

This patient group direction (PGD) must only be used by registered health professionals who have been named and authorised by their organisation to practice under it. The most recent and in date final signed version of the PGD should be used.

# **Patient Group Direction (PGD)**

For the administration or supply of

23-valent pneumococcal polysaccharide vaccine (PPV)

By registered health care professionals for

individuals from 65 years of age and individuals from 2 years of age in a clinical risk group in accordance with the national immunisation programme for active immunisation against pneumococcal disease and UK guidelines for the public health management of clusters of serious pneumococcal disease in closed setting

Throughout the Manx Care and those contracted by the Manx Care where appropriate within practice

**PGD NUMBER 75** 

Change history (see next page)

Reference number: 75 Valid from: 09/2020 Review date: 08/2023 Version: 3

### 1. Change history

number	Change details	Date
V01.00	New PHE PGD template	01/09/2016
V02.00	<ul> <li>PPV PGD amended to:         <ul> <li>include vaccination in accordance with UK guidelines for the public health management of clusters of serious pneumococcal disease in closed settings</li> <li>include 64 year olds who may be immunised during the influenza season and who will turn 65 years by the 31 March</li> <li>include both vial and pre-filled syringe presentations of PPV</li> <li>include additional healthcare practitioners in Section 3</li> <li>refer to PHE vaccine incident guidance within the off-label and storage sections</li> <li>include minor rewording, layout and formatting changes for clarity and consistency with other PHE PGD templates</li> </ul> </li> </ul>	08/08/2018
V03.00	<ul> <li>PPV PGD amended to:         <ul> <li>clarify abbreviation from PPV to PPV23 as used in the Green Book</li> </ul> </li> <li>Recommend vaccination contacts if not received PPV23 in the preceding 12 months</li> <li>Insert a note on immunisation of welders in the inclusion section and remove mention elsewhere</li> <li>Update off-label section in line with revised SPC</li> <li>Include minor wording, layout and formatting changes for clarify and consistency with other PHE PGD templates</li> </ul>	19/05/2020

# 2. Medicines practice guideline 2: Patient group directions

Refer to the relevant sections of NICE medicines practice guideline 2: *Patient group directions* as stated in the blank template notes. For further information about PGD signatories, see the NHS and Manx Care <u>PGD website FAQs</u>

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### 3. PGD development

Refer to the NICE PGD competency framework for people developing PGDs

Job Title & organisation	Name	Signature	Date
Author of the PGD			
Member of the PGD working group			

#### 4. PGD authorisation

Refer to the <u>NICE PGD competency framework for people authorising PGDs</u>

Job Title	Name	Signature	Date
Medical Director			
Chief Pharmacist/ Pharmaceutical Adviser			
Senior Paramedic			
Director of Nursing			
GP Adviser			
Senior Microbiologist (if PGD contains antimicrobials)			

### 5. PGD adoption by the provider

Refer to the <u>NICE PGD competency framework for people authorising PGDs</u>

Job title and organisation	Signature	Date	Applicable or not applicable to area

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# 6. Training and competency of registered healthcare professionals, employed or contracted by the Manx Care, GP practice or Hospice

Refer to the NICE PGD competency framework for health professionals using PGDs

	Requirements of registered Healthcare professionals working under the PGD
Qualifications and professional registration	<ul> <li>Registered healthcare professionals, working within or contracted by the Manx Care, GP practice or Hospice who are permitted staff groups outlined within the current PGD policy</li> <li>Pharmacists must be practising in Manx Care authorised premises i.e. contracted pharmacy premises</li> </ul>
	<ul> <li>Additionally practitioners:</li> <li>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</li> <li>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</li> <li>must be competent to undertake immunisation and to discuss issues related to immunisation</li> <li>must be competent in the handling and storage of vaccines, and management of the 'cold chain'</li> <li>must be competent in the recognition and management of</li> </ul>
	anaphylaxis 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)
Initial training	<ul> <li>Knowledge of current guidelines and the administration of the drug specified in this PGD/BNF and of the inclusion and exclusion criteria</li> <li>Training which enables the practitioner to make a clinical assessment to establish the need for the medication covered by this PGD</li> <li>Local training in the use of PGDs</li> </ul>
Competency assessment	Staff will be assessed on their knowledge of drugs and clinical assessment as part the competency framework for registered health professionals using PGDs
Ongoing training and competency	The registered health care professionals should make sure they are aware of any changes to the recommendations for this medication; it is the responsibility of the registered health care professionals to keep up to date with continuing professional development. PGD updates will be held every two years

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#### 7. Clinical Conditions

Clinical condition or	Indicated for the active immunisation of individuals from 65 years of		
situation to which	•		
	age and individuals from 2 years of age in a clinical risk group, for the prevention of pneumococcal disease in accordance with the		
this PGD applies	· · · · · ·		
	national immunisation programme, <u>UK guidelines for the public</u>		
	health management of clusters of serious pneumococcal disease in		
	closed settings and recommendations given in Chapter 25 of		
	Immunisation Against Infectious Disease: the 'Green Book'		
Inclusion criteria	Individuals who:		
	are aged 65 years and over (including those 64 year olds who		
	may be immunised during the influenza season and who will turn		
	65 years by the 31 March) <sup>2</sup>		
	are aged 2 years and over and have a medical condition included		
	in the clinical risk groups defined in the Green Book <u>Chapter 25</u>		
	Table 25.2 (copy provided at Appendix D)		
	have asplenia, splenic dysfunction or chronic kidney disease (see		
	Appendix D) and require a pneumococcal polysaccharide vaccine		
	(PPV23) booster		
	are a close contact recommended vaccination by the local Health		
	Protection Team for the public health management of		
	pneumococcal disease in accordance with UK guidelines for the		
	public health management of clusters of serious pneumococcal		
	disease in closed settings		
	Note: Individuals at risk of frequent or continuous occupational		
	exposure to metal frames (such as welders) should be considered		
	for immunisation taking into account exposure control measures in		
	place. This indication is outside the remit of this PGD		
Exclusion criteria	Individuals for whom no valid consent has been received. Individuals		
Exclusion Criteria	who:		
	are less than 2 years of age		
	have previously received PPV23 over the age of 2 years, except		
	individuals with asplenia, splenic dysfunction and chronic kidney		
	disease (see <u>Appendix D</u> ) and those recommended vaccination		
	for the public health management of clusters of serious		
	pneumococcal disease in closed settings		
	have had a confirmed anaphylactic reaction to a previous dose of		
	PPV23 or to any component of the vaccine		
	have received pneumococcal conjugate vaccine (PCV) in the		
	preceding 2 months		
	are suffering from acute severe febrile illness (the presence of a		
	minor infection is not a contraindication for immunisation)		
Cautions (including any	Antibody response may be impaired in those with immunological		
relevant action to be	impairment and those with an absent or dysfunctional spleen (see		
taken)	Special considerations / additional information section regarding		
,	appropriate timing of vaccination)		
Arrangements for referral	Patient should be referred to a more experienced clinical		
for medical advice	practitioner for further assessment		
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# Action to be taken if patient excluded

- If aged less than 2 years PPV23 is not indicated, ensure PCV immunisation is up-to-date.
- If PPV23 has previously been received over the age of 2 years and the individual does not have asplenia, splenic dysfunction or chronic kidney disease (see <u>Appendix D</u>) and the individual is not recommended vaccination for the public health management of clusters of serious pneumococcal disease in closed settings, further PPV23 is not indicated.
- Individuals who have received PCV in the preceding 8 weeks postpone immunisation until 8 weeks has elapsed.
- In case of postponement due to acute severe febrile illness, 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.
- Inform or refer to the GP or a prescriber as appropriate.

# Action to be taken if patient declines treatment

- A verbal explanation should be given to the patient on: the need for the medication and any possible effects or potential risks which may occur as a result of refusing treatment
- This information must be documented in the patients' health records
- Any patient who declines care must have demonstrated capacity to do so
- Where appropriate care should be escalated
- Informed consent, from the individual or a person legally able to act on the person's behalf, must be obtained for each administration
- Advise the individual/parent/carer about the protective effects of the vaccine, the risks of infection and potential complications of disease
- Document advice given and the decision reached
- Inform or refer to the GP as appropriate

#### 8. Details of the medicine

# Name, form and strength of medicine

23-valent pneumococcal polysaccharide vaccine (PPV) eg:

- Pneumococcal polysaccharide vaccine4, 0.5ml solution for injection in a vial or pre-filled syringe, with each 0.5ml dose containing 25 micrograms of each of the following 23 pneumococcal polysaccharide serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19F, 19A, 20, 22F, 23F, 33F
- Pneumovax® 23 solution for injection in a pre-filled syringe

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Legal category	Prescription only medicine (POM)		
Indicate any off-label use	Administration of a further dose of PPV23 to high-risk individuals		
(if relevant)	who have already received a dose of PPV23 more than 12		
	months previously is off-label but is recommended in		
	accordance with the <u>UK guidelines for the public health</u>		
	management of clusters of serious pneumococcal disease in		
	<u>closed settings</u>		
	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	Administer by intramuscular or subcutaneous injection. The		
administration	preferred site is the deltoid region of the upper arm.		
	The intramuscular route is routinely used because localised		
	reactions are more common when vaccines are given		
	subcutaneously. However, for individuals with a bleeding		
	disorder, vaccines may alternatively be given by subcutaneous		
	injection to reduce the risk of bleeding.		
	See Appendix C for more information.		
Dose and frequency	Single 0.5ml dose.		
	Individuals with asplenia, splenic dysfunction or chronic kidney		
	disease (see <u>Appendix D</u> ) should be revaccinated at 5 year		
	intervals.		
	PPV23 should be offered to high-risk individuals recommended		
	vaccination by the local Health Protection Team for the public		
	health management of pneumococcal disease in accordance		
	with <u>UK guidelines for the public health management of clusters</u>		
	of serious pneumococcal disease in closed settings		
Overtitute be	Revaccination is not routinely indicated for other individuals  Single 0.5 and does		
Quantity to be	Single 0.5ml dose		
administered and/or			
supplied  Maximum or minimum	Single O Emil doce (see Doce and frequency regarding indications for		
	Single 0.5ml dose (see Dose and frequency regarding indications for		
treatment period	revaccination).		

<sup>&</sup>lt;sup>2</sup> The NHS England Directed Enhanced Service (DES) for pneumococcal polysaccharide vaccination (PPV23) is renewed annually. Historically the DES allows PPV23 to be administered to those aged 64 years if they attain 65 years of age by the 31<sup>st</sup> March. This is to facilitate co-administration of both PPV23 and influenza vaccine at the same practice visit.

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<sup>&</sup>lt;sup>3</sup> Exclusion under this Patient Group Direction does not necessarily mean the medication is contraindicated, but it would be outside its remit and another form of authorisation will be required

Storage	• Store at +2°C to +8°C.
	Store in original packaging in order to protect from light. Do not
	freeze.
	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 <u>PHE Vaccine</u> <u>Incident Guidance</u>
Adverse effects	Local reactions following vaccination are very common including
	pain, swelling, induration and/or redness at the injection site.
	A low grade fever may occur
	The most common systemic adverse events reported are
	asthenia/fatigue, myalgia and headache
	Hypersensitivity reactions and anaphylaxis can occur but are
	very rare
	Other adverse events have been reported in clinical trials and
	post- marketing surveillance but the frequency of these is not
	known
	A detailed list of adverse reactions is available in the vaccine's
	SPC, which is available from the electronic Medicines
	Compendium website: <u>www.medicines.org.uk</u>
	Healthcare professionals and individuals/parents/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
Records to be kept	The administration of any medication given under a PGD must
	be recorded within the patient's medical records
	See Appendix C for more details

# 9. Patient information

Verbal/Written information to be given to patient or carer	<ul> <li>Where medication is being supplied under a PGD, written patient information leaflet must also be supplied</li> <li>A patient information leaflet is available on request</li> <li>Offer the marketing authorisation holder's patient information leaflet (PIL) provided with the vaccine.</li> <li>Immunisation promotional material may be provided as appropriate: Splenectomy leaflet</li> </ul>
	<ul> <li>Available from: <u>www.gov.uk/government/collections/immunisation</u></li> </ul>

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# Follow-up advice to be given to patient or carer

If symptoms do not improve or worsen or you become unwell, seek medical advice immediately

- Inform the individual/parent/carer of possible side effects and their management
- Vaccination may not result in complete protection in all recipients
- Individuals at especially increased risk of serious pneumococcal infection (eg asplenics and those who have received immunosuppressive therapy for any reason), should be advised regarding the possible need for early antimicrobial treatment in the event of severe, sudden febrile illness
- The individual/parent/carer should be advised to seek medical advice in the event of an adverse reaction

#### 10. Appendix A

#### References

- 1. British National Formulary (BNF) 2019 available online: <a href="https://bnf.nice.org.uk">https://bnf.nice.org.uk</a>
- 2. Nursing and Midwifery (2018) "The code" available online: https://www.nmc.org.uk
- 3. Current Health Care Professions Council standards of practice
- 4. General Pharmaceutical Council standards
- 5. The General Optical Council
- 6. Electronic medicines compendium available online: <a href="https://www.medicines.org.uk">https://www.medicines.org.uk</a>

### Pneumococcal polysaccharide vaccine

- Immunisation Against Infectious Disease: The Green Book <u>Chapter 25</u> last updated 13 January 2020. <a href="https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book">https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book</a>
- Summary of Product Characteristic for pneumococcal polysaccharide vaccine, Merck Sharp & Dohme Limited. Last updated 01 August 2019.\_ http://www.medicines.org.uk/emc/medicine/1446
- Summary of Product Characteristic for pneumococcal polysaccharide vaccine, Merck Sharp & Dohme Limited. Last updated 01 August 2019.\_ http://www.medicines.org.uk/emc/product/9692/smpc
- NHS public health functions agreement 2019-20 Service specification No.8: Pneumococcal immunisation programme. Published July 2019.\_ https://www.england.nhs.uk/publication/public-health-national-service-specifications/
- Enhanced Service Specification: Seasonal influenza and pneumococcal polysaccharide vaccination programme 2020/21. Published 31 March 2020.\_ <a href="https://www.england.nhs.uk/publication/directed-enhanced-service-specification-seasonal-influenza-and-pneumococcal-polysaccharide-vaccination-programme-2020-21/">https://www.england.nhs.uk/publication/directed-enhanced-service-specification-seasonal-influenza-and-pneumococcal-polysaccharide-vaccination-programme-2020-21/</a>
- Guidelines for the public health management of clusters and outbreaks of pneumococcal disease in closed settings with high-risk individuals, Public Health England. Updated 21 February 2020. <a href="https://www.gov.uk/government/publications/managing-clusters-of-pneumococcal-disease-in-closed-settings">https://www.gov.uk/government/publications/managing-clusters-of-pneumococcal-disease-in-closed-settings</a>

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#### General

- Health Technical Memorandum 07-01: Safe Management of Healthcare Waste. Department of Health 20 March 2013 <a href="https://www.gov.uk/government/publications/guidance-on-the-safe-management-of-healthcare-waste">https://www.gov.uk/government/publications/guidance-on-the-safe-management-of-healthcare-waste</a>
- National Minimum Standards and Core Curriculum for Immunisation Training. Published February 2018. <a href="https://www.gov.uk/government/publications/national-minimum-standards-and-core-curriculum-for-immunisation-training-for-registered-healthcare-practitioners">https://www.gov.uk/government/publications/national-minimum-standards-and-core-curriculum-for-immunisation-training-for-registered-healthcare-practitioners</a>
- 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. March 2017. <a href="https://www.nice.org.uk/guidance/mpg2/resources">https://www.nice.org.uk/guidance/mpg2/resources</a>
- PHE Immunisation Collection <a href="https://www.gov.uk/government/collections/immunisation">https://www.gov.uk/government/collections/immunisation</a>
- PHE Vaccine Incident Guidance <a href="https://www.gov.uk/government/publications/vaccine-incident-guidance-responding-to-vaccine-errors">https://www.gov.uk/government/publications/vaccine-incident-guidance-responding-to-vaccine-errors</a>

#### 11. Appendix B

#### Health professionals agreed to practice

- Each registered healthcare professional will hold their own Competency framework which will be signed and agreed by their mentor
- A mentor is defined within the Manx Care policy as any ward/area managers, sisters, senior nurses, GPs, pharmacists or senior paramedics who has completed the PGD training themselves

#### 12. Appendix C

Route/method of administration	<ul> <li>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</li> <li>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 vaccine was given should be noted in the individual's records</li> <li>The vaccine's normal appearance is a clear colourless solution.</li> <li>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</li> <li>The vaccine's SPC provides further guidance on administration and is available from the electronic Medicines Compendium website: <a href="https://www.medicines.org.uk">www.medicines.org.uk</a></li> </ul>
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)

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#### **Drug interactions**

- Immunological response may be diminished in those receiving immunosuppressive treatment but it is important to still immunise this group
- PPV23 may be given at the same time as other vaccines
- PPV23 can also be given at the same time as shingles vaccine,
   Zostavax®, as recommended in the 'Green Book' following assessment of the evidence, concluding that there is no reduction in the effectiveness of Zostavax®

# Special considerations/ additional information (continued)

- Ensure there is immediate access to adrenaline (epinephrine) 1 in 1000 injection and access to a telephone at the time of vaccination.
- Minor illnesses without fever or systemic upset are not valid reasons to postpone immunisation. If an individual is acutely unwell, immunisation may be postponed until they have fully recovered.
- Individuals who are a contact of pneumococcal disease do not usually require PPV23. Immunisation may be indicated for close contacts where there is a confirmed cluster of serious pneumococcal disease in a closed setting and should be on the advice of your local Health Protection Team.
- Pneumococcal vaccines may be given to pregnant women when the need for protection is required without delay. There is no evidence of risk from vaccinating pregnant women or those who are breast-
- feeding with inactivated viral or bacterial vaccines or toxoids.

#### **Timing of vaccination**

- Wherever possible, immunisation or boosting of immunosuppressed or HIV-positive individuals should be either carried out before immunosuppression occurs or deferred until an improvement in immunity has been seen. The optimal timing for any vaccination should be based upon a judgement about the relative need for rapid protection and the likely response. For individuals due to commence immunosuppressive treatments, inactivated vaccines should ideally be administered at least two weeks before commencement. In some cases this will not be possible and therefore vaccination may be carried out at any time and re-immunisation considered after treatment is finished and recovery has occurred
- Ideally PPV23 should be given four to six weeks before elective splenectomy or initiation of treatment such as chemotherapy or radiotherapy. Where this is not possible, it can be given up to two weeks before treatment
- If it is not practicable to vaccinate two weeks or more before splenectomy, immunisation should be delayed until at least two weeks after the operation
- If it is not practicable to vaccinate two weeks or more before initiation of chemotherapy and/or radiotherapy, immunisation should be delayed until at least three months after completion of therapy in order to maximise the response to the vaccine.

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# Special considerations/ additional information (continued)

- Immunisation of these individuals should not be delayed if this is likely to result in failure to vaccinate
- Splenectomy, chemotherapy or radiotherapy should never be delayed to allow time for vaccination

#### Records to be kept

#### 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 PGD

Records should be signed and dated (or a password controlled immuniser's 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 Systems 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

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# 13. Appendix D

# Clinical risk groups who should receive the pneumococcal immunisation

(Green Book Chapter 25 Table 25.2)

Clinical risk group	Examples (decision based on clinical judgement)
Asplenia or dysfunction of	This also includes conditions such as homozygous sickle cell
the spleen	disease and coeliac syndrome that may lead to splenic
	dysfunction. (Re-immunisation is recommended every 5 years)
Chronic respiratory disease	This includes chronic obstructive pulmonary disease (COPD),
	including chronic bronchitis and emphysema; and such
	conditions as bronchiectasis, cystic fibrosis, interstitial lung
	fibrosis, pneumoconiosis and bronchopulmonary dysplasia
	(BPD). Children with respiratory conditions caused by
	aspiration, or a neurological disease (e.g. cerebral palsy) with
	a risk of aspiration. Asthma is not an indication, unless so
	severe as to require continuous or frequently repeated use of
	systemic steroids (as defined in Immunosuppression below)
Chronic heart disease	This includes those requiring regular medication and/or
	follow-up for ischaemic heart disease, congenital heart
	disease, hypertension with cardiac complications, and chronic
	heart failure
Chronic kidney disease	Nephrotic syndrome, chronic kidney disease at stages 4 and 5
	and those on kidney dialysis or with kidney transplantation.
	(Re-immunisation is recommended every 5 years)
Chronic liver disease	This includes cirrhosis, biliary atresia and chronic hepatitis
Diabetes	Diabetes mellitus requiring insulin or oral hypoglycaemic
	drugs. This does not include diabetes that is diet controlled
Immunosuppression	Due to disease or treatment, including patients undergoing
	chemotherapy leading to immunosuppression, bone
	marrow transplant, asplenia or splenic dysfunction, HIV
	infection at all stages, multiple myeloma or genetic
	disorders affecting the immune system (e.g. IRAK-4,
	NEMO)
	Individuals on or likely to be on systemic steroids for more
	than a month at a dose equivalent to prednisolone at 20mg
	or more per day (any age), or for children under 20kg, a
	dose of 1mg or more per kg per day
Individuals with	It is important that immunisation does not delay the cochlear
cochlear implants	implantation
Individuals with	This includes leakage of cerebrospinal fluid such as following
cerebrospinal fluid leaks	trauma or major skull surgery (does not include CSF shunts)

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