

---

---

---

---

Technical paper  
COVID 19  
ICMR – Serological Surveillance Report  
Round 3



Department of Health & Family Welfare  
Government of Kerala

## Serological Surveillance – ICMR – Round 3 Report

### Results of ICMR Seroprevalence studies reflects Kerala's success in containment of COVID-19

ICMR is doing population based sero epidemiological studies to measure the extent of spread of infection in an area and recommend containment measures accordingly.

- Strategy for population based surveillance adopted is repeated cross-sectional investigation in the same geographic area to establish trends in an evolving pandemic.
- Three rounds of such studies have been completed – one in May, second in August and third in December 2020.
- The survey was conducted in the general population among individuals aged 18 years or more in selected representative 736 districts in India.
- Samples are collected from three districts of Kerala (Ernakulam, Palakkad and Thrissur).
- ICMR has communicated the results of third round of sero-survey.
- The current paper discusses the results of the sero-surveillance and its implications for Kerala

**Table 1: Summary of results- Kerala**

Date of sample collection	May 18-23 <sup>th</sup>	August 24-26 <sup>th</sup>	Dec 20-30 <sup>th</sup>
Total IgG Positive	4	11	145
Total Tested	1193	1281	1246
% IgG positive	0.33%	0.8 %	11.6%

**Table 2: Comparison of Results with National Average**

	<b>May 2020</b>	<b>August 2020</b>	<b>December 2020</b>
Kerala	0.33%	0.8%	11.6%
National Average	0.73%	6.6 %	21%

The antibody test reflects the infection transmission 2-3 weeks before the actual date of blood sample collection. This survey was followed after the peak transmission period in October 2020 in Kerala.

- Kerala's sero prevalence as of December was just half that of the national average. This shows the effectiveness of robust containment measures in Kerala including quarantine, contact tracing, rapid detection of cases through improved access to tests and isolation of COVID positive cases, picking up clusters' formation at the beginning through surveillance and containment measures within clusters and the 'break the chain' measures that were adopted in the state.
- The proportion of unidentified cases is much less in Kerala as compared to the national average. On Dec 1, 2020 Kerala had 608357 confirmed cumulative cases of COVID-19 whereas the figure for India was 9491514. Extrapolating the sero prevalence results, Kerala might have identified 1 out of 6 actual cases where as country as a whole might have identified and reported only 1 out of 30 actual cases. This shows the effort the state of Kerala is taking to identify the cases and declare the number transparently in public domain.
- This also implies that a huge proportion of citizens in Kerala still remain susceptible to COVID-19. Out of the 30 clusters in Kerala, 5 had a sero prevalence of zero in third round of sero prevalence. This means there are still communities where COVID-19 has not penetrated in Kerala. As number of susceptible individuals are higher, ironically which is due to good containment measures adopted by the state, cases will continue to occur in Kerala. In other places where already a good proportion of citizens have got the disease, the susceptible population to new infections are less. This answers why cases are still occurring in Kerala.

- With a huge population remains susceptible in the state, as evidenced by the sero-survey, the state may be considered as a priority state for a rapid implementation of COVID-19 vaccine.
- All credits for lower prevalence of COVID in the state goes to the responsible citizens of the state who followed all COVID protocols rigorously and co-operated with all containment measures. It also implies that, till a significant proportion of citizens are vaccinated, all citizens shall strictly follow physical distancing by reducing the number of primary contacts, use masks, practice hand hygiene and all shops/establishments/markets shall follow 'COVID compliance'.

## Discussion

The country and the state have learned a lot from tackling HIV epidemic and Tuberculosis, two of the best designed and implemented National Programs. During NACP III robust surveillance mechanism was put in place and every state and sub state surveillance reports were published yearly to have national level understanding as well as state level understating of the HIV epidemic. Accordingly, High prevalent, mid and low prevalent states and districts were identified. Evidence based strong Targeted interventions, package of services were taken up as per the categorization of the districts . The same was practiced in Tuberculosis program. In order to get the true picture of epidemic these national programs demonstrated and archived results only because of informing granular details to all by publishing series of Surveillance Reports.

In case of COVID pandemic Sero surveillance report, we are getting information of national averages and each state is knowing their respective figures. National level analytical report giving all the details of all the phases of surveillance done in all the states and selected districts by explaining technical aspects in easy-to-understand language will improve the understanding regarding the pandemic. It will involve the stakeholders to ensure unified response and that will result into the public action. Such detailed report can throw a light on phases of pandemic, infection spread percentages, infection missed out percentages, the prevention activities qualitative aspects, so as to take proper interventions. It also avoids unnecessary comparison of numbers and skewed interpretations by non technical persons thereby creating confusion in the minds of people.

The estimate provided by ICMR are point estimates(11.6%) and when the 95 % confidence intervals is calculated manually the margin of error is (9.91% – 13.5%). This is a pretty wide range given the dynamics of the pandemic.

Achievement of Kerala should to be measured not only with number of cases but with other indicators like- hospitalisations, deaths, persons under surveillance, testing rates, COVID care facilities, management structures and patients' care and response.

Kerala has been trying and ensuring “flattering the curve” with the lowest mortality rate by doing active case findings. The gap between the confirmed cases and recovered cases continues to remain

constant. The patient surges experienced were of short duration without any COVID care providing facilities ever overwhelmed by patient surge.

It is the need of the hour to coordinate the response further by giving the objective information of the sero surveillance and setting up mechanism of concurrent technical oversight as is done in NACP and TB elimination program.

We solicit the remarks of the experts to strengthen the fight against COVID19.