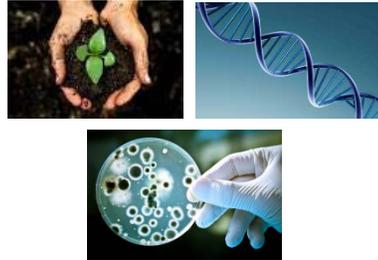


## BIOLOGICAL WASTE

Biological waste generated at LLNL is governed by a number of regulatory agencies. The state of California regulates Medical Waste under the California Medical Waste Management Act (MWMA). Medical waste includes biohazardous, pathology, pharmaceutical, trace chemotherapeutic and trauma scene waste. A number of other regulatory agencies, including the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH) and the United States Department of Agriculture (USDA), also require biological waste to be decontaminated prior to disposal. Below is a brief description of the Biological Waste streams that may be generated at LLNL. Specific information for managing these waste streams is provided in [PRO-2758 Biological Waste Management](#) and training for biological waste generators is provided in either [HS4435/HS4435-RW Working Safely in Biosafety Level 1 Laboratories](#) or [HS4436/HS4436-RW Working Safely in Biosafety Level 2 Laboratories](#).

| MEDICAL WASTE <sup>1</sup>   |   |  |   | Non-Red bag Biological (NRB) Waste   |
|--|---|--|---|--|
| Biohazardous Waste   | Pathology Waste   | Pharmaceutical Waste   | Trace Chemotherapeutic Waste  |  |
| <p>Waste contaminated with or potentially contaminated with <b>Risk Group 2 (RG2)</b> or higher biological agents or materials (e.g., RG2 or higher microbes, human blood, blood components and body fluids, human and non-human primate [NHP] cell lines).</p>  <p style="text-align: center;">↓</p>  | <p>Includes:</p> <ol style="list-style-type: none"> <li>Human body parts (excluding teeth) that are contaminated with RG2 or higher biological agent or material.</li> <li>Human body parts that have been fixed in formaldehyde or other fixative.</li> <li>Carcasses, parts, tissues and fluids of <b>research animals</b> infected with a RG2 or higher biological agent or material.</li> </ol>  <p style="text-align: center;">↓</p>  | <p>Consists of <u>expired or unused prescription or over-the-counter drugs</u> that are <u>hazardous waste</u> (<i>i.e.</i>, hazardous only in the state of CA), but are not federally regulated RCRA waste and are not radioactive. Includes human or veterinary pharmaceuticals:</p> <ol style="list-style-type: none"> <li>Purchased/acquired from a pharmacy; AND</li> <li>Manufactured for research purposes not specifically formulated for human/veterinary consumption.</li> </ol>  <p style="text-align: center;">↓</p>  | <p>Waste contaminated through contact with, or having previously contained, chemotherapeutic agents, including but not limited to, solid lab trash, sharps, liquid waste (e.g., spent liquid media) and empty containers that held chemotherapeutic agents.</p>  <p style="text-align: center;">↓</p>  | <p>Waste contaminated with or potentially contaminated with <b>Risk Group 1 (RG1)</b> biological agents or materials (e.g., RG1 microorganisms, confirmed non-viable organisms, recombinant DNA subject to the <i>NIH Guidelines</i>, animal (except NHP) cell lines, and cell cultures/tissue of plant origin).</p>  <p style="text-align: center;">↓</p>  |

All waste streams can include: solid lab trash, standard (*i.e.*, California-regulated) sharps (e.g., needles, needle/syringe combinations, Pasteur pipettes, scalpels, razor blades), non-standard (*i.e.*, not regulated by the state of California) sharps (e.g., serological pipettes, pipette tips, swabs with wooden shafts), and liquid waste.

<sup>1</sup> Medical waste also consists of Trauma Scene Waste. Trauma scene waste is rarely generated at LLNL. In the event of a trauma scene, the waste will be managed by a registered Trauma Scene Waste Management Practitioner.