Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

HSE WEST

LIMERICK, CLARE & NORTH TIPPERARY

Policy on Meningococcal Disease Prevention for Employees of HSE West

Limerick, Clare & North Tipperary

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1.0 Policy Statement

1.1 This policy describes the measures to prevent Meningococcal Disease in HSE West - Limerick, Clare & North Tipperary employees.

1.2 Under the Safety, Health and Welfare at Work Act 2005, employers, employees and the self-employed have specific duties to protect, so far as reasonably practicable, those at work and others who may be affected by their work activity, such as contractors, visitors and patients. Central to health and safety legislation is the need for employers to assess the risks to staff and others. The Biological Agents Regulations 2001 require employers to assess the risks from exposure to hazardous substances, including pathogens (called biological agents), and to bring into effect the measures necessary to protect workers and others.

1.3 This policy describes the action to be taken to prevent meningococcal disease infection or spread in employees of HSE West – Limerick, Clare & North Tipperary. The principles underlying the policy and in accordance with legislation are of **risk assessment and disease prevention**.

1.4 The Occupational Health Department, (OHD) is committed to promoting safety, health and welfare in employees of HSE West – Limerick, Clare & North Tipperary, and to assist the organisation in fulfilling its statutory duties in relation to meningococcal disease prevention, through the provision of competent specialist occupational health advice.

1.5 Immunisation of healthcare and laboratory staff aims to protect workers at risk of exposure and their families, to protect patients and other staff from exposure to infected workers, and to sustain the workforce.

2.0 Purpose

2.1 Aim

2.1.1 To describe the actions to be taken by healthcare workers in relation to meningococcal disease prevention.

2.2 Objectives

2.2.1 To describe the infection control precautions necessary to prevent exposure to meningitis

2.2.2 To describe the risk assessment procedure and criteria applicable to the administration of vaccination and chemo-prophylaxis.

2.2.3 To describe the means by which chemo-prophylaxis is administered.

3.0 Scope

3.1 This policy applies to all employees of HSE West – Limerick, Clare & North Tipperary and replaces all previous Occupational Health policies in relation to Meningococcal Disease.

4.0 Glossary of Terms and Definitions

4.1 **Occupational Health Department (OHD):** The Occupational Health Department referred to is the Occupational Health Department, Old Dooradoyle Health Centre, Dooradoyle, Limerick (Telephone 061-482179).

4.2 **Meningococcal Meningitis:** Meningococcal Meningitis and Septicaemia are Invasive infections caused by *Neisseria meningitidis. N meningitidis* is a Gram negative diplococcus which is divided into antigenically distinct serogroups most commonly B, C, A, Y and W135. Transmission from case to case is rare and most cases acquire infection from healthy carriers by prolonged close contact. It is found in the throats of 10% of normal healthy individuals, with rates as high as 25% in young adults. The carrier state may however proceed to cause infection. Invasion of the meninges causes acute meningitis, and invasion of the blood stream causes septicaemia. Invasive meningococcal disease is relatively rare, but is a serious and potentially fatal condition.

Meningococcal disease – septicaemia and meningitis – is a notifiable disease and any patient with a meningococcal infection suspected or proven, should be notified as soon as possible to the local on-call Department of Public Health at 061-483338 Monday to Friday 9:30am to 5:00pm and the on-call Specialist in Public Health Medicine through Ambulance Control at 061-228799 / 228177 outside of these hours.

4.3 **Chemo-prophylaxis:** In relation to meningococcal disease refers to the administration of antibiotics for a prescribed period to close contacts, for the purpose of disease prevention and elimination of carriage.

4.4 Close Contacts in Health Care: Those whose mouth or nose is directly exposed to infectious naso-pharangeal droplets or secretions within one metre of a probable or confirmed case of meningococcal disease, who has not received twenty-four (24) hours of treatment.

5.0 Procedure

5.1 Prevention

5.1.1 **Standard isolation precautions** in a single room should be adopted for 24 – 48 hours in all cases of Meningococcal disease, from when treatment has been initiated. It is the responsibility of the admitting Medical Officer and Infection Control team to inform staff of the requirement for isolation and standard precautions.

5.1.2 **Personal Protective Equipment** (PPE): A surgical mask, visor and gloves and plastic aprons should be worn when close patient contact is necessary, particularly when contact with oro-pharangeal secretions is foreseeable e.g. when performing oral hygiene, nasopharangeal and endotracheal suctioning and intubation. A surgical mask must be worn for care of these patients until deemed no longer necessary by a senior clinician. It is the responsibility of each staff member to remain informed regarding all necessary precautions and to adhere to advice in relation to PPE.

5.1.3 Published UK guidelines for preventing hospital acquired infections recommend wearing face masks and eye protection when there is a risk of secretions splashing into face and eyes. In the USA, masks are recommended when working within **one (1) metre** of patients known or suspected to be infected with micro-organisms transmitted by large-particle droplets (> 5 micrometres diameter) that can be generated during coughing, sneezing, talking or the performance of clinical procedures. Laboratory studies suggest that surgical masks can protect the wearer against droplet transmission. Meningococcal pneumonia may carry a low risk of transmission in healthcare settings especially to the immuno-compromised.

5.2 Risk Assessment

5.2.1 Where there is increased risk in relation to exposure to aerosolised meningococcal bacteria or after an unprotected exposure a risk assessment is required in order to determine necessity for vaccination or chemoprophylaxis.

5.2.2 Risk assessment should take into account the possible adverse effects of offering chemoprophylaxis such as adverse drug reactions, promotion of antibiotic resistance and eradication of carriage of non-pathogenic Neisseria species that generate cross-protective immunity against invasive disease.

5.2.3 In accordance with HSE West – Limerick, Clare & North Tipperary Pre-Placement Procedure and 'Immunisation for Health Care Workers' advisory, a risk assessment must be conducted for all new and existing employees who may require vaccination against meningococcal disease as a precautionary measure.

5.3 Vaccination

5.3.1 There is no vaccine for use against *N Meningidis* group B which accounts for over 80% of laboratory confirmed isolates. *N Meningitidis* group C conjugate vaccines (MenC) are part of the routine childhood vaccinations. Menveo® a Quadrivalent polysaccharide vaccine against groups A, C, W135 and Y is also available. Chemoprophylaxis should be given first and the decision to offer vaccine to contacts should be made when the results of sero-grouping are available. This decision may be made in conjunction with Public Health. Close contacts of cases of vaccine preventable strains of *N Meningitidis* who received chemoprophylaxis should be offered an appropriate vaccine once diagnosis has been confirmed and up to four (4) weeks after illness onset. For **confirmed serogroup C** infection, MenC vaccination should be offered to close contacts previously unimmunised with MenC vaccine. Those vaccinated more than one year previously should be offered

a booster. For **confirmed serogroups A, W135 or Y** infections, vaccination with quadrivalent polysaccharide vaccine should be offered to close contacts.

5.3.2 Vaccination will not routinely be offered to health care personnel. Vaccination may be considered for employees at increased risk of unprotected exposure, including exposure to aerosolised solutions, this may include Laboratory Pathology Personnel. Polysaccharide vaccine related immunity lasts for 3 – 5 years in adults. Conjugate vaccine immunogenicity is likely to be lifelong in adults. The Occupational Health Department may be contacted for advice in relation to vaccination and are responsible for maintaining records of staff who have been vaccinated by the Occupational Health Service.

5.4 Chemoprophylaxis

5.4.1 **Healthcare workers** – *Neisseria meningidis* is transmitted from person to person through nasopharyngeal secretions or large particle respiratory droplets that are unlikely to remain airborne beyond a distance of one metre (3 feet). The organism dies quickly outside the host. Exposure to meningococci may be followed by colonisation and development of immunity or, more rarely, the development of invasive disease. After the patient commences appropriate intravenous antibiotic therapy carriage rates decrease rapidly so that meningococci are undetectable by nasopharyngeal swabbing after 24 hours.

5.4.2 Due to the mode of transmission and the subsequent treatment of the infected patient the **only staff for whom prophylaxis should be considered are those who had significant exposure to the patient's respiratory secretions before the patient has been on appropriate antibiotics for twenty four (24) hours.** The decision to remove isolation precautions lies with the treating Consultant in association with the Infection Control team and Unit Manager.

Table 1 – Exposure Risk Guide

Significant Exposure	**Non-Significant Exposure**
• Mouth-to-mouth resuscitation • Endotracheal intubation without wearing a mask • Airway management without wearing a mask • Healthcare Workers performing / assisting at autopsy without wearing a mask. (Where patient has had *N Meningitidis* and had not been on appropriate antibiotics for 24 hours).	• Exposure of the eyes to respiratory droplets✶ • General nursing care • General ITU care • Exposure to isolates in the laboratory setting • Contact with deceased patients (apart from autopsy) ✶ *This may carry a low risk of meningococcal conjunctivitis and staff should be counselled about this risk and advised to seek treatment for Occupational Health if conjunctivitis occurs within 10 days of exposure.*

5.4.3 Chemoprophylaxis is only recommended for healthcare workers who are directly exposed to infectious droplets from a probable or confirmed case e.g. mouth-to-

mouth resuscitation or where they were heavily exposed to nasopharyngeal secretions of cases around the time of admission.

5.4.4 When the Pharmacy Department is open, the member of staff will be supplied with a post exposure pack on foot of a prescription from the Occupational Health Physician. Due to the variable onsite access to the Occupational Health Physician within HSE West – Limerick, Clare & North Tipperary it may be necessary to refer a staff member to the Emergency Department during working hours also.

5.4.5.1 When the Pharmacy Department is closed the supply will be made by a medical practitioner to the member of staff, using the packs stored in the Emergency Department. In this circumstance the Pharmacy Department will supply the packs to the Emergency Department in advance, by means of a requisition. There will be a need for a requisition for the initial supply for stock and then further requisitions to replenish stock.

5.4.5.2 The Pharmacy Department will provide an appropriate proforma requisition to be completed by the medical practitioner. This requisition must be signed by a medical practitioner and state his / her bleep number. It must also state the drug name quantity and purpose for its use. All fields on the requisition must be completed to initiate supply.

5.4.5.3 The Pharmacy will label the Rifampicin pack to fulfil legal requirements except patient details and date of supply. A patient information leaflet and any other information deemed necessary will be supplied with each pack. The medical practitioner supplying Rifampicin to the healthcare worker must fill in the patient name and the date of supply on the label (legal requirements). The medical practitioner supplying Rifampicin to the healthcare worker should record the healthcare worker's name, contact number, date of birth and contact type and advise Occupational Health of same. The medical practitioner must counsel the patient appropriately.

5.4.6 The absolute risk of developing infection in healthcare worker contacts is small ($0.8/10^5$), however there is a small residual risk. Close contacts must be advised that infection may occur even if prophylaxis is given, as they may already be incubating the disease, or become recolonised. Laboratory studies suggest that surgical masks can protect the wearer against droplet transmission.

5.4.7 **Recommended Prophylaxis**: Rifampicin is the drug choice and should be given preferably within the first 24 hours of diagnosis of the index case. Chemoprophylaxis may be given up to one (1) month later if contact is not immediately identified or traced.

Dose: Rifampicin 600mgs every 12 hours for two (2) days in adults.

Side Effects: Recipients should be warned that the medication

- May interfere with the efficacy of the contraceptive pill,
- Interferes with anticoagulants,
- Causes red colouration of urine, sweat and tears

- Causes permanent discolouration of soft contact lenses.

Precautions and Contraindications to Rifampicin: Severe liver disease, pregnancy and anaphylaxis to a previous dose.

5.4.8 **Alternative prophylaxis for adults are**:

Ciprofloxacin (Ciproxin) – 0rally	500 mgs given as a single dose
Ceftriaxone (Rocephin) – IM	250 mgs by intramuscular injection as a single dose

5.4.9 Chemoprophylaxis in pregnancy

- Ceftriaxone can be given as a first choice for chemoprophylaxis during pregnancy

- Options for chemoprophylaxis in pregnancy, following counselling, include:
  - Giving no chemoprophylaxis
  - Giving Ceftriaxone
  - Taking nasal and throat swabs and giving Ceftriaxone if Meningococcus is cultured

- Although no drug can be regarded as absolutely safe in pregnancy, harmful effects on the foetus have not been documented in relation to Ceftriaxone.

- Contact should be made with a pregnant healthcare worker's General Practitioner and/or Obstetrician with regard to making a decision regarding chemoprophylaxis.

6 Implementation Plan

The policy will be circulated to the Emergency Department, Infection Control Teams, Infection Control Nurses, Microbiology Consultant and Risk Management.

7 Evaluation and Audit

The policy will be reviewed on a two (2) yearly basis.

8 References

8.1 Health and Safety Authority: Safety Health and Welfare at Work Act, 2005. HSA Dublin

8.2 Health and Safety Authority: Safety Health and Welfare at Work (Biological Agents) Regulations, 2001 HSA Dublin

8.3 HSE West – Limerick, Clare & North Tipperary: Meningococcal Disease Prevention Among Healthcare Workers. Occupational Health Department Policy 2006

8.4 Department of Health UK: Immunisation Against Infectious Disease, 2006. The Stationary Office, Belfast

8.5 Immunisations Advisory Committee Royal College of Physicians of Ireland: Immunisation Guidelines for Ireland, 2008. NDSC DOHaC

8.6 Guidance for Public Health Management of Meningococcal Disease in the UK: Health Protection Agency Meningococcus Forum. Updated August 2006

8.7 NHS Trust: Policy for the Management of Meningococcal Disease, 2006. County Durham Acute Hospitals NHS Trust

8.8 NHS Trust: Guidelines for the Supply of Oral Rifampicin Preparations as Chemoprophylaxis to patients identified at increased risk of contracting Meningococcal Disease, 2006. South Hams and West Devon Primary Care Trust

8.9 Gilmore A, Stuart J, Andrews N: Risk of Secondary Meningococcal Disease in Healthcare Workers. Lancet 2000; 356; 1654-5

8.10 Weber A, Willeke K, Marchioni R, Myojo T, McKay R, Donnelly J, et al.: Aerosol penetration and leakage characteristics of masks used in the healthcare industry. Am J Infect Control 1993; 21(4); 167-73. 99

8.11 Chen CC, Willeke K: Aerosol penetration through surgical masks. Am J Infect Control 1992; 20; 177-84

9.0 Appendices

Appendix 1 Meningococcal Disease Contract Tracing Form

ADVICE SHEET ON MENINGOCOCCAL INFECTION

FOR HEALTHCARE STAFF

Meningococcal disease is caused by *Neisseria meningitidis* or meningococcus. They can cause meningitis and septicaemia. Septicaemia without meningitis has the highest case fatality of 15 – 20% or more, whereas in meningitis alone, the fatality rate is around 3 – 5%.

The disease can affect any group but the young are the most vulnerable.

Transmission

The nasopharyngeal carriage rate of all meningococci in the general population is about 10%.

About 2.5% of young adults may be carriers at any one time. Person-to-person transmission is mainly by droplet spread from the upper respiratory tract. The incubation period is 2-10 days.

Signs & Symptoms

- Malaise, pyrexia, vomiting
- Headache
- Photophobia
- Drowsiness / confusion
- Joint pain.
- Haemorrhagic rash associated with meningococcal septicaemia. The rash - which may be petechial or purpuric – does not blanche under pressure. The rash can be confirmed readily by gentle pressure with a glass, when the rash can be seen to persist.

Advice

Should the above signs or symptoms develop within 2-10 days after exposure to a confirmed case of meningococcal meningitis or septicaemia, please attend your own GP for immediate assessment.

The Occupational Health Department can be contacted at Mid-Western Regional Hospital, The Old Dooradoyle Health Centre, Dooradoyle, Limerick. Telephone Number; 061-482179

INFORMATION LEAFLET - RIFAMPICIN

The antibiotic you will be given is called ***Rifampicin***. It comes as either tablets or syrup and is suitable for people of all ages. The meningococcal germs that cause meningitis and septicaemia can be carried in the nose and throat. This antibiotic will kill them.

Rifampicin must be taken twice a day for 2 days (morning and evening) the instructions will be clearly written on the box or bottle. **It is important that you take a 2-day course**.

Rifampicin is a well-known antibiotic, which is used to treat many different conditions. It is recommended in the national guidelines for close contacts of someone with meningococcal disease.

The side effects of Rifampicin may include;

- Orange / reddish staining of body fluids such as urine, sputum and tears.
- Beware this may permanently stain some contact lenses and nappies. Therefore, do not wear contact lenses whilst on treatment
- Tummy upset, diarrhoea and nausea.
- Skin flushing and itching, with or without a rash.
- Very rarely, jaundice (yellowing of the skin or whites of the eyes).

Do not take Rifampicin if;

- You are allergic to Rifampicin
- You are on blood thinning medication (anticoagulants)
- Please tell the Public Health Doctor, Pharmacist or Clinical Nurse Manager if any of the above applies and they will arrange for you to have alternative medicine.

IF YOU ARE PREGNANT OR MAY BE PREGNANT, YOUR TREATMENT WILL NEED TO BE

DISCUSSED.

If you are taking the combined oral contraceptive pill (known as the "the Pill") or the progesterone only pill (known as the "mini pill") you should take extra precautions (e.g. condoms) for the time that you are on Rifampicin and for **4 weeks** after your medicine has finished. It is also important that if you only have 7 days of pills (or less) left in the packet, do not have your usual 7-day break between packs but instead start to take your new packet immediately after finishing the last one. You may or not have a bleed that month. Please note; No other type of contraception will be affected by Rifampicin.

If you are unclear or would like further information, please contact;

The Pharmacist, HSE Mid-Western Regional Hospital, Ennis, Co. Clare. 065-6824464
(9.30-5pm Monday to Friday).
The Pharmacist, Mid-Western Regional Hospital, Ennis, Co. Clare. 061-482337
(9am-1pm & 2pm-5pm Monday to Friday)
The Pharmacist, St. Joseph's Hospital, Nenagh, Co. Tipperary. 067-31491
9am-1pm, 2pm-4.30pm Monday & Wednesday, 9am-1pm Tuesday, Thursday& Friday

INFORMATION LEAFLET

CIPROFLOXACIN

The antibiotic you will be given is called **Ciprofloxacin (Ciproxin).** The meningococcal germs that cause meningitis and septicaemia can be carried in the nose and throat, this antibiotic will kill them.

It comes in tablet form. You will receive either one or two tablets of Ciprofloxacin. It is taken as a one-off dose. It is important that you drink plenty of fluid for the rest of the day after taking this antibiotic.

Ciprofloxacin is a well-known antibiotic which is used to treat many different conditions. It is recommended in the national guidelines for close contacts of someone with meningococcal disease.

The side effects of Ciprofloxacin may include;

- Tummy ache, diarrhoea and nausea.
- Tiredness
- Facial swelling
- Rarely, breathing difficulties are associated with the facial swelling. You should seek medical attention urgently if this occurs.

Do not take Ciprofloxacin if;

- You have previously had a reaction to Ciprofloxacin.
- You are pregnant.

Please tell the Public Health Doctor, Pharmacist or Clinical Nurse Manager if any of the above applies and they will arrange for you to have an alternative medicine.

If you are unclear or would like further information, please contact;

The Pharmacist, HSE Mid-Western Regional Hospital, Ennis, Co. Clare. 065-6824464
(9.30-5pm Monday to Friday).
The Pharmacist, Mid-Western Regional Hospital, Ennis, Co. Clare. 061-482337
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9am-1pm, 2pm-4.30pm Monday & Wednesday, 9am-1pm Tuesday, Thursday& Friday

INFORMATION SHEET

CEFTRIAXONE
(ROCEPHIN)

- Ceftriaxone can be given as a first choice in pregnancy as chemoprophylaxis.

- Close contacts (who are pregnant) of a confirmed case of meningococcal infection should consult with their Obstetrician to make a decision regarding chemoprophylaxis.

- Options following counselling include:
  - Giving no prophylaxis,
  - Giving Ceftriaxone,
  - Taking a throat swab and giving chemoprophylaxis if Meningococcus is cultured

- Although no drug can be regarded as absolutely safe in pregnancy, harmful effects on the foetus have not been documented in relation to Ceftriaxone.

- Ceftriaxone can be used as an alternative to Rifampicin or where compliance is in doubt.

- Ceftriaxone is contra-indicated in patients with a hypersensitivity to Cephalosporins.

If you are unclear or would like further information, please contact;

The Pharmacist, HSE Mid-Western Regional Hospital, Ennis, Co. Clare. 065-6824464
(9.30-5pm Monday to Friday).
The Pharmacist, Mid-Western Regional Hospital, Ennis, Co. Clare. 061-482337
(9am-1pm & 2pm-5pm Monday to Friday)
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APPENDIX 5

MENINGOCOCCAL DISEASE CONTACT TRACING

Name of Index: _____ **Date of Admission**: _____ **Hospital/Ward**: _____

Name	Address	Telephone Number	D.O.B.	Weight	Contact with Patient	Prophylaxis Drug / Vaccine & Dose	Date given	General Practitioner

Signature Sheet:

I have read, understand and agree to adhere to the attached Policy, Procedure, Protocol or Guideline:

Print Name	Signature	Area of Work	Date