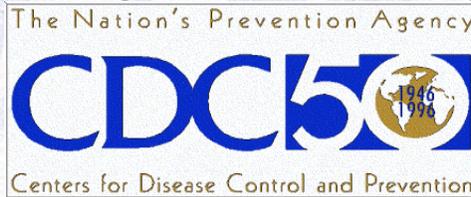


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## CDC Laboratories

Starting in the 1960s, CDC, along with experts at the National Institutes of Health, established a system for categorizing work with microorganisms according to the risk they present to laboratory workers. Work with organisms not known to cause diseases is done at biosafety level 1 (BSL1), and work with organisms that represent only a modest risk, such as viruses that cause the common cold, is done at BSL2. Work with organisms that can cause serious disease, but for which vaccines or antibiotics are available, such as rabies or Rocky Mountain spotted fever, is done at BSL3. While work with organisms that pose a high risk of transmission of life-threatening disease and for which no vaccines or antibiotics are available, is done at BSL4 (maximum containment laboratory) or as recent books and movies have labeled it, the "hot zone".

The first biocontainment facility at CDC was built in the early 1960s; it consisted of three laboratory suites that provided isolation from the rest of CDC, but provided little except biological safety cabinets to protect laboratory workers. The first BSL4 laboratory was established at CDC in 1967 and was built in a large truck trailer. The entire area consisted of closed stainless-steel cabinets with glass observation windows and glove ports (ports with attached arm-length gloves that allowed workers to manipulate specimens within the cabinet). Two additional, upgraded BSL4 laboratories followed.

Then in 1988, a new biocontainment facility opened at CDC. The laboratory consists of two buildings; a 6-story building housing BSL3 facilities and a 3-story building housing BSL4 facilities. The two buildings are separated by an atrium and from the outer walls to inner laboratory rooms, each wall represents an increasing element of biocontainment. The key to this concept is controlled air flow with increasingly negative air pressure in inner rooms, and the most negative pressure within the biological safety cabinets located within the innermost rooms. The air flow system contains special filters called high-efficiency particulate air (HEPA) filters at every appropriate inlet and outlet. In addition, the building has systems for decontamination of liquid and solid wastes and for safe handling of laboratory chemicals and radioisotopes.

In laboratories across the country, almost 10 billion tests are performed on body fluids, tissues, and cells each year. The primary goals of all these laboratories is to determine who is at risk of developing diseases, to detect conditions as early as possible, to make better decisions regarding treatment, and to help patients have healthy tomorrows.

[Click here to view "A Few Milestones in CDC Laboratory Science."](#)



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