

BU Agent Incident Reporting Summary March to June 2021

**CAMPUS	Date of Incident	Incident Type/Agent Involved	BSL	Description	Reportable Incident	Report of Clinical Illness	Agency Reported To	Comments/Corrective Actions
BU Medical Campus (BUMC)								
BUMC	4/5/21	Saline splash to face	ABSL-2	ROHP was called at approximately 10:40 this am notifying us that a first year PhD Student had sustained a splash of saline which could possibly contain NHP (Macaque) blood to the right eye during cranial surgery/procedure today.	Yes	No	BPHC	EHS scheduled an in-person follow up meeting with student and PI to investigate and review the incident reported by ROHP. The root cause was determined as an inadequate procedure. The PI described that while she was training this new student and providing instructions she inadvertently did not wait long enough for the motorized drill to stop completely before setting it down on the surgical table. Although it was turned off, it takes a few more seconds to fully stop spinning. During that time, it mistakenly caught onto the gauze presumably containing saline solution described and this material sprayed back at the student's face and right eye. PPE worn at the time of incident included hair cover, lab gown, sleeve covers and double nitrile gloves underneath the long 7.5 surgical gloves described along with a double surgical mask and full face shield. Student will continue to follow up for medical assistance as advised by ROHP. The PI and student verified that there were no other infectious agents, biologics, chemicals or toxins of concern involved with the incident. The NHP undergoing cranial surgery was housed separately and not with other NHPs. ASC vet services reported to EHS that the last Herpes B virus testing for this NHP involved in the incident was back in January 2021 and at that time had a negative test result. PI, student, and EHS reviewed the surgical space at W745. EHS recommends that the room be stocked with multiple saline eyewash bottles. This would allow for immediate washing, which could be supplemented with further irrigation at the eyewash accessible in the W7 hallway. Operation of the eyewash and safety shower were also reviewed. The new student had already completed the on-line prerequisite safety trainings in BioRAFT and the PI was up to date with annual certifications as well. Immediate reporting of the incident to ROHP was appropriate. Animal Science Center (ASC) Report: ASC vet services confirmed the NHP involved with the incident was re-tested for Herpes B virus immediately after the incident and according to protocol will repeat Herpes B virus testing, for a second time, 21 days later. Both serology and viral culture samples were taken for analysis. Once available from outside source, ASC vet will communicate results to ROHP for further dissemination. Root cause was inadequate procedure. PI provided SOP Working with Rhesus Monkeys. PI will conduct an after action review of incident with the lab and train members working with NHPs on the SOP. The SOP was updated to reaffirm standard practices followed according to online training requirements, hands-on training and IACUC and IBC protocol work. EHS expanded on the importance of having a dedicated field setup in front of the researcher so that placement of motorized surgical tools and clinical instruments requiring hand manipulations are managed away from the face and mitigate potential splash exposures that could occur from other angles. The PI agreed she and her lab staff will exercise precautions in the future to avoid having any mishaps and will ensure all motorized equipment come to a complete stop before proceeding to next steps.
BUMC	4/14/21	Glass needlestick to left 3rd finger	BSL2	A right hand dominant 6th year PhD Graduate student called ROHP at 3:00 pm to report he accidentally sustained a needle stick to his left middle finger knuckle with a glass capillary tube containing AAV.	Yes	No	BPHC	EHS met with the student and corroborates with the initial ROHP report. At the time of the incident the student was working independently in one of the animal facility rooms. He reported that while handling the wild type mouse on the bench top he inadvertently raised his arm near the stereotactic machine where the glass capillary tube was set up and accidentally stuck his left middle knuckle. He again reaffirmed the glass capillary tube had not yet touched the mouse prior to the accidental stick. He appropriately disinfected the wound area and was consulted by ROHP. Same day he went to the emergency room for further medical evaluation. On 4/16/21 he reported that the initial discomfort had gone away and he had already completed the second follow up with ROHP and the wound was healing well. He reported to have ~5 years of experience with research animal handling and likewise had been using the stereotactic machine for many years. He was surprised to encounter this incident and attributes it to not paying close enough attention. The student's PI was interviewed by phone. The PI told EHS that both the AAV vectors that the student was using used a Cre-inducible gene expression vector, meaning that only Cre recombinase-expressing cells (not cells that naturally exist) will have the transgene expression from the AAV vectors. Both AAV-GFP and AAV-Tau P301L are replication-deficient. Upon consultation with IBC office, it was agreed this matter is a reportable incident to NIH. Root cause was attributed as not being conscientious. EHS advised him to complete the online sharps safety training as a refresher for best practices.

BUMC	5/3/21	Right middle finger laceration	BSL-2	A Master of Science in Dentistry student was escorted to ROHP by her professor at 5:00 pm. She indicated that she was attempting to take out of blade to clean the microtome when her hand slipped and she sustained a laceration of the right middle finger distal phalange pad.	No	No	N/A	EHS met with the student and PI to discuss the incident and determine ways to prevent reoccurrence in the future. EHS corroborates with the initial ROHP report. It was verified by the PI that there were no biologics involved and that the equipment had been cleaned prior to slicing paraffin fixed rat tissues in 10% PFA. The researcher admitted she had forgotten to remove the blade before starting to clean when she inadvertently sustained the injury to her finger. Although there were cut resistant gloves available she was not wearing them at the time of incident. She notified her PI immediately when the incident occurred and followed appropriate washing, and reporting measures with ROHP. Root cause was lack of awareness and lack of PPE. EHS instructed the PI to develop an SOP for the microtome and to retrain lab staff on safe operations for handling the blade, use of cut resistant gloves and cleaning procedures for the microtome. The student has already completed the Sharps Safety Training as a refresher on BioRAFT.
BUMC	5/4/21	Mouse bite to left index finger	N/A	It was reported to ROHP today that a post-Doc researcher was bitten on left index finger. ROHP spoke to the researcher, and they reported that while in animal training they were holding the mouse to prepare for an injection when the mouse turned and bit them on the left 2nd digit on the medial portion of the finger between the MCP and the PIP joint.	Yes	No	BPHC	EHS followed up with researcher, conducted phone interview and corroborates with the initial ROHP report. The mouse was non-transgenic and did not involve any biological, toxic or hazardous chemical agents. The researcher told EHS that he had gone to several sessions with the animal trainer to learn animal handling techniques but is learning all of this for the first time and has no previous experience. Root cause was insufficient skills and expertise. Not yet trained. The researcher was advised to follow up with the animal trainer to reaffirm techniques for dosing animals and perform placebo injections with nonhazardous materials until fully proficient and before working with any biological agents/cancer cell lines.
BUMC	5/11/21	Hot water spray to left eye	ABSL-1	ROHP received an injury report on 5/20/21 from a supervisor that an animal care technician had reported to them on 5/20/21 that they had injured their left eye on 5/14/21 (the injury occurred on 5/11/21 as reported to me by the employee today) while cleaning the animal cages.	No	No	N/A	EHS is continuing follow up investigation.
BUMC	5/24/21	Puncture to left thumb	ABSL-1	An undergraduate research intern working for the ophthalmology department on the BUMC was seen at ROHP today after sustaining a puncture of his left thumb with a sharp tweezers.	Yes	No	BPHC	EHS conducted a phone interview with the student and corroborates with the initial ROHP report. He verified that the mouse involved with the incident had not been administered any biologics, toxins or chemicals and that it was nontransgenic. He reported that he has been conducting this animal protocol work for the last year since January 2020. In this particular instance he mentioned he may have been rushing when trying to discard the mouse carcass while still holding the sharp forceps in the other hand. Root cause was not conscientious. Going forward the researcher agreed he would use more caution when handling sharps. In a stepwise fashion, reusable sharps forceps should be immediately disinfected after use followed by other housekeeping tasks such as discarding the mouse carcass. EHS advised the student to complete the online sharps safety training in BioRAFT to reaffirm good sharps safety techniques.
BUMC	6/4/21	Left thumb contusion	BSL-2	A researcher was seen in ROHP today after their supervisor reported that they had sustained an injury to their left thumb after slamming the negative 80 freezer door on it.	No	No	N/A	EHS met with researcher who reported that their gloves got wet from moving frozen samples and this contributed to their hand sticking to the -80 inner door surface. The root cause was not conscientious. The researcher admitted working too quickly and was counseled to work more purposely and situationally aware.
BUMC	6/10/21	Hair exposure to buffer containing EDTA	BSL-2	ROHP received a call on 6/10/21 at 6:01 pm from a graduate student that an undergraduate student researcher had a very minor exposure. Some hair strands had gotten some buffer containing EDTA on the ends of the hair.	No	No	N/A	EHS corroborates with the initial ROHP report. In conducting a phone interview with the undergraduate she verified the incident description and response. The undergraduate has all of the necessary on-line safety modules completed in BioRAFT and is up to date with certifications. She appropriately reported the near miss for follow up investigation and was wearing adequate PPE at time of incident. Root cause was not conscientious. In speaking with the researcher she agreed to pay closer attention before performing experimentation to confirm all the PPE is providing coverage and all of her hair is completely pulled back by an elastic.

BUMC	6/18/21	Right thumb laceration	BSL-2	ROHP received an email 6/18/21 from a Principal Investigator that a researcher sustained a laceration to her right thumb.	Yes	No	BPHC	EHS met with the researcher, discussed the incident and corroborates with the ROHP report. The experiment which the researcher wanted to perform was fluorescent in situ hybridization (FISH) using an unfixed frozen human brain tissue which was kept in their -80 freezer. The tissue was a deidentified normal human brain tissue with no prior history of any prion or neurodegenerative disease. The researcher wore the following PPE: A pair of nitrile gloves, a full sleeve laboratory coat and a face mask. She took out the frozen tissue from the freezer, put it in dry ice and proceeded to section the tissue using the cryostat. She started cutting the tissue into thin sections and while cutting it, debris started depositing on the sample block. She proceeded to use a brush to remove the debris and while she was doing it, the sample block moved and due to that motion, her hand also moved and it hit the cryostat blade. The researcher mentioned that she is a first time user of the cryostat and on the day before the incident, one of her laboratory colleague trained her on another cryostat. On the day of the incident, the trainer was not present when she was using the cryostat. A colleague called security and they helped her apply a Band-Aid on her injured finger. She was escorted by BU security to the emergency room immediately. The researcher mentioned that after the incident, she became aware that the cryostat had a locking mechanism to prevent the fly wheel from moving while cleaning the sample block. There is also a guard to cover the cryotome blade in the equipment as well. By employing these safety features, the injury could have been avoided. The PI mentioned that the laboratory discussed the incident at their group meeting. They felt that during this incident, the cryotome SOP regarding safety guidelines were not properly followed. He also informed me that the researcher was using the departmental cryostat as their own cryostat was out of order. He also mentioned that the researcher told the trainer that she was familiar with using cryostats and had used them before during her PhD graduate work and therefore she was not overseen by the trainer at the time when the injury happened. Root cause was insufficient skills and expertise and lack of oversight/supervision. 1.Moving forward the cryotome equipment trainer will first evaluate and assess the competency level of the trainee before the start of the training and after the training, if the trainer is confident, only then the trainee be allowed to perform the work with appropriate oversight. The newly adopted lab. cryotome SOP will be followed at all times. 2. The researcher must be retrained on proper and safe use of the cryostat. 3.Cut resistant gloves must be worn over the nitrile gloves while cleaning, removing, and sharpening the cryostat blade. 4.The researcher must take sharps safety training in the BioRAFT. 5.The researcher should not rush while working on the cryotome.
Charles River Campus (CRC)								
CRC	4/9/21	Needlestick to abdomen	BSL-1	A PhD candidate/ Research Fellow called ROHP Sat. 4/10/21 at 4:30 pm to report a needle stick containing peptide segment of NEMO (He NF-kappa-B essential modulator) protein 4/9/21 at around 6:30-7pm and spoke to the on call physician.	Yes	No	BPHC	EHS discussed incident with researcher and corroborates with the initial ROHP report. PI reported the peptide is not from a biological source (not from human or bacterial cells) and therefore is not covered under an IBC protocol. EHS determined that the group has been using sharp, single use hypodermic needles for injecting samples into an instrument. Instrument requires a needle to inject sample, however EHS advised the lab to replace the use of hypodermic needle with a blunt tipped needle and wider gauge for injecting peptides into instrument. Root cause was equipment related. EHS recommended student complete the Sharps Safety Training in BioRAFT.
CRC	5/4/21	Needlestick to left thumb	BSL-2	A right hand dominant chemist called ROHP at 10:30 am this morning to report he accidentally pricked his gloved left thumb with a (1ml tuberculin 21 gauge) syringe that had been used to dispense 1,2-dichloroethane.	No	No	N/A	EHS followed up with Staff Scientist who reported he used his right hand to dispense less than 1 mL of 1,2-dichloroethane solvent from a 1 mL syringe equipped with a 3-inch, 21 gauge needle into a 4 mL glass vial in his fume hood. Immediately after completing the solvent addition and while in the process of removing the syringe from the vial using his right hand, he accidentally punctured his left thumb. He stated that he is not exactly sure how the accidental puncture happened. The syringe was empty at the time of the puncture except that there was likely some residual 1,2-dichloroethane present in the needle (needle dead volume). He immediately checked for a puncture and when he saw a small amount of blood, he squeezed to express it and rinsed it under water for about 5 minutes. He then called ROHP to report the incident. ROHP suggested first aid, rinsing for 15 minutes, and he then rinsed for additional 10 minutes after the ROHP call. He monitored the puncture wound carefully after the incident, and as of three hours post-incident there is no indication of any itching, pain, or discoloration. As a lesson learned [PI] suggested that when handling and moving uncapped syringes, the unused hand should be held in a position as far away from the hand holding the uncapped needle as possible (e.g. at the side of the body or behind the back). Root cause was not conscientious. EHS recommended that he take the BioRAFT sharps safety training.

CRC	5/17/21	Rat bite between her right middle and ring fingers	ABSL-2	A supervisor submitted an online incident report that his staff was bitten by a rat on 5/17/21.	No	No	N	EHS conducted a phone interview with the researcher who reported the wound had completely healed. There were no biologics, toxins or chemicals involved with the incident and the rat was not transgenic. PPE was appropriate as well as washing the affected area and reporting the incident to ROHP. The researcher described that she was bitten while trying to transfer the rat to a new cage. The animal was holding onto the top rack and didn't want to seem to move. She mentioned she has been working with animals since 2014 and over the past year has handled 30 rodents at least 3 times a week at the animal facility and lab. Her safety training modules are up to date in BioRAFT. The root cause was attributed as Other. The bite was unexpected as the rats are typically friendly. She will monitor the rats behavior more closely when transferring them into cages in the future.
CRC	6/7/21	Exposure to potassium cyanide	N/A	The ROHP on call physician noted that he received a phone call 6/7/21 @ 6:00 pm from a 1st year PhD student and his laboratory safety coordinator that he had completed emptying waste into a disposal container in the chemical fume hood. After rinsing the tube, he immediately got a strong odor.	No	No	N/A	Approximately 1.5 hours after the exposure, the graduate student reported his exposure to the group's lab safety coordinator (LSC). LSC initiated emergency response- they first called ROHP and spoke with the on-call doctor, then called BUPD who summoned an ambulance. BUPD called the main CRC EHS number at 6:30PM. Chemical Safety Officer (CSO) took the call and responded to 24 Cummington 10 minutes later with a respirator and the 6-gas meter, which has a HCN detector. Upon arriving at 24 Cummington, the graduate student had refused transport and was signing the ambulance crew's form. BUPD took the CSO's ID info and left to write his report. At 6:45 CSO met with graduate student and LSC to discuss incident in the 10th floor conference room. Initial follow-up focused on description of incident, work place practices, delay in reporting, and recommendations for improvement. 6/8/2021 CSO and Environmental Assistant Director met with graduate student and LSC for a second meeting following up on disposal, training, and PPE. Root cause was lack of awareness and understanding procedure. EHS advised to never rinse containers used with P-listed chemicals- dispose of them directly. Lab needs to provide training on highly hazardous chemicals (KCN) prior to new researchers starting work and an annual refresher training covering the handling, hazards, and emergency response.
CRC	6/11/21	Needle puncture to right 3rd digit	ABSL-2	A contracted worker for a biohazard waste removal company walked into ROHP at approximately 11:00 am and reported a needle stick injury to his right 3rd digit.				A hazardous waste contractor reporting to Environmental Management and responsible for hazardous waste and biological waste throughout Charles river campus, was responding to a biological sharps waste request at approximately 10:05am. Upon arrival at KCLSE 316 he discovered that the laboratory had filled more sharps containers than indicated on the request. He then decided to try to consolidate the sharps by pouring one container into another partial container. After opening the first container, he realized this was an unsafe idea, and tried to put the lid back on. While reattaching the lid, a needle punctured his third finger on his right hand. At this point he notified EHS. The hazardous waste contractor washed the affected area with soap and water and EHS Environmental Management instructed him to report the incident immediately to ROHP at medical campus. ROHP was notified to let them know he was on his way. The contractor is aware that he acted against his training and biological waste management procedures when he opened the sharps container. Many empty containers were available in the first floor biological waste room. He was cutting corners to complete the work more quickly. The contractor will be re-trained on safe biological waste management. Additionally the employer was notified of the incident. The root cause was not conscientious. The hazardous waste contractor is actively following medical recommendations. Going forward, he will exercise more caution when handling biological waste and follow protocol procedures. Additionally he will be retrained by Environmental Management and complete online safety training in BioRAFT .
CRC	6/17/21	Chemical spill to hands	N/A	A PhD researcher reported on the afternoon of 6/18/21 that the previous evening he was pipetting reagents into a tube under a hood and approximately 2ml spilled onto both hands.	No	No	N/A	Student reports that he removed his double gloves at time of incident and did not notice any damage, then washed them for couple of minutes with soap and water. After a while, he noticed the redness and contacted ROHP. When EHS followed up with the researcher in the lab, the CSO noticed that the gloves he had been using were a thinner nitrile from Shamrock Supreme. The gloves did not have a listed thickness, but EHS suspects that they might have been 2 MIL and acquired from the PPE at 700 Beacon. EHS has spoken with S&P about providing thick enough gloves to chemical researchers. Root cause was PPE and training (no procedure/inadequate procedure). EHS advised PI and graduate student to develop Carcinogens SOP for the lab and retrain members of specific hazards, PPE, usage and disposal.
CRC	6/21/21	Possible chemical exposure to right arm	N/A	A lab manager called ROHP 6/21/21 to report an undergraduate student employee was washing bottles with regular tap water that held rain water and noticed a red rash developed on her right arm. The Lab manager confirmed that no chemicals or biologics were involved with this activity.	No	No	N/A	EHS is continuing follow up investigation.

National Emerging Infectious Disease Laboratory (NEIDL)								
NEIDL	4/6/21	Syncopal episode while in ABSL-4 - no biological exposure concern	ABSL-4	ROHP received a call at 9:20 am from the Medical Director at the NEIDL reporting she received a call from Biosafety officer that a researcher collapsed in the Animal BSL4 suite and was being escorted out of containment through the chemical shower.	No	No	N/A	EHS is continuing follow up investigation.
NEIDL	6/7/21	Right upper back muscle strain	BSL-4	A General Mechanic for the NEIDL Facilities Dept. walked into ROHP at 10:35 am reporting he felt a pull in his upper right back with some shortness of breath at about 9:00 am this morning.	No	No	N/A	On Monday, 6/7/2021 at 9 am, general mechanic pulled his right back while moving freezer from one room to another inside the BSL4 laboratory. In containment he worked with his coworker and the ramp was used to move freezer through a bump on the floor. The legs of the freezer stuck on the floor or the ramp while he was trying to move it. Mechanic was wearing standard BSL4 PPE; positive pressure suit and suit gloves and was connected to the air during the freezer move. There was no breach or hazardous agent exposure or any concerns. Mechanic was evaluated by ROHP after he exited the laboratory. ROHP and supervisor were contacted and Staff was evaluated by ROHP. Mechanic was sent home for the day and asked to follow up with ROHP the next day. After the follow up on 6/8 mechanic was cleared for work with restriction of: no lifting or pulling more than 15 pounds keeping below shoulder level. Root cause was equipment related. Steps to prevent reoccurrence in the future will include to re-evaluate process for moving heavy equipment from room to room.
Other - Collaborating Laboratory		No incidents						

* Indicates if incident is reportable to local, state or federal agency (e.g. Centers for Disease Control, National Institutes of Health, Boston Public Health Commission, etc.)

**** Campus Location**

BUMC - Boston University Medical Center

CRC - Charles River Campu

NEIDL - National Emerging Infectious Disease Laboratories

Other - work done at collaborating laboratories