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# Building a wall against future diseases

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**With the country now vying to become a global vaccine research and production powerhouse, the overall growth predictions for the biotech industry including technologies such as PAPRs will play a key enabler in the overall progress**



Since the dawn of modern medicine, vaccines have been an integral part of preventing the spread of diseases. From the very first vaccine invented in 1796 to treat smallpox to the recent COVID-19 vaccine, the need for medical research and medical research professionals have been of paramount importance. The COVID-19 pandemic has brought with it untold human suffering and has changed the way humans work and interact. To combat this virus and other future pandemics, scientists are working hard to develop lifesaving drugs that could bring a swift end to this ongoing crisis.

**Protecting our protectors**

Researchers in vaccine manufacturing labs or facilities are at constant risk of exposure to the very diseases they aim to prevent. To ensure the safety of scientists and researchers, technologies such as Powered Air Purifying Respirator (PAPR) are an essential commodity that assists in the vaccine creation and production process. With the rapid growth of India's Bio-Technology, the industry is predicted to be an eye-watering 16.4per cent CAGR. The country's commitment to the welfare of its citizens underscores the need for cutting-edge technologies such as PAPR.

PAPRs are essentially a device to supply clean breathable air to the wearer of the device, with minimal to no particulate matter and microorganisms. Synonymous to a deep-sea diver's suit & helmet, the device uses a HEPA (high-efficiency particulate air) filter like the ones used in modern passenger aeroplanes. The device uses a fan to draw in ambient air and provides filtered air to the operator by passing the air through the HEPA filter. In India, among others, 3M produces its proprietary Versaflo PAPR solution that has facilitated multiple vaccine manufacturers in the country. The product, along with just filtration also provides mobility and ease of use with its battery-operated turbo unit and controllable airflow rate knob respectively.

**Modern mechanisms for a better future**

Modern PAPRs can achieve an Assigned protection factor (APF) of up to 1000, which equates to almost 0 contaminates, thus reducing the risk of infections. This equipment has also been designed in such a way as to reduce the risk of contamination to others when the wearer exits the containment zones during the decontamination process.

For people who serve as healthcare professionals or are in fields that require high caution and protection against deadly particles for long periods, comfort is key along with cost-effectiveness and durability. Designed with scientific technology that would run for long hours, an ideal PAPR should last for eight hours. India has, through this pandemic raised its financial nourishment towards healthcare and has opened its markets to promote the manufacture of this lightweight, cost-effective and breath responsive product.

With the country now vying to become a global vaccine research and production powerhouse, the overall growth predictions for the biotech industry including technologies such as PAPRs will play a key enabler in the overall progress. Doctors being our guardians during these trying times can now rely on personal respirators that reduce the vulnerability of fatal outcomes to a minimum. Every single medical professional and worker who operate in potentially biological high-risk environments deserve the utmost protection. With the advent of PAPR HEPA filters, the reality of the world building a wall against diseases is not too far away.

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