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DRDO suit ideal for COVID-19 warriors too

The clothing was fabricated for medical, para-medics in the event of radiological emergencies

Hyderabad: The Institute of Nuclear Medicine & Allied Sciences of the Defence Research Development Organisation (DRDO) has announced that the protective clothing it had earlier developed for medical and para-medical staff in event of radiological emergencies is also considered as an ideal full body suit to stop contamination through coronavirus.

The suit is washable and has passed all critical standards. It has been found to be suitable after being widely tested by the DRDO and other agencies. The defence research organisation has outsourced the manufacture to firms in Kolkata and Mumbai with a joint capacity of 10,000 suits a day, each costing about ₹7,000, informed an official spokesman.

These suits are intended for the front line medical respondents rushing to any incident site and those working for long hours in the hospitals. “The dry suit has now become a critical requirement for health and medical staff so that they are protected from any contact from the virus during their work,” he added.

It is among four items kept ready by the DRDO and its allied units following the outbreak of the COVID-19 in China three months ago under the theme ‘War against Corona’.

The other items include indigenously developed hand sanitisers costing about ₹120 a litre already being supplied to the Delhi police and other Central government agencies, a multi-patient ventilator costing about ₹4 lakh is to be ready in few days and an advanced five layer/two layer masks, costing ₹70 a piece, are also being supplied to several agencies concerned, the spokesman added.



- Suited for calamities
- Integrated suit has facility to adjust waist size
- It is made of high strength polyester fabric coated with breathable polymer on the inner side and waterproof clothing on the outer side
- A pair of detachable shoe covers is provided with the suit
- A non-metallic and corrosive zipper is provided in the front
- Velcro is fitted to adjust the bottom part of the legging
- Two pockets are provided below the waist protected by a flap.

<https://www.thehindu.com/news/cities/Hyderabad/drdo-suit-ideal-for-covid-19-warriors-too/article31195033.ece>

Coronavirus से जंग के बीच DRDO चीफ बोले- हमारे साइंटिस्टों ने बनाया वेंटिलेटर, 4 से 8 लोग कर सकते हैं इस्तेमाल

Coronavirus Updates: DRDO के प्रमुख रेड्डी ने कहा कि वेंटिलर के कुछ पार्ट्स को लेकर दिक्कत आ रही है. बीईएल और एक इंडस्ट्री इसका ज्यादा उत्पादन करने लगेंगे. अगले महीने के अंदर 10,000 वेंटिलेटर (ventilator) बना लेंगे
परिमल कुमार

खास बातें

- डीआरडीओ प्रमुख ने कहा कि अगले दो महीने में 30,000 वेंटिलेटर तैयार होंगे
- पिछले चार दिनों में वैज्ञानिकों ने बनाया ऐसा वेंटिलेटर
- चार से आठ लोग कर सकते हैं इस्तेमाल

नई दिल्ली: कोरोनावायरस (Coronavirus) से निपटने के लिए रक्षा अनुसंधान एवं विकास संगठन (DRDO) ने भी तैयारियां तेज कर दी है। डीआरडीओ के चेयरमैन जी. सतीश रेड्डी ने टेलीफोन पर दिए इंटरव्यू में कहा कि हमने 10-15 दिन में 20 हजार सैनेटाइजर की बोतलें बनाई हैं। इसके साथ करीब 35 हजार मास्क भी बनाए गए हैं। आज से उत्पादन शुरू हो गया है। 10 से 20 लाख का लक्ष्य रखा गया है। उन्होंने कहा सबसे अहम कच्चे माल की उपलब्धता है। कच्चा माल उपलब्ध होना जरूरी है। उन्होंने बताया कि एक हफ्ते में वेंटिलेटर (ventilator) की आपूर्ति शुरू हो जाएगी।

रेड्डी ने कहा कि वेंटिलर के कुछ पार्ट्स को लेकर दिक्कत आ रही है। बीईएल और अन्य इसका ज्यादा उत्पादन करने लगेंगे। अगले महीने के अंदर 10,000 वेंटिलेटर बना लेंगे। महिंद्रा और अन्य कंपनियों को प्रौद्योगिकी देंगे। उन्होंने बताया कि पिछले 4 दिनों में हमारे साइंटिस्ट ने एक वेंटिलेटर विकसित किया है, जिसे 4 से 8 लोग यूज कर सकते हैं। दो महीने में 30 हजार वेंटिलेटर बना लेंगे और इसकी आपूर्ति कर पाएंगे।

डीआरडीओ प्रमुख ने कहा कि आईआईटी (IIT) हैदराबाद ने भी इस पर कुछ रिसर्च किया है वो अगर सफल हुआ तो 30 हजार से ज्यादा वेंटिलेटर बनाकर दे सकते हैं। ये अनेस्थेसिया वेंटीलेटर है। एक की कीमत करीब 4लाख रुपये आएगी।

देश में कोरोनावायरस तेजी से पैर फैला रहा है। भारत में अब तक कोरोनावायरस के 873 मामले सामने आए हैं। पिछले 24 घंटों में इस वायरस के 149 नए मामले सामने आए हैं। वहीं, इस वायरस से अब तक 19 लोगों की जान जा चुकी है। हालांकि, थोड़ी राहत वाली बात यह है कि इस बीमारी से 79 लोग या तो ठीक हो चुके हैं या फिर उनकी स्थिति में सुधार है।

<https://khabar.ndtv.com/news/india/drdo-chief-on-coronavirus-indian-scientists-made-ventilators-4-to-8-people-can-use-2202162>



Coronavirus : DRDO चीफ बोले- अगले महीने तक बना लेंगे 10 हजार वेंटिलेटर

**DRDO चीफ के मुताबिक DRDO के साइंटिस्ट ने पिछले 4 दिनों में एक
ऐसा वेंटिलेटर विकसित किया है, जिसका इस्तेमाल 4 से 8 लोग कर सकते हैं।**

रक्षा अनुसंधान एवं विकास संगठन (Defense Research and Development Organization) ने कोरोना वायरस से लड़ने के लिए कसरत कस ली है। एक टेलीफोनिक इंटरव्यू में DRDO के चेयरमैन जी. सतीश रेड्डी (G. Satish Reddy) ने बताया कि 10 से 15 दिनों में 20 हजार सैनेटाइजर की बोतलें और लगभग 35 हजार मास्क बनाए गए हैं। रेड्डी के मुताबिक एक हफ्ते में वेंटिलेटर की आपूर्ति शुरू हो जाएगी। इसके लिए आज से उत्पादन शुरू किया गया है जिसके लिए 10 से 20 लाख का टारगेट फिक्स है।

रेड्डी ने बताया कि अगला महीना खत्म होने तक वो 10,000 वेंटिलेटर बना लेंगे। वेंटिलेटर के कुछ पार्ट्स मिलने में मुश्किल आ रही है मगर BEL और दूसरे इसका उत्पादन ज्यादा करने लगेगे।



जी. सतीश रेड्डी के मुताबिक DRDO के साइंटिस्ट ने पिछले 4 दिनों में एक ऐसा वेंटिलेटर विकसित किया है, जिसका इस्तेमाल 4 से 8 लोग कर सकते हैं। हम अगले दो महीने में ऐसे 30 हजार वेंटिलेटर और बना लेंगे और इसकी आपूर्ति कर पाएंगे।

DRDO चीफ ने कहा कि IIT हैदराबाद ने भी वेंटिलेटर्स पर रिसर्च की है। अगर सफलता मिली तो हम 30 हजार से ज्यादा वेंटिलेटर बनाकर सकते हैं। ये अनेस्थेथेटिया वेंटिलेटर होंगे. एक वेंटिलेटर के ऊपर करीब 4लाख रुपये का खर्च आएगा।

गौरतलब है कि देश में कोरोना वायरस (Coronavirus) का खतरा दिन-प्रतिदिन बढ़ता जा रहा है। कोरोना पीड़ितों की संख्या 800 से ऊपर जा चुकी है और अबतक 21 लोगों की मौत हो गई है। वहीं, 76 लोग ऐसे भी हैं जो इस महामारी (Pandemic) की चपेट में आने के बाद अब ठीक हो चुके हैं। कोरोना महामारी को देखते हुए देश में 21 दिनों का लॉकडाउन (Lockdown) चल रहा है।

<https://www.tv9bharatvarsh.com/india/corona-virus-latest-drdo-chief-g-satish-reddy-scientists-made-ventilators-193274.html>

#CoronaPositive: डीआरडीओ के डिजाइन से बने वेंटीलेटर खरीदे जाएंगे, मारुति भी उतरेगी निर्माण क्षेत्र में

नई दिल्ली: दुनियाभर में कोरोना वायरस से निपटने के लिए सबसे बड़ी जरूरत वेंटीलेटर की पर्याप्त तादाद होना है। भले ही भारत में इटली, अमेरिका जैसी आपात स्थिति पैदा नहीं हुई हो लेकिन इसे लेकर तैयारियां जोरों पर हैं। ताजा जानकारी के मुताबिक, रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के डिजाइन के आधार पर सार्वजनिक उपक्रम भारत हेवी इलेक्ट्रिकल लिमिटेड (भेल) ने सस्ते वेंटीलेटर तैयार किए हैं।

अब केंद्र सरकार भेल से कुछ हफ्तों में ऐसे 30 हजार वेंटीलेटर खरीदने जा रही है। डीआरडीओ के महानिदेशक डॉ जी सतीश रेड्डी के अनुसार, कुछ समय पहले डीआरडीओ की बायोमेडिकल तकनीक समिति ने वेंटीलेटर बनाने का एक डिजाइन मैसूर स्थित स्कैन-रे टेक्नोलॉजीज नामक कंपनी को स्थानांतरित किया था। रेड्डी ने बताया, वेंटीलेटर प्रमुखतः दो प्रकार के होते हैं- आईसीयू और एनेस्थेटिक।

देश की प्रमुख कार कंपनी मारुति सुजुकी भी अब वेंटीलेटर व मास्क बनाएगी। मारुति ने शनिवार को कहा, देश में वेंटीलेटर का उत्पादन बढ़ाने के लिए वह एग्वा हेल्थकेयर के साथ मिलकर काम करेगी। हमारा इरादा वेंटीलेटर का उत्पादन 10 हजार प्रति माह करने का है।

<https://www.amarujala.com/india-news/coronavirus-effect-drdo-designed-ventilators-will-be-purchased-maruti-will-also-manufacture>

Business Today

Sun, 29 March 2020

Coronavirus crisis: DRDO working with Tata, Mahindra on 'multi-patient ventilators'

It is estimated that India has only about 40,000 ventilators at present, including about 8,500 in public hospitals

By PB Jayakumar

The Defence Research and Development Organisation (DRDO) is trying to develop 'multi-patient ventilators', wherein several patients can be supported by a single ventilator to meet the huge demand if the Covid-19 outbreak goes out of control.

"This innovation is expected to be available within a week. Around 5,000 ventilators will be produced in the first month and 10,000 subsequently. The DRDO has identified local alternatives to the supply of critical components. Already Secretary (Pharmaceuticals) has identified nine companies for design transfer to produce and Anand Mahindra for the fabrication of components. Each ventilator unit will cost around Rs four lakh," the government said in a statement.

It said since COVID-19 affects pulmonary functions, keeping in mind the futuristic requirement, the Society for Biomedical Technology (SBMT) programme of the DRDO has been modified to cater to the current situation. Defence Bio-Engineering and Electro Medical Laboratory (DEBEL), Bangalore (a DRDO lab), has identified a



vendor, Scanray Tech, Mysore, to produce critical care ventilator. It has been created by using existing technologies like breath regulators, pressure/flow sensors, etc.

Reportedly, the Union government has already reached out to five automakers -- Tata Motors, Mahindra and Mahindra (M&M), Hyundai Motor India, Honda Cars India and Maruti Suzuki India to explore the possibility of making ventilators at their plants.

It is estimated that India has only about 40,000 ventilators at present, including about 8,500 in public hospitals. Kerala, which currently has the largest number of COVID 19 patients, has about 5,000 ventilators; Mumbai has less than 1,000; 1,500 in Tamil Nadu; and 1,800 in Madhya Pradesh.

In some eastern states, the number of ventilators is in single digits. The Health Ministry has reportedly asked a public sector unit to make 10,000 ventilators and another 30,000 would be supplied by Bharat Electricals, a PSU under the Ministry of Defence, by June, Health Ministry Joint Secretary Lav Agarwal has said.

The move to invite corporates to make multi-patient ventilators is also being experimented by the United States, where the number of COVID-19 patients has crossed over a lakh. Major auto giants like Ford and General Motors are working on war footing to manufacture ventilators. On Friday, Ventec Life Systems and General Motors announced a partnership to produce more than 10,000 ventilators per month starting as early as April.

<https://www.businesstoday.in/current/corporate/drdo-innovating-multi-patient-ventilators-to-meet-emergency/story/399488.html>



Sun, 29 March 2020

Fight against COVID-19: Indian Army fully prepared, says Army Chief

Instructions have been issued to not only increase the capacity for isolation and surveillance at the base, command hospitals. All the field hospitals have been issued instructions to set up 45 bed isolation facility and 10 bed ICU facility

To prevent the negative effects of the coronavirus, the next few weeks are crucial, cautions the Indian Army Chief. According to General MM Naravane, “Combating the COVID-19 is being taken aggressively and extreme precautions are being taken and preparations are going on to support the Civil administration when required.”

“What is happening now is just the preparatory stage of the COVID-19 and all efforts are being made to control this virus from making a firm base,” he said.

“The Indian Army is in a complete state of preparedness and are preparing for stringent countermeasures,” he added. The chief who has been not only reviewing the situation on a daily basis has also been visiting the quarantine facilities set up by the Indian Army and has been in touch with the commanders and the PSOs regularly.



Besides setting up the COVID-19 helplines Command wise, the army has also been pitching in by issuing advisories and instruction on how to stop the spread of the deadly virus.

If need be the Quick Reaction Medical Teams (QRMTs) are on a six-hour standby notice at different levels to help the civil administration.

Keeping the Borders Safe

According to the chief despite the fight against COVID-19, the Indian Army is keeping the borders safe and ensuring that there is no effect on the operational preparedness.

He also stated that the Army is ensuring that there is a restriction in place on the movement of the personnel, all training exercises, postings and conferences stand cancelled. “This to ensure that the COVID-19 does not spread and we are in sync with the advisory issued by the government,” he added.

The training, exercises and other routine activities will be re-scheduled, however, their postponement does not impact the efficiency of the army, he said.

Quarantine facilities at Manesar, Jaisalmer and Jodhpur have been set up where the evacuees from China, Italy and Iran have been treated. Also, Financial Express Online has reported earlier that there are additional locations identified for setting up of wellness/ quarantine facilities. The army has identified dedicated staff to ensure that those quarantined in these facilities are taken care of.

“Studying how the pattern of the virus spreading in other countries over the last three months, there could be an increase in demand for medical services for both infected/ suspected cases. The demand could be from with the Army as well as the civil authorities in the coming days and the Army is getting ready to help the nation,” said the Chief.

Instructions have been issued to not only increase the capacity for isolation and surveillance at the base, command hospitals. All the field hospitals have been issued instructions to set up 45 bed isolation facility and 10 bed ICU facility.

If need be the Indian Army has kept around 30 per cent Field Hospitals on standby to construct COVID hospitals.

<https://www.financialexpress.com/defence/fight-against-covid-19-indian-army-fully-prepared-says-army-chief/1912012/>



Sun, 29 March 2020

Army launches ‘operation namaste’ to combat coronavirus; here’s all you should know about it

*‘Force protection is my priority, for only when we are well, can we serve the nation’,
says Chief of Army Staff General Manoj Mukund Naravane.*

By Harsha Bhatt

The Indian army has named its battle against Corona Virus ‘Operation Namaste’. This operation has been launched by the Indian army to help the Indian government in dealing with the outbreak.

Addressing the 1.3 million force, army chief General MM Naravane launched the operation while asking the Indian army to take all precautions to protect themselves in the wake of the virus.

As social distancing is not a privilege available to the forces owing to operational and strategic limitations, the army chief asked the forces to ensure they follow the instructions that have been issued to protect themselves against the virus.

Be it those seated in an ambush or the tank crew, it becomes inevitable for the men in uniform to be close to each other. Hence it is important that the soldiers take care of their health, said the army chief, asking them to follow the advisories that have been issued recently.

Greeting the entire gathering with ‘Sat Sri Akal’ General Naravane highlighted that in the times of this crisis that the entire world is going through, it was very important to follow the advisories issued by the government over the last few days.

“For only when we stay away and safe from the Corona virus will we be able to do our duty,” he stressed.

The men in uniform as well as the *veer naris* and veterans were advised to go to their nearest army camp if they faced any health issues and those who were unable to can access the command wise helplines that have been set up.

“It is our duty to help the government and the civil administration in these times. And as the army chief, my priority is force protection,” said Naravane, assuring the forces that their families would be the

responsibility of the army. He also assured the families that the ‘safety of the soldiers would be taken care of’.

Empathising with those who were facing difficulties owing to cancelled leave owing to the present crisis, he said, “It is not new for us. During Operation Parakram in 2001 -2002 no one went home for eight to ten months,” said Naravane.

“Like we were successful in Op Parakram, in Op Namaste too we shall emerge victorious,” said Naravane.

“Wherever you be, just remember, ‘har kaam desh ke naam’ (whatever you do, let it be in the name of the nation),” he said as he signed off.

<https://swarajyamag.com/news-brief/army-launches-operation-namaste-to-combat-coronavirus-heres-all-you-should-know-about-it>

ThePrint

Sun, 29 March 2020

Army may recall retd personnel with medical expertise if fight against Covid-19 intensifies

The Army has made a composite list of all those who retired in the last two years, especially focussing on those with medical expertise and trained technicians

By Snehash Alex Philip

New Delhi: The Army has made a composite list of all those who retired in the last two years for possible recall if the need arises to fight the war against coronavirus.

Army sources said they are focusing on all those with medical expertise and specialised technicians.

The military has a system of recall by which it can ask all those who retired in the last two years to rejoin the forces and offer their services.

These kind of recall measures have been put in place as part of the steps to be taken in times of war.

“We have made a composite list. This basically focuses on those with medical backgrounds and those with technical expertise who can be recalled if the need arises,” a senior Army officer told ThePrint.

He added that the Commands have the required details of all these individuals.

“It is not that everyone will be recalled. It all depends on the need. For example, if there is a requirement in Chandigarh, a person from Kerala would not be recalled,” the officer said.

Retired Personnel yet to be Contacted

Asked if retired personnel have been sounded out, the senior officer said, “No, they have not been contacted. A two-year period of recall is something that every officer, JCO and jawan is aware of. Whenever a situation emerges, they know they could be called back.”

While initially, the military’s help was limited to just setting up quarantine centres for those evacuated from abroad, the government has started roping them in more in the fight against Covid-19.

The Indian military has identified six more of its hospitals to carry out Covid-19 tests and has also earmarked 28 other facilities across the country to exclusively deal with the outbreak.

Speaking to ThePrint, Lt General Anup Banerji, DG Armed Forces Medical Services (AFMS), had said that armed forces have been directed to augment medical resources for civil health set-ups too.

The military is also conducting four research projects on the coronavirus.

<https://theprint.in/defence/army-may-recall-retd-personnel-with-medical-expertise-if-fight-against-covid-19-intensifies/390421/>

India's approach to defence indigenisation has basic flaws. Private players can up the game

India's approach to indigenisation of defence production has not been yielding desired results. The new procurement procedure addresses this issue

By Satish Dua

While the world is grappling with coronavirus, Ministry of Defence released another updated edition of Defence Procurement Procedure (DPP 2020) last week, with a view to boost indigenisation and reduce reliance on defence imports. It proposes a higher percentage of indigenous content, new multipliers in defence offsets, a new innovative category for leasing, and new options for equipment sustainment activity.

Our approach to indigenisation has not been yielding desired results. It has a basic flaw, that it is majorly dependant on public sector, for manufacture as well as for research and development (R&D). The private sector should have been involved in big way, a long time ago. Even now, public and private sectors are competing in defence field. There is a need to collaborate more, although some competition is good for both sides. The new edition of DPP 2020 should be addressing this to some extent. DPP is primarily focused on procurement, and not on development. Transformational reforms are required to get industry to participate as an equal not only in defence manufacturing but in R&D as well.



Chinese Model

While the US, UK and Australia have a dynamic public private partnership (PPP) in place, let us examine the Chinese model, as they have State Owned Enterprises (SOE) like our PSUs. Having opened up the defence industry to private sector in a collaborative model for design and development, in addition to manufacturing, their armed forces have to buy indigenously manufactured products, and later execute incremental product improvements.

In our context, let us take the case of manufacture of Light Combat Aircraft (LCA) by Hindustan Aeronautics Limited (HAL). Even if LCA is not the top of the rack fighter aircraft in the world, we can make incremental product improvements as we go along. The responsibility for this should be given to the Indian Air Force.

In fact, user interface in aviation industry is low. Navy, on the other hand, has been in the driving seat in ship building ever since the sixties, when a Directorate of Naval Design was set up. The Air Chief will have to be made responsible for product improvement of LCA. To accomplish this, he will also have to be given the authority to coordinate the activities of three major organisations that majorly constitute the aviation industry in public sector, namely Hindustan Aeronautics Limited (HAL), Aeronautical Development Agency (ADA) and Gas Turbine Research Agency (GTRE).

If space sector can be a success story in the country, there is no reason why aviation sector cannot. Public private partnership between ISRO and Godrej is also an example to learn from. Space assets and satellites are mostly dual use platforms. Similarly, aviation sector in India lends itself to combining the buying power of private sector as well. In the next decade or so, India is forecast to acquire over a thousand commercial aircraft. Our armed forces too want to buy roughly same number of fixed and rotary wing aircraft put together. At a national level, we would do well to leverage this aspect to our advantage. On the converse, India must be the only country that holds separate air shows for military and civil sectors. Even developed countries have combined air shows and efforts.

Need Greater Participation of Services

When armed forces draw up their criteria for acquisition of modernisation equipment, they would want the best possible. To be told to take ownership of an Indian product and put it through incremental product improvements, there will be a requirement to introduce changes in rules in a big way. For decades, our defence needs have been serviced largely by public sector that works in silos. It is time to synergise the silos, and enhance the user interface. Services should be put in the lead, making them accountable, albeit with adequate authority.

Public sector is a huge asset, only in need of optimisation. Public sector is a repository of significant amount of technology transfers, has huge infrastructure in terms of plant, equipment, experience and skilled human resource. Great potential, that best practices can optimise well. We would do well to move seriously on corporatisation of ordnance factories, making defence PSUs competitive, and try PPP models like government owned company operated (GOCO).

Private Sector Participation

Transformational reforms are required to get private industry to participate as an equal not only in defence manufacture but in R&D as well. This will mean incentivising R&D by private sector. Even after conditions are made favourable for private sector's participation in defence sector, they will need technology, which is a serious shortcoming in our country. To bridge this technology gap, a 'Strategic Partnership' scheme has been launched for big platforms, so that private sector can leapfrog to better technology by collaborating with defence majors in the world, the original equipment manufacturers (OEMs).

Similarly, in low tech manufacturing segment too, we could adopt more of a joint venture (JV) approach with foreign manufacturers, where required. A good example is manufacture of rifles in India as a JV with Kalashnikov. Although that is a JV with ordnance factories, similar model can be followed by private industry for low tech- high population weapons, equipment or even ammunition. These have huge scope for export as well. The 'Buy Global – Manufacture in India' category introduced in DPP 2020 should be able to address that.

Recently, two Defence Industrial Corridors have been announced by the govt, one each in Uttar Pradesh and Tamil Nadu. Together with these measures and more, defence industry can actually drive the 'Make in India' growth story, if we kick-start the private sector entry into defence manufacturing, R&D and exports, as well as public private partnership.

(Lt General Satish Dua is a former Corps Commander in Kashmir, who retired as Chief of Integrated Defence Staff.)

<https://theprint.in/opinion/indias-approach-to-defence-indigenisation-has-basic-flaws-private-players-can-up-the-game/390157/>



Sun, 29 March 2020

North Korea fires missiles into sea, criticized by South

In recent weeks, North Korea has fired a slew of missiles and artillery shells in an apparent effort to upgrade its military capability amid deadlocked nuclear talks with the United States

North Korea on Sunday fired two suspected ballistic missiles into the sea, South Korea said, calling it "very inappropriate" at a time when the world is battling the coronavirus pandemic.

South Korea's Joint Chiefs of Staff said it detected the projectiles flying from the North Korean eastern coastal city of Wonsan into the waters between the Korean Peninsula and Japan on Sunday morning.

The projectiles flew about 230 kilometers (143 miles) at a maximum altitude of 30 kilometers (19 miles), the statement said.

South Korean and U.S. intelligence authorities were analyzing more details of the launches.

The military described them as "very inappropriate" because they occurred while the world is grappling with the coronavirus outbreak. It urged North Korea to stop such military action.

In recent weeks, North Korea has fired a slew of missiles and artillery shells in an apparent effort to upgrade its military capability amid deadlocked nuclear talks with the United States. The talks remain stalled since the breakdown of a second summit between North Korean leader Kim Jong Un and President Donald Trump in Vietnam in early 2019.

The weapons launched recently were all short range and didn't pose a direct threat to the U.S. homeland. North Korea hasn't carried out nuclear or long-range missile tests since it began nuclear diplomacy with the United States in 2018. A resumption of a major weapons test by North Korea could completely disrupt the negotiations, some experts say.

North Korea also has been engaged in an intense campaign to prevent the spread of the coronavirus that has infected more than 660,000 worldwide.

North Korea has repeatedly said there hasn't been a single virus outbreak on its soil, a claim questioned by foreign experts. Many experts say an outbreak in North Korea could be dire because of its chronic lack of medical supplies and poor health care infrastructure.

A week ago, North Korea said Trump sent a personal letter to Kim, seeking to maintain good relations and offering cooperation in fighting the outbreak. A North Korean state media dispatch didn't say whether Trump mentioned any of the latest weapons tests by the North.

<https://indianexpress.com/article/world/north-korea-fires-missiles-into-sea-6336771/>



Sat, 28 March 2020

Covid-19 vaccine: Research on at Oxford lab, clinical trial on humans soon

By Chethan Kumar

Bengaluru: University of Oxford researchers working in vaccine development effort to prevent Covid-19 have started screening healthy volunteers (aged 18-55) for their upcoming ChAdOx1 nCoV-19 vaccine trial in the Thames Valley Region.

The trial has been approved by UK regulators and ethical reviewers and interested candidates will have to volunteer for the programme.

"The team will enrol healthy volunteers aged between 18 – 55, who, if they pass screening, will be the first humans to test the new vaccine, called ChAdOx1 nCoV-19," the varsity said in a statement.

The trial will provide valuable information on the safety aspects of the vaccine, as well as its ability to generate an immune response against the virus.

The trial — collaboration between the University's Jenner Institute and Oxford Vaccine Group clinical teams — will recruit up to 510 volunteers.

They will receive either the ChAdOx1 nCoV-19 vaccine or a control injection for comparison.

"Whilst the team will start screening people now to see if they are eligible to take part in the study, participants will not receive the vaccine for some weeks," the statement added.

Detailed pre-clinical work is being done and the vaccine is being manufactured to clinical grade standard at the Clinical Biomanufacturing Facility at Oxford University.

Researchers are working as quickly as possible to get the vaccine ready to be used in the trial, which includes further preclinical investigations and production of a larger number of doses of the vaccine.

Professor Adrian Hill, Director, Jenner Institute at the University of Oxford, said: "...Vaccines are being designed from scratch and progressed at an unprecedented rate. The upcoming trial will be critical for assessing the feasibility of vaccination against COVID-19 and could lead to early deployment."



Professor Andrew Pollard, Chief Investigator on the study, said, that starting the clinical trials is the first step in the efforts to find out whether the new vaccine being developed at Oxford University works and could safely play a central role in controlling the pandemic coronavirus that is sweeping the globe.

Scientists around the world are working hard to develop a vaccine to prevent COVID-19, but there is a lot to be done. The Oxford team led by Professor Sarah Gilbert, Professor Andrew Pollard, Professor Teresa Lambe, Dr Sandy Douglas and Professor Adrian Hill started work designing a vaccine on Friday 10th January 2020.

The vaccine is an adenovirus vaccine vector (ChAdOx1) and was developed at Oxford's Jenner Institute. It was chosen as the most suitable vaccine technology for a SARS-CoV-2 (COVID-19) vaccine as it can generate a strong immune response from one dose and it is not a replicating virus, so it cannot cause an ongoing infection in the vaccinated individual.

This also makes it safer to administer to children, the elderly and anyone with a pre-existing condition such as diabetes. Adenoviral vectors are a very well-studied vaccine type, having been used safely in thousands of subjects, from 1 week to 90 years of age, in vaccines targeting over 10 different diseases.

According to Oxford University's press release, preclinical evaluation of its ChAdOx1 nCoV-19 vaccine is being conducted in parallel to Phase 1 in collaboration with the US Rocky Mountain Laboratories and through the 'CSIROxbridge Consortium'.

"The 'CSIROxbridge Consortium' (Principal Investigator Professor S.S. Vasan) is led by Australia's science agency CSIRO for 'High Containment Studies to Support Product Development' for CEPI", the University has said. Rocky Mountain Laboratories specialises in primate research, while the CSIRO team was the first in the world to establish the ferret model as reported by TOI. The efficacy data from ferrets and primates along with Phase 1 human safety data will be critical for this vaccine to advance to Phase 2 human trials in the coming months.

<https://timesofindia.indiatimes.com/world/uk/oxford-attempting-to-develop-covid-19-vaccine-clinical-trial-on-humans-soon/articleshow/74852453.cms>



Sun, 29 March 2020

Boost to early detection of coronavirus patients

Healthy lungs will help doctors and paramedical staff to identify such cases at an early stage

By Andrew W. Lyngdoh

A team of researchers are working on developing an artificial intelligence-based terahertz radiation (T-Ray) scanning unit to address the limitation of infrared thermal scanner in accurate and early detection of coronavirus patients.

The researchers, Moumita Mukherjee, associate dean, Adamas University (Calcutta), and formerly associated with DRDO centre, and Dinesh Bhatia, associate professor, biomedical engineering, department of the North Eastern Hill University (Nehu), Shillong, and their collaborative research group are currently working on the scanning unit.

Mukherjee and Bhatia said the unique absorption fingerprint of T-Ray radiation in lungs and the contrast thermal image of affected and healthy lungs will help doctors and paramedical staff to identify such cases at an early stage when the patient is apparently asymptomatic and not showing any virus symptoms.

While Bhatia is helping in the analysis and extraction of biomedical images by incorporating artificial intelligence, Mukherjee is looking after the design and implementation of the device/ product.

Bhatia said the T-Ray thermography is a potential alternative to thermal infrared scanners and CT imaging for early detection and safe monitoring of Covid-19 patients.

He pointed out that with a very limited supply of Covid-19 test kits in India and the rest of the world, people with mild symptoms are less likely to be tested.

“This leaves many people in the dark as to whether cold-like symptoms are just the sniffles, or a mild case of novel coronavirus making them potential source of spreading the contagious virus in society,” Bhatia said.

He pointed out that thermal screening or infrared-based devices have major limitations in accurately identifying asymptomatic individuals carrying the virus and such cases go undetected.

Stating that an alternative is required, Bhatia said to prevent spread of any infectious communicable disease, an early disease diagnosis and monitoring were important not only for prompt implementation of treatment, but also for patient isolation and effective public health surveillance, containment to avoid spread of contagious disease and ensuring quick medical response.

“To detect the virus at an early stage and help in isolating such individuals by following the principle of social distancing or self-quarantine at their homes for a period of 14-20 days, may help in preventing spread of this severe communicable disease,” he pointed out.

He said that near “patient care” or near POC assays that test for SARS-CoV-2 are currently in the development stage and are awaiting approval by different regulatory agencies.

He explained that the fundamental physics behind the bio-medical diagnosis with T-Ray depends on the distribution of water content in cell and bio-molecules, which could be employed for screening of body organs such as lungs for diagnosing respiratory infections.

The application of terahertz imaging tool in such investigations has not yet been employed by any research group, he added.

Bhatia said the product would be cost-effective, which will allow quick diagnosis with accurate screening and monitoring of mass population. “Our extensive research is showing a ray of hope in easy identification, followed by safe monitoring of Covid-19 patients worldwide,” he added.

<https://www.telegraphindia.com/states/north-east/boost-to-early-detection-of-coronavirus-patients-in-shillong/cid/1760058>