Lessons Learned & Success Stories – September to November 2016 Report

The NBACC 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. In recent weeks the Building Automation Administrator recognized that the Building Automation System (BAS) monitors outside of containment suites were in need of replacement and the currently used models were no longer supported by the vendor. Using the programming capabilities within the BAS, new streamlined, touch screen monitors were purchased and installed. The updated screens continue to provide the same information as before but they also have the capability to provide additional information such as phone numbers for each lab, daily updates for upcoming decon activities, and/or equipment monitoring within each lab. This improved technology can and will provide better information for lab staff before entering a containment lab. There will be future informational screens added as needed to further enhance conditions within the BSL-3 suites.
2. Recently, a staff member reported that the NBACC Safety culture continues to spread beyond the walls of the building and has permeated their home. This prevents a broad range of accidents and benefits work by ensuring employees are safe and available to work in support of mission needs. More specifically, while working on a stepstool to remove a burst pipe in the ceiling of the basement, the spouse asked their son to bring different tools. In one trip from the garage with the tools in hand, their son brought a pair of safety glasses and gloves, "Safety first". My spouse usually wears PPE appropriate for each job, but they forgot PPE this time in the rush of adrenaline from the gushing water. I am very proud of my 11 year old son for noticing and correcting the issue before there was an incident. Definitely a future NBACC employee in the making.
3. An employee noticed two coffee spills in the hallway outside of the third floor conference room. They took the time to clean the spills and check for any additional spills in the surrounding area.
4. During the summer months, an NBACC staff member decided to take charge of safety at their home and implemented the use of PPE in several tasks. The employee used ear plugs for auditory protection while attending summer concerts and bought gloves to protect their hands while fishing to avoid finger sticks. They also encouraged their significant other to embrace PPE by getting safety glasses for sanding and painting, as well as sunglasses to protect their eyes from the sun (the first pair they ever owned!). Having the foresight to consider PPE prevented possible injuries from occurring and is an excellent example of taking best practices from the lab environment into the home environment.
5. Upon install of a new Class III BSC, it was noticed that the supply air flange to the BSC was located at a height where people might hit their heads on it. The adjoining HEPA filter housing was also in a hazardous

position for potentially causing head injuries. The sharp edges on both of these sections were covered with foam insulation to prevent injury.

6. While planning training for nonsurgical animal procedures, staff and the Attending Veterinarian discussed the temperament of the animals proposed for use on study. The original animal selected for the study has a well-known propensity for being difficult to work with, which could lead to incidents. After discussion, an alternative, more docile breed was selected for use. The selection of this alternative breed reduces the likelihood of incidents, thus providing a safer environment.
7. During the past 5 years (i.e. 60+ issues), the Lessons Learned report has helped to drive continuous improvement at NBACC by opening and maintaining lines of communication between staff as a way to help everyone learn from each other in order to prevent accidents. While it is not possible to know how many accidents have been prevented during this time, there have been 140 success stories, 155 lessons learned, and 697 near misses. That's close to 1,000 opportunities to learn from each other and improve NBACC.

LESSONS LEARNED:

1. The term "continuous improvement" is frequently used in reference to making sure that operational processes evolve to address changing condition/requirements. But it can also be applied to the use of ever evolving technology. As outlined in a success story, a staff member recently identified a way to improve NBACC operations through the change out of dated technology with a more advanced system. As you work through milestones and deliverables, please remember to bring forward new ideas you may have to improve a process or NBACC capability.
2. It is frequently noted that the "Devil is in the details". This saying is referring to the fact that the difference between success and failure can largely be influenced by whether the seemingly small details get the attention they deserve. This month's summaries highlight several situations where the details made the difference between success (e.g. protecting a flange edge to prevent an injury) and near miss (e.g. entering an airlock prior to completion of the air wash).

   As you work through normal tasks and onetime events, please remember to pay attention to the details as they can definitely be the difference between a good day and a bad day. As a practice activity, as you read through the Lessons Learned Report, please consider the details of the success stories and events/near misses. Staff members submitting a list of where they think the details made the difference will be entered into a drawing for a prize.
3. Finger cuts made a big return to the Lessons Learned Report. After seeing a sharp decrease in the number of injured fingers during the past year, 7 different employees experienced an injured finger last month. While most of these "cuts" would rate little more than a shoulder shrug (and possibly a Band-Aid) at most work locations, as most of you know, NBACC takes a much more conservative approach to overall safety. There are high hazards present so we take a very conservative approach to monitoring and managing even the simplest of near misses. 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. Some things to consider for minimizing the risk of a finger cut that also prevent bigger issues:
   - **a.** Always use the right tool (i.e. using clippers instead of a knife)
   - **b.** Always consider a safer approach to a task (i.e. using a safety cutter instead of an open blade)
   - **c.** Always use the correct PPE (i.e. wearing cut resistant gloves)

EVENT SUMMARIES:

1. **OSHA RECORDABLE INJURY SUMMARY:** 08/17/2016; A staff member cut their finger on the sharp edge of a light switch box while working in the vivarium. The wound was treated by the CMA with liquid suture, and the employee returned to work.
2. **OSHA RECORDABLE INJURY SUMMARY:** 09/22/2016; A small drop of a RG2 agent splashed out of a BSC. The drop was cleaned up following appropriate spill procedures and in consultation with Health & Safety. The staff members received post-exposure prophylaxis as a safety precaution.
3. **FIRST AID SUMMARY:** 09/22/2016; A staff member sustained a small cut in the palm of their hand from a microscope slide cover slip in a BSL-2 laboratory. The CMA examined the wound and applied first aid. No work restrictions resulted from the event.
4. **FIRST AID SUMMARY:** 09/26/2016; A staff member scraped their finger on the sharp edge of an autoclave cart outside of containment. The CMA evaluated the injury and applied first aid.
5. **FIRST AID SUMMARY:** 10/04/2016; A staff member noticed that a hangnail was bleeding while they were in the BSL-3. The CMA examined the wound and applied first aid. No work restrictions resulted from the event.
6. **FIRST AID SUMMARY:** 10/06/2016; A staff member struck their finger on the sharp edge of a stack of blue Tupperware containers in a support area. The CMA examined the small finger cut and applied first aid. No work restrictions resulted from the event.
7. **FIRST AID SUMMARY:** 10/06/2016; A staff member bumped their hand on the corner of an electrical box in an interstitial area which resulted in a small cut. The CMA examined the wound and applied first aid. No work restrictions resulted from the event.
8. **FIRST AID SUMMARY:** 10/07/2016; A staff member sustained a small finger cut on the corner of a box in an office area. The CMA examined the wound and applied first aid. No work restrictions resulted from the event.
9. **OSHA RECORDABLE INJURY SUMMARY:** 10/07/2016; A staff member caught their finger in the door frame (latch striker plate) of the women's bathroom. The CMA examined the injury and ordered x-rays to rule out a fracture. The finger was not broken and no work restrictions resulted from the event.
10. **FIRST AID SUMMARY:** 10/11/2016; A staff member scratched their knuckle while manipulating cable for a network server in an interstitial space. The CMA examined the wound and applied first aid. No work restrictions resulted from the event.
11. **FIRST AID SUMMARY:** 10/17/2016; A staff member cut their finger while cleaning up broken glass from a coffee pot in an office area. The CMA evaluated the injury and applied first aid. Although the employee was restricted from BSL-3 and BSL-4, they did not have to enter the suites until the wound healed.

NEAR MISS SUMMARIES:

1. **LAB PROCESS FAILURE SUMMARY:** 08/04/2016; A staff member reported that tape rolled out of a BSC onto the floor inside a BSL-3 laboratory. The employee informed the others in the lab and everyone exited the room. After consulting with Health & Safety, the staff member disinfected the floor of the lab. The CMA ruled no potential exposure.

2. **PPE FAILURE SUMMARY:** 08/09/2016; A staff member reported an outer glove tear (latex) while installing a BSC in a BSL-3 laboratory. The inner glove was intact, and the CMA ruled no potential exposure.

3. **LAB PROCESS FAILURE SUMMARY:** 08/12/2016; A staff member reported that a small amount of infectious material spilled onto an absorbent diaper pad inside the BSC while they were working in BSL-4. The spill was cleaned up, and the CMA ruled no potential exposure.

4. **LAB PROCESS FAILURE SUMMARY:** 08/17/2016; A staff member reported that a small amount of liquid leaked out of a waste bag onto the benchtop in the BSL-4 while it was being transported to a waste container. The bag was placed into another bag, the spill was cleaned up and the area was decontaminated. The CMA ruled no potential exposure.

5. **LAB PROCESS FAILURE SUMMARY:** 08/17/2016; A staff member reported that they forgot to remove their wedding ring prior to entering the BSL-4 cabinet lab. The ring was decontaminated and removed from the suite.

6. **EQUIPMENT FAILURE SUMMARY:** 08/17/2016; A staff member reported a leak in a compressed air line that supplies air to instruments inside a Class III BSC. The compressed air was turned off, and the line was replaced.

7. **LAB PROCESS FAILURE SUMMARY:** 08/23/2016; A staff member exited from a BSL-3 suite through the airlock without taking a shower during an emergency evacuation drill. The staff member reported that they could not hear the instructions on the One Call System® and made a decision to exit. The One Call System® for the suite was shown to be working properly in a subsequent test. The employee was retrained to contact the Emergency Manager if there is any confusion with the message(s) communicated on the One Call System®.

8. **PPE FAILURE SUMMARY:** 08/31/2016; A staff member reported an outer glove tear (latex) while installing a BSC in a BSL-3 laboratory. The inner glove was intact, and the CMA ruled no potential exposure.

9. **LAB PROCESS FAILURE SUMMARY:** 09/01/2016; A staff member reported that a robot discharged several micropipette tips onto a table inside a large BSC. The tips were to have been deposited into a sharps container. The position of the sharps container was corrected.

10. **PPE FAILURE SUMMARY:** 09/06/2016; A staff member reported an outer glove tear while working in a Class III BSC. The inner glove was intact, and the CMA ruled no potential exposure.

11. **LAB PROCESS FAILURE SUMMARY:** 09/06/2016; A staff member reported that they escorted another staff member into the BSL-4 without an annually updated Escorted Laboratorian Form approved. A new renewal form had been submitted but not approved prior to the entry. The person escorting was retrained on escorting responsibilities.

12. **LAB PROCESS FAILURE SUMMARY:** 09/07/2016; A staff member entered a BSL-3 airlock prior to completion of the 15 minute air wash. The CMA ruled that this was not a potential exposure.

13. **EQUIPMENT FAILURE SUMMARY:** 09/09/2016; A staff member discovered a liquid nitrogen freezer had been damaged in the VHP decontamination cycle during removal from the BSL-4. The freezer was being removed from the BSL-4 due to its loss of internal insulating vacuum. Without its internal vacuum, the inner wall buckled from the airlock pressure change during the decontamination cycle.

14. **SECURITY FAILURE SUMMARY:** 09/14/2016; The Security Command Center did not respond correctly to an afterhours call received from a staff member. The Security staff was retrained on proper response procedures.

15. **PPE FAILURE SUMMARY:** 09/21/2016; A staff member reported an inner glove tear (blue nitrile) while working in a BSC in a BSL-3 laboratory. The outer glove was intact, and the CMA ruled no potential exposure.

16. **PPE FAILURE SUMMARY:** 09/21/2016; A staff member reported an outer glove tear (latex) while working in a BSC in a BSL-3 laboratory. The inner glove was intact, and the CMA ruled no potential exposure.

17. **LAB PROCESS FAILURE SUMMARY:** 09/22/2016; A staff member entered a laboratory and noticed that a BSC containing a sharps container had been turned off. The individual turned the blower on and exited the room. It had been turned off earlier in an effort to make the room quieter so a different staff member could hear the phone. The individual who turned off the blower was reminded of the internal policy requiring the BSC blower to be on when a sharps container is inside.

18. **EQUIPMENT FAILURE SUMMARY:** 09/22/2016; A staff member reported that a LN2 freezer was overfilled in the BSL-4 laboratory. The cause of the incident was a malfunctioning level sensor, which was replaced. Excess LN2 was allowed to evaporate from the tank until the tank reached a normal operating level.

19. **LAB PROCESS FAILURE SUMMARY:** 09/22/2016; A staff member reported that a small quantity of water had collected near a change room door by the dunk tank in BSL-3. The cause of the incident was a preventative maintenance task performed on a back flow preventer where a small amount of clean water had drained out of the system into the suite.

20. **LAB PROCESS FAILURE SUMMARY**: 09/28/2016; A staff member wore jewelry into the BSL-3. The jewelry was decontaminated out of the suite.

21. **LAB PROCESS FAILURE SUMMARY:** 09/30/2016; A staff member found a small amount of liquid in the bottom of a cytospin centrifuge (which was inside of a BSC). The centrifuge was surface decontaminated. A specific cause of the spill was not able to be determined.

22. **LAB PROCESS FAILURE SUMMARY:** 10/03/2016; A staff member reported that a flask containing a RG2 agent leaked in a HEPA filtered incubator in a BSL-3 laboratory. The staff member opened the door of the incubator, and held their breath when they noticed the small spill. The CMA ruled no potential exposure.

23. **FACILITY PROCESS FAILURE SUMMARY:** 10/05/2016; A staff member reported that an inlet valve on the Effluent Decontamination System (EDS) vent valve was leaking prior to the HEPA filter. The

CMA ruled no potential exposure. The valve was repaired, the spill was cleaned up, and the area was decontaminated.

24. **LAB PROCESS FAILURE SUMMARY:** 10/07/2016; A staff member reported that water had made its way under the door from the BSL-4 personal shower into the cold side change room. The water originated from cleaning the inside of the shower door.

25. **PPE FAILURE SUMMARY:** 10/12/2016; A staff member reported an inner glove tear (latex) while working in a BSC in a BSL-3 laboratory. The outer glove was intact, and the CMA ruled no potential exposure.

26. **PPE FAILURE SUMMARY:** 10/12/2016; A staff member reported an inner glove tear (latex) while working in a BSC in a BSL-3 laboratory. The outer glove was intact, and the CMA ruled no potential exposure.

27. **LAB PROCESS FAILURE SUMMARY:** 10/17/2016; A staff member reported that a cover slip was mistakenly placed on the wrong side of a slide containing a RG3 agent, which had been taken out of the BSC for microscope viewing. The slide had undergone methanol fixation. The CMA ruled no potential exposure.

28. **LAB PROCESS FAILURE SUMMARY:** 10/18/2016; A staff member forgot to don safety glasses after removing a PAPR in a BSL-3 laboratory.

29. **LAB PROCESS FAILURE SUMMARY:** 10/31/2016; A staff member dropped and broke a glass bottle containing a small amount of a controlled substance onto the floor of the pharmacy. The Controlled Substance Officer was notified and the spill was cleaned up appropriately.