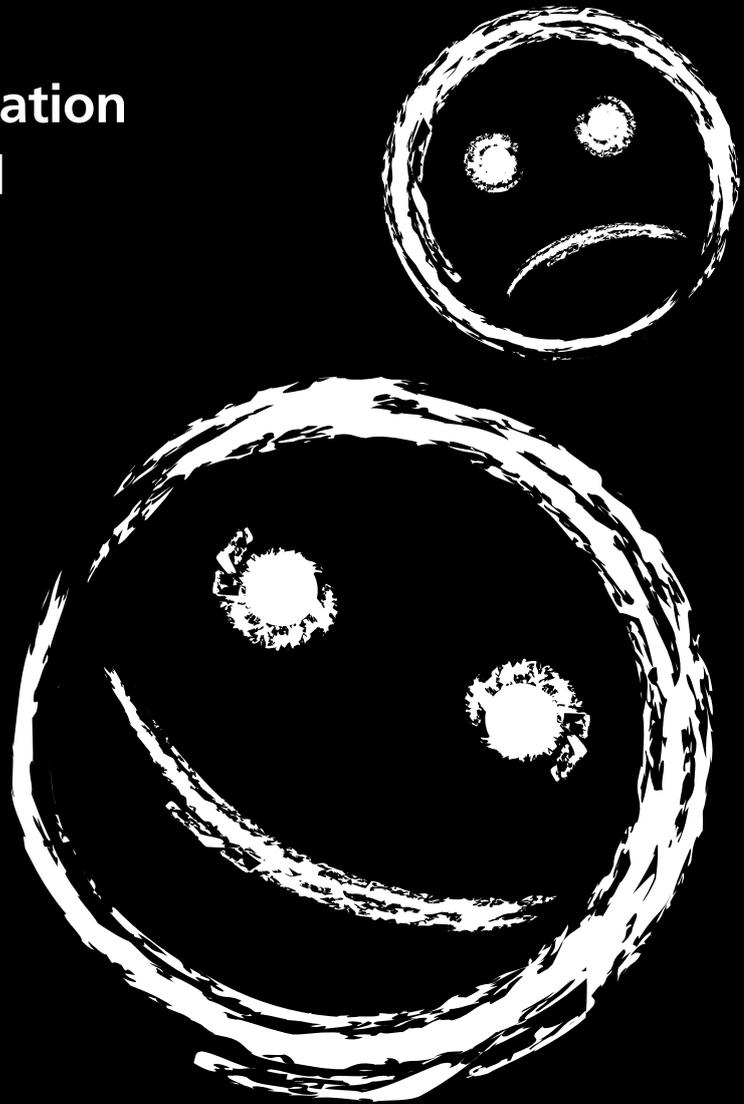




# Guidance on the prevention and management of meningococcal meningitis and septicaemia in higher education institutions

Raising awareness,  
promoting immunisation  
and planning ahead





© Crown copyright 2016  
PHE Publications Gateway Number: 2016383

[www.nhs.uk/vaccinations](http://www.nhs.uk/vaccinations)

# Guidance on the prevention and management of meningococcal meningitis and septicaemia in higher education institutions

## Raising awareness, promoting immunisation and planning ahead

- Meningococcal disease can develop suddenly, usually as meningitis or septicaemia, and can kill or leave people with life changing disabilities and health problems.
- There has been a rapid increase in one type of meningococcal disease, MenW, in recent years in the UK.
- This recent MenW strain has been particularly virulent and can be difficult to diagnose because it has been associated with symptoms infrequently seen with meningococcal disease, such as severe diarrhoea and vomiting.
- Higher Education students, particularly freshers, are known to be at increased risk of meningococcal disease.
- This rapid rise of MenW disease nationally led to the introduction of a targeted vaccination programme with MenACWY vaccination being offered to all 14-18 year olds and to freshers.
- This vaccine will save lives and it is extremely important that all freshers are aware and have the opportunity to be vaccinated before they arrive at university or as soon as possible after they arrive.
- The uptake of school leavers in 2015 (when this programme began) was disappointing with only 36% of those 18 year olds taking up the offer of this free vaccination in England.
- We know that efforts of Higher Education Institutions in collaboration with their student health partners can and have made a difference when MenACWY vaccine has been offered opportunistically to their freshers.
- It is important that all higher education students are made aware of the common signs and symptoms of this disease, that they know to tell someone if they feel unwell, that they keep an eye on friends they know are unwell and that they seek medical advice immediately if someone has symptoms of concern or whose condition is getting worse.
- There are resources available to help support Higher Education Institutions inform their students detailed in this guidance.

# Contents

|                                                                                  |           |
|----------------------------------------------------------------------------------|-----------|
| <b>Executive summary</b>                                                         | <b>5</b>  |
| <b>Arrangements in England, Northern Ireland, Scotland and Wales</b>             | <b>6</b>  |
| <b>1. Introduction</b>                                                           | <b>7</b>  |
| Definitions                                                                      | 8         |
| <b>2. Background</b>                                                             | <b>10</b> |
| Why might Freshers be at increased risk?                                         | 11        |
| <b>3. Vaccination against invasive meningococcal disease</b>                     | <b>12</b> |
| 3.1. Vaccination against MenACWY disease                                         | 12        |
| 3.2. Vaccination against MenB disease                                            | 13        |
| Clusters / Outbreaks                                                             | 14        |
| <b>4. Recommended ongoing health promotion activities</b>                        | <b>15</b> |
| 4.1. Before arrival                                                              | 15        |
| 4.2. Raising awareness among students                                            | 16        |
| Table 1: Ongoing Health Promotion Activities                                     | 17        |
| 4.3. Raising awareness among staff                                               | 17        |
| 4.4. Raising awareness among general practitioners and hospital doctors          | 17        |
| Case study: The University of Nottingham                                         | 18        |
| <b>5. Action in the event of student illness</b>                                 | <b>22</b> |
| Table 2: Main signs and symptoms of meningitis and septicaemia                   | 23        |
| <b>6. Action when a single possible, probable or confirmed case occurs</b>       | <b>24</b> |
| 6.1. Dealing with a case of possible meningococcal disease                       | 24        |
| 6.2. Dealing with a case of probable or confirmed meningococcal disease          | 24        |
| Table 3: Action for a single confirmed or probable case of meningococcal disease | 26        |
| <b>7. Action when more than one case occurs</b>                                  | <b>27</b> |
| 7.1. Dealing with unrelated cases of meningococcal disease                       | 27        |
| 7.2. Dealing with a cluster (outbreak) of meningococcal disease                  | 27        |
| <b>8. Action after a case or cluster</b>                                         | <b>29</b> |
| Table 4: Immediate action for a cluster of meningococcal disease                 | 30        |
| <b>9. Drawing up plans</b>                                                       | <b>31</b> |
| 9.1. Plans for HEIs                                                              | 31        |
| 9.1.1. Existing plans                                                            | 31        |
| 9.1.2. Key individuals                                                           | 31        |
| 9.1.3. Communication                                                             | 31        |
| 9.1.4. Helplines and online information                                          | 32        |
| 9.1.5. Facilities for public health action                                       | 32        |
| 9.1.6. Public relations                                                          | 32        |
| 9.2. Plans for local Health Protection Teams                                     | 33        |
| 9.2.1. Liaison between local Health Protection Teams and HEIs                    | 33        |
| 9.2.2. Issues to be covered in a health protection plan                          | 33        |
| <b>10. Conclusions</b>                                                           | <b>34</b> |
| <b>Appendix</b>                                                                  | <b>35</b> |
| Helplines and Leaflets                                                           | 35        |
| Websites                                                                         | 35        |
| Health and social care publications orderline                                    | 36        |
| <b>Reference list</b>                                                            | <b>38</b> |

# Executive summary

November 2016

There has been a rapid rise in one particularly virulent type of meningococcal disease, MenW, in the UK in recent years and this outbreak led to the introduction of a MenACWY vaccination programme targeting teenagers aged 14-18 years and Freshers. Students in full time higher education are at higher risk of **meningococcal disease** (meningitis and septicaemia) than their peers, especially those in their first year. Their living arrangements and lifestyles pose particular challenges in disease prevention and management. Universities and colleges are aware of these risks and challenges as well as the stress to students and staff on campuses caused by cases of the disease.

This publication summarises the issues facing students, staff, universities and colleges and their associated health services, NHS services and Health Protection Teams. It builds on earlier advice on how to promote high levels of vaccination uptake amongst students in order to minimise the risk to them and their fellow students and to ensure that a protocol is in place that can be followed if a case occurs. There are national guidelines for the public health management of meningococcal disease<sup>1</sup>.

This guidance for Higher Education Institutions (HEI) updates the 2004 guidelines and continues to support the proposal that each HEI should ensure that it has management protocols, firstly for promoting vaccination of its students and secondly to deal with cases of meningococcal disease if they occur. In particular, such policies should ensure that there are:

- awareness raising activities to promote the importance of MenACWY vaccination for freshers, based on current national policy, both before and after entering HEI;
- awareness raising activities to ensure that students and staff are informed of the common signs and symptoms of meningococcal disease, the need to alert someone if they are unwell, to frequently monitor friends who are unwell and to seek medical advice immediately if someone has symptoms of concern or whose condition is getting worse;
- strong links to Health Protection Teams, Screening and Immunisation Teams (SITs), other relevant NHS organisations and local GPs;
- direct access to appropriate advice on management following a case of meningococcal disease;
- good channels of communication with students, staff and the public;
- good links with meningitis charities who can support students affected and;
- effective support arrangements for students.

This revised guidance has been developed by Public Health England and Universities UK together with the Meningitis Research Foundation, Meningitis Now, NHS National Services Scotland, Public Health Wales and Public Health Agency in Northern Ireland. We are grateful for the additional contributions made by the Public Health England Vaccine Preventable Invasive Bacterial Infections Forum, Student Health Association, Guild HE, and AMOSSHE (The Student Services Organisation).

---

<sup>1</sup> [www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management](http://www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management)

# Arrangements in England, Northern Ireland, Scotland and Wales

In **England and Wales**, **Health Protection Team** refers to the local health team to which all clinically suspected cases of invasive meningococcal disease (IMD) should be notified and this team is responsible for advising on any subsequent local public health action. In England the local Health Protection Teams are part of **Public Health England** (PHE) whilst in Wales the Teams are part of **Public Health Wales** (PHW). Both organisations form a national public health service which exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. The **PHE Immunisation Team** offers central expert public health advice on meningococcal disease management whilst in Wales this service is undertaken by the Vaccine Preventable Disease Programme. PHE **Meningococcal Reference Unit** is the national reference laboratory for meningococcal disease.

In **Northern Ireland**, the **Health Protection Team** is a division of the **Public Health Agency** (PHA). The PHA Health Protection Team receives all notifications of clinically suspected cases of IMD and will advise on any local public health actions necessary, including liaison with the HEI for the provision of information and prophylaxis if required. The Health Protection Team can be contacted on 0300 555 0119.

In **Scotland**, investigation of cases of IMD in HEIs will be undertaken by experienced members of staff in the **NHS Boards Health Protection Teams**, these are part of the NHS in Scotland. These teams will liaise with the HEI in order to provide information to staff and students and for the administration of prophylaxis and vaccination as appropriate. In Scotland, **Health Protection Scotland** offers central expert public health advice on meningococcal disease.

**Local Health Protection Team (HPT)** will be used throughout this document to denote these equivalent organisations in each of the four countries.

**NHS England (NHSE) Screening and Immunisation team (SIT)** is the local unit sitting within NHS England with responsibility for commissioning and co-ordination of the agreed national immunisation programmes and policies for their local population. These and other national equivalent organisations are referred to as **local NHS organisations** throughout this document.

# 1. Introduction

Meningococcal disease is rare but life-threatening and cases in higher education institutions (HEIs) can pose challenges in public health management and cause considerable concern amongst students and staff.

This publication describes the procedures that HEIs, local Health Protection Teams (HPTs) and other local NHS organisations should have in place and the action to be taken if a case or an outbreak of meningococcal disease arises. Ensuring high awareness and maximising uptake of available vaccines against meningococcal disease will protect against devastating illness and save lives. However, not all students may have been vaccinated, and recommended vaccines in this age group will not protect against all types of disease, notably meningococcal B, which is responsible for the highest number of cases. If a case does arise, prompt and accurate communication to raise awareness of symptoms in students and health care providers, and to provide reassurance to students, is essential.

Unlike cases of disease in young children, the close circle of contacts, whilst well defined, may be difficult to agree and trace. Normal assumptions may not apply, as students will often be living in a hall of residence and may also be part of an active and close social network outside the hall. Misinformation about the incident may spread quickly electronically and by word of mouth and can result in panic. Students who have recently left home may feel vulnerable, especially if they have not yet established good friendship support or access to local primary care services.

Meningitis or septicaemia can be caused by other organisms, most commonly bacteria (such as pneumococci) or viruses (such as enterovirus). Public health action is rarely required after infection due to these other organisms, either because they do not tend to cause outbreaks or because there is no effective prevention. This document is therefore focused on the prevention and management of **invasive meningococcal disease (IMD)**.

This guidance was first published in 1998. It was revised in 2004 to take account of new national guidelines [1] and the introduction of the new meningococcal vaccine against Group C strains. It has been revised again in 2016 primarily due to the important introduction of MenACWY vaccination for teenagers and HEI Freshers<sup>2</sup> but also to take account of new guidelines on the public health management of IMD<sup>3</sup> and guidelines on the use of MenB vaccine in cluster and outbreak control<sup>4</sup>. There is NICE guidance<sup>5</sup> aimed at improving vaccine uptake in the under 19s.

---

2 [www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme](http://www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme)

3 [www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management](http://www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management)

4 [www.gov.uk/government/publications/invasive-meningococcus-capsular-group-b-menb-preventing-secondary-cases](http://www.gov.uk/government/publications/invasive-meningococcus-capsular-group-b-menb-preventing-secondary-cases)

5 [www.nice.org.uk/guidance/ph21](http://www.nice.org.uk/guidance/ph21)

# Definitions

## **Invasive meningococcal disease (IMD)**

is an acute infectious bacterial disease caused by *Neisseria meningitidis*. There are 12 capsular groups of *Neisseria meningitidis* that cause human disease of which groups B, C, W and Y (referred to as MenB, MenC, MenW and MenY respectively) were historically the most common in the UK.

Since the introduction of the routine MenC vaccination programme, cases of invasive meningococcal disease (IMD) in the UK due to MenC disease have reduced dramatically, with MenB currently accounting for the majority of cases, followed by MenW and MenY. This bacterium is found in the human throat and between 5 and 11% of adults and up to 25% of adolescents carry the bacteria without any signs or symptoms of disease.

However, in some individuals illness can develop very rapidly after acquiring the bacterium and is fatal in five to ten per cent of cases. Illness is most commonly due to septicaemia (blood poisoning), meningitis (inflammation of the brain lining) or a combination of the two. Other parts of the body e.g. throat, joints, lungs and eye may occasionally be infected. Urgent antibiotic treatment and rapid admission to hospital are needed.

## **Vaccination with a Meningococcal ACWY (MenACWY) vaccine**

for longer term prevention against 4 meningococcal groups (A, C, W and Y) causing IMD is available to all new HEI students (Freshers) up to 25 years of age. This is due to an increase in a highly virulent form of MenW disease in the UK. All new HEI entrants should ideally have been vaccinated with the **MenACWY vaccine** at least two weeks before starting at their HEI. Students may have been immunised as part of a school based programme or by their GP.

Immunisation against **MenC disease** has been in place since 1999 and continues to be offered routinely at 12 months of age (as MenC/Hib vaccine). In early 2013, a new vaccine was licenced in Europe which had been developed specifically to prevent **MenB disease** (4CMenB, Bexsero®) and this has been part of the infant programme since September 2015. HEI students are not currently routinely offered this vaccine.

## **Prophylaxis** is preventive treatment.

This will usually consist of a single dose of antibiotics (chemoprophylaxis) and is recommended for the group of close (household-type) contacts of a case to reduce the risk to these contacts themselves and, more importantly, to reduce the risk of further cases in that setting by eradicating carriage of the organism in the throats of members of that group who have no symptoms.

## Case definitions

Initial diagnosis of meningococcal disease (meningitis or septicaemia) is often based on clinical signs and symptoms. Laboratory identification and characterisation of the meningococcal bacteria responsible for the infection provides important information to assist the public health response. In the absence of microbiological confirmation, however, the nature and level of response will be decided by the local Health Protection Team and will depend largely on the certainty of clinical diagnosis. The following are the recommended case definitions for public health action.

- **Confirmed case:** person with a clinical diagnosis of meningococcal meningitis or septicaemia, or other invasive disease (e.g. orbital cellulitis, septic arthritis) which has been confirmed microbiologically by culture or nonculture methods.
- **Probable case:** person with a clinical diagnosis of meningococcal meningitis or septicaemia or other invasive meningococcal disease without microbiological confirmation, where an experienced member of the local Health Protection Team, in consultation with the clinician and microbiologist consider that meningococcal disease is the most likely diagnosis.

- **Possible case:** person with a clinical diagnosis of meningococcal meningitis or septicaemia or other invasive meningococcal disease without microbiological confirmation, where an experienced member of the local Health Protection Team, in consultation with the clinician and public health doctor consider that diagnoses other than meningococcal disease are at least as likely. Cases categorised as possible do not require public health action but may raise awareness and anxiety that requires the prompt dissemination of information to students and staff.

After a single confirmed or probable case in an HEI the local Health Protection Team (HPT) will be informed. They will liaise with the HEI to ensure that clear information is available to the relevant students and staff. The HPT will also help to ensure that prophylaxis is offered to the close household contacts of that case.

**Household contact** is defined as prolonged close contact with the case in a household type setting during the seven days before onset of illness. Examples of such contacts would be those living and/or sleeping in the same household, boy/girlfriends or other intimate contacts, or students sharing a kitchen or bathroom in a hall of residence. It would not include students on the same course, unless they were also a **close contact** as defined above.

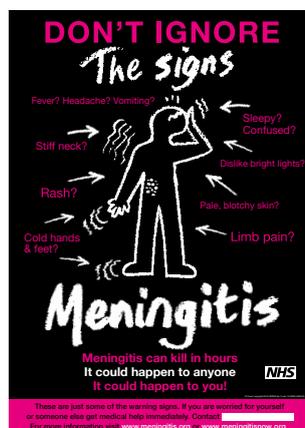
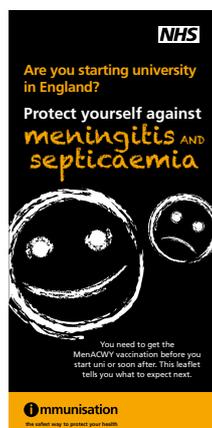
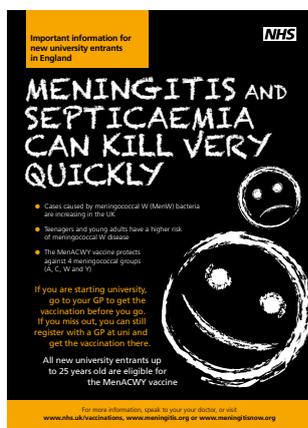
## 2. Background

Most cases of IMD continue to occur in children under five years of age. However, a second peak of incidence occurs at age 15-19 years, corresponding with the age at which most students start further or higher education [2][3].

HEI undergraduate students are at higher risk compared with non-students of the same age group, especially those in HEIs with a high proportion of students in catered hall-type accommodation [4]. The risk is highest among first year students who make up the majority of residents in such accommodation, especially in the first term (PHE, unpublished data). Outbreaks in this group are well documented [5][6]. A higher risk of meningococcal disease among first year students in dormitories has also been observed in the USA [7]. Postgraduate students and staff are not thought to be at above average risk,

but it is important to remember that anyone of any age can get meningococcal disease. It is also important to remember that the peak season for meningococcal disease extends through the winter months. Active and passive cigarette smoking, attendance at pubs/clubs, intimate kissing have all been linked with a higher likelihood of meningococcal carriage [8] and passive smoking with disease [9][10]. One outbreak in a US university was associated with a crowded, smoky bar [11] and a large UK study linked meningococcal disease to halls of residence with associated bars [12].

Meningococcal disease is notoriously difficult to diagnose in the early stages. It usually starts with fever, aches and pains, and feeling unwell, just like flu. At this stage doctors cannot make a definite diagnosis. In meningococcal disease however, the illness can get worse very rapidly (see section 5).



**1. Meningitis and septicaemia poster Uni students** – Product code: 2748622

**2. Meningitis and septicaemia leaflet for university students** – Product code: 2748602

**3. Meningitis. Don't ignore the signs poster** – Product code: 283253

1

2

3

## WHY MIGHT FRESHERS BE AT INCREASED RISK?

**Meningococcal carriage rates peak in the 15-19 year old age group and may be as high as twenty-five per cent, compared to a background rate of less than 25% in other age groups [14]. Students starting at HEIs are likely to be exposed to different meningococcal strains, many of which they may not have encountered previously and in a setting where extensive social interaction occurs. This exposure is likely to be higher among students living in communal halls of residence. Indeed, it has been shown that, among first year students, carriage rates rise rapidly during the first days and weeks [4]. This highlights the need to be protected by vaccination before arriving at university where possible, or soon after arrival. Although most strains of meningococci do not cause illness and carriage actually helps to build up an individual's immunity, a small proportion of strains are particularly virulent and can cause serious illness.**

---

Antibiotics by injection or infusion are an essential and effective part of treatment. An injection of penicillin given by the GP before admission to hospital may be life-saving, although this should not delay urgent transfer to hospital. The fatality rate is around five to ten per cent, but can vary depending on the strain of meningococcus causing disease, the age of the case and whether the clinical picture is of blood poisoning (septicaemia) or meningitis (infection of the lining of the brain).

Between 1999 and 2002 there were an average of 62 cases each year in English, Welsh and Northern Irish HEIs with five (8%) associated deaths (2004 University Meningococcal Guidance). In the 2014 to 2015 academic year there were 49 cases of IMD among students attending UCAS registered universities in England, with 4 (8%) associated deaths (PHE unpublished data). During the intervening period cases of meningococcal disease in the general population fell by around 70%. The proportionately smaller reduction in cases in university students suggests that they remain at a higher risk of disease than others in the population.

Not only is meningococcal disease difficult to diagnose, but it also presents particular challenges in public health management.

These challenges arise in; defining, tracing and alerting contacts, communicating with fellow students and staff, and alerting relevant health care professionals. The arrangements for student health services vary considerably. In some institutions, there may be a general practice with which all students and most staff and their families are registered.

Elsewhere, an HEI health centre may provide a limited range of services, but students and staff are registered with a variety of local general practices. Therefore, when a case of meningococcal disease occurs in a student or staff member, the nature of the response will vary depending on the exact circumstances.

The response will need to take account of the certainty of diagnosis, the place of residence of the case, the local configuration of student health services and the occurrence of any other recent cases of meningococcal disease in the same or in linked HEIs.

## 3. Vaccination against invasive meningococcal disease

In 1999, the year in which a vaccine to protect against MenC disease was introduced, there were over 2,500 laboratory confirmed cases of IMD reported in England. At that time, at least 50% of cases were due to MenB and 34% due to MenC disease.

The MenC vaccination programme successfully reduced MenC disease by 97% in all age groups, so that there are now only around 30 to 40 cases each year in England, mainly in older unvaccinated adults. Over that time, we have also seen a natural fall in MenB disease but cases of MenW, in particular, and MenY disease have increased since 2010 having previously been relatively rare in the UK. IMD is a cyclical disease and does naturally rise and fall over periods of years at a time.

We are currently in a period of low overall activity with around 600 to 700 cases confirmed each year in England. Around sixty per cent of cases are currently due to Group B strains, with Groups W and Y accounting for 37% of disease. It is a similar picture in the rest of the UK.

### 3.1. Vaccination against MenACWY disease

Historically, MenW has been a rare cause of IMD in the UK, accounting for less than 5% of all laboratory-confirmed cases in England each year [2, 15]. In the 2008/09 epidemiological year (running from 1 July to 30 June the following year), MenW was responsible for only 19 of 1,109 (1.7%) cases in England. Since then, MenW cases have started to increase, with cases nearly doubling annually in recent years. By 2014/15 the number of cases reached 176 and MenW accounted for 24% of all meningococcal disease, with cases increasing across all ages and in all parts of the country [15].

This increase was due to the emergence of a specific virulent clone of the bacteria which had been previously associated with increased disease and high case fatality in different parts of the world. The UK independent expert advisory committee, the Joint Committee on Vaccination and Immunisation (JCVI), considered this situation to constitute a public health emergency.

MenW incidence has been highest in infants but JCVI concluded that immunising infants would only offer those infants short term protection and, because their carriage rates are low, would have no wider population effect. The second highest incidence occurs in teenagers and so JCVI chose an outbreak control strategy that vaccinates the age group with the highest carriage rate, those aged 14-18 years. From 2015 MenACWY vaccine replaced the routine teenage MenC dose school-based programme.

**HEIs should promote awareness and encourage MenACWY vaccination through a number of different platforms. Every eligible student should have the opportunity to be vaccinated so that they are protected against this devastating disease.**

---

All those born between 01/09/1996 and 31/08/2001 will be part of a catch-up campaign offered a single dose of MenACWY vaccine between 2015 and 2018. This will provide long lasting protection to that age group but also has potential to reduce transmission of the organism across the whole population. This catch-up programme needs to be completed quickly to generate herd protection and therefore slow the overall rate of increase.

Students up to 25 years of age who have missed MenACWY vaccination may still be eligible and should be encouraged to check this with their GP.

In Scotland S6, S5 and S4 school leavers were offered MenACWY vaccine from summer 2015 and those still at school (S3-S6) were offered MenACWY in early 2016, with an ongoing yearly programme for those in S3. In Northern Ireland, year 14 school leavers were offered the vaccine in summer 2015, with those in ages equivalent to school years 11-14 offered the vaccine in 2016. The ongoing annual programme will be for those in year 11.

In Scotland, in 2016, young people aged 14-18 who have not received a dose of MenACWY vaccine are eligible, as is anyone aged under 25 years, who is attending an HEI for the first time. This arrangement will be reviewed next year (2017).

**Current national meningococcal immunisations guidance can be found in Immunisations against Infectious Disease<sup>6</sup>.**

### **3.2. Vaccination against MenB disease**

In early 2013, a new vaccine was licenced in Europe which had been developed specifically to prevent MenB disease (4CMenB, Bexsero<sup>®</sup>). This vaccine is unlike existing MenC and MenACWY conjugate vaccines in that it is protein-based with different safety, reactogenicity and immunogenicity profiles in different age groups [16]. From September 2015, the UK became the first country to offer routine vaccination against MenB disease to infants born from 1 May 2015. Bexsero<sup>®</sup> has the potential to prevent around 73-88% of MenB strains causing invasive disease in the UK and could potentially also protect against other meningococcal groups. This vaccine is not being routinely offered to adolescents or teenagers but may be recommended following confirmation of a MenB cluster. If a MenB disease cluster were identified, then the vaccine would be offered to the same group that received antibiotic chemoprophylaxis. The vaccine would be given as soon as practically possible unless molecular characterisation confirms that the cluster is not caused by a vaccine-preventable MenB strain<sup>7</sup>.

---

6 [www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22](http://www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22)

7 [www.gov.uk/government/publications/invasive-meningococcus-capsular-group-b-menb-preventing-secondary-cases](http://www.gov.uk/government/publications/invasive-meningococcus-capsular-group-b-menb-preventing-secondary-cases)

## **CLUSTERS / OUTBREAKS**

An HEI cluster is defined as two or more confirmed or probable cases of IMD that occur in the same HEI within a four week period and have an identified common link (e.g. same social network, same course and year, same hall of residence) and who are, or could be, infected by the same strain.

Around 97% of cases of meningococcal disease are sporadic and will not lead directly to any further cases [13]. Although the risk to contacts is low overall, the highest documented risk is in people who live in the same household as a case (and this risk is reduced by the prompt administration of antibiotic prophylaxis). The risk of further cases is highest in the first week after the onset of disease in the index case and after this the risk rapidly falls.

Two or more cases may occur at the same HEI and not meet the cluster definition above. When two or more cases are reported from an educational institution, experienced members of the Local Health Protection Team will undertake a rapid but careful assessment of any links between cases and will ensure that rapid microbiological investigation takes place. They will then agree what public health action, if any, should be undertaken. In the following circumstances, cases of meningococcal disease at the same HEI will not usually constitute an outbreak that requires public health action:

- if there are two confirmed cases due to different meningococcal strains; or
- if there are two confirmed or probable cases but the interval between cases is more than four weeks; or
- if there are two confirmed or probable cases with no evidence of any common links in spite of intensive enquiry (e.g. no social contact network, cases live in different halls of residence, or are on different courses), whatever the interval between them; or
- if there are two possible cases (or one possible and only one confirmed/probable case), whatever the interval or link between them.

In all instances the local HPT will liaise with the HEI to ensure that clear information is available to the relevant students and staff. The local HPT will also decide if further public health action is indicated, and, if so, will work with the HEI to ensure that prophylaxis is offered to a wider group of students. They will try to define a close contact group at highest risk of acquiring meningococcal infection and disease, and target that group for prophylaxis in order to reduce risk.

## 4. Recommended ongoing health promotion activities

The local HPT, the HEI and local NHS services (including student health services, where appropriate) should agree responsibility for the following actions (summarised in Table 1).

### 4.1. Before arrival

1. HEIs should send out information and advice on meningococcal disease (meningitis and septicaemia) in joining packs to students.
2. UK first year undergraduates should already have been offered MenACWY vaccine at school, college or by their GP before they leave for their HEI. Students should be advised to check if they have been vaccinated before arrival (a single dose is required), to make arrangements for vaccination before leaving for their HEI where necessary and to have the vaccination at least 2 weeks before arrival at the HEI, if possible, to allow time for immunity to develop prior to their arrival. Multiple prompts to check immunisation status may be helpful, such as when applying for library cards or HEI accommodation. The vaccine is available to new HEI entrants, including international students, if they are a first year entrant and up to 25 years of age. HEIs should, therefore, also send information about meningococcal disease (meningitis and septicaemia) and available vaccinations to international students who may not have been routinely vaccinated.
3. At enrolment, HEIs should encourage students to register with a local GP as soon as possible, and to ask for MenACWY vaccine if eligible and not already vaccinated.

---

**Public information resources** targeting eligible teenagers and their students are available at [www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme](http://www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme). In Scotland resources are available at [www.immunisationscotland.org.uk](http://www.immunisationscotland.org.uk) and in Northern Ireland at [www.publichealth.hscni.net](http://www.publichealth.hscni.net) (ordered via 0300 555 0119).

They can also be ordered in hard copy from the DH/ PHE Publications Orderline, or devolved administration equivalent. Additionally the meningitis charities can supply free information (see appendix). HEIs are encouraged to distribute these leaflets widely with any correspondence to first-time university entrants. Further information on the programme can be found on NHS Choices and HEIs are asked to support related social media campaigns.

## 4.2. Raising awareness among students

At the start of the academic year, all new students should be encouraged to:

- acquaint themselves with the common symptoms and signs of meningococcal disease;
- register with a local general practice and inform warden at hall of residence (if applicable) of GP's name;
- look out for each other's welfare;
- inform someone (a friend or hall warden) if they are feeling ill, so that they can be regularly monitored and prompt medical attention sought if their condition deteriorates; and
- check that they have had MenACWY vaccination if eligible (see [section 3](#)); but be aware that this vaccine does not protect against all meningococcal strains or against other organisms that can also cause meningitis or septicaemia.

The following are suggested methods for raising awareness:

- distribute leaflets and symptom cards to all new students on arrival (see Appendix)
- incorporate into HEI checklists of what to do before arrival;
- display posters and leaflets throughout the university and in all halls of residence (see Appendix);
- incorporate information on meningococcal disease in handbooks for new students, including the national meningitis charities helpline telephone numbers;
- use social media, mass texting or emailing where possible to provide information;
- make leaflets and symptom cards available through general practices and the university health centre;
- involve the Students' Union in awareness raising campaigns;
- use the student newspaper and student-led media to highlight the message;
- use the computer network through the use of log on messages and information on Internet or Intranet web pages;
- use electronic prompts to check immunisation status whilst undertaking other routine student actions, such as applying for a library card or accommodation;
- arrange displays at the "Freshers' Fair"; and
- consider working with the meningitis charities (see Appendix) or consider other channels already communicating with students.

**Table 1: Ongoing Health Promotion Activities**

|   | Action                                                                                                               | Person/organisation responsible* |
|---|----------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1 | Ensure plan is in place for dealing with cases and outbreaks.                                                        | HEI/HPT/NHS                      |
| 2 | Ensure HEI health services have received a copy of these revised guidelines.                                         | HEI/HPT/NHS                      |
| 3 | Ensure effective support arrangements for ill students.                                                              | HEI                              |
| 4 | Promote MenACWY vaccination among first year students up to 25 years of age.                                         | HEI/NHS                          |
| 5 | Encourage students to register with a GP.                                                                            | HEI                              |
| 6 | Raise awareness about meningococcal disease each autumn among students, staff, GPs and Accident and Emergency staff. | HEI/HPT/ NHS                     |
| 7 | Distribute leaflets, posters etc. widely in HEIs and general practices.                                              | HEI/HPT/ NHS                     |

\* Can be modified to take account of local arrangements and circumstances

HEI = normally Dean of Students or equivalent

HPT = experienced individual nominated within the Local Health Protection Team

NHS = Responsible local NHS organisations such as the NHS England Screening and Immunisation Team in England

### 4.3. Raising awareness among staff

The following are suggested methods for raising awareness:

- use contact with staff and social media to highlight the issue of meningococcal disease from time to time and particularly at the start of the academic year;
- contact Heads of Departments and Deans at the start of the academic year to alert them to their role if an episode of meningococcal disease occurs;
- Public Health management guidelines exist and will be followed but tutors should be aware of their role in helping to defuse anxiety and in providing sound information and;
- arrange training for hall wardens and sub-wardens so that they are aware of the common signs and symptoms of meningococcal disease, the need for students who are unwell to be regularly monitored and for prompt medical attention to be sought if a student's condition gets worse even if a doctor has previously been consulted.

### 4.4. Raising awareness among general practitioners and hospital doctors

General practitioners, including deputising services (out of hours), should be reminded by the local HPT or responsible NHS organisations:

- to maintain a high level of suspicion for meningococcal disease in students (information available from meningitis charities, see Appendix).
- of the recommended treatment for a suspected cases of IMD prior to hospital admission based on current recommended clinical guidance and of the need to ensure that they have the appropriate antibiotic in their emergency bag.

Hospital doctors should be reminded by the local HPT:

- to maintain a high level of suspicion (especially Accident and Emergency staff) for meningococcal disease in students;
- to ensure that a full range of specimens<sup>8</sup> are collected from patients with suspected meningococcal disease; and
- to notify the local Health Protection Team immediately of any suspected case.

<sup>8</sup> [www.gov.uk/government/publications/meningococcal-disease-enhanced-surveillance-plan](http://www.gov.uk/government/publications/meningococcal-disease-enhanced-surveillance-plan)



There are many examples of good practice but the following case study may be helpful in identifying some ways in which Higher Education Institutions can play an active role in improving awareness and promoting vaccination uptake amongst its students.

## CASE STUDY THE UNIVERSITY OF NOTTINGHAM

- Before first year students arrive at the University of Nottingham one of the top ten actions recommended to them in their 'welcome pack' is to register with a local General Practice on their arrival.
- Incoming students are also sent a medical questionnaire prior to arrival that includes questions on their MMR and MenACWY vaccination history.
- The University of Nottingham provides key logistic support to its large university based NHS General Practice through the provision of two large halls during freshers' week and by incorporating opportunities to register with the practice into the timetable for that week.
- New students visit the allocated halls to register with the practice. The dedicated space is also used as a Health Promotion Fair that has focussed on meningococcal disease in collaboration with one of the meningitis charities whose volunteers have discussed symptoms of meningococcal disease and the MenACWY vaccination with students as they queue.
- The completed medical questionnaire (sent pre-arrival) is discussed with students when they register and any student identified with chronic disease or who has not received 2 doses of MMR vaccine or their MenACWY vaccination is referred to a team of doctors and nurses in the second room provided by the University of Nottingham. The student will then be offered any outstanding vaccination which can be given at that time.
- Overall, following registration, MenACWY vaccine coverage in over 7000 first year students at the University of Nottingham in 2015, as assessed by UNHS database search, increased from 31% to 71%.
- In a subset of international students aged 17-25 years, who registered with UNHS, only 1% confirmed they had already received the MenACWY vaccine prior to arrival and 72% went on to accept vaccination.

Source: Turner D et al. Personal communication.

# It might not be freshers' flu...



*"Is it hot in here, or just me?"*



Fever

*"Not tonight babe."*



Headache

*"It's coming out of both ends..."*



Vomiting & Diarrhoea

These could be just a bout of freshers' flu, but they can also be some of the early symptoms of **meningitis**.

Know what to look out for and keep an eye on your friends. If you're at all worried, **get medical help immediately** - it could save someone's life.

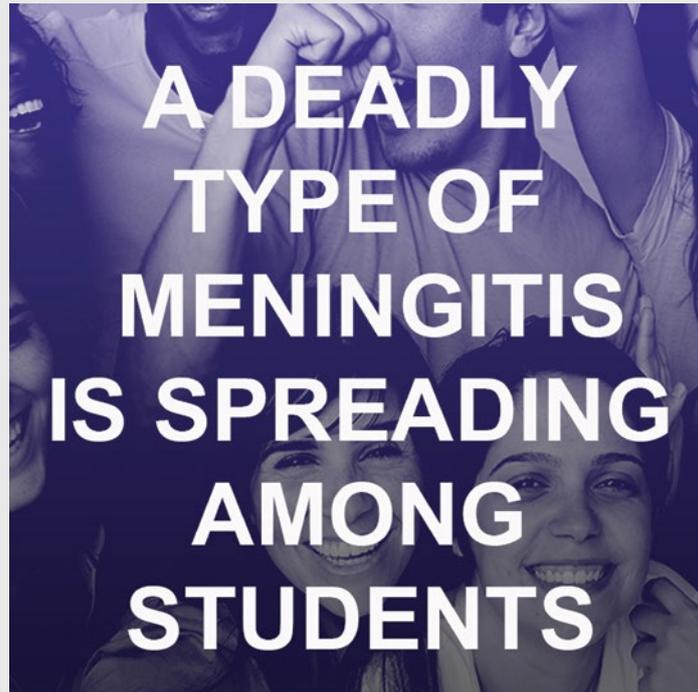
[www.fightfornow.org](http://www.fightfornow.org)



Meningitis Now. Registered Charity Number 809016 (England & Wales) SC097790 (Scotland). Company Registration Number 2469190.



Images from the 2016 Meningitis Now MenACWY awareness campaign.



**The FREE SHOT you won't regret**

**A DEADLY TYPE OF MENINGITIS  
IS SPREADING AMONG STUDENTS  
GET THE FREE MenACWY VACCINE**

- ✓ Get vaccinated if you haven't already
- ✓ Know the symptoms  
[www.meningitis.org/stopthespread16](http://www.meningitis.org/stopthespread16)
- ✓ Tell your friends #StopTheSpread
- ✓ Check your friends if they're unwell. The symptoms can be like a very bad hangover that quickly gets worse. It can be deadly. Act fast.

Under 25?  
University fresher?  
You need the free  
MenACWY vaccine  
from your GP  
ASAP

A charity registered in England & Wales no 1091105, in Scotland no SC037586 and in Ireland 20034368. Registered office: Newminster House, Baldwin Street, Bristol BS1 1LT 08/16

**Meningitis  
Research Foundation**

Meningitis Research Foundation 2016  
MenACWY campaign with UCAS.

**Important information for new university entrants in England**

**NHS**

# MENINGITIS AND SEPTICAEMIA CAN KILL VERY QUICKLY

- Cases caused by meningococcal W (MenW) bacteria are increasing in the UK
- Teenagers and young adults have a higher risk of meningococcal W disease
- The MenACWY vaccine protects against 4 meningococcal groups (A, C, W and Y)

**If you are starting university, go to your GP to get the vaccination before you go. If you miss out, you can still register with a GP at uni and get the vaccination there.**

All new university entrants up to 25 years old are eligible for the MenACWY vaccine



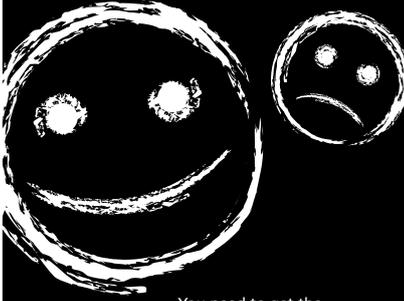
For more information, speak to your doctor, or visit [www.nhs.uk/vaccinations](http://www.nhs.uk/vaccinations), [www.meningitis.org](http://www.meningitis.org) or [www.meningitisnow.org](http://www.meningitisnow.org)

© Crown copyright 2010. 2748022. 1st 1st Aug 10 (BCD). First printed August 2010. Produced by Williams Lea for Public Health England.

**NHS**

**Are you starting university in England?**

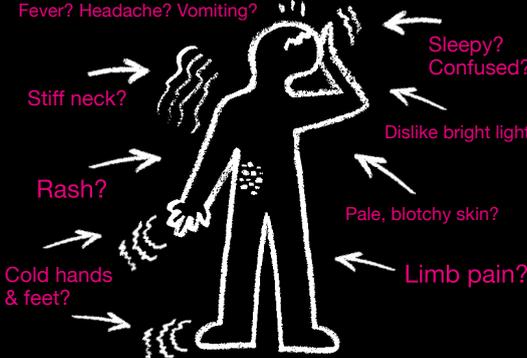
**Protect yourself against meningitis AND septicaemia**



You need to get the MenACWY vaccination before you start uni or soon after. This leaflet tells you what to expect next.

**i mmunisation**  
the safest way to protect your health

# DON'T IGNORE The signs



Fever? Headache? Vomiting?

Sleepy? Confused?

Stiff neck?

Dislike bright lights?

Rash?

Pale, blotchy skin?

Cold hands & feet?

Limb pain?

# Meningitis

**Meningitis can kill in hours  
It could happen to anyone  
It could happen to you!**

**NHS**

© Crown copyright 2010. 2748022. 1st 1st Aug 10 (BCD). Produced by Williams Lea for Public Health England.

These are just some of the warning signs. If you are worried for yourself or someone else get medical help immediately. Contact [www.nhs.uk](http://www.nhs.uk)  
For more information visit [www.meningitis.org](http://www.meningitis.org) or [www.meningitisnow.org](http://www.meningitisnow.org)

Meningitis and septicaemia poster Uni students, Meningitis and septicaemia leaflet for university students and Meningitis Don't ignore the signs poster. Find out more on page 37.

## 5. Action in the event of student illness

Students should be encouraged to look out for each other, and to report illness to a friend or warden (if in hall of residence). Students should know how to get help and advice from a general practitioner if they are ill. This information should be widely available through the HEI and Students' Union e.g. HEI website, notice boards. It is important that contact information for local general practitioners, including out of hours, is readily available, particularly in halls of residence.

Students should be made aware that dialling 999 is for emergencies and that 111 is the NHS non-emergency number in England and Scotland (NHS Direct Wales 0845 46 47). If they are concerned, but do not need urgent care for themselves or another student, they should call the appropriate non-emergency number and speak to a trained adviser, supported by healthcare professionals. Non-emergency numbers are available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones. (see Appendix).

When a doctor is called to see an ill student, it is important that a friend or warden is aware of this. If the doctor advises that the student be kept under observation, it is vital that clear arrangements are made by the doctor for regular monitoring by a duty warden, flat-mate or friend. Regular checks should be undertaken e.g. between every hour and every 4 hours depending on the level of concern and the speed of access to further medical attention. Clear arrangements should also be made so that a student can contact

a warden or alternative by phone if they become concerned or develop new symptoms. GPs should be aware of the importance of "safety-netting". In halls of residence, standing arrangements for ill students, to monitor for deterioration in the student or any recognisable symptoms of meningococcal disease (meningitis and/or septicaemia), are essential. Even if a student has previously consulted a doctor, if there are concerns about their condition trust your instincts and urgent medical attention should be sought (e.g. dropping consciousness and cold peripheries can indicate a more serious illness). This is especially important at night-time.

Meningococcal disease is notoriously difficult to diagnose in the early stages. It usually starts with fever, aches and pains, and feeling unwell, just like many infections. There may also be vomiting and/or diarrhoea. At this stage, it is usually very difficult to make an accurate diagnosis. In meningococcal disease, however, the illness can get worse very rapidly. **Early admission to hospital is advised if a student's condition is worsening**, especially if another case or cases have recently occurred at the same HEI.

It is important to keep looking for signs and symptoms that help in making the diagnosis as meningitis and septicaemia can kill in hours. Signs and symptoms are detailed on charity websites ([www.meningitis.org/symptoms](http://www.meningitis.org/symptoms) and [www.meningitisnow.org/meningitis-explained/signs-and-symptoms/signs-and-symptoms-children-and-adults](http://www.meningitisnow.org/meningitis-explained/signs-and-symptoms/signs-and-symptoms-children-and-adults)) as summarised in Table 2.

**Table 2: Main signs and symptoms of meningitis and septicaemia**

Not everyone will develop these symptoms – one or more symptom can appear in any order and be mixed between the two illnesses

| Meningitis                              | Septicaemia                                               |
|-----------------------------------------|-----------------------------------------------------------|
| Fever                                   | Fever and shivering                                       |
| Very bad headache                       | Vomiting                                                  |
| Vomiting                                | Severe pains and aches in joints and limbs                |
| Stiff neck                              | Very cold hands and feet                                  |
| Dislike of bright lights                | Pale or mottled skin                                      |
| Rash                                    | Rapid breathing                                           |
| Confusion, delirium                     | Diarrhoea and stomach cramps                              |
| Severe sleepiness, losing consciousness | Red or purple spots/rash that do not fade under pressure* |
| Seizures                                | Difficulty walking or standing                            |
|                                         | Severe sleepiness, losing consciousness                   |

---

\* a rash that doesn't fade when pressed with a glass due to bleeding under the skin (see [www.meningitis.org/symptoms](http://www.meningitis.org/symptoms) or [www.meningitisnow.org/meningitis-explained/signs-and-symptoms/glass-test](http://www.meningitisnow.org/meningitis-explained/signs-and-symptoms/glass-test))

---

**Medical help must be summoned as a matter of utmost urgency if there is concern about the health of an ill student. If a doctor is not immediately available call an ambulance using 999 or take the student to the nearest Accident and Emergency department.**

## 6. Action when a single possible, probable or confirmed case occurs

### 6.1. Dealing with a case of possible meningococcal disease

Local HPTs will lead and advise on the appropriate course of action. Contacts of a **possible case** of IMD would not meet the criteria for needing antibiotics<sup>9</sup>. However, if there is concern or alarm among fellow students, it is advisable to issue information to contacts and local HPTs will be able to advise on this and provide templates for communication.

The information will emphasise that they are not considered at any risk even if they were in close contact with the possible case, that antibiotic prophylaxis is not necessary, and that no follow-up action is required unless further evidence emerges that changes the diagnostic category to a probable or confirmed case. Alerting relevant general practices may be necessary if only to inform them that this was a possible case and that no preventive action is necessary.

Meningitis charities can provide information on symptoms.

---

<sup>9</sup> [www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management](http://www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management)

### 6.2. Dealing with a case of probable or confirmed meningococcal disease

The actions outlined in Table 3 on page 26 are recommended.

The social contact network will need to be elicited carefully from the case (or a close friend) to inform the local HPT's decisions on appropriate public health action. The local HPT and HEI should agree on the best approach and person to obtain the following information rapidly:

- (a) identification of all students who share an accommodation sub-unit eg. shared kitchen and/or bathroom facilities (usually provided by HEI);
- (b) identification of closest friends of case (usually done by HEI); and
- (c) a social diary of the student's movements in the week (7 full days and nights) before illness to include non-HEI friends, though communication with the case (usually done by the HPT); but if the case is too unwell to provide this information promptly the HEI may be asked to help compile the list via friends and family.

(a) and (b) should allow identification of students who share a "household setting" with the case and may therefore be assessed for eligibility for antibiotic prophylaxis, and potentially vaccination, by the Health Protection Team if they meet the definition for close (household-type) contacts, according to national guidelines.

(c) is useful as a cross-check to ensure all close contacts have been identified and as a means of identifying links between cases if further cases should occur. The student would also be asked in confidence about recent intimate kissing and sexual contacts by the local Health Protection Team because they would be defined as close contacts eligible for antibiotic prophylaxis, and potentially vaccination. Staff would not normally be offered prophylaxis, or vaccination, unless they fall into the close contact category.

As antibiotic prophylaxis cannot be relied upon to prevent illness in a contact who has recently acquired infection, all close contacts (at home or HEI) should also be alerted to the range of symptoms caused by meningitis and septicaemia. Where feasible this would include close contacts who have just left the HEI setting e.g. if a case is diagnosed at the end of term. Although antibiotics will have less overall effect on transmission within a **dispersed social network**, prophylaxis is recommended for close contacts who have recently dispersed, where practical (refer to national guidelines).

Information should be provided to other students and staff in the same hall of residence (where relevant) and on the same course(s) as the affected student.

Students need to be advised not only of the early symptoms and signs of meningococcal disease, but also on how to access medical

care promptly. This information will need to be transmitted speedily and accurately both during and outside working hours.

A variety of channels of communication such as social media, HEI websites, email to students and staff, bulletin boards, helplines and a HEI radio station may be useful.

Careful consideration should be given as to what messages are appropriate to issue through open communications channels and students should be encouraged to retweet the messages posted on the HEI's official social media accounts where possible. If appropriate, the issuing of suggested text to use through open communication channels should be considered.

HEIs may find it helpful to include recorded messages to direct enquiries to the correct telephone number and to direct online enquiries appropriately.

Local healthcare professionals including general practitioners and public health etc. should also be alerted as speedily as possible. Further action may be necessary if the patient dies or if further suspect cases are admitted to hospital.

If a local HPT becomes aware of a case in a student who is resident, or admitted to hospital, outside their HEI health district, they should inform the local HPT responsible for that HEI.

**Table 3: Action for a single confirmed or probable case of meningococcal disease**

|    | <b>Action</b>                                                                                                                                                                                                                      | <b>Person/organisation responsible</b>   |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| 1  | Make a risk assessment to define close contacts (e.g. household and intimate contacts) requiring information and antibiotics and other “non-close” contacts (from household, study and social groups) who may require information. | HPT                                      |
| 2  | Inform and liaise with the HEI doctor or senior nurse (where applicable).                                                                                                                                                          | HPT                                      |
| 3  | Inform and liaise with the Vice-Chancellor’s office, Dean of Students and other relevant HEI staff (Often through student welfare services).                                                                                       | To be agreed based on local arrangements |
| 4  | Arrange for close contacts to be alerted and to be issued with antibiotic prophylaxis (and offered vaccine where appropriate).                                                                                                     | HPT                                      |
| 5  | Inform and alert the general practitioners of all close contacts who are thus treated.                                                                                                                                             | HPT                                      |
| 6  | Provide public health information and advice to the HEI.                                                                                                                                                                           | HPT                                      |
| 7  | Inform urgently – same day if possible – students in same hall of residence (where applicable) and consider information requirements of students sharing classes or social activities with the case.                               | HEI drafted in liaison with HPT          |
| 8  | Assess which student group(s) it is appropriate to inform, in other departments and/or halls of residence for example.                                                                                                             | HEI in liaison with HPT                  |
| 9  | Consider arranging a meeting for students in the same hall, teaching group or other defined group.                                                                                                                                 | HEI in liaison with HPT                  |
| 10 | Consider alerting national meningitis helplines/NHS 111*                                                                                                                                                                           | HEI in liaison with HPT                  |
| 11 | Alert specific HEI practices and others known to serve significant numbers of students and consider alerting GP out of hours.                                                                                                      | HPT                                      |
| 12 | Draft a holding reactive press statement.                                                                                                                                                                                          | HEI/HPT (jointly)                        |

**HPT** = Public Health England Health Protection Team

**HEI** = normally Dean of Students or equivalent

\* NHS 24 in Scotland using 111 and NHS Direct Wales using 0845 46 47

## 7. Action when more than one case occurs

### 7.1. Dealing with unrelated cases of meningococcal disease

In these instances the local HPT will normally seek advice on further action from the National Immunisation Team and the PHE Meningococcal Reference Unit or equivalent (1). The action outlined in Table 3 is recommended. In some circumstances, it may be helpful to convene an Incident Control Team as part of the local HPT outbreak management plan. Wider public health action, other than issuing preventive antibiotics to close contacts of individual cases, is not usually indicated. Widespread anxiety amongst students, staff and parents should be anticipated. There should be contingency plans for setting up a helpline, likely to be provided through NHS non-emergency health lines but may be provided by the students themselves (under the auspices of the Students' Union), or by the HEI. Arrangements for handling press enquiries should also be agreed in advance between the HEI and health protection team.

PHE HPTs have communications specialists attached to their centres who are able to advise on media handling and to assist in preparing a reactive joint media statement. HEIs communications teams should liaise with their local PHE counterparts before issuing any internal or media statements. Follow-up action may be necessary if a patient dies, if further suspect cases are admitted to hospital or if new evidence linking cases comes to light.

### 7.2. Dealing with a cluster (outbreak) of meningococcal disease

The public health action outlined in Table 4 should be taken urgently. An Incident Control Team should be convened by the local HPT and the local outbreak control plan followed. The team should include representatives of the HEI (management, Students' Union and health service) and local acute hospital and local NHS organisations (Screening and Immunisation Team) as appropriate. The roles and responsibilities of the members of the team should be clearly defined. Where students have already dispersed, the Incident Control Team should make decisions on action in the light of local circumstances.

The immediate priority is to alert all students and staff to the symptoms of meningococcal disease and to inform local general practices and acute hospitals of the incident. In outbreaks of meningococcal disease, further cases often occur within two or three days of the index case. Antibiotic prophylaxis or immunisation in individuals already incubating disease will not prevent illness. Raising awareness to ensure prompt diagnosis and rapid referral for treatment is therefore of paramount importance. Rapid communication of accurate information and advice to health professionals is also vital. General practitioners, deputising services, hospital doctors, emergency admission units, Accident and Emergency departments and local public health teams should be alerted to prevent any delays in diagnosis, treatment, or reporting of suspect cases.

Clear advice should be given to achieve consistency of approach. Colleagues in other public health departments and microbiology laboratories should be alerted.

Responsibility for decisions on wider antibiotic prophylaxis rests with the Incident Control Team. It is important to consider a target group at higher risk, eg. students in the same hall of residence or same social group, for prophylaxis. If uncertain, advice should be sought from regional/national epidemiologists and/or reference laboratories. Organising mass antibiotic prophylaxis can present a considerable logistical challenge. The Incident Control Team will identify pharmacies for antibiotic supply e.g. the local NHS hospital pharmacy. The HEI may be asked to suggest possible venues on campus.

Ciprofloxacin is the drug of choice for use in students because it can be given as a single oral dose and does not interact with the oral contraceptive pill (1).

Information sheets on the antibiotic used should be handed out to the target group. An example is available in Appendix A of the national guidelines which can be found at: [www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management](http://www.gov.uk/government/publications/meningococcal-disease-guidance-on-public-health-management)

In the unlikely event that clusters of cases of any meningococcal group preventable by vaccination arise in a HEI setting, mass vaccination may be required (see [section 3](#)).

The Incident Control Team will discuss and agree how communications, including with the media, should be appropriately handled, including deciding whether it is necessary to proactively contact the media because of the public health risk, or whether, as is more usual, to respond reactively to media queries about the incident. These are likely to arise, especially if communications have been sent out to students and staff and the incident has been discussed on social media or websites. Communications and media specialists, from the HPT and/or HEI, should be available to provide advice to the Incident Control Team, to assist in drafting reactive media statements and to channel and respond to queries from the media. Skilled and experienced spokespeople will need to be briefed to handle media interviews and the local HPT and affected HEI should agree on a spokesperson as part of the Incident Control Team discussions.

## 8. Action after a case or cluster

After the immediate response to a case or outbreak, a critical case review should be considered by the Incident Control Team to identify remediable errors in management, ensure any corrective action is taken, and share lessons learnt for improved future management of cases or clusters.

HEIs should consider the pastoral and after-care of the affected student, the student's family and friends, and staff in the immediate aftermath of an incident of meningococcal disease. There is an urgent need during and immediately after a case to give reassurance and support.

Later, when the student returns, low profile support is essential; for example, such practicalities as helping affected students formulate communication required to have "special circumstances" taken into account in the examination periods, or helping them with living arrangements. Referring families affected to the meningitis charities for help and support would be appropriate if this has not already happened. Bereavement support can also be offered by the meningitis charities (see [Appendix](#)).

**Table 4: Immediate action for a cluster of meningococcal disease**

|    | <b>Action</b>                                                                                                                | <b>Person/organisation responsible*</b>        |
|----|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| 1  | Activate the outbreak plan and convene an Incident Control Team                                                              | HPT                                            |
| 2  | Consult with regional/national epidemiologists                                                                               | HPT                                            |
| 3  | Consider prophylaxis for defined target group                                                                                | Incident Control Team                          |
| 4  | Consider vaccination for defined target group                                                                                | Incident Control Team                          |
| 5  | If agreed, administer preventative antibiotics to the target group                                                           | HPT/NHS to organise Local provider to deliver* |
| 6  | If agreed, vaccinate the target group                                                                                        | HPT/NHS to organise Local provider to deliver* |
| 7  | Issue information immediately (within four hours) to students in the same hall of residence (where relevant)                 | HEI                                            |
| 8  | Issue information urgently (same day) to all appropriate HEI departments and halls of residence                              | HEI                                            |
| 9  | Alert local Accident & Emergency departments and acute hospitals (same day)                                                  | HPT                                            |
| 10 | Alert all general practices serving students urgently (same day) by telephone or fax                                         | HPT                                            |
| 11 | Consider notifying other local HEIs (where applicable)                                                                       | HEI                                            |
| 12 | Alert all appropriate local general practices as soon as possible (next working day) eg. via public health link              | HPT/NHS                                        |
| 13 | Convene meeting with the target group                                                                                        | HEI                                            |
| 14 | Check for any signs & symptoms in other contacts                                                                             | HPT/HEI                                        |
| 15 | Consider setting up a helpline for students, staff and parents, ensuring national charity helplines are available as back up | HEI                                            |
| 16 | Notify details of the incident to the meningitis charities and NHS 111                                                       | HPT                                            |
| 17 | Notify other Health Protection Teams via the weekly PHE national teleconference                                              | HPT                                            |
| 18 | Agree public communication strategy                                                                                          | HEI/Health Protection Team/NHS(jointly)        |

\* These may differ depending on local arrangements and commissioning arrangements

**HEI** = normally Dean of Students or equivalent

**HPT** = local Health Protection Team

**NHS** = local NHS organisations

~ NHS 24 in Scotland using 111 and NHS Direct Wales using 0845 46 47

## 9. Drawing up plans

### 9.1. Plans for HEIs

#### 9.1.1. Existing plans

HEIs should already have a plan in place setting out procedures to support the prevention and management of any cases of meningococcal disease, which should include ongoing health promotion activities, action to be taken in the event of a single case or outbreak. It is advisable for HEIs to have template letters ready for use in different scenarios as these can save time but these would need customising according to the individual circumstances of the case or outbreak. In addition, institutions will have protocols or procedures for dealing with the death of a student.

#### 9.1.2. Key individuals

Institutions should consider which individuals will need to be involved in reviewing plans and in responding to a case or cases of meningococcal disease. It is advisable for one person to coordinate operations and to receive and disseminate all information. It may be necessary to devise a rota of people to undertake this responsibility. At the very least, it should be clear who assumes this task if the person responsible is unavailable.

The following individuals may also need to be involved in any incident:

- A member of the senior management team;
- Staff from the HEI Health Service;
- Student Services personnel;
- The Public Relations Officer;
- The warden or manager of any halls involved;
- The head of the appropriate academic department(s); and
- Students' Union representatives.

Consideration should be given to which of these individuals should be part of the Incident Control Team. Contact arrangements within working hours and out of hours should be included in the plans.

HEIs should also consider in their response plans the implications of campuses spanning more than one local area.

#### 9.1.3. Communication

The fear and anxiety engendered by a case of meningococcal disease are often out of all proportion to the risk. It is essential, therefore, that clear, consistent and accurate information is provided within the institution. The local HPT will lead on drafting any communication and providing the information sheets to be disseminated.

The student and staff groups to whom information is provided may vary according to the target group concerned but the following might be considered:

#### Students

- those in the same residence;
- those in residences on the same site;
- those on the same course; and
- The general student population who may not be at increased risk but who may perceive themselves to be including well defined social contacts such as sports teams etc.

## **Staff**

- residence staff, particularly those who have had recent contact with the affected student, such as cleaners or porters;
- those in the same academic department;
- others within the institution who may not be at increased risk but who may perceive themselves to be;
- parents and relatives of students who may not be at increased risk but who may be perceived to be by others; and
- local and possibly national media (see below for more about press strategy).

HEI websites can provide a useful source of information and links to meningitis charity websites. Other areas of the institution may be able to assist in ensuring that information reaches certain audiences. For example, Personnel and/or Occupational Health departments can be recruited to help disseminate information to staff groups and Registry departments can aid in tracing students and getting information to them. As far as possible, information that may need to be disseminated in the event of a case or cases should be prepared in advance. Although the final versions may depend on details relevant to the specific incident, general frameworks can be developed in draft format and be ready for rapid circulation.

### **9.1.4. Helplines and online information**

In the event of an outbreak it may prove necessary to provide helplines and online information to field large numbers of enquiries. SMS messaging may be considered. It may be possible to employ existing resources within the community such as NHS non-emergency numbers or meningitis charities. Some queries and concerns, however, are clearly best dealt with by the institution involved and plans should be made to enable such a line to be set up at short notice. This will include identifying a suitable location, and recruiting and training helpline volunteers. National meningitis charities may be able to assist with support and training.

### **9.1.5. Facilities for public health action**

In the event of an outbreak of meningococcal disease, it may be necessary to administer antibiotics and immunisation to a large target group of students. A suitable venue at the HEI will likely be required. Institutions should assess their sites and facilities for use as a possible venue. For example, if a particular hall of residence is involved it may make sense to use its hall, canteen or common room.

Institutions need to know how such sessions would be staffed. Necessary medical personnel will be commissioned to be provided by the appropriate organisation or the NHS depending on what is being administered; HEIs may need to provide clerical, administrative and management staff to facilitate the process.

### **9.1.6. Public relations**

A communications strategy is required since past experience has shown that a case of meningococcal disease in HEIs can be of significant media interest. Most institutions will have their own public relations professionals and public health communications specialists are attached to each PHE HPT.

Issues to be considered include the potential conflict, which may arise because of the media's desire for information and the confidentiality of a student. While there is a need to provide accurate, reassuring information about the situation and the level of risk in response to media enquiries all communications from the Incident Control Team should only contain information which there is a clear public health need to release to the media in order to accurately warn and inform the public about the situation. Above all, patient confidentiality must be absolutely respected at all times.

As far as possible, reactive press statements should be prepared in advance in such a way that they can be completed with any specific details at short notice. Communications specialists from local Public Health England Centres will be able to assist with drafting press statements and briefing expert spokespeople for media interviews. Public relations professionals from the meningitis charities also have expertise in this area.

## **9.2. Plans for local Health Protection Teams**

### **9.2.1. Liaison between local Health Protection Teams and HEIs**

Local HPTs should maintain contact with HEIs in their area to ensure that:

- Good working relationships are retained with all relevant agencies, eg. Including Public Relations, HEI Health Service, Occupational Health Services (where available);
- Training needs of HEI wardens and other staff continue to be met and awareness raising campaigns for students and staff are considered; and
- HEIs have plans and protocols are established to deal with cases of meningococcal disease.

### **9.2.2. Issues to be covered in a health protection plan**

Issues in plans for responding to a cluster or outbreak of meningococcal disease, including that in a local HEI, will include:

- Situations in which an Incident Control Team will be established;
- Composition, terms of reference and location of the Team;
- Roles and responsibilities of individual members of the Team;
- Pharmacy arrangements for supply of large quantities of ciprofloxacin at short notice and Patient Group Directives for the administration of antibiotic prophylaxis by registered nurses (see Guidance for public health management of meningococcal disease in the UK);
- Practical arrangements for antibiotic prophylaxis including information sheets on contra-indications and side-effects (1), and arrangements for dealing with adverse reactions;
- Practical arrangements for vaccination when appropriate;
- Practical arrangements for establishing and staffing a telephone helpline; and
- Arrangements for responding to media interest.
- Annual liaison (and update of contact details) with HEIs should be undertaken unless a specific situation/issues arises necessitating earlier contact. There should also be agreement about how and when the HPT and HEI contact each other.

## 10. Conclusions

Good channels of communication and effective support arrangements need to be established in advance of any incident of meningococcal disease. The local HPT and local NHS organisations need to maintain good links with management and health services in local HEIs and with local general practices. This will help ensure that the teams become aware of any incident promptly and that HEIs have access to appropriate advice on the management of meningococcal disease. The HEI needs to be sure that it can communicate information speedily and efficiently to its students and staff. Outside normal office hours there may need to be alternative means of communication available.

We suggest that all HEIs ensure their management protocols for dealing with meningococcal disease and other communicable disease incidents have been updated in line with this revised guidance and in conjunction with their local HPT, local NHS organisations and student health services.

# Appendix

## Helplines and Leaflets

### Meningitis charities and NHS111/NHS 24/NHS Direct

The meningitis charities may be contacted when there is a case of meningococcal disease. They need to have sufficient information so that they can support callers with appropriate advice. The information given to these bodies should include anonymised details of the case and of public health action taken.

### Leaflets and posters available from Meningitis Now

- 01453 768000

### Meningitis Research Foundation

- 0333 4056262 for England and Wales
- 0131 5102345 for Scotland
- 028 90321283 for Northern Ireland

## Helplines

### Meningitis Now

- 0808 80 10 388 (Freephone)  
9am to 8pm every day.
- In addition to obtaining leaflets and posters by calling the Meningitis Now office, they can also be viewed and downloaded from the website [www.meningitisnow.org/how-we-help/resources/view-download-order](http://www.meningitisnow.org/how-we-help/resources/view-download-order)

### Meningitis Research Foundation

- 0808 800 3344 (freephone)
- Information and support is also offered by email and on social media: [helpline@meningitis.org](mailto:helpline@meningitis.org); [www.facebook.com/meningitisresearch](http://www.facebook.com/meningitisresearch); @M\_R\_F

## NHS 111 (England) NHS 24 (Scotland)

- Dial 111

## NHS Direct Wales

- 0845 46 47

## Websites

- Meningitis Research Foundation  
[www.meningitis.org](http://www.meningitis.org)
- Meningitis Now  
[www.meningitisnow.org](http://www.meningitisnow.org)
- NHS Choices  
[www.nhs.uk/conditions/Meningitis/Pages/Introduction.aspx](http://www.nhs.uk/conditions/Meningitis/Pages/Introduction.aspx)
- Public Health England  
[www.gov.uk/government/collections/meningococcal-disease-guidance-data-and-analysis](http://www.gov.uk/government/collections/meningococcal-disease-guidance-data-and-analysis)
- Public Health Agency, Northern Ireland  
[www.publichealth.hscni.net](http://www.publichealth.hscni.net)
- Immunisation Scotland  
[www.immunisationscotland.org.uk](http://www.immunisationscotland.org.uk)
- The Green Book  
[www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22](http://www.gov.uk/government/publications/meningococcal-the-green-book-chapter-22)

## **Health and social care publications orderline**

### **Ordering from the Department of Health (DH) Health and social care order line is easy.** Anyone can register for an account.

This is a quick process starting with entering your address and postcode into the finder on the registration page and then completing the registration details. Once you have registered you will then be allocated an account and can place orders.

- [www.orderline.dh.gov.uk/ecom\\_dh/public/newAccount.jsf](http://www.orderline.dh.gov.uk/ecom_dh/public/newAccount.jsf)

You will need your full postal address and an email address.

### **Who can have an account?**

Anyone can have an account. We only restrict ordering from private commercial customers and even these orders are triaged daily on a case by case basis.

You can phone the orderline on 0300 123 1003 to place orders and check on their progress.

### **How many of each product can I order?**

You can order as many copies as you need. Orders over 500 are triaged daily to ensure that they are accurate and then prioritised as normal on a first come first served basis.

### **What if I need a large number/bulk order?**

We anticipate, and are fulfilling, bulk orders all the time. Orders for larger amounts are couriered and occasionally the team will need to check with the person who places the order that they are prepared for the large delivery. Very large orders are transported on pallets and customers may need special equipment to off load and store them. We work with the customer to make this as smooth as possible. Larger orders make time longer to be fulfilled and delivered.

### **Can I place multiple orders?**

Yes, multiple orders are anticipated and fulfilled. The system is set up to take as many orders from each customer as they need. We appreciate orders being placed at the same time for each delivery point so that we can ensure that the customer has all the items in one delivery. This also reduces costs at national level.

### **Do I have to pay for materials?**

No. All leaflets, posters and resources are free of charge. You do not have to pay postage or any fees.

### How are orders prioritised?

Orders are fulfilled in time/date sequence. They are fulfilled and prioritised according to when they are placed chronologically.

### If items are out of stock should I still order?

Yes, at peak times and during times when an item is being updated, orders can still be placed and are fulfilled as soon as the item comes into stock.

### How will I be informed when my order will arrive?

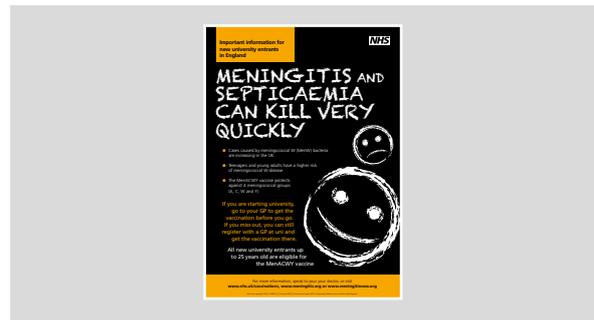
Unfortunately there is no mechanism in place to inform you of this. All orders for items in stock should be fulfilled within 7 working days. You can phone the order line to place orders and check on their progress on 0300 123 1003.

### How do I find materials?

All our publications are first published on the Immunisation section of the Gov.uk page. You can find the publication on the .Gov.uk site and download it to familiarise yourself with the contents and help decide if you wish to order it. If it is available to order in hard copy you can follow the link to the order line from the page or go straight to the order line and request it.

For example this year's meningococcal programme resources are listed under the [www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme](http://www.gov.uk/government/collections/meningococcal-acwy-menacwy-vaccination-programme)

Each leaflet can be searched for using its title, subject or product code, by entering these details on the browser menu on the right hand side of the order line home page. The product code can be found on the back of the leaflet or on the front side of the poster and are listed next to the relevant resource.



**Meningitis and septicaemia poster Uni students** – Product code: 2748622  
[www.gov.uk/government/publications/meningitis-and-septicaemia-poster-for-new-university-entrants](http://www.gov.uk/government/publications/meningitis-and-septicaemia-poster-for-new-university-entrants)



**Meningitis and septicaemia leaflet for university students** – Product code: 2748602  
[www.gov.uk/government/publications/meningitis-and-septicaemia-leaflet-for-new-university-entrants](http://www.gov.uk/government/publications/meningitis-and-septicaemia-leaflet-for-new-university-entrants)



**Meningitis Don't ignore the signs poster** – Product code: 283253

# Reference list

- [1] Universities UK, "Managing meningococcal disease (septicaemia or meningitis) in higher education institutions," 2004.
- [2] S. N. Ladhani, J. S. Flood, M. E. Ramsay, H. Campbell, S. J. Gray, E. B. Kaczmarski, R. H. Mallard, M. Guiver, L. S. Newbold, and R. Borrow, "Invasive meningococcal disease in England and Wales: Implications for the introduction of new vaccines," *Vaccine*, vol. 30, pp. 3710–3716, 2012.
- [3] S. N. Ladhani, P. A. Waight, S. Ribeiro, and M. E. Ramsay, "Invasive meningococcal disease in England: assessing disease burden through linkage of multiple national data sources.," *BMC Infect. Dis.*, vol. 15, p. 551, Jan. 2015.
- [4] Neal KR; Nguyen-Van-Tam J; Monk P; O'Brien SJ; Stuart J; Ramsay M, "Invasive meningococcal disease among university undergraduates: association with universities providing relatively large amounts of catered hall accommodation.," *Epidemiol Infect*, vol. 122, pp. 351–357, 1999.
- [5] Round A; Evans MR; Salmon RL; Hosein IK; Mukerjee AK; Smith WJ et al, "Public health management of an outbreak of group C meningococcal disease in university campus residents.," *Eur J Public Heal.*, vol. 11, pp. 431–436, 2001.
- [6] Gilmore A; Jones G; Barker RM; Soltanpoor N; Stuart J, "Meningococcal disease at the University of Southampton: outbreak investigation.," *Epidemiol Infect*, vol. 123, pp. 185–192, 1999.
- [7] Bruce MG; Rosenstein NE; Capparella JM; Shutt KA; Perkins B; Collins M, "Risk Factors for Meningococcal Disease in College Students.," *JAMA*, vol. 286, no. 6, pp. 688–693, 2001.
- [8] J. MacLennan, G. Kafatos, K. Neal, N. Andrews, J. C. Cameron, R. Roberts, M. R. Evans, K. Cann, D. N. Baxter, M. C. J. Maiden, and J. M. Stuart, "Social behavior and meningococcal carriage in British teenagers.," *Emerg. Infect. Dis.*, vol. 12, no. 6, pp. 950–7, Jun. 2006.
- [9] Stuart JM; Cartwright KAV; Robinson PM; Noah ND., "Effect of smoking on meningococcal carriage.," *Lancet*, vol. ii, pp. 723–726, 1989.
- [10] Stanwell-Smith RE; Stuart JM; Hughes AO; Robinson P; Griffin MB; Cartwright KAV, "Smoking, the environment and meningococcal disease: a case control study.," *Epidemiol Infect*, vol. 112, pp. 315–328, 1994.
- [11] Imrey PB; Jackson LA; Ludwinski PH; England ACI; Fella GA; Fox BC et al, "Outbreak of serogroup C meningococcal disease associated with campus bar patronage. 1996; 143.," *Am J Epidemiol*, vol. 143, pp. 624–630, 1996.
- [12] Nelson S J; Charlett A; Orr HJ; Barker RM; Neal KR; Taylor C et al, "Risk factors for meningococcal disease in university halls of residence. 2001; 126.," *Epidemiol Infect*, vol. 126, pp. 211–217, 2001.
- [13] Hastings L; Stuart J; Andrews N; Begg N, "A retrospective survey of clusters of meningococcal disease in England and Wales, 1993-95: estimated risks of further cases in household and educational settings. 1997; 7(13).," *Commun Dis Rep Rev*, vol. 7, no. 13, pp. R195–R200, 1997.
- [14] H. Christensen, M. May, and L. Bowen, "Meningococcal carriage by age: a systematic review and meta-analysis," *Lancet Infect. ...*, 2010.
- [15] H. Campbell and S. Ladhani, "The importance of surveillance: Group W meningococcal disease outbreak response and control in England.," *Int. Health*, Sep. 2016.
- [16] Serruto D; Bottomley MJ; Ram S; Giuliani MM; Rappuoli R, "The new multicomponent vaccine against meningococcal serogroup B, 4CMenB: immunological, functional and structural characterization of the antigens.," *Vaccine*, vol. 30 Suppl 2, pp. B87–97, 2012.





[www.nhs.uk/vaccinations](http://www.nhs.uk/vaccinations)