Treatment of Splenectomy Patients

Patients who suffer from asplenia or hyposplenia are at increased risk of overwhelming bacterial infection. Infection is most commonly pneumococcal (Streptococcus pneumoniae) but other organisms such as Haemophilus influenzae type b (Hib) and Neisseria meningitidis may be involved. This risk is greatest in the first two years following splenectomy and is greater amongst children but persists into adult life.

Please check online for most up to date information

Practical schedule for immunising individuals with asplenia, splenic dysfunction or complement disorders (including those receiving complement inhibitor therapy*).

First diagnosed under 1 year of age
Children should be fully immunised according to the national schedule, and should also receive:

- two doses of MenACWY vaccine at least one month apart during infancy;
- one additional dose of PCV13* and one dose of MenACWY conjugate vaccine two months after the 12-month vaccinations; and
- one additional dose of Hib/MenC and one dose of PPV231 after the second birthday.

First diagnosed at 12-23 months of age
If not yet administered, give the routine 12-month vaccines: Hib/MenC, PCV13, MMR and MenB, plus:

- one additional dose of PCV13* and one dose of MenACWY conjugate vaccine two months after the 12-month vaccinations; and
- one additional dose of Hib/MenC and one dose of PPV23*,** after the second birthday.

If not already received, two primary doses of MenB vaccine should be given two months apart at the same visit as the other vaccinations.

First diagnosed from two years to under ten years of age
Ensure children are immunised according to the national schedule, and they should also receive:

- one additional dose of Hib/MenC and one dose of PPV23*; followed by:
- one dose of MenACWY conjugate vaccine two months later

If not already received, two primary doses of MenB vaccine should be given two months apart at the same visit as the other vaccinations.

First diagnosed at age ten years onwards
Older children and adults, regardless of previous vaccination, should receive:

- one dose of Hib/MenC and one dose of PPV23*; followed by:
- one dose of MenACWY conjugate vaccine one month later.

If not already received, two primary doses of MenB vaccine should be given one month apart at the same visit as the other vaccinations.

All patients
Annual influenza vaccine each season

* Patients on Eculizumab (Soliris®) therapy are not at increased risk of pneumococcal disease and do not require PPV23 or additional doses of PCV13
** Patients with splenic dysfunction should receive boosters of PPV at five yearly intervals.
Prophylactic antibiotics should be offered to all patients.

Lifelong antibiotic prophylaxis is appropriate for high-risk groups including those individuals
- aged less than 16 years or greater than 50 years
- with inadequate serological response to pneumococcal vaccination,
- a history of previous invasive pneumococcal disease,
- splenectomy for underlying haematological malignancy, particularly in the context of on-going immunosuppression.

Low-risk patients should be counselled as to the risks and benefits of prophylaxis, particularly where adherence is an issue.

Lifelong compliance with prophylactic antibiotics is problematic. If the patient does not continue to be at high risk as per the criteria above, the patient must have antibiotic prophylaxis until at least 2 years after splenectomy.

If compliance is a problem, the patient must be advised to have an emergency supply of Amoxicillin or Erythromycin to take in the event of fever as well plus be advised to seek medical attention urgently.

Phenoxy methylpenicillin is preferred unless the cover is also needed against Haemophilus influenza for a child in which case, give amoxicillin; or if the patient is allergic to penicillin, give Erythromycin.

<table>
<thead>
<tr>
<th>Phenoxy methylpenicillin</th>
<th>Child 1 – 11 months</th>
<th>62.5 mg bd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child 1 – 4 years</td>
<td>125 mg bd</td>
</tr>
<tr>
<td></td>
<td>Child 5 – 17 years</td>
<td>250 mg bd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amoxicillin</th>
<th>Child 1 month – 4 years</th>
<th>125 mg bd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child 5 -11 years</td>
<td>250 mg bd</td>
</tr>
<tr>
<td></td>
<td>Child 12 – 17 years</td>
<td>500 mg bd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Erythromycin</th>
<th>Child 1 month – 1 year</th>
<th>125 mg bd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Child 2 – 7 years</td>
<td>250 mg bd</td>
</tr>
<tr>
<td></td>
<td>Child 8 – 17 years</td>
<td>500 mg bd</td>
</tr>
</tbody>
</table>

Adapted from BNF for children and PHE guidelines

Other measures to reduce risk include
- Patients should be asked to consult if they have a febrile illness and may be given a stock of antibiotics to start treatment by themselves. They should carry a card or Medic-Alert bracelet or necklace, or both.
- When travelling abroad patients should obtain advice from a reputable travel advice centre (e.g. Liverpool School of Tropical Medicine) to ensure precautions are adequate and up to date.
- Patients should avoid malaria (which is more severe in asplenic patients) by avoiding malaria areas or, if going to such areas, adhere scrupulously to antimalarial prophylaxis and anti-mosquito precautions.
- Avoid tick bites as there is a risk of Babesiosis and Lyme disease.
Outpatient Parenteral Antimicrobial Therapy (OPAT)

OPAT allows medically stable patients who would otherwise be fit for discharge from hospital, to receive intravenous antibiotics at home. This service aims to promote quality of life and reduce the necessity for prolonged hospital admission.

Patients receiving OPAT will have been assessed for their suitability for the service according to strict criteria. The clinical and prescribing responsibility for the management of the patient remains with the clinician who makes the diagnosis and assessment of the patient and makes the decision for the patient to commence IV antimicrobials (this could be the hospital or primary care clinician). Once the patient is switched onto an oral preparation responsibility is referred back to the GP.

Overall responsibility for monitoring and prescribing for other medical conditions remains with the supervising GP.

OPAT services vary across the Mersey area. The table below provides contact details for individual areas.

<table>
<thead>
<tr>
<th>CCG</th>
<th>Referrals</th>
<th>Contact Numbers</th>
<th>Working Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liverpool</td>
<td>IV Team for Liverpool</td>
<td>Tel: 0151 285 4696  Fax: 0151 296 7848</td>
<td>08.30 - 17.00 hrs</td>
</tr>
<tr>
<td></td>
<td>Liverpool Community Health</td>
<td></td>
<td>7 days a week</td>
</tr>
<tr>
<td>South Sefton, Southport</td>
<td>Mersey Care</td>
<td>Tel: 0151 475 4280  Fax: 0151 475 4031</td>
<td>08:00 – 16:00</td>
</tr>
<tr>
<td>and Formby</td>
<td></td>
<td></td>
<td>7 days a week</td>
</tr>
<tr>
<td>Knowsley, Halton, St Helens</td>
<td>Bridgewater Community Health</td>
<td>Tel: 01744 626 702  Mob: 07776 287606  Fax: 01744 605 951</td>
<td>07.00 - 22.00 hrs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 days a week</td>
</tr>
<tr>
<td>Warrington</td>
<td>Single point of access service, Bridgewater</td>
<td>Tel: 01925 454814  Fax: 01925 867953</td>
<td>08.00 - 19.00 hrs</td>
</tr>
<tr>
<td></td>
<td>Community Health</td>
<td></td>
<td>Monday to Friday</td>
</tr>
<tr>
<td>Wirral</td>
<td>OPAT nurse contact information – For help with referral/IV access</td>
<td>Bleep 7090 via APH switchboard  Phone: 0151 678 5111 Ext. 8986  OPAT team email: <a href="mailto:wih-tr.OPATTeam@nhs.net">wih-tr.OPATTeam@nhs.net</a></td>
<td></td>
</tr>
</tbody>
</table>

**Specialist Trust**

Alder Hey OPAT team  
Ruth Cantwell and Claire Crouch (OPAT/AMS nurse specialists)  
0151 228 4811 ex 3251 bleep 652  
Monday – Friday 08:30 – 16:30
## Miscellaneous

<table>
<thead>
<tr>
<th>Clinical diagnosis</th>
<th>Treatment advice</th>
<th>Comments and guidelines for lab testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial meningitis</td>
<td>Admit urgently</td>
<td>Give IM only if venous access cannot be found.</td>
</tr>
<tr>
<td>Meningococcal septicaemia</td>
<td>If not allergic to penicillin administer Benzylpenicillin IV/IM prior to admission:</td>
<td>In this instance, allergy means a clear history of anaphylaxis. A history of rash following penicillin is not a contraindication.</td>
</tr>
<tr>
<td>Notifiable immediately to Consultant in Health Protection</td>
<td>Child 1 – 11 months 300 mg STAT</td>
<td>Close contacts of meningococcal infection will be offered chemoprophylaxis by Consultant in Health Protection</td>
</tr>
<tr>
<td></td>
<td>Child 1 – 9 years 600 mg STAT</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adults and children aged 10 years or over 1.2 g STAT</td>
<td></td>
</tr>
</tbody>
</table>

### Hepatitis

**a) Hepatitis A**
- Notifiable to Consultant in Health Protection
- Close contacts require prophylaxis with normal immunoglobulin, preferably after lab confirmation of the index case (acute serum sample positive for Hep A IgM)
- Community infection nurse will liaise with GP regarding vaccination of contacts.
- Discuss with Consultant in Health Protection

**b) Hepatitis B**
- Notifiable to Consultant in Health Protection
- As Hepatitis A: patients without icteric illness can be missed. Raised alanine aminotransferase is a good indicator if infection suspected.

**c) Hepatitis C**
- Notifiable to Consultant in Health Protection
- No prophylaxis
- REFER to Gastroenterologist or Infections Disease Specialist for drug treatments following NICE guidelines.
- Counselling available, to be arranged by Health Protection

### Hepatitis

- For diagnosis of acute Hepatitis A request Hepatitis A IgM and IgG tests (serology)
- Transmission is enteric, food or water but rarely blood.
- Management is supportive; adequate fluid intake and appropriate nutrition and rest. Advise patient about scrupulous hygiene.

- Request serology for acute Hepatitis B
- Transmission is blood and all other body fluids.
- Management as Hepatitis A Untreated will develop into chronic Hepatitis. **Refer.**

- To diagnose active infection
  - Request Hepatitis C antibody test.
  - Repeat test to confirm a new positive.

**Refer if positive.** Transmission is via blood

**Note** LFT will give false negatives
Antimicrobial Prophylaxis

Endocarditis

Refer to the NICE CG64 Prophylaxis against infective endocarditis

Regard people with the following cardiac conditions as being at risk of developing infective endocarditis

- acquired valvular heart disease with stenosis or regurgitation
- valve replacement
- structural congenital heart disease, including surgically corrected or palliated structural conditions, but excluding isolated atrial septal defect, fully repaired ventricular septal defect or fully repaired patent ductus arteriosus, and closure devices that are judged to be endothelialised.
- hypertrophic cardiomyopathy
- previous infective endocarditis.

Offer people at risk of infective endocarditis clear and consistent information about prevention, including

- the benefits and risks of antibiotic prophylaxis, and an explanation of why antibiotic prophylaxis is no longer routinely recommended the importance of maintaining good oral health.
- symptoms that may indicate infective endocarditis and when to seek expert advice.
- the risks of undergoing invasive procedures, including non-medical procedures such as body piercing or tattooing.

Do not offer antibiotic prophylaxis against infective endocarditis

- to people undergoing dental procedures
- to people undergoing non-dental procedures at the following sites
  - upper and lower gastrointestinal tract
  - genitourinary tract; this includes urological, gynaecological and obstetric procedures and childbirth
  - upper and lower respiratory tract; this includes ear, nose and throat procedures and bronchoscopy

Do not offer chlorhexidine mouthwash as prophylaxis against infective endocarditis to people at risk undergoing dental procedures.

Investigate and treat promptly any episodes of infection in people at risk of infective endocarditis to reduce the risk of endocarditis developing.

Offer an antibiotic that covers organisms that cause infective endocarditis if a person at risk of infective endocarditis is receiving antimicrobial therapy because they are undergoing a gastrointestinal or genitourinary procedure at a site where there is a suspected infection.

Malaria

Malaria prophylaxis should not be prescribed on an NHS prescription form. Patients should be advised to purchase their medicines from a pharmacy where it often costs less than the prescription charge. Mefloquine, Maloprim®, Malarone® and Doxycycline* are ‘prescription only medicines’ which should be provided on private prescription. Where Doxycycline* is prescribed for chemoprophylaxis of malaria it should only be prescribed privately.

Local Community Pharmacists have access to up to date advice about appropriate regimes and can advise travellers accordingly.

* Avoid in pregnancy
The length and timing of commencement of prophylaxis are determined by the regime required. Regular GP literature also provides updated advice on the choice of antimalarials for different regions of the world. Further information is available from Liverpool School of Tropical Medicine - 0151 705 3100 or from hospital pharmacy medicines information services. Pre-travel Clinic service available by appointment but adults attending may incur a charge.

**Other resources**

[NaTHNaC](#)  [fitfortravel](#)

Prophylactic medicines **do not provide** absolute protection against malaria. Personal protection against being bitten using mosquito nets, insect repellents and appropriate clothing are also important.

[Prescribing for patients living or travelling abroad or otherwise absent from the UK](#)
Current statutorily notifiable diseases and food poisoning (2017)
These infections must be reported to Public Health England (see useful contact numbers)

- Acute encephalitis
- Acute infectious hepatitis
- Acute meningitis
- Acute poliomyelitis
- Anthrax
- Botulism
- Brucellosis
- Cholera
- Diphtheria
- Enteric fever (typhoid or paratyphoid fever)
- Food poisoning
- Haemolytic uraemic syndrome (HUS)
- Infectious bloody diarrhoea
- Invasive group A streptococcal disease
- Legionnaires’ disease
- Leprosy
- Malaria
- Measles
- Meningococcal septicaemia
- Mumps
- Plague
- Rabies
- Rubella
- Severe Acute Respiratory Syndrome (SARS)
- Scarlet fever
- Smallpox
- Tetanus
- Tuberculosis
- Typhus
- Viral haemorrhagic fever (VHF)
- Whooping cough
- Yellow fever
Members of the Pan Mersey Antimicrobial Review Group for 2017

The guidelines were developed jointly between primary and secondary care. The Review Group would like to take the opportunity to thank all those in primary and secondary care who contributed to the latest review of these guidelines.

Andrea Giles, Senior Pharmacist, St Helens CCG  
Andrew Lewis, Antimicrobial Pharmacist, St Helens and Knowsley Hospital Trust  
Andrew Taylor, Antimicrobial Pharmacist, Alder Hey Children’s Hospital Trust  
Anne Neary, Antimicrobial Pharmacist, Royal Liverpool and Broadgreen Hospitals Trust  
Callum Sykes, Clinical Pharmacist, North West Boroughs Healthcare NHS Foundation Trust  
Carolyn Barton, Knowsley CCG  
Clare Sawers, Medicines Optimisation Pharmacist, Warrington CCG  
Emma Hughes, Antimicrobial Pharmacist University Hospital Aintree  
Emma Wilson, Pharmacist, Liverpool CCG

Contributions were also received from the following:

David Sharpe, Antimicrobial Pharmacist, Alder Hey Children’s Hospital Trust  
Dr Gill Thomas, GP South Sefton CCG  
Dr John Cunniffe, Consultant Microbiologist, Wirral University Teaching Hospital  
Dr Kalani Mortimer, Consultant Microbiologist, St Helens and Knowsley Hospital Trust  
Lucy Reid, Head of Medicines Management, Halton CCG  
Nicola Baxter, Senior Pharmacist West Lancs CCG  
Dr Rashmi Gupta, Consultant Microbiologist, Southport and Ormskirk Hospital Trust  
Grace Harris, Pharmacist, South Sefton CCG and Southport and Formby CCG  
Helen Stubbs, Senior Pharmacist, Cheshire and Merseyside CSU  
Jacqueline Ward, Pharmacist, Warrington and Halton Hospitals NHS Foundation Trust  
Dr Jamie Hampson GP Liverpool CCG  
Jessica Mellor, Pharmacist, Halton CCG  
Dr Jonathan Folb, Consultant Microbiologist, Royal Liverpool and Broadgreen Hospitals Trust  
John Gwilliam, Antimicrobial Pharmacist, Southport and Ormskirk Hospital Trust  
Sandra Craggs, Senior Pharmacist, South Sefton CCG and Southport and Formby CCG

Dr Richard Cooke, Consultant Microbiologist, Alder Hey Children’s Hospital  
Dr Rob Caudwell, GP Southport and Formby CCG  
Dr Sian Alexander White, GP, Liverpool  
Dr Stephane Paulus, Consultant Microbiologist, Alder Hey Children’s Hospital  
Dr Stephanie Gallard, Deputy Medical Director, Wirral Community NHS Trust  
Dr Stephen Aston, Specialty Trainee in Infectious Diseases and General Internal Medicine, Royal Liverpool and Broadgreen Hospitals Trust  
Victoria Vincent, Medicines Optimisation Pharmacist, Wirral Medicines Management Team
## Useful Contact Numbers

### Medical Microbiologists and Virologists

*Contact respective hospital switchboards to obtain microbiological advice out of hours*

<table>
<thead>
<tr>
<th>Hospital/Trust</th>
<th>Switchboard</th>
<th>Microbiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aintree University Hospitals NHS Foundation Trust</td>
<td>0151 525 5980</td>
<td>0151 529 4900</td>
</tr>
<tr>
<td>Alder Hey Children’s NHS Foundation Trust</td>
<td>0151 228 4811</td>
<td></td>
</tr>
<tr>
<td>Lancashire Teaching Hospitals NHS Foundation Trust</td>
<td>01772 716565</td>
<td>01772 523116 (in hours)</td>
</tr>
<tr>
<td>Liverpool School of Tropical Medicine</td>
<td>0151 705 3100 (in hours only)</td>
<td>0151 706 4410 (out of hours service)</td>
</tr>
<tr>
<td>Public Health England</td>
<td>Switchboard 0344 225 0562 option 1 (in hours)</td>
<td>The contact people: 0151 434 4819 (out of hours)</td>
</tr>
<tr>
<td>Health professionals: to contact a public health professional in an emergency out of hours; in evenings, weekends or bank holidays, please phone: 0151 706 2000 and ask for ‘public health on call’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Royal Liverpool and Broadgreen University Hospitals NHS Trust</td>
<td>Switchboard: 0151 706 2000</td>
<td>Bleep 4578 or ask for the infectious diseases registrar</td>
</tr>
<tr>
<td></td>
<td>Microbiology: 0151 706 4410</td>
<td></td>
</tr>
<tr>
<td>Tropical and Infectious Diseases Unit</td>
<td>Call switchboard and bleep 4578 or ask for the infectious diseases registrar</td>
<td></td>
</tr>
<tr>
<td>Southport and Ormskirk Hospital NHS Trust</td>
<td>Switchboard: 01704 547471</td>
<td>Microbiology: 01704 704717 (in hours)</td>
</tr>
<tr>
<td>St Helens and Knowsley NHS Trust</td>
<td>Switchboard: 0151 426 1600</td>
<td>Microbiology: 0151 430 1837 (in hours)</td>
</tr>
<tr>
<td>Warrington and Halton NHS Trust</td>
<td>Switchboard: 01925 635911</td>
<td>Microbiology: 01925 662134 (in hours)</td>
</tr>
<tr>
<td>Wirral University Teaching Hospital NHS Trust</td>
<td>MicroPath automated switchboard 01244 362500 option 3 (WUTH microbiology) <strong>during normal working hours</strong></td>
<td>Arrove Park Switchboard 0151 678 5111 if <strong>out-of-hours</strong></td>
</tr>
</tbody>
</table>

### ENT – Aural Toilet Clinics

*at the following sites, by referral only*

<table>
<thead>
<tr>
<th>Hospital/Trust</th>
<th>Fax</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aintree Hospitals</td>
<td>0151 529 4946</td>
<td></td>
</tr>
<tr>
<td>Alder Hey Children’s NHS Foundation Trust</td>
<td>0151 252 5301</td>
<td></td>
</tr>
<tr>
<td>St Helens (for people registered with a GP in St Helens CCG)</td>
<td>Use the ENT hub services where possible</td>
<td>In case of query 01925 222731 (switch)</td>
</tr>
<tr>
<td>Royal Liverpool and Broadgreen Hospitals</td>
<td>Tel: 0151 706 3534</td>
<td></td>
</tr>
<tr>
<td>Southport and Ormskirk Hospital NHS Trust</td>
<td>Fax: 01704 704443</td>
<td></td>
</tr>
<tr>
<td>Warrington and Halton Hospitals</td>
<td>Fax: 01925 662209</td>
<td></td>
</tr>
<tr>
<td>Runcorn and Widnes (for people registered with a GP in Halton CCG)</td>
<td>Fax: 01925 220314</td>
<td></td>
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</tbody>
</table>