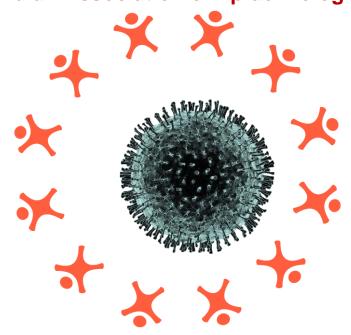






Indian Public Health Association (IPHA), Indian Association of Preventive and Social Medicine (IAPSM) & Indian Association of Epidemiologists



3rd Joint Statement on COVID-19 Pandemic in India – Public Health Approach for COVID-19 Control

25th August 2020

Dr. Sanjay K Rai President, IPHA

President, IAE

Dr. Anil Kumar

Amil Kumar

Dr. Sanjay Zodpey President, IAPSM

Dr. Sanghamitra Ghosh Secretary General IPHA

Sanghamilta Ghosh

Dr. Jugal Kishore Vice President IAE

Dr. A Kadri Secretary General IAPSM

Contents

■ Terms of Reference Page no. 2

Executive Summary and Action PlanPage no. 3-5

Situation AnalysisPage no. 6 -11

For further details please contact: Prof. (Dr.) Sanjay K. Rai, Room No. 29, Centre for Community Medicine (CCM), All India Institute of Medical Sciences (AIIMS), New Delhi-29. Phone - 011-26594416, Ph - 9868397358, email - drsanjay.aiims@gmail.com

Indian Public Health Association (IPHA), Indian Association of Preventive and Social Medicine (IAPSM) & Indian Association of Epidemiologists (IAE)

Third Joint Statement on COVID-19 Pandemic in India: Public Health Approach for COVID-19 Control

August 25, 2020

Terms of Reference:

A Joint Task Force of eminent public health experts of India was constituted by IPHA, and IAPSM in April 2020 to advise the Government of India for containment of COVID-19 pandemic in the country. Subsequently, Indian Association of Epidemiologists (IAE) also joined the Task Force.

The members of the IPHA, IAPSM, and IAE **Joint COVID-19 Task Force** are as follows: (in alphabetical order)

- 1. Dr A. C. Dhariwal, Former Director, NVBDCP & NCDC, and Advisor NVBDCP, MoHFW, GoI, New Delhi
- 2. Dr Anil Kumar, President, IAE & Dy DGHS (Deafness), Nirman Bhawan, New Delhi
- 3. Dr A.M. Kadri, Secretary-General, IAPSM, Ahmedabad
- 4. Dr Chandrakant S. Pandav, Past President IPHA & IAPSM, former Professor & Head, Centre for Community Medicine (CCM), AIIMS, New Delhi, and President, ICCIDD
- 5. Dr D.C.S. Reddy, Former Professor & Head, Community Medicine, IMS, BHU, Varanasi
- 6. Dr Farooq Ahmed, Former Director NEIGRIMS, and Pro VC KBN University, Gulbarga
- 7. Dr Forhad Akhtar Zaman, Professor, Department of Community Medicine Sikkim Manipal Institute of Medical Sciences, Gangtok
- 8. Dr Jugal Kishore, Director Professor & Head Community Medicine, VMMC & Safdarjung Hospital, New Delhi, and Vice President IAE
- 9. Dr Kapil Yadav, Additional Professor, CCM, AIIMS, New Delhi
- 10. Dr Puneet Misra, Past President, IAPSM & Professor, CCM, AIIMS, New Delhi
- 11. Dr Rajesh Kumar, Former Professor & Head, Department of Community Medicine and School of Public Health, PGIMER, Chandigarh
- 12. Dr Rajib Dasgupta, Professor and Chairperson, Community Health, Jawaharlal Nehru University, New Delhi
- 13. Dr Sanghamitra Ghosh, Secretary-General, IPHA, and CMO (SG) Ministry of Defence, Kolkata
- 14. Dr Sanjay Chaturvedi, Professor and Head, Department of Community Medicine, University College of Medical Sciences, Delhi
- 15. Dr Sanjay K. Rai, National President, IPHA and Professor, CCM, AIIMS, New Delhi
- 16. Dr Sanjay Zodpey, President, IAPSM and Vice President-Academics, Public Health Foundation of India (PHFI), New Delhi
- 17. Dr Sanjiv Kumar, Former Executive Director, NHSRC, and Chairman, Indian Academy of Public Health (IAPH), New Delhi
- 18. Dr Shashi Kant, Past President IAPSM, and Professor & Head, CCM, AIIMS, New Delhi
- 19. Dr Sujeet Kumar Singh, Director, National Centre for Disease Control, New Delhi
- 20. Dr Suneela Garg, Director Professor and Ex-Head, Department of Community Medicine, Maulana Azad Medical College, New Delhi and National President-Elect, IAPSM

Executive Summary and Action Plan

BACKGROUND

COVID-19 pandemic in India has progressed at an unprecedented speed and scale bringing in its wake unimaginable humanitarian, health and economic consequences. It required decision making often based on weak or insufficient evidence. Fortunately, the global research community responded with robust and quick generation of evidence. Almost every day new evidence base is being added. Hence, many decisions taken during the early phase of the pandemic, with the benefit of hindsight, may appear to be inadequate or even inappropriate. However, as would be true of any evolving situation, we should be bold to effect course correction in light of the new and emerging evidence.

We appreciate that the health system's response is often constrained by socio-political, economic, human resource and governance structure. This third statement makes recommendation based on evidence available till date and the existing circumstances. The overall objective of the third statement is to support the Government of India is formulating evidence-based policy for prevention and control of COVID-19 in India.

We strongly and unequivocally advocate for a "public health approach" for the novel coronavirus pandemic control, with the maximum possible good being done for the largest possible numbers. The ongoing pandemic is a public health problem that is fast worsening existing health inequities. It is not a law and order problem and should be dealt with empathy and meaningful community engagement. The way forward needs to take into account contextual constraints and community interests and design optimal interventions that require technical competence blended with good judgment, clarity and trust. The testing strategy needs to be pragmatic from a public health perspective, promoting differential/targeted testing of high-risk individuals and discontinuing universal testing at this stage. Vaccines do not have any role in current ongoing COVID-19 pandemic control in India. Vaccines with proven efficacy and safety, as and when available, should be administered according to the WHO's "strategic allocation" approach or a multi-tiered risk-based approach.

ACTION PLAN

1. No lockdowns, only "cluster" restrictions of short defined duration to be imposed:

- 1.1. Lockdown as a strategy for control should be discontinued. Geographically limited restrictions for short periods may be imposed in epidemiologically defined clusters. Cluster restrictions should be considered only in areas with no community transmission. Even cluster restrictions should be imposed after weighing the impact of the same on the livelihood of target population. With adequate health system preparedness, including facility care for severe cases, cluster restrictions can be totally done away with and should be the ideal way to address this pandemic.
- 1.2. In Large cities (Y class) where already there has been substantial spread (can be assessed by the expert committee) there is NO advantage of creating containment zones and aggressive testing. The focus should be to prevent deaths from COVID-19 and not on containing the infection. IEC should advice people to watch for the symptoms and early reporting for testing on demand and contacting doctor for proper advice.
- 1.3. In Y class cities with moderate spread: Containment zones (CZ)should be revamped with clear roadmap and timelines for periodic review by expert committee, with the aim to test all suspects, isolate all infected individuals for proper treatment. All CZs should be de- contained in maximum of 14 days.
- 1.4. Small cities and rural townships with mild/limited spread: Existing testing and cluster containment strategy may be continued. Although testing strategy attached with mandatory isolation, needs to be reviewed in view of social stigma. In small cities this is a major factor preventing persons from coming forward for testing.

- 1.5. Rural areas: syndromic surveillance by ASHA and village Nigrani Samiti and periodic review at PHC level could be done.
- 2. Quarantine and Isolation Policy: should be community friendly. The present policies, where:
 - 2.1. Houses of all persons who test positive, are stamped, isolated by barricades is creating a fear in society. This practice should be abandoned immediately.
 - 2.2. When majority of states / districts are affected, there is no rationale for quarantine of inter-state travelers who are required to be in mandatory facility (Hotel or health facility) quarantine (for 14 days). This should be stopped immediately. Citizen friendly measures like following home quarantine/isolation, which has been an effective strategy in many cities/states should be followed.
- 3. **Pragmatic Testing as a control strategy:** Universal scaling up of testing at current community transmission stage of the pandemic may not be an optimal control strategy and will divert attention and resources from control measures. With the availability of sufficient understanding of the natural history of disease and at-risk population, testing should be used with due diligence. Targeted testing of high-risk individuals, healthcare workers, elderly with co-morbidities, screening prior to surgical procedure etc. is recommended. However, areas in very early phase of pandemic (where zero or very few cases have been reported) testing may be used as a surveillance tool.

Suggested Testing strategy

- 3.1. Cities and towns with high case load:

 (i) Consider all symptomatic COVID-19 cases and treat them at home or hospital depending on the clinical condition, as COVID-19 even without testing (syndromic approach); (ii) monitor symptomatic patients (even without testing), through phone, family members, and paramedics, and also through SpO₂ values (either by supplying pulse oximeters individually or making these available through local paramedics) for early shifting to hospitals to reduce mortality; and, (iii) a reliable and accountable dashboard and central helpline for those requiring hospitalization (in coordination with ambulance services).
- 3.2. *Towns/districts with low case load:* Continue the practice of containment zones, identify the case and contain that area, conduct house-to-house survey, identify cases through testing, isolate all those cases preferably at some facility to avoid further spread or home quarantine if possible with strict instruction so that spread can be stopped.
- 3.3. *Towns/districts with no case load:* Continue surveillance activity and precautions; actively promote physical distancing, mask use and hand hygiene.
- 4. **Immediate resumption of comprehensive health care services:** Primary, secondary and tertiary health care services including outpatient and inpatient services including routine/emergency surgeries should resume as early as feasible, at least those areas that are progressing towards higher levels of immunity and in towns/districts with no cases. Adequate safety measures should be put in place for the safety of health care staff engaged with optimal PPE and testing of patients for COVID-19 as may be appropriate.
- 5. **Protecting high-risk populations including elderly and those with co-morbidities:** Elderly persons (>65 years) and those with co-morbidities (hypertension, DM, Cancer, obesity etc.) shall continue to restrict their outdoor activities as far as possible. Younger persons with co-morbidities should also exercise appropriate caution.
- 6. Continue preventive control measures of physical distancing face mask use, hand washing: All should continue to practice distancing (avoiding mass gatherings), face mask usage and hand washing to prevent and limit transmission.
- 7. **ILI and SARI surveillance:** Early detection of ILI and prompt management of SARI cases using a combination of syndromic surveillance and Test and Track strategy should be strengthened.

- 8. **Periodic sero-surveillance survey for monitoring the pandemic:** State and national level sero-surveillance surveys need to be undertaken to monitor the pandemic and modify the control strategies accordingly. In future use of already existing sero-surveillance platform could be a cost-effective way to do the sero surveillance. All the sero surveillance must be supervised by trained public health specialist (MD Community Medicine) from local medical colleges, and public health institutions.
- 9. **Opening of schools and educational institutions:** It's time now to move towards normalcy. Opening of school and other educational institutions could be started in graded manner. There should be a pragmatic approach, especially in areas where sufficient population is already infected with SARS CoV-2 (As assessed by expert committee). Even in low infection areas, schools may be opened with due safety measures (social distancing, alternate work days, etc.), and with adequate surveillance for any outbreaks acceleration due to schools.
- 10. **Role of vaccines in controlling ongoing outbreak:** Vaccine have no role in current ongoing pandemic control. However, whenever available, the vaccine may play a role in providing personal protection to high-risk individuals like HCWs and elderly with co-morbidities. While being optimistic the prevention and control strategy should also prepare for the worst. It must assume that an effective vaccine would not be available in near future. We must avoid false sense of hope that this panacea is just around the corner.
- 11. **Increase healthcare expenditure to 5% of GDP:** Public health care should be significantly strengthened and enhanced with overall public expenditure to be increased to at least 5% of the GDP. The focus of increased health expenditure should be on primary health care and human resource and infrastructure strengthening rather than opening/strengthening tertiary care centres.
- 12. **Public Health Cadre at national and state levels:** The states like Tamil Nadu and Gujarat with existing public health cadre are relatively better placed in handling such public health crisis on their own. There is a need to expedite the establishment of a dedicated, efficient, and adequately resourced public health cadre as Indian Health Service (IHS) in the center and across states as recommended by various national committees and expert groups since 1946 on the pattern of Indian Administrative Service (IAS).

Situation Analysis

- 1. India has emerged as the hardest-hit country in Asia and currently reporting about 30% of the daily news cases and 20% of daily deaths globally.
- 2. Cumulative recoveries in India are an impressive 2.3 million, and the corrected case fatality ratio (CCFR) has steadily declined to 2.48 (23 August 2020).
- 3. An active case pool of 700,000+ with an Effective Reproduction Number (R_t) of 1.06 (16 August 2020) implies that a country-wide peak may still be some distance away.
- 4. The count of daily new cases has increased dramatically from 9,472 (5 June) to 61,749 (23 August) through two months of Unlock.
- 5. Cases per million population in India are 2,251.
- 6. Increasingly, COVID-19 positive persons are being reported from small sized town, as well as from rural areas. Sero- surveys have revealed that the disease has spread to most part of the country indicating community transmission of COVID-19.
- 7. The sero-surveillance reports from various parts of India indicate that through the current strategy of "Test, Trace, Treat, and Isolate" we are detecting less than 5% of the total estimated SARS CoV-2 infection.
- 8. Due to preoccupation of entire health system with COVID-19 response, other national health programmes have received limited attention.

Lockdown/ Unlock Phase

- 1. The primary purpose of the lockdown was to slow down the pandemic and gain time for preparedness to fight it. This purpose has already been achieved. There is no evidence that any useful purpose would be served by:
 - a. Weekend or intermittent or night time lockdown
 - b. Banning of domestic flights
 - c. Large sized containment zones.
- 2. Closure of educational institutions, especially schools for children (5-18 years) has had a significant impact on the teaching-learning system as well as mental health of the children. The impact has been disproportionately higher on the children of lower socio-economic strata who do not have social capital for alternatives like digital platforms. Sufficient evidence is available that infected, young children are at an extremely low risk of developing morbidity. The risk of young children transmitting corona infection to older family members would be the same as adult family members who are permitted to carry out activities outside of home environment.

Testing

1. Testing: The current benchmarks for adequacy of testing is 140 tests per million population per day, and sample positivity rate of less than five percent. In order to reach this target indiscriminate testing is being resorted. Testing by itself is not a control strategy. Moreover, daily testing of more than one million, mostly ill-defined population, is imposing heavy economic cost without commensurate benefit for control effort. There is need to relook at the testing strategy in a way that it results in guiding the public health response and effectively limiting the spread of the disease

- 2. Experience from other countries (Table-1) indicates that increased testing does not prevent the deaths
 - from COVID-19. Few counties like Japan, Sri Lanka with the lowest testing rates have lowest fatality due to COVID-19. There is evidence from other countries too that the present testing strategies are unable to contain deaths and transmission of SARS-CoV-2.
- 3. The testing strategies in densely populated urban areas, and the limited disease spread rural areas must be different. In most cases, by the time the testing is done and the results are made available, the infection has already spread to the close contacts. This is more pronounced in rural
- 4. The presence of a large number of asymptomatic cases in all States/UTs further compounds the problem of early detection as the current testing strategy does not allow for testing of asymptomatic persons unless they are close contacts of a diagnosed case.

		,
Name of the counties	COVID-19 Tests / million population	COVID-19 deaths / million population
USA	229,889	545
UK	223,397	610
Spain	170,146	617
Italy	132,471	586
Brazil	66,474	539
India	25,997	42
Pakistan	11,122	28
Japan	10,450	9
Sri Lanka	9,102	0.6
Bangladesh	8,747	24
Source: https://www.wor	dometers.info/coronavirus as	on August 24, 2020

Table 1: Data related to level of tests and COVID-19 mortality in few selected countries

- 5. A large number of tests e.g. RT-PCR, CBNAAT, TRUNAT, RAT, etc have been employed for COVID-19 test. In order to achieve the pre-defined target, peripheral health functionaries are using whichever test is available, flouting the guidelines. For example, use of RAT in areas which are neither a containment zone nor a health facility.
- 6. The strategy of "Test, Track, Treat, isolate" focusing on early identification of the cases to limit their transmission to others and also for effective clinical management is helpful when the epidemic is at its very early stage to avoid its foothold in the community. Since the virus has already widely spread in the community in many geographical areas, current strategy would not serve the intended objectives. Moreover, confirmed cases represent only a fraction of the total estimated cases as is indicated by serosurveillance surveys. Hence, a greater number of tests being carried out will yield a greater number of detected cases without any benefit in reducing the deaths which should be the primary goal.
- 7. In areas with high incidence of laboratory-confirmed cases, all symptomatic cases should be treated on the lines of confirmed cases to isolate and treat to reduce the spread and mortality even without testing as the probability of being positive is quite high. This is the usual practice adopted during outbreak situation. This brings the efficiency in preventing the spread of infection and making it cost-effective.
- 8. There is a need to re-assess the thrust on testing strategy and shift to syndromic management, especially in the high sero-prevalence states and districts for efficient management of resources. A pragmatic and differential testing strategy needs to address issues of testing high-risk populations, testing only in the early stages of outbreak, and testing as part of monitoring. Universalization of testing may be an extremely expensive proposition and unlikely to yield any public health benefits for control strategy.

Health Care services

1. The National Health Authority's analysis of the Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY) utilisation during COVID-19 bears some key messages: (i) average daily hospitalisation dropped by over 70% during the COVID-19 lockdown, up to more than 90% on some days; (ii) while there has been a significant drop in admissions for elective procedures, the decline in critical care services vary from 64%

for chemotherapy to 26% for childbirths; (iii) the utilisation of private hospitals increased; and, (iii) the share of claims from private hospitals (more government hospitals are empanelled than private) has registered an increase since pre-COVID levels as most public hospitals were converted to COVID care centres.

- 2. There is a conspicuous lack of data on numbers of residents of long-term care facilities such as nursing homes, old age homes and mental hospitals who might have been infected or died from confirmed or suspected COVID-19. There are reports of rising infections among custodial populations such as prisoners
- 3. Media reports from several states across the country indicate instances of public protests by patients over poor facilities (hygiene, quality of food, water and congestion) in the COVID care centres including key tertiary care hospitals
- 4. There are varying guidelines for quarantine, home isolation, and admission to COVID care centre. There is a need for single harmonized policy applicable to entire country.

Healthcare staff

- 1. We recognise that both central and state governments have made considerable efforts to strengthen rural health services under the National Rural Health Mission (NRHM) since 2005. It has also been expanded to urban areas under the National Health Mission (NHM) since 2013. The Rural Health Statistics data points to a major concern regarding vacancies that have increased between 2005 and 2019. Vacancies of specialists at Community Health Centers (CHC) increased from 46.6% to 72.6%, doctors at Primary Health Centers (PHC) from 17.4% to 23.5%, ANMs from 4.7% to 8.9%, and nurses from 15.5% to 19.3%. Large numbers of vacancies exist at secondary and tertiary public hospitals too, increasing the dependence on private providers and contractual workers.
- 2. Accredited Social Health Activists (ASHA) and Anganwadi workers are playing a key role in contact-tracing, surveys and awareness generation. They observed a two-day strike (7-8 August 2020) protesting against inadequate assistance from the government in the COVID response including lack of safety equipment, payment of salary and risk allowance.
- 3. The Indian Medical Association recently (8 August 2020) reported death of nearly 200 doctors. A significant proportion of them are general practitioners and from the private sector. There have also been reports of government doctors engaged in contractual positions neither receiving treatment costs nor adequate compensation. No such data is forthcoming about nurses and other frontline healthcare staff.
- 4. State and district level epidemiologists would have been an excellent resource to interpret the data locally, and suggest context specific response. However, these posts are mostly lying vacant due to poor salary structure. There is an urgent need to declare their posts as specialist post requiring MD degree in Community Medicine or Preventive and Social Medicine and recruit qualified persons.
- 5. The role of front-line community health workers in COVID-19 control activities needs to be acknowledged and due recognition given to these front line COVID-19 warriors. This will not only boost the efforts of prevention and control of epidemic in the field but also community at a large will realize the importance of preventive measures and join hands in efforts for with Government in prevention and control.

Risk communication

1. Even after six months of the disease which is increasingly spreading to small towns and rural areas, reports of stigma, fears and discrimination continue. The practice of pasting a notice on doors of home

- isolated corona patients has led to stigma and discrimination. In response, many patients left home for unknown destination, defeating the very purpose of isolation. Of particular concern has been the issue of the dignity of death and cremations and burials of COVID-19 victims.
- 2. No disease outbreak can be controlled without optimal community participation, and coercive measures nearly always are counter-productive over a long period. The current corona pandemic is a public health problem and should not be addressed using stringent law and order measures. The impact of control measures on livelihood and general life patterns of the populations have to be factored in the risk communication strategy. The disruption of livelihoods and psycho-social consequences are disproportionately higher among the most marginalised communities and vulnerable individuals.

Vaccines

- 1. Vaccines may theoretically be a useful intervention in future, if and when made available for public health use.
- 2. More than 140 candidate vaccines are undergoing preclinical and clinical trials all over the world. Many countries, including Russia and China, are fast-tracking the vaccine development which might have concerns of efficacy and safety.
- 3. Three COVID-19 vaccines are in different phases of clinical trials in India.
 - a. COVAXIN: India's first indigenous COVID-19 vaccine by Bharat Biotech was developed in collaboration with the Indian Council of Medical Research (ICMR) and the National Institute of Virology (NIV). The Whole-Virion-Inactivated SARS CoV-2 vaccine received DCGI approval for Phase I & II Human Clinical Trials which has already started in July 2020 at 12 sites.
 - b. ZyCoV-D: India's second indigenous COVID-19 vaccine by Zydus Cadila has also started phase 1/2 clinical trial at 11 sites. The plasmid DNA COVID-19 vaccine received DCGI approval for Phase I & II Human Clinical Trials a few days after the COVAXIN was approval in July 2020.
 - c. AZD1222 vaccine: Serum Institute of India (SII) in partnership with AstraZeneca, and Oxford University has got the approval for recombinant adenovirus vectored COVID-19 vaccine to start the phase II/III clinical trials at 17 sites.

Annexure – 1: COVID-19 indicators: inter-country comparisons [August 24, 2020]

Country	Total cases ^[1]	Total deaths ^[1]	Total recovered ^[1]	Active cases ^[1]	Cases per million population ^[1]	Deaths per million population ^[1]	Tests per million population ^[1]	Transmission classification ^[2]	Seroprevalence
India	31,10,761	57,715	23,38,899	7,14,147	2,251	42	25,979	Clusters of cases*	0.73% ^[3]
Pakistan	2,933,26	6,244	2,76,829	10,188	1,324	28	11,122	Clusters of cases	
Bangladesh	2,97,083	3,983	1,82,875	1,10,225	1,801	24	8,828	Community* transmission	
Sri Lanka	2,953	12	2,811	130	138	0.6	9,726	Clusters of cases	
USA	58,75,918	1,80,618	31,67,232	25,28,068	17,737	545	2,29,935	Community transmission	5.0% (0.0%- 29.9%) ^[4]
Brazil	36,05,783	1,14,772	27,09,638	7,81,373	16,946	539	66,474	Community Transmission	1.3% (0.0%-6.8%)
Russia	9,61,493	16,448	7,73,095	1,71,950	6,588	113	2,37,078	Clusters of cases	
Spain	4,07,879	28,838			8,723	617	1,71,789	Clusters of cases	4.7% (0.6%- 12.1%) ^[4]
UK	3,25,642	41,429			4,793	610	2,23,397	Community transmission	7.2% (0.01%- 25.5%) ^[4]
Italy	2,59,345	35,437	2,05,470	18,438	4,290	586	1,32,471	Clusters of cases	
France	2,42,899	30,513	84,973	1,27,413	3,720	467	91,891	Clusters of cases	2.8% (0.2%- 8.4%) ^[4]
Sweden	86,672	5,807			8,574	574	1,01,895	Community transmission	
South Africa	6,09,773	13,059	5,06,470	90,244	10,263	220	59,806	Community transmission	
China	84,967	4,634	79,925	408	59	3	62,814	Clusters of cases	0.8% (0.6%- 1.0%) ^[4]

^{*}Transmission classification is based on a process of country/territory/area self-reporting. Classifications are reviewed on a weekly basis and may be revised as new information becomes available. The classification is based on the highest category reported within a country/territory/area. The categories are: **No cases**: With no confirmed cases; **Sporadic cases**: With one or more cases, imported or locally detected; **Clusters of cases**: Experiencing cases, clustered in time, geographic location and/or by common exposures; **Community transmission**: Experiencing larger outbreaks of local transmission defined through an assessment of factors including, but not limited to: large numbers of cases not linkable to transmission chains; large numbers of cases from sentinel lab surveillance; and/or multiple unrelated clusters in several areas of the country/territory/area; **Pending**: Transmission classification has not been reported to WHO

Annexure – 2: COVID-19 indicators: Inter-state comparisons [August 24, 2020]

States	Total cases ^[5]	Total deaths ^[5]	Total cured/disch arged/ migrated ^[5]	Active cases ^[5]	State Population ^[6]	Cases / million population	Deaths/ million population	Tests / million population ^[7]	Seropre valence
Maharashtra	6,82,383	22,253	4,88,271	1,71,859	12,31,44,223	5,541	181	29,786	
Tamil Nadu	3,79,385	6,517	3,19,327	53,541	7,78,41,267	4,874	84	54,041	t.
Andhra Pradesh	3,53,111	3,282	2,60,087	89,742	5,39,03,393	6,551	61	60,071	
Karnataka	2,77,814	4,683	1,89,564	83,567	6,75,62,686	4,112	69	35,729	
Uttar Pradesh	1,87,781	2,926	1,35,613	49,242	23,78,82,725	789	12	19,651	
Delhi	1,61,466	4,300	1,45,388	11,778	1,87,10,922	8,630	230	76,484	23.48%
West Bengal	1,38,870	2,794	1,08,007	28,069	9,96,09,303	1,394	28	15,674	*
Bihar	1,21,947	511	98,325	23,111	12,47,99,926	977	4	19,990	55
Telangana	1,06,091	761	82,411	22,919	3,93,62,732	2,695	19	24,595	
Assam	90,740	242	70,900	19,598	3,42,93,000	2,646	7	57,511	
Gujarat	86,624	2,895	69,212	14,517	6,38,72,399	1,356	45	27,494	

References:

- 1. Coronavirus Update (Live): World meters. (Data from 24 August 2020) [Internet]. [cited 2020 Aug 24]; Available from: https://www.worldometers.info/coronavirus/
- 2. World Health Organization. WHO COVID-19 Situation Report 209 (16 August 2020). [cited 24 August 2020)
- 3. "India is definitely not in the stage of community transmission; prevalence of COVID-19 infection is low, less than 1%": DG, ICMR [cited 18 August 2020]; Available from: pib.gov.in/Pressreleaseshare.aspx?PRID=1630926
- 4. Sero Tracker [Internet]. [cited 24 August 2020]; Available from: https://serotracker.com/Dashboard
- 5. Ministry of Health and Family Welfare. COVID-19 Statewise Status as on 24 August 2020, 8:00 IST (GMT+5:30) [cited 24 August 2020]; Available from: https://www.mohfw.gov.in/
- 6. Unique Identification Authority of India, Government of India. State/UT wise Aadhar saturation. 2020;
- 7. Coronavirus in India: Latest Map and Case Count [Internet]. [cited 24 August 2020]; Available from: https://www.covid19india.org
- 8. Press Information Bureau. Sero-prevalence study conducted by National Center for Disease Control, MoHFW in Delhi, June 2020.pdf. 2020 (Posted on 21 July 2020);