

8,000 defence scientists, staff working on solutions

Dr G. Satheesh Reddy, Chairman, Defence Research and Development Organisation

By Pradip R Sagar

Dr G. Satheesh Reddy was made member of an empowered working group set up by Prime Minister Narendra Modi to manage the Covid-19 crisis. In an exclusive interview with THE WEEK, Reddy shared his experience and the challenges faced:



Q. How has the DRDO contributed as a Covid-19 warrior?

A. The DRDO has been tracking the spread of Covid-19 ever since the media reported its devastating impact in China. We have been gearing up with technologies to support the national mission and have been on alert since the first case. When the number of cases in India crossed 30, the DRDO began to accelerate and enhance products and countermeasures to combat the spread. Efforts were focused on creating required solutions for critical medical requirements, within the given constraints.

Q. The DRDO has gone from developing armaments to health care products. How are you managing this?

A. For the last ten days, I have been constantly on call with labs all over the country. I have pulled in my scientists to work on simple things like personnel protective equipment (PPE). If we can develop missiles or other high-end technology, then our scientific brains should not have any problem finding a solution to these medical problems. Our defence scientists have been working day and night to rise to the occasion.

Q. Is it true that the focus of the DRDO is to now provide affordable solutions?

A. As a nation we were not [ready for this]. Now, the demand of these health care items is huge. The DRDO is aiming to make things available in [large] quantities, keeping in mind the affordability. So, we have managed to develop some new items while some spinoff technology was also being [introduced]. The key focus is to make the medical equipment cheap.

Q. How many DRDO laboratories are working on this?

A. I have asked every DRDO scientist and laboratory to come up with contributions. More than 15 DRDO laboratories with a dedicated force of around 8,000 scientists and technical staff will work on these solutions. We are ready with the technology and are working with the industry for volume production of critical supplies. The Institute for System Studies and Analysis, Delhi, has developed METRICS (Mathematical Estimation for Tracking Infections of Covid-19 Spread in India) to generate a daily estimation report.

Q. The DRDO has come up with critical technology like the multi-patient ventilator. Tell us about it.

A. Ventilators were developed by the DRDO a few years ago, and the technology was transferred to the industry. Now, industries have tied up with defence PSU Bharat Electronics Limited (BEL) to manufacture it in large numbers. Our scientists are working closely with BEL to provide all assistance, including developing some critical equipment not available in the open market.

Most importantly, our multi-patient ventilator kits have been successfully tested at Apollo hospital and ESIC hospital in Hyderabad. It is being improved now to regulate pressure for each patient, and they are putting UV filters on each line to avoid contamination.

Q. How are private industries collaborating with the DRDO?

A. The role of the private industry is very encouraging so far. More than 50 [organisations] have come forward to work with the DRDO. We are sharing technology with them at zero cost for mass production. A high-ranking team of DRDO scientists are working closely with these industries. We expect more products to be rolled out in the coming days in partnership with them.

<https://www.theweek.in/theweek/cover/2020/04/09/8000-defence-scientists-staff-working-on-solutions.html>

THE ECONOMIC TIMES

Fri, 10 April 2020

Covid-19 pandemic: DRDO, ITI to ink MoU to manufacture portable ventilators

In the wake of the ongoing pandemic, medical experts say that India would require several thousand ventilators and its absence may impair the country's healthcare system to respond to rising epidemic cases

By Mantazir Abbas

New Delhi: The Defence Research and Development Organisation (DRDO) and the Indian Telephone Industries (ITI) are likely to ink a deal soon to produce portable ventilators, a first of its kind in India, following the Coronavirus or Covid-19 outbreak.

"DRDO wants ITI to manufacture portable ventilators and is transferring technology to us. Once, we come up with a final product and after due test procedures, we'll be able to produce such ventilators," Rakesh Mohan Agarwal, Chairman, ITI told ETT.

In the wake of the ongoing pandemic, medical experts say that India would require several thousand ventilators and its absence may impair the country's healthcare system to respond to rising epidemic cases.

With a population of 1.33 billion, India has nearly 50,000 ventilators.

Agarwal said that ITI is well poised to fast-track the production amid the present Covid-19 situation, and have plans to undertake manufacturing in its Bangalore facility.

ITI is a state-owned electronics product manufacturer under the Department of Telecommunications (DoT) that produces radio modems, optical networks, smart metres, and Wi-Fi access points, with the defense sector contributing to a third or nearly 35% of its overall revenue.

"Once we come up with the product prototype, ITI will be able to produce portable ventilators within the next 30 to 60 days," the top official said and added that the apparent challenge would be on the component sourcing front.

The state-controlled telecom technology company is signing the Memorandum of Understanding (MoU) with DRDO this week.

"The only thing that worries us is component sourcing. We will require components locally as well as from other countries which appears to be a cumbersome task during the current lockdown," he added.

Since March 24, India is under a 21-day lockdown to prevent community transmission of novel Coronavirus that has so far killed 150 individuals with nearly 6,000 confirmed infection cases.

Agarwal further said that portable ventilators could not be used merely in the present Covid-19 crisis but would be required in the future by the army and paramilitary forces and defense hospitals.



Meanwhile, taking a cue from carmakers worldwide, Mahindra Group, Maruti Suzuki India, and Hyundai Motor Company have expressed their keenness to manufacture ventilators locally amid the Coronavirus pandemic.

With a strong order book worth about Rs 20,000 crore, the state-owned ITI is expecting to continue with a growth momentum of nearly 35%.

In Q3, 2019, the public sector firm posted a turnover of Rs 979 crore, up 53% over the same quarter last year.

<https://economictimes.indiatimes.com/industry/healthcare/biotech/healthcare/covid-19-pandemic-drdo-iti-to-ink-mou-to-manufacture-portable-ventilators/articleshow/75059265.cms>



Fri, 10 April 2020

ITI, DRDO to partner for producing portable ventilators

Electronics manufacturing company ITI Limited and the Defence Research and Development Organisation (DRDO) are set to sign an agreement for the manufacturing of portable ventilators, a top official of the public sector firm said on Thursday.

The company expects to start production of the ventilators in about two-and-a-half months from the date of signing of the memorandum of understanding and technology transfer of the ventilator technology to it from the DRDO.

"We are going to sign a memorandum of understanding with DRDO in the next 2-3 days for the transfer of technology for portable ventilators. We will get 80-90 per cent components locally and the rest will have to be imported. We expect to start manufacturing ventilators in the Bengaluru plant in two-and-a-half months from the date of technology transfer," ITI Chairman and Managing Director RM Agarwal told.

He said that the cost of ventilators will depend on the size of the order that the PSU will get.

"The cost of ventilators that we will produce will be lower than units of the same quality. Being a PSU, we will not charge high margins. The final cost cannot be estimated at present because the cost of components for low volume production will be high and less for high volume production. Once DRDO transfers technology, we will start working on material cost and orders," Agarwal said.

India might need anywhere between 110,000-220,000 ventilators by May 15 in the worst-case scenario if coronavirus infection continues to spread. The number of ventilators available in the country is a maximum of 57,000 at present and come with a cost of Rs 5-15 lakh, according to a Brookings report.

Agarwal said that the portable ventilator will cost less than the ICU ventilators and the DRDO technology can be used for catering needs of armed forces in future.

He said that ITI can expand manufacturing of portable ventilators at three other locations - Mankapur and Rae Bareilly in Uttar Pradesh and Palakkad in Kerala.

<https://www.gadgetsnow.com/tech-news/iti-drdo-to-partner-for-producing-portable-ventilators/articleshow/75069915.cms>

Fri, 10 April 2020

Face shields, bio-suits, and disinfection chambers—some of the ways that coronavirus is driving innovation in India

By Prabhjote Gill

- *The onset of the Coronavirus pandemic in India is forcing innovation to focus on the healthcare system.*
- *From drones to robots, solutions are being re-purposed to address the building health crisis.*
- *The Defence Research and Development Organisation (DRDO), Indian Institutes of Technology (IITs) and start ups are gearing up to find new solutions.*

Coronavirus is a health crisis that's put India's population of over 1.3 billion people into their homes under lockdown for 21 days since March 25 — a lockdown that the government is now reportedly thinking about extending.

The silver lining is that it has shifted the focus of innovation on to the healthcare sector. From big wigs like the Defence Research and Development Organisation (DRDO) to startups like drone delivering Marut — everyone wants to help.

Innovations to ramp up production of personal protective equipment (PPEs) like face shields and bio suits can go a long way to fill in the huge public-health deficiencies that India faces. According to the World Health Organisation (WHO), there's only one doctor for every 1,800 people in the country — well below the recommended bare minimum doctor to population ratio of least one doctor per 1,000 people.

Here are some of the ways the Coronavirus pandemic is driving innovation in India:

With face masks in short supply and health workers on the front line being left to develop make-shift solutions to protect themselves as they treat patients, the DRDO has come up with face shields.

Produced using 3D printing, they don't feel suffocating like face masks and cover more than just your nose and mouth.

The Personnel Sanitisation Enclosure (PSE) has been designed by the DRDO as a full-body disinfection chamber. Its main selling point is its portability. It has a separate cabin to monitor people as they go through.

The system has been manufactured with the help of DH Limited, a Ghaziabad-based company, which can produce one of these chambers every four days.

According to DRDO, the chambers can be used to monitor incoming and outgoing personnel as hospitals, official buildings and other critical points of transit.

DRDO developed a new biosuit which has seam sealing glue to keep paramedics and other health workers on the front line safe from Coronavirus. This is the same sealant that's used to keep submarines waterproof.

Kusumgarh Industries partnered with the DRDO to mass-produce these suits. Their current production capacity is at around 7,000 suits per day with plans to ramp it up to 15,000.



The use of drones has taken precedence in lieu of social distancing being the need of the hour. A Hyderabad-based startup called Marut demonstrated how drones can be used to deliver medicines, collect blood samples and more amid the Coronavirus pandemic in the state of Telangana. Even though drone delivery isn't allowed according to current laws, the startup is hoping that the government may consider relaxing the rules considering the national emergency in place right now.



Authorities are also using drones to monitor crowds and ensure that people maintain quarantine in areas where Coronavirus infections have been reported — like Nizammudin and Karimnagar. In addition, they're also being used to sanitize areas.

Three alumni from the Indian Institute of Technology (IIT) have also come up with a way to use infrared cameras on drones for thermal screening to identify Coronavirus suspects.

A company in Tamil Nadu called Propellor Technologies donated its Zafi robots to help medical staff attend to patients in quarantine without contact. Within weeks of Coronavirus coming to India, the engineers were able to repurpose their original design into the Zafi Med robot for the specific requirements of the pandemic.



The Zafi med is capable of being operated from further away and carries a heavier load than the original Zafi robot.

At the Indian Institute of Technology (IIT) - Roorkee students prepared more than 150 litres of herbal hand sanitizer to address the shortage after people have been panic buying and hoarding it. It is based on the recommendations dictated by the World Health Organisation (WHO) and the Centre for Disease Control (CDC).



The sanitizer is now being distributed free of cost across the campus.

Even though the government was initially offering Covid-19 testing for free, the sudden surge in cases after the Nizamuddin hotspot has the centre rethinking its stance. One test can cost as much as ₹4,500. However, the Supreme Court has ordered the government to continue offering the tests for free.

Students at the IIT-Delhi have developed a new kit that could considerably lower those prices, making it cheaper for the government to procure them.

The testing kit is currently undergoing trials at the National Institute of Virology (NIV) in Pune. They have not disclosed the cost difference as of now but if successful it can help the country the mounting financial stress of surge in healthcare spending.

<https://www.businessinsider.in/slideshows/here-are-the-ways-the-coronavirus-pandemic-is-driving-innovation-in-india/bio-suits/slideshow/75059412.cms>

कोरोनावायरस: DRDO ने एम्स में लगाया डिसइन्फेक्शन चैम्बर, जानें इसकी खासियतें

नई दिल्ली: कोरोनावायरस महामारी के खिलाफ जारी लड़ाई में रक्षा अनुसंधान और विकास संगठन (डीआरडीओ) ने अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में पूरे शरीर को संक्रमण रहित करने वाला चैम्बर स्थापित किया है। डीआरडीओ ने यह चैम्बर खासतौर से विकसित किया है। चैम्बर कोरोनावायरस के प्रसार को नियंत्रित करने में मदद करेगा।

डीआरडीओ के एक वरिष्ठ अधिकारी ने समाचार एजेंसी आईएनएस को बताया, 'यह परीक्षण के आधार पर स्थापित किया गया है। हम देख रहे हैं कि यह कैसे काम कर रहा है।' अधिकारी ने समझाया कि एक बार सफल होने के बाद, यह संबंधित संगठनों में मांग के अनुसार स्थापित किया जाएगा।

पिछले हफ्ते, डीआरडीओ ने पूरे शरीर को संक्रमणरहित करने वाला चैम्बर विकसित किया, जिसे कार्मिक स्वच्छता संलग्नक और फेस प्रोटेक्शन मास्क कहा जाता है।

अहमदनगर स्थित डीआरडीओ की एक प्रयोगशाला, वाहन अनुसंधान एवं विकास प्रतिष्ठान ने पूरे शरीर को संक्रमण मुक्त करने वाले इस चैम्बर को डिजाइन किया है, जिसे पर्सनल सैनिटाइजेशन एन्क्लोजर कहते हैं।

डीआरडीओ ने कहा, 'यह चैम्बर एक समय में एक व्यक्ति को संक्रमणरहित करने के लिहाज से डिजाइन किया गया है। यह एक पोटेबल सिस्टम है, जो सैनिटाइजर और साबुन मशीन से सुसज्जित है।'

डिसइन्फेक्शन चैम्बर की खासियतें :

इस चैम्बर में प्रवेश करने के बाद पैर से एक पैडल को चलाने से शरीर की सफाई शुरू हो जाती है। चैम्बर में प्रवेश करने पर, विद्युतीय रूप से संचालित पंप हाइपोसोडाक्लोराइड का एक संक्रमणनाशक धुंध बनाता है। धुंध स्प्रे 25 सेकंड के ऑपरेशन के लिए कैलिब्रेट किया जाता है और स्वचालित रूप से ऑपरेशन पूरा होने का संकेत देता है। प्रक्रिया के अनुसार, संक्रमणशोधन से गुजरने वाले कर्मियों को चैम्बर के अंदर रहते हुए अपनी आंखें बंद रखने की आवश्यकता होगी।

सिस्टम में कुल 700 लीटर की क्षमता के साथ छत के बीचो-बीच एक टैंक लगा है। रिफिल की आवश्यकता होने तक लगभग 650 कर्मचारी संक्रमणशोधन के लिए चैम्बर से गुजर सकते हैं।

उन्होंने कहा, 'सिस्टम में मॉनिटरिंग के उद्देश्य के लिए साइड की दीवारों पर ग्लास लगा हुआ है, जिसे पैनेलों के माध्यम से देखा जा सकता है और रात के समय के संचालन के दौरान रोशनी के लिए यह रोशनी से भी लैस है। समग्र संचालन की निगरानी के लिए एक अलग ऑपरेटर केबिन प्रदान किया गया है।'

डीआरडीओ ने कहा, 'इस प्रणाली का निर्माण गाजियाबाद में ड्रास हिताची लिमिटेड की मदद से चार दिन में हुआ है। इस प्रणाली का उपयोग प्रवेश और निकास जैसे स्थानों पर कर्मियों के संक्रमण शोधन के लिए किया जा सकता है।'

<https://www.livehindustan.com/health/story-coronavirus-drdo-set-up-disinfection-chamber-at-aiims-delhi-3138200.html>

Coronavirus: DRDO, ITI to team up to manufacture portable ventilators

The state controlled telecom technology company ITI will sign a Memorandum of Understanding (MoU) with DRDO this week to begin work on the ventilators, according to a press release by ITI

The Defence Research and Development Organisation (DRDO) and the Indian Telephone Industries (ITI) will soon sign a deal to jointly produce portable ventilators to aid in the fight against coronavirus.

The state-controlled telecom technology company ITI will sign a Memorandum of Understanding (MoU) with DRDO this week to begin work on the ventilators, according to a press release by ITI.

"DRDO wants ITI to manufacture portable ventilators and is transferring technology to us. Once, we come up with a final product and after due test procedures, we'll be able to produce such ventilators," ITI Chairman Shri Rakesh Mohan Agarwal said.



Agarwal said that ITI is well poised to fast-track the production amid the present COVID-19 situation, and have plans to undertake manufacturing in its Bengaluru facility. "Once we come up with the product prototype, ITI will be able to produce portable ventilators within the next 30 to 60 days", said Agarwal and added that the apparent challenge would be on the component sourcing front.

"The only thing that worries us is component sourcing. We will require components locally as well as from other countries which appears to be a cumbersome task during the current lockdown," Agarwal further explained the issue. Agarwal said that portable ventilators could not be used merely in the present COVID-19 crisis but would be required in the future by the army and paramilitary forces and defence hospitals.

India has reported 5,095 active cases of coronavirus (as of 9 am, April 9), according to the health ministry. Total deaths stood at 166. As many as 472 patients have been cured or discharged and 1 migrated.

<https://www.businesstoday.in/latest/trends/coronavirus-drdo-iti-to-team-up-to-manufacture-portable-ventilators/story/400610.html>



ITI, DRDO to sign pact for producing portable ventilators

New Delhi: Electronics manufacturing company ITI Limited and the Defence Research and Development Organisation (DRDO) are set to sign an agreement for the manufacturing of portable ventilators, a top official of the public sector firm said on Thursday.

The company expects to start production of the ventilators in about two-and-a-half months from the date of signing of the memorandum of understanding and technology transfer of the ventilator technology to it from the DRDO.

"We are going to sign a memorandum of understanding with DRDO in the next 2-3 days for the transfer of technology for portable ventilators. We will get 80-90 per cent components locally and the rest will have to be imported. We expect to start manufacturing ventilators in the Bengaluru plant in two-and-a-half months from the date of technology transfer," ITI Chairman and Managing Director RM Agarwal told PTI.

He said that the cost of ventilators will depend on the size of the order that the PSU will get. "The cost of ventilators that we will produce will be lower than units of the same quality. Being a PSU, we will not charge high margins.

The final cost cannot be estimated at present because the cost of components for low volume production will be high and less for high volume production. Once DRDO transfers technology, we will start working on material cost and orders," Agarwal said. India might need anywhere between 110,000-220,000 ventilators by May 15 in the worst-case scenario if coronavirus infection continues to spread. The number of ventilators available in the country is a maximum of 57,000 at present and come with a cost of Rs 5-15 lakh, according to a Brookings report.

Agarwal said that the portable ventilator will cost less than the ICU ventilators and the DRDO technology can be used for catering needs of armed forces in future. He said that ITI can expand manufacturing of portable ventilators at three other locations Mankapur and Rae Bareilly in Uttar Pradesh and Palakkad in Kerala.

(Disclaimer: This story has not been edited by Outlook Staff and is auto-generated from news agency feeds. Source: PTI)

<https://www.outlookindia.com/newscroll/iti-drdo-to-sign-pact-for-producing-portable-ventilators/1797106>



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Ministry of Defence's contribution to fight Covid-19

*Various wings of defence ministry are contributing in
their best possible ways to tackle Covid-19 better*

By Manu Pubby

Armed Forces

- Armed Forces running six quarantine facilities at Mumbai, Jaisalmer, Jodhpur, Hindon, Manesar and Chennai.
- Total Evacuees received so far - Over 1500 (including Med team and air crew)
- One thousand seven hundred thirty seven persons quarantined, of which 402 released so far. Four positive COVID cases referred to Hospitals.
- Total dedicated Army Hosp to Covid 19 Patients- 13
- Total Covid-19 Bed Capacity with Army Hospitals -7500
- Fifteen other facilities are being kept ready as standby for use, if required.
- Dedicated COVID-19 facilities including High Dependency Units, Intensive Care Unit beds are being prepared in 51 hospitals of the Armed Forces across the country.
- Five viral testing labs at Armed Forces hospitals made part of national grid. Six more hospitals are being equipped shortly with the resources to begin COVID-19 testing.

Indian Air Force

Two evacuation missions by C 17 aircraft, first on 26/27 Feb where 15 T medical assistance was taken to Wuhan and 112 Indians and citizens of friendly foreign countries were flown back. Second aircraft flew to Tehran on 10 March and flew back with 58 Indian citizens.

Two quarantine facilities are operational, first at AF Stn Hindon which is looking after 58 people ex Tehran and at AF Stn Tambram which is looking after 113 citizens ex Malaysia. Seven other quarantine facilities have been kept in a state of readiness in Bhatinda, Devlali, Dundigal, Chakeri, Agra, Gorakhpur and Bangalore. AF Hospital Jaisalmer is the reporting hospital for the Army quarantine facility at Jaisalmer.

Air Force Command Hospital Bangalore is carrying out COVID testing. AF aircraft are being used to fly back samples from Leh for COVID testing at Delhi and Chandigarh regularly. 3 doctors from PGI Chandigarh were also flown in to Leh by IAF aircraft.

Medical assistance to friendly foreign countries were airlifted on two occasions. On 30 Mar, 1 T medical load was positioned at Gorakhpur by Dornier aircraft and Mi17 Helicopters and thereafter taken by road to Nepal. On 02 Apr, 6.2T medical load was flown to Male by C 130 ac.

Medical load is being regularly flown in support of State Governments as and when required. Load has been flown in to Leh, Srinagar, Prayagraj, Dibrugarh, Mohanbari, Blareily, Agra, Guwahati, Port Blair etc in aid of the Govts of UP, Assam, Nagaland, Manipur, Arunachal Pradesh, Jammu and Kashmir, Ladakh and Andaman and Nicobar islands. C 17, C130, An 32, Avro, Dornier and Mi17 aircraft have been used for this purpose. Around 60 Tonne load has been airlifted for this purpose till date. Load for DRDO (fabric) was also airlifted to help them in making masks. 26 medium and heavy lift aircraft and 23 medium and heavy lift helicopters have been kept in readiness for any contingency.

IAF airlifted essential medical supplies and commodities from nodal points to Manipur, Nagaland and Gangtok in North Eastern region; and the Union Territories of J&K and Ladakh. In addition, An-32 aircraft, on 06 Apr 2020, airlifted personnel and 3500 kg of medical equipment of ICMR from Chennai to Bhubaneshwar for setting up of testing labs and facilities in Odisha.

Crisis Management Cells (CMC) have been set up at Air HQ, Command HQ and Stations for effective liaisoning and prompt response. Air HQ CMC is in constant touch with COVID Control Room at INCP Complex.

CMC is also coordinating for any assistance required by all IAF veterans.

All guidelines by DOH&FW and relevant WHO guidelines being strictly enforced pan IAF. All possible assistance is being provided to the civil administration by the local Stations. All Stations are also taking care of those in need of assistance in the immediate vicinity of AF Stations.

Indian Navy

Quarantine Facilities (Wellness/Corona Care Centres) have been set up in all three Commands (Capacity of approx 1500 personnel).

Mumbai (Ghatkopar) already functioning with 44 Indians brought back from Iran.

Vizag and Kochi are also ready when required.

In the process of setting up isolation facilities in all the commands including outlying units.

Teams of Battle Field Nursing Assistants (BFNA), comprising of non-medical personnel have been readied to help medical staff should the situation become overwhelming. Training of Indian Navy personnel is in progress.

Jawans of the Defence Security Corps (DSC) and Indian Naval personnel from INS Hansa distributed food at several locations in Vasco, Goa for stranded migrant labourers, rag pickers and low income families, struggling to feed themselves in the prevailing lockdown conditions. 320 people were provided cooked food at Vasco Railway Station, Bogda and Ram Mandir at Goa.

Armed Forces Medical Services

Armed Forces Medical Services (AFMS) earmarked 28 Service Hospitals as COVID hospitals for managing purely Corona virus cases. This will include Armed Forces as well as civilian patients transferred from state health authorities, in case their capacity is overwhelmed.

Defence Research and Development Organisation (DRDO)

DRDO developed a bio suit to keep the medical, paramedical and other personnel to manage & evacuate the casualties in the event of radiological emergencies. Each suit costs Rs 7,000.

Developed Portable Backpack Area Sanitisation Equipment and Trolley Mounted Large Area Sanitisation Equipment for effective sanitisation of public spaces.

Developed In-house hand sanitiser and provided nearly 73,000 litres to Indian Armed forces, Armed Forces Medical Corps, Defence Security Corps, MoD, Parliament, and to various security establishments and high offices. The cost of sanitiser is less than Rs 12/litre (including GST).

Provided 20,000 three ply masks to Delhi Police.

Innovation on to create 'Multi patient ventilator' wherein several patient can be supported by a single ventilator. Around 5,000 ventilators will be produces in the first month and 10,000 subsequently.

Developed Five layer N99 masks with two layers of nano mesh with Capacity to make 10,000 N99 masks per day.

Developed Body Suits for medical & paramedical staff

Society for Biomedical Technology (SBMT) - A DRDO funded and managed initiative) & DEBEL, Bangalore have developed a ventilator and technology is transferred to Industry. Defence PSU, M/s BEL has joined the efforts for large scale production of ventilators.

DEBEL, Bangalore has undertaken the initiative to develop the critical components of the ventilators which are not available in the country. These will be produced with the help of industry.

Two laboratories of DRDO are ready to function as test centers for detection of Covid19. Once approved, these laboratories can undertake 700 tests per day.

Cantonment Boards

Sixty two Cantonment Boards spread over 19 States/Union Territories, across the country, with a population of approx. 21 lakh (including military and civil) geared up to the challenge posed by Novel Coronavirus pandemic.

Instructions issued to all the Cantonment Boards to identify beds in hospitals/health centres and guest houses for any eventuality.

Ordnance Factory Board

Ordnance Factory Board designated 285 beds for isolation wards in handling COVID-19 cases.

The OFB has manufactured and dispatched 50 specialised tents for COVID-19 patients to Government of Arunachal Pradesh at a short notice.

Hindustan Aeronautics Limited (HAL) Bengaluru, has isolation ward facility with three beds in Intensive Care Unit and 30 beds in wards. In addition, a building having 30 rooms was readied. In all, 93 persons can be accommodated at HAL facility.

Bharat Electronics Limited (BEL) has stepped in to manufacture and supply 30,000 ventilators designed DRDO within the next two months.

Ordnance Equipment Factories located at Kanpur, Shahjahanpur, Hazratpur (Firozabad) and Chennai are engaged in developing coveralls and masks. They have also arranged special heat sealing machines for manufacture of these garments at a very short notice. Shortly commencing bulk production of coveralls up to 5,000 to 6,000 pieces per week.

Development and production of hand sanitiser as per WHO standards have been undertaken in the factories of OFB. They have received a requirement of 13,000 litres from HLL Lifecare Limited (HLL), the nodal agency appointed by Government of India for centralised procurement. First lot of 1,500 litres of sanitiser was sent on Mar 31, 2020 from Cordite Factory Aruvankadu (Tamil Nadu). Two more factories, namely Ordnance Factory (OF) Itarsi (Madhya Pradesh) and OF Bhandara (Maharashtra) are ready with bulk production. Together they have capacity to produce 3000 litres of sanitiser per day to meet the national requirement.

NCC

Offered its volunteer cadets for national duty to fight COVID-19 under 'Ex NCC Yogdan'.

Accordingly, NCC cadets started serving people on 5 April in the States/UTs of Jammu & Kashmir and Ladakh, Madhya Pradesh, Chhattisgarh, Himachal Pradesh, Tamil Nadu, Puducherry, Andaman & Nicobar and Meghalaya. The Cadets have been employed to assist the district administration in works like traffic management, distribution of food and essential items, management of queues, supply chain management, sensitization of public about social distancing and lockdown, manning CCTV control rooms and preparation and packaging of food items.

Ex-Servicemen Welfare

Department of Ex-Servicemen welfare (ESW) took the initiative to mobilise services of Ex-Servicemen (ESM) community to assist the State and District administration, wherever required.

Ex-Servicemen have started playing their part in providing succour to people in their fight against COVID-19 in the States of Karnataka, Andhra Pradesh, Uttar Pradesh, Punjab, Chhattisgarh, Jharkhand, Haryana, Uttarakhand and North East.

Ministry Of Defence

MoD employees from various wings, including Army, Navy, Air Force, Defence PSUs and others, will contribute one day salary to PM-CARES Fund; Rs 500 crore contribution expected.

Raksha Mantri Shri Rajnath Singh

- Raksha Mantri Shri Rajnath Singh appealed to people to make 'Janta Curfew' a huge success
- Acknowledged that 'Janta curfew' brought the nation together and gave hope in combating the virus
- Lauded efforts of health professionals and security personnel in fight against COVID-19
- Raksha Mantri held a review meeting on March 26 with senior officials of Ministry on the action plan of the Ministry to deal with the COVID-19 situation and urged Armed Forces, Defence PSUs and other organisations to gear up preparedness and provide all required assistance to civilian authorities.
- Raksha Mantri chaired GoM Meetings on 1st, 3rd and 7th April 2020.

International Cooperation

Six naval ships are kept ready for assistance to neighbouring countries. Five medical teams are also on standby for deployment in Maldives, Sri Lanka, Bangladesh, Nepal, Bhutan and Afghanistan.

Special flights of Indian Air Force evacuated people and carried medical supplies. A C-17 Globemaster III comprising of crew, medical team and support staff has carried 15 tonnes of medical supplies to China and airlifted 125 persons on its return.

The C-17 Globemaster III made another journey, this time to Iran and brought back 58 stranded Indians. The aircraft also brought 529 samples for COVID-19 investigation.

The C-130J Super Hercules aircraft has ferried around 6.2 tonnes of medicines to Maldives. An Army Medical Corps team consisted of five doctors, two nursing officers and seven paramedics was deployed in Maldives for capacity building measures and assist in setting up their own testing, treatment and quarantine facilities between March 13-21, 2020.

DPR

- The DPR is ensuring that the media and public receive up to date information regarding the measures taken by different arms of MoD.
- Forty One Press Releases concerning Covid-19 have been issued so far.
- Issued more than 220 Twitter Messages, 30 Facebook and 25 Instagram Posts.
- Released 35 Photos.

<https://economictimes.indiatimes.com/news/defence/ministry-of-defences-contribution-to-fight-covid-19/articleshow/75075456.cms>