

# Lessons Learned & Success Stories – October to December 2021

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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 STORY**

1. While reviewing the Spill Standard Operating Procedures (SOP) with their mentors, a new staff member raised several smart and attentive questions about NBACC’s procedures for doffing potentially contaminated scrubs. Rather than pushing the questions aside, the mentors reached out to Health and Safety to get clarity. In doing so, they all helped identify some contrasting guidance within the SOP document that Health and Safety agreed should be improved and updated. This new staff member immediately embraced the questioning attitude that we promote at NBACC. Their mentors also cultivated and fostered that attitude by reaching out to Health and Safety for guidance and explanation.

## **LESSONS LEARNED**

1. Success Stories give us a forum to recognize and illuminate positive or beneficial activities conducted by staff members. These are reportable events where staff members did not just “follow an SOP” but went a step further. What are some examples of success stories? Below are two past success stories, in each story the employee was pro-active and prevented a potential injury or incident from occurring.
  - During testing, a technician noticed condensation on the drum of a piece of aerobiology equipment. The technician decided to check the treads and rollers to make sure it didn’t affect the rotation, and during the inspection, noticed a piece of the tread had peeled away from the metal frame and also noticed some cracks in the tread. While this issue was most likely occurring for some time and probably would not have affected the experiment, the technician decided to terminate the experiment to avoid further damage to the equipment and to prevent any potentially unsafe situation that might have arisen. This stop work prevented a potentially significant event from occurring.
  - After the big snowstorm, a BNBI employee noticed that several icicles were hanging from the bottom of the NBACC building roof, along the entryway sidewalk. The employee notified the IO Director and warning tape was strung around the area to keep employees safe as they entered the building.

If you have a success story, email or contact a member of the ISC.

2. Although the lack of reported events and near misses may be due, in part, to a reduction in overall lab work, it also reflects the priority placed on safety by everyone at NBACC. Work with hazardous samples and materials can be performed safely by following appropriate SOPs, utilizing appropriate personal protective equipment, verifying all equipment is functioning properly, asking questions and/or stopping work if anything seems off, and working carefully and mindfully. We have seen several recent examples of people who saw something out of the ordinary (water on the floor, a burning coffee pot) and notified safety personnel. While it might be time consuming to stop what you are doing and take responsibility for something that you didn't do, taking the time to report an event helps us all work safer and better.
3. Systems and rules are meant to prevent problems from occurring. It is critical that everyone supporting NBACC continues to exhibit the highest standards when performing tasks in any location. We need to lead by example and continue to demonstrate NBACCs outstanding Safety Culture by following all procedures. Please be conscientious in various work environments and do not bypass the systems and rules meant to protect us all. There are two incidents this month concerning ducted BSC's, in both incidents staff members recognized something wasn't right and took the correct steps before proceeding with work.

#### **EVENT SUMMARIES**

**FIRST AID SUMMARIES:** In all the following incidents, personnel reported to the Competent Medical Authority (CMA), first aid was applied as necessary, and laboratory restrictions were placed, if needed:

- 10/26/2021 – A staff member was moving two microscopes to the atrium for a demonstration when they scraped their left wrist on a table.
- 11/08/2021 – A staff member scraped their arm on the rim of a Biological Safety Cabinet (BSC) high-efficiency particulate absorbing (HEPA) filter housing in an Animal Biosafety Level-2 (ABSL-2) space.
- 11/16/2021 – A staff member scraped their knuckle on a clipboard at the loading dock.

#### **NEAR MISS SUMMARIES**

1. **PROCEDURAL FAILURE SUMMARY:** 09/08/2021 – A staff member working in a Biosafety Level-3 (BSL-3) suite was preparing to help with a vaporous hydrogen peroxide (VHP) decon set-up when they opened the airlock door and noticed a staff member on the 'clean side' of the airlock in street clothes. The staff member entered the airlock from the non-containment side to bring in more supplies for the decon. Both staff members immediately recognized the mistake and exited the airlock, with the staff member in containment setting the timer for 15 minutes before closing the door. There were no spills or agent present, and neither staff member crossed into the other's side of the airlock. The CMA ruled no potential exposure
2. **PROCEDURAL FAILURE SUMMARY:** 09/23/2021 – A staff member reported that while working in a BSL-3 suite they noticed two containers of caulk and paste in the autoclave waste bin. The staff member recognized the items as chemicals, removed them from the waste bin and placed them in the satellite accumulation point. The items likely originated from a supply closet that had recently been cleaned out by Facilities Management Operations (FMO). A member of Health and Safety reached out to the FMO manager to inform them of the incident, and the Chemical Hygiene Officer attended the next FMO meeting to discuss chemical waste disposal with the group.

3. **SPILL SUMMARY:** 11/09/2021 – A staff member was surface decontaminating a BSC in a BSL-3 laboratory when they bumped an empty tube rack and it fell out of the BSC onto the floor. Though the rack was wet with bleach and undergoing a surface decon, the full contact time had not been reached when it fell from the BSC. The staff member did not leave the room at the time of the spill. After speaking to a member of Health and Safety, the staff member returned the rack to the BSC and cleaned the floor where it landed. The CMA ruled no potential exposure.
4. **PPE FAILURE SUMMARY:** 11/10/2021 – A staff member working in a BSL-3 laboratory had completed their work with a Risk Group (RG) 2 agent when they noticed a tear in their inner right glove. The staff member had already discarded their outer gloves and could not perform a leak test to confirm that they had remained intact. The staff member removed their inner gloves, washed their hands, donned a new pair of waiver-required gloves, and called the command center. It was confirmed that the staff member's skin was intact, and the CMA ruled no potential exposure.
5. **SPILL SUMMARY:** 11/16/2021 – A staff member working in the BSC of a BSL-2 laboratory was taping a bag of plates closed when a roll of tape fell out of the BSC. All the staff members in the room immediately held their breath and exited the lab. After speaking to Health and Safety, the staff members were permitted to re-enter the room, place the tape back into the BSC and clean the area of the floor where it landed. The CMA ruled no potential exposure.
6. **SPILL SUMMARY:** 11/23/2021 – A staff member walking through the hallway noticed a few drops of an unknown substance on the floor. Upon further investigation, they also noticed that there was a spill in a nearby BSL-2 laboratory. The staff member contacted a member of Health and Safety who was able to reach the supervisor for the group utilizing the laboratory. The supervisor was able to determine the source of the spill based on the location and the work that had taken place earlier in the week. Used reagent cartridges for a piece of equipment had been discarded in a waste container after the runs were complete. Upon disposal, a small amount of non-hazardous liquid remains in the cartridges. Though staff normally tape the cartridges or put them in a resealable bag prior to disposal, the spill was likely the result of residual liquid from the cartridges leaking from a bag of waste that had been removed from the waste container and allowed to sit on the floor over the weekend. The supervisor cleaned the spill and bleached the floor. After speaking to Health and Safety, the Laboratory Space Manager (LSM) reminded the group to discard the cartridges in resealable bags and provided a secondary container for any waste that may need to be removed from the hard-sided containers. The CMA ruled no potential exposure.

#### **OTHER OCCURENCES:**

**REPORTED EVENTS:** In all the following, personnel reported the events to Health and Safety, and the events were tracked for trending purposes:

- A staff member working in a BSC of a BSL-3 laboratory was cleaning up after their work when they bumped the sash of the BSC. Upon bumping the sash, the staff member noticed that the blower appeared to power down. They quickly jostled the sash, and the blower returned to normal operation. Next, an error message appeared on the digital display reading "airflow in alert". The staff member left the room and called Health and Safety. The BSC was marked 'out of service' and was later evaluated and repaired. The staff member had not been working with agent at the time of the incident.

- A staff member working in a BSL-3 laboratory noticed a thin puddle of water spanning the containment suite hallway. Upon further investigation, the staff member discovered that a freezer was defrosting for an upcoming VHP decon and had oversaturated the pig mats that had been placed on the floor to absorb the water. The staff member cleaned up the water and mopped the entire suite with bleach. They also replaced the pig mats with fresh ones. Health and Safety sent a Safety Flash to staff reminding them to place a suitable amount of absorbent mats on the floor when defrosting.
- A staff member entered a BSL-3 laboratory to use the ducted BSC and noticed both the blower and screen on the BSC were powered off. The staff member turned the BSC on, allowed it to run for a few minutes and confirmed that the BSC was functioning normally before beginning their work. Health and Safety reached out to the Calibration Technician who noted that both the blower and screen of the ducted BSC can only be powered off together manually. Also, because the BSC is ducted, it maintains negative airflow when powered off.
- A staff member working in a BSL-3 laboratory was deconning materials in a BSC when they noticed an outer glove tear. The staff member performed an inner glove test and confirmed that their gloves remained intact.
- A staff member working in a BSL-3 laboratory was removing the BSC usage log from a protective sleeve when they realized they were not wearing a water-proof band-aid as instructed by the CMA. The staff member immediately washed their hands, exited the containment suite to the dirty-side change room and called a coworker, who retrieved the band-aid for them. The staff member had not started their work prior to noticing the missing band-aid, and no agent was out at the time of the incident.
- A staff member reported that a ducted BSC was in alarm, which occurred after opening the door to the room. The staff member also reported that this BSC was in alarm the two previous days. At the time of the alarms, the BSC inflow rates were normal. The Calibration Technician evaluated the BSC and did not find any issues. The frequent alarming of this BSC is most likely a result of its location and the negative pressure of the room.
- A staff member was verifying carbon dioxide levels in BSL-3 incubators when the top button of a combustion test kit analyzer became stuck in the down position and released some of the contained testing solution onto the laboratory floor when it was inverted. The staff inside the room immediately held their breath, left the room, and called the Command Center. After speaking to a member of Health and Safety, the staff members were allowed to re-enter the laboratory with the chemical spill kit and clean up the spill using the pig pads and gloves contained in the kit. After cleaning the floor, the waste was bagged, labeled, and placed in the satellite accumulation point.
- A staff member was working in the BSC of a BSL-3 laboratory when they spilled a small amount (<1 ml) of sterile media onto the absorbent pad in the BSC.
- Staff member reported a wet box containing a bottle of bleach. Upon further inspection, it appeared that a bottle of bleach overturned during transport and spilled roughly half of its contents into the shipping box.
- A staff member working in a BSL-2 laboratory was centrifuging non-infectious samples when, upon pulling the samples out, one of the tubes cracked and spilled its contents into the centrifuge. The staff member held their breath, closed the lid, and left the room. After speaking to Health and Safety and waiting the required 30 minutes, they were allowed to re-enter the room and clean the spill.

**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) represented a CDC Form 3 submission, or a potentially serious accident or incident that could have resulted in personal injury, illness, death, and damage to property or the environment, but did not occur due to one or more factors.

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

**Success Story** – A successful process improvement or response to an event that went above or beyond normal operations, where an injury was prevented, or the improvement had a positive effect on a program, project, or activity.

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All research was conducted in compliance with the Animal Welfare Act and other federal statutes and regulations relating to animals and experiments involving animals and adheres to principles stated in the Guide for the Care and Use of Laboratory Animals, and approved by both the NBACC Institutional Animal Care and Use Committee and, when applicable, the DHS Compliance and Assurance Program Office. The facility where this research was conducted is fully accredited by AAALAC International and maintains a Public Health Service (PHS) Humane Care and Use of Laboratory Animals (Policy) assurance.