

LABORATORY SAFETY – THE NEED FOR CONSTANT VIGILANCE

Progress on laboratory safety

CDC laboratories routinely work with some of the most deadly germs in the world – identifying health threats and conducting vital public health research. CDC constantly develops and reviews extensive laboratory guidelines and procedures to protect both the public and laboratory workers. However, after a series of laboratory incidents that posed no public risk and minimal risk to workers, CDC investigated its laboratory practices and found several areas that needed improvement. Significant progress is already being made and the result will be safer laboratories at CDC and elsewhere.



Safety is the highest priority in CDC labs.

Creating an enhanced culture of safety at CDC

A laboratory safety improvement workgroup submitted recommendations on how CDC could improve safety practices across the agency to minimize exposure risks to dangerous germs. Some level of risk will always be there, but these improvements will help. CDC is already making progress on these recommendations, including:

- Establishing a new Laboratory Science and Safety Office to provide agency-wide leadership and accountability for laboratory science, safety, and quality
- Stopping transfers of materials temporarily out of affected laboratories and resuming full operations only when all safety improvements have been made
- Installing more cameras in laboratories as part of a “secondary verification” process to ensure critical steps in lab processes are appropriately executed
- Searching laboratory facilities housing more than 8 million samples of potentially dangerous agents and finding no instances where materials were stored in non-secure areas
- Improving inventory management of specimens, including a new electronic inventory system
- Initiating the Laboratory Leadership Service (LLS), a new fellowship program focused on biosafety and laboratory management

Background

In 2014, there were incidents involving anthrax and H5N1 influenza at CDC labs and smallpox at a Food and Drug Administration lab at the National Institutes of Health. Although there was no public risk in these incidents, all federal agencies with laboratories conducted a “Safety Stand-Down” from handling dangerous agents or toxins to verify that all materials in their laboratories were properly registered and stored. CDC also created an internal Laboratory Safety Improvement Workgroup (LSIW) and a workgroup of external advisors to review CDC’s laboratory incidents and make recommendations for improving safety. A later laboratory incident involving possible exposure to Ebola further demonstrated the immediate need to enhance a culture of safety in CDC’s laboratories.

- Developing improved competency-based laboratory safety training through the newly established Biosafety Training Working Group
- Conducting Laboratory Safety Engagement Sessions that provide information and training
- Developing improved competency-based laboratory safety training through the newly established Biosafety Training Working Group

Why laboratory safety is important

Laboratory safety cannot be achieved by a single set of standards or methods. What is an acceptable workflow in a lower biosafety-level lab may expose workers to risk if used in a higher biosafety-level lab. All levels of biosafety are needed to allow scientists and researchers to work with specimens to identify new health threats, stop outbreaks, and gain new knowledge.



Working with dangerous germs is never without some risk.

Biosafety – the science of working with risk ➤

CDC has the expertise to operate laboratories at all levels of biosafety. All laboratories require special training and equipment, whether lab staff are working with relatively safe materials or extremely dangerous pathogens. There are four biosafety levels (BSL) of labs at CDC:

- BSL1 – these labs handle agents that pose minimal risks and are not known to consistently cause disease in healthy adults
- BSL2 – these labs handle agents that pose only moderate risks to lab staff or the environment
- BSL3 – these labs handle agents that can cause serious or lethal disease
- BSL4 – the highest level of lab safety in the world, these labs handle the deadliest pathogens for which there is no known cure or treatment



Laboratories are critical in fighting health threats.

Why work with dangerous germs anyway?

CDC laboratories save lives and protect people, and CDC researchers are among the most dedicated scientists in the world. Laboratory work is absolutely critical because deadly viruses and bacteria constantly threaten to infect people in new ways. CDC stands in the way of these deadly pathogens by learning how these germs spread. The work is difficult and can never be without risk, but CDC scientists and staff remain dedicated to tracking and stopping any disease that threatens health.

To learn more about CDC's 24/7 role in saving lives and protecting people visit About Us:
<http://www.cdc.gov/24-7/>

To view this fact sheet on the web, visit:
<http://www.cdc.gov/24-7/CDCFastFacts/CDCFacts.html>