Mobile BSL-3 VRDL Lab

- The Defence Research and Development Organization (DRDO) in collaboration with labour ministry governed ESIC medical college & hospital, Sanathnagar (Hyderabad) has developed India’s first COVID-19 sample collection mobile lab named “Mobile BSL-3 VRDL Lab”
- Approved by the Indian Council of Medical Research (ICMR), the lab was launched on Thursday by defence minister Rajnath Singh.
- The efforts of DRDO and ESIC in setting up of this bio-safety Level 2 and Level 3 lab in a record time of 15 days which usually takes about six months time.
- The first of such Mobile Viral Research Lab (MVRL) that will speed up COVID-19 screening and related R&D activities was developed by Research Centre Imarat (RCI), the Hyderabad based laboratory of DRDO in consultation with ESIC Hospital, Hyderabad.
- The Mobile Viral Research Lab is the combination of a BSL 3 lab and a BSL 2 lab essential to carry out the activities. The labs are built as per WHO and ICMR Bio-safety standards to meet international guidelines. The system has built in electrical controls, LAN, Telephone cabling, and CCTV.
- The Mobile Lab will be helpful to carry out diagnosis of COVID-19 and also virus culturing for drug screening, Convalescent plasma derived therapy, comprehensive immune profiling of COVID-19 patients towards vaccine development early clinical trials specific to Indian population.
- The lab screens 1000-2000 samples per day.
- This lab can be positioned anywhere in the country, as per requirement.

What are Biosafety Labs 1,2,3,4 (BSL 1,2,3,4)?

Biological Safety Levels (BSL) are a series of protections relegated to autoclave-related activities that take place in particular biological labs. They are individual safeguards designed to protect laboratory personnel, as well as the surrounding environment and community.

These levels, which are ranked from one to four, are selected based on the agents or organisms that are being researched or worked on in any given laboratory setting. For example, a basic lab setting specializing in the research of nonlethal agents that pose a minimal potential threat to lab workers and the environment are generally considered BSL-1—the lowest biosafety lab level. A specialized research laboratory that deals with potentially deadly infectious agents like Ebola would be designated as BSL-4—the highest and most stringent level.

The Centers for Disease Control and Prevention (CDC) sets BSL lab levels as a way of exhibiting specific controls for the containment of microbes and biological agents. Each BSL lab level builds upon the previous level—thereby creating layer upon layer of constraints and barriers. These lab levels are determined by the following:

- Risks related to containment
- Severity of infection
- Transmissibility
- Nature of the work conducted
- Origin of the microbe
- Agent in question
- Route of exposure