The term containment is used in describing safe methods for managing biological materials in the laboratory environment where they are being handled or maintained. The purpose of containment is to reduce or eliminate exposure of laboratory workers, other persons, and the outside environment to potentially hazardous or detrimental materials.

The Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) established criteria for four levels of containment called Biosafety Levels (BSLs). These criteria consist of combinations of laboratory practices and techniques, safety equipment, and laboratory facilities. Each combination is specifically appropriate for the operations performed, biological materials to be used, and the laboratory function or activity.

Biosafety Level 2 (BSL2) practices, equipment, and facility design are applicable to clinical, diagnostic, teaching, and other laboratories in which work is done with moderately risk agents that are present in the community and associated with human. Hepatitis B virus, HIV, the salmonellae, and Toxoplasma spp. are representative of microorganisms assigned to this containment level. With good microbiological techniques, these agents can be used safely in activities conducted on the open bench, when the potential for producing splashes or aerosols is low. BSL2 is appropriate when work is done with any human-derived blood, body fluids, tissues, or primary human cell lines where the presence of an infectious agent may be unknown.

Primary concerns at BSL2 include accidental needlesticks or cuts or mucous membrane exposures, or ingestion of infectious materials. Even though organisms routinely manipulated at BSL2 are not known to be transmissible by the aerosol route, procedures with aerosol or high splash potential may increase the risk of personnel exposure.

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**Basics of Biosafety Level 2**

- Limit access to work areas. Close doors during work with research materials.
- Post biohazard warning signs at access points and on equipment containing or contaminated by potentially infectious materials.
- Wash hands after handling biological materials, removing gloves, or before leaving work area.
- Don’t eat, drink, etc. in the work area.
- Never mouth pipette.
- Use sharps only when no alternatives (e.g., safety devices or non-sharps) exist.
- Take extreme precautions when sharps must be used. Dispose sharps carefully and properly.
- Conduct procedures likely to create splashes, sprays, or aerosols within a biological safety cabinet that is certified annually.
- Decontaminate work surfaces at least daily.
- Decontaminate waste materials before disposal.
- Wear a BUTTONED lab coat to protect street clothes.
- Wear gloves when hands may contact potentially infectious materials, contaminated surfaces, or equipment.
- Wear eye/face protection if splashes or sprays are anticipated during work outside a biological safety cabinet.
- Transport materials outside of the laboratory using secondary containment and a cart. Avoid public areas during transport.
- Transfer materials to and from the Vanderbilt campus according to federal and international regulations.
- Be familiar with written instructions for laboratory procedures and proper responses to emergencies.
- Report spills, exposures, illnesses, and injuries immediately.