB vaccination solely for the purpose of overseas travel • are at solely an occupational risk of hepatitis B exposure • are suffering from acute severe febrile illness (the presence of a minor illness without fever or systemic upset is not a contraindication for immunisation)
Cautions including any relevant action to be taken	Premature infants should have their immunisations at the appropriate chronological age, according to the schedule. This is vital for infants born to hepatitis B infected mothers as delay will increase the chance of infection being acquired. However, the occurrence of apnoea following vaccination is especially increased in infants who were born very prematurely. Therefore, very premature infants (born ≤ 28 weeks of gestation) who are in hospital should have respiratory monitoring for 48-72 hours when given their first immunisation, particularly those with a previous history of respiratory immaturity. If the child has apnoea, bradycardia or desaturations after the first immunisation, the second immunisation should also be given in hospital, with respiratory monitoring for 48-72 hours. As the benefit of vaccination is high in this group of infants, vaccination should not be withheld or delayed. Syncope (fainting) can occur following, or even before any vaccination especially in adolescents as a psychogenic response to the needle injection. This can be accompanied by several neurological signs such as transient visual disturbance, paraesthesia and tonic-clonic limb movements during recovery. It is important that procedures are in place to avoid injury from faints. Use caution when vaccinating individuals with severe (ie anaphylactic) allergy to latex. The HBvaxPRO® syringe plunger, stopper and tip cap contain dry natural latex rubber; use an alternative vaccine if available. The immunogenicity of the vaccine could be reduced in immunosuppressed subjects. Vaccination should proceed in accordance with the national recommendations. However, re-immunisation may need to be considered. Seek medical advice as appropriate.
Action to be taken if the patient is excluded continued over page **Action to be taken if the patient is excluded**	Individuals who have had a confirmed anaphylactic reaction to a previous dose of HepB vaccine or any components of the vaccine should be referred to a clinician for specialist advice and appropriate management. Individuals known to have markers of current (HBsAg) or past (anti-HBcore) hepatitis B infection should be advised that vaccination is not necessary. However, immunisation should not be delayed while awaiting any test results. Individuals who are on haemodialysis, or renal transplantation programmes, or with chronic kidney disease and anticipated to require haemodialysis or transplant should be offered HepB vaccination but this is outside the remit of this PGD (see HepB Renal PGD for vaccination of renal patients over 15 years, or for individuals under 15 years refer for specialist advice and manage under PSD as appropriate). Individuals requiring HepB vaccination solely for overseas travel purposes should be administered HepB in accordance with local policy. However, HepB immunisation for travel is not remunerated by

(continued)	the NHS as part of additional services and is therefore not covered by this PGD. Where an individual also requires HepA vaccination, it may be appropriate to provide the combined HepA and HepB vaccine, see the PHE HepA/B vaccine PGD. Individuals who are solely at occupational risk of hepatitis B exposure should be referred to their employer's occupation health provider for vaccination. Individuals suffering acute severe febrile illness should postpone immunisation until they have recovered; immunisers should advise when the individual can be vaccinated and ensure another appointment is arranged. Seek appropriate advice from the local Screening and Immunisation Team, local Health Protection Team or the individual's clinician as required. The risk to the individual of not being immunised must be taken into account. Document the reason for exclusion and any action taken in the individual's clinical records. In a GP practice setting, inform or refer to the GP or a prescriber as appropriate.
Action to be taken if the patient or carer declines treatment	Informed consent, from the individual or a person legally able to act on the person's behalf, must be obtained for each administration. All cases where HepB vaccination is declined on behalf of infants born to hepatitis B positive mothers should be contemporaneously referred. Advise the individual/parent/carer about the protective effects of the vaccine, the risks of infection and potential complications. Document advice given and the decision reached. In a GP practice setting, inform or refer to the GP as appropriate.
Arrangements for referral for medical advice	As per local policy

5. Description of treatment

Name, strength & formulation of drug	Hepatitis B recombinant DNA (rDNA) vaccine (adsorbed)* (HepB) eg: • Engerix B® 10micrograms/0.5ml suspension for injection in pre-filled syringe • Engerix B® 20micrograms/1ml suspension for injection in pre-filled syringe • Engerix B® 20micrograms/1ml suspension for injection in a vial • HBvaxPRO® 5micrograms/0.5ml suspension for injection in pre-filled syringe • HBvaxPRO® 10micrograms/1ml suspension for injection in pre-filled syringe An appropriate vaccine product should be selected for the patient group to be treated see Dose and Frequency of Administration.
Legal category	Prescription only medicine (POM)
Black triangle▼	No
Off-label use	The full 1ml volume of adult preparations of HepB vaccine may be given to paediatric patients off-label, during paediatric hepatitis B containing vaccine supply shortages, in accordance with the PHE recommendations, see Hepatitis B: vaccine recommendations during supply constraints. Engerix B® very rapid (super accelerated) schedule (given at 0, 7 and 21 days) is licensed for those from 18 years of age but may be used off-label in those from 16 to 18 years of age where it is important to provide rapid protection and to maximise compliance (this includes PWID and those in prison) in accordance with Chapter 18 of 'The Green Book'. Vaccine should be stored according to the conditions detailed in the Storage section below. However, in the event of an inadvertent or unavoidable deviation of these conditions refer to PHE Vaccine Incident Guidance. Where vaccine is assessed in accordance with these guidelines as appropriate for continued use this would constitute off-label administration under this PGD. Where a vaccine is recommended off-label consider, as part of the consent process, informing the individual/parent/carer that the vaccine is being offered in accordance with national guidance but that this is outside the product licence.
Route / method of administration	Administer by intramuscular injection into the deltoid region of the upper arm for individuals over one year of age and the anterolateral thigh for infants. The buttock should not be used because vaccine efficacy may be reduced. When administering at the same time as other vaccines, care should be taken to ensure that the appropriate route of injection is used for all the vaccinations. The vaccines should be given at separate sites, preferably in different limbs. If given in the same limb, they should be given at least 2.5cm apart. The site at which each was given should be noted in the individual's records.

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<table>
<tr><td>Route / method of administration
(continued)</td><td>For individuals with a bleeding disorder, vaccines normally given by an intramuscular route should be given by deep subcutaneous injection to reduce the risk of bleeding (see ‘The Green Book’ Chapter 4).

The vaccine may settle during storage, shake the vaccine well before administration to obtain a slightly opaque (HBvaxPro®) or turbid (Engerix B®), white suspension.

The vaccine should be visually inspected for particulate matter and discoloration prior to administration. In the event of any foreign particulate matter and/or variation of physical aspect being observed, do not administer the vaccine.

The vaccine’s SPC provides further guidance on administration and is available from the electronic Medicines Compendium website: www.medicines.org.uk</td></tr>
<tr><td>Dose and frequency of administration

(Note: This section is reproduced in Appendix A for clarity and ease of reference)</td><td>Individuals who require other vaccines at the same time as a scheduled HepB dose may receive these as separate vaccine products or the scheduled HepB dose may be fulfilled by the administration of a multivalent vaccine, eg HepA/HepB combined vaccine or DTaP/IPV/Hib/HepB, see PHE HepA/B vaccine PGD or PHE DTAP/IPV/Hib/HepB PGD as appropriate.

Current UK licensed HepB vaccines contain different concentrations of antigen per millilitre.

Table 1: Current UK licensed HepB vaccine doses
<table>
<tr><td>Age</td><td>Vaccine</td><td>Dose</td><td>Volume</td></tr>
<tr><td rowspan="2">0–15 years*</td><td>Engerix B®**</td><td>10 micrograms</td><td>0.5ml</td></tr>
<tr><td>HBvaxPRO®**</td><td>5 micrograms</td><td>0.5ml</td></tr>
<tr><td rowspan="2">16 years or over</td><td>Engerix B®</td><td>20* micrograms</td><td>1.0ml</td></tr>
<tr><td>HBvaxPRO®</td><td>10 micrograms</td><td>1.0ml</td></tr>
<tr><td colspan="4">*20 micrograms of Engerix B® may be given to children 11-15 years of age if using the two dose schedule.
**During supply shortages of paediatric hepatitis B containing vaccine, the full 1ml adult preparation of hepatitis B containing vaccine may be administered to infants (off-label) rather than delay or risk omitting HepB vaccination in individuals at high risk (see Additional Information). The adult preparations may be used interchangeably with the paediatric products when vaccine becomes available (see Additional Information for order of preference).</td></tr>
</table>
It is important for immunisations to be provided on time as delay will increase the chance of infection being acquired (see Table 2 for schedules). Where immunisation has been delayed beyond the recommended intervals, the vaccine course should be resumed and completed.

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Dose and frequency of administration
(continued)

Table 2: Pre- and post-exposure prophylaxis schedules for Engerix B® or HBvaxPRO®

Schedule	Examples of when to use this schedule
Usual pre- and post-exposure prophylaxis accelerated schedule*: • 3 doses at 0, 1, and 2 months • further dose 12 months after the first dose for babies born to hepatitis B positive mothers and individuals at continued risk	Used for individuals of all ages for pre- and post-exposure prophylaxis. This is the preferred schedule for babies born to hepatitis B positive mothers. Note: dose from 2 months of age may be provided by multivalent vaccine, eg DTaP/IPV/Hib/HepB, and doses may also be administered in addition to this schedule where DTaP/IPV/Hib/HepB is used for routine childhood immunisation.
Alternative schedule*: • 3 doses at 0, 1, and 6 months	This is rarely the most appropriate schedule. It should only be used when rapid protection is not required and there is a high likelihood of compliance with the regimen.
Two dose schedule of Engerix B® only: • 2 doses of adult strength (20 microgram) vaccine at 0 and 6 months	Only to be used for individuals 11 to 15 years of age, when there is a low risk of hepatitis B infection during the course and completion of the course can be assured.
Very rapid (super accelerated) schedule of Engerix B® only: • 3 doses at 0, 7 days and 21 days • further dose 12 months after the first dose is recommended to be considered protected	To be used for individuals from 16 years of age (see Off-label use) who are at immediate risk and when very rapid immunisation is required eg PWID, prisoners.
Booster (Engerix B®, HBvaxPro®)*: • Single dose administered 5 years after the primary course or, for children born to hepatitis B infected mothers, given with the pre-school boosters** for other childhood immunisations.	Use once to maintain immunity for those who continue to be at risk. **Note: Children born to hepatitis B infected mothers who have received five or more HepB doses, from either monovalent or multivalent vaccine (eg DTaP/IPV/Hib/HepB), including one dose from 12 months of age, do not routinely require a further HepB booster with their pre-school vaccinations.

*HBvaxPRO® and Engerix B® may be used interchangeably to complete the vaccine course.

	Note: Scheduled HepB vaccine doses may be fulfilled by multivalent vaccine when appropriate. This PGD does not cover the administration of multivalent vaccines.
Duration of treatment	Dependent on vaccine schedule, see Dose and frequency of administration.
Quantity to be supplied / administered	Dose of 0.5ml or 1.0ml per an administration depending on the age of the individual and vaccine product used, see Dose and frequency of administration.
Supplies	Supplies should be ordered directly from manufacturers/wholesalers. Protocols for the ordering, storage and handling of vaccines should be followed to prevent vaccine wastage (see protocol for ordering storage and handling of vaccines and Green Book Chapter 3).
Storage	Store at between +2°C to +8°C. Store in original packaging in order to protect from light. Do not freeze. In the event of an unavoidable temperature excursion. HBvaxPRO® can be administered provided total (cumulative multiple excursion) time out of refrigeration (at temperatures between 8°C and 25°C) does not exceed 72 hours. Cumulative multiple excursions between 0°C and 2°C are also permitted as long as the total time between 0°C and 2°C does not exceed 72 hours. In the event of an inadvertent or unavoidable deviation of these conditions, vaccine that has been stored outside the conditions stated above should be quarantined and risk assessed for suitability of continued off-label use or appropriate disposal. Refer to PHE Vaccine Incident Guidance.
Disposal	Equipment used for immunisation, including used vials, ampoules, or discharged vaccines in a syringe or applicator, should be disposed of safely in a UN-approved puncture-resistant 'sharps' box, according to local authority regulations and guidance in the technical memorandum 07-01: Safe management of healthcare waste (Department of Health, 2013).
Drug interactions	Immunological response may be diminished in those receiving immunosuppressive treatment. Vaccination is recommended even if the antibody response may be limited. May be given at the same time as other vaccines. A detailed list of drug interactions is available in the SPC, which is available from the electronic Medicines Compendium website: www.medicines.org.uk
Identification & management of adverse reactions	Local reactions following vaccination are very common ie pain, swelling or redness at the injection site, induration. Low grade fever, fatigue, drowsiness, headache, irritability, appetite loss and gastrointestinal symptoms (nausea, vomiting, diarrhoea, and abdominal pain) have been commonly reported symptoms after HepB vaccination. Hypersensitivity reactions and anaphylaxis can occur but are very rare.

	A detailed list of adverse reactions is available in the SPC, which is available from the electronic Medicines Compendium website: www.medicines.org.uk
Reporting procedure of adverse reactions	Healthcare professionals and patients/carers are encouraged to report suspected adverse reactions to the Medicines and Healthcare products Regulatory Agency (MHRA) using the Yellow Card reporting scheme on: http://yellowcard.mhra.gov.uk Any adverse reaction to a vaccine should be documented in the individual's record and the individual's GP should be informed.
Written information to be given to patient or carer	Offer marketing authorisation holder's patient information leaflet (PIL) provided with the vaccine. Immunisation promotional material may be provided as appropriate: • A guide to immunisations up to one year of age • Hepatitis B: what does my positive screening result mean? Available from: www.gov.uk/government/collections/immunisation
Patient advice / follow up treatment	Inform the individual/carer of possible side effects and their management. The individual/carer should be advised to seek medical advice in the event of an adverse reaction. When administration is postponed advise the individual/carer when to return for vaccination. Sexual contacts of individuals infected with hepatitis B should be advised regarding the appropriate use of condoms; a reasonable level of protection can be assumed following the second dose, provided that completion of the schedule can be assured. Individuals/carers should be informed about the importance of completing a course of hepatitis B immunisation. Hepatitis B positive mothers whose babies are on the neonatal hepatitis B immunisation pathway should be informed of the importance of completing the course on time and for baby to be tested at age 12 months to identify if they have become chronically infected with hepatitis B.
Special considerations / additional information	Ensure there is immediate access to adrenaline (epinephrine) 1 in 1000 injection and access to a telephone at the time of vaccination. **Limitations of HepB vaccination** Because of the long incubation period of hepatitis B it is possible for unrecognised infection to be present at the time of immunisation. The vaccine may not prevent hepatitis B infection in such cases. The vaccine will not prevent infection caused by other pathogens known to infect the liver such as hepatitis A, hepatitis C and hepatitis E viruses. As with any vaccine, a protective immune response may not be elicited in all vaccinees (see Chapter 18 for more detail). **Testing for evidence of infection or immunity** Where testing for markers of current or past infection is clinically indicated (eg sexual and household contacts of hepatitis B infected individuals), this should be done at the same time as the administration of the first HepB vaccine dose. Vaccination should not be delayed while waiting for results of the tests. Further doses may

Continued over page **Special considerations / additional information** (continued)	not be required in those with clear evidence of current or past infection. Testing children born to hepatitis B infected mothers for HBsAg at one year of age will identify any babies for whom vaccination has not been successful and who have become chronically infected with hepatitis B, and will allow them to be referred for assessment and any further management. This testing can be carried out at the same time as the 12 month vaccine dose is given. Where immunisation has been delayed beyond the recommended intervals, the vaccine course should be completed, but it is more likely that the child may become infected. In this instance, testing for HBsAg from 12 months of age is particularly important. Additional vaccine doses may need to be considered for persons who do not respond or have a sub-optimal response to a course of vaccinations. Except in certain groups (eg risk of occupational exposure and renal failure), testing of anti-HBs is not routinely recommended. Refer to Chapter 18 for advice on response to vaccine and the use of additional doses. **Post-exposure prophylaxis** Guidance on post-exposure prophylaxis following exposure to hepatitis B has been issued by the former PHLS Hepatitis Subcommittee (PHLS Hepatitis Subcommittee, 1992). A summary of this guidance is given in the Green Book Chapter 18 Table 18.5. **Hepatitis B immunoglobulin (HBIG)** This PGD does not cover the administration of HBIG. Whenever immediate hepatitis B protection is required, hepatitis B containing vaccine should be given. When appropriate, this should be combined with simultaneous administration of HBIG at a different site (see Chapter 18 Table 18.5 for more information). The use of HBIG in addition to vaccine is recommended post exposure only in high-risk situations or in a known non-responder to vaccine. HBIG should be given as soon as possible, ideally within 48 hours, although HBIG should still be considered up to a week after exposure. Any sexual partner of individuals suffering from acute hepatitis B, and who are seen within one week of last contact, should be offered protection with HBIG and vaccine. Sexual contacts of an individual with newly diagnosed chronic hepatitis B should be offered vaccine; HBIG may be added if unprotected sexual contact occurred in the past week. All babies born to highly infectious mothers (see Table 18.4 in Chapter 18 of “The Green Book”) and babies of a birthweight of 1500g or less born to any mother infected with hepatitis B, should receive HBIG as well as active immunisation. HBIG may be given simultaneuosly with vaccine but at a different site. **Choice of HepB vaccine** During periods of constrained paediatric hepatitis B containing vaccine, the first priority group for paediatric vaccine should be infants in the selective neonatal hepatitis B programme, ie infants born to hepatitis B infected mothers receiving post exposure prophylaxis (PEP), followed by other lower risk indications for PEP.

Continued over page **Special considerations / additional information** (continued)	Vaccine administration should never be delayed for infants born to hepatitis B infected mothers, as these infants have been exposed to a substantial volume of infectious blood during the birthing process. Available vaccine products should be used in the following order of preference: 1. Hepatitis B paediatric monovalent vaccine (Engerix B® 10 microgram in 0.5ml or HBvaxPRO® 5 micrograms in 0.5ml) 2. Hepatitis B adult monovalent vaccine (Engerix B® 20 micrograms in 1.0ml and HBvaxPRO® 10 micrograms in 1.0ml). 3. Combined hepatitis A and B vaccine (see PHE HepA/B Temp PGD). The 1ml adult preparations of HepB vaccine contain exactly twice the content of the paediatric equivalent (see Table 1 above). As the adult pre-filled syringe has no clear graduations, PHE recommends that the full 1ml volume (ie an adult dose) should be given to avoid the risk of under-dosing the child (see doses and volumes in Table 1 above). This will be off-label use of the adult vaccine. Available data, although limited, does not indicate any additional safety risk from use of adult HepB vaccine in infants. If an adult dose(s) of HepB vaccine has been used in a child, the course can be completed with paediatric products at the appropriate ages when vaccine stock becomes available. **Pregnant women/breastfeeding** There is no evidence of risk from vaccinating pregnant women or those who are breast feeding with inactivated vaccines. Since HepB is an inactivated vaccine, the risks to the foetus are negligible and it should be given where there is a definite risk of infection.
Records	Record: • that valid informed consent was given • name of individual, address, date of birth and GP with whom the individual is registered • name of immuniser • name and brand of vaccine • date of administration • dose, form and route of administration of vaccine • quantity administered • batch number and expiry date • anatomical site of vaccination • advice given, including advice given if excluded or declines immunisation • details of any adverse drug reactions and actions taken • supplied via Patient Group Direction (PGD) Records should be signed and dated (or a password controlled immunisers record on e-records). All records should be clear, legible and contemporaneous. This information should be recorded in the individual's GP record. Where vaccine is administered outside the GP setting appropriate health records should be kept and the individual's GP informed. The local Child Health Information Services team (Child Health Records Department) must be notified using the appropriate

	documentation/pathway as required by any local or contractual arrangement. A record of all individuals receiving treatment under this PGD should also be kept for audit purposes in accordance with local policy.

6. Key references

Key references	**HepB vaccine** • Immunisation Against Infectious Disease: The Green Book Chapter 4, last updated June 2012, Chapter 18, last updated 17 July 2017. https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book • Summary of Product Characteristic for Engerix B®, GlaxoSmithKline. 24 April 2017. http://www.medicines.org.uk/emc/medicine/9283 http://www.medicines.org.uk/emc/medicine/24844 • Summary of Product Characteristic for HBvaxPRO® 5mcg and 10mcg. MSD Ltd. 12 March 2019. http://www.medicines.org.uk/emc/medicine/9850 http://www.medicines.org.uk/emc/medicine/9847 • NHS public health functions agreement 2018-19, Service specification No.1 Neonatal hepatitis B immunisation programme. September 2018. https://www.england.nhs.u/publication/public-health-national-service-specifications/ • Hepatitis B: vaccine recommendations during supply constraints. Public Health England, last updated 20 November 2018. https://www.gov.uk/government/publications/hepatitis-b-vaccine-recommendations-during-supply-constraints • Exposure to hepatitis B virus: guidance on post-exposure prophylaxis. PHLS Hepatitis Subcommittee. 14 August 1992. http://webarchive.nationalarchives.gov.uk/+/http://www.hpa.org.uk/cdr/archives/CDRreview/1992/cdrr0992.pdf **General** • Health Technical Memorandum 07-01: Safe Management of Healthcare Waste. Department of Health 20 March 2013 https://www.gov.uk/government/publications/guidance-on-the-safe-management-of-healthcare-waste • National Minimum Standards and Core Curriculum for Immunisation Training. Published February 2018. https://www.gov.uk/government/publications/national-minimum-standards-and-core-curriculum-for-immunisation-training-for-registered-healthcare-practitioners • NICE Medicines Practice Guideline 2 (MPG2): Patient Group Directions. Published March 2017. https://www.nice.org.uk/guidance/mpg2 • NICE MPG2 Patient group directions: competency framework for health professionals using patient group directions. Updated March 2017. https://www.nice.org.uk/guidance/mpg2/resources • PHE Immunisation Collection https://www.gov.uk/government/collections/immunisation • PHE Vaccine Incident Guidance

	https://www.gov.uk/government/publications/vaccine-incident-guidance-responding-to-vaccine-errors • Protocol for ordering storage and handling of vaccines. April 2014. https://www.gov.uk/government/publications/protocol-for-ordering-storing-and-handling-vaccines

7. Practitioner authorisation sheet

HepB PGD v02.00 Valid from: 01/05/2019 Expiry: 30/04/2021

Before signing this PGD, check that the document has had the necessary authorisations in section two. Without these, this PGD is not lawfully valid.

Practitioner

By signing this patient group direction you are indicating that you agree to its contents and that you will work within it.

Patient group directions do not remove inherent professional obligations or accountability.

It is the responsibility of each professional to practise only within the bounds of their own competence and professional code of conduct.

I confirm that I have read and understood the content of this Patient Group Direction and that I am willing and competent to work to it within my professional code of conduct.			
Name	Designation	Signature	Date

Authorising manager

I confirm that the practitioners named above have declared themselves suitably trained and competent to work under this PGD. I give authorisation on behalf of **INSERT NAME OF ORGANISATION** for the above named health care professionals who have signed the PGD to work under it.			
Name	Designation	Signature	Date

Note to authorising manager

Score through unused rows in the list of practitioners to prevent practitioner additions post managerial authorisation.

This authorisation sheet should be retained to serve as a record of those practitioners authorised to work under this PGD.

APPENDIX A

Table 1: Current UK licensed HepB vaccine doses

Age	Vaccine	Dose	Volume
0–15 years*	Engerix B®**	10 micrograms	0.5ml
	HBvaxPRO®**	5 micrograms	0.5ml
16 years or over	Engerix B®	20* micrograms	1.0ml
	HBvaxPRO®	10 micrograms	1.0ml
*20 micrograms of Engerix B® may be given to children 11-15 years of age if using the two dose schedule. **During supply shortages of paediatric hepatitis B containing vaccine, the full 1ml adult preparation of hepatitis B containing vaccine may be administered to infants (off-label) rather than delay or risk omitting HepB vaccination in individuals at high risk (see Additional Information). The adult preparations may be used interchangeably with the paediatric products when vaccine becomes available (see Additional Information for order of preference).			

Table 2: Pre- and post-exposure prophylaxis schedules for Engerix B® or HBvaxPRO®

Schedule	Examples of when to use this schedule
Usual pre- and post-exposure prophylaxis accelerated schedule*: • 3 doses at 0, 1, and 2 months • further dose 12 months after the first dose for babies born to hepatitis B positive mothers and individuals at continued risk	Used for individuals of all ages for pre- and post-exposure prophylaxis. This is the preferred schedule for babies born to hepatitis B positive mothers. Note: dose from 2 months of age may be provided by multivalent vaccine, eg DTaP/IPV/Hib/HepB, and doses may also be administered in addition to this schedule where DTaP/IPV/Hib/HepB is used for routine childhood immunisation.
Alternative schedule*: • 3 doses at 0, 1, and 6 months	This is rarely the most appropriate schedule. It should only be used when rapid protection is not required and there is a high likelihood of compliance with the regimen.
Two dose schedule of Engerix B® only: • 2 doses of adult strength (20 microgram) vaccine at 0 and 6 months	Only to be used for individuals 11 to 15 years of age, when there is a low risk of hepatitis B infection during the course and completion of the course can be assured.
Very rapid (super-accelerated) schedule of Engerix B® only: • 3 doses at 0, 7 days and 21 days • further dose 12 months after the first dose is recommended to be considered protected	To be used for individuals from 16 years of age (see Off-label use) when very rapid immunisation is required, this includes PWID and prisoners
Booster (Engerix B®, HBvaxPro®)*: • Single dose administered 5 years after the primary course or, for children born to hepatitis B infected mothers, given with the pre-school boosters** for other childhood immunisations.	Use once to maintain immunity for those who continue to be at risk. **Note: Children born to hepatitis B infected mothers who have received five or more HepB doses, from either monovalent or multivalent vaccine (eg DTaP/IPV/Hib/HepB), including one dose from 12 months of age, do not routinely require a further HepB booster with their pre-school vaccinations.

*HBvaxPRO® and Engerix B® may be used interchangeably to complete the vaccine course.

Note: Scheduled HepB vaccine doses may be fulfilled by multivalent vaccine when appropriate. This PGD does not cover the administration of multivalent vaccines.