



INDIAN COUNCIL OF MEDICAL RESEARCH

Department of Health Research

Press Release

ICMR advises States to conduct sero-survey to measure Coronavirus exposure in the population using IgG ELISA Test

Delhi, May 30, 2020: The COVID19 pandemic has so far affected 216 countries and caused more than 59.31 lakh cases and 3.65 lakh deaths worldwide. There is continuous demand for various types of diagnostic tests by countries all across the globe. Real-time i.e. RT-PCR test is considered gold standard frontline test for clinical diagnosis of SARS-CoV-2, causing COVID19. The test is useful only when performed in the acute stage of infection (< 7 days). For several viral infections, antibody tests are useful for disease detection after 5–7 days of illness. Understanding related to antibody tests for COVID19 is evolving and several tests are being developed globally.

IgG antibodies generally start appearing after two weeks of onset of infection, once the individual has **recovered after infection and last for several months**. Therefore, the IgG test is **not useful for detecting acute infection but indicates episode of SARS-CoV-2 infection in the past**. However, detection of IgG antibodies is useful in the following situations:

- i.) Sero-surveys help to understand the proportion of population exposed to SARS-CoV-2 infection including asymptomatic individuals. Depending upon the level of sero-prevalence of infection, appropriate public health interventions can be planned and implemented for prevention and control of the disease. Periodic sero-surveys are useful to guide the policy makers.
- ii.) Survey in high risk or vulnerable populations (health care workers, frontline workers, immune-compromised individuals, individuals in containment zones, etc.) to know who has been infected in the past and has now recovered.

In an attempt to decide the future course of action against the pandemic, ICMR has communicated a detailed plan to all the states to measure coronavirus exposure in general population as well as in high risk populations. This sero-survey will guide appropriate public health intervention. An indicative list of different groups has been provided for adequate representation (Annexure I). The numbers and frequency in different groups to be tested has been entrusted with states depending upon the requirement and situation in that particular area.



The sero-survey would be conducted using an IgG ELISA kit. Scientists at ICMR-National Institute of Virology, Pune have developed and validated an indigenous IgG ELISA test **for antibody detection for SARS-CoV-2**. The test has undergone intense validation in three stages and has been found to have high sensitivity and specificity. To fast track production and increase availability of the IgG ELISA test, ICMR has transferred this technology to many pharma companies viz. Zydus Cadila, J Mitra & Company, Meril Diagnostics, Voxtur Bio, Trivitron Healthcare, Karwah Enterprises, Avecon Healthcare, etc. The technology has been transferred to various entities without exclusivity clause and therefore can be further shared with others as per demand and capability. IgG ELISA tests from other USFDA/ CE-IVD/ indigenous sources such as Abott, Roche etc. are also available.

ICMR has offered to provide technical support to States/ UTs, if required, in planning and carrying out sero-surveys using IgG Elisa test kits and also interpreting the results.

About ICMR: The Indian Council of Medical Research (ICMR), New Delhi, the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world. ICMR's research agenda align with the National health priorities. These efforts are undertaken with a view to reduce the total burden of disease and to promote health and well-being of the population. ICMR promotes biomedical research in the country through intramural as well as extramural research. Visit us at <https://www.icmr.gov.in>

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Annexure -I

Possible groups/ community/ population based on specific requirement for sero-survey by using IgG Elisa test

- i.) **Immuno-compromised patients:** PLHIV, patients on immuno-suppressive treatment, TB, SARI, COPD, patients on dialysis to be considered for testing;
- ii.) **Individuals in containment zones:** In identified containment zones and buffer zones where large number/ cluster of cases have been identified as demarcated geographical areas with residential, commercial structures;
- iii.) **Health Care Workers:** Specifically, all doctors including specialists, nursing staff, support staff, sanitary and other staff including the staff at registration, pharmacists, client facing desk clerks etc. Those workers in health care settings who either faces patients (whether known COVID 19 +ve or not), involved in their care or are in environment of potentially shared spaces or handling fomites;
- iv.) **Security personnel:** All security personnel facing the visitors, conducting their security screening, physical checking and thermal screening. This includes CISF personnel involved in security especially of offices;
- v.) **Police and paramilitary personnel civil defense & volunteers:** police personnel and volunteers involved in duties facing large number of individuals or those coming in contact with potentially infected individuals, fomites or settings/ places;
- vi.) **Press corps:** Press reporters covering field, interviews, press briefings, etc. and support staff;
- vii.) **Rural, tribal population (after reverse migration):** Migrant workers who have travelled back from urban and peri-urban areas to rural, tribal, hard to reach areas in the country as well as natives after coming in contact with returned migrants.
- viii.) **Industrial workers or labour force:** industry workers, daily wagers, migrant workers, temporary travel related workers, hospitality related works, service sector who are in large number or groups and has potential to spread transmission rapidly in workplace settings;
- ix.) **Farmers, vendors visiting large markets:** Farmers, sellers, brokers, purchasing vendors, distributors and other persons including drivers and labor by virtue of visiting crowded places like main markets where large exchange of materials happen between farmers and vendors during purchase and sell of vegetables etc.;



- x.) **Staff in municipal bodies:** Municipal staff working in areas like sanitation, water supply, electricity, etc. where interactions with citizens is expected; and
- xi.) **Drivers:** Drivers of hospital ambulances, hearse, buses, auto, taxies, etc. who have been on work front faced large number of individual previously or going to face in future. Bus conductors, cleaners and helping staff also should be included;
- xii.) **Banks, post, couriers, telecom offices:** public or private banks, small or large branches of banks and post, telecom offices as well as couriers;
- xiii.) **Shops:** Vendors and/ or owners as well as staff working in shops for essential goods, groceries, vegetables, milk, bread, chemists working at pharmacies, eateries and take away restaurants, etc.;
- xiv.) **Air travel related staff:** All ground staff, security staff, janitors, sanitation staff, flight captains and crew for domestic and international as well as cargo may be considered;
- xv.) **International operations:** All members of overseas operations for evaluation;
- xvi.) **Congregate settings:** People staying or working in slums with very high population density with poorly ventilated building, structures. Persons staying in institutional settings like old age homes, orphanage, asylums, shelters for homeless, hostels, etc. may also be considered;
- xvii.) **Prisons:** All prisoners with or without symptoms whenever there is a batch transfer or reported symptomatic.