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समाचार पत्रों से चयित अंश Newspapers Clippings

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DRDO develops product to prevent spread of air droplets to doctors from Covid-19 patients

The product has been designed by two DRDO laboratories in Hyderabad and Chandigarh.

The move comes at a time when many doctors are testing positive for the virus

By Amrita Nayak Dutta

New Delhi: With the number of doctors and health workers testing positive for Covid-19 crossing 50 last week, the Defence Research and Development Organisation (DRDO) has come up with a product that will prevent transmission of air droplets from patients to medical staff.

The product, called the 'Enclosure for Intubation Procedure — Aerosol Containment Box', has been designed by two DRDO laboratories — the Research Centre Imarat (RCI), Hyderabad, and the Terminal Ballistics Research Laboratory (TBRL), Chandigarh.

While the RCI is a premier laboratory spearheading research and development for diversified defence, the TBRL is involved in the development, production, processing and characterisation of different high explosive compositions, among others, according to the DRDO website.

As of Friday evening, India reported 6,039 active coronavirus cases and 206 deaths.

What the Product is all About

Giving details of the product, a DRDO official told ThePrint it consists of a transparent cube covering the patient's head upto the chest, and acts as a safety barrier against transmission of air droplets from patients to doctors and health workers.

"The two circular ports allow the health worker's hands to pass and perform the airway procedures. The acrylic/perspex material used here is 50 per cent lighter thermoplastic compared to glass, making it easy to handle," the official added.

The official said the product is useful while taking samples from suspected patients, during observation or during treatment to completely avoid droplets and aerosols, which could spread as they cough or sneeze.

The boxes have been designed in two sizes — for both adult and minor patients.

The official quoted above said the use of the enclosure could control the spread of the virus on gowns, gloves, face mask, eye shield, shoes and also on the floor of the hospitals, thereby effectively safeguarding doctors and health workers.

"The RCI has manufactured prototype units at local industry partners at Hyderabad and a demonstration has been carried out by a team of doctors at ESI Medical College, Hyderabad, and the design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh," the official said.

The production of the containment box is being carried out at factories in Hyderabad and Chandigarh. Some products are being directly provided to the doctors.



DRDO's other Covid-19 products

Since the outbreak of Covid-19 in the country, the DRDO has developed several products to curb the spread of the virus — from hand sanitisers, sanitising equipment and disinfectants to five-layered N-99 masks, face shields and full-body suits.

An Ahmednagar-based DRDO laboratory has also designed a full-body disinfection chamber, called 'Personnel Sanitisation Enclosure', where a walk-through enclosure has been designed for decontamination of people.

DRDO Chief G. Satheesh Reddy had said the DRDO has also developed multi-patient ventilation kits, which have been successfully tested and would enable the use of a single ventilator for four to eight patients in case of an emergency.

Reddy had said scientists across the country have been asked to develop and share technologies at zero cost with the private sector to mass produce critical items identified by the government.

<https://theprint.in/defence/drdo-develops-product-to-prevent-spread-of-air-droplets-to-doctors-from-covid-19-patients/399484/>



Sat, 11 April 2020

DRDO does it again! Develops aerosol barrier for safety of medical professionals

The Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough & sneeze

By Huma Siddiqui

Helping the country in fighting COVID-19, Defence Research and Development Organisation (DRDO) has successfully demonstrated its new product 'Enclosure for Intubation Procedure – Aerosol Containment Box'.

Designed by RCI, Hyderabad & TBRL, Chandigarh, DRDO Laboratories, Acrylic and Perspex materials have been used respectively. There is a transparent cube which covers the patient's head up to the chest and acts as a safety barrier against transmitting droplets from patients while giving treatment.



Importance of Aerosol Containment Box?

There are two circular ports which allow the health worker's hands to pass and perform the airway procedures. The acrylic/perspex material used is 50 per cent lighter thermoplastic compared to glass making it easy to handle.

The Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough & sneeze.

So far according to the DRDO two sizes of Aerosol Containment, Boxes are designed and developed for use by adult patients and child patients.

Why is the Enclosure Important?

The use of the enclosure is meant to safeguard against the spread of viral contamination of COVID-19 to reach the gown, gloves, face mask, eye shield, shoes and also on the floor of the hospitals effectively safeguarding health care workers.

RCI, Hyderabad has manufactured prototype units at local industry partners at Hyderabad and a demonstration has been carried out by a team of doctors at ESI Medical College, Hyderabad.

The design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh.

The production of required quantities of 'Enclosure for Intubation Procedure – Aerosol Containment Box' is being done at industries located in Hyderabad and Chandigarh.

<https://www.financialexpress.com/defence/drdo-does-it-again-develops-aerosol-barrier-for-safety-of-medical-professionals/1924554/>



Sat, 11 April 2020

DRDO develops 'Aerosol Containment Box'- PPE for COVID health workers: Here's what it does

In a bid to provide a major relief to the frontline medical workers fighting Coronavirus, DRDO has successfully demonstrated its new product against COVID-19

By Jay Pandya

Mumbai: In a bid to provide a major relief to the frontline medical workers fighting Coronavirus, DRDO has successfully demonstrated a new product against COVID-19 called 'Enclosure for Intubation Procedure - Aerosol Containment Box'.

DRDO's Research Centre Imarat (RCI) in Hyderabad and Terminal Ballistics Research Laboratory (TBRL) in Chandigarh have designed the product using Acrylic and Perspex materials respectively. It consists of a transparent cube which covers the patient's head up to the chest and acts as a safety barrier against transmitting droplets from patients while giving treatment. The two circular ports allow the health worker's hands to pass and perform the airway procedures.

Two sizes of Aerosol Containment Boxes are designed

The acrylic/perspex material used here is 50% lighter thermoplastic compared to glass making it easy to handle. According to the official press release, the Enclosure for Aerosol Containment is useful while taking samples from a suspected patient, during intubation, observation or during treatment to completely avoid droplets and aerosols emanating from them due to cough and sneeze. Two sizes of Aerosol Containment Boxes are designed and developed by DRDO for use by adult patients and child patients.



The use of the enclosure could safeguard against the spread of viral contamination of COVID-19 to reach on the gown, gloves, face mask, eye shield, shoes and also on the floor of the hospitals effectively safeguarding our health care workers.

RCI, Hyderabad has manufactured prototype units at local industry partners at Hyderabad and a demonstration is carried out by a team of doctors at ESI Medical College, Hyderabad and the design is validated and accepted. The design of TBRL has been tested and qualified at PGIMER, Chandigarh.

The production of required quantities of 'Enclosure for Intubation Procedure - Aerosol Containment Box' is being done at Industries in Hyderabad and Chandigarh.

Meanwhile, with an increase of 547 new COVID-19 cases in the last 12 hours, India's total number of coronavirus positive cases rose to 6,412 on Friday. Out of the total cases, 5,709 are active patients and 504 of them have been cured/discharged and migrated, as per the Ministry of Health and Family Welfare. With 30 new deaths reported in the last 12 hours, the death toll stands at 199.

<https://www.republicworld.com/technology-news/other-tech-news/drdo-develops-aerosol-containment-box-ppe-for-covid-health-warriors.html>

THEWEEK

Sat, 11 April 2020

From Gaganyaan to COVID-19: DFRL provides quick meals for healthcare workers

Over 10,000 ready to eat meals have been supplied to healthcare workers

By Pradip R Sagar

From the Kargil conflict to expeditions to Antarctica and the upcoming Gaganyaan human spaceflight mission, the responsibility of feeding India's heroes under extreme conditions lies with the Mysuru-based Defence Food Research Laboratory (DFRL).

With the whole country engaged in fighting COVID-19, DFRL has now prepared and distributed over 10,000 Ready-to-Eat (RTE) meals for healthcare professionals in Kochi and Mysuru. The meals included tomato rice, vegetable pulao, sooji halwa, khichdi, combo meals like white rice and dal, and ready-to-drink packets of pineapple juice, all distributed in the last two days.

These meals are also what the DFRL will be providing for the astronauts who will be part of the upcoming Rs 10,000 crore Gaganyaan human space-flight mission.

"From potable water in pouches with dispensing system to Oral Rehydration solution(ORS), Saline water, food heater, cutlery, in pouch rehydration system, waste disposal & restraining bag, DFRL has been tasked by the Indian Space Research Organisation (ISRO) to provide space food," a senior DRDO official privy to the development told THE WEEK.

From the 1999 Kargil operation to expeditions in Antarctica, mountaineering missions in Kanchenjunga, Nanda Devi and Mount Everest and rowing expeditions, scientists of DFRL have proved themselves by providing processed food. They have also done so during natural calamities like the Latur and Gujarat earthquakes, Malpa and Chamoli landslides, Orissa cyclone, J&K floods, Chennai floods and 2018 Kerala flood rescue and relief operations.

The DFRL Mysore, established in 1961, was assigned to cater to the needs of varied foods of Indian Army, Navy, Air force and paramilitary forces. Their aim is to design light-weight convenient packed food with longer shelf-life under varying climatic conditions.

Since then, scientists of DRFL has developed to produce many ready-to-eat, quick-cooking and instant foods with longer shelf-life. Some of them are, long keeping chappatis (shelf-life six months), high protein snacks (nine months), spiced potato parathas (six months), fruit bars (nine months), mutton pickle (six months), stabilized chikki (one year), fruit juice powder (mango, pineapple, mosumbi (one year) and chicken pulao with a shelf-life of one year. Besides, precooked dehydrated (PD) dal/curries, PD rice, and PD potato peas curry, scientists have also come out with instant pulao mix, instant curries, dal, instant kheer mix, instant khichadi mix, instant basmati rice, instant upma mix—with each a shelf life of one year.



DFRL has developed various rations including the Main Battle Tank (MBT) ration, submarine rations and survival rations for the Army, Navy and Air Force. Besides, DFRL has also designed emergency ration for Army, emergency flying ration for aircrew, survival ration for Navy and commandos.

Explaining about Meals-Ready-To-Eat [MRE] ration for Indian Army, scientists said that it does not require any cooking since the contents are thermally processed. And it can be consumed readily after a little warming if required.

"The food products are processed in a special retort to internationally accepted food standard. The Indian MRE supplies adequate calories and nutrition during operation and competes very well with well-known international rations like MRE of USA and UK in nutritional quality and hygienic. Its shelf life is 12 months," scientists explained.

While describing the role of military food during Operation Vijay, a scientist recalls DFRL had supplied 50,000 survival rations and 30,000 MRE rations to the Army for Kargil operation at a very short notice of only 48 hrs. Besides, it supplied 1,000 MRE rations to the Navy and 125 MRE rations to Air Force station, Pune. "Packaged Biryani for army personnel deployed in icy heights like Siachen and Kargil, can now expect mutton and chicken biryanis or non-vegetarian sandwiches with all nutrients and home-made taste," he narrates.

Scientists also spoke about 'minimally processed vegetables', a new technology by which a variety of tropical, subtropical and temperate vegetables like cauliflower, cabbage carrot, beetroot, potato, sweet potato, sponge gourd, ridge gourd, radish, papaya raw, mango raw and French beans are processed.

"Additives and preservatives are used up to permissible level. But the technology does not include any thermal treatment as it retains the freshness of vegetables for a longer period. They are safe from microorganisms besides being rich in ascorbic acid. The process condition and additive treatment change with the vegetable. This technology gives the product a shelf-life of 14 to 28 days," another military scientist said.

DFRL is also engaged in the food supply to the paramilitary forces. The food requirements of paramilitary forces are different from that of the army in general as paramilitary forces need energy-rich food with less volume since they are constantly on the move and are engaged in Low-Intensity Combat (LIC) operations.

"Research is going on for the new packaging material and technology to increase the shelf-life of the food products," scientists added.

<https://www.theweek.in/news/india/2020/04/10/from-gaganyaan-to-covid-19-dfrl-provides-quick-meals-for-healthcare-workers.html>



Sat, 11 April 2020

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

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," ITI Chairman Shri Rakesh Mohan Agarwal 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 Bengaluru 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 defence 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.

Shri 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.

Shares of ITI LTD. was last trading in BSE at Rs.72.8 as compared to the previous close of Rs. 69. The total number of shares traded during the day was 140616 in over 2484 trades.

The stock hit an intraday high of Rs. 74.5 and intraday low of 68.25. The net turnover during the day was Rs. 10037728.

https://www.equitybulls.com/admin/news2006/news_det.asp?id=265164

THE TIMES OF INDIA

Sat, 11 April 2020

Samples approved, Indore textile units start making 5,000 protective kits per day

By Meenakshi Sharma

Indore: Textile units engaged in making Personal Protective Equipment (PPE) kits have increased production with supplies touching over 5,000 kits per day. The production capacity was enhanced after a team of experts from Defence Research and Development Establishment (DRDE) in Gwalior, visited manufacturing facilities and also cleared some samples sent to them.

Madhya Pradesh Industry Development Corporation (MPIDC) Indore head Kumar Purushottam said, "We had sent three samples of PPE kits to DRDO and of them two were approved and one

could not pass through. All the manufacturing of PPE suits in textile units is as per the standard fixed by DRDO.”

DRDO is a premier research institute that works for the development of defence technologies. The institute is also producing sanitisers, masks and working on developing ventilators to combat Covid 19.

The state government has roped in a few textile units of Indore to produce PPE kits, masks and gloves to supply across the state. According to government officials, the daily requirement of PPE kits in the state is about 6,000-7,000 kits per day.

HS Jha, vice president, Human Resource at Pratibha Syntex Ltd engaged into production of PPE suits said, “We had an inspection by team of DRDO last week and they checked the entire working station and gave certain directives. Our samples have been approved and we are producing kits as per the laid directives.”

According to the company, experts team advised to carry manufacturing process in a packed room, pass all raw material through a tunnel of disinfectant, workers should be sanitized at regular intervals and floor should be disinfected after every few hours. Pratibha is producing around 5,000 PPE kits per day, 15,000-20,000 masks and gloves. In the wake of increasing demand of PPE kits in the state, the parent company and allied units engaged into production are working on increasing production.

Jha said, “We are working in two shifts and now we are contacting our workers on leave to check if they can report to work because workload is very high and we need more manpower.” To ensure continuous supply of PPE kits, the state government has called raw material from Pune, Gujarat and Bengaluru and is targeting to build inventories for over one lakh PPE kits.

<https://timesofindia.indiatimes.com/city/indore/samples-approved-indore-textile-units-start-making-5000-protective-kits-per-day/articleshow/75087875.cms>



Sat, 11 April 2020

IAF airlifts 3 tonnes of raw material from Mumbai to Bengaluru for production of medical protection kits

New Delhi: While the nation is battling to contain COVID-19 spread amid the lockdown, the Indian Air Force (IAF) under 'Har Kaam Desh Ke Naam' initiative airlifted 3 tonnes of essential raw material for the production of personal protection equipment (PPE) from Mumbai to Bangalore.

The task was completed in support of the Defence Research and Development Organisation (DRDO) to facilitate expeditious production of PPEs in the Karnataka region.

"One AN-32 aircraft of IAF airlifted 3.0T of essential raw material



for production of Personal Protection Equipment (PPE) from Mumbai to Bangalore on April 8. The task was completed in support of DRDO to facilitate expeditious production of PPE in Karnataka region," the IAF tweeted.

With 547 new positive COVID-19 cases reported in the last 12 hours, India's tally of positive coronavirus cases crossed the 6,000 mark as the number of cases rose to 6,412.

Out of the 6,412 cases, 5,709 are active patients and 504 people have been cured/discharged and migrated.

With 30 new deaths reported in the last 12 hours, the death toll stands at 199. (ANI)

<https://www.aninews.in/news/national/general-news/iaf-airlifts-3-tonnes-of-raw-material-from-mumbai-to-bengaluru-for-production-of-medical-protection-kits20200410091518/>



Sat, 11 April 2020

LCA-Tejas performed better than competitors in Malaysia: HAL official

With the recent slump in India's bilateral ties with Malaysia, state-run Hindustan Aeronautics Ltd (HAL) officials belonging to LCA division who was part of the team which visited Kuala Lumpur with Two LCA-Tejas fighter jets for evaluation by the Royal Malaysian Air Force (RMAF) said in an interview to Anantha Krishnan M that LCA-Tejas not only performed better than other jets in the competition but also demonstrated better turn around time after each sortie.

After exist of India critic, Mahathir bin Mohamad and with the appointment of Muhyiddin Yassin has Malaysia's New Prime Minister, India, and Malaysia are keen to reset ties and HAL sees good opportunity to sell LCA Tejas to Malaysia.

Malaysia plan to procure up to 36 light combat aircraft/fighter lead-in trainer (LCA/FLIT) with options for 26 and types under consideration are the Korean Aerospace Industries (KAI) FA-50 Fighting Eagle; the Hindustan Aeronautics Limited (HAL) Tejas; the Leonardo M-346; the Aero Vodochody L-39NG; the CAC L-15A/B; the CAC/PAC JF-17; the Saab Gripen; and the Yakovlev Yak-130.



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<https://idrw.org/lca-tejas-performed-better-than-competitors-in-malaysia-hal-official/#more-225017>

IAF की मदद से बेंगलुरु पहुंचा 3 टन कच्चा

माल, बनाए जाएंगे प्रोटेक्शन किट

3 टन कच्चा माल मुंबई से बेंगलुरु तक पर्सनल प्रोटेक्शन इक्विपमेंट (PPE) के प्रोडक्शन के लिए IAF की मदद से लाया गया है।

नई दिल्ली: कोविड 19 (COVID-19) के कारण देश संकट में है। इसके लिए मदद करने को भारतीय वायुसेना (Indian Air Force) की ओर से 'हर काम देश के नाम (Har Kam Desh K Naam)' नामक एक शुरुआत हुई है। इसके तहत वायुसेना ने 3 टन कच्चा माल मुंबई से बेंगलुरु पहुंचाया है। यह माल पर्सनल प्रोटेक्शन इक्विपमेंट (PPE) के प्रोडक्शन के लिए लाया गया है। यह काम रक्षा अनुसंधान और विकास संगठन (DRDO) के सहयोग से पूरा हुआ।

कोरोना वायरस से जंग में भारतीय वायुसेना भी काफी मदद कर रही है। वायुसेना का कहना है कि हालात के अनुसार वे कदम उठा रहे हैं। इसके लिए मंत्रालयों और संबंधित विभिन्न विभागों के साथ वायुसेना संपर्क में है। इसके लिए क्राइसिस मैनेजमेंट सेल का भी गठन हुआ है जिसमें देश के कई मालवाहक विमान और हेलिकॉप्टर भी काम पर लगाए गए हैं।

दूसरे देशों में फंसे भारतीय नागरिकों के लिए वायुसेना ने 'ऑपरेशन संजीवनी' की शुरुआत की। भारत सरकार इस महामारी के संकट से संघर्ष के लिए सेना, वायु सेना और नौसेना की सहायत ले रही है और उनके संसाधनों का उपयोग कर रही है।



IAF ने ट्वीट किया, 'वायुसेना का एक AN-32 एयरक्राफ्ट मुंबई से 3.0 टन कच्चा माल लेकर 8 अप्रैल, सोमवार को बेंगलुरु पहुंचा। कर्नाटक में PPE के तेजी से प्रोडक्शन के लिए किया गया यह काम DRDO के सहयोग से पूरा हुआ।' बता दें कि कोरोना वायरस के खिलाफ जारी जंग में डीआरडीओ ने राष्ट्रीय राजधानी स्थित अखिल भारतीय आयुर्विज्ञान संस्थान (एम्स) में पूरे शरीर को संक्रमणरहित करने वाला चैम्बर स्थापित किया है।

इस चैंबर को कार्मिक स्वच्छता संलग्नक और फेस प्रोटेक्शन मास्क के नाम से जाना जाता है।

पिछले 12 घंटे में कोविड-19 के 547 नए मामले आए इसके साथ ही देश में अब तक संक्रमण का आंकड़ा 6 हजार के पार हो गया। मामले में मरने वालों का आंकड़ा 199 पर पहुंच गया है।

<https://www.jagran.com/news/national-iaf-airlifts-3-tonnes-of-raw-material-from-mumbai-to-bengaluru-for-production-of-medical-protection-kits-20179333.html>



Sat, 11 April 2020

Pivotal role being played by forces in Covid-19 fight, all assistance to industry: Defence Secretary

In an interview to Manu Pubby, Defence Secretary Ajay Kumar has said that regular interactions are on with industry to minimize the Covid impact, instructions to release payments have been issued and shares the role the armed forces and defence production units are playing to combat the virus.

Q: The Defence Ministry has activated the forces, PSUs and its medical units to tackle Covid. What has been the scale of this effort, some are calling it unprecedented?

Armed Forces have always played pivotal role in mitigating any national calamity plaguing the country from time to time. Covid-19 is a pandemic of extraordinary scale, affecting not only India, but almost whole of the world. To face this unprecedented challenge all the Ministries and Departments of Government of India are working to their optimum level to contain the adverse effects of Covid-19 and mitigate the sufferings of the people. As far as Ministry of Defence is concerned, right from rescuing stranded Indians from COVID-19 affected areas, such as China, Iran, Italy, Malaysia etc, to providing relief materials to all across the country, Armed Forces have put in place all its medical and manpower resources. Force's Hospitals and Medical Facilities have been dedicated to treat Covid-19 patients and some of its bases have been turned into quarantine centres.



Besides the all out efforts of Armed Forces, its various organizations and arms viz. Armed Forces Medical Services, Defence Research and Development Organisation (DRDO), Defence Public Sector Undertakings, Ordnance Factory Board, Indian Coast Guard, Cantonment Boards, National Cadet Corps are contributing in their own way to fight this pandemic. More and more ventilators, personal protection equipment (PPE), face shields, N99 & N 95 masks, hand sanitisers and other disinfectant and protective gears are being manufactured stopping all the routine works.

The Directorate of Public Relations of MoD has been disseminating the information on a daily basis through its press releases made public through the Press Information Bureau and reaching out to Media.

Q: You have taken into consideration the concerns of the industry and have interacted with industry leaders through video conferencing. What is the ministry doing to minimize the impact of the crisis on the industry?

We are continuously working with the industry to address the issues raised by them. We had a Video-conference on March 27th in which nearly 250 industry representatives participated.

<https://www.defenceaviationpost.com/2020/04/pivotal-role-being-played-by-forces-in-covid-19-fight-all-assistance-to-industry-defence-secretary/>

In the Covid-19 fight, how the Indian armed forces can assist the state| Analysis

Its human resources, communications, and distribution networks can prove to be very useful

By Akshat Upadhyay

The Indian armed forces have been called upon to combat terrorists, violent ideologies and natural disasters. In rare instances, they have been ordered to enforce law and order in riot situations. However, they have not dealt with pandemics.

The coronavirus disease (Covid-19) currently poses a threat which, affecting the entire spectrum of society and State, can be classified in terms of its first-and-second-order impact.

The first order or direct impact is on the patient affected by the virus in terms of illness, possible death and the risk of infecting others. Medical services and related infrastructure are also directly impacted. The second-order impact is manifold and on infrastructure and services such as communications, law and order, and finances. These can be managed and controlled through various departments of the government. The questions that then arise are the following: Should the armed forces be deployed to deal with pandemics? If yes, what are the ways of utilising them?



To answer this, one must understand the concept of securitisation. This means that security, as understood from a realist point of view, is a social construct rather than a condition. In other words, the affected political system may define what a security threat is, and it may not be what is commonly considered a threat. The armed forces can deal with pandemics as a lead agency in countries when they are defined as security threats, and if the forces are equipped accordingly. However, if defined from the perspective of aid to civil authorities, the forces are likely to deal with the second-order impact. Additionally, the forces have a sterling reputation in the public eye and this can be “weaponised” and used to stabilise the situation, if it worsens.

The armed forces have developed several advanced capabilities in communications, logistics, inventory management, surgery and rapid insertion and deployment of modular teams. While dealing with pandemics, the armed forces can be used to supplement and, at times, complement the efforts of the civil administration.

The Indian Navy and the Indian Air Force (IAF) have significant capabilities such as secure and robust communications, near blue-water presence and dominance and strategic airlift, which puts them in the driver’s seat when it comes to out-of-area contingencies. After the outbreak of Covid-19, the two major contingencies that arose were the evacuation of Indian nationals from affected countries and providing trained medical manpower to friendly countries. The mass evacuation of Indians and nationals from at least 23 countries was earlier conducted successfully during Operation Raahat in 2015 from Yemen. In the case of Iran, India flew some of its scientists from the Indian Council of Medical Research in an IAF aircraft to set up a lab to test 1,200 stranded Indians for Covid-19. On March 13, doctors and paramedics from the armed forces were flown to the Maldives to provide medical assistance. Both these actions were made possible due to the bilateral and multilateral exercises with friendly countries on humanitarian assistance and disaster relief operations, port calls, participation in air shows, seminars and discussions in various multinational forums. With the severity and spread of Covid-19 increasing, the armed forces may likely see an accelerated deployment cycle in the Indian Ocean region.

The sharp increase in the number of infected cases in almost all affected countries is an indicator that India will face this situation soon. There will be a clamour for wards and open spaces for patients, in case hospitals are overwhelmed. As the forces have shown, by creating quarantine zones and wellness centres out of pre-existing accommodations, they have the capability and manpower to do so at a larger scale, and in a much shorter time frame. The engineering equipment in the Army's inventory can be used by local formations to support and augment civilian capacities in respective areas. The human resources of the armed forces can also be used to rapidly convert open spaces such as stadiums and parks into closed ones with basic facilities.

If there is a breakdown of law and order, there may have to be flag marches or other interventions by the forces. This is in case the police and Central Armed Police Forces are overwhelmed. The panic likely to be generated due to the news about casualty figures may lead to violence, which may be intrinsically created or inflated by external factors.

The armed forces need to weaponise their perceived impartiality in cases of intra-community violence, if any. Violence in a jail in Bogota, Colombia, over Covid-19 rumours, which resulted in 23 deaths and 83 people being injured in March, is a stark reminder of what can happen if false information is allowed to spread uncontrolled. In such a situation, the forces can be pressed into action.

With rugged distribution networks, the armed forces are adept at the distribution of basic amenities during natural calamities, as has been evident in the aftermath of many natural disasters in India and abroad. These capabilities can be utilised by the government and local administration to provide basic food and medicines to remote places as well as to specific sections of society most affected by the lockdown. The forces can also be used to carry out awareness campaigns within the civilian population, thanks to their credibility.

The unique capabilities of the armed forces in terms of their trained manpower, communications and extensive distribution networks will complement the government's efforts. They must be prepared for a role that will be challenging and risky. However, all these capacities can be brought to bear on the condition that the forces themselves are safe and infection-free.

(Lt Col Akshat Upadhyay is a serving officer and author of Coercive Diplomacy Against Pakistan). The views expressed are personal)

<https://www.hindustantimes.com/analysis/in-the-covid-19-fight-how-the-indian-armed-forces-can-assist-the-state-analysis/story-WkN3bTTWb1sTeXMAS9oKkl.html>



Sat, 11 April 2020

Vital assets like ships, submarines must remain free from coronavirus: Navy Chief Karambir Singh

Coronavirus India: Admiral Singh listed the steps that were taken by the Indian Navy to deal with the virus such as stopping the recruitment, putting a halt on transfers and movements of sailors and officers, and changing the training set up

New Delhi: As COVID-19 continues to spread across the world, Indian Navy Chief Admiral Karambir Singh has told his personnel that vital operational assets such as ships and submarines must remain free from the virus and the armed force is ready to assist other countries in Indian Ocean region.

"The coronavirus pandemic is unprecedented and it has never been seen before. Its impact has been extraordinary across the globe, including India," he said in a video message to all Navy personnel.

The danger posed by this disease is real, imminent and unprecedented, he noted.

India is under a 21-day lockdown till April 14 to curb the coronavirus pandemic.

"We need to double our efforts to ensure that our personnel and their families continue to remain safe...We also have to make sure that our operational assets, especially ships and submarines, remain free from the virus," Admiral Singh said.

"It is a very difficult task as physical-distancing on ships and submarines is a challenge...I would also request you to wear your masks at all times," he noted.



Admiral Singh listed the steps that were taken by the Indian Navy to deal with the virus such as stopping the recruitment, putting a halt on transfers and movements of sailors and officers, and changing the training set up.

Around 13 lakh people have been infected globally and more than 70,000 deaths have occurred due to the virus.

"These are difficult times. Many of you are separated from your families. Some personnel's parents are in villages and they need help....But I can say with satisfaction that our personnel and our community has risen to the occasion proactively," he said.

"Our ships and aircraft are on standby to support the government and civil administration. We are ready to extend support not only to our country but to Indian Ocean region nations, island territories of our country," the navy chief said.

The COVID-19 challenge is not over and it is only going to intensify in the days and weeks ahead, he said, adding that the Navy will be required to further augment its preparedness.

Large scale disinfection of public areas, supporting movement between states, being ready to assist local law and order, preparing makeshift vehicles for medical support, establishing quick response teams that can do contact tracing of naval community as the COVID-19 positive cases rise - these are the steps that Navy would have to take, said Admiral Singh.

"We need to be ready for the worst case scenario. And to my mind, it is going to be a long battle. We have decided that once the lockdown is over, the movement of personnel will happen in a coordinated manner. We should not do the movements in rush," he said.

"If the situation worsens, we will have to be ready to create alternate areas where mass isolation and quarantine can be done," he noted.

(Except for the headline, this story has not been edited by NDTV staff and is published from a syndicated feed.)

<https://www.ndtv.com/india-news/vital-assets-like-ships-submarines-must-remain-free-from-coronavirus-navy-chief-karambir-singh-2209761>

Amid Covid-19 outbreak, India takes all precautionary measures for 57th edition of national maritime day

This year, India is commemorating the 57th edition of National Maritime Day. Historically, the country has always been a maritime nation with a blessed geography. The saga of India shipping initiated on April 5, 1919, when the SS Loyalty, the first ship of the Scindia Steam Navigation Company Ltd, travelled from Mumbai to London.

National Maritime Day was celebrated on 5 April, 1964 for the first time. It is aimed at supporting the global economy, the well-organised, safe and sound, environmentally responsive approach of transporting the goods across the world.

An award ceremony is also organised to recognise those who have made outstanding contributions to the Indian Maritime Sector. It goes without saying that development of the country sea route and preservation is extremely crucial and 5th April highlights the essentiality of preserving and defending our maritime zone.



Over the last few years, the celebratory Committee instituted the award to recognise and honour people for their sustained and rigorous efforts in the segment. This award is known as Varuna Award which consists of a statue of Lord Varuna and a Citation.

The ‘NMD Award of Excellence’ is also presented during celebrations which consist of a trophy and a citation for lifetime achievements in the Indian Maritime sector. However, this year, the COVID-19 outbreak has impacted the celebrations as several Nations are observing a lockdown.

“While the Nation and rather the whole world is battling the outbreak of COVID-19, sailors of the Indian Navy (IN), the Indian Coast Guard (ICG) and the Indian merchant marine are going through their share of hardship far from our shores. We must never forget their sacrifices and rigorous efforts for the society,” says Sanjay Dalmia, chairman of Dalmia group of companies.

With over 100,000 cases and more than 47,000 deaths across the globe, the coronavirus outbreak is critical. Precautionary measures like self-isolation are also practiced globally.

Although, we must remember the National Maritime Day for the years of sacrifice for defending our maritime zones, it is equally important to abide by the clarion call of the PM for social distancing as these are the difficult times and we can’t let the outbreak get the better of us. The multi-nation naval exercise “Milan” was also postponed due to the pandemic last month.

<http://www.newspatrolling.com/amid-covid-19-outbreak-india-takes-all-precautionary-measures-for-57th-edition-of-national-maritime-day/>

पेंशन का बोझ घटे, सेना में रिटायरमेंट की उम्र बढ़ाने पर विचार

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■ नई दिल्ली : भारतीय सशस्त्र सेना यानी आर्मी, नैवी और एयरफोर्स में लगातार बढ़ते पेंशन के खर्च को कम करने के लिए अब रिटायरमेंट की उम्र बढ़ाने पर विचार हो रहा है। तीनों सेना उन एरिया की पहचान कर रही हैं, जहां रिटायरमेंट उम्र बढ़ाकर 58 से 60 साल की जा सकती है। इस प्रस्ताव पर भी विचार चल रहा है कि रिटायरमेंट से पहले जवानों को एक साल कॉलेज एजुकेशन दी जाए या एक साल की स्टडी लीव दी जाए ताकि वे अपनी क्वालिफिकेशन बढ़ा सकें। फिर जब वे रिटायर हों तो उन्हें पेंशन की बजाय एकमुश्त कुछ रकम दी जाए। इससे वे सेटल होकर अपनी क्वालिफिकेशन के मुताबिक दूसरा रोजगार कर सकें। एक प्रस्ताव उन्हें रिटायरमेंट से पहले रोजगार के दूसरे विकल्प उपलब्ध कराने का भी है।

डिफेंस का पेंशन बजट एक दशक में 3.5 गुना बढ़ा है, जिसे कम करने के लिए ये उपाय तलाशे जा रहे हैं। बढ़ते पेंशन बजट पर रक्षा मामलों की संसद की स्थायी समिति ने भी चिंता जाहिर की है और रक्षा मंत्रालय से पूछा है कि क्या उसके पास लगातार बढ़ती पेंशन को कम करने का कोई रास्ता है? चीफ ऑफ डिफेंस स्टाफ (सीडीएस) ने समिति को बताया कि तीनों सेनाओं के चीफ के साथ मिलकर यह



सुनिश्चित कर रहे हैं कि रिटायरमेंट की उम्र बढ़ाई जा सके। उन्होंने कहा कि रिटायर होने की उम्र बढ़ने पर पेंशन बजट कम हो जाएगा। हमने कुछ फील्ड की पहचान की है, जहां रिटायरमेंट ऐज बढ़ाई जा सकती है। बाकी की पहचान की जा रही है। सीडीएस ने कहा कि कोशिश है कि हम कम से कम शुरू में 30 परसेंट फोर्स की रिटायरमेंट ऐज बढ़ाकर 58 से 60 साल तक करें, जैसा दूसरे सुरक्षा बलों में लागू है।

इसके अलावा, तीनों सेनाओं में एकीकरण से भी बजट घटाने की कोशिश हो रही है। सीडीएस ने बताया कि हम देख रहे हैं कि क्या मेंटिनेंस की जरूरतों को आउटसोर्स किया जा सकता है और क्या कुछ सर्विस प्राइवेट सेक्टर को आउटसोर्स कर सकते हैं? इससे बचा पैसा सेनाओं के आधुनिकीकरण में इस्तेमाल हो सकता है।

Military digest: Three Army Commanders from Kapurthala Sainik School

The large number of hospitals, beds and intensive care units have been earmarked by the Army for the treatment of Covid-19 patients is a significant step in the war against the pandemic

By Mandeep Singh Bajwa

Sainik School, Kapurthala was set up in 1961 to prepare boys academically, physically and mentally for the National Defence Academy. Over the years it has turned out to be a significant feeder school for the armed forces. The list of its alumni who have been commissioned as officers is impressive indeed.

A very momentous milestone in the school's proud history occurred a few months ago. No less than three of its illustrious alumni held the rank of Army Commander at the same time. These were Lieutenant Generals Ranbir Singh (1969-76) who commanded Northern Command, Satinder Saini (1970-77) who was Southern Army Commander and Iqroop Singh Ghumman (1970-77) who held the reins of Central Command. Something which all Saikapians (as ex-students of the school are known) can be justly very proud of.

Thirteen Military Hospitals Dedicated to Deal with Pandemic

No less than thirteen Army hospitals located all over the country with a total capacity of 3,000 beds have been earmarked to treat Coronavirus patients. These hospitals are located at Lucknow, Pune, Ahmedabad, Belgaum, Golconda (Telangana), Jhansi, Nasirabad (Rajasthan), Saugor (MP), Jodhpur, Panagarh (West Bengal), Shillong, Patiala and Palampur (HP). 370 intensive care and high dependency units are included in the capacity. At the moment more than 1,250 persons are housed in six quarantine facilities run by the Army at Mumbai, Jaisalmer, Jodhpur, Hindon (UP), Manesar (Haryana) and Chennai.

Separate wards have been designated for the treatment of Covid-19 patients in twenty-nine other military hospitals in addition to regular patients. These are located at Ambala, Amritsar, Delhi, Yol (HP), Firozpur, Pathankot, Agra, Mathura, Meerut, Roorkee, Udhampur, Srinagar, Leh, Ganganagar, Ahmednagar, Babina (UP), Raipur, Pune, Devlali (Maharashtra), Kamptee (Maharashtra), Secunderabad, Wellington (Tamil Nadu), Barrackpore (West Bengal), Bengdubi (West Bengal), Tenga (Arunachal Pradesh), Likabali (Arunachal Pradesh), Allahabad, Lucknow and Danapur (Bihar). The total capacity of these hospitals is nearly 5,000 beds with nearly 800 intensive care units.

Whether going into battle or preparing to tackle a pandemic the armed forces believe in being ready for all eventualities and contingencies that may arise.

Military Staff for the Vice President

I was somewhat surprised to note that the Vice President now has two military aides-de-camp forming part of his personal staff. This is unprecedented. Why has this been done one wonders? The Vice President does not figure in the military chain of command unlike the President who is the supreme commander of the armed forces. Nor does he have any military functions to carry out.



He does not present colours to regiments, ships or air squadrons for instance even in the absence of the President. That job is the prerogative of the Services Chiefs.

Many people feel that Services headquarters should once again cultivate the art of saying a polite no to unreasonable demands from politicians.

Successful IAF Experiment

A key landmark was achieved by the Air Force on January 31st when an AN-32 transport aircraft powered by a 10 percent blend of bio-jet fuel undertook flying from Leh. This meant that aviation bio-fuel is suitable for high altitude operations. The indigenously developed mixture passed all tests performed by test pilots from the Aircraft and Systems Testing Establishment, Bengaluru and aircrew from the squadron which operates the aircraft. The IAF's capability to assimilate new technology while promoting homegrown solutions was superbly demonstrated.

4 Para SF Strike at Terrorists

Aided by visual sightings and monitoring by drones a team of 4 Para (Special Forces) struck at terrorists infiltrating from Pakistani-occupied territory into Kupwara. All terrorists were successfully eliminated after a close-quarter battle with weapons, warlike stores and rations being recovered.

Unfortunately, Subedar Sanjeev Kumar from Bilaspur (HP), Havildar Devendra Singh Rana from Rudraprayag, Uttarakhand and Paratroopers Bal Krishan (from Kulu, HP), Amit Kumar (from Pauri-Garhwal, Uttarakhand) and Chhatrapal Singh (from Jhunjhunu, Rajasthan) were also killed in the fierce encounter. A heavy price to pay indeed.

<https://indianexpress.com/article/india/military-digest-three-army-commanders-from-kapurthala-sainik-school-6356048/>



Sat, 11 April 2020

Thanks to China, Pakistan's military keeps getting stronger

China has helped Pakistan acquire some powerful weapons

By Charlie Gao

- **Key point: Multiple rocket launchers (MRLs) are some of the deadliest artillery systems on the battlefield.**

As Pakistan's relationship has soured with the United States in the past two decades, Pakistan's armed forces have largely looked towards Chinese suppliers for equipment. While China has long supplied Pakistan's armed forces, the relationship has deepened in recent years, with Pakistan making major purchases of top-of-the-line Chinese export equipment.

Here are some of the most powerful weapons China has sold or licensed to Pakistan.

1. Nuclear Weapons Program

The acquisition of nuclear weapons in the 1990s is considered to be one of the largest failings of the nuclear nonproliferation regime. But, it is widely said that China provided significant assistance to the Pakistani nuclear weapons program (in addition to the A.Q. Khan's espionage). China is alleged to have provided missile components, warhead designs, and even highly-enriched uranium. The political motive behind this is clear, Pakistan acts as an effective foil against growing Indian regional ambitions. But it is clear that nuclear assistance is the most deadly example of Chinese/Pakistani defense cooperation.

2. JF-17 Fighter

The JF-17 fighter is the new premier multirole fighter of the Pakistan Air Force, supplanting the position previously held by American F-16Cs. Featuring integration with a wide variety of air-to-air and air-to-ground munitions, including active radar air-to-air missiles and air-launched cruise missiles, the JF-17, while a “budget” aircraft brings a lot of modern capability and modern ergonomics for its cost. While it would probably lose a dogfight to Indian Su-30MKIs due to inferior thrust-to-weight ratio and turn rate, in the beyond visual range arena, the JF-17 could prove to be a tough opponent, especially given the Indian aircraft are said to have issues locking on at range with their first-generation R-77 missiles.

3. A-100 Multiple Rocket Launcher

Multiple rocket launchers (MRLs) are some of the deadliest artillery systems on the battlefield. Combat experience in the Donbass has proven that MRLs can wipe out entire units if they remain static and unprepared. The A-100 is one of the latest MRL systems, reaching operational capability around 2,000. The first units were sold to Pakistan by China around 2008, since then Pakistan has built facilities to indigenously produce rockets for the system. Long-range MRLs are fielded by both India and Pakistan, with Indians fielding the Soviet/Russian BM-30 Smerch MRL. Rocket artillery could incur massive casualties in rear areas in the opening stages of a conventional conflict, as such both MRL systems are considered to be key parts of conventional deterrence strategies for India and Pakistan.

4. VT-1A

The VT-1A, alternatively known as the Al-Khalid or MBT-2000 is one of the more capable tanks in the region. Designed as a joint project between Pakistan and China, the design was practically a clean slate. Production tanks have thermal gunner’s sights, a panoramic commander’s sight, and a 125mm gun. While not up to the standard of modern Russian or Western tanks, the VT-1A is more than capable of combating the T-72Ms that form the bulk of the Indian tank forces. However, the more advanced T-90S may pose issues to the VT-1A. However, Pakistan is considering acquiring the VT-4, China’s further development of the VT-1A design.

5. HQ-16

While the Pakistani military has long relied on the Pakistan Air Force for air defense, the Pakistan Army has acquired the Chinese HQ-16 medium-range surface to air missile (SAM) for the defense of its formations on the ground. A deep modernization of the Russian Buk SAM, the HQ-16 utilizes vertical launch and containerized missiles to enhance reaction times. HQ-16 batteries are also said to be highly mobile, allowing them to avoid artillery and SEAD/DEAD attacks. Pakistan is also in negotiations to buy the longer ranged Chinese HQ-9 system, a Chinese analog to the Russian S-300 long-range SAM.

(Charlie Gao studied Political and Computer Science at Grinnell College and is a frequent commentator on defense and national security issues. This first appeared in 2019 and is being reposted due to reader interest.)

<https://nationalinterest.org/blog/buzz/thanks-china-pakistans-military-keeps-getting-stronger-143272>

छह चरणों में होता है किसी वैक्सीन का निर्माण, जानिए कब तक आएगी कोरोना की दवा?

प्रदीप पाण्डेय

नई दिल्ली: कोरोना वायरस भारत में अब तेजी से पैर पसारने लगा है। भारत में कोरोना से संक्रमितों की संख्या 6,000 के आंकड़े को पार कर चुकी है, वहीं पूरी दुनिया में इस वक्त 1,453,804 लोग कोरोना वायरस से संक्रमित हैं। कोरोना की वैक्सीन को लेकर पूरी दुनिया में रिसर्च चल रही है। हजारों वैज्ञानिक कोरोना की वैक्सीन बनाने में लगे हैं।

आमतौर पर किसी वैक्सीन को बनाने में दो से पांच साल का वक्त लगता है। इसके बाद वैक्सीन इस्तेमाल करने से पहले सर्टिफिकेशन के लिए छह चरणों में टेस्ट किया जाता है। अमेरिका के सेंटर फॉर डिजीज कंट्रोल एंड प्रिवेंशन (सीडीसी) के मुताबिक ये छह चरण एक्सप्लोरेट्री, प्री-क्लिनिकल, क्लिनिकल डेवलपमेंट और इसके बाद के तीन चरण में मानव पर वैक्सीन का परीक्षण किया जाता है।

1. **एक्सप्लोरेट्री** : इस चरण में वायरस के कमजोर कड़ी की पहचान की जाती है।
2. **प्री-क्लिनिकल** : किसी वैक्सीन की टेस्टिंग का यह दूसरा चरण होता है। इसमें जानवरों पर वैक्सीन का परीक्षण होता है। परीक्षण के दौरान जानवरों में वायरस (एंटीजन) को डाला जाता है और फिर देखा जाता है कि जानवर का शरीर एंटीबॉडी उत्पन्न करता है या नहीं।
3. **क्लिनिकल डेवलपमेंट** : यह चरण तभी शुरू किया जाता है जब दूसरे चरण में जानवर पर परीक्षण सफल होता है। तीसरे चरण में ही वैक्सीन के सैंपल को अमेरिका में एफडीआई और भारत में डीसीजीआई जैसी संस्थाएं टेस्ट करती हैं। तीसरे चरण में परीक्षण की शुरुआत कम-से-कम 100 लोगों पर होती है और इसी चरण में सबसे अधिक समय लगता है, क्योंकि इस दौरान यह भी देखना होता है कि वैक्सीन को कोई प्रतिकूल प्रभाव तो नहीं पड़ रहा है। तीसरे चरण में सालों-साल लग जाते हैं।

क्लिनिकली ट्रायल के बाद जब किसी इंसान में वैक्सीन का प्रतिकूल प्रभाव नजर नहीं आता है तब वैक्सीन को सर्टिफाइड किया जाता है और इसके बाद उत्पादन और गुणवत्ता पर काम शुरू होता है। इस चरण को चौथा चरण भी कहा जाता है।

कोरोना वायरस के मामले में वैक्सीन को लेकर काफी तेजी से काम चल रहा है और खास बात यह है कि कोविड -19 की वैक्सीन को लेकर पूरी दुनिया में रिसर्च चल रही है। चीन ने जनवरी में SARS-Cov-2 के आरएनए अनुक्रम को दुनिया के साझा किया था।

फिलहाल कोरोना की वैक्सीन क्लिनिकल ट्रायल में है जिसका परीक्षण अमेरिका में मॉडर्न थैरेप्यूटिक्स की देखरेख में हो रहा है। कोरोना की वैक्सीन इसलिए भी जल्दी तैयार हो सकती है क्योंकि इसके 80-90 फीसदी आनुवंशिक कोड सार्स से मेल खाते हैं। ऐसे में उम्मीद की जा रही है कि कोरोना की वैक्सीन 12-18 महीने में तैयार हो जाएगी।

<https://www.amarujala.com/india-news/coronavirus-vaccine-update-why-a-covid-19-vaccine-could-take-12-18-months>

NIH begins study to quantify undetected cases of coronavirus infection

A new study has begun recruiting at the National Institutes of Health in Bethesda, Maryland, to determine how many adults in the United States without a confirmed history of infection with SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), have antibodies to the virus. The presence of antibodies in the blood indicates a prior infection. In this “serosurvey,” researchers will collect and analyze blood samples from as many as 10,000 volunteers to provide critical data for epidemiological models. The results will help illuminate the extent to which the novel coronavirus has spread undetected in the United States and provide insights into which communities and populations are most affected.

The study will be conducted by researchers at the National Institute of Allergy and Infectious Diseases (NIAID) and the National Institute of Biomedical Imaging and Bioengineering (NIBIB), with additional support from the National Center for Advancing Translational Sciences (NCATS) and the National Cancer Institute (NCI), all parts of NIH.

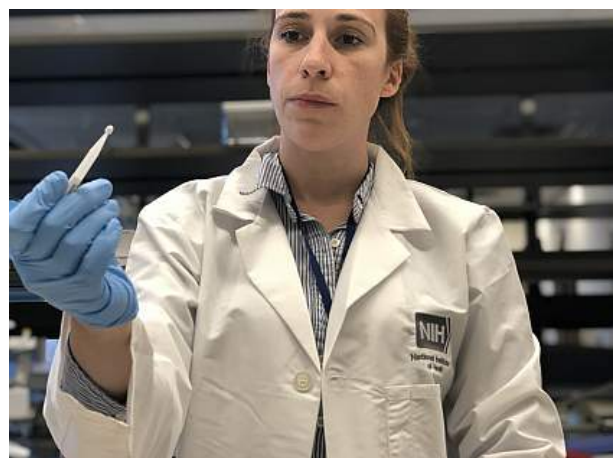
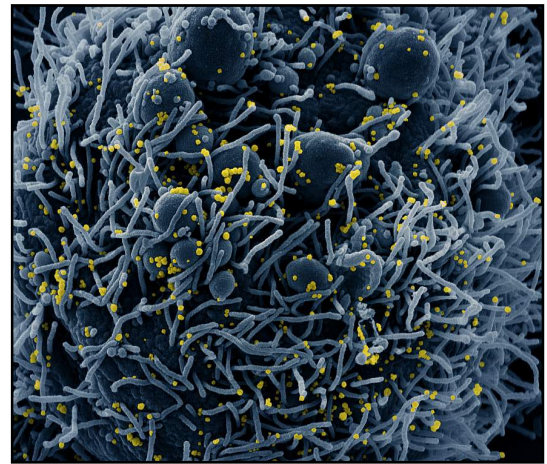
“This study will give us a clearer picture of the true magnitude of the COVID-19 pandemic in the United States by telling us how many people in different communities have been infected without knowing it, because they had a very mild, undocumented illness or did not access testing while they were sick,” said Anthony S. Fauci, M.D., NIAID director. “These crucial data will help us measure the impact of our public health efforts now and guide our COVID-19 response moving forward.”

Investigators will test participants’ blood samples for the presence of SARS-CoV-2 [antibodies](#), proteins the immune system produces to fight a specific infectious agent. A positive test result indicates previous infection. To date, reporting of U.S. cases of COVID-19 has mostly relied on molecular tests that determine the presence of the virus in a person’s airways using a noninvasive cotton swab. While these cotton swab-based tests rapidly and effectively identify active infection, they do not determine whether a person was previously infected with SARS-CoV-2 and recovered.

Kaitlyn Sadtler, Ph.D., study lead and principal investigator for laboratory testing, holds up a microsampling device from the home blood collection kit used in the study. *NIBIB*

“An antibody test is looking back into the immune system’s history with a rearview mirror,” said Matthew J. Memoli, M.D., M.S., principal investigator of the study and director of NIAID’s Laboratory of Infectious Diseases Clinical Studies Unit. “By analyzing an individual’s blood, we can determine if that person has encountered SARS-CoV-2 previously.”

Investigators will analyze blood samples for two types of antibodies, anti-SARS-CoV-2 S protein IgG and IgM, using an ELISA (enzyme-linked immunosorbent assay) developed by researchers at NIAID and NIBIB. In blood samples found to contain antibodies against SARS-



CoV-2, researchers may perform additional tests to evaluate the volunteers' immune responses to the virus. These data may provide insight as to why these cases were less severe than those that lead to hospitalization.

Healthy volunteers over the age of 18 from anywhere in the United States can participate and will be asked to consent to enrollment over the telephone. Individuals with a confirmed history of COVID-19 or current symptoms consistent with COVID-19 are not eligible to participate.

After enrollment, study participants will attend a virtual clinic visit, complete a health assessment questionnaire and provide basic demographic information—including race, ethnicity, sex, age and occupation—before submitting samples in one of two ways. Participants working at the NIH Bethesda campus will have blood drawn at the NIH Clinical Center. Other volunteers will participate in at-home blood sampling. Neoteryx, a medical device firm based in Torrance, California, will supply at-home blood collection kits. Researchers will ship each study participant a Mitra[®] Home Blood Collection Kit and provide detailed instructions on collecting a microsample of blood and mailing it back for future analysis in the laboratory.

“Researchers have considerable experience using these at-home blood collection kits to track the spread of other infectious diseases like influenza, and this method is safe, effective and easy-to-use,” said Kaitlyn Sadtler, Ph.D., study lead for laboratory testing and chief of [NIBIB's Section for Immunoengineering](#). “With a small finger-pick, volunteers can help scientists fight COVID-19 from their homes.”

(People interested in joining this study should contact clinicalstudiesunit@nih.gov)

<https://www.nih.gov/news-events/news-releases/nih-begins-study-quantify-undetected-cases-coronavirus-infection>



Sat, 11 April 2020

Israeli lab pauses research on Shrimp Viruses to develop COVID-19 Coronavirus Vaccine

By Ariella Simke

In a seemingly peculiar transition from aquaculture science to rapid pandemic response, hopeful Israeli scientists at the Technion- Israel Institute of Technology in Haifa are developing a vaccine that will target COVID-19 using immunity-boosting technology that has previously been used in shrimp farming and other applications. However, the pace of regulatory approval is much slower than that of the vaccine research.

“We all feel the call. Look how one virus shut down the world and is putting us all at risk. It’s our will to survive that gave us the call [to action] to treat people that were infected”

Dr. Avi Schroeder

Dr. Avi Schroeder develops targeted medicine technologies for applications in cancer, agriculture and aquaculture as head of the Laboratory for Targeted Drug Delivery and Personalized Medicine Technologies and scientific advisor to aquaculture startup ViAqua Therapeutics. His research on a virus called White Spot Syndrome Virus (WSSV) in shrimp resulted an immunity-boosting feed that can help combat disease in farmed shrimp.

“Viruses infect us by multiplying inside our cells. To do this the virus produces proteins. We stop the production of these proteins inside the body, this is called [RNA interference](#),” says Dr. Schroeder, “The shrimp feed triggers RNA interference, breaking down the messenger RNA that carries the virus that infects the body”.

Vaccines work by arming the immune system with a ‘memory’ of hostile invaders. Using a vaccine to artificially stimulate an immune response, the body produces antibodies that allow it to recognize and attack the virus before it can progress to illness. By disrupting the usual methods of

viral infection, the targeted medicine technology produced in Dr. Schroeder's lab can keep the virus at manageable levels, allowing the immune system to catch up. "If we can do that then the person's immune system can kick in and fight off the virus," he says.

<https://www.forbes.com/sites/ariellasimke/2020/04/10/israeli-lab-pauses-research-on-shrimp-viruses-to-develop-covid-19-vaccine/#1ce2c82a3ea6>

Science

Fri, 10 April 2020

Would-be coronavirus drugs are cheap to make

By Robert F. Service

With a vaccine for the novel coronavirus still likely a year or more away, the first weapon against the virus could be one of the drugs now in clinical trials with COVID-19 patients. A new analysis out today shows that many of these drugs, which are currently manufactured or in development to treat other diseases, can be made for \$1 a day per patient, or less. If any prove effective against the novel coronavirus, a coordinated international effort will be needed to ensure they are made affordable for people worldwide, the researchers argue.

Scientists worldwide are conducting clinical trials on at least a dozen potential treatments for COVID-19. Some compounds have been on the market for decades, such as chloroquine and hydroxychloroquine used to combat malaria and lupus. That makes it relatively straightforward to estimate the minimum cost of making them, says Andrew Hill, a drug pricing specialist at the University of Liverpool.

For the new analysis, out today in the *Journal of Virus Eradication*. Hill and colleagues reprised a strategy he previously used to estimate the cost of drugs to treat HIV and hepatitis C. They started with an India-mandated database that includes the cost per kilogram of active pharmaceutical ingredients (APIs) shipped in and out of the country, a major hub for generic drug production. To those figures, they added in additional costs for formulating APIs into medicines, packaging, and a 10% markup for the companies manufacturing the drugs. For eight of the nine candidate COVID-19 treatments analyzed the estimated cost was under \$1.50 per day per person treated and from \$0.30 to \$31 for a full course of treatment. The bottom line is clear, Hill says. "All of these drugs are fundamentally really cheap to make." (Hill's team was unable to estimate the cost of one compound, Tocilizumab, a monoclonal antibody used to treat rheumatoid arthritis, because it is currently made only in small quantities.)

Today, however, these drugs aren't always cheap to buy. They retail for between \$0.20 and \$510 per course in countries that strictly hold down drug costs, such as India and Pakistan, but between \$19 to \$18,610 per course in the United States, Hill and his colleagues report.

Jessica Burry, a pharmacist with Doctors Without Borders, worries that high pricing of COVID-19 treatments would amount to rationing, putting them off-limits for poorer patients and countries. "Rationing drugs because of high prices and limited supply will only serve to prolong the pandemic," says. "What good is a lifesaving drug if you can't afford it?"

Hill notes that most of the drugs his group evaluated are off patent, and thus could be manufactured cheaply by generic drugmakers. But some of the antivirals in the COVID-19 clinical trials are proprietary. As the debate over drug pricing for coronavirus drugs is already heating up, one flashpoint is remdesivir, a drug from Gilead Sciences that appears to inhibit an RNA-copying polymerase the new coronavirus uses to replicate. Hill's team estimates that 1 day's supply of the drug could be manufactured for \$0.93.

Manufacturing cost of potential coronavirus drugs

Though most drugs currently in clinical trials to fight COVID-19 can be made cheaply, they can sell for hundreds of times the price.

Drug	Estimated cost price (course)	Estimated cost price (day)
Remdesivir (10 days)	\$9	\$0.93
Favipiravir (14 days)	\$20	\$1.45
Lopinavir/ritonavir (14 days)	\$4	\$0.28
Hydroxychloroquine (14 days)	\$1	\$0.08
Chloroquine (14 days)	\$0.30	\$0.02
Azithromycin (14 days)	\$1.40	\$0.10
Sofosbuvir/daclatasvir (14 days)	\$5	\$0.39
Pirfenidone (28 days)	\$31	\$1.09

A. HILL ET AL., *Journal of Virus Eradication*, 2020

But patent protection and limited supplies could send its price soaring, some groups fear. On 30 March, Doctors Without Borders and nearly 150 other civil society organizations sent an open letter to Gilead CEO Daniel O’Day asking “that Gilead take immediate actions to ensure rapid availability, affordability, and accessibility of its experimental therapy remdesivir for the treatment of COVID-19.” The authors implored Gilead to forgo patent protection for the drug and allow generic manufacturers to add to the supply. Gilead’s Corporate Affairs and General Counsel Brett Pletcher responded today that Gilead is already ramping up production sharply. The company is also exploring a partnership with UNICEF to distribute the drug globally, Pletcher wrote the groups in a letter made public by the company.

One model for distributing a coronavirus drug quickly and cheaply comes from ongoing parallel efforts to provide HIV and tuberculosis drugs, run by the Global Fund and the U.S. President’s Emergency Plan for AIDs Relief. Each organization pools financial contributions from governments worldwide or U.S. government agencies, respectively, and use the money to negotiate cheap prices for generic drugs that are then distributed to countries in need—an approach that has been hailed for saving tens of millions of lives. David Nash, a physician and pharmaceutical industry expert at Jefferson College of Population Health, says that model could work with coronavirus as well. “I would not reinvent the wheel here.” Nash says international drug pricing experts should begin setting up such an initiative to mass produce and distribute coronavirus medications, adding that they should move fast. “We ought to start the conversation now in anticipation of the results of the clinical trials.”

(Author is a news reporter for *Science* in Portland, Oregon, covering chemistry, materials science, and energy stories)

<https://www.sciencemag.org/news/2020/04/would-be-coronavirus-drugs-are-cheap-make>

Chinese long march 3B rocket fails during launch of Indonesian satellite

It's the second Chinese rocket failure in a month

By Tariq Malik

A Chinese rocket carrying a new communications satellite for Indonesia has failed to reach orbit in a launch gone awry, the second failure for China's space agency in less than a month, state media reported today (April 9).

The Long March 3B rocket lifted off today at 7:46 a.m. EDT (1146 GMT) from China's Xichang Satellite Launch Center in the southwestern province of Sichuan, where the local time was 7:46 p.m. on Thursday night, according to the Xinhua News Agency. The rocket was carrying the Palapa-N1, also known as the Nusantara Dua, a next-generation satellite for broadband and broadcast communications built for the Indonesian joint venture of Indosat Ooredoo and Pasifik Satelit Nusantara.

The first and second stages of the three-stage Long March 3B rocket appeared to perform well during the outset of Thursday's launch. But something went wrong with the third stage, raining debris back to Earth and destroying the Palapa-N1 satellite, Xinhua reported.

Videos posted on China's social media site Weibo showed several views of the initial launch. Other videos from Guam showed what appeared to be fiery debris streaking across the sky.

Officials with the Guam Homeland Defense and Civil Defense (GHS/OCD) and the Mariana Regional Fusion Center (MRFC) said the fireball was likely connected to China's failed launch. They were monitoring all events in the region, "including widely circulated videos of a fiery object over the Marianas sky this evening," the officials said in a statement.

"In concert with federal partners, GHS/OCD and MRFC identified that the object was likely connected to a scheduled satellite test launch from China," they added.

The failed Long March 3B launch marks China's second launch failure in less than a month. On March 16, a Long March 7A rocket failed to launch a classified satellite into orbit during a debut test flight from the Wenchang Satellite Launch Center on China's southern Hainan Island.

China was not the only country launching rockets today.

A Russian Soyuz rocket successfully launched a new U.S.-Russian crew to the International Space Station from Baikonur Cosmodrome in Kazakhstan at 4:05 a.m. EDT (0805 GMT). That mission successfully reached the space station six hours later, and NASA astronaut Chris Cassidy and cosmonauts Anatoli Ivanishin and Ivan Vagner joined the station's Expedition 62 crew.

<https://www.space.com/china-long-march-3b-rocket-launch-failure.html>