ERP C.1 HIGH AND MAXIMUM CONTAINMENT MEDICAL INCIDENT RESPONSE PLAN

1. Purpose
   1.1. The purpose of the Medical Incident Response Plan is to outline necessary institutional steps and provide first aid to personnel high and maximum containment facilities in the event of a medical emergency, accident or other situations such as exposure to biological pathogens requiring medical intervention prior to the arrival of Boston emergency response personnel.

2. Assumptions
   2.1. Due to the security practices and procedures in high and maximum containment facilities, medical assistance and intervention by the traditional Boston emergency response personnel may be delayed significantly in cases of emergent medical events.
   2.2. The application of first aid in high and maximum containment facility prior to the arrival of Boston emergency response personnel will minimize the extent of injury to personnel.
   2.3. High and maximum containment facilities employees working in BSL-3 and BSL-4 laboratories or involved in emergency response will be trained in basic CPR and first aid.
   2.4. High and maximum containment facilities are equipped with first aid kits and automatic external defibrillators that are located throughout the building on every floor.
2.5. Personnel working in high and maximum containment laboratories must ensure that the doors are closed behind them when entering and leaving the lab.

2.6. There are two airlocks in the NEIDL’s Maximum Containment Laboratory that are used for removing non-ambulatory personnel - East Airlock (Room 246) by the service elevators and the the West Airlock (Room 232).

2.7. In cases of medical emergencies (defined below), City of Boston Emergency Responders will:

2.7.1. Enter the NEIDL via the vehicle entrance off Biosquare Drive. They will enter the building via the loading dock in the South East corner of the building and will be met and escorted to the scene.

2.7.2. Enter 700 Albany Street via the Loading Dock on East Stoughton Street

2.7.3. Enter the Robinson Building via the lobby of the Instructional Building of the BU Medical School.

3. Definitions

3.1. The National Emerging Infectious Diseases Laboratory (NEIDL) is located at 620 Albany Street, Boston.

3.2. The Research Occupational Health Program (ROHP serves the entire Boston University/Boston Medical Center Research community and can be reached via telephone at 617.414.7647.

3.3. Boston Medical Center will serve as the primary medical facility receiving injured and ill patients or personnel with potential exposures to selected agents from NEIDL.
3.4. For the purpose of this Medical Incident Response Plan, there are three categories of Medical Incidents.

3.4.1.1. Minor Accidents (Slips, Falls, Contusions, Simple Fractures)

3.4.1.2. Minor Puncture Wounds and Animal Bites, Scratches and Punctures from Animal Caging or Equipment (animal caging and equipment must be considered contaminated) with potential exposure to biological agent

3.4.1.3. Major medical emergency (e.g. heart attack, acute respiratory distress, major wound, etc.)

3.5. Lab Alert Buttons are found in BSL4 spaces in the NEIDL and in W934.

3.6. Major Medical Incidents will be reported to BUMC Control Center at 4-6666 by using the speed dial or through the use of the Lab Alert System.

4. Notifications

4.1. Once notified, the Control Center will make the following notifications for medical emergency.

4.1.1. High and Maximum Containment Emergency Response Team (HMC ERT)

4.2. Prior to the individual(s) being taken to either the ROHP, Boston Medical Center or an appropriate medical care facility, the ROHP member of the HMC ERT will contact the receiving site with patient information.

4.2.1. A member of the HMC ERT will always accompany an exposed or injured worker to either ROHP or the appropriate medical care facility.
4.2.2. If the individual(s) requires transport to medical attention, BUMC Public Safety will notify Boston Emergency Medical Services for transport.

4.3. If at any point during a minor or major emergency, the patient is referred to a medical care facility, ROHP will provide information to the receiving Emergency Department, including, but not limited to, the patient’s name, condition and any biological agent to which the patient may have been exposed.

4.4. Minor Medical Incidents are reported to the ROHP.

4.4.1. Minor Medical Incidents without pathogen exposure will be reported to ROHP for treatment and/or referral to a medical care facility, based on the nature of the involved incident.

4.4.2. ROHP may see the patient, or refer the patient to an appropriate medical care facility.

4.5. Minor Puncture Wounds, Animal Bites and Scratches in BSL4 unit involving Exposure to Infectious Pathogens.

4.5.1. Minor Puncture Wounds, Animal Bites and Scratches in BSL4 unit will be reported to Command Center so as to initiate a communication tree alerting ROHP, Infectious Diseases and Emergency Preparedness at Boston Medical Center, the Principal Investigator and the Biosafety Officer.

4.5.2. The potentially exposed patient will receive first aid for minor wounds in the NEIDL Clinical Space prior to transfer to the Boston Medical Center, if deemed necessary.

4.5.3. The decision to admit patient to Boston Medical Center’s Patient Isolation Unit (PIU) will be will require the review and agreement of BPHC in consultation with the NEIDL Core Director, Occupational
Health Officer, Director of Research Safety, the Infectious Diseases Physician on call and Medical Director of the PIU.

4.5.4. If a decision is made to admit to PIU, exposed personnel will be escorted via BU Public Safety to the receiving room near BMC’s Menino Pavilion Emergency Room.

4.5.5. If patient has been exposed or believed to have been exposed to a contagious biological agent, ROHP will notify the Boston Public Health Commission of the actual or potential exposure.

4.5.6. If the patient is seen at another medical care facility, and the patient has been exposed, or believed to have been exposed, to a contagious biological agent, that medical care facility will notify the Boston Public Health Commission’s Communicable Diseases Control Division of the actual or potential exposure in accordance to the hospital’s internal procedures.

4.6. Major Medical Incidents requiring immediate medical attention are reported to BUMC Control Center at 4-6666 by using the speed dial or by activating the Lab Alert System Button

4.6.1. BUMC Control Center will notify BUMC Public Safety who will contact Boston EMS for response to a medical incident.

4.6.2. BUMC Control Center will notify the Medical Response Emergency Response Team via the Boston University Emergency Response Communication System

4.6.3. Prior to a transport to a medical care facility, the ROHP Representative will communicate to the Emergency Department the patient’s name, condition and any biological agent to which the patient may have been exposed.
4.7. The Responsible Official or his/her designee will notify the Boston Public Health Commissions’s Environmental Division of the medical incident.

4.8. The NEIDL ERT Leader will ensure that all notifications listed in this section have been executed.

5. Procedure

5.1. Lab Worker Response

5.1.1. Immediately inform all other personnel of the situation/hazard

5.1.2. Conduct a quick risk and security assessment of the area

5.1.3. If this is a Minor Medical Accident or Incident, contact ROHP, and follow their instructions.

5.1.4. Begin appropriate first aid and decontamination as indicated.

5.1.4.1. Minor Accident

5.1.4.1.1. Administer first aid to the injured person in accordance with those techniques and procedures learned in the required first aid class.

5.1.4.2. Minor Puncture Wounds – If you receive a contaminating puncture wound as a result of a needle-stick, blade incision, or bite from an infected animal

5.1.4.2.1. Remain calm.

5.1.4.2.2. Inform other laboratory personnel of injury.

5.1.4.2.3. Wash wound with soap and water.

5.1.4.2.4. Cover wound with medical adhesive to control excess bleeding.

5.1.4.2.5. Meet the NEIDL ERT, who will assist you and escort you to the appropriate medical care facility.

5.1.4.2.6. Inform supervisor.
5.1.4.2.7. File an accident/incident form

5.1.5. Major medical emergency (e.g. heart attack, acute respiratory distress, major wound, etc.)

5.1.5.1. First stabilize the casualty according to training.

5.1.5.2. Press the Lab Alert Button in the room and, if safe to do so, dial BUMC Control Center at 4-6666 by using the speed dial and inform them of the nature of the problem. They will contact the relevant emergency services without further action from you.

5.1.5.3. Begin appropriate first aid as indicated by your training.
Assist emergency responders with the injured personnel.

5.2. Loss of Encapsulating Suit Integrity

5.2.1. Suit integrity can be compromised by sharps, needle sticks, bites, or cuts, suit failure, or by improper use of the suit. When this occurs:

5.2.1.1. Maintain positive pressure by remaining connected to air

5.2.1.2. Spray the area with disinfectant

5.2.1.3. Tape the suit at the site of the tear to maintain positive pressure conditions in the suit

5.2.1.4. Enlist others to help, if possible

5.2.1.5. Secure equipment, animals and select agents before leaving, if safe to do so.

5.2.1.6. Exit the laboratory and enter the shower; remove boots as normal, but do not take time to clean them (others will take care of this).

5.2.1.7. In the shower, expose the tear to disinfectant; for exposures that result in injury, allow the site to bleed and expose the injury to disinfectant as soon as possible.
5.2.1.8. Upon exiting the shower and doffing the suit, inspect the tear and potentially exposed clothing and skin for injury and abrasions.

5.2.1.9. For gloves, retain the outer and inner glove for EHS staff to inspect.

5.3. Egress from Containment Area BSL4

5.3.1. In a situation where the lab worker can walk with assistance, without compromising their wellbeing, the lab worker may take a standard decontamination shower and exit in the normal manner.

5.3.2. In a situation where the lab worker has suffered a life-threatening illness or injury (heart attack, stroke, severe bleeding), while still in the BSL 4 containment area and is non-ambulatory, the lab worker(s) will follow the following procedures:

5.3.2.1. Be sure to remove non-ambulatory person’s boots before leaving the incident room.

5.3.2.2. Be sure to close all APR doors after you have passed through them.

5.3.2.3. The lab worker will be moved into the closest airlock (Room 246 East, Room 232 West) by means of the BSL-4 extraction sled.

5.3.2.4. At the APR door to the fumigation airlock, press and hold the red, emergency door release button until the door bladder is completely retracted. Push the door open before releasing the button.

5.3.2.5. Enter the fumigation airlock and wheel in the non-ambulatory person.

5.3.2.6. Ensure that the non-ambulatory person is connected to air...
5.3.2.7. Close the inner airlock door

5.3.2.8. Using the sponge and buckets located in the airlock, liberally coat the non-ambulatory person, the sled underneath them, yourself and, any other accompanying personnel with disinfectant. Soak all areas of the airlock most likely to be contaminated (floor, door handles, etc.)

5.3.2.9. Ensure that all personnel in the airlock have undergone decontamination

5.3.2.10. Press the request button on the outer airlock door and open the door once the light goes green

5.3.2.11. Begin to remove your suit and then assist the ERT members with cutting the non-ambulatory person from their positive pressure suit

5.3.2.12. Move the non-ambulatory person into the buffer corridor and deliver them to Boston EMS personnel

5.3.2.13. The lab worker will then be treated by the NEIDL ERT and Boston EMS personnel and transported to the nearest appropriate hospital.

5.3.3. The primary exit point for injured research personnel, who are incapable of leaving the BSL4 on their own, will be through the nearest available airlock. The researcher taking the injured party to the airlock must let Control know which airlock they are using – East or West. The NEIDL ERT will meet the injured party at that location and administer first aid and prepare the injured for Boston responders, further treatment and transport to the nearest appropriate hospital.

5.4. Egress from High Containment Laboratory BSL-3
5.4.1. If it becomes necessary to remove an unconscious or otherwise seriously injured individual from a BSL-3 laboratory:

5.4.1.1. First stabilize the casualty according to training.

5.4.1.2. Dial the BUMC Control Center at 4-6666 by using the speed dial and inform them of the nature of the problem. They will contact the relevant emergency responder services without further action from you.

5.4.1.3. If possible, using the red extraction vehicle, remove the injured personnel to the entrance to the ante-room removing PPE at the appropriate locations and await the arrival of the ERT.

5.4.1.4. Assist emergency responders with the injured personnel. As long as no personal contamination exists, follow normal exit procedures and exit the laboratory.

5.5. Reporting

5.5.1. Immediately report this event to your supervisor.

5.5.2. File all necessary incident/accident forms and initiate any necessary medical surveillance and facility clean-up procedures.

6. References

6.1. NEIDL ERP Overview
6.2. NEIDL ERP 20 – Emergency Response Team Protocol
6.3. NEIDL Public Safety SOP #7.15 Emergency Responder Clearance Plan
6.4. SOP for Use of Fumigation Airlock in an Emergency

7. ERP Revision History
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<tr>
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<th>Section / Paragraph Changed</th>
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<td>V.1</td>
<td>N/A</td>
<td>None, Original Version</td>
<td>12/12/08</td>
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<td>V.2</td>
<td>Throughout</td>
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<td>V.3</td>
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<td>Change in CPR/AED and First Aid requirements</td>
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<td>V.4</td>
<td>4.3, 4.4, 5.1.5</td>
<td>Change in reporting Minor and Major Medical Incidents</td>
<td>10/22/12</td>
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<td>V.5</td>
<td>5.3.2.1</td>
<td>Identifying Room Numbers for East and West Airlock</td>
<td>11/2/12</td>
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<td>V.6</td>
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<td>Loss of Encapsulating Suit Integrity</td>
<td>11/8/12</td>
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<td>V.7</td>
<td>5.2.1.5</td>
<td>Adding the words “if safe to do so” to the instructions about leaving the lab during a loss of Encapsulating Suit Integrity..</td>
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<tr>
<td>V.8</td>
<td>5.3.2.2 – 5.3.2.10</td>
<td>Revised airlock decon procedures</td>
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<tr>
<td>V.9</td>
<td>1, 2, 3, and 4</td>
<td>Revisions made to simplify and update procedures to conform with University Wide procedures for High and Maximum Containment Facilities.</td>
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<tr>
<td>V.10</td>
<td>6.4</td>
<td>Added Reference for Fumigation Airlock Use in an Emergency</td>
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<tr>
<td>V.11</td>
<td>3, 4, and 5</td>
<td>Revised notification procedures to include the use of the Lab Alert System in addition to phone call. Revised Maximum Containment Emergency Decon procedures to reflect change in system.</td>
<td>4/1/13</td>
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<td>V.12</td>
<td>3.5</td>
<td>Added locations of Lab Alert Buttons</td>
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<td>V.12</td>
<td>Section 3.5 and 3.6</td>
<td>Old 3.5 becomes 3.6</td>
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<td>V.12</td>
<td>3.6, 4.5, 5.1.5.2, and 5.4.1.2</td>
<td>Added the phrase &quot;by using the speed dial&quot; to all sections</td>
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<td>V.12</td>
<td>5.1.4.2.6, 5.1.4.2.7, 5.1.5.4 and 5.1.5.5</td>
<td>Deleted and listed under a new Section 5.5 Reporting</td>
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<tr>
<td>V.13</td>
<td>2.5 and 5.3.2.2.2</td>
<td>New Section reminding personnel to close lab doors</td>
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<tr>
<td>V.13</td>
<td>5.3.2.1</td>
<td>New Section on boot removal prior to leaving incident room.</td>
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<td>V.14</td>
<td>Section 3.3</td>
<td>Boston Medical Center is named as the primary medical care facility for High and Maximum Containment medical emergencies</td>
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<td>V.14</td>
<td>Section 4.4 and 4.5</td>
<td>Updated protocols for minor injuries and needle sticks</td>
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