2020

समाचार पत्रों से चयित अंश

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THE WEEK

Fri, 10 April 2020

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
WWW.ECONOMICTIMES.COM

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 Bangaluru 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 Coronavius 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 Bareily in Uttar Pradesh and Palakkad in Kerala.

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

BUSINESS INSIDER
INDIA

Fri, 10 April 2020

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

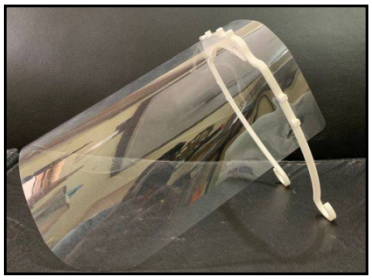
By Prabhjote Gill

- ***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

Live हिन्दुस्तान .com

Thu, 09 April 2020

कोरोनावायरस: DRDO ने एम्स में लगाया डिसइनफेक्शन 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 आईएएनएस 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 पोटेर्बल सिस्टम है, जो सैनिटाइजर और साबुन मशीन से सुसज्जित है।'

डिसइनफेक्शन चैंबर 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 पैनलों 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 निमार्ण गाजियाबाद में डास 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

Business Today

Fri, 10 April 2020

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

Outlook
THE FULLY LOADED MAGAZINE

Fri, 10 April 2020

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 Bareily 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/newsscroll/iti-drdo-to-sign-pact-for-producing-portable-ventilators/1797106

THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

Fri, 10 April 2020

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 being 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 causalities 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 coverall 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 cover alls 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

The Indian EXPRESS

Fri, 10 April 2020

Armed Forces in coronavirus outbreak battle: Their role, procedures for requisition

Providing aid to civil authorities, as and when called upon to do so, is a secondary task for the armed forces. It cannot replace the primary role of ensuring external security and operational preparedness

By Sushant Singh

New Delhi: As the Army moves in to take over the COVID-19 quarantine facility at Narela in Delhi, the procedure for calling the armed forces to help the civil administration is in the spotlight.

What is the procedure?

The regulations permit civil authorities to requisition the Army for controlling law and order, maintaining essential services, assisting during natural calamities such as earthquakes, and any other type of help that may be needed by the civil authorities. The procedure for requisitioning armed forces is governed under 'Aid to Civil Authorities' under the guidelines laid in Instructions on Aid to the Civil Authorities by the Armed Forces, 1970; Regulations for the Army, Chapter VII, Paragraphs 301 to 327; and Manual of Indian Military Law, Chapter VII. Civil administration requests the Local Military Authority for assistance, for the maintenance of law and order, maintenance of essential services, disaster relief and other types of assistance. Armed forces can be asked to provide troops and equipment for a flag march, rescue and relief, evacuation, and immediate aid.

The current case of checking the spread of COVID-19 is different, as the medical aspect is predominant. These resources are being controlled centrally and judiciously, because of the requirement of doctors, equipment and facilities.

What are the tasks expected to be performed in the current situation?

Besides the specialised medical resources, which are centrally controlled, the local units are prepared for maintenance of law and order, crowd control, curfew in sensitive areas, evacuation of civilians from affected areas, provision of essential supply of electricity and water, restoration of essential services, emergency feeding and shelter, prevention of panic, prevention of theft and loot, guarding quarantine locations and detention centres, surveillance through drones aerial platforms, and other miscellaneous tasks.

In such situations, what happens to the armed forces' primary role?

Providing aid to civil authorities, as and when called upon to do so, is a secondary task for the armed forces. It cannot replace the primary role of ensuring external security and operational preparedness. The Army recently killed five militants on the Line of Control (LoC), foiling an infiltration attempt, while losing five Special Forces soldiers in the engagement. There have been 53 ceasefire violations on the LoC which the Army has responded to. The Navy also continues to be operational on its various mission-based deployments, while taking all the precautions to prevent infection from foreign ports.

Is there a ceiling on such deployment?

No, there is no such ceiling either of duration of deployment or on the number of armed forces personnel that can be deployed to aid civil authority. The National Crisis Management Committee (NCMC), headed by the cabinet secretary, is the final authority.

Are there any templates or instances from the past that are applicable here?

The current situation is different from earlier cases such as tsunami or super-cyclone, which were natural disasters. The major difference is that specialists are the key in the current situation, and their tasks cannot be performed by general duty soldiers.

Who pays for the costs incurred by the armed forces in these roles?

The civil administration. The cost of assistance provided by the Armed Forces is recovered in accordance with the instructions contained in Appendix 'H' to the Pamphlet 'Instructions on Aid to Civil Authorities by the Armed Forces 1970'. These instructions are also contained in the ADGFP letter No 9367/Reports/GS/FP2 dated 11 Jul 1994.

What is the role of the National Disaster Management Authority?

NDMA is involved in secondary follow-ups by the Home Ministry, and is not very actively involved in the current case. The roles of the Ministries of Health, Home, Civil Aviation and Defence are predominant in this case. The armed forces are aligned with them at the apex level viz NCMC. The directions are followed by execution-level coordination which is done by respective secretaries in the government.

What Armed Forces have done so far

- 6 quarantine facilities in Mumbai, Jaisalmer, Jodhpur, Hindon, Manesar and Chennai. Over 1,700 persons have been kept at these centres so far, of whom over 400 have been released. Three positive cases were referred to a hospital.
- 15 other facilities on standby, capacity of approximately 7,000. The Army runs 6 (Babina, Jhansi, Barmer, Bhopal, Kolkata, Binnaguri), IAF another 6 (Bhatinda, Hyderabad, Deolali, Kanpur, Gorakhpur, Agra), the Navy 3 (Vizagapatam, Kochi, Chilka).
- 51 armed forces hospitals are preparing dedicated COVID-19 facilities including High Dependency Units (scaled-down version of an Intensive Care Unit), and ICU beds.
- 5 testing labs at armed forces hospitals made part of national grid. These are Army Hospital (Research & Referral), Delhi Cantt; Air Force Command Hospital, Bangalore; AFMC, Pune; Command Hospital (Central Command), Lucknow; and Command Hospital (Northern Command), Udhampur. Six more hospitals to be equipped with the resources to begin COVID-19 testing.
- Special IAF flights have evacuated people and carried medical supplies. A C-17 Globemaster III has carried 15 tonnes of supplies to China and airlifted 125 persons including Indians on its return. From Iran, it brought back 58 stranded Indians. Also, C-130J Super Hercules aircraft has ferried 6.2 tonnes of medicine to Maldives. An Army Medical Corps team was deployed in Maldives between March 13-21.
- 60 tonnes of stores airlifted by IAF transport fleet has airlifted approximately to various parts of the country. Twenty-eight fixed wing and 21 helicopters are on standby.
- 6 Naval ships kept ready for assistance to neighbouring countries. Five medical teams also on standby for deployment in Maldives, Sri Lanka, Bangladesh, Nepal, Bhutan and Afghanistan.

https://indianexpress.com/article/explained/indian-army-coronavirus-outbreak-role-procedures-requisition-6355513/

THE WEEK

Fri, 10 April 2020

Southern Naval Command conducts medical evacuation trials amid COVID-19

The exercise was carried out for contingencies in the aftermath of COVID-19

The Southern Naval Command in Kochi undertook medical evacuation trials on Wednesday in a bid to prepare for contingency requiring transfer personnel from the Lakshadweep islands and for ships at sea in the aftermath of COVID-19.

Trials for evacuation of patients were undertaken on board an Advanced Light Helicopter (ALH) and inside isolation capsule in Dornier aircraft of Indian Navy. Feasibility study was

undertaken for in-house modification to isolate the cockpit and cabin area by installing polythene film screen to prevent any kind of contact with the patient.

The aircrew in full Personal Protective Equipment (PPE) gear undertook the sortie to understand the nuances of flying with additional gears.

The aircraft was flown at different heights to understand efficacy of aircraft modification and effect of PPE on aircrew. An exercise of air lifting the patient was also simulated.

Post transfer of patients to medical authorities the aircraft and aircrew were sanitized to mitigate risk of infection.

https://www.theweek.in/news/india/2020/04/09/southern-naval-command-conducts-medical-evacuation-trials-amid-covid-19.html

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Fri, 10 April 2020

Indian Navy Chief addresses Naval staff; Says 'ready to assist govt to fight covid-19'

Indian Navy Chief Admiral Karambir Singh said that the Navy is ready to assist the civilian administration to deal with the Coronavirus epidemic

By Shubhayan Bhattacharya

Mumbai: Indian Navy Chief Admiral Karambir Singh said that the Navy is ready to assist the civilian administration to deal with the Coronavirus epidemic. Admiral Karambir Singh addressed his Navy personnel via conference on Thursday.

"Our medical teams have set up Corona Centres, isolation wards, quarantine facilities and requisitioned medical supplies and manufactured equipment in a very short time. Our ships and aircrafts are in standby and we are ready to extend support not only to our country also countries in the Indian Ocean Region (IOR)," Admiral Karambir Singh said.

Lists out Navy's social work

The Navy Chief listed out many of the tasks that the naval officers have carried out in the last few weeks. He said that the Navy has delivered free food rations to the poor, sent essential medical supplies to areas like Andaman and North East. Singh said that the senior leadership in the Navy is also in contact with veterans to take stock of their health and well being.

Admiral Singh also lauded the monetary contribution of the naval staff to the PM CARES Fund, meant to fight national emergencies like this COVID-19 outbreak.

Remain 'caregivers' and not become 'care seekers'

"We have to take care of ourselves and our families. We have to make sure that we remain 'caregivers' and not become 'care seekers'. We also have to make sure that our assets like ships and submarines are free of infection," the Navy Chief said. He also asked his officers to maintain "physical distance" instead of "social distance" saying that in the Navy, the staff is socially very close.

Coronavirus count goes up

India has so far reported 5,865 cases of COVID-19 so far. The death toll has also mounted to 169 after 17 patients succumbed to the disease since Wednesday. So far, 477 patients have recovered and been discharged from the hospital.

https://www.republicworld.com/india-news/general-news/navy-chief-addresses-naval-staff-says-well-prepared-to-assist-govt.html

THE TIMES OF INDIA

Fri, 10 April 2020

103 medical graduates commissioned into Armed Forces medical services

By Sandip Dighe

Pune: Total 103 medical graduates were commissioned into the Armed Forces Medical Services (AFMS) at a commissioning ceremony held at Armed Forces Medical College (AFMC) recently.

Lt Gen R S Grewal was the Chief Guest at this distinctive tri-services commissioning ceremony held under overall supervision of Lt Gen Nardeep Naithani, Director and Commandant of the AFMC.

"A total of 134 students of the college, including five students from foreign nations, passed the final MBBS examination in the winter session exam of 2019. 103 medical cadets were commissioned into AFMS. 80 medical cadets got commissioned in Army, 12 in Air Force and 11 in Navy," an AFMC release stated.

Medical Cadet (Lieutenant) Akhil Mathew of B3 batch had the honour of Commanding the parade this year. 83 male officers and 20 women officers joined the AFMS.

The ceremony was followed by the academic awards presentation by Lt Gen RS Grewal. He presented trophies, prizes and medals, to recognize outstanding achievements in academics and all round performance by the medical cadets. This year, the prestigious 'President's Gold Medal' was awarded to medical cadet flying officer Shantanu Khanna. 'Kalinga Trophy' and Maj Gen NDP Karani Trophy was awarded to medical cadet M Sri Saran.

AFMC has been consistently rated among the top medical education institutions in the country. In the Maharashtra University of Health Sciences (MUHS) examinations in winter 2019, students of AFMC scored a pass percentage of 99.25% in the final MBBS.

The commissioning parade included spectacular fly past by Indian Air Force helicopters. The event also witnessed an exhilarating performance by Pipe Band of Army Medical Corps followed by a military display of helicopter borne casualty evacuation operation by Army Aviation team.

https://timesofindia.indiatimes.com/home/education/news/103-medical-graduates-commissioned-into-armed-forces-medical-services/articleshow/75075403.cms

BangaloreMirror

Fri, 10 April 2020

Aerial rout of Covid-19 impresses the Army

Southern Command wants B'luru-based startup to build 20 drones for the force

By Hemanth CS

Bangalore: A team of four drone operators which has been moving from one locality to another to disinfect the city since the spread of the Covid-19 pandemic, have impressed the Indian Army with their indigenously developed drones.

Following a report that appeared in Bangalore Mirror on March 30 (Meet the four drone operators who are helping BBMP sanitise Bengaluru), Indian Army's Southern Command has approached Alpha Drone Technology, the drone startup which has been hired by the civic body to disinfect the city.

Impressed with the work of the drone startup in disinfecting Bengaluru, the Pune-headquartered Southern Command has given an offer to Alpha Drone Technology to build 20 hexacopter drones for it,to not only contain the Covid-19 pandemic in its garrisons but also to carry out civilian drone operations in future.

"Officers from the Southern Command have approached us to build drones for them. They want to place an order for 20 drones of which four can be delivered each week by us," Neel Sagar, founder of Alpha Drone Technology told Bangalore Mirror. Sagar added that the startup has already given a quotation to the Southern Command for the manufacture of drones.

"Once we finalise the order we can start the production of the drones. However due to the lockdown some components are currently unavailable, like the brushless motors and lithium-ion batteries which have to be sourced from local manufacturers," Sagar added.

The requirement of the army too is slightly different from the hexacopters that the team is operating currently in Bengaluru.

"They want an upgrade which is an increase in the payload capacity. The hexacopters with six propellers deployed by us in Bengaluru can carry 15 litres of disinfectant. The upgraded version will have a capacity to carry 20 litres of disinfectant," Sagar said.

The Bengaluru-based startup has designed and developed the drones in-house with the battery too has been sourced indigenously. This is said to have impressed the army to go in for an indigenously developed technology.

"The Army is in the process of studying the quotation given by the startup along with a few others. It will soon take a decision on the procurement of the drones," a defence ministry official told Bangalore Mirror.

https://bangaloremirror.indiatimes.com/bangalore/others/aerial-rout-of-covid-19-impresses-the-army/articleshow/75074077.cms

DEFENCE AVIATION POST
Your Connect To The World Of Defence And Aviation

Fri, 10 April 2020

F-35 Lightning II for India: Is America about to make a big stealth sale?

New Delhi: Still likes Russian technology, but Washington is trying to make a sale and enhance American-Indian ties. If a deal happens, it will further remove India from Russia's influence. When the Times of India revealed that the Indian air force was revising its single-engine fighter competition to encompass twin-engine jet designs, a collective groan likely rang from New Delhi to Washington—and even Stockholm.

This first appeared in 2018 and is being reposted due to reader interest. The competition was meant to acquire a new generation of short-range jets suitable for defending India's borders. The Indian air force is gradually retiring its 1950s-era MiG-21 single-engine fighter jets over the next few decades. Currently, it has only thirty-three squadrons of combat aircraft out of a planned forty-four, with ten more squadrons set to retire their aircraft over the coming decade.

An analyst quoted by the Times of India characterized India's Ministry of Defense as "constantly changing their rules, changing their minds" and having a "knack for snatching defeat

from the jaws of victory." The exasperation stems from two factors. The first is that the single-engine competition had narrowed down to just two choices, the American F-16 and Swedish JAS 39 Gripen. If the government had simply stuck to the original guidelines, the Indian air force could have begun receiving 115 new fighters by the early 2020s and retained domestic production facilities to build even more if desired.

The second factor is that the Indian government is notorious for its incredibly slow arms procurement process—that often results in dysfunctional weapon systems and partially or completely cancelled orders. Take the preceding Medium Multi-Role Competition (MMCR) which began in the year 2001: even though the Indian air force wanted to order more Mirage 2000s, New Delhi insisted on holding a competition that took so long that the Mirage 2000 stopped being available for production. Fifteen years later, bickering over technology transfers led India to order just thirty-six more advanced and expensive Rafale fighters—out of the 126 aircraft originally stipulated.

Then there is the domestically built single-engine HAL Tejas ("Radiant") Light Combat Aircraft, which India began developing in the 1980s. Over three decades later, the delta-wing fighter has proven so underpowered that the Indian navy refused to adopt it into service and the air force reduced the size of its order. Although HAL is working on an improved Tejas Mark IA and II which may correct some of the aircraft's flaws, production is lagging behind schedule.

So, unless the Ministry of Defense moves more quickly than before, selection and procurement of replacement fighters could drag on for years while the fighter force continues to shrink.

The single-engine requirement was supposedly revised because the Indian air force never really wanted to constrain the competition to light fighters in the first place. Instead, the Indian air force wanted to procure the rest of the medium fighters the MMCR project failed to obtain. This may have coincided with recent public furor over the cost-per-plane of the Rafale, causing the Modi administration to open up the new competition to a wider range of fighter types.

Single-engine fighters are significantly cheaper and more cost-efficient to operate than their twin-engine counterparts. Twin-engine fighters tend to boast greater range and weapons capacity. As India's chief likely adversary, Pakistan, is a short hop across the border, short-range fighters have a viable role to play in India's defense strategy. A downside of single-engine jets is that they tend to suffer higher accident rates because they lack a backup engine.

The single-engine competition had narrowed down to either the updated F-16 Block 70 or the Saab JAS-39 Gripen-E. While the Swedish jet is more advanced, the super F-16 would have been cheaper up front and come with advantageous export conditions due to the U.S. Foreign Military Sales program. Though both aircraft would have been manufactured in India by partner companies, the F-16 deal would have involved an opportunity for India to become the sole distributor of the popular airframe.

Some critics of the single-engine competition grumbled that investing top dollars on an upgraded version of a fighter developed in the 1970s was not a sound investment for the future. However, the Gripen-E and F-16 Block 70 technically both remain on the table, even though the number of eligible competitors has increased.

Notable new twin-engine contenders now include the American Super Hornet, the Eurofighter Typhoon, the French Rafale, and the Russian Su-35 or MiG-35. The Russian fighters offer good bang-for-buck on paper, but India has been frustrated by poor after sales support and frequent breakdowns in much of its Russian hardware—including the MiG-29 and Su-30MKI jets.

https://www.defenceaviationpost.com/2020/04/f-35-lightning-ii-for-india-is-america-about-to-make-a-big-stealth-sale/

Business Standard

Fri, 10 April 2020

COVID-19 pandemic provides window into how bio-terrorist attack might unfold in world: Guterres

The COVID-19 pandemic has provided a window into how a bio-terrorist attack might unfold across the world, UN chief Antonio Guterres said, issuing a strong warning that non-state groups could gain access to virulent strains that could pose similar devastation to societies around the globe.

The Secretary-General listed pressing risks to the world due to the pandemic as he addressed the powerful UN Security Council, which for the first time discussed the coronavirus crisis in a closed video-conference session on Thursday under the Presidency of the Dominican Republic.

Guterres described the battle against COVID-19 as the fight of a generation -- and the raison d'tre of the United Nations itself.

While the COVID-19 pandemic is first and foremost a health crisis, its implications are much more far-reaching. The pandemic also poses a significant threat to the maintenance of international peace and security -- potentially leading to an increase in social unrest and violence that would greatly undermine our ability to fight the disease, Guterres said in his briefing to the UNSC.

The weaknesses and lack of preparedness exposed by this pandemic provide a window onto how a bio-terrorist attack might unfold and may increase its risks. Non-state groups could gain access to virulent strains that could pose similar devastation to societies around the globe, he said.

Voicing strong concern that the threat of terrorism remains alive, Guterres said, terrorist groups may see a window of opportunity to strike while the attention of most governments is turned towards the pandemic.

Further, in some conflict settings, the uncertainty created by the pandemic may create incentives for some actors to promote further division and turmoil.

This could lead to an escalation of violence and possibly devastating miscalculations, which could further entrench ongoing wars and complicate efforts to fight the pandemic, Guterres said.

According to estimates from Johns Hopkins University Coronavirus Resource Centre, there are more than 1.6 million confirmed coronavirus cases across the world and over 95,000 people have died so far of the disease.

The UN chief stressed that the crisis has hindered international, regional and national conflict resolution efforts, exactly when they are needed most.

Another significant risk posed by the pandemic is that it is triggering or exacerbating various human rights challenges and refugees and internally displaced persons are particularly vulnerable.

We are seeing stigma, hate speech, and white supremacists and other extremists seeking to exploit the situation. We are witnessing discrimination in accessing health services... And there are growing manifestations of authoritarianism, including limits on the media, civic space and freedom of expression he said.

The coronavirus crisis has unleashed ruinous social and economic impacts, as governments around the world struggle to find the most effective responses to rising unemployment and the economic downturn.

Last month, Guterres had called for an immediate global ceasefire, urging all warring parties to silence the guns in order to help create conditions for the delivery of aid, open up space for diplomacy and bring hope to places among the most vulnerable to the pandemic.

He said he is encouraged by the support his call for global ceasefire has received from Heads of State and Government to regional partners, civil society activists and religious leaders.

From South America to Africa and from the Middle East to Asia we have seen conflict parties take some initial steps to end violence and fight the pandemic, he said.

Two weeks ago, the UN chief also launched the COVID-19 Global Humanitarian Response Plan, focusing on needs in countries already facing a humanitarian crisis. The Central Emergency Response Fund has allocated USD 75 million and so far the Plan had received USD 396.5 million.

(This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/pti-stories/covid-19-pandemic-provides-window-into-how-bio-terrorist-attack-might-unfold-in-world-guterres-120041000194_1.html

The Weather Channel

Fri, 10 April 2020

COVID-19: 42 vaccines in Pre-clinical stage; Two in Phase 1, reveals WHO

As top drug makers, scientists and independent researchers join an unprecedented race to develop a vaccine against SARS-CoV-2 virus that causes deadly COVID-19 disease, the ordinary souls are left confused, grappling with claims making rounds on social media as if a COVID-19 drug or a vaccine is just around the corner.

The stark truth is: There is absolutely none.

The piecemeal efforts are currently on in various countries, but a coordinated global vaccine development effort is nowhere to be seen. According to Dr Seth Berkley, CEO of Gavi, the Vaccine Alliance in Geneva, unless "we take a global perspective and ensure that everyone has access to future COVID-19 vaccines, this virus will keep coming back. "And in a race like that, there are no winners," he tweeted on Wednesday.

In an article in UK-based The Spectator, Dr Berkley said: "Without global coordination, there is a danger that we could end up facing immediate shortages and a vaccine that is merely the first to be approved, rather than the most effective or safest".

Billionaire philanthropist Bill Gates has announced his foundation is paying for the construction of facilities that will manufacture seven promising coronavirus vaccines and the best two vaccines would be picked for final trials. In India, the Serum Institute of India has collaborated with New York-based Codagenix Inc to develop a vaccine against the deadly respiratory virus.

According to the World Health Organisation (WHO), 42 vaccines are in pre-clinical stage while only two have entered Phase 1.

The two vaccines which are in Phase 1 are from CanSino Biological Inc. and Beijing Institute of Biotechnology; and Moderna/the National Institute of Allergy and Infectious Disease (NIAID) in the US. From Zydus Cadila to Moderna, from Sanofi Pasteur to Sinovac -- and several prestigious universities like Imperial College London and University of Oxford in between -- the efforts are on to develop a vaccine, but all are currently in just preclinical stages.

Those 44 vaccines use a wide range of delivery platforms and techniques to protect our bodies from Sars-CoV-2 virus. According to experts, the COVID-19 vaccine is at least 12-18 months away, so there is no need to jump on every occasion someone announces a new one. "We need to set aside nationalistic and financial interests when tackling Covid-19. Instead, we need a global, publicly funded, 'Big Science' approach that encourages collaboration and the sharing of information and resources," stressed Dr Berkley.

"Like the Human Genome Project, the Large Hadron Collider and other Big Science projects, this approach would allow the world to make significant advances more quickly and efficiently than could be achieved through piecemeal efforts," he added.

Apart from vaccines, nearly 70 drugs and experimental cocktails are being examined. The WHO has announced a global trial called 'SOLIDARITY' to find out if any drug can actually treat infections with the new coronavirus. Scientists have suggested dozens of existing compounds for testing, but WHO is focusing on what it says are the four most promising therapies.

These are "an experimental antiviral compound called remdesivir; the malaria medications chloroquine and hydroxychloroquine; a combination of two HIV drugs, lopinavir and ritonavir; and that same combination plus interferon-beta, an immune system messenger that can help cripple viruses," said the article in the journal of the American Association for the Advancement of Science (AAAS).

California-based biotechnology company Gilead Sciences says it is ready with 1.5 million individual doses of promising remdesivir drug against COVID-19 disease for compassionate use, expanded access and clinical trials. Remdesivir is still an investigational medicine and has not been approved by regulatory authorities anywhere in the world.

US President Donald Trump made Hydroxychloroquine a wonder drug, but there are conflicting reports, available data are thin and results from COVID-19 patients are murky. A study that first claimed that anti-malaria drug hydroxychloroquine is an effective treatment for the novel coronavirus has now been slammed by the same society that publishes the journal in which the paper first appeared.

The Scotland-based nonprofit International Society of Antimicrobial Chemotherapy (ISAC) has stressed that the study in question that appeared in its International Journal of Antimicrobial Agents (IJAA) "did not meet its standard".

In Dr Berkley's viewpoint: "It's clear now that vaccination is the only way to end this pandemic and return to a more normal life, so we need take steps to ensure we don't have a repeat of what happened in 2009 during the H1N1 swine flu pandemic, where a small number of countries effectively hoarded the global supply of vaccines".

https://weather.com/en-IN/india/coronavirus/news/2020-04-09-covid-19-42-vaccines-preclinical-stage-reveals-who

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Vaccine candidates from engineered viruses and ancient tobacco plants — latest on Covid-19

From research on how loss of forests can raise risk of diseases to study identifying which Covid-19 patients need ICU care, ThePrint brings you the latest on Covid-19.

By Mohana Basu

New Delhi: In a race to find treatment for Covid-19, scientists across the world have been looking for solutions in every possible place — be it in cutting edge technology that can tweak genes or an ancient tobacco plant that can act as a biofactory of drug molecules.

ThePrint brings you some of the latest global research and developments in the fight against the novel coronavirus.

Genetically Modified Virus may Help Fight Covid-19

Scientists have proposed that tweaking a virus that is harmless for humans can potentially offer a new approach for developing vaccines against the SARS-CoV-2.

Researchers at the University of Iowa have suggested that an RNA virus called parainfluenza virus 5 (PIV5), which is believed to cause kennel cough in dogs but is harmless to humans, can be genetically modified to act as a vaccine for humans.

The team of scientists had taken this approach earlier to develop a MERS vaccine. An extra gene was added to the PIV5 so that infected cells would produce the 'spike' protein known to be involved in MERS infections. A similar spike protein allows the SARS-CoV-2 to enter living cells in humans.

Laboratory tests in mice have shown that a single dose of the vaccine, given through the nose, triggers immune responses.

Study Outlines Which Covid-19 Patients Need Urgent ICU Care

Scientists have identified the most common clinical characteristics of 109 patients with Covid-19-related pneumonia who died in Wuhan during the early stages of the coronavirus pandemic.

Published in the *Annals of the American Thoracic Society*, this study can help doctors identify Covid-19 patients who need ICU care more urgently — and thus minimise the number of deaths.

Since multiple organ failure, especially respiratory and heart failure, are seen to have occurred rapidly after hospital admission, an organ protection strategy and ICU care should be provided as soon as possible to patients with severe Covid-19 pneumonia in order to prolong their survival, the researchers said.

Coronavirus Vaccine from Ancient Australian Plant

A team of scientists in Australia's Queensland University of Technology is making information about some ancient native plants available to researchers across the globe to help find potential drugs for Covid-19.

The team has already given an international consortium called Newcotiana fast-tracked access to the entire chromosome-level genome sequence of *Nicotiana benthamiana*, an ancient tobacco plant that grows naturally only in Northern and Central Australia.

The genome of this plant has about 60,000 genes, twice the number of an ordinary plant. It is being used for a wide spectrum of vaccines and antibodies, including those for Ebola, the researchers said.

Destroying Wildlife Habitats May Raise Risk of Future Diseases

A new Stanford study has warned that viruses like the SARS-CoV-2, that jump from animals to humans, will likely become more common as people continue to transform wildlife habitats into agricultural land.

The research, published in *Landscape Ecology*, shows how the loss of tropical forests in Uganda puts people at greater risk of physical interaction with wild primates and the viruses they carry.

In Uganda, decades of migration and the creation of farmlands outside Kibale National Park have led to a high density of people trying to support their families at the edge of forested habitats.

Ordinarily, people avoid wild primates since they are known to be carriers of diseases and many are protected by Uganda's wildlife authority. However, continued loss of forested habitat means wild primates and humans are increasingly sharing the same spaces and vying for the same food.

Coronavirus Infections are Seasonal, Spread like Influenza

Four of the seven coronaviruses known to humans cause common respiratory infections that are seasonal and appear to transmit similarly to influenza, a new study has found.

While it is not possible to determine whether SARS-CoV-2 coronavirus will behave likewise, researchers from the University of Michigan hope that their findings will help investigators prepare for what is to come during the Covid-19 pandemic.

The study, published in the *Journal of Infectious Diseases*, notes that while coronaviruses have long been recognised, human coronaviruses have historically been detected in mild respiratory illnesses. But when animal coronaviruses spill over to humans they can cause severe illnesses.

https://theprint.in/health/vaccine-candidates-from-engineered-viruses-and-ancient-tobacco-plants-latest-on-covid-19/397771/

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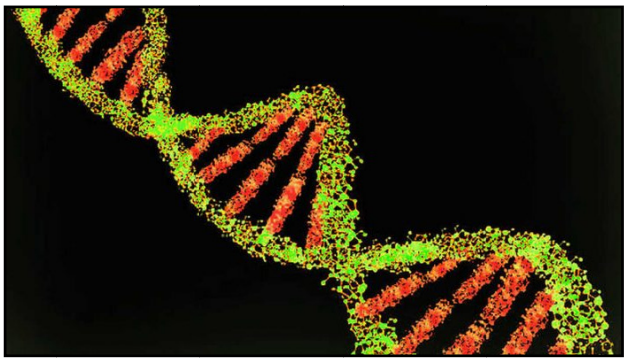
Is coronavirus mutating in India? If yes, how? CSIR starts genetic sequencing to find out

Over the next couple of weeks, once more Covid-19 samples are available, two CSIR institutes will sequence over 100 samples from different locations.

By Mohana Basu

New Delhi: Two institutes functioning under the Council of Scientific and Industrial Research (CSIR) have started conducting genetic sequencing of virus isolates from coronavirus patients' samples. The aim is to have a better understanding of coronavirus mutations in India.

Rakesh K. Mishra, director of Centre for Cellular and Molecular Biology (CCMB), told ThePrint the institute is working with the CSIR-Institute of Genomics and Integrative Biology (IGIB) to conduct genome sequencing of the SARS-CoV-2 (the virus that causes the Covid-19 disease). The CCMB comes under the CSIR.



"It will take a few days before we can start drawing any conclusion from the data," Mishra said. He added the availability of the virus samples is important.

"To begin with, we are getting isolates from Hyderabad, but we are writing to NIV (National Institute of Virology in Pune) and a few other places to get isolates from different places," Mishra said.

Analysing 50 samples takes five to six days. Over the course of the next couple of weeks, once more samples become available, the institutes will sequence over 100 samples from different locations.

Genetic sequencing is important as it helps in finding drugs and vaccines, besides figuring out if there has been a mutation of the virus and how it will affect different populations. It is also essential to finding ways to deal with the spread of the virus.

What is Genetic Sequencing?

The SARS-CoV-2 virus is primarily made of three important elements — spike proteins that help the virus bind to a living cell, ribonucleic acid (RNA) strands that start replicating inside a living cell and fatty envelop that holds all the components together.

The RNA strands can be thought of as a code that determines how the virus will behave. Coronaviruses have about 26,000 to 32,000 bases or RNA "letters" in their length.

The virus multiplies inside living organisms' cells by creating copies for the RNA. However, the process it uses to make these copies is not perfect, and often introduces tiny errors in the sequence of 'letters' — much like a game of Chinese whispers.

These errors are known as mutations, which can introduce slight variations in the behaviour of the virus.

These mutations are an essential part of how a virus evolves. The errors that do not help in the survival of the virus eventually get eliminated, while other mutations get embedded.

Some viruses, such as the coronaviruses that cause flu, change their genetic code extremely rapidly. This is the main reason why it's so difficult to find a vaccine for coronaviruses. They evolve quickly, making vaccines defunct.

The flu vaccine, now available and recommended especially for older people, needs to be taken annually for this reason. By the time the next season comes along, the vaccine is no longer effective on the circulating form of the virus.

Mutations in Virus are Like Moving Targets

Tracking mutations help scientists visualise how the virus travelled around different geographic locations.

The mutations in the virus are like moving targets, which can't be easily hit because they keep changing their genetic sequence.

"Genome sequencing on a large scale can tell us whether viral isolates are different in different countries from what we saw from China. So this will help us decide whether the treatments being contemplated in those places will be applicable for our strains or not," Mishra had told ThePrint in an earlier interview.

It will also help decide if the different strains vary so much that developing vaccines may not be viable, Mishra had said.

So far, genome sequences of only two isolates of the virus are available — both from patients in Kerala, who had contracted the virus in Wuhan, China. This is not enough to draw reasonable conclusions about mutations in the virus that may be unique to India.

Once the CCMB is done analysing the data from the virus isolates, the figures will be made available in the public domain so the research community can work on them.

https://theprint.in/science/is-coronavirus-mutating-in-india-if-yes-how-csir-starts-genetic-sequencing-to-find-out/396954/

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India has allocated over Rs 200 cr for new Covid-19 projects: Science secretary

The Department of Science and Technology has received over 500 proposals over the last two weeks for developing technologies to fight the Covid-19 crisis.

By Mohana Basu

New Delhi: Funds of over Rs 200 crore have been allocated to scientific institutions, industries and startups to develop innovative solutions that can help fight the novel coronavirus pandemic, Department of Science and Technology (DST) secretary Ashutosh Sharma has said.

In a telephonic interview to ThePrint late Tuesday, Sharma said more funds will be allocated in due course as and when new proposals get approved in the fiscal year.

"Since we made the calls, we have received about 500 different project proposals… Right now we have put in over Rs 200 crore (into Covid-19 projects). We will continue to fund more research depending on how many good projects we get," he added.

Sharma's comments come days after the DST issued several calls inviting researchers to develop technologies that can help manage the disease.

Due to the urgent need of these technologies, the DST has fast-tracked the approval process of proposals dealing with coronavirus. Last week, the DST's Science and Engineering Board (SERB) announced funding for the first five projects, even as officials continue to consider and approve project proposals on a rolling basis. Usually the DST takes at least six months to select projects for funding.

"Also remember, to initiate a project we do not need all the money up front – more funds will get sanctioned as the project progresses," he said.

The DST is looking at funding projects under different categories. The first focuses on R&D, being sanctioned through SERB. The next is for commercial indigenous technology, via the Technology Development Board. The third is for supporting startups that are close to the final

product or technology, through the National Science & Technology Entrepreneurship Development Board.

"We are not just funding research. We are also funding startups and manufacturing activities for companies. At this moment we are not giving priority to long term research. We are focussing more on development – that is translating research into product or technology," Sharma said.

He added that once the immediate crisis blows over, the DST will start looking at long term research on the subject.

https://theprint.in/science/india-has-allocated-over-rs-200-cr-for-new-covid-19-projects-science-secretary/397722/

DEFENCE AVIATION POST

Your Connect To The World Of Defence And Aviation

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Finance Ministry cut off budget of ISRO due to Corona Lockdown

The Indian Space Research Organization (ISRO) has also been hit by the coronavirus. One, the work on all the centers of ISRO has been reduced due to the lockdown. After this, Corona has also attacked ISRO's budget.

The government has made major cuts in the budget of the first quarter (April to June) of the Indian Space Research Organization (ISRO) for the fiscal year 2020-21.

It is difficult to say how much will be affected by ISRO's functioning due to this deduction. But due to lockdown and limited access to money, many projects of ISRO can be delayed. That is, many missions will be delayed this year.

Or they can also be postponed till next year. The Budget Division of the Department of Economic Affairs, under the Ministry of Finance, has issued an office memorandum to the Department of Space that 15 percent reduction is being done in the first quarter of your current financial year 2020-21. You have to run your expenses according to the instructions given.

Let us tell you that most of the scientists of ISRO are working in their homes during lockdown. All missions are on hold. Some mission work was completed. But all projects and missions have been asked to keep the status quo.

About 17 thousand scientists and technicians engaged in ISRO centers are working on development work from their homes. All these development works are for the upcoming mission.

https://www.defenceaviationpost.com/2020/04/finance-ministry-cut-off-budget-of-isro-due-to-corona-lockdown/