



Lessons Learned & Success Stories – March to May 2019 Report

The NBACC Mishaps, Lessons Learned and Success Stories Summary serves to reinforce a strong culture of safety and accountability by promoting consistent reporting of mishaps, establishing strong lines of communication with the safety department, supporting a learning environment by allowing others to learn from reported events, and tangibly demonstrating NBACC Leadership’s commitment to safety, accident prevention, and continuous improvement.

SUCCESS STORIES:

1. A staff member working in a BSL-3 suite was doing chores when they noticed that an unlabeled biohazard bag was taped up and sitting on the non-containment side of the airlock. The autoclave tape on the bag had not been “activated,” indicating that the bag had not been autoclaved. The staff member notified another member of their group and then called Health and Safety to report the bag. It was eventually determined that the bag contained a piece of equipment that was being moved to another BSL-3 suite, but Health and Safety had not been notified of the movement. The employee showed great awareness to notice that the bag “stood out” due to its position in the airlock and the status of the autoclave tape.
2. After a VHP decontamination, members of Comparative Medicine noticed that the downdraft table in the BSL-4 had become rusty. The staff members began to devise different ways to remove the rust from the table. One option involved taking the panels off of the table and running them through the autoclave. The panels would then need to be taken to a cage washer so that an acid cycle could be used to remove the rust. The other idea that the group thought of was to try using vinegar and a chore boy sponge to clean the table in place. After some discussion, two staff members entered the BSL-4 suite, cleaned the table with the vinegar and water solution and discovered it removed all of the rust. Since this option worked, it was not necessary to take the panels apart and run them through the autoclave and the cage washer. This prevented staff in the BSL-4 suite from having to transport large pieces of the table to the autoclave. Additionally, using the vinegar solution to remove the rust saved time, energy and resources. This an excellent example of staff members working together to remedy a problem and mitigating their risks at the same time. Keeping their equipment clean and rust free also ensures that the Comparative Medicine group continues to do well during their regulatory inspections.
3. An employee was examining a potential project to a registered space, when they stopped themselves before entering the room because they saw the sign on the door and recognized that they did not have an escort card for that space. The employee was astute enough to see the sign and realize that it was different. They are preparing an Escorted Laboratorian Form (ELF) for both them and a subcontractor so they can properly enter the room to evaluate the project.

LESSONS LEARNED:

1. As evidenced in this month’s near misses, proper communication is a critical component to ensuring appropriate actions are taken. Consider all elements involving personnel or groups as well as who would be affected by any activities being performed.

2. When we hurry on the job, we accomplish little more than to increase our chances of an unsafe act happening. Sometimes when you rush, there is no consequence, other times there may be "near misses" or worse. Is it really worth the risk to save a few minutes? Before starting work do a mental checklist to ensure you have all required items to complete the task, remember to thoroughly check all Personal Protective Equipment (PPE) prior to use, and be cognitive of your work spaces to avoid hand injuries
3. Finger cuts are common workplace injuries and are sometimes unavoidable accidents. And, while we don't want to lose sight of the big picture, we believe that solving/preventing little issues can go a long way towards preventing the big ones. Precautions can be taken to reduce the risk of cuts in the workplace. Slow, deliberate movements and an awareness of your surroundings at all times can go a long way to prevent finger cuts.

Some things to consider for minimizing the risk of a finger cut that also prevent bigger issues:

- Always use the right tool (i.e. using clippers instead of a knife)
- Always consider a safer approach to a task (i.e. using a safety cutter instead of an open blade)
- Always use the correct PPE (i.e. wearing appropriate gloves for the specific task)

EVENT SUMMARIES:

1. **FIRST AID SUMMARY:** 02/15/2019; A staff member working in a BSL-3 laboratory was moving materials into an incubator when they scraped the top of their left hand against the bottom of one of the incubator's shelves. There was no visible breach in the staff member's gloves, so they continued to clean up their work and leave the laboratory. Upon removing their gloves, the staff member noticed a cut on the top of their hand. They washed their hands, exited the suite and called the Competent Medical Authority (CMA) from the dirty side change room, who informed a member of Health and Safety. The employee showered out of the suite and reported directly to the CMA. The CMA applied first aid and the staff member was restricted from BSL-2, -3 and -4 laboratories until the injury healed.
2. **FIRST AID SUMMARY:** 02/21/2019; A subcontractor was servicing a piece of equipment in a BSL-2 laboratory when their knuckle struck the cover/housing of the unit and began to bleed. The subcontractor immediately washed their hands and was escorted to the CMA's office by a staff member. The CMA applied first aid, supplied the subcontractor with their contact information and encouraged them to follow up with their own occupational health provider. The subcontractor was permitted to return to work with a waterproof Band-Aid.
3. **FIRST AID SUMMARIES (CUTS):** 03/2019; In all the following incidents, personnel reported to the CMA, first aid was applied as necessary, and laboratory restrictions were placed if needed.
 - a. 03/05/2019; A staff member working in the BSL-4 corridor was loading the autoclave when they scraped their knuckle on the top edge of the unit. The employee immediately washed their hands and applied a bandage.
 - b. 03/13/2019; A staff member entered a BSL-2 laboratory and immediately started typing on a keyboard when they noticed that their left knuckle was bleeding. The staff member washed their hands. It is unclear if the cut was due to dry skin or from when the staff member struggled to return the daily lab checklist to its protective sleeve.
 - c. 03/19/2019; A staff member working in an interstitial space was connecting an injection hose to a caisson exhaust port when they scraped their left forearm on the caisson.
 - d. 03/21/2019; A staff member sitting at their desk was crossing their legs when they scraped their left ankle on their bottom drawer handle.

- e. 03/22/2019; A staff member was attempting to transfer an overhead shelf from their old cubicle to their new cubicle when the light fixture that was mounted under the shelf fell off, and the staff member cut their finger while attempting to remount the light.
 - f. 03/27/2019; A staff member working in an industrial space was picking up a metal industrial fan when they cut their finger on the fan housing. The employee immediately washed their hands and applied a bandage.
4. **FIRST AID SUMMARY:** 03/26/2019; A staff member was stocking bleach in a BSL-3 hallway when they grabbed a bottle with a loose lid causing half of the contents to spill on the floor and onto the staff member. The staff member immediately called the Command Center, spoke to Health and Safety, notified staff in the area, showered out, and reported to the CMA. The spill was cleaned up by another staff member working in the suite after speaking with Health and Safety. The staff member was evaluated for skin irritation, provided a healing ointment and allowed to return to work.
 5. **FIRST AID SUMMARY (CUTS):** 4/2019; In all of the following incidents, personnel reported to the CMA, first aid was applied as necessary, and laboratory restrictions were placed if needed.
 - a. 04/09/2019; A staff member working in a server room was cutting Velcro strips when they snipped the palm of their left hand. The staff member immediately washed their hands with soap and water.
 - b. 04/25/2019; A staff member in a BSL-3 laboratory was breaking down a box of gloves when they cut their right index finger. They washed their hands, exited the suite and called the Command Center from the dirty side change room.
 - c. 04/29/2019; A staff member at the loading dock was removing a document from a folder when they received a paper cut on their right hand. The staff member immediately washed their hands.
 6. **FIRST AID SUMMARY:** 04/11/2019; A staff member was carrying a box up the stairs when the tip of their shoe caught the lip of one of the stairs and they lost their footing. Upon falling, the staff member scraped the back of their right hand and bruised their right knee. The staff member reported to the CMA and first aid was applied.

NEAR MISS SUMMARIES:

1. **PROCEDURAL FAILURE SUMMARY:** 02/07/2019; A -80 freezer which had previously held agents was placed on the dock to defrost without being decontaminated first. A member of Facilities approached a member of Health and Safety and informed them that a large number of freezers would be arriving the following week to replace the aging freezers in the building. The two staff members discussed the best ways to defrost the freezers since the unit must be defrosted before it can be decontaminated. The staff members were forced to cut their conversation short before a definitive answer could be given, but the member of Health and Safety suggested that both Facilities and Health and Safety groups meet later in the day to determine the best course of action. Upon arrival at the meeting, it was discovered that the freezer had been swapped with a new one already in house and the old freezer had been moved on to the dock to defrost. Health and Safety immediately went to the dock, confirmed that the freezer had not started to defrost and had the unit moved into the closest airlock to defrost, along with absorbent pads. Health and Safety also confirmed that there had never been any spills of agent inside the freezer. The following day, the freezer was decontaminated and the floor of the airlock was mopped with bleach after the removal of the freezer. The incident highlighted a problem in communication between Health and Safety

and Facilities. The freezer swap-out project is a huge undertaking requiring oversight by a number of different groups, however information regarding the project had not been provided to the entire Health and Safety group. Additionally, Facilities was not aware that Health and Safety had not been provided all the necessary information required to direct the movement and decontamination of freezers to and from the labs. Moving forward, a member of Health and Safety will now attend all 'Shop Meetings' with the Facilities group and provide updates to the rest of Health and Safety at their weekly meeting.

2. **PROCEDURAL FAILURE SUMMARY:** 02/25/2019; A staff member working in a BSL-4 laboratory used a centrifuge with an expired HEPA filter. The staff member checked the calibration sticker and confirmed that the unit was within calibration but they did not check the sticker indicating the HEPA filter replacement date. It wasn't until several days later, when the staff member was asked to place the centrifuge 'out of service,' that they noticed the HEPA replacement date was expired. After speaking with the Laboratory Space Manager (LSM), the calibration subcontractors and the Health and Safety group, it was determined that the 'Centrifuge Use and Maintenance Log' document should be updated to include a section for users to document the date of the last HEPA filter change. Additionally, Health and Safety and the calibration contractors are exploring whether the HEPA filter replacements dates can be moved to align with the equipment's calibration date.
3. **PPE FAILURE SUMMARY:** 03/07/2019; A staff member working in a BSL-3 laboratory reported a double glove tear while decontaminating a BSC. Prior to the tear, the staff member had been using a robot and a RG2 agent, but all infected plates and tubes containing agent had been decontaminated and either removed from the BSC or placed in a biohazard bag. There were no imperfections in the staff member's skin, and there were no spills of agent during their work. The CMA ruled no potential exposure.
4. **PPE FAILURE SUMMARY:** 03/08/2019; A staff member that had been working in the BSL-4 was exiting through the chemical shower, when they discovered a small hole in the left shoulder of their Sperian suit (#236). After exiting the shower to the suit room, the staff member called the control room and reported the hole to Health and Safety. The suit was repaired and returned to service. The CMA ruled no potential exposure.
5. **PROCEDURAL FAILURE SUMMARY:** 03/20/2019; A staff member was doing chores in the BSL-4 when they looked down and realized that their suit zipper was not fully closed. The staff member immediately closed the zipper, called the control room and had the operator contact Health and Safety. The staff member had not worked with agent and had only been in the suite to do chores. After further discussion with Health and Safety, the staff member admitted that they noticed that the airflow in the suit did not seem normal but they attributed it to the fact that they were not wearing their usual suit. The CMA ruled no potential exposure.
6. **PPE FAILURE SUMMARY:** 03/22/2019; A staff member in a BSL-3 laboratory was preparing to look at a flask containing a RG3 agent under the microscope when their Powered Air Purifying Respirator (PAPR) battery became dislodged from the motor unit as they attempted to sit down in a chair. The staff member held their breath, left the room and called the Command Center. The staff member placed the unit out of service, grabbed a new PAPR and continued their work. The PAPR unit was later evaluated by a member of Health and Safety and placed back in service. The CMA ruled no potential exposure. As a reminder, staff should hear an audible click when attaching the PAPR battery to the motor unit. Do not hold the blue 'release' button down when inserting the battery, as this can lead to a battery that is not fully engaged and likely to disconnect from the unit when bumped.

7. **PPE FAILURE SUMMARY:** 03/22/2019; A staff member was doing chores in the BSL-4 when they noticed that their left suit sleeve had become untaped from their glove, leaving a gap between their glove and their suit. The staff member immediately dunked their hand in MicroChem, taped the breach and showered out. Prior to the breach, the staff member had been working with Health and Safety to test a new method for shortening their BSL-4 suit sleeves. The employee rolled the lower portion of the sleeves over the suit cuff and then taped the rolled sleeve to the cuff. The suit gloves were then placed over the taped fold on the cuff and taped on. Moving forward, Health and Safety and the staff member have decided on an alternative taping method that provides redundancy should one section of tape loosen during the course of the staff member's work. The CMA ruled no potential exposure.
8. **SPILL SUMMARY:** 04/05/2019; A staff member working in a BSL-3 laboratory was pouring acetone, which had been used to fixate slides containing RG3 organisms, into a waste container when 5mL spilled onto the surface of the BSC. The spill remained contained in the BSC, but a small amount of the acetone waste contacted the staff member's outer glove. The staff member immediately decontaminated their outer gloves, removed them, checked their inner gloves for leaks and confirmed that they were intact. The staff member called the Command Center and after speaking with Health and Safety, cleaned the spill. The CMA ruled no potential exposure.
9. **SPILL SUMMARY:** 04/08/2019; A staff member working in a BSL-3 laboratory was decontaminating an aspirator that had been used with a RG2 agent when the handle fell out of the BSC. The staff member had run MicroChem through the aspirator and had wiped the handle down, but it had not completed the required decontamination time when it fell out of the BSC. The staff member and the other two employees present in the room immediately left the lab and called the Command Center. After speaking with Health and Safety, the staff members waited 30minutes and reentered the room to retrieve the handle from the floor. The CMA ruled no potential exposure.

OTHER OCCURENCES

1. **PROCEDURAL FAILURE SUMMARY:** 01/23/19, A staff member was cleaning in a BSL-3 suite when they failed to don their required PAPR and entered a laboratory. The staff member immediately recognized their mistake, exited the room and donned their PAPR.
2. **PROCEDURAL FAILURE SUMMARY:** 03/14/19; A newly hired subcontractor obtained their badge and was given access to areas in NBACC without completing the proper access paperwork. Also, Human Resources, Health and Safety, Occupational Health and the Training Coordinator were not notified prior to access being granted. There are multiple corrective actions for this event including a revision of the SOP defining the control of access at NBACC.

Note: *It should be assumed that staff are wearing a PAPR (minimum APF 25) in events taking place in the BSL-3 laboratories unless otherwise stated.*

Document Definitions:

Event Summaries – Any OSHA recordable mishap or first aid injury or illness.

Near Miss Summaries – Any mishap that requires a potential exposure ruling from the Competent Medical Authority (CMA) or represented a CDC Form 3 submission.

Other Occurrences – Mishaps that do not fit into the other two categories.

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