McMaster University
Medical Monitoring Program Information Sheet

The purpose of this document is to provide information on an agent/virus in order for all McMaster University staff and students to make an informed decision about entering our medical monitoring program.

Please review this document, print your name, sign and date the Memorandum of Understanding and Agreement and then provide it to your supervisor.

**Neisseria meningitidis**

The following summary is provided by the McMaster Biosafety Office.

For a complete copy of the excerpted text below please refer to: http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/msds109e-eng.php

Susceptible to many disinfectants - 1% sodium hypochlorite, 70% ethanol, iodines, glutaraldehyde, formaldehyde

Susceptible to temperature changes and desiccation; inactivated by moist heat (121° C for at least 15 min) and dry heat (160-170° C for at least 1 hour)

Demonstrated hazard to laboratory workers; 8 reported cases up to 1974 (Pike, R.M.; Ann Rev Microbiol., 1979; 33:41-46); 2 fatal cases in clinical labs in 1988 (MMWR 1991; 40:46-47); 2 fatal cases in 1991 (unpublished)

**SOURCES/SPECIMENS:** Pharyngeal exudates, cerebrospinal fluid, blood, saliva

Hazards are from **parenteral** inoculation; droplet or aerosol exposure of mucous membranes; infectious aerosols and ingestion

Biosafety level 2 practices, containment equipment and facilities for all activities utilizing known or potentially infectious body fluids and tissues; additional containment (biosafety level 3) for activities with high potential for aerosol production or activities involving production quantities or concentrations of infectious cultures. Laboratory coat; gloves when working with infectious materials; gloves and gowns with ties in back and tight wrists when working in biosafety cabinet. Certified biological safety cabinets should be used when mechanical manipulations that have aerosol potential are performed.
Facts
Meningococcal disease is an infection caused by the bacterium *Neisseria meningitidis*. This bacterium can cause serious and sometimes fatal diseases including meningitis (infection of the brain lining) and meningococcal septicemia (infection of the blood). There are many different subtypes of the bacteria but five of the subtypes (A, B, C, Y and W135) are responsible for the majority of meningitis cases. *Neisseria meningitidis* only infects humans; there is no animal reservoir. The bacteria can be carried in the throat and sometimes, for reasons not fully understood, can overwhelm the body's defenses allowing infection to spread through the bloodstream to the brain. Although there remain gaps in our knowledge, it is believed that 10% to 20% of the population carries *Neisseria meningitidis* at any given time. However, the carriage rate may be higher in epidemic situations.

Symptoms
Acute disease characterized by sudden onset with fever, intense headache, nausea and often vomiting, stiff neck, and frequently a petechial rash with pink macules; delirium and coma; early diagnosis and modern therapy have reduced case fatality rate from 50% to less than 10%; may be asymptomatic or with only local symptoms, 10% of patients who recover have permanent neurologic disability, limb loss, and hearing loss; invasive with septicemia or meningitis; death rate is high in fulminating meningococcemia; infection usually causes sub-clinical mucosal infections; carrier prevalence of 25% or greater may exist without cases of meningitis.

Diagnosis
Initial diagnosis of meningococcal meningitis can be made by clinical examination followed by a lumbar puncture showing a purulent spinal fluid. The bacteria can sometimes be seen in microscopic examinations of the spinal fluid. The diagnosis is supported or confirmed by growing the bacteria from specimens of spinal fluid or blood, by agglutination tests or by polymerase chain reaction (PCR). The identification of the groups and susceptibility testing to antibiotics are important to define control measures.

Treatment
Initiate antibiotic treatment immediately when the presumptive clinical diagnosis is made. Personnel working with high concentrations or large quantities of organisms should be immunized with the tetravalent polysaccharide vaccine (A, C, Y, and W-135); a bivalent vaccine (A and C).
Memorandum of Understanding and Agreement (“MUA”) for BSL2 Medical Monitoring Program

Note: This MUA is to be signed by the employee/student and supervisor, filed and kept by the supervisor. It will be reviewed during the annual biosafety audit by the McMaster Biosafety office.

The employee/student named below acknowledges and agrees as follows:

- I have read and understand all of the information in this Medical Monitoring Information Sheet provided jointly by the McMaster Biosafety Office and Employee Health Services and reviewed the biologically hazardous agent to which I have potential exposure. Initial here____

- I will report a pregnancy or a compromised immune system (due to medication {steroid or other immunosuppressive therapy}, organ transplant, chemotherapy or radiation therapy, HIV infection etc.) to my supervisor and X (graduate students) or Employee Health Services Occupational Health Nurse at ext. 20310 (faculty and staff) Initial here____

- I will report an exposure to a biological agent to my supervisor immediately and complete a McMaster incident/accident report. Initial here____

- I will report any illness that resembles the symptoms listed in this Medical Monitoring Information Sheet to my supervisor. Initial here____

- I recognize my responsibility to observe all safety practices and precautions while present in the BSL2 laboratory. Initial here____

- I am aware of, and wish to participate in, the medical monitoring program (RMM #605) for this biological level 2 agent. Please circle: [yes] [no] Initial here _____

Employee/Student print name: ____________________________

Supervisor print name: ____________________________

Signature: ________________________________________

Signature: ________________________________________

Date: ____________________________ Date: ____________________________