

DRDO develops casualty evacuation bags

By Vijay Mohan

- *Bag is water and air-proof*
- *The bag, in the shape of a rigid cylinder, is made of non-woven, water-repellant fabric with air and waterproof zippers as well as a ventilator*
- *It is coated with a film to cater to a chemical, biological, radiological and nuclear (CBRN) environment with requisite protection against blood and viral penetration*

The Defence Research and Development Organisation (DRDO) has designed a casualty evacuation bag to transport or isolate persons infected with Covid-19. The bag is water and air-proof and treated to deal with biological agents.

“The design of the bag was finalised this week and DRDO will be procuring an initial lot of 500 such bags,” a senior DRDO official said. “We are looking at the private industry which has expertise in this field to manufacture them,” he added.

DRDO’s Defence Bioengineering and Electromedical Laboratory (DEBEL), which carries out research in aero-medical engineering and life support equipment and Nuclear Chemical and Biological (NBC) protection systems, has developed this bag.

According to DRDO sources, the bag, in the shape of a rigid cylinder, is made of non-woven, water-repellant fabric with air and waterproof zippers as well as a ventilator. It is coated with a film to cater to a chemical, biological, radiological and nuclear (CBRN) environment with requisite protection against blood and viral penetration.

The size and shape of the Covid casualty evacuation bag is something akin to a fabric chamber developed by DEBEL in the aftermath of the 1999 Kargil conflict to manage patients affected with High Altitude Pulmonary Odema (HAPO). The chamber is airtight and simulates air pressure that is prevalent at lower altitudes while evacuating patients from high altitude.

The DRDO has been tracking the spread of Covid-19 since the first reports of its outbreak in China’s Wuhan province. It took a call in the first week of March to enhance efforts for creating counter-measures and creating a mass supply solution of critical medical requirements if Covid-19 becomes a crisis.

A protective body suit developed earlier by DRDO’s Institute for Nuclear Medicine and Allied Sciences for medical and paramedical staff to manage and evacuate casualties in the event of CBRN emergencies has now been adapted for use by medical staff and health workers engaged in combating Covid-19. Over 10,000 such suits are being produced per day by private manufacturers and production is expected to ramp up further with more private players joining hands.

Critical care ventilators, advanced, five-layer N-99 face masks and hand sanitisers are other products developed by DRDO laboratories that are now being mass-produced by the industry to mitigate the Covid-19 threat.

<https://www.tribuneindia.com/news/drdo-develops-casualty-evacuation-bags-62867>



Body suits, sanitizers, and N99 masks: DRDO gears up to fight coronavirus

The body suit is one of the four instruments developed by the DRDO and ready to be deployed in 'War against Corona'

A body suit developed by India's premier research and development organisation DRDO can protect doctors and other health workers attending on Covid-19 patients.

The Defence Research and Development Organisation (DRDO) said the body suit can shield doctors, medical staff, sanitation workers and others.

According to a DRDO statement, the body suit developed earlier for medical and paramedical staff to manage and evacuate the casualties in the event of radiological emergencies has now been converted into a full body suit to stop contamination.

"The suit is washable and has passed the ASTM International standards. The suit is widely tested by DRDO and other agencies and found suitable for the cause," it said.

Each suit costs Rs 7,000. Frontier Protective Wear Pvt Ltd, Kolkata and Medikit Pvt Ltd, Mumbai are producing 10,000 suits per day.

The body suit is one of the four instruments developed by the DRDO and ready to be deployed in 'War against Corona'.

Since COVID-19 affects pulmonary functions, it has developed critical care ventilators.

The Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bengaluru, a DRDO lab, has identified a vendor (Scanray Tech Pvt Ltd, Mysore) to produce ventilators. "Innovation is on to create 'Multi patient ventilator' wherein several patients can be supported by a single ventilator. This innovation is expected to be available within a week," the DRDO said.

Around 5,000 ventilators will be produced in the first month and 10,000 subsequently. Each ventilator unit will cost around Rs 4 lakh.

The third instrument developed by DRDO is five layer N99 masks with two layers of nano mesh. The production vendors of this advanced mask are Venus Industries Mumbai, and IMTEC Kolkata. The capacity is 10,000 masks per day. Material for these are sourced from Ahmedabad Textile Industry's Research Association, which is already having plenty of government orders for N95 masks. The mask costs Rs 70 per piece.

The DRDO has also developed hand sanitiser, a basic instrument against spread of Covid-19. It has provided about 4,000 litres of hand sanitiser to the Indian Armed forces, Armed Forces Medical Corps, and the Defence Security Corps, 1,500 litres to Ministry of Defence, 300 litres to the Parliament, and 500 litres to various security establishments and high offices.

Initially a DRDO lab, Defence Research & Development Establishment (DRDE), Gwalior produced about 20,000 litres. DRDO identified vendor, Gwalior Alco Brew Pvt Ltd, Gwalior for production of sanitisers. It has a capacity of 20,000 to 30,000 litres. It is priced at Rs 20 per litre.

https://www.business-standard.com/article/current-affairs/body-suits-sanitizers-and-n99-masks-drdo-gears-up-to-fight-coronavirus-120033000206_1.html

एरिया सेनेटाइज के लिए लैब में काम करेगी रक्षा प्रयोगशाला, मोबाइल केमिकल तकनीक विकसित करने की पहल

कोरोना वायरस के संक्रमण से निपटने के लिए रक्षा अनुसंधान एवं विकास संगठन यानी रक्षा प्रयोगशाला जोधपुर भी जुटी हुई है। रक्षा प्रयोगशाला लैब में कई लीटर सेनेटाइजर बनाकर आर्मी को वितरित किया है, ताकि आर्मी द्वारा बनाये गए वैलनेस सेंटर में इसका उपयोग किया जा सके

हर्षवर्धन सिंह भाटी

गजेंद्र सिंह दहिया/जोधपुर: कोरोना वायरस के संक्रमण से निपटने के लिए रक्षा अनुसंधान एवं विकास संगठन यानी रक्षा प्रयोगशाला जोधपुर भी जुटी हुई है। रक्षा प्रयोगशाला लैब में कई लीटर सेनेटाइजर बनाकर आर्मी को वितरित किया है, ताकि आर्मी द्वारा बनाये गए वैलनेस सेंटर में इसका उपयोग किया जा सके। इसके अलावा डीआरडीओ अब अपनी लैब में एरिया सेनेटाइज करने की सस्ती तकनीक विकसित करने जा रहा है। लैब टैस्ट के बाद यह तकनीक आर्मी को दे दी जाएगी ताकि आर्मी अपने क्षेत्र के अलावा सिविल में भी इसका उपयोग कर सकेगी।

डीआरडीओ जोधपुर मुख्य रूप से न्यूक्लियर साइंस पर कार्य करता है। कोरोना संक्रमण के खतरे के चलते फिलहाल अधिकांश वैज्ञानिक वर्क फ्रॉम होम कर रहे हैं। डीआरडीओ दिल्ली के महानिदेशक डॉ जी सतीश रेड्डी द्वारा कोरोना से निबटने के लिए आगे आने का आह्वान करने के बाद देश भर की आरडीओ लैबोरेट्रीज भी रूटीन से हठ कर अलग-अलग काम करने में लग गयी हैं। अपनी क्षमता के अनुसार डीआरडीओ के वैज्ञानिक भी केंद्र सरकार को कोरोना संक्रमण के प्रभाव को काम करने के लिए संयोग कर रहे हैं।

जैसलमेर व जोधपुर वैलनेस सेंटर में गया सेनेटाइजर

आर्मी के द्वारा राजस्थान में सबसे पहले जैसलमेर मिलिट्री स्टेशन में वैलनेस सेंटर बना कर वर्तमान में 484 भारतीयों को रखा गया है, जिन्हे ईरान से रेस्क्यू करके लाया गया है हाल ही में जोधपुर मिलिट्री स्टेशन में भी 277 भारतीय लाये गए हैं, जिन्हे क्वारंटाइन सुविधा दी जा रही है। इन दोनों ही कैंप में प्रतिदिन सेनेटाइजर की जरूरत पड़ती है। हर दो तीन दिन में एरिया सेनेटाइज करना पड़ता है। डीआरडीओ ने दोनों ही वैलनेस सेंटर में सेनेटाइजर बना कर वितरित किये हैं ताकि आर्मी को परेशानी नहीं होगी।

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<https://www.patrika.com/jodhpur-news/mobile-chemical-spray-technique-developed-by-drdo-to-sanitize-places-5943244/>

Mon, 30 March 2020

DRDO to soon equip frontline health personnel with advanced ventilators, face masks, PPEs to fight Corona

In a force multiplying move, the Defence Research and Development Organisation (DRDO) will soon equip the frontline Health personnel of the country with advanced ventilators, face masks and Personal Protection Equipments in their fight against spread of novel Coronavirus.

DRDO Chairman Dr G Sateesh Reddy informed our Hyderabad Correspondent that many of them will be made available in next couple of days to health professionals. Stating that many technologies have been transferred to the industry, he said, the DRDO has developed a technology to use one ventilator for multiple patients.

He further informed that the DRDO is helping the Industry to produce certain components and large number of ventilators will be produced in next few weeks with Bharat Electronics limited (BEL) and a couple of other Industries.

Dr Reddy said, the DRDO has developed five layered N-99 masks and offered technology to the Industry to produce in large scale. He held a meeting with 800 industry representatives through Video Conference. He further said the technology relating to the PPEs has also been offered to Industry for production in large quantity.

Stating that the DRDO has produced surgical face masks in emergency and distributed to Delhi police, Mr Reddy said, 3D printing face masks will be produced for police and health workers.

Dr Sateesh Reddy also informed that Sanitizing Vans will also be produced soon in considerable numbers and they will be supplied to major cities and towns for sanitizing people who enter the van. Similarly, he said, technology relating to Oxygen Tubes is also being worked on among other technologies and they also will be produced soon.

<http://www.newsonair.com/News?title=DRDO-to-soon-equip-frontline-Health-personnel-with-advanced-ventilators%2C-face-masks%2C-PPEs-to-fight-Corona&id=384143>

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Mon, 30 March 2020

How defence establishments are fighting the Covid-19 battle

By Elizabeth Roche

- ***Military establishments are running isolation centres, hosting Indians rescued from Covid-19 hotspots***
- ***Medical teams of the armed forces have been dispatched to help the administrations in the Maldives and Nepal***

From manufacturing hand sanitizers, protective masks and bodysuits to identifying and preparing military hospitals for treating novel coronavirus patients, India's defence establishment is doing its role, albeit away from the spotlight, to help the nation deal with the crisis.

Indian military establishments are running isolation and wellness centres across the country, hosting groups of Indians brought back from Covid-19 hotspots such as Iran.

On Sunday, a fresh batch of 275 evacuees from Iran, who reached India, were taken to the Army Wellness Facility in Jodhpur, according to a statement from a defence spokesman in Rajasthan. A previous batch of 277 Indians evacuated from Iran is already at this centre and is being taken care of under Operation Namaste, the spokesman said.

According to a person familiar with the developments, those coming from Iran and other Covid-19 affected nations have to undergo a mandatory period in quarantine, which is why the two groups are at the same wellness centre in Jodhpur. "They are being regularly monitored by the army medical teams," the person added.

Instructions have also been issued to the Indian Army's 62 Cantonment Boards in 19 states and Union territories "to identify beds in hospitals or health centres and guest houses for any eventuality", a defence ministry official said.

Medical teams of the armed forces have been dispatched to help the administrations in the Maldives and Nepal, added the defence ministry official.

Separately, the Indian Air Force (IAF) has created nine quarantine facilities across the country. "From 1 February, the Air Force has evacuated 1,059 people (including five foreign nationals) and quarantined them at their facilities or bases in Manesar (Haryana), Hindon (Ghaziabad), Ghatkopar (Mumbai) and Jaisalmer (Rajasthan)," IAF said in a statement. Besides, Command Hospital Air Force, Bengaluru, has been designated as the first laboratory under IAF to undertake Covid-19 testing, the statement said. "This will greatly enhance the region's ability to carry out quick testing of suspected cases and allow prompt and timely intervention where required."

IAF has undertaken at least two missions to evacuate Indian nationals and citizens of friendly countries from Covid-19 front lines—China, Japan and Iran—defence minister Rajnath Singh said at a meeting in New Delhi last week to take stock of preparedness.

The Indian Navy has set up a quarantine camp at its base in Visakhapatnam, a statement from the navy said. It has also set up isolation facilities at its premier hospital INHS Asvini at Mumbai. The naval base in Kochi is gearing up to offer quarantine facilities for Indians nationals. Ordnance Factory Boards have designated 285 beds for isolation wards.

The Defence Research and Development Organisation (DRDO) is now focused on "creating mass supply solutions of critical medical requirements", a statement from DRDO said.

Hand sanitizers have been produced for the armed forces, medical corps, defence security corps, the defence ministry and Parliament. For Delhi Police, DRDO has supplied 20,000 three-ply masks, besides hand sanitizers. DRDO is working with private firms to produce the five-layer N99 masks, said its statement.

<https://www.livemint.com/news/india/how-the-defence-establishments-are-fighting-the-covid-19-battle-11585476180352.html>



Mon, 30 March 2020

Prepping for the future after coronavirus: 9 steps taken by government

By Vikash Aiyappa

New Delhi: Amid looming fears of coronavirus infection entering the community transmission stage, India is boosting its overall health infrastructure by initiating measures like designating dedicated hospitals for affected patients in states, ramping up procurement of ventilators and mobilising resources of Railways and armed forces to deal with any eventuality.

As of now, the country reported 873 coronavirus cases and 19 deaths.

Even though the Health Ministry and the Indian Council of Medical Research (ICMR) have been insisting that there is "no solid evidence" of community transmission so far, the government has started scaling up health infrastructure to deal with any situation.

Here's how India is boosting capacity for tougher challenges ahead:

- The Centre has asked all states to earmark hospitals only for treating COVID-19 patients and ramp up their capacity to manage increasing number of cases. At least 17 states have started work on it.
- The armed forces are keeping ready 28 service hospitals to provide treatment to COVID-19 patients apart from five hospitals which are carrying laboratory tests for the infection.
- Defence public sector undertaking Bharat Electronics Limited has been tasked with manufacturing ventilators while premier defence research laboratory DRDO is producing protective gears for medical personnel and supplying hand sanitisers and face masks to various agencies involved in patient care.
- The government has granted emergency financial powers to Army corps and divisional commanders to procure equipment to set up medical and quarantine facilities for affected people.
- The railways has manufactured a prototype of an isolation ward for treating coronavirus patients by converting non-air-conditioned train coaches. Once the best practices are finalised, each railway zone would manufacture a rake with 10 coaches every week, the national transporter said.
- The Centre has directed the states to keep some beds reserved for creating isolation facilities in public and private hospitals and ensuring that stable patients are discharged as early as possible.
- The health ministry has asked hospitals and medical education institutions to procure sufficient number of ventilators and high-flow oxygen masks to be prepared for any possible influx of patients.
- The AIIMS has set up a task force to develop management protocol for COVID-19 and has constituted several committees to be able to respond to challenges which may come across in coming days due to the rising infection, officials said.
- The Centre has also asked hospitals to postpone all non-essential surgeries.
- Private hospitals too have ramped up their facilities and creating focussed team to handle any surge of patients in future.
- To address the shortage of ventilators in the country, joint secretary in the ministry of health Lav Agarwal on Friday said that an order has been placed for 10,000 ventilators in addition to earlier order of 1,200 ventilators.



<https://sg.news.yahoo.com/prepping-future-coronavirus-9-steps-040451779.html>