GOVERNMENT OF INDIA
MINISTRY OF HEALTH AND FAMILY WELFARE
DEPARTMENT OF HEALTH RESEARCH

LOK SABHA
STARRED QUESTION NO. 423
TO BE ANSWERED ON THE 1ST APRIL, 2022

RESEARCH BY ICMR ON COVID-19

†*423. SHRI DINESH CHANDRA YADAV:

Will the Minister of **HEALTH AND FAMILY WELFARE** be pleased to state:

(a) the details of the COVID-19 related research carried out by the Indian Council of Medical Research(ICMR);

(b) the percentage of success of such research activities; and

(c) the amount spent on ICMR during the last three years by the Government, year-wise?

ANSWER
THE MINISTER OF HEALTH AND FAMILY WELFARE
(DR MANSUKH MANDAVIYA)

(a) to (c) A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO LOK SABHA STARRED QUESTION NO. 423* FOR 1ST APRIL, 2022

(a) & (b): **Indian** Council of Medical Research (ICMR), an autonomous body of the Department of Health Research, has been at the forefront in the fight against COVID-19. Some of the major research activities undertaken for COVID-19 are as follows:

I. Testing for COVID-19:

a. In January 2020, ICMR-NIV, Pune standardized the RT-PCR based diagnostic test and was the standalone lab for COVID testing, whereas today there are 3337 labs with testing capacity close to 20 lakh per day. These include high throughput machines and mobile testing labs deployed in the country.

b. For remote and rural areas, TrueNat/CBNAAT platform, validated by WHO for TB, have been repurposed for COVID testing.

c. Rapid antigen testing was approved in last week of June, 2020. This point of care test has tremendously improved access and ease of testing.

d. Strategy for pooled testing of samples was standardized and disseminated.

e. 32 validation centers have been set up for fast track validation of newer diagnostic commodities. So far, more than 1600 different diagnostics have been evaluated of which 770 are approved. In line with the "Atmanirbhar Bharat" initiative of the Hon'ble PM, ICMR has approved 600 indigenous test kits. Indigenous manufacturers are also being hand-held to improvise their products. This has resulted in drastic cost reduction of a single RTPCR test as compared to March 2020.

f. A quarterly Quality Control program has been implemented for more than 1700 RTPCR laboratories. With the help of WHO, External Quality Assurance program has also been implemented where more than 1300 laboratories participated. 91% of the laboratories qualified this exercise. This effort is envisaged to improve the quality of testing.

g. A uniform data entry portal is hosted by ICMR. This database carries India's COVID-19 testing data for more than 78 crore tests.

h. A common sample referral form (SRF) has been developed and deployed with the help of National Information Centre (NIC) through the RTPCR application.

II. Nationwide serosurvey to determine the seroprevalence of SARS-CoV-2:

Blood samples from a total of 24000 samples from 71 districts were collected and tested for IgG antibodies against SARS-CoV-2. Three Nationwide serosurveys have been conducted from May 11 to June 4, 2020; August 17 to September 2 and December 17 to January 8. The nationwide adjusted sero-prevalence was found to be 0.73%; 7.1% and 21.5% respectively. The third serosurvey also included 7000 healthcare workers. The fourth serosurvey was undertaken in June-July, 2021 wherein two-third of individuals with the age ≥ 6 years from the general population and 85% of healthcare workers had antibodies.

III. Isolation of SARS-CoV-2 virus by ICMR-NIV, Pune:

India became the 5th country to isolate the virus in March 2020.

Afterwards the following variant of concerns (VOCs) were isolated and cultured:

(i) Alpha variant strain was isolated in January, 2021
(ii) Gamma variant strain was isolated in February 2021
(iii) Beta variant strain was isolated in March, 2021
(iv) Kappa/ Delta/ B.1.617.3 and Delta Derivatives variant strains were isolated in April-June, 2021
(v) Omicron variant strain was isolated in December, 2021

a. Virus isolation paved the way for development of following technologies:
   (i) Indigenous ELISA IgG kit by NIV, Pune. Technology was transferred to 7 Indian companies.
   (ii) Development of indigenous whole virion inactivated vaccine by Bharat Biotech International Ltd.
   (iii) Laboratory assays like the gold standard Plaque Reduction Neutralization Test (PRNT) was established.
   (iv) Animal challenge experiments were conducted to understand the efficacy of vaccines and therapeutics.

IV. Drug Trials:

a. **World's largest Plasma Therapy Trial (PLACID):** The trial was conducted in a total of 464 participants across 39 hospitals. A set of clinical and laboratory parameters were monitored over 28-day period. The trial has revealed no significant benefit of plasma therapy in terms of reducing severity of disease and mortality.

b. **WHO Solidarity Trial:** India: ICMR-National AIDS Research Institute led the trial which was initiated trial in April 2020 across 26 hospitals and 1048 adults randomized. The globa trial in >11000 individuals concluded that Remdesivir, Hydroxychloroquine, Lopinavir and Interferon - little or no effect on overall mortality, initiation of ventilation and duration of hospital stay in hospitalized.

V. COVID-19 Vaccine trials supported by ICMR/DHR:

i. **COVAXIN of Bharat Biotech International Ltd (BBIL) – ICMR:** Provided virus strain, Characterized vaccine strain, and conducted preclinical studies in hamsters & monkeys. Technical & Lab support for phase 1 & 2 trials and Technical & lab and financial support for phase 3 trials were also provided.

ii. **COVID-19 vaccines manufactured by Serum Institute of India:** Phase 2/3 studies of COVISHIELD (AstraZeneca), Phase 2/3 studies of COVOVAX (Novavax) and Preclinical Hamster studies: indigenous candidates were conducted

iii. **ZyCoV-D of Zydus Healthcare:** Preclinical studies in monkeys at ICMR-NIV, Pune

In addition to these, ICMR also supported the following activities:

VI. Other activities:

a) COVID-19 clinical registry across 40 tertiary medical institutes of eminence has been established. Aim is to understand the demographic features, clinical outcome and design suitable treatment modalities for COVID-19 affected patients.

b) Ten COVID-19 biorepositories for helping industry/academia with appropriate samples of SARS-CoV-2 for developing indigenous diagnostics etc. have been established.

c) Sewage surveillance has been standardized to detect presence of SARS-CoV-2 as early warning signal to predict increase in disease prevalence in a particular zone.

d) ICMR has been issuing timely advisories, treatment modalities, discharge guidelines, testing advisories etc. through the National Task Force chaired by Member Niti Aayog.

e) More than 100 antiviral drugs/compounds have been screened for their antiviral potential.

f) Before the establishment of INSACOG, ICMR undertook genomic and epidemiological surveillance of the COVID-19 positive samples collected from January, 2020 till August, 2020 across different regions of the country.

g) To understand the possible reason of breakthroughs infections a study was undertaken entitled "Clinical characterization and Genomic analysis of COVID-19 breakthrough infections during second wave in different states of India was undertaken in July, 2021".

h) i-DRONE' (ICMR's **D**rone **R**esponse and **O**utreach for **N**orth **E**ast) assessed the feasibility of using drone to deliver vaccines and medical supply. This was carried out in difficult geographical terrains including land, island, foothills and across the hills. The medical supplies delivered under iDrone project included COVID-19 vaccines, vaccines used under routine immunisation program, ante-natal care medicines, multi-vitamins, syringes and gloves. A total of 17,275 units of medical supplies were delivered through such initiatives in the states of Manipur and Nagaland.

i) Mobile BSL-3 has been launched by ICMR.

j) Good quality research projects with high translational potential in areas of epidemiology & surveillance, laboratory diagnostics, clinical and operational research have been funded. There are more than 250 publications of ICMR on COVID-19 and vaccine in major areas of Plasma Therapy, Vaccine Trials, Genome sequencing, variant analysis *etc*.

(c): The expenditure incurred by ICMR with respect to the budget allocated during the last three years is as under:

(Rs. in Crores)

F.Y	Actual Expenditure
2018-19	1447.85
2019-20	1479.17
2020-21	2886.79 (including Rs. 1275 crores on Covid-19 Emergency Epidemic Preparedness and Response Project.

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