



Frequently Asked Questions

1. What is a Biosafety Level 4 (BSL-4) laboratory?

While much of the infectious diseases research is done in Laboratories with BSL1, 2 and 3 capabilities, a BSL-4 laboratory is required to provide a safe environment for work with dangerous agents that pose a high individual risk of aerosol-transmitted laboratory infections and life-threatening disease. A BSL-4 laboratory is designed to protect researchers and has special engineering and design features to prevent microorganisms from being disseminated into the environment. Researchers who use the BSL-4 Laboratories have thorough training in handling hazardous infectious agents. Access to the laboratory is strictly controlled.

2. What will be studied in the laboratory?

BUMC and collaborating scientists from other institutions will study a variety of bacteria and viruses. The goal of these studies is to develop drugs, treatments and vaccines to combat these microorganisms so that they no longer pose a threat to public health. Some of the organisms that will be studied at the lab are dangerous if not handled properly. Therefore, the facility will be designed and built to meet and exceed stringent federal safety standards to protect researchers and the community.

3. Who will provide oversight of the laboratory?

The facility will be owned, operated and managed by Boston University Medical Center. Only trained, screened personnel will be allowed access to the lab.

4. How will you ensure nothing leaks from the facility?

Because of the hazardous materials involved, a BSL-4 facility is one of the most cautiously designed and constructed types of buildings in the world. The BSL-4 facility will be a self-contained unit. It will have its own air supplies, filters, power supplies decontamination and waste disposal systems. All critical systems will be built with redundancy so that back-up units are ready for use in the event that primary units fail to operate. For example, the air that comes out of the building will be double filtered through high efficiency particle filters and the air from the entire building will undergo additional high-level filtration. In effect, the air that leaves the building is cleaner than the air that comes in.

5. What are the evacuation plans?

BUMC has an emergency response plan currently used for various disasters, including fire, flood, natural disasters, and others. The Plan is being upgraded to include evacuation procedures associated with the new BSL-4 facility. The Plan will be reviewed and refined with the appropriate emergency response agencies in order to coordinate with local authorities. Once implemented, periodic drills will take place to ensure efficient plan performance.

6. What security plans will be in place to keep the building safe?

The facility will be constructed within a secured perimeter in accordance with federal standards. In addition, BUMC has retained professional risk assessment and threat analysis experts to identify areas of concern and to assist with design that reduces and/or eliminates risk. Creating a secure perimeter and structure, assigning trained staff, and installing sophisticated security access and state-of-the-art audit systems are the cornerstones of the plans to keep the building safe.

7. What kind of background check will workers in the laboratory need?

All staff in the building will be determined by BUMC, consistent with institutional and government-mandated regulations and standards. All employees working with select agents, for example, will have to successfully complete a federal background check and be compliant with all aspects of The Patriot Act.

8. What is the safety record of BSL-4 laboratories?

In more than 80 combined years of operation, there has never been a community incident or environmental release at the five BSL-4 laboratories in North America. BSL-4 laboratories have an excellent safety record.

9. Where will the building be located?

The site will be adjacent to the BUMC located within an area known as BioSquare. BioSquare is a state-of-the-art biomedical research and business park currently under active development in Boston's South End. Its development is designed to support innovation in biomedical research and science and promote novel partnerships between academia and industry.

10. What is being planned for BioSquare at the Boston University Medical Center ("BUMC") Campus?

In addition to the existing research buildings, there will be other medical research buildings, including the BioSafety Laboratory. These buildings will contain Biosafety Levels 2 and 3 (BSL-2 and BSL-3) laboratory suites similar to those already on the BUMC campus. The Biosafety Laboratory will also include a Biosafety Level 4 (BSL-4) suite designed to allow research to be done safely at the highest level of containment. The BSL-4 laboratory will comprise 15% of the facility.

11. How will the Level 4 agents be transported to the building?

Transportation of infectious materials is governed by strict national and international rules including guidelines from the Department of Transportation and the International Air Transport Authority (IATA). All biological samples that are potentially infectious are packed, shipped, and transported by authorized individuals. BUMC is notified in advance that a shipment is expected and when it is arrived. Trained personnel are given a schedule of arrival for incoming shipments and are prepared to receive them; transportation policies can be viewed at <http://bmbi.od.nih.gov/appendc.htm>.

12. What will be the benefits to the community from the laboratory?

The research will benefit the community in that new treatments and preventive vaccines against emerging and reemerging infectious diseases will be developed. This project will also have a significant economic and community impact as well. More than 1,300 construction jobs will be generated. An anticipated 660 permanent jobs -- at all levels including: environmental services, lab technicians, scientists and administrative staff-- will be created to operate the facility. The laboratory will contribute \$1.9 million in job training and housing linkage payments to the City of Boston. In addition, BUMC and Boston University will continue to make Payments in Lieu of Taxes (PILOT) to the City. Currently, BUMC makes PILOT payments in excess of \$300,000 per year and Boston University makes annual PILOT payments of \$3.2 million and tax payments of \$3 million.

13. Will the laboratory be making bioweapons?

No. The research conducted at the lab is to develop diagnostic tests, drugs vaccines and treatments for emerging infectious diseases wither they occur naturally or are introduced through bioterrorism.