

SwasthVayu

January 19, 2021

In News: CSIR-NAL has bagged an order for supply of 1200 SwasthVayu machines to Delhi Government and the execution & installation at various hospitals in Delhi is being implemented.

About SwasthVayu

- It is a microcontroller-based precise closed-loop adaptive control system with a built-in biocompatible **"3D printed manifold & coupler" with HEPA filter** (Highly Efficient Particulate Air Filter).
- It is a 'Made in India' non-invasive ventilator being **developed by the National Aerospace Laboratories (NAL), Bengaluru.**
- It has features like Spontaneous, CPAP, Timed, AUTO BIPAP modes with provision to connect Oxygen concentrator or Enrichment unit externally.
- The system has been certified for safety and performance by NABL accredited agencies.
- The system has undergone stringent biomedical tests and beta clinical trials at NAL Health Centre.
- Its advantage is that it is simple to use without any specialized nursing, cost effective, compact and configured with majority of indigenous components.
- CSIR-NAL has commercialized this technology with six private companies.

Objective of SwasthVayu

- To address the shortages of ventilators in the beginning of the Covid-19 pandemic

Benefits of SwasthVayu

- The major advantage of this machine is that it is simple

to use without any specialized nursing, cost-effective, compact and configured with the majority of indigenous components.

- This is ideal for treating COVID -19 patients in Wards, Makeshift Hospitals, dispensaries and home in the current Indian COVID 19 scenario.

HEPA stands for High Efficiency Particulate Air (filter)

- HEPA was a top-secret technology developed during the 1940s by the United States Atomic Energy Commission to efficiently filter radioactive particulate contaminants.
- HEPA is a type of highly efficient filtration media that removes microscopic particles from air that passes through the filter. There are different efficiency ranges depending on particle size.
- The most efficient HEPA filter removes 99.7% of particles with a size of 0.3 microns that enter the filter.
- Such particles include tobacco smoke, household dust, and pollen.
- HEPA filters are most commonly found in household vacuum cleaners and air filters.
- Depending on their usage and indoor air quality factors, it is suggested that HEPA filters be replaced every 12 to 18 months.

National Aerospace Laboratories (NAL)

- NAL is India's first largest aerospace firm.
- It was established by the Council of Scientific and Industrial Research (CSIR) at Delhi in 1959 and its headquarters was later moved to Bangalore in 1960.
- The firm closely operates with HAL, DRDO and ISRO and has the prime responsibility of developing civilian aircraft in India.
- The CSIR-NAL mandate is to develop aerospace

technologies with strong science content, design and build small and medium-sized civil aircraft, and support all national aerospace programmes.