2020

समाचार पत्रों से चयित अंश

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COVID-19: DRDO's Contribution

ZEENEWS

Mon, 13 April 2020

इंदौर में बन रही PPE किट से दूर होगी किल्लत, DRDO ने भी किया प्रमाणित

पुरषोत्तम ने 5 कंपनियों से बात कर इन किटों को बनवाना शुरु किया था। हालांकि पहले प्रति दिन सिर्फ 2000 किट ही बन रही थी, लेकिन अब प्रति दिन 7,000 तक किट बन रही हैं।

सत्यप्रकाश

भोपाल: कोरोना वायरस की वजह से पर्सनल प्रोटेक्टिल इक्विपमेंट (PPE) किट की कमी पूरे देश में हो गई है। क्योंकि कोरोना संक्रमण के इलाज में लगे डॉक्टर्स और नर्स की सुरक्षा के लिए इसकी मांग में वृद्धि हुई है। मध्य प्रदेश राज्य में पीपीई किट की कमी न हो इसके लिए राज्य सरकार ने 1 लाख 50 हजार किट बनाने का ऑर्डर दिया था। हालांकि अभी तक पूरे प्रदेश में सिर्फ 50 हजार किट की ही सप्लाई हो पाई है।

कोरोना वायरस के शुरुआत में प्रदेश में पीपीई किट नहीं होने की वजह से डॉक्टर्स और नर्स सर्जरी किट पहनकर इलाज कर रहे थे। जिसकी वजह से इंदौर में 40 से ज्यादा डॉक्टर्स और नर्स कोरोना के शिकार हो गये। इनमे से 2 डॉक्टरों की मौत भी हो चुकी है। डॉक्टरों पर कोरोना संक्रमण का खतरा बढ़ता देख राज्य सरकार ने इंडस्ट्रियल डेवलपमेंट कारपोरेशन के प्रबंध संचालक कुमार पुरुषोत्तम को पीपीई किट तैयार करने की जिम्मेदारी सौपी थी। पुरुषोत्तम ने 5 कंपनियों से बात कर इन किटों को बनवाना शुरु किया था। हालांकि पहले प्रति दिन सिर्फ 2000 किट ही बन रही थी, लेकिन अब प्रति दिन 7,000 तक किट बन रही हैं।

बता दें कि पूरे दुनिया में पीपीई किट की भारी कमी थी, जिसकी चेतावनी WHO ने पहले दी दे थी। चेतावनी देते हुए WHO ने कहा था कि अगर सभी देशों में पीपीई किट की कमी को दूर नहीं किया गया तो डॉक्टर्स और नर्स को भी कोरोना वायरस संक्रमण का खतरा बढ़ जाएगा। लेकिन फिर भी कई देशों ने इसकी अनदेखी की। जिसकी वजह से डॉक्टर्स और नर्स आज बिना पीपीई किट के ही काम करने को मजबूर हैं।

हालांकि प्रदेश के इंदौर जिले में बन रहे किट को डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गनाइजेशन (DRDO) ग्वालियर ने प्रमाणित कर दिया है। अब यह किट जल्द ही राज्य में कोरोना संक्रमित मरीजों का इलाज कर रहे डॉक्टर्स और नर्स को उपलब्ध होगी।

छत्तीसगढ़ की बात करें तो राज्य में बाकि राज्यों की अपेक्षा कोरोना से संक्रमित मरीजों की संख्या कम है। लेकिन इसकी तादाद बढ़ने की आशंका है, ऐसे में सबसे बड़ा सवाल ये उठ रहा है कि अगर मरीज ज्यादा होते हैं तो क्या इसके लिए सरकार स्तर पर तैयारी है, खासतौर पर जो डॉक्टर या मेडिकल स्टाफ मरीजों के देख-रेख में हैं उनके बचाव के पर्याप्त इंतजाम है।

सूत्रों की माने तो प्रदेश में बड़े पैमाने पर पीपीई किट की जरुरत को स्वास्थ्य विभाग भी महसूस कर रहा है, बावजूद इसके अभी तक बड़ी तादाद में किट की खरीदी नहीं हो पाई है, हालांकि राज्य सरकार के आदेश के बाद ढाई लाख पीपीई

किट के लिए टेंडर जरूर खोल दिए गए हैं। उम्मीद की जा रही है कि इन किटों की खरीददारी 14 अप्रैल से शुरू हो जायेगी।

मौजूदा वक्त के लिए स्वास्थ्य विभाग पर्याप्त किट का दावा जरूर कर रहा है, लेकिन स्वास्थ्य विभाग से मिली जानकारी की मानें तो छत्तीसगढ़ स्वास्थ्य महकमे के पास करीब 5 हजार पीपीई किट ही मौजूद है।

स्वास्थ्य मंत्री टीएस सिंहदेव की माने तो पीपीई किट के लिए टेंडर निकाला जा चुका है, जल्द ही पीपीई की खरीदी की जाएगी, इसके अलावा रैपिड टेस्ट किट की भी खरीदी होगी, स्वास्थ्य मंत्री ने बताया कि हमारे पास अलग अलग कंपनीयों के प्रस्ताव आए हैं। PPE उच्च गुणवत्ता का खरीदा जाएगा।

https://zeenews.india.com/hindi/india/madhya-pradesh-chhattisgarh/madhya-pradesh-indore-ppe-kit-certified-by-drdo-gwalior/666747

DALAL STREET INVESTMENT JOURNAL

Mon, 13 April 2020

ITI inks deal with DRDO; stock opens 17 per cent higher

By Pratik Shastri

The public sector undertaking in telecommunication technology firm, ITI Ltd opened as high as 16 per cent intraday on Monday after it reported production of ventilators. In a fight against the deadly Coronavirus the company set to put in its efforts by manufacturing portable ventilators, the company said in a press release to the stock exchanges.

The press note submitted by the company said that, Defence Research and Development Organisation (DRDO) and ITI would very soon get into a deal to produce portable ventilators. If all things right, the ventilators would be a first of its kind in India. DRDO will be transferring the technology to the company, followed by tests procedures to enable manufacturing of ventilators.

The management is confident about the company's ability looking and would undertake the manufacturing process at Bengaluru. The company further said that, it will be able to produce portable ventilators within the next 30 to 60 days, though, the component sourcing can be challenging. The signing of memorandum of understanding (MoU) with DRDO is expected in the coming week.

At operating level, owing to a strong order book of nearly Rs 20,000 crore, the company is expected to continue with a growth momentum of touching 35 per cent growth rate.

At the first tick, ITI Ltd traded at Rs 85 per share with gains of 17 per cent on BSE.

https://www.dsij.in/DSIJArticleDetail/ArtMID/10163/ArticleID/12384/ITI-inks-deal-with-DRDO-stock-opens-17-per-cent-higher

COVID-19: DRDO/ IAF Contribution

STATE TIMES

Mon, 13 April 2020

IAF fully supporting fight against coronavirus

New Delhi: Indian Air Force (IAF) is always ready 24×7 to undertake any task for complementing efforts of the Government of India to contain spread of the novel coronavirus. All efforts are being made to ensure timely delivery of the essential medical supplies and ration to nodal points of various States, thereby equipping the state governments and supporting agencies to combat the contagion effectively and efficiently.

During the last few days, IAF airlifted essential medical supplies and commodities from nodal points to various States across the country including Maharashtra, Kerala, Telangana, Nagaland and the Union Territories of J&K and Ladakh.

Indian Air Force flew dedicated sorties for DRDO and airlifted around 9,000 Kg of raw material from various nodal points for producing PPEs at the production facilities of DRDO. It also airlifted N95/99 Masks manufactured by DRDO.

Meanwhile, IAF is ensuring that all necessary precautions as specified by the Government of India to prevent the spread of the contagion, are put in place while undertaking these tasks. IAF is ever ready and geared up to meet all the emerging needs to support the fight against prevailing pandemic situation in the country.

http://news.statetimes.in/iaf-fully-supporting-fight-against-coronavirus/

DRDO Technology

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

Mon, 13 April 2020

DRDO successfully tests upgraded rocket motor for Agni-V ICBM

This test was conducted to qualify the propellant and evaluate the ballistic performance parameters. Various parameters, viz.,, thrust, chamber pressure, igniter pressure, temperature, strain, displacement, vibration and acoustic pressure, were validated and real-time data was recorded.

The pressure-time and thrust-time plots of the rocket motor matched exactly with the prediction. The ballistic performance parameters closely matched with the predicted values.

https://www.defenceaviationpost.com/2020/04/drdo-successfully-tests-upgraded-rocket-motor-for-agni-v-icbm/

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

Mon, 13 April 2020

Lightweight integrated aircrew helmet for Su-30, MiG-21, MiG-29 and Mirage fighters tested

The integrated helmet-mask assembly has been designed to primarily incorporate Helmet Mounted Display and Sight (HMDS) as per user requirement and was subjected to open jet wind blast test at 600 KEAS at DGA, CEAT, France as per MiL 29591/1(AS).

The integrated helmet with internally retractable dual polycarbonate visor system (with EMI/EMC complied pre-amplifier meeting RS-03 test) and pressure breathing oxygen mask has been developed by Defence Bio-Engineering & Electro Medical Laboratory (DEBEL), Bangalore, against specific QRs issued by Indian Air Force.

The helmet-mask assembly was subjected to eight different profiles and has successfully withstood all the tests thereby proving the integrity of Helmet-Mask assembly during ejection. The team led by Dr R Indushekar, Sc 'F', DEBEL with representatives of Air HQ (Flying Clothing Cell), Regional Centre for Military Airworthiness (A/C), Director General Air Quality Assurance (DGAQA), Institute of Aerospace Medicine (IAM), Aircraft and Systems Testing Establishment (ASTE) and development partners from industries M/s Shakti Enterprises and M/s Vega Aviation participated in the successfully tests.

The data obtained from 3-axes head accelerometer, eye pressure sensors, mouth sensor and bending moment and tensile force transducers in the neck (C1 & C7), was analysed by IAM as per the AGARD technique met the neck injury criteria.

https://www.defenceaviationpost.com/2020/04/lightweight-integrated-aircrew-helmet-for-su-30-mig-21-mig-29-and-mirage-fighters-tested/

COVID-19: Defence Forces Contribution

orissadiary.com

Mon, 13 April 2020

Indian Navy hands over in-house portable multifeed oxygen manifolds to visakhapatnam district administration

Visakhapatnam: The in-house designed and manufactured 'Portable Mutlifeed Oxygen Manifold' by Naval Dockyard, Visakhapatnam was handed over to Shri V Vinay Chand, Collector Visakhapatnam by Rear Sreekumar Nair, Admiral Superintendent, Naval Dockyard in presence of Rear Admiral CS Naidu, Command Medical Officer, Eastern Naval Command and Dr PV Sudhakar Principal Andhra Medical College on 09 Apr 20. The entire set up uses an industrial 6-way radial header to enable one jumbo size Oxygen Bottle to supply Oxygen to six patients concurrently. While five sets were handed over to the Collector, balance 20 sets are planned to be progressively supplied over within the next two weeks.

https://orissadiary.com/indian-navy-hands-over-in-house-portable-multifeed-oxygen-manifolds-to-visakhapatnam-district-administration/

NEWS SERVICES DIVISION
ALL INDIA RADIO

Mon, 13 April 2020

Indian Navy supports fight against Covid-19 in Port Blair

The Naval Air Station, Utkrosh and Material Organisation, Port Blair carried out food distribution in Port Blair reaching out to those in need during the Covid-19 crisis.

NAS Utkrosh organised food distribution camp for 155 labourers working for the infrastructural development of the Air Station. The labourers are presently staying in the vicinity of the Air Station.

A team from Material Organisation, Port Blair visited the Vanvasi Kalyan Ashram and distributed cooked meals and dry provisions for the children and staff. Vanvasi Kalyan Ashram is a non profit organization providing food and shelter to adivasi children.

The organization has a unit operating at Port Blair housing around 38 children. The organization also provides lodging facility to poor adivasi families visiting Port Blair for medical treatment. The team also sensitised the children and staff about COVID-19 and the precautions to be exercised during lockdown to avoid spread of the pandemic.

http://newsonair.com/Main-News-Details.aspx?id=385379

ANI
South Asia's Leading Multimedia News Agency

Mon, 13 April 2020

Combatting Covid-19: Indian Army's Eastern Command Headquarters install sanitisation gate to disinfect vehicles

Kolkata: In the wake of coronavirus outbreak, the Eastern Command headquarters of the Indian Army in Kolkata has installed a sanitisation gate to disinfect vehicles entering the premises.

Meanwhile, according to the State Health Department, the total number of active COVID-19 cases stood at 95 in West Bengal on Sunday.

7 deaths due to COVID-19 have been reported in the state till date.

West Bengal Government made it mandatory to cover nose and mouth with a mask or any other available piece of cloth in public places, to avoid transmission of COVID-19. (ANI)

https://www.aninews.in/news/national/general-news/combatting-covid-19-indian-armys-eastern-command-headquarters-install-sanitisation-gate-to-disinfect-vehicles20200412231501/

Defence Strategic: National/International

Business Standard

Mon, 13 April 2020

Conflicting orders from centre and state impact aero manufacturing

Global aerospace giants are continuing work and Indian sub-vendors are required to continue supply of components

By Ajai Shukla

New Delhi: Even after the Tamil Nadu and Karnataka governments issued orders allowing aerospace and defence industries to continue manufacturing work, the comprehensiveness of the countrywide lockdown, and absence of governmental coordination is preventing even a limited return to normal production.

As Business Standard reported ("*Karnataka exempts aerospace and defence firms from Covid-19 lockdown*") a state government circular number CI 06 SPI 2020, dated April 1, "relax(ed) the restrictions imposed on the movement of workers and staff working in these industrial units."

However, aerospace manufacturing companies continue to face severe difficulties in obtaining passes from the Karnataka Police for employees to travel to work.

The police are held back from issuing movement passes by a letter that Home Secretary Ajay Bhalla sent to all state chief secretaries on March 31, complaining that state governments are allowing "exceptions beyond what has been allowed under lockdown measures" by the Centre.

"This amounts to violation of the lockdown measures issued by MHA under the Disaster Management Act, 2005, and may defeat the overall objective of containing the spread of Covid-

19," wrote Bhalla, demanding that state governments must "strictly implement the lockdown measures."

"After numerous visits to the police, we have obtained movement passes for just 10 per cent of our employees so far," says a senior official from an aerospace production company, speaking on condition of anonymity.

Aerospace manufacturers also report another problem stemming from a growing fear of Covid-19: A culture of vigilante citizens, particularly in villages in the outskirts of Bangalore, erecting barriers, stopping vehicles and refusing to allow passengers to proceed. The Karnataka Police is doing little to stop them.

Contacted for comments, the Karnataka Police did not respond.

Meanwhile, pressure for the uninterrupted supply of aerospace components is growing from global aerospace vendors, such as Boeing, Lockheed Martin, Airbus and Bell Textron, which all source components from Indian aerospace manufacturers.

The US federal government wants America's aerospace and defence industry to function as usual. It has cited national security to order the industry's 2.5 million employees to continue reporting for work in many production facilities.

Boeing's multiple production units across the US are continuing to function, except for the one at Puget Sound in Seattle, which builds commercial planes and derivatives; and the production line in Philadelphia that builds the Chinook and Osprey aircraft. This demands uninterrupted supply of components from Indian sub-vendors.

Canadian firm, Bell Textron, has written to its suppliers that its government has deemed it "part of the businesses providing important and essential activities" and "Therefore, Bell needs and expects all suppliers to proceed with diligent completion of open orders to Bell in support of the war fighters…".

Indian aerospace suppliers say there is growing pressure from foreign customers who demand to know, on a day to day basis, what impact the Covid-19 pandemic is having on their supply lines.

Boeing has written to its suppliers that it reserves the right for remedy, as per the terms and conditions of their contract, if interruption in supply from India impacts the discharge of the company's contract requirements.

Indian aerospace firms, mostly based around Bengaluru, are growing suppliers to global aerospace giants. Last year, Boeing sourced over Rs 7,000 crore worth of components and services from over 200 Indian companies, while Airbus sourced over Rs 4,500 crore worth of components and services from some 45 Indian companies.

However, many of these Indian firms worry that a failure to honour existing contracts could result in a flight of business to countries like South Korea – already major aerospace component suppliers – where the governments are ensuring there is no interruption in aerospace component production.

"Our foreign customers cannot pull the plug on India right away. But when production contracts come up for renewal, it will be noted that India was one of the countries from where supply was interrupted," says an aerospace manufacturing chief executive.

https://www.business-standard.com/article/companies/conflicting-orders-from-centre-and-state-govts-hit-aerospace-production-120041201202_1.html

ThePrint

Mon, 13 April 2020

Covid-19 pandemic won't affect S-400 deliveries: Indian Ambassador in Russia

India had signed a $5 billion deal with Russia to buy five units of the S-400 air defence missile systems in October 2018

Moscow**:** All the major military contracts, including the deliveries of S-400 air defence missile systems, between Russia and India will be on schedule and the coronavirus pandemic will have no effect on their timeframe, according to India's top diplomat here.

"I don't think there will be any impact. There has been slight dislocation of a couple of weeks but all the major contracts will be on schedule, we don't anticipate any problem on that," Indian Ambassador to Russia Bala Venkatesh Varma was quoted as saying by the TASS news agency on Saturday.

In October 2018, India had signed a USD 5 billion deal with Russia to buy five units of the S-400 air defence missile systems, notwithstanding warning from the Trump administration that going ahead with the contract may invite US sanctions.

Last year, India made the first tranche of payment of around USD 800 million to Russia for the missile systems.

In February, Deputy Director of the Russia's Federal Service for Military-Technical Cooperation (FSMTC), Vladimir Drozhzhov, said that Moscow will begin the delivery of the S-400 surface-to-air missile systems to India by the end of 2021 and there will be no delay in execution of the project.

"We will fulfil our delivery commitments," Drozhzhov had said, adding that the defence cooperation between the two countries is very robust.

The 'Triumf' interceptor-based missile system can destroy incoming hostile aircraft, missiles and even drones at ranges of up to 400 km.

The S-400 is known as Russia's most advanced long-range surface-to-air missile defence system.

Russia plans to complete the delivery of the fifth regimental set in the first half of 2025.

The US had imposed sanctions on Russia under the stringent Countering America's Adversaries Through Sanctions Act (CAATSA). The law also provides for punitive action against countries purchasing defence hardware from Russia.

https://theprint.in/defence/covid-19-pandemic-wont-affect-s-400-deliveries-indian-ambassador-in-russia/400331/

DefenceNews

Mon, 13 April 2020

S-500 is 'Anti-Space Weapon' that will fundamentally transform Russia's air defences – Fmr Commander

Last month, a subsidiary of S-500 maker Almaz-Antey confirmed that multiple components of the next generation air defence system had been developed and tested, with the completed complex to start testing with the military later this year.

The S-500 is not just a conventional air and missile defence system, but an anti-space weapon whose introduction will fundamentally change Russia's air defence capabilities, says Col. (ret) Sergei Khatylev, former head of the anti-aircraft missile forces of the special forces command of the Russian Air Force.

"The system is capable of solving several tasks, for example, the detection and destruction of conventional aerodynamic targets, airplanes and helicopters, cruise missiles – anything that flies at speeds up to hypersonic. But besides this, the S-500 can shoot down ballistic targets, and not just during the downward portion of their flight, but at all other stages as well. And here the speeds are already cosmic – several km per second," Khatylev said, speaking to the Moskovskiy Komsomolets newspaper.

With its ability to take out targets at a range of up to 600 km and an altitude of nearly 200 km, the S-500 can effectively defend against targets in near space. In other words, "this is an anti-space weapon," Khatylev stresses. "The complex features a partition approach where one locator works on targets flying at maximum altitude, while the other is used for those flying near to the ground at altitudes up to 30 km," he explains. According to the retired commander, the S-500's capabilities will fundamentally alter Russia's missile defences, which, going back to the days of the Cold War, have traditionally been concentrated around Moscow.

"With the advent of a complex like the S-500, we can talk about the anti-missile defence of whole territories. Later, when the production of these systems is increased and they are improved, we'll be able to speak about creating on their basis the aerospace defences of the entire Russian Federation," Khatylev says.

Last month, the Design Bureau for Special Machine-Building, a subsidiary of Almaz-Antey, confirmed that the S-500's launcher, multi-functional locator, missile defence locator command post chassis and transporter units for early warning radar have already been developed, with testing underway. Late last year, Russia's defence ministry reported that state testing would begin in 2020, with deliveries to the military to start in 2025. Russian defence giant Rostec has indicated that the first priority will be to manufacture the system for the Russian military before any talk of exports can even begin.

https://www.defencenews.in/article/S-500-is-%e2%80%98Anti-Space-Weapon%e2%80%99-That-Will-Fundamentally-Transform-Russia%e2%80%99s-Air-Defences-%e2%80%93-Fmr-Commander-830138

THE HINDU

Mon, 13 April 2020

Coronavirus impact | First batch of Rafales likely to fly in late

France severely hit by rising infections and death toll

By Dinakar Peri

New Delhi: The arrival of the first batch of Rafale fighter jets for the Indian Air Force is likely to be delayed by around three months due to the COVID-19 pandemic, as France battles rising infections and deaths, and continuing lockdown restrictions, which have also impacted the training schedule, defence sources said.

"In mid-March there were 8-9 weeks of training left before the first major group could move to India for starting operations here. Some logistic support equipment and test equipment were also to be flown to Ambala beginning April, which is postponed as of now due to the lockdown and restrictions on flights imposed by India," a defence source told *The Hindu* on condition of anonymity.

'No Clear Timeframe'

In addition, the lockdown restrictions are expected to continue in France at least till the end of April due to severity of the outbreak. "So, it is only obvious that we expect corresponding delay," the two sources separately stated.

"Taking in the delay due to the lockdown in France, followed by any restrictions on flights and personnel coming from Europe imposed by India, we could be looking at July[for the arrival of the aircraft]," the first source stated, adding that the timeframe was not clear yet.

In October 2019, on a visit to France for the second India-France ministerial-level annual defence dialogue, Defence Minister Rajnath Singh took formal delivery of the first Rafale jet built for the IAF at the Dassault Aviation's facility in Merignac. The jets were scheduled to arrive in India by May 2020.

In addition, the Defence Ministry had stated that during the dialogue the "French side has agreed to consider the Indian request for 8-10 Meteor missiles to be given to India by 2020 with the first four aircraft".

May 2020 Deadline

In November, Minister of State for Defence Shripad Naik said in a written reply to Parliament that three Rafale aircraft have been handed over to the IAF. By May 2020, 24 IAF pilots along with engineers and technicians were scheduled to be trained on the Indian jets in France. Three IAF pilots and two technical officers were trained earlier on French Air Force (FAF) Rafales as per the terms of the contract.

France has been badly hit by the COVID-19 pandemic with over 90,000 confirmed cases and over 13,800 deaths as on Saturday. It has been under lockdown since March 17. The French armed forces have also been affected with the French Defence Ministry confirming on Friday that 50 crew members onboard their sole aircraft carrier, the nuclear-powered *Charles de Gaulle*, have tested positive.

Diplomatic sources said a civilian staff of Italian origin and two family members with recent travel history had tested positive for COVID-19 at an FAF base outside Paris and the FAF has imposed a series of measures to prevent further spread, including several precautions, curtailed flying and working in shifts.

India has contracted 36 Rafale multi-role fighter jets from France in fly-away condition with 13 India Specific Enhancements (ISE) under a €7.87 billion Inter-Governmental Agreement (IGA) signed in September 2016. As per the IGA, deliveries begin 36 months from signing of contract and will be completed in 67 months.

Last September, the IAF had resurrected the 17 Squadron 'Golden arrows' at Air Force station Ambala which will operate the first Rafale squadron while the second squadron would be based at Hasimara in West Bengal. The Indian standard Rafale with all ISE is operationally expected to be ready latest by September 2021.

https://www.thehindu.com/news/national/coronavirus-impact-first-batch-of-rafales-likely-to-fly-in-late/article31325582.ece

Mon, 13 April 2020

DARPA'S C-130 "Swarm drone mother ship" concept intrigues Indian Air Force

The Defense Advanced Research Projects Agency (DARPA) has been researching several types of swarm drone technology that could be used on the battlefield and According to Pentagon acquisition head Ellen Lord, one particular program has impressed Indian air force (IAF) due to which both the United States and India have discussed collaborating on such efforts to build a relatively low-cost unmanned aircraft that can be launched from a "mother ship" transport aircraft like C-130J which IAF already has in its fleet and then be recovered by the same mother ship after their mission is complete.

IAF also wants to include other "mother ship" transport aircraft like its C-17 fleet as well and primarily talks were held last year between two government officials about collaboration with US Air Force Research Laboratory and India's Defence Research and Development Organization and further talks will likely be held later this year to work on the technicality of the proposed joint venture.

According to DARPA's concept, a jet-powered drone can be launched from the C-130 wing pylons and recovered by using a docking cable and a crane-like recovery arm from the cargo door. DARPA is looking at the drones that can be used as a potential line-of-sight communications link in contested environments where radios could be jammed, as well as use its sensor platforms for surveillance and targeting.

IAF is impressed by the concept and jet-powered swarm drones could be developed under Defense Technology and Trade Initiative, or DTTI which will allow co-production and co-development opportunities for both governments. Each C-130J will be able to launch 4 such Jet powered SWARM drones which can be tasked to perform specific individual tasks and interact with each other using autonomous mode and all can be recovered within 20 minutes.

https://idrw.org/darpas-c-130-swarm-drone-mother-ship-concept-intrigues-indian-air-force/#more-225121

DefenceNews

Mon, 13 April 2020

Pakistan's tactical nuclear weapons a bigger threat to Pakistan itself than India: OpEd

Pakistan is one of the few countries and the only Islamic nation in the world to possess nuclear weapons. Pakistan's nuclear weapons are designed to offset India's huge superiority in conventional forces and deter the adversaries, writes Kyle Mizokami for the National Interest.

Pakistan began developing nuclear weapons after its arch-rival India detonated its first nuclear bomb in 1974. A conservative estimate puts Pakistan's nuclear arsenal around 150 to 180 bombs. In 1998 Pakistan in response to India's second nuclear test detonated five devices in a single day and a sixth one two days later.

To tackle growing Indian threats of punitive cross border strikes, Pakistan focused on developing tactical nuclear weapons. Tactical nuclear weapons or non-strategic nuclear weapons that have a low yield. These weapons unlike large nuclear weapons that are used for destroying large strategic or civilian targets in the enemy's territory are used for destroying military targets on the battlefield.

Pakistan's economy is tiny when compared against India and as such it does not have a defense budget to counter India's vastly superior armed forces with the gulf widening every day. In an all-out ground war, India undoubtedly holds the edge.

India had envisioned launching a counterattack with three Strike Corps of three divisions, all highly mechanised and each including at least one armoured division in case of a Pakistani offensive. However, Pakistani Tactical Nuclear Weapons are meant to thwart India's counterattack in case of a failed Pakistani offensive to halt the advancing Indian troops dead in their tracks.

The idea for having tactical nuclear weapons most probably had its origins in the 1999 Kargil War. After Pakistani forces occupied much of the Indian Territory, the Indian Army mounted an offensive to remove the Pakistani force and regain the lost ground.

Although India was at a disadvantageous position it still managed to win the war and this loss made Pakistan aware of India's conventional superiority and the need to have tactical nuclear weapons. Another reason Pakistan wanted to have tactical nuclear weapons was to thwart India's cold start doctrine, as widely publicised by former Indian National Security Advisor – Ajit Doval.

It became clear that according to a report by Bulletin of Atomic Scientist Pakistan has around 20 -30 transporter-erector-launcher vehicles meant to carry its NASR/HATF short-range tactical nuclear ballistic missiles. Each vehicle can carry two or more NASR missiles.

These missiles are believed to have a range of 43 miles meaning they are more likely to be used for defensive rather than offensive purposes. This also indicates that the nuclear weapons would have a low yield as Pakistan would not want to have its own nuclear weapons with a huge yield detonated on its territory.

However, these weapons should worry Pakistanis more than anyone else. Even if Pakistan calls it tiny weapons to offset India's conventional military might, these are nonetheless nuclear weapons and if used against India will not only invite an unimaginable response from New Delhi but also global condemnation and sanctions from across the world.

Analysts believe that Pakistan would have to use a minimum of 30 kiloton bomb to seriously hurt Indian troops. The wind direction is crucial at the time of detonation. The radioactive particles from a detonation can spread to thousands of miles. Any such detonation on the Pakistani soil and near to a city can kill millions of Pakistanis.

Additionally, a big problem that has struck the Pakistani political and military establishment is regarding the control of such weapons. A political decision may take too much time rendering the use of tactical nuclear weapons futile.

However, the Pakistan Army to avoid such delay has tasked area commanders with the responsibility of using the tactical warheads which has presented another serious question. If an area commander uses these weapons then there may be no turning back as India then would be forced counter-nuke Pakistan. This has exacerbated the command and control challenges.

One of the biggest threats to these Pakistani weapons is from the home and foreign-based insurgents. India and other global powers are especially worried about the nature of security accorded to such tactical weapons and their control system.

Some officials are worried that these weapons may be snatched while they are being transported. Another worry is that the terror groups may be able to plant one of their own sympathisers or they may turn an insider to sympathise with the terrorist cause who in turn may hand them secrets of nuclear technology.

Considering that such weapons present multiple problems from their effective control to protection and to its possible use on Pakistani soil itself and that too without any conclusive evidence of it being a deterrent, the tactical nuclear weapons are more a nightmare than a strategic deterrent.

https://www.defencenews.in/article/Pakistan%e2%80%99s-Tactical-Nuclear-Weapons-A-Bigger-Threat-To-Pakistan-Itself-Than-India-OpEd-830126

StrategyPage
The News as History

Mon, 13 April 2020

Naval Air: Seahawk makes a save

One of the many arms purchase deals signed by the Indians when the American president visited India in February was one for 24 American MH-60R Seahawk ASW (anti-submarine warfare) helicopters. These will cost about $109 million each, which includes accessories, spare parts, tech support and the cost of establishing maintenance facilities for a new type of helicopter. Despite the higher cost India has found American military helicopters the best value for the money. Indians called the purchase a major boost to their naval power. It certainly was because the Seahawks replace elderly Sea King helicopters that had to be retired in the 1990s because they were no longer safe to fly. Even before that The Indian navy had been seeking replacements but the Indian defense procurement bureaucrats and parliamentary politics kept delaying the purchase of replacements. Even the Seahawk deal endured several years of delays before India cleared all the bureaucratic obstacles to finally agree to place an order. The final details on the Seahawk purchase were agreed to in early 2019 but in India the signing of the deal can often be delayed several more years or be delayed indefinitely and then cancelled. Until the purchase contract was signed the construction and delivery of the helicopters could not be scheduled. Fortunately the assembly line for all UH-60 helicopters is still going strong after 41 years. The MH-60 has been in service since 1984 and over 700 have been built so far, most of them in the United States. Some have also been built overseas under license. India will begin receiving their Seahawks in 2021.

India already has some American helicopters in service and on order. In addition to newly ordered MH-60Rs India already has 15 CH-47F heavy transport helicopters on the way and some have recently begun arriving. In addition 22 AH-64E helicopter gunships will began arriving in 2019. The ability of the Americans to deliver quickly is another plus. The Americans take good care of their customers, something that India does not get from Russia, its oldest, and largest supplier. Russia is losing more and more business to foreign (Western) producers. You get what you pay for.

This MH-60R is a navalized version of the 11 ton U.S. Army UH-60. India will use the MH-60Rs for ASW as well as attacks on surface vessels with Hellfire missiles. The ASW involves using computers, sonar, and radar to search for submarines. This work consists of someone staring at a computer display most of the time while manipulating the sensors and computers to detect and

locate subs. Once you have a solid location fix, the MH-60 can launch a torpedo and sink the enemy sub.

The MH-60R uses a sonar that operates in active (broadcasting) and passive (just listening) mode. The sonar system consists of dipping sonar and sonobuoys, which are dropped and communicate wirelessly. The dipping sonar is lowered into the water from the helicopter using an 806 meter (2,500 foot) cable and winch. The MH-60R is also equipped with a radar system for detecting subs on the surface or just beneath the surface. Modern non-nuclear subs often travel just beneath the surface with only the periscope or snorkel (to provide air for the diesel engine and gets rid of the exhaust fumes) above water.

MH-60Rs can also perform SAR (search and rescue) work where, to obtain maximum airtime and carrying capacity, the sonar and all its associated electronics is quickly and temporarily removed. The MH-60 can hover low enough to deploy a line to people in the water and winch people aboard.

For decades the Indian Navy has had problems with procuring new helicopters and the situation kept getting worse. The navy preferred proven foreign models like the MH-60R but their procurement bureaucracy excels at corruption, timidity and an exceptional talent for not getting things done. As a result, Indian warships equipped to handle helicopters have had, for nearly a decade, only 20 percent of the helicopters they are supposed to have. The main deficiency was in importing a suitable medium (10 ton class) helicopters like the U.S. SH-60, Russian Ka-31 and the European EH101 or NH90.

The main source of delays was the Indian effort to build a local design that met navy needs. Indian efforts to develop a local helicopter industry have been plagued by political and bureaucratic bungling. Despite that, after a half-century of effort, India did produce some Indian made naval helicopters, but not yet the heavier types the navy needs for ASW. The closest Indian manufacturers have come to filling navy needs was the locally designed and built 5.5 ton Dhruv. In late 2013 the Indian Navy finally put its first squadron of Dhruvs into service. These were used for patrolling, search and rescue, and anything else the Navy needed, except for those jobs requiring a 10 ton class helicopter. It’s been a difficult journey for the Dhruv. In 2009 the Indian Navy bought six of the Dhruvs for evaluation and did not like what they saw. The main complaints were lack of engine power and poor reliability. These were considered fatal flaws for helicopters meant for SAR and ASW.

Dhruv entered service in 2002 and the Coast Guard and the other services got a few of them for evaluation. The army actually bought 40 Dhruvs without thoroughly testing them. This purchase was made under intense pressure from the government to "buy Indian". Then the army discovered that, although the purchase contract stipulated that the Dhruv be able to operate at high altitudes (5,000 meters/16,000 feet), its engine (as the navy noted) was underpowered and could not handle high altitudes. So the army has to keep its older helicopters in service until the Dhruvs were upgraded.

The Dhruv can carry up to 14 passengers or four stretchers. Max load is 1.5 tons and endurance is about two hours, depending on load and altitude. The Dhruv can also fly as high as 6,000 meters (nearly 20,000 feet). Northern India has a lot of mountains, so operating at high altitude was a key design requirement.

The 5.5 ton Dhruv has had a lot of problems and by 2009, a series of crashes indicated some basic design flaws which the manufacturer insisted did not exist. The Navy disagreed. Although it is Indian made, until 2010, the Dhruv was assembled mostly (90 percent) with imported parts. The manufacturer had kept quiet about this because at least half the parts in "Indian made" weapons are supposed to be made in India. Since then the percentage of Indian made components has increased. As embarrassing as this revelation was, there were other problems that were more crucial.

The primary goal of the MH-60R was to about 30 elderly Indian Sea Kings. MH-60s have replaced Sea Kings in many countries. The Sea Kings were a 1950s American design and the Indian Navy began receiving them from a British manufacturer in 1972. The last of 42 Sea Kings ordered arrived in the mid-1980s. As the Sea Kings got older they required more maintenance and

a growing number were too worn out to repair. Only six were lost to accidents and most were retired because of old age. The last few that were still flyable only had a few years of useful life left. The U.S. is the main source of spare parts as most other suppliers have ceased production because so few Sea Kings are still in service.

The Sea Kings have a max speed of 209 kilometers an hour, max load of 3.5 tons, max altitude of 3,500 meters (11,500 feet) max range of 1,200 kilometers and max endurance of about six hours. The MH-60R has a max speed of 270 kilometers an hour, max load of 1.9 tons, max altitude of 3,500 meters (11,500 feet), max range of 830 kilometers and max endurance of about four hours.

The MH-60R entered service in 1984 as the SH-60. Most American military helicopters (UH-60, HH-60, MH-60) are militarized versions of the Sikorsky S-60, a 1970s design that won the competition to replace the older UH-1 "Huey". The UH-60 (for the army) was introduced in 1979. The latest version, the 11 ton UH-60M can carry 14 troops, or 1.1 tons of cargo internally, or four tons slung underneath. Cruise speed is 278 kilometers an hour. Max endurance is two hours, although most sorties last 90 minutes or less. Max altitude is 5,790 meters (19,000 feet). The army currently has about 2,000 UH-60s and has upgraded the force with the new "M" model and upgraded many of the older L models to the V standard. This includes a lot of the new electronic features of the M model. The M model has also been upgraded to the “improved UH.60M.” So far, about 4,000 UH-60 type helicopters have been built, mostly for the U.S. military.

One reason the MH-60 is so popular is because the UH-60s have accumulated so many flight hours that there are many current or former pilots and so many people with experience maintaining it. Plus there are so many UH-60s still flying that its spare parts are not only cheaper but are going to be available for a long time. None of the Russian or West European competitors have these advantages and India made the most of that. As a bonus for all their foreign purchases India demands some co-production or license manufacturing in India. For the MH-60 Indian firms will build some MH-60 components. This involves Indian firms qualifying for such status because those components must be built to work in any MH-60. That means if an American warship was near India and had a MH-60 that needed a part that the Indians produced, they could arrange to procure the part from India and keep their MH-60 flying. That rarely happens but these foreign parts suppliers can sell to the American manufacturer of the MH-60 or a country that is building the MH o UH-60 under license. In some cases foreign producers of aircraft components are major suppliers of certain aircraft assembled in the United States or elsewhere. In this way India improves its ability to eventually build helicopters, ships or warplanes to Western standards. It’s a slow process and the Chinese have moved much more quickly at climbing that ladder and are able to produce more capable ships, aircraft and all manner of weapons than India can.

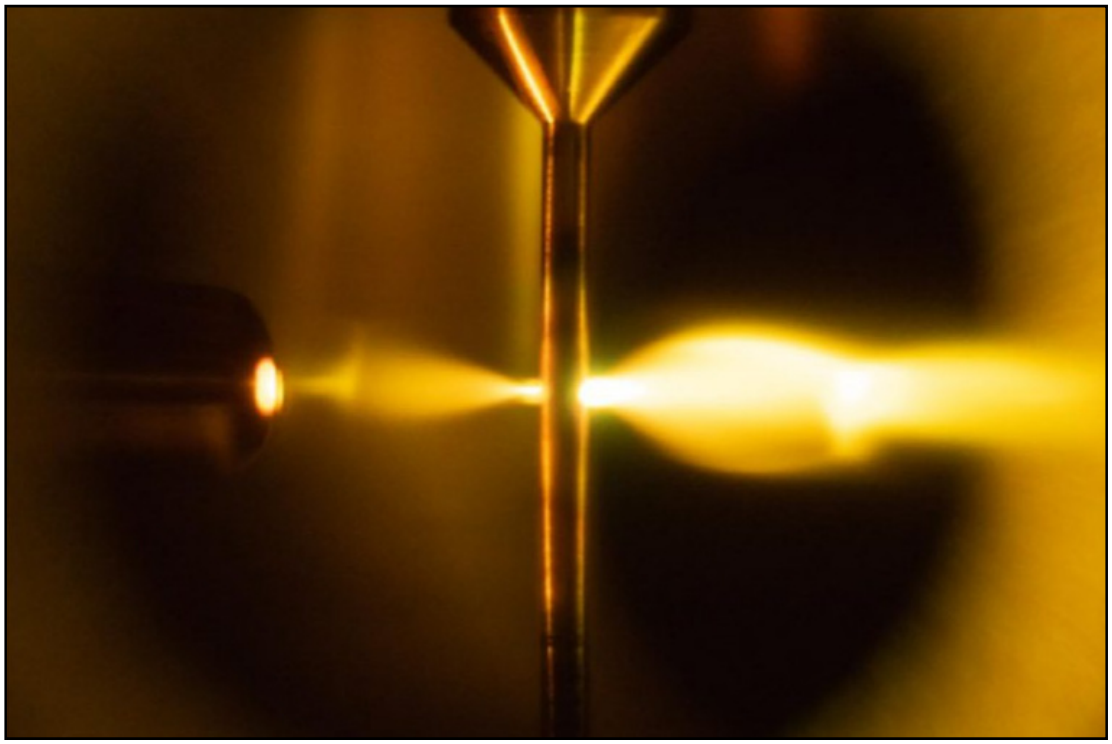
https://www.strategypage.com/htmw/htnavai/articles/20200412.aspx

Mon, 13 April 2020

X-Ray vision through the water window enables new generation of attosecond technology

By ETH Zurich Department of Physics

ETH physicists have developed the first high-repetition-rate laser source that produces coherent soft x-rays spanning the entire 'water window,' heralding the beginning of a new generation of attosecond technology. This technological breakthrough should enable a broad range of studies in the biological, chemical and material sciences as well as in physics.



The photograph is taken during the high-harmonic-generation process in the high-pressure gas cell, with the mid-?infrared input arriving on the right and the soft x-?ray output appearing on the left.
Credit: ETH Zurich/D-PHYS Keller group

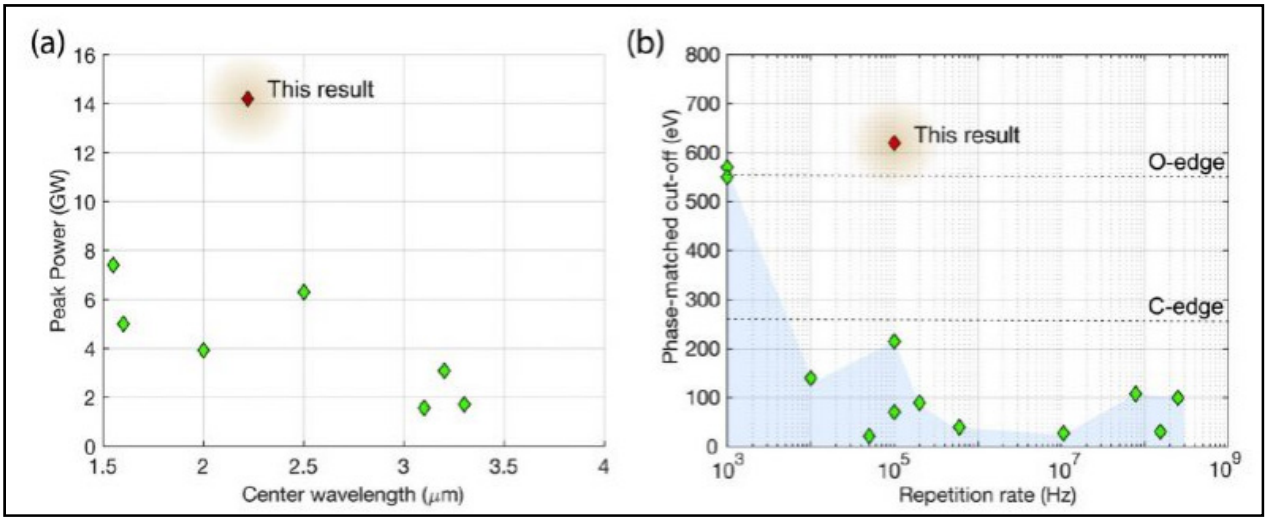
The ability to generate light pulses of sub-femtosecond duration, first demonstrated some 20 years ago, has given rise to an entirely new field: attosecond science and technology. Table-top laser systems have emerged that enable studies that for decades were but a distant dream — to follow, image and characterize electronic processes in atoms, molecules, and solids on their natural, attosecond timescales. The laser systems that make such studies possible typically operate in the extreme ultraviolet spectral band. There has long been a push to achieve higher photon energies though. Of particular interest is the 'water window', occupied by soft x-ray radiation with wavelengths between 2.2 and 4.4 nm. That spectral window owes its name, and importance, to the fact that at those frequencies, photons are not absorbed by oxygen (and hence by water), but they are by carbon. This is ideal for studying organic molecules and biological specimens in their natural aqueous environment. Today, a handful of attosecond sources spanning this frequency range exist, but their applicability is limited by relatively low repetition rates of 1 kHz or below,

which in turn means low count rates and poor signal-to-noise ratios. Writing in *Optica* [1], Justinas Pupeikis and colleagues in the Ultrafast Laser Physics group of Prof. Ursula Keller at the Institute for Quantum Electronics report now an essential leap to overcome the limitations of the prior sources. They present the first soft-x-ray source that spans the full water window at 100 kHz repetition rate — a hundredfold improvement compared to the state-of-the-art sources.

A Boost in Technological Capability

The bottleneck in producing soft x-rays at high repetition rates has been the lack of suitable laser systems to drive the key process underlying attosecond-pulse generation in table-top systems. That process is known as high-harmonic generation, and it involves an intense femtosecond laser pulse interacting with a target, typically an atomic gas. The nonlinear electronic response of the target then causes the emission of attosecond pulses at an odd-order multiple of the frequency of the driving laser field. To ensure that that response contains x-ray photons spanning the water-window range, the femtosecond source has to operate in the mid-infrared range. Also, it has to deliver high-peak-power pulses. And all of that at high repetition rates. Such a source did not exist so far.

Pupeikis *et al.* took up the challenge and systematically improved a layout they had already explored in earlier work [2], based on optical parametric chirped pulse amplification (or OPCPA for short). They had established before that the approach is promising with a view to realizing high-power mid-infrared sources, but substantial improvements were still needed to reach the performance required for the high-harmonic generation of x-ray photons in the water window. In particular, they pushed the peak power from previously 6.3 GW to 14.2 GW, and they reached an average power of 25 W for pulses just a bit longer than two oscillations of the underlying optical field (16.5 fs). The peak power demonstrated is comfortably the highest reported to date for any high-repetition-rate system with a wavelength above 2 μm (see the figure, panel a).



Ready for the x-ray room

With this level of performance at their disposal, the team was ready for the next stage, frequency upconversion through high-harmonic generation. For that, the output beam of the OPCPA was routed via a periscope system to another laboratory more than 15 m away, to accommodate for local lab-space constraints. There, the beam met a helium target, kept at a pressure of 45 bar. Such high pressure was necessary for phase-matching between the infrared and the x-ray radiation, and thus optimal energy-conversion efficiency.

All pieces carefully put in place, the system indeed delivered. It generated coherent soft x-ray radiation extending to an energy of 620 eV (2 nm wavelength), covering the full water window — a stand-out achievement relative to other high-repetition-rate sources in this frequency range, see panel b of the figure. (The photograph above is taken during the high-harmonic-generation process in the high-pressure gas cell, with the mid-infrared input arriving on the right and the soft x-ray output appearing on the left.)

A Window of Opportunity

This demonstration opens up a vast spectrum of fresh opportunities. Coherent imaging in the water-window spectral region, highly relevant for chemistry and biology, should be possible with a compact setup. At the same time, the high repetition rate available helps, for instance, addressing the limitations due to space-charge formation which plague photoemission experiments with pulsed sources. Moreover, the 'water window' comprises not only the K-edges of carbon, nitrogen, and oxygen, but also the L- and M-edges of a range of metals, which can now be studied with higher sensitivity or specificity.

With such bright prospects, the realization of the source now presented heralds the beginning of the next generation of attosecond technology, one where experimentalists for the first time can make combined use of high repetition rates and high photon energies. An attosecond beamline designed to exploit these new capabilities is currently under construction in the Keller lab.

References:

1. "Water window soft x-ray source enabled by a 25 W few-cycle 2.2 µm OPCPA at 100 kHz" by J. Pupeikis, P.-A. Chevreuil, N. Bigler, L. Gallmann, C. R. Phillips and U. Keller, 7 February 2020, *Optica*. DOI: 10.1364/OPTICA.379846
2. "High-power OPCPA generating 1.7 cycle pulses at 2.5 µm" by N. Bigler, J. Pupeikis, S. Hrisafov, L. Gallmann, C. R. Phillips and U. Keller, 28 September 2018, *Optica*. DOI: 10.1364/OE.26.026750

https://scitechdaily.com/x-ray-vision-through-the-water-window-enables-new-generation-of-attosecond-technology/

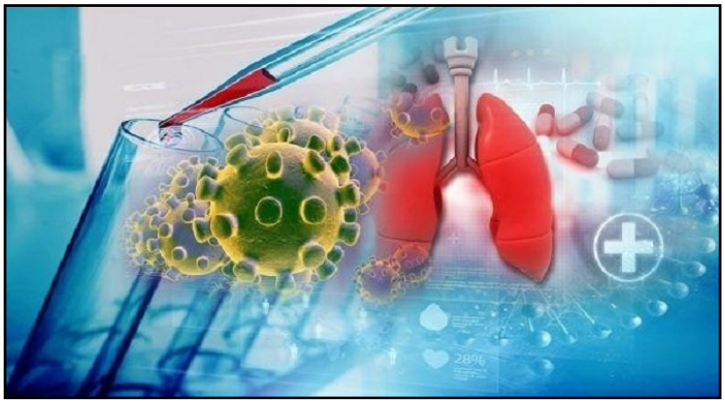
COVID-19 Research

The Hitavada

Mon, 13 April 2020

Experts in India isolating genes encoding antibodies to neutralise Covid-19

New Delhi: AN anti-COVID consortium of experts with the assistance of Department of Biotechnology is working towards producing therapeutic antibodies against COVID-19. In India, one such effort is being led by Vijay Chaudhary at the University of Delhi South Campus-Centre for Innovation in Infectious Disease Research, Education and Training (UDSC-CIIDRET), with the support of the Department of Biotechnology in the Ministry of Science and Technology.



Chaudhary's group is isolating genes encoding antibodies, which can neutralise the SARS-CoV-2, using a large antibody library already available in-house as well as a library made from cells of patients who have recovered from COVID-19 infection. These antibody genes will be used to produce recombinant antibodies in the laboratory, which, if successful in neutralising the virus, will become a perennial source of antibodies against this virus, both for prophylactic and therapeutic purposes. This work is being undertaken as part of an Anti-COVID consortium under the leadership of Chaudhary and involving Amulya Panda at

National Institute of Immunology and Sanjay Singh at Gennova Biopharmaceutical Limited, Pune (GBL). COVID 19 is caused by the novel SARS coronavirus-2 (SARS-CoV-2).

However, a large number of infected people are also recovering despite not having any specific treatment. This is because of antibodies produced within the body in response to the virus invasion. Over the years, passive transfer of antibodies obtained from the plasma of convalescent patients cured of infection has been used for treatment of numerous disease conditions. Today such therapeutic antibodies can be produced in the laboratory by DNA-based recombinant technologies. Efforts are in full swing globally to produce therapeutic antibodies against SARS-CoV-2, a statement by Department of Biotechnology said.

https://www.thehitavada.com/Encyc/2020/4/13/Experts-in-India-isolating-genes-encoding-antibodies-to-neutralise-COVID-19.html

NDTV FULL COVERAGE CORONAVIRUS

Mon, 13 April 2020

Plasma therapy of cured patients' blood can be used in fighting COVID-19: AIIMS Director

Dr Randeep Guleria cured COVID-19 patients' blood can be used to boost the immunity system of other virus-infected patients.

New Delhi: The blood of cured coronavirus patients can be used to treat COVID-19 patients, says Delhi AIIMS director Dr Randeep Guleria. "Conversion plasma is a therapy that is being looked at as an option to treat the patients of COVID-19. If a coronavirus positive patient recovers, then he recovers by his body fighting the infection. To fight the infection, the body produces antibodies that stay in the blood," Dr Guleria told ANI on Sunday.

He said this is the reason the doctors can ask the cured COVID-19 patients to donate their blood to another virus-infected patient to boost his immune system.

"If these antibodies are found to be in high amount in a person who has recovered from the coronavirus, we can ask him to donate his blood. From that blood, we take plasma which has a high concentration of anti-bodies. These antibodies can be transfused to another COVID-19 person, which boost the immune system of sick persons and fight the virus in a better manner," added Dr Guleria.

The plasma therapy was used to deal with viruses like Ebola. It is now being tried in various institutes in India. "If data suggests it is useful, we will use it in the near future," said Dr Guleria.

The Indian Council for Medical Research (ICMR) on Saturday gave approval to Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) to treat COVID-19 patients with 'convalescent-plasma therapy,' which uses immune power gained by a recovered person to treat a sick person.

SCTIMST comes under the Department of Science and Technology.

"Technically called convalescent-plasma therapy, the treatment aims at using immune power gained by a recovered person to treat a sick person. The Indian Council for Medical Research has given approval to SCTIMST for carrying out the novel treatment," said the Ministry of Science and Technology.

https://www.ndtv.com/india-news/plasma-therapy-with-cured-patients-blood-can-be-used-in-fighting-covid-19-aiims-director-2210605

Mon, 13 April 2020

Beijing tightens grip over coronavirus research, amid US-China row on virus origin

By Nectar Gan, Caitlin Hu and Ivan Watson, CNN

Hong Kong (CNN): China has imposed restrictions on the publication of academic research on the origins of the novel coronavirus, according to a central government directive and online notices published by two Chinese universities, that have since been removed from the web.

Under the new policy, all academic papers on Covid-19 will be subject to extra vetting before being submitted for publication. Studies on the origin of the virus will receive extra scrutiny and must be approved by central government officials, according to the now-deleted posts.

A medical expert in Hong Kong who collaborated with mainland researchers to publish a clinical analysis of Covid-19 cases in an international medical journal said his work did not undergo such vetting in February.

The increased scrutiny appears to be the latest effort by the Chinese government to control the narrative on the origins of the coronavirus pandemic, which has claimed more than 100,000 lives and sickened 1.7 million people worldwide since it first broke out in the Chinese city of Wuhan in December.

Since late January, Chinese researchers have published a series of Covid-19 studies in influential international medical journals. Some findings about early coronavirus cases -- such as when human-to-human transition first appeared -- have raised questions over the official government account of the outbreak and sparked controversy on Chinese social media.

And now, Chinese authorities appear to be tightening their grip on the publication of Covid-19 research.

A Chinese researcher who spoke on condition of anonymity due to fear of retaliation said the move was a worrying development that would likely obstruct important scientific research.

"I think it is a coordinated effort from (the) Chinese government to control (the) narrative, and paint it as if the outbreak did not originate in China," the researcher told CNN. "And I don't think they will really tolerate any objective study to investigate the origination of this disease."

CNN has reached out to China's Foreign Ministry for comment.

Increased Scrutiny

According to the directive issued by the Ministry of Education's science and technology department, "academic papers about tracing the origin of the virus must be strictly and tightly managed."

The directive lays out layers of approval for these papers, starting with the academic committees at universities. They are then required to be sent to the Education Ministry's science and technology department, which then forwards the papers to a task force under the State Council for vetting. Only after the universities hear back from the task force can the papers be submitted to journals.

Other papers on Covid-19 will be vetted by universities' academic committees, based on conditions such as the "academic value" of the study, and whether the "timing for publishing" is right.

The directive is based on instructions issued during a March 25 meeting held by the State Council's task force on the prevention and control of Covid-19, it said.

The document was first posted Friday morning on the website of the Fudan University in Shanghai, one of China's leading universities.

When CNN called a contact number left at the end of the notice, a staff member of the Education ministry's science and technology department confirmed they had issued the directive.

"It is not supposed to be made public -- it is an internal document," said the person, who refused to reveal his name.

A few hours later, the Fudan University page was taken down.

The China University of Geoscience in Wuhan also posted a similar notice about the extra vetting on Covid-19 papers on its website. The page has since been deleted, but a cached version of it remains accessible.

The Chinese researcher who spoke to CNN said the notice was issued a few days ago, adding that only Covid-19 research was subject to the additional checks.

David Hui Shu-cheong, a respiratory medicine expert at the Chinese University of Hong Kong, said he did not encounter any additional vetting when he and a team of mainland Chinese researchers published a clinical analysis of Covid-19 cases in the New England Journal of Medicine in February.

"The process was really simple then," he told CNN over the phone.

Hui said he was still revising the draft of the paper until 3 a.m. on the day it was due for submission, and the paper was sent to the NEJM by midday.

"There was completely no restriction at all," he said.

"I don't know if it is because some researchers published something that is considered sensitive domestically in China. (I'm) not sure if it is because of the controversy about the origin of the virus later, and the non-sensitive stuff becomes sensitive too."

Origin of the Virus

In late December, Wuhan reported the first cases of the coronavirus, linked by authorities to a seafood market in the city. Scientists in China and the West have said the virus is likely to have originated in bats and jumped to humans from an intermediate host -- just like its cousin that caused the SARS epidemic in 2002 and 2003.

However, parts of Chinese social media and even the country's government appear to have launched a concerted campaign to question the origin of the virus.

Chinese officials and state media have repeatedly stressed that there has been no conclusion on the exact origin of the virus. Last month, Zhao Lijian, a spokesperson of the Chinese Foreign Ministry, promoted a conspiracy on Twitter that the virus had originated in the US and was brought to China by the US military.

Yanzhong Huang, a senior fellow for global health at the Washington-based Council on Foreign Relations, said the origin of the coronavirus has become a politically sensitive topic in China.

"It is no surprise that the government seeks to control related scientific research so that the findings do not challenge its own narrative on the origin of the virus and the government response to the crisis," Professor Huang told CNN.

"The danger is that when scientific research is subject to the needs of those in power, it further undermines the credibility of the government narrative, making accusations of underreporting and misinformation more convincing."

In China, research papers on the coronavirus are already subjected to layers of vetting after they are submitted to Chinese academic journals, according to an editor at a Chinese medical journal.

Wang Lan, the editorial director of the Chinese Journal of Epidemiology, said all Covid-19 papers have to go through an approval process for "major topics" after being submitted to her journal.

"It has always been the case," she told CNN. "They have to be approved by three levels of organizations. It's a long process."

The Chinese researcher who requested anonymity said under the new restrictions, however, coronavirus research that contradicted the official narrative could be suppressed by Beijing.

"I think the importance is that the international scientific community must realize that any journal or manuscripts from (a) Chinese research institution has kind of been double-checked by the government," said the researcher. "It is important for them to know there are extra steps between independent scientific research and final publication."

CNN's Steven Jiang and Alexandra Lin contributed reporting.

https://edition.cnn.com/2020/04/12/asia/china-coronavirus-research-restrictions-intl-hnk/index.html

theguardian

Mon, 13 April 2020

China clamping down on coronavirus research, deleted pages suggest

Move is likely to be part of attempt to control the narrative surrounding the pandemic

China is cracking down on publication of academic research about the origins of the novel coronavirus, in what is likely to be part of a wider attempt to control the narrative surrounding the pandemic, documents published online by Chinese universities appear to show.

Two websites for leading Chinese universities appear to have recently published and then removed pages that reference a new policy requiring academic papers dealing with Covid-19 to undergo extra vetting before they are submitted for publication.

Research on the origins of the virus is particularly sensitive and subject to checks by government officials, the notices posted on the websites of Fudan University and the China University of Geosciences (Wuhan) said. Both the deleted pages were accessed from online caches.

Prof Steve Tsang, director of the SOAS China Institute in London, said the Chinese government had had a heavy focus on how the evolution and management of the virus is perceived since the early days of the outbreak.

“In terms of priority, controlling the narrative is more important than the public health or the economic fallout,” he said. “It doesn’t mean the economy and public health aren’t important. But the narrative is paramount.”

With the virus having infected more than a million people worldwide and caused heavy casualties particularly across Europe and the US, details about its origin and the first weeks of the pandemic – when there was a cover-up by local officials – may be considered particularly sensitive.

“If these documents are authentic it would suggest the government really wants to control the narrative about the origins of Covid-19 very tightly,” said Tsang of the reports of new regulations.

China University of Geosciences (Wuhan) appears to have published and then deleted new requirements that academic papers dealing with the origins of the virus be approved by China’s ministry of science and technology before publication.

The university’s academic committee was expected to first go through the research “with an emphasis on checking the accuracy of the thesis, as well as whether it is suitable for publication,” the regulation said.

“When the checks have been completed, the school should report to the Ministry of Science and Technology [MOST], and it should only be published after it has [also] been checked by MOST,” it said.

Despite its name, the geosciences university announced elsewhere on its website that it was carrying out coronavirus research.

A separate document obtained by the Guardian, which could not be independently verified, appears to be from the Renmin Hospital of Wuhan University and also said publication of research into the origins of Covid-19 would need approval from the science and technology ministry.

Another notice, which appears to have been published on 9 April by the school of information science and technology at Fudan University in Shanghai, called for "strict and serious" management of papers investigating the source of the outbreak.

Papers could only be submitted for publication after being approved by a special office. Email, names and phone numbers provided on the notice suggested that office was part of China's ministry of education.

A source who alerted the Guardian to cached versions of the websites, and who spoke on the condition of anonymity, said they were concerned by what appeared to be an attempt by Chinese authorities to intervene in the independence of the scientific process.

The person said researchers submitting academic papers on other medical topics did not have to vet their work with government ministries before seeking publication.

A technical analysis of the cached websites indicated that the posts were published on verified university websites before they were removed. The Guardian could not independently verify that they reflected a new government policy.

The notices appear to be part of a broader push to manage research on the virus. The science and technology ministry said on 3 April that ongoing clinical research on the coronavirus must be reported to authorities within three days or be halted.

In March China's president, Xi Jinping, published an essay that included "tracing the origin of the virus" on a list of national priorities. It was referenced by the science and technology ministry shortly before the universities posted their orders.

The Chinese government did not reply to a request for comment sent by the Guardian to the Chinese embassy in Washington.

While the exact origin of the pandemic is still not certain, one commonly held hypothesis is that it began following an interaction between a human and an animal at the Huanan seafood "wet market" in Wuhan.

Scientists have said the virus probably originated in bats and then passed through an intermediary animal before infecting the first human.

Scientists believe the transmission was similar to that in the 2002 outbreak of Sars. Some criticism of China has focused on why the government did not shut down wet markets after the previous outbreaks of coronaviruses.

Kevin Carrico, a senior research fellow of Chinese studies at Monash University, said he was not aware of any specific recent change to rules for academic research in China in connection to Covid-19, but the documents were generally consistent with efforts by China to control the narrative of the pandemic.

"They are seeking to transform it from a massive disaster to one where the government did everything right and gave the rest of the world time to prepare," Carrico said.

Carrico said those efforts had been evident in communications ranging from government pronouncements at the highest level to public sentiment on social media.

"There is a desire to a degree to deny realities that are staring at us in the face … that this is a massive pandemic that originated in a place that the Chinese government really should have cleaned up after Sars," he said.

Around a month ago senior Chinese diplomats, officials and state media all publicly encouraged speculation that the new coronavirus could have come from outside the country. The foreign ministry spokesman Zhao Lijian suggested without evidence that the US military might have brought the virus to Wuhan.

https://www.theguardian.com/world/2020/apr/11/china-clamping-down-on-coronavirus-research-deleted-pages-suggest

BBC

Sun, 12 April 2020

कोरोना वायरसः कोरोना वायरस का टीका बनाने से दुनिया कैसे चूक गई

साल 2002 में चीन के ग्वांझो प्रांत में एक अनजाने से वायरस की वजह से एक महामारी फैली जिसे वैज्ञानिकों ने सार्स (SARS) का नाम दिया था।

मारिया एलीना नवास, बीबीसी न्यूज़

सार्स (SARS) का मतलब था सीवियर एक्यूट रेसपिरेटरी सिंड्रोम यानी ऐसी बीमारी जो सांस की तकलीफ़ का कारण बनती है।

बाद में वैज्ञानिकों ने पता लगाया कि सार्स बीमारी कोरोना वायरस की वजह से होता है और ये जानवरों से शुरू होकर इंसानों तक पहुंच गया।

उस समय ये वायरस कुछ ही महीनों में 29 देशों में फैल गया है, 8000 से ज़्यादा लोग संक्रमित हुए जबकि 800 से ज़्यादा लोगों की जान गई।

तब पूरी दुनिया ये जानना चाह रही थी कि इसका टीका कब तक तैयार हो जाएगा और यूरोप, अमरीका और एशिया के दर्जनों वैज्ञानिकों ने बहुत तेज़ी से इसका टीका तैयार करने पर काम शुरू कर दिया था।

कई उम्मीदवार उभरे थे, उनमें से कुछ ने तो यहां तक कहा कि वे क्लीनिकल ट्रायल के तैयार हैं।

टीका तैयार करने की ज़रूरत

लेकिन तभी सार्स महामारी पर काबू पा लिया गया और कोरोना वैक्सीन पर जारी तमाम रिसर्च बंद हो गए।

कुछ सालों बाद 2012 में एक और जानलेवा कोरोना वायरस मर्स-कोव (मिडल ईस्ट रेसिपेरिटरी सिंड्रोम) का प्रकोप हुआ। ये ऊंटों से इंसानों तक पहुंचा था।

तब भी बहुत सारे वैज्ञानिकों ने इन रोगाणुओं के ख़िलाफ़ टीका तैयार करने की ज़रूरत एक बार फिर से दोहराई।

आज लगभग 20 साल बाद जब नए कोरोना वायरस SARS-Cov-2 ने तकरीबन 15 लाख लोगों को संक्रमित कर दिया है तो एक बार फिर दुनिया में ये सवाल पूछा जाने लगा है कि इसका टीका कब तक तैयार हो जाएगा।

कोरोना वायरस के अतिक्रमण की पिछली घटनाओं से हम सबक क्यों नहीं ले पाए जबकि ये मालूम था कि इसकी वजह से कोविड-19 जैसी जानलेवा बीमारी हो सकती है?

और टीका तैयार करने वाले रिसर्चों को आगे क्यों नहीं बढ़ाया गया।

'हमें दिलचस्पी नहीं है'

लेकिन अमरीका के ह्यूस्टन में वैज्ञानिकों की एक टीम ने कोरोना वायरस के ख़िलाफ़ टीका तैयार करने का काम नहीं छोड़ा था।

साल 2016 में वे लोग अपनी कोशिश में कामयाब हो गए और कोरोना वायरस का वैक्सीन तैयार कर लिया गया।

बेयलर कॉलेज ऑफ़ मेडिसीन के नेशनल स्कूल ऑफ़ ट्रॉपिकल मेडिसीन की को-डायरेक्टर डॉक्टर मारिया एलीना बोट्टाज़्ज़ी ने बीबीसी मुंडो से इस बारे में बात की।

उन्होंने बताया, "हमने ट्रायल्स ख़त्म कर लिए थे और वैक्सीन के शुरुआती उत्पादन प्रक्रिया के अहम पड़ाव से भी गुजर चुके थे।"

डॉक्टर मारिया एलीना बोट्टाज़्ज़ी टेक्सास के बच्चों के हॉस्पिटल के वैक्सीन डेवलपमेंट सेंटर की को-डायरेक्टर भी हैं।

वो कहती हैं, "फिर हम एनआईएच (यूएस नेशनल इंस्टीट्यूट ऑफ़ हेल्थ) के पास गए और पूछा कि 'हम इस वैक्सीन को क्लीनिक तक जल्द पहुंचाने के लिए क्या कर सकते हैं?' और उन्होंने जवाब दिया, 'देखिए, फिलहाल हमें इसे दिलचस्पी नहीं' है।"

जब ये महामारी ख़त्म हो गई

ये टीका साल 2002 में फैली सार्स महामारी के ख़िलाफ़ तैयार किया गया था। चूंकि जिस देश (चीन) में इसकी शुरुआत हुई थी, उस पर वहां काबू पा लिया गया था, इसलिए इस वैक्सीन पर रिसर्च कर रहे वैज्ञानिक और पैसा जुटाने की स्थिति में नहीं रह गए थे।

ऐसा नहीं है कि केवल कोरोना वायरस के टीके की खोज का काम रोक दिया गया था।

दुनिया भर के दर्जनों वैज्ञानिकों को अपनी रिसर्च सिर्फ इसलिए रोक देनी पड़ी कि उसमें लोगों की दिलचस्पी कम हो गई थी और रिसर्च के लिए पैसा जुटाना मुश्किल हो गया था।

यूनिवर्सिटी ऑफ़ पेनसिलवेनिया में माइक्रोबॉयलॉजी की प्रोफ़ेसर सुजैन वीज़ कहती है कि सात-आठ महीने के बाद जब ये महामारी ख़त्म हो गई तो लोगों, सरकारों और दवा कंपनियों की कोरोना वायरस की स्टडी में दिलचस्पी तुरंत ख़त्म हो गई।

वो कहती हैं, "साथ ही सार्स का असर एशिया में ज़्यादा देखने को मिला। कनाडा में इसके संक्रमण के कुछ मामले मिले थे पर ये यूरोप तक नहीं पहुंच पाया जैसा कि इस बार कोरोना वायरस के साथ हुआ। इसके बाद मर्स वायरस आया लेकिन इसका असर मध्य पूर्व तक ही सिमटा रहा। फिर कोरोना वायरस और उसमें लोगों की दिलचस्पी ख़त्म होती चली गई। कुछ दिनों पहले तक यही स्थिति बनी रही। और मुझे सचमुच ऐसा लगता है कि हमें बेहतर रूप से तैयार रहना चाहिए था।"

वैक्सीन तैयार हो जाता तो..

सार्स और मर्स के बारे में विशेषज्ञों का कहना है कि ये दोनों कोरोना वायरस के ख़तरे से आगाह करने वाली ऐसी चेतावनी थी, जिन्हें नज़रअंदाज़ नहीं किया जाना चाहिए था और इसलिए इन पर रिसर्च जारी रखा जाना चाहिए था।

हालांकि डॉक्टर मारिया एलीना बोट्टाज़्ज़ी का वैक्सीन इस समय संक्रमण में प्रचलित कोरोना वायरस के लिए नहीं था बल्कि ये सार्स बीमारी के लिए था।

लेकिन विशेषज्ञ इस बात पर सहमत हैं कि अगर वो वैक्सीन तैयार हो जाता भविष्य की महामारियों के लिए नए टीके का विकास ज़्यादा तेज़ रफ़्तार से किया जाना मुमकिन था।

येल यूनिवर्सिटी में स्कूल ऑफ़ पब्लिक हेल्थ के प्रोफ़ेसर जैसन स्क्वॉर्ट्ज़ कहते हैं कि कोविड-19 की महामारी के ख़िलाफ़ तैयारियां साल 2002 की सार्स महामारी के वक़्त ही शुरू हो जानी चाहिए थी।

उन्होंने कहा, "अगर हमने सार्स वैक्सीन प्रोग्राम बीच में नहीं छोड़ा होता तो नए कोरोना वायरस पर रिसर्च करने के लिए हमारी पास काफी बुनियादी स्टडी उपलब्ध होती।"

कोरोना परिवार का विषाणु

नया वायरस Sars-Cov-2 उसी कोरोना परिवार का विषाणु है जिसने साल 2002 में सार्स महामारी को जन्म दिया था।

डॉक्टर मारिया एलीना बोट्टाज़्ज़ी कहती हैं कि दोनों ही विषाणु आनुवांशिक रूप से 80 फ़ीसदी समान हैं।

"चूंकि उनकी वैक्सीन ने मंज़ूरी की शुरुआती प्रक्रिया पूरी हो गई थी, इसलिए नए कोरोना वायरस के ख़िलाफ़ ये जल्दी ढल सकता था।"

"हमारे पास इसके उदाहरण होते कि ऐसे वैक्सीन कैसा बर्ताव करते हैं और भले ही ये विषाणु अलग-अलग हों लेकिन वे आते तो एक वर्ग से हैं। हमारे पास इस बात का अनुभव होता कि समस्या की जड़ कहां हैं और उसे कैसे हल किया जा सकता है। क्योंकि हमने पहले ये देखा था कि क्लिनिकल ट्रायल की शुरुआत में सार्स वैक्सीन कैसे प्रतिक्रिया कर रहा था और हमें ये उम्मीद है कि नई वैक्सीन भी तकरीबन उसी तरह काम करती।"

'ख़राब कारोबारी पेशकश'

अगर ये सभी जानकारियां अभी मौजूद हैं तो उस वक़्त कोरोना वायरस पर चल रहे रिसर्च क्यों रोक दिए गए? विशेषज्ञों का कहना है कि हर बात इस बात पर निर्भर करती है कि रिसर्च के लिए कितना पैसा मिल रहा है।

डॉक्टर मारिया कहती हैं, "हम सौ डॉलर या एक अरब डॉलर की बात नहीं कर रहे हैं। हम महज 30 से 40 लाख डॉलर की बात कर रहे हैं। 15 लाख डॉलर में हम इंसानों पर इस वैक्सीन के असर की क्लिनिकल स्टडी पूरी कर लेते। लेकिन उन्होंने ऐसे वक़्त में हमारा काम बंद कर दिया जब हम दिलचस्प नतीज़ों तक पहुंचने के क़रीब थे।

बॉयोटेक कंपनी आरए कैपिटल के निदेशक और वीरोलॉजिस्ट (विषाणु विशेषज्ञ) पीटर कोलचिंस्की बताते हैं, "चूंकि इस वैक्सीन के लिए कोई बाज़ार नहीं था, इसलिए इसके लिए पैसा देना बंद कर दिया गया। हकीकत तो ये है कि जब एक बाज़ार होता है तो इसका एक हल भी होता है। आज हमारे पास कोरोना वायरस के लिए सैंकड़ों वैक्सीन हैं लेकिन ये सभी सुअर, मुर्गे-मुर्गी और गाय जैसे जानवरों के लिए हैं।"

ये वो वैक्सीन हैं जो पॉल्ट्री और पालतू पशुओं को बीमारी से बचाने के लिए हैं क्योंकि इनका करोड़ों डॉलर का बाज़ार है। लेकिन इसके बावजूद ये सोचा गया कि इंसानों को अपना शिकार बनाने वाली कोरोना वायरस की महामारी पर काबू किया जा सकता है।

पीटर कोलचिंस्की कहते हैं, "समस्या ये है कि किसी भी कंपनी के लिए ऐसा कोई प्रोडक्ट तैयार करना एक ख़राब कारोबारी पेशकश है जिसका दशकों तक या फिर शायद कभी नहीं इस्तेमाल किया जाएगा। ये उस तरह की चीज़ है जिसपर सरकारों को निवेश करना चाहिए। अगर ये उनकी प्राथमिकता में होता तो मुझे कोई शक नहीं कि सरकारी एजेंसियों ने सार्स महामारी के वैक्सीन पर चल रही रिसर्च को पैसा देना जारी रखा होता। और तब शायद हम कोविड-19 के लिए बेहतर रूप से तैयार होते।"

नई वैक्सीन

आज का सच तो यही है कि हमें कोविड-19 के लिए वैक्सीन चाहिए। इस बात की संभावना कम ही है कि आने वाले 12 से 18 महीनों में शायद ही ये तैयार हो पाए।

और तब तक कोरोना वायरस की महामारी पर शायद काबू ही पा लिया जाए। डॉक्टर मारिया और उनकी टीम 2016 में तैयार किए गए वैक्सीन के अपडेट पर काम कर रहे हैं ताकि कोविड-19 का नया टीका तैयार किया जा सके। लेकिन अभी भी रिसर्च के लिए पैसा जुटाने की मशक्कत उठानी पड़ रही है।

वो कहती हैं, "2016 की वैक्सीन के अपडेट के काम को तेज़ करने के लिए पैसा मिला है। नेशनल इंस्टिट्यूट ऑफ़ हेल्थ ने भी चार लाख डॉलर की रकम दी है। लेकिन हमें इसे और तेज करने के लिए ज़्यादा पैसे की ज़रूरत है। लेकिन ये पूरी प्रक्रिया बहुत निराश करने वाली है।"

https://www.bbc.com/hindi/science-52254921