Covid-19 India : State-wise Estimates of Current Hospital Beds, ICU Beds, and Ventilators

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*Our COVID-19 modeling estimates for India were produced by a team of researchers affiliated with CDDEP and Princeton University. This work does not reflect the views of CDDEP or Princeton University





Assumptions

- 1. Number of beds in public sector has been obtained from National Health Profile 2019. (<u>https://www.thehinducentre.com/resources/article29841374.ece/binary/8603321691572511495.pdf</u>)
- 2. Number of beds in private sector was not available. Based on a ratio of 37:63 for public vs private hospitals, we have assumed same ratio for public vs private beds. Reference: <u>A. Gudwani, P. Mitra, A. Puri et al., India</u> <u>Healthcare: Inspiring Possibilities, Challenging Journey. McKinsey and Co., Jan. 2012.</u>
- 3. Information on number of beds in Ladakh was not available as it was recently declared as a Union Territory by Government of India.
- 4. Number of ICU beds in India was not available (since the registration of ICUs and hospitals is not a centralized process). Reference: <u>Critical Care in India. ICU Management & Practice 2014</u>.
- 5. Based on available information that critical care beds constitute 5-8% of total bed strength in large public teaching hospitals, we have assumed ICU beds constitute 5% of hospital beds across both public and private sector. Reference: <u>Yeolekar, M. E., and S. Mehta. ICU care in India-status and challenges. Journal of Association of Physicians of India 56, no. R (2008): 221.</u>
- 6. Number of ventilators in India was not available. Based on available information that 50% of ICU beds may have ventilators, we have also assumed 50% of ICU beds across both public and private sector, are equipped with ventilators. Reference: <u>Singh, P., Ravi, S., & Chakraborty, S. (2020, March 27). COVID-19: Is India's health infrastructure equipped to handle an epidemic</u>.





Hospital Beds in States

India Total		Number of hospital beds in private sector	
	7,13,986	12,15,706	19,29,692

	States	Number of hospital beds in public sector	Number of hospital beds in private sector	Total number of hospital beds (public+private)
1	Ladakh	0	0	0
2	Daman &Diu	240	409	649
3	Lakshadweep	300	511	811
4	Dadra Nagar Haveli	619	1,054	1,673
5	Andaman Nicobar Islands	1,075	1,830	2,905
6	Manipur	1,427	2,430	3,857
7	Sikkim	1,560	2,656	4,216
8	Nagaland	1,880	3,201	5,081
9	Mizoram	1,997	3,400	5,397
10	Arunachal Pradesh	2,404	4,093	6,497
11	Goa	3,012	5,129	8,141
12	Puducherry	3,569	6,077	9,646
13	Chandigarh	3,756	6,395	10,151
14	Tripura	4,429	7,541	11,970
15	Meghalaya	4,457	7,589	12,046
16	Jammu & Kashmir	7,291	12,414	19,705
17	Uttarakhand	8,512	14,493	23,005
18	Chhattisgarh	9,412	16,026	25,438

	States	Number of hospital beds	Number of hospital beds in	
		in public sector	private sector	(public+private)
19	Jharkhand	10,784	18,362	29,146
20	Haryana	11,240	19,138	30,378
21	Bihar	11,664	19,860	31,524
22	Himachal Pradesh	12,399	21,112	33,511
23	Assam	17,142	29,188	46,330
24	Punjab	17,933	30,535	48,468
25	Odisha	18,519	31,532	50,051
26	Gujarat	20,172	34,347	54,519
27	Telangana	20,983	35,728	56,711
28	Andhra Pradesh	23,138	39,397	62,535
29	Delhi	24,383	41,517	65,900
30	Madhya Pradesh	31,106	52,964	84,070
31	Kerala	38,004	64,710	1,02,714
32	Rajasthan	47,054	80,119	1,27,173
33	Maharashtra	51,446	87,597	1,39,043
34	Karnataka	69,721	1,18,714	1,88,435
35	Uttar Pradesh	76,260	1,29,848	2,06,108
36	Tamil Nadu	77,532	1,32,014	2,09,546
37	West Bengal	78,566	1,33,775	2,12,341



Number of hospital beds are estimates of current capacity based on specific assumptions

States have been arranged in increasing order of number of hospital beds



Hospital Beds in States

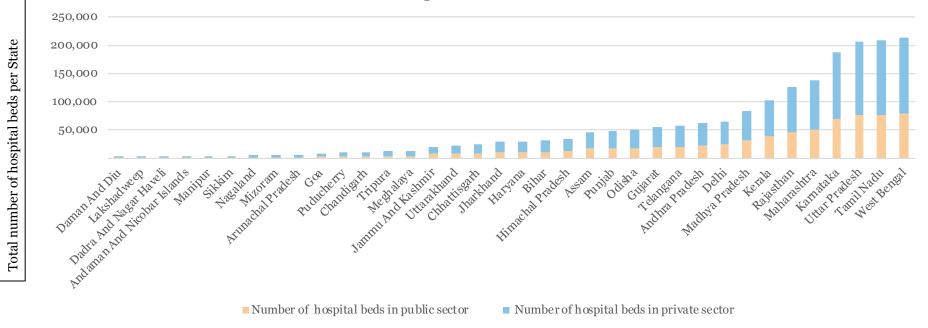
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India Total	Number of	Number	Total number
	hospital beds	of hospital beds	of hospital beds
	in public sector	in private sector	(public+private)
	7,13,986	12,15,706	19,29,692

Hospital Beds in States



Number of hospital beds are estimates of current capacity based on specific assumptions Height of column represents total number of hospital beds in that State

Height of column represents total number of hospital beds in that State States have been arranged in increasing order of total number of hospital beds



ICU Beds in States

	States	Number of ICU beds in public sector	ICU beds in private	(public +
			sector	private)
1	Ladakh	0	0	0
2	Daman &Diu	12	20	32
3	Lakshadweep	15	26	41
4	Dadra Nagar Haveli	31	53	84
5	Andaman Nicobar Islands	54	92	145
6	Manipur	71	122	193
7	Sikkim	78	133	211
8	Nagaland	94	160	254
9	Mizoram	100	170	270
10	Arunachal Pradesh	120	205	325
11	Goa	151	256	407
12	Puducherry	178	304	482
13	Chandigarh	188	320	508
14	Tripura	221	377	599
15	Meghalaya	223	379	602
16	Jammu & Kashmir	365	621	985
17	Uttarakhand	426	725	1,150
18	Chhattisgarh	471	801	1,272

India Total	Number of ICU	Number of ICU	Total number of ICU
	beds in	beds in	beds
	public sector	private sector	(public + private)
	35,699	60,785	96,485

	<i>a.</i> .			
	States	Number of ICU		Total number of
		beds in public	ICU beds in	ICU beds
		sector	private	(public +
			sector	private)
19	Jharkhand	539	918	1,457
20	Haryana	562	957	1,519
21	Bihar	583	993	1,576
22	Himachal Pradesh	620	1,056	1,676
23	Assam	857	1,459	2,317
24	Punjab	897	1,527	2,423
25	Odisha	926	1,577	2,503
26	Gujarat	1,009	1,717	2,726
27	Telangana	1,049	1,786	2,836
28	Andhra Pradesh	1,157	1,970	3,127
29	Delhi	1,219	2,076	3,295
30	Madhya Pradesh	1,555	2,648	4,204
31	Kerala	1,900	3,236	5,136
32	Rajasthan	2,353	4,006	6,359
33	Maharashtra	2,572	4,380	6,952
34	Karnataka	3,486	5,936	9,422
35	Uttar Pradesh	3,813	6,492	10,305
36	Tamil Nadu	3,877	6,601	10,477
37	West Bengal	3,928	6,689	10,617

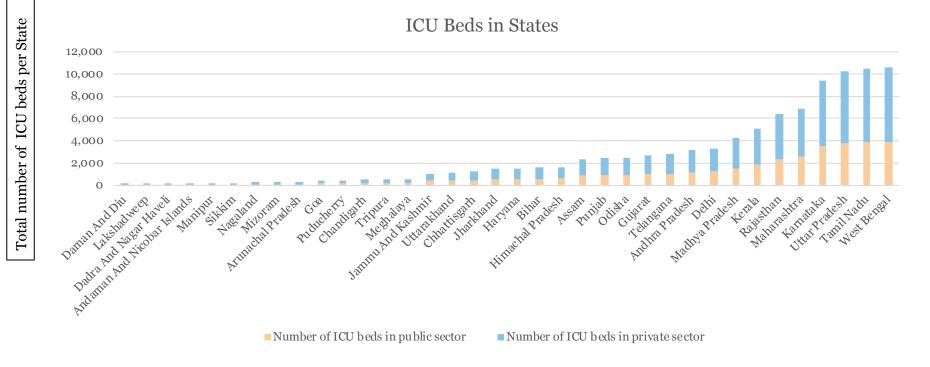
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Numbers of ICU beds are estimates of current capacity based on **specific assumptions** States have been arranged in increasing order of number of ICU beds



India Total	Number of ICU	Number of ICU	Total number of ICU
	beds in	beds in	beds
	public sector	private sector	(public + private)
	35,699	60,785	96,485

ICU Beds in States



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Numbers of ICU beds are estimates of current capacity based on specific assumptions

Height of column represents total number of ICU beds in that State States have been arranged in increasing order of total number of ICU beds



Ventilators in States

	States	Number of	Number of	Total number
		ventilators		
		in public	in private	(public +
		sector	sector	private)
1	Ladakh	0	0	0
2	Daman &Diu	6	10	16
3	Lakshadweep	8	13	20
4	Dadra Nagar Haveli	15	26	42
5	Andaman Nicobar Islands	27	46	73
6	Manipur	36	61	96
7	Sikkim	39	66	105
8	Nagaland	47	80	127
9	Mizoram	50	85	135
10	Arunachal Pradesh	60	102	162
11	Goa	75	128	204
12	Puducherry	89	152	241
13	Chandigarh	94	160	254
14	Tripura	111	189	299
15	Meghalaya	111	190	301
16	Jammu & Kashmir	182	310	493
17	Uttarakhand	213	362	575
18	Chhattisgarh	235	401	636

India Total	Number of ventilators in public sector	Number of ventilators in private sector	Total number of ventilators (public + private)
	17,850	30,393	48,242

	States	Number of	Number of	Total number of
		ventilators in	ventilators in	ventilators
		public sector	private	(public +
			sector	private)
19	Jharkhand	270	459	729
20	Haryana	281	478	759
21	Bihar	292	497	788
22	Himachal Pradesh	310	528	838
23	Assam	429	730	1,158
24	Punjab	448	763	1,212
25	Odisha	463	788	1,251
26	Gujarat	504	859	1,363
27	Telangana	525	893	1,418
28	Andhra Pradesh	578	985	1,563
29	Delhi	610	1,038	1,648
30	Madhya Pradesh	778	1,324	2,102
31	Kerala	950	1,618	2,568
32	Rajasthan	1,176	2,003	3,179
33	Maharashtra	1,286	2,190	3,476
34	Karnataka	1,743	2,968	4,711
35	Uttar Pradesh	1,907	3,246	5,153
36	Tamil Nadu	1,938	3,300	5,239
37	West Bengal	1,964	3,344	5,309

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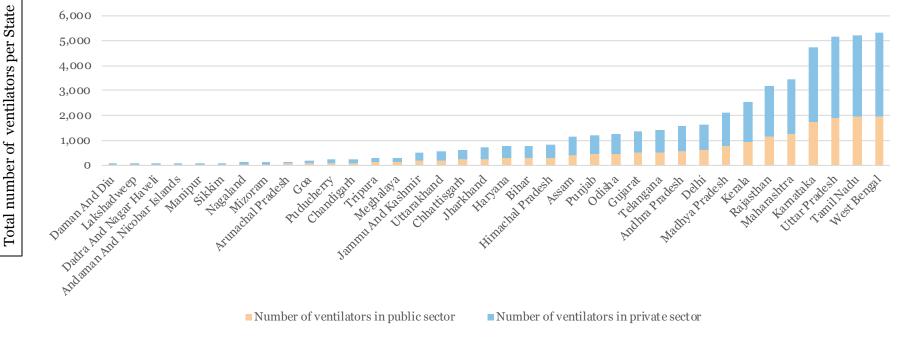
Numbers of ventilators are estimates of current capacity based on **specific assumptions** States have been arranged in increasing order of number of ventilators



Ventilators in States

India Total	Number of	Number of	Total number of
	ventilators in	ventilators in	ventilators
	public sector	private sector	(public + private)
	17,850	30,393	48,242







Numbers of ventilators are estimates of current capacity based on specific assumptions

Height of column represents total number of ventilators in that State States have been arranged in increasing order of number of ventilators



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Thank you!



