



Viewpoint

COVID-19 testing in India in comparison to the rest of the world. If Indian testing strategy was replicated in the other top 15 COVID-19 affected countries in the world, the status would be startlingly different

Purvish M. Parikh¹, Ajay Bapna², M. Vamshi Krishna³, Prashant Mehta⁴, Shyam Aggarwal⁵, Ashish Gulia⁶

¹Department of Oncology, Shalby Hospital, Mumbai, Maharashtra, India, ²Department of Medical Oncology, Bhagwan Mahaveer Cancer Hospital, Jaipur, Rajasthan, India, ³Department of Medical Oncology and Hematology, Apollo Cancer Institutes, Hyderabad, Telangana, India, ⁴Department of Medical Oncology/Hematology/BMT, Asian Institute of Medical Sciences, Faridabad, Haryana, India, ⁵Department of Medical Oncology, Sir Ganga Ram Hospital, New Delhi, India, ⁶Bone and Soft Tissue, Tata Memorial Hospital, Mumbai, Maharashtra, India.



***Corresponding author:**

Purvish M. Parikh,
Department of Oncology,
Shalby Hospital, Mumbai,
Maharashtra, India.

purvish1@gmail.com

Received : 19 June 2020

Accepted : 04 July 2020

Published : 21 August 2020

DOI

10.25259/IJMS_148_2020

Quick Response Code:



ABSTRACT

In terms of the absolute number of COVID-19 positive cases, India is among the top four countries in the world. There is a lot of unwarranted criticism about the alleged inadequacy of COVID-19 testing in India. The facts available from international and publicly available online non-government source covering the entire world show otherwise. While India is fourth in terms of an absolute number of cases, its rank is 132nd in terms of cases per million population and 107th for deaths per million population. These are indications that India is doing much better in the battle against COVID-19 than it is getting credit for. The correct benchmark for the adequacy of testing is the percentage of COVID-19 positive results as compared to the total number of tests performed. India ranks 5th (out of 215) in this respect – being better than some western countries such as the USA, Spain, and France. Thus, the Indian strategy for COVID-19 testing is better and more appropriate than the majority of other countries with the large absolute number of positive cases.

Keywords: Adequacy of testing, Ratio to population, Coronavirus, Trends, Comparison

COVID-19 is an unprecedented global pandemic that has infected more than 8 million cases worldwide (as on June 15, 2020) and unfortunately led to the loss of 435,666 lives.^[1] The caseload in India has been steadily increasing over the past 3 months, and presently, India is counted among the top four countries in the world (behind USA, Brazil, and Russia) in terms of absolute numbers.^[2] There is an ongoing debate about how governments and health authorities are responding to the COVID-19 pandemic.^[3] Specifically, there is a lot of criticism regarding the adequacy of testing and whether all the cases are being detected.^[4]

To evaluate these claims, we decided to analyze the publicly available data obtained at a single point in time (June 15, 2020) from an international, online, and publicly available non-government resource that have provided real-time facts from across the globe – covering 215 nations.^[1]

Table 1 compares the number of cases in the top four countries – USA, Brazil, Russia, and India. Not to compare apples with oranges, we have added columns to show the number of cases per

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million of each country's population as well as the number of deaths per million of population (along with the world rank for these parameters). While India may be ranked #4 in terms of absolute number of cases, its rank is 132nd in terms of cases per million population (out of a total of 215 countries). These are very encouraging figures and indicate that India has less cases as a percentage of its population as compared to the rest of the world. In terms of deaths per million of the total population, India ranks 107th. Despite rather dire predictions about the volume of cases, these figures probably indicate that India has been able to contain the COVID-19 pandemic to some extent.

The other area of significant concern has been the adequacy of testing. The top 15 countries are compared in Table 2 (adapted from Parikh PM 3M India.in). To get the right perspective, we have shown the absolute number of COVID tests performed as well as the ratio of COVID-19 positive tests to the total number of tests actually performed (as a percentage). The generally accepted implication is that the lower the percentages,

the higher is the adequacy of testing. Table 2 shows that Russia is the best with only 3.54% of tests being positive. India's rank among the top 15 countries is 5th, with 5.77% positive tests which appear to be significantly better than some European countries such as Spain (rank 6th), France (Rank 9th), and the USA (rank 8th).

Rather intriguingly, if we use the level of COVID-19 testing in India as a benchmark and then compare other countries, a rather different pattern emerges regarding the adequacy of testing. There is a wide variation with several countries being seen to have inadequate testing relative to the number of cases – including France, the USA, and some South American countries. We agree that this is a single measure only and that further granular analysis is need once the pandemic resolves.^[5,6] Till hard additional data become available to the contrary, we hope that this will put to rest all complaints about India not testing enough people. Indian strategy for COVID-19 testing is better and more appropriate than the majority of other countries with a large absolute number of COVID-19 positive cases.

Table 1: World rank of actual COVID-19 status of the four top countries – per million populations (adapted from Parikh PM 3M India.in).

Country	Absolute number of COVID-19 positive cases		Cases per million of population	
	Total cases	World rank (out of 215)	No	World rank (out of 215)
USA	2,162,406	1 st	6535	11 th
Brazil	867,882	2 nd	4084	26 th
Russia	537,210	3 rd	3681	39 th
India	333,380	4 th	242	132 nd

Table 2: COVID-19 testing status of most affected countries – tests are done and percentage positivity (adapted from Parikh PM 3M India.in).

Country	Absolute number of COVID-19 positive cases		Absolute number of tests		Adequacy of testing – Percentage of positive tests (ratio of positive tests to total number of tests; lower percentage is better) (%)	Rank of adequate testing (least number of positive cases per tests performed)	Number of COVID-19 tests that would have been required if testing gave the level of positivity as India	
	Total cases	World rank (out of 215)	No	Rank			Total tests required	Change in testing required to match India's level (percentage) (%)
USA	2,162,406	1 st	24,795,407	1 st	8.72	8 th	37,452,816	+51
Brazil	867,882	2 nd	1,604,784	9 th	54.08	15 th	15,031,694	+837
Russia	537,210	3 rd	15,161,152	2 nd	3.54	1 st	9,304,463	-39
India	333,380	4 th	5,774,133	4 th	5.77	5 th	Reference	Reference
UK	295,889	5 th	6,772,602	3 rd	4.36	3 rd	5,124,789	-24
Spain	291,008	6 th	4,826,516	5 th	6.02	6 th	5,040,251	+4
Italy	236,989	7 th	4,620,718	7 th	5.12	4 th	4,104,643	-11
Peru	229,736	8 th	1,360,839	11 th	16.88	12 th	3,979,022	+193
Iran	189,876	9 th	1,269,194	12 th	14.96	10 th	3,288,647	+159
Germany	187,706	10 th	4,694,147	6 th	4.00	2 nd	3,251,063	-31
Turkey	178,239	11 th	2,632,171	8 th	6.77	7 th	3,087,095	+17
Chile	174,293	12 th	840,150	14 th	20.75	13 th	3,018,750	+259
France	167,220	13 th	1,384,633	10 th	11.35	9 th	2,896,246	+109
Mexico	146,837	14 th	406,547	15 th	36.12	14 th	2,543,213	+526
Pakistan	144,478	15 th	897,650	13 th	16.09	11 th	2,502,355	+179

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

The authors Purvish M. Parikh and Ashish Gulia are on the editorial board. They do not have any competing interests.

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How to cite this article: Parikh PM, Bapna A, Krishna MV, Mehta P, Aggarwal S, Gulia A. COVID-19 testing in India in comparison to the rest of the world. If Indian testing strategy was replicated in the other top 15 COVID-19 affected countries in the world, the status would be startlingly different. *Indian J Med Sci* 2020;72(2):107-9.