

Assessment of infrastructure and manpower in public health facilities in Madhya Pradesh: Spatial dimension

S. K. Sharma, Madhya Pradesh

Abstract

Madhya Pradesh, one of India's poorest states, has experienced significant changes in the state's demographic attributes despite substantial existing gap between the state and national health facilities and achievements. Utilizing the recently published data by the Government of India, Government of Madhya Pradesh and Niti Aayog, the paper examines the crucial spatial dimensions of public health facilities available to the people of the state. The existing health facilities both at aggregate and in spatial terms are found much less than that is required. This is evident from the indicator such as the average area and population served by each health facilities which continues to be much higher than the national averages. The inherent spatial disparity too accentuates the already grim situation. More than three-fourths of sub-centres do not have male health workers, making them functionally ineffective. One-third of the PHCs are without doctor and more than half have only one doctor. CHCs suffer overall shortage of 96.3 percent of required specialists. Acute scarcity of qualified personnel, causing long waiting time and low-quality services is major reason of lower achievements and distraction of patients from existing public health facilities.

Keywords: *Human development, crude birth rate, total fertility rate, infant mortality rate, crude death rate, population-institution ratio.*

Introduction

Healthcare services are required not only for prevention and control of major communicable and non-communicable diseases but also are necessary for controlling rapid population growth by facilitating family welfare measures and for overall improvement in the quality of life. Healthy mother and healthy child are the objectives of the healthcare system in the country. Madhya Pradesh along with other neighbouring states have been lagging behind in these services resulting in poor health of both mother and child and abnormally high vital rates, earning the title of 'BIMARU states' (term coined by

A. Bose, as cited by Kumar 2007) for them in 1980s. The Government of India in April 2005 launched the National Rural Health Mission (NRHM) and put Madhya Pradesh in the list of 18 high focussed states in order to help improve the condition of poor health in the state.

Despite significant progress made since the Independence and particularly in recent years, the state may take more time to reach the national level if not the level of the developed states. For providing health facilities to everyone and everywhere, three-tier system of healthcare facilities has been

established in the state in line with the entire country. The Sub-health Centre (SHC) is the basic and the smallest unit, serving some 5000 people in the plain areas. The SHCs are mandated to provide services to the rural people pertaining to primary treatment, immunisation, maternal and child healthcare, family planning, common diseases and public health and sanitation. Above this sub-centre is 'Primary Health Centre' (PHC) meant for 30,000 people. These centres to provide higher order medical and surgical services. Community Health Centre (CHC) is at the third level in the array of health services and is designed to cater to the health needs of 120,000 people with medical, surgical and delivery services. It is a referral unit in the rural areas. District hospital is at the top of all these institutions which provides higher level medical, surgical and delivery services and arranges different types of camps such as eye camp, vasectomy, awareness camp of specific diseases.

The National Health Mission (NHM) has been launched in this state also to provide universal access to equitable, affordable and quality health care services that are accountable and responsive to the people's needs. The main components of this mission include the strengthening the health system in rural and urban areas, Reproductive-Maternal-New-born Child and Adolescent Health (RMNCH+A) and control of diseases. Several new programmes have been launched under NHM recently. Besides modern healthcare system, traditional Indian systems of medical care have also been strengthened under the department of AYUSH (Ayurveda, Yoga and naturopathy, Unani, Sidhha and Homoeopathy) in 2003.

Objectives

The state progressed in raising the healthcare facilities and launched several programmes with an objective to improve the health conditions of the population of this state. National level study carried out earlier shows significant spatial variation in availability and accessibility not only of healthcare infrastructure but also of outcome and processes (Sharma, 2020, 2021). In this context, NITI Aayog prepares Health Index, utilizing state-wise data on health performance and governance, to measure the annual performance of states and Union territories since 2017 (Niti Aayog, 2019, 2021). But this report does not consider the spatial distribution of health infrastructure below the state level, accessibility, and pressure of population on public health facilities, particularly in rural areas nor competition of public health facilities with private facilities. The Niti Aayog presents average progress for the state at aggregate level ignoring the much glaring intra-state variation. It is this aspect the paper addresses to examine by carefully mapping the intra-state reality regarding healthcare facilities in the state.

This research aims at analysing temporal progress and inter-district variation in healthcare infrastructure in terms of certain inputs such as 'health institutions', population-institution ratio and 'availability of health personnel in Madhya Pradesh during 2019-20. Private sector records massive growth in providing healthcare services despite high cost in comparison to public sector. It also necessitates the examination of the public sector healthcare system.

Table 1: Madhya Pradesh - Comparison of certain health achievements with India, 2001-19

Indicators	2001		2011		2019		Index, 2019	% Change
	M.P.	India	M.P.	India	M.P.	India	(MP/India) *100	2001-19
Total Crude birth rate	31.0	25.4	26.9	21.8	24.5	19.7	124.4	-21.0
Rural crude birth rate	32.9	27.1	28.8	23.3	26.4	21.4	123.4	-19.8
Urban crude birth rate	23.1	20.3	20.1	17.6	19	16.4	115.9	-17.7
Total Crude death rate	10.1	8.4	8.2	7.1	6.6	6.0	110.0	-34.7
Rural crude death rate	10.8	9.1	8.7	7.6	7.0	6.5	107.7	-35.2
Urban crude death rate	7.2	6.3	6.1	5.7	5.6	5.0	112.0	-22.2
Infant mortality rate	86	66	59	44	46	30	153.3	-46.5
Rural infant mortality rate	93	72	57	43	50	34	147.1	-46.2
Urban infant mortality	54	42	62	46	32	20	160.0	-40.7
Total fertility rate	3.9	3.1	3.1	2.4	2.7	2.2	122.7	-30.8

Source: Government of India, Ministry of Health & Family Welfare, Central Bureau of health Intelligence National Health Profiles. 2021.

Table 2: Madhya Pradesh - Growth of public health institutions, 2001 to 2020

Class of health facility	2001-02	2005-06	2008-09	2012-13	2018-19	2019-20 (23/4/2020)	% Growth
District Hospital	39	39	50	50	51	52	33.3
Civil/Sub-District Hospital	57	57	56	56	84	199	249.1
Community Health Centre	227	265	333	333	330	369	62.6
Primary Health Centre	1194	1152	1155	1156	1199	1574	31.8
Sub-Health Centre	8835	8835	8659	8869	10226	12128	37.3
TOTAL	10449	10445	10345	10556	11890	14322	37.1
Population	60348023					82794567*	37.2

Source: Government of India, Ministry of Health & Family Welfare, Central Bureau of Health Intelligence National Health Profiles. 2021. * Estimated population by Census of India.

Methodology

This is an evaluative study of availability and accessibility of public healthcare services based on secondary data published by the Ministry of Health, Government of India as well as of Madhya Pradesh. Major sources of information are Ministry of Health and Family Welfare, National Health Profiles 2021; Government of India, Central Bureau

of Health Intelligence (2021), Health and Family Welfare Statistics in India, 2019-20, Rural Health Statistics (RHS), 2019-20; Health care system in India, and Health Management Information System (HMIS) 2019-20 (An Analytical Report) and Directorate of Health Services, Development and Planning Division, Government of Madhya Pradesh (2019) Health Institutions in

Madhya Pradesh, 2019. Niti Aayog's 'Report on the Ranks of States and Union Territories (Health Index) published in 2019 and 2021 is also provides necessary comparative perspective for the present study. Spatial distribution of infrastructure and health personnel is discussed converting actual number into density of healthcare institutions per 100 km² and calculating institution-population ratio, utilizing the district-wise population estimates made by the National Health Intelligence Bureau, New Delhi for mid-July 2020. These rates and ratios are depicted on maps for easy reading of the spatial pattern.

Health achievements

Madhya Pradesh is the second largest state in terms of area and the seventh largest in population in the country. But in performance of the healthcare services, it is far behind as evident from the state-wise health progress report of the Niti Aayog (2021) based on 44 indicators and sub-indicators. Madhya Pradesh occupies the 17th rank among large states of the country in overall performance with a score of 36.72 during 2019-20 (Niti Aayog, 2021, 22) marginally better than only Uttar Pradesh (score 30.57) and Bihar (score 31.00). Rajasthan is just after Madhya Pradesh with score of 41.33. This is in sharp contrast to the performance by Kerala and Tami Nadu, with overall performance score of 82.20 and 72.42 respectively. Further, performance based rank of Madhya Pradesh has undergone little change in 2018-19 and 2019-20. The state is categorized as an 'aspirant' state as it is part of the bottom one-third states that have substantial scope for improvement (Niti Aayog, 2021, 24). The state is one of the privileged eighteen Empowered Action Group (EAG) states

receiving special attention for improving the health conditions.

In health performance, the state is lagging far behind the national average (Table 1). Despite progress in health performance discernible after reorganization of the state in 2000, the pace is slower than most other states of the country, as evident from higher index values of the negative indicators. For instance, infant mortality rate is 153 percent higher than the national average of 2019. The situation is not too different in case of fertility rate, birth rates and death rates.

Growth of healthcare institutions

Accessibility to healthcare services, especially by the poor and the underprivileged sections of the society mainly depends on the distribution and location of the health institutions. The number of healthcare institutions has increased since 2001 in the state as is evident from Table 2. Total institutes increased by 37.1 percent during 2001-2019, but merely kept pace with the total population growth (37.2%) during the corresponding period. However, the increase in Civil/sub-district hospitals has been more spectacular with a growth rate close to 250 percent in this period. But this increase could rarely compensate the gaps that existed earlier and the state continues to suffer from the dearth of health facilities even today.

Spatial distribution of healthcare institutions

Distribution of health institutions in terms of actual number, density per unit of area and population served by each institution may now be examined. Population size is crucial in determining the required number of healthcare centres. But in practice it is hardly followed.

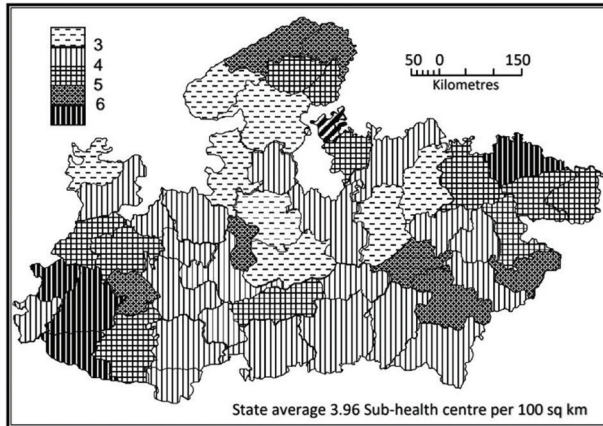


Fig. 1: Madhya Pradesh - Number of SHCs per 100 Km²

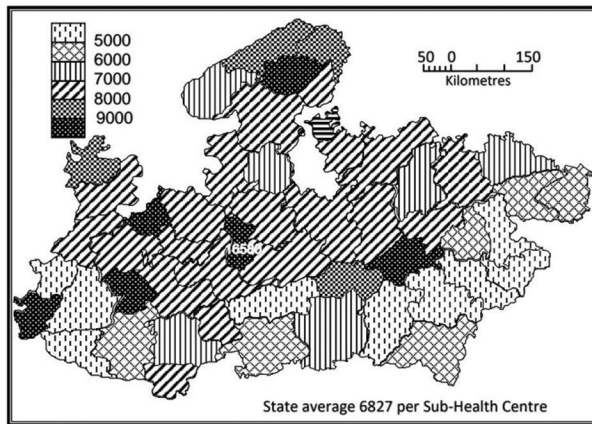


Fig. 2: Madhya Pradesh - Population served by SHCs, 2020

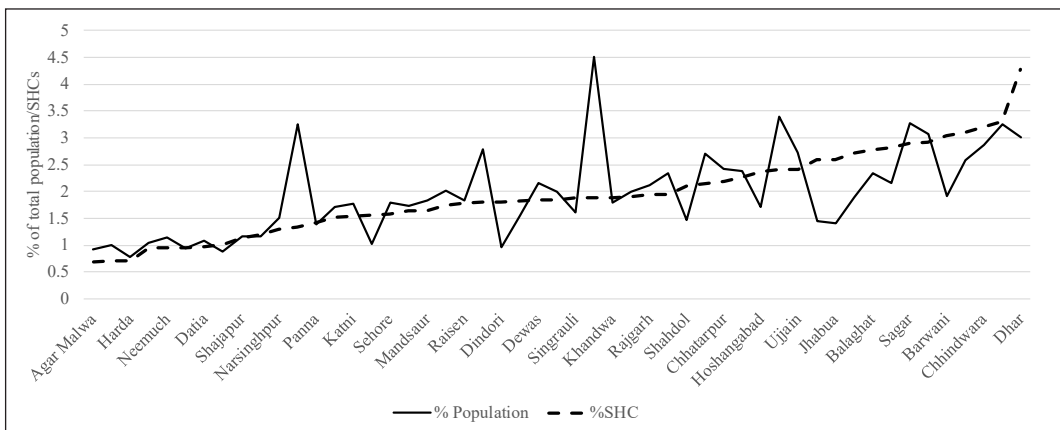


Fig. 3: District-wise comparison of proportion of population and Sub-Health Centres 2020

Sub-Health Centres

Sub-health centre (SHC) is the grassroots facility and first contact point between the primary health care system and the community. Sub-centres are assigned the task of interpersonal communication in order to bring about behavioural changes and provide services in different programmes like maternal and child health, family welfare, nutrition, immunization, and control of diarrhoea, communicable and non-communicable diseases. Therefore, sub-health centres are planned to be accessible to the people for common health problems and acquaintance with health programmes. They are comparatively more ubiquitous than other health facilities. In fact, the effectiveness of health services depends, to a great extent, on distribution, location and availability of medical personnel at these sub-health centres.

There are 12,128 active sub-health centres during 2019-20 in the state, constituting 85 percent of total active public health facilities. District-wise distribution of these active centres is very uneven. It ranges from 83 in newly created Agar Malwa and 85 in Alirajpur district to 402 in Rewa and 520 in Dhar district. Ratio between lowest and highest numbers is 1:6.3. This number, with other things, depends on the areal size of the district. Therefore, their density may give more realistic picture of their distribution. Density of Sub-health centres per 100 km² ranges from only 1.76 in Sheopur tribal district to 8.76 in Jhabua, another tribal district with state average of 3.93. More than half (29 out of 51) of the districts are below the state average. Majority of the tribal districts of south, southeast and southwest, Bundelkhand, eastern Malwa and Madhya Bharat are in this class (Figure 1). In contrast, western Malwa and Nimar plain, Gwalior

region and Baghelkhand region have higher density than state average.

Since the number of health institutions is determined by population size, distribution of health facilities should respond to uneven distribution of population. This criterion also fails to justify the present distribution of SHCs. One sub-centre is needed to serve 5000 persons in plain and 3000 persons in hilly areas. At present, average population served by each sub-centre varies from 3667 persons in Dindori district to more than 10 thousand persons in Gwalior (10626), Indore (16312) and Bhopal (16583) districts which have large urban population. Sub-centres of all districts have to cater more population than the norm. Even tribal district like Dindori has average of 3667 persons per sub-health centre, being lowest in the state, against the norm of 3000 people for tribal district. Thirty of the fifty-one districts have higher population ratio than the state average. They include most of the districts north of the Narmada valley. Figure 2, showing the SHC-Population ratio, give quite different picture than that of the density map of SHC (Figure 1). The western Malwa, Nimar region and Baghelkhand region have high density but low pressure of population on sub-centres in sharp contrast to parts of Madhya Bharat and Bundelkhand which present the opposite. It testifies that high density of SHCs is not accompanied by low population pressure.

Since the number of sub-health centres is determined by the population size, the share of the district in sub-health centres should correspond with its share of population of the state. But this is not the case (Figure 3). Thirty districts, mostly confined to the north of the Narmada River, have lower share in number of the sub-health centres than the

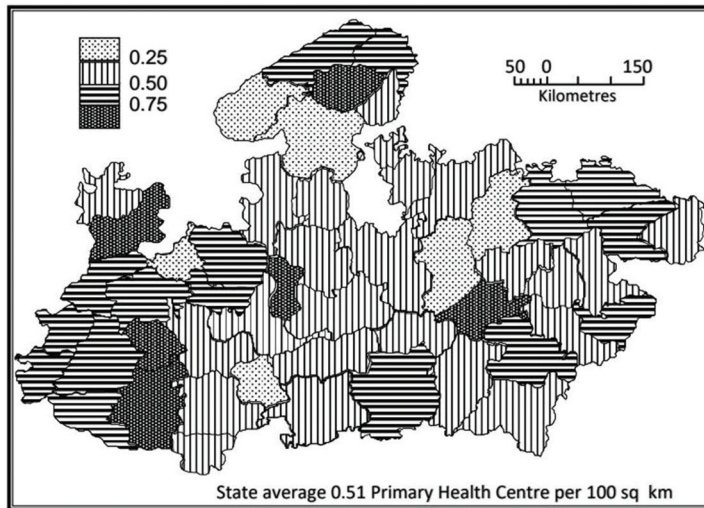


Fig. 4: Madhya Pradesh - Number of Primary Health Centres per 100 Km², 2020

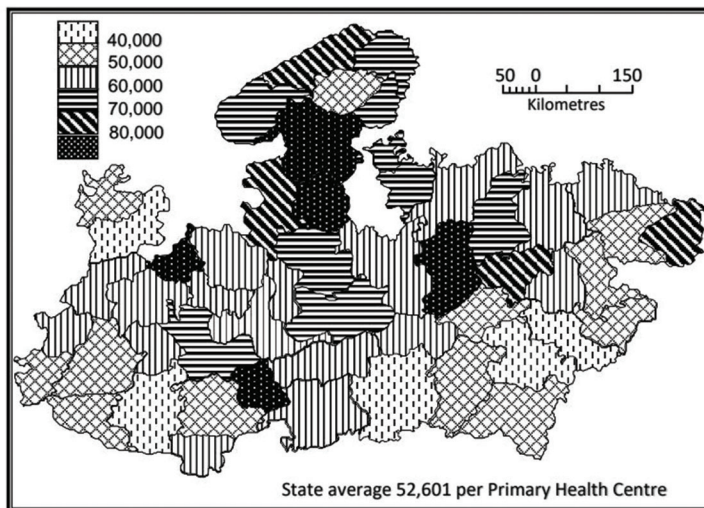


Fig. 5: Madhya Pradesh - Population served by each PHC

share in total population in 2020. In districts supporting big cities, such as Indore, Bhopal, Jabalpur and Gwalior, this deficiency is met by the proliferation of the private healthcare facilities. But in less urbanized and rural districts it is difficult to get basic medical aids. In most of the districts of western and northern Madhya Pradesh the population curve is well above the SHC curve showing

deficit of SHCs in respect of population. Such districts are problematic in healthcare services.

Primary Healthcare Facilities

Primary Health Centre (PHC) is not only higher-ranking healthcare facility controlling the sub-centres under its jurisdiction, but also is the first contact point between village

community and medical officer. The PHCs are envisaged to provide integrated curative and preventive health care to the rural people. There are 1,574 active PHCs in the state in 2019-20. District-wise number of PHCs varies from 6 in Agar Malwa to 71 in Chhindwara district. Thirty-one districts have lesser PHCs than the state average of 30.9. Their density per 100 km² varies from 0.16 PHC in Shivpuri and 0.18 in Sheopur district to more than one in Gwalior (1.23), Jabalpur (1.29), Bhopal (1.66) and Indore (1.74) against the state average of 0.51 (Figure 4). The distribution pattern of the density of PHCs is almost similar to that of the sub-health centres. Majority of the districts have lower density than that of the state average. More PHCs are concentrated in areas of high density of Sub-centres.

PHC Population ratio ranges from 33,364 in Khargone district and 33573 in Chhindwara district to 122,981 in Shivpuri and 126,633 in Agar Malwa district with state average of 52601 in 2020 (Figure 5). Norm per PHC is of 30,000 persons in plain area and 20,000 persons in hilly tribal areas. In the southern and western hilly and tribal belt of the state, facing multifaceted health problems, population pressure on PHCs is much higher than the norm, ranging from 36507 persons in Dindori in south-east, to 55645 persons in Jhabua in west and 65347 persons in Sheopur district. in the north. Much higher average population per PHC than the norms speak of high and very high pressure on them, reducing their performance. In 34 districts, population-PHC ratio is more than 50,000 persons. Besides Shivpuri and Agar Malwa, Ashoknagar, Damoh and Harda too have more than 80,000 persons dependent on one

PHC. Scarcity of health personnel and modern facilities multiplies this problem. Usually, low density of PHCs is accompanied by high pressure of population with few exceptions.

Community Healthcare Facility

Community healthcare centres are referral units and are provided with higher order health facilities than the PHCs. They are treated equivalent to hospitals. One CHC is supposed to cater to the needs of 120,000 persons in plains and 80,000 persons in hilly area. There are 369 Community Health Centres (CHC) active in the state. Usually, they are located at Development Block headquarters. Certain blocks have more than one CHC. Number of CHCs ranges from 3 each in Agar Malwa, Neemuch, Sheopur and Umaria districts to 13 in Chhindwara and 14 in Dhar. Thirty out of 51 districts have less than 7 CHCs with average of 7.2 per district for the state. Density of CHCs per 1,000 km² varies from 0.5 in Sheopur to 2.1 in Indore, Jabalpur and Anuppur districts.

Population per CHC varies from 106,766 persons in Anuppur and 114,734 persons in Dindori district, both hilly and tribal area, to 453,005 in Ujjain, 466,929 in Indore and 675,753 people in Bhopal district (Figure 6) - much higher population than the norm. In thirteen districts more than 250,000 people are dependent on one CHC. Most of them are distributed in the north-western part of the state. Jabalpur and Satna are out of this belt.

Table 3 shows that the value of the standard deviation is more than 28.4 percent of the mean for SHC, 51.6 percent of PHCs and 35.8 percent of CHCs, showing wide variation in their distribution. The level of disparity is the highest in case of Primary Health Centres which are crucial healthcare

Table 3: Madhya Pradesh - Parameters of distribution of healthcare facilities in 2019-20

Parameters	SHC	PHC	CHC	SDH	DH	TOTAL
	Distribution of Health Centres					
Mean	326	31	7	8	1	281
SD	93	16	3	2	0	105
Minimum	83	6	3	2	1	95
Maximum	520	71	14	10	2	596
Distribution of population per health centres						
Mean	7214	58014	234822	450097	1608009	5946
SD	2417	18828	92835	174743	673420	1700
Minimum	3667	33364	106766	160777	650330	3200
Maximum	16583	126633	675753	1004554	3735435	12067

Source: Based on Month-wise Status of Data Reporting for districts of Madhya Pradesh. From Govt. of India, Ministry of Health and Family Welfare (2020). Health Management System – A digital initiative under National Health Mission. Accessed on 16.03.2022.

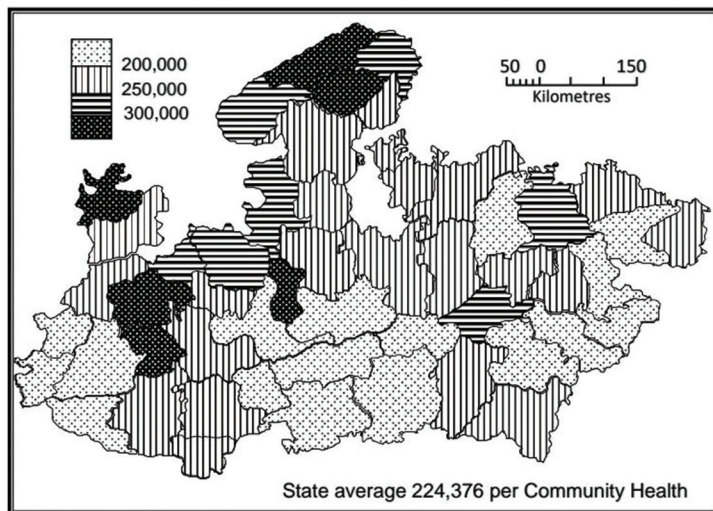


Fig. 6: Madhya Pradesh - Population served by CHCs

facility at the primary level. CHCs are also sporadically distributed. SHCs, supposed to be diffusion point of health programmes in rural areas, is also distributed very unevenly.

Infrastructure

Utilizing fixed population norms, Ministry of Health and Family Welfare, Government of

India has calculated the number of required health centres for each state as well as of the country. These estimated numbers, existing centres and difference of these numbers in rural areas of the state are presented in Table 4 which reveals that existing number is invariably less than the required at every

Table 4: India - Shortfall in health facilities for estimated mid-year population, March 2020 (rural areas)

Health Facility	Required	In Position	Shortfall	% Shortfall
	R	P	S	
Sub-centres (SC)	14106	10226	3880	27.5
Primary Health Centre (PHC)	2260	1199	1061	46.9
Community Health Centre (CHC)	565	306	256	45.3

Source: Government of India, Ministry of Health and Family Welfare (2020). Health Management System – A digital initiative under National Health Mission. Accessed on 16.01.2021.

level. SCs are short by 28 percent of the required number. Number of existing PHCs is only 53 percent and of CHCs 55 percent of the required numbers in 2020 restricting the accessibility of these facilities. Average area served by each SC is about 25 km², one PHC per 196 km² and one CHC per 835 km², much higher than the national averages of 19, 120 and 560 km² respectively in 2019. Average rural population served by each SC is 6827, by each PHC 52601 and by each CHC 224376 persons in mid-July 2020. These numbers are not only much larger than the stipulated for each class of health centres but also much less than the national averages. It means basic infrastructure could not be created in rural areas where private services are also scanty.

Human resources

Existing rural health facilities of the state are suffering from acute shortage of skilled health personnel which is evident from the Rural Health Statistics published by the Ministry of Health and Family Welfare, Government of India (2021). The agency has calculated requirement of different cadres of man power in different class of healthcare facilities, using the prescribed norms. Table 5 has the details.

It is difficult to assess shortage of manpower in the absence of district wise information on working health personnel. However, at the state level, all classes of healthcare facilities are suffering from acute shortage of manpower, excepting the Sub-Centres. However, over three-fourths (8064 out of 10226) of the sub-centres are functioning without male health workers. Nearly one-tenth (737) of them are without Auxiliary Nurse and Midwife ANM/Female health worker (HW). Scarcity of ground level health workers makes these sub-centres functionally ineffective.

The situation in PHCs is not very encouraging. The norm set for PHC is two medical officers along with two pharmacists, four staff nurses, one male health assistant, and one female health assistant along with other paramedical staff. But nearly a third of the PHCs are functioning without any doctor and more than half have only one doctor each. Large number of PHCs has no lady doctors. Over 38 percent of the PHCs are without a laboratory technician and close to a quarter of these PHCs are without a pharmacist (Table 6). There is a shortfall of 11.6 percent of doctors in PHCs at the state

Table 5: Madhya Pradesh - Human resources in public health facilities of rural areas, March 2020.

Facility/Posts	Required	Sanctioned	In Position	Vacant	Shortfall (R-P)	% Shortfall
Health worker (Female)/ANM at Sub-centres	10226	10226	9721	505	505	4.9
Health worker (Female)/ANM at PHCs	1199	2678	2366	312	*	-97.3
Health worker (Male) at PHCs	10226	4260	1549	2711	8776	84.9
Health Assistant at PHCs	2398	2124	764	1360	1634	68.1
Doctors at PHCs	1199	1525	1065	460	134	11.2
Ayush doctors at PHCs	1199	NA	208			82.7
Surgeons at CHCs	309	324	7	317	302	97.7
Obstetricians & Gynaecologists at CHCs	309	324	21	309	288	93.2
Physicians at CHCs	309	324	7	317	302	97.7
Paediatricians at CHCs	309	60	11	49	298	96.4
Total Specialists at CHCs	1236	1032	46	986	1190	96.3
Radiographers at CHCs	309	309	183	126	126	40.8
Pharmacists at PHCs & CHCs	1508	1508	1323	185	185	12.3
Laboratory Technicians in PHCs & CHCs	1508	1508	1323	185	185	12.3
Nursing Staff at PHCs & CHCs	3362	3362	2853	509	509	15.1

Source: Ministry of Health and Family Welfare, Govt. of India-Rural Health Statistics, 2019-20

level. About 30 percent of sanctioned posts are vacant in 2019. The shortfall is 68 percent for female health assistants and 84.9 percent for male health workers. Acute scarcity of qualified personnel, causing huge pressure on existing staff, long waiting time and low-quality services, is one of the major reasons of distraction of patients from government health facilities and of attraction towards private facilities.

The CHCs provide specialized medical facilities of surgeons, obstetricians and gynecologists, physicians and pediatricians. However, in this respect, there is a glaring shortfall of required posts by 97.7 percent

surgeons, 93.2 percent obstetricians and gynecologists, 92.2 percent physicians and 97.7 percent pediatricians. As against the requirement of all specialists of 1236, the shortfall is 1190 specialists in 2020 which is 96.3 percent of required specialists. Out of the sanctioned posts, 97.8 percent of Surgeons, 95.4 percent of obstetricians and gynecologists, 97.8 percent of physicians and 81.7 percent of pediatricians are vacant as on 31st March 2020 making up an overall 95.5 percent of the sanctioned posts of specialists being vacant. This reveals the sorry state of affairs with regard to specialized manpower available currently.

Table 6: India - PHCs without health personnel in rural areas 31 March 2019

Health personnel	PHCs	% of Total
Total	1039	100
With 1 doctor	461	50.9
Without doctor	238	31
Without Lady doctor	127	9.6
Without Lab. Technician	617	38.4
Without Pharmacist	397	23.9

Source: Health Management System – A digital initiative under National Health Mission.

Table 7: Madhya Pradesh - Grading of CHCs and PHCs, 2019-20

Grade of Facility	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Not eligible	Total
Centre	Number of health centres in each grade class							
CHCs		0	0	0	9	155	166	330
PHCs Total	0	0	3	99	69	27	1143	1341
PHCs Rural	0	0	0	78	48	15	1057	1198
PHCs Urban	0	0	3	21	21	12	86	143
	Percent of total health centres in each grade class							
CHCs		0.0	0.0	0.0	2.7	47.0	50.3	100.0
PHCs Total	0	0.0	0.2	7.4	5.1	2.0	85.2	100.0
PHCs Rural	0	0.0	0.0	6.5	4.0	1.3	88.2	100.0
PHCs Urban	0	0.0	2.1	14.7	14.7	8.4	60.1	100.0

Source: Statistical Division, Ministry of Health and Family Welfare, Govt. of India (2021) HMIS Health Management Information System 2019-20 (An Analytical Report)

Grading of health facilities

Considering the availability and quality of infrastructure, working health personnel and services a set of standards set by Indian Public Health Standards (IPHS), different health care facilities have been graded. National Health Mission (NHM) started grading of Community Health Centre (CHC) in 2014-15 and of PHCs in 2018-19 based on the data reported on Health Management

Information System (HMIS). The main objective of grading was to monitor the healthcare services rendered by CHCs and PHCs by continuous assessment of resources, quality of services and providing feedback during resource allocation.

CHCs are graded on the basis of infrastructure and MIS data. These data cover: 1. Manpower availability, 2. Infrastructure availability, 3. Drug & supplies availability, 4. Service availability, 5. Client orientation,

and 6. Service utilization. If a CHC meets norms on first two mandatory categories, viz., manpower availability and infrastructure availability, only then it is considered for grading. Those not meeting the norms on these two mandatory categories are excluded from the grading exercise and are labelled as 'not eligible' (NE). Eligible CHCs are assigned grades from 1 to 5. Increasing grade shows declining availability and utilization of resources.

Grading of PHCs is based on infrastructure and MIS data; but they differ from those fixed for CHCs. Information considered are:

1. Manpower availability,
2. Infrastructure & Service availability
3. Essential laboratory services
4. Drug and supplies availability,
5. Service utilization/ Performance indicators.

Manpower availability is mandatory category and only those PHCs are considered for grading which fulfil this category; and those not meeting the norms on mandatory category are classed as 'not eligible' (NE). The PHCs selected for grading are also assigned grades from 0 to 5. Gradation of CHCs and PHCs of Madhya Pradesh is summarized below (Table 7).

Significantly, more than half of the CHCs fail to fulfil the mandatory requirements of infrastructure and availability of manpower and therefore are put under NE category. The remaining CHCs are placed at grade 5 with minor exceptions. The poor-quality health services offered by these CHCs are much too evident from their abysmally poor grades. The situation is not good even for the PHCs, 85.2 percent of which are not even eligible for grading for non-fulfilment of the mandatory requirement of manpower. Only 7.6 percent PHCs are in the second and third grades and

7.21 percent in 4th and 5th grades. PHCs are principal healthcare service providers in rural areas; hence their poor grades reflect the paucity of these services in areas where they are needed most.

Conclusion

Public health services in Madhya Pradesh continue to remain neglected as a sector and as a priority. There is acute scarcity of healthcare institutions and more of skilled health personnels, raising questions on their accessibility, availability, efficiency and quality of services. Ranked on the basis of infrastructure and health personnel, more than half of the CHCs and more than three-fourths of PHCs of the state are not even eligible for grading in respect of functioning. It is no wonder that the state is far behind the national averages in health and healthcare, particularly in indicators such as fertility, mortality, maternal and child health and nutritional achievements. Health is primarily a state responsibility and Madhya Pradesh would do well to accord highest priority to improve health infrastructure in the years to come.

References

- Government of India, Ministry of Health and Family Welfare (2017). *National Health Policy 2017*. Retrieved 16 January 2021.
- Government of India, Ministry of Health and Family Welfare (2020). *Health and Family Welfare Statistics in India 2019-20*.
- Government of India, Ministry of Health and Family Welfare (2021). *RHS Eng-Hindi 2019-20. Health care system in India, Part 1. Health Management System – A digital initiative under National Health Mission*.
- Government of India, Ministry of Health and Family Welfare, Central Bureau of Health

- Intelligence (2021). *National Health Profiles 2021*. New Delhi.
- Government of India, Ministry of Health and Family Welfare, National Health Mission, (2012). *Indian Public Health Standards*. <https://nhm.gov.in/index1.php?lang=1&level=2&sublinkid=971&lid=154>
- Government of India, Ministry of Health & Family Welfare, Statistics Division (2021). *Health Management Information System. HMIS 2019-20 (An Analytical Report)*.
- Government of Madhya Pradesh, Directorate of Health Services (2019). *Health Institutions in Madhya Pradesh*. Development & Planning Division, Satpura Bhawan, Bhopal: Madhya Pradesh March.
- Kumar, N. K. P. (2007). Ashish Bose - The man who coined the term 'Bimaru.' *Live Mint. The Wall Street Journal*. <http://www.livemint.com/2007/07/11001558/Ashish-Bose--The-man-who-coin.html>
- Niti Aayog (2019). *Healthy States - Progressive India*. Report on the Ranks of States and Union Territories (Health Index). Online accessed on 30 January 2020.
- Niti Aayog, Ministry of Health and Family Welfare and World Bank (2021). *Healthy States Progressive India: Report on the Ranks of States and Union Territories*. Health index round IV 2019-20.
- Sharma, S. K. (2020). Rural-urban divide in India: A spatial perspective. *Population Geography*. 42 (2): 1-18. Chandigarh.
- Sharma, S. K. (2021). Assessment of Availability and Achievements of the Public Health Care Services in Rural India. *Annals of the National association of Geographers, India, Vol. 41* (1), January 2021, Pp 1-24.

S. K. Sharma

Formerly Professor and Director,
Population Research Centre
Dr. Harisingh Gour Vishwavidyalay,
Sagar (M. P.), India

E-mail: shrikamal.sharma@rediffmail.com