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Duty to Warn:

The Risks of a Dangerous Laboratory Tour

Introduction: The Importance of Safety Protocols

In scientific research, laboratories serve as gateways to groundbreaking discoveries but also harbor significant risks. This warning is intended to highlight a pressing safety concern regarding the upcoming tour of a HAZMAT laboratory at the University of Washington, scheduled for April 18, 2025. With a focus on protecting students and ensuring compliance with safety regulations, Dr. Correo Hofstad has taken the initiative to express his concerns as part of his Duty to Warn. This call-to-action emphasizes the importance of reevaluating the tour format, advocating for a transition to a virtual experience rather than a potentially hazardous physical visit.

As an Electronics Engineering undergraduate student at North Seattle College involved in the LSAMP Puget Sound Alliance, Dr. Hofstad is not only invested in creating opportunities for his fellow students but also in safeguarding their health and safety. With a significant responsibility on the part of research institutions to mitigate risks associated with laboratory tours, it is crucial to assess the dangers posed by the laboratory environment, especially when dealing with highly infectious pathogens like HIV, Herpes, and Zika viruses.

Understanding the Context: The Significance of Pathogen Research

Pathogen research is vital for public health and medical advancement, enabling scientists to develop treatments, vaccines, and preventative measures against diseases that can severely affect human populations. However, with such research comes an inherent level of risk and responsibility. Laboratories that study dangerous pathogens operate under stringent safety protocols and classifications, ensuring the safety of researchers and the community alike.

Dr. German Gornalusse at the UW ObGyn engages in critical studies exploring the interaction of the human immune system with various pathogens. While the intention

behind a tour of this HAZMAT laboratory may be educational, it is essential to recognize that these labs are designed for trained professionals. Despite their eagerness to learn, untrained students are not equipped to handle the potential hazards these environments present, which can lead to severe safety violations and health risks.

Exploring the Dangers: Laboratory-Acquired Infections (LAIs)

Laboratory-Acquired Infections (LAIs) are a grave risk inherent to the operation of high-containment laboratories. LAIs occur when laboratory personnel contact pathogens directly, resulting in infection. Such contact can originate from improper safety measures, breaches in protocol, or even simple accidents like spills. Significantly, the consequences of LAIs can range from mild symptoms to severe conditions, depending on the pathogen involved and the individual's health status.

The implications of introducing untrained individuals into an environment where LAIs are a concern can be devastating. Students lack the specialized training required to recognize or respond to potential dangers. Thus, the duty of care obligates lab representatives to prioritize the health and safety of participants by avoiding unnecessary risks and arranging a more suitable virtual tour format.

The Threat of Accidental Pathogen Releases

Another serious concern from physical access to HAZMAT labs is the potential for accidental pathogen releases. Such events occur when infectious agents escape the laboratory setting, posing a significant threat to public health. Examples of incidents that lead to unintentional releases include spills, equipment malfunctions, and improper waste disposal. Pathogens escaping containment can trigger community outbreaks and contribute to global public health crises.

Considering the highly infectious nature of pathogens like HIV and Zika, the ramifications of an accidental release can be catastrophic. As responsible advocates for health and safety, it is critical to ensure that those who may inadvertently introduce risk, such as untrained student visitors, are adequately protected. Dr. Hofstad's recommendation to cancel the physical tour is thus not only reasonable but necessary.

Potential Exposure Routes: Pathways to Infection

Understanding the various exposure routes through which pathogens can infect individuals provides insight into the enormity of the risks associated with laboratory environments.

These routes include skin, eye, or mucous membrane exposure, ingestion, and inhalation of infectious aerosols. Each pathway presents a different mechanism for infection and underscores the critical importance of adhering to safety protocols.

1. **Skin, Eye, or Mucous Membrane Exposure:** Direct contact with contaminated surfaces or materials poses a significant risk to those without appropriate training in laboratory safety. The potential for infection escalates dramatically when untrained individuals are allowed access to sensitive research facilities.
2. **Ingestion and Inhalation:** Ingestion of contaminated food or water and inhalation of airborne particles containing pathogens are serious concerns. Untrained visitors may unwittingly expose themselves to life-threatening infections without appropriate safety measures.

Biosafety Levels: Understanding the Hierarchy of Risk

Biosafety Levels (BSLs) classify laboratories based on the risk their associated pathogens present. The BSL system categorizes risks into four levels, with BSL-4 facilities being the most secure, necessitating rigorous containment and safety protocols. BSL-1 and BSL-2 laboratories typically handle less hazardous pathogens, while BSL-3 and BSL-4 laboratories deal with highly infectious agents that severely threaten public health.

Institutions conducting research in BSL-3 and BSL-4 settings must maintain stringent protocols and restrict entry to trained professionals. The potential presence of deadly pathogens within these facilities supports Dr. Hofstad's position advocating against the proposed tour for untrained individuals. Adherence to biosafety regulations is paramount to preventing accidents and ensuring a safe research environment.

The Role of Safety Protocols: Minimizing Risks

Proper implementation of safety protocols serves as the cornerstone of effective risk management in laboratory settings. Such protocols encompass training, using Personal Protective Equipment (PPE), and standard operating procedures designed to minimize the incidences of Laboratory-Acquired Infections (LAIs) and accidental pathogen releases. Consequently, researchers must engage in continuous education to remain aware of best practices in laboratory safety.

A robust approach to biosafety protects researchers and extends to all individuals who may interact with laboratory environments. Institutions can mitigate the risks accompanying research in hazardous conditions by prioritizing training and strict adherence to established safety measures. In light of the upcoming tour, a responsible decision would

be to transition to a virtual visit, providing educational opportunities without compromising safety.

Advocating for Change: A Call to Action

Dr. Hofstad's proactive stance embodies the essence of his Duty to Warn regarding the dangers associated with the April 18 laboratory tour. By bringing attention to the potential risks, he seeks the endorsement of fellow students and faculty to reconsider the event format. Such advocacy safeguards participants and fosters a culture of awareness and responsibility in scientific research.

This call to action is an essential reminder that those in positions of influence must remain vigilant and prioritize the safety of all stakeholders. Further, it emphasizes the importance of dialogue around laboratory safety and the conscious effort to maintain best practices in scientific exploration.

Educating Future Generations: The Value of Virtual Tours

Transitioning to a virtual tour format can provide a rich educational experience while eliminating serious health risks. Utilizing modern technology, educators can effectively engage students by showcasing laboratories, their operations, and the research being conducted without the hazards associated with physical presence.

Virtual tours facilitate an inclusive learning environment where students can gain insights into laboratory procedures and the significance of health and safety protocols without exposure to the dangers these spaces pose. Thus, the long-term application of virtual experiences can enable greater participation while prioritizing public health.

Prioritizing Safety and Responsibility

The upcoming tour of the HAZMAT laboratory at the University of Washington presents significant risks that cannot be overlooked. Through Dr. Correo Hofstad's clarion call, the critical considerations surrounding Laboratory-Acquired Infections (LAIs), accidental pathogen releases, and the overall safety of untrained visitors weigh heavily on the decision to proceed with the tour.

In conclusion, prioritizing safety must align seamlessly with the commitment to education. Transitioning the proposed laboratory tour to a virtual format is the most prudent course of action. As we advance in the quest for knowledge, we must not lose sight of our responsibilities to protect and ensure the well-being of our future generations.

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