

HEALTH INFRASTRUCTURE, FACILITIES, PERSONNEL AND SERVICES IN NAVI MUMBAI

"It's not enough that we do our best; sometimes we have to do what's required"

– Sir. Winston Churchill

Executive Summary

Monitoring of health system resources, services delivered, available health personnel and their socio-demographic and economic characteristics is mandatory for future planning for healthy growth of a city. The present study is one of several such welfare measures undertaken by the Statistics Division of Economics Section, CIDCO in various planned nodes, villages, Panvel and Uran Municipal Councils of Navi Mumbai, with a view to take stock of the progress made by the city over last 37 years in terms of employment and economic activities in service sector in general, health infrastructure/health facilities (subject of present report) in particular. The main purpose of conducting such periodical surveys in the new planned city is to monitor the progress made and to underscore the areas where more resources are required for overall and balanced growth of the city. The information presented in this report may be found crucial for giving direction for effective health planning in future.

The Rationale of the Study

In the backdrop of rapid population growth in some of the nodes of Navi Mumbai and expected spurt of population in most of its other developing nodes in future, particularly those which are presently sparsely populated, the CIDCO has undertaken the present study entitled *Census of Hospitals/Nursing Homes in Navi Mumbai, 2007*, to take a stock of the existing health infrastructure, health facilities, health personnel available and health services provided in its all the 14 nodes including 95 villages and Municipal Councils. Hopefully, the baseline information collected in this study would yield the existing health scenario in the new planned city.

The Objectives

The primary objective of the present study is to review the existing health facilities, and medical and diagnostic services available in Navi Mumbai.

The study also aims to give age and sex profile of medical personnel working in hospitals/nursing homes, private clinics and pathology laboratories in the city, their educational qualifications and salary. The specific objectives of the study have been classified under the following three heads, namely, A. Health System Resources & Health Services; B. Private Clinics, and C. Pathology Laboratories.

Layout of the Report

The present study is divided into four sections: 'Section I: Introduction' deals with the rationale of the study, objectives and methodology used for data analysis; 'Section II: Health System Resources and Health Services' gives an overview of the existing



health facilities, health services delivered, and health personnel hospitals/nursing homes/ health centres and their socio-demographic and economic characteristics. It also discusses the methods of disposal of garbage/medical waste adopted by hospitals/nursing homes/health centres.' Section III: Private Clinics' presents information on the number and type of clinics, their spatial distribution; average cost of construction on the clinic by nodes and their average monthly turnover. The section also gives the socio-demographic and economic profile of clinic employees. Finally, 'Section IV: Pathology Labs' focuses on their spatial distribution by nodes/ villages/ Municipal Councils their monthly average turnover, average number of employees per lab and their socio-demographic and economic

characteristics. The report concludes with a section on 'Recommendations'.

Salient Findings in Brief

I. Health System Resources

This section gives the summary of the salient findings of the present study. ES Table 1 displays the statistics showing through numerical figures the availability of health system resources in Navi Mumbai. This table has been generated from the results presented in Sections II to IV of this report.

ES Table 1: Statistics at a Glance-Health System Resources (Physical)

Health System Resources	Number
General Hospitals	75
Nursing Homes/Speciality Hospitals	53
Health Centres/Other Hospitals & Dispensaries	48
No. of Beds	6036
No. of Private Clinics	1177
No. of Pathology Labs	97

ES Table 2 gives conservative estimates of some health system resources accessible to residents of Navi Mumbai. Availability of only four health system resources is presented. These are (i) number of physicians, (ii) number of dentists, (iii) number of hospital beds and (iv) number of pathological lab workers, per 10,000 population. These estimates are based upon some assumptions. For example, to estimate the availability of physicians per 10,000 population, it is assumed that on average, the number of doctors available in 'General Hospitals', 'Nursing Homes/Specialty Hospitals', 'Health Centres/Other Hospitals' and 'Private Clinics' (Excluding Dental Clinics) are 6, 4, 3, and 1, respectively. For 'Dentists', it is assumed that 1.25 dental doctors are available per clinic. Using the data on number of health facilities available in Navi Mumbai given in ES Table 1 above, the estimates have been obtained. The population of Navi Mumbai has been taken as 1.81 million in 2007 as per the estimates given by CIDCO. It may be emphasized here that the average number of doctors assumed for different types of health facility is on lower side. For example, one physician per

clinic can never be an unreasonable assumption. Thus, the estimates of different health system resources presented in ES Table 2 may be on lower side.

ES Table 2: Estimates of Some Health System Resources per 10,000 Population in Navi Mumbai

Resource	Resource Available Per 10,000 Population
Physicians	11.0
Dentists	0.7
Path. Lab. Workers	1.9
Hospital Beds	33.5

Encouragingly enough, even these conservative estimates for Navi Mumbai are higher than their respective average values for some health system resources available in developing countries of the region (Appendix Table 1). For example, the availability of physicians (11.0) per 10,000 population in the city as found in the present study, is greater than 8 per 10,000 population observed for Pakistan- the highest in the Indian subcontinent circa 2005 (WHO 2006). According to the report, the average for India and Sri Lanka is 6 doctors per 10,000 population. Similarly, the number of hospital beds available in Navi Mumbai was about 34 beds per 10,000 population; whereas it ranged from a minimum of 2 for Nepal and a maximum of 29 beds per 10,000 population for Sri Lanka (Appendix Table 1). The availability of dentist per 10,000 population was less than one for almost all countries of the Indian subcontinent leaving Pakistan for which it was one per 10,000 population. The number of workers of pathology labs ranged from a minimum of <1 for India to a maximum of 10 for Myanmar. In the present study, we found 1.9 lab workers per 10,000 population. Thus, it can safely be inferred that the availability of health system resources, particularly number of physicians and number of hospital beds per 10,000 population in Navi Mumbai, are much higher than their corresponding figures for most of the countries of the Indian subcontinent. Other health resources are also not found deficient in the city as compared to their respective values for countries of Indian subcontinent. However, in comparison to available health system resources in

developed countries, these are much lacking in Navi Mumbai (Appendix Table 1).

Ownership Status of Private Clinics & Pathology Labs

The majority (54%) of the private clinics were owned by Physicians/General Practitioners. In case of Pathology labs, 51.5% labs were on rental basis. Among the labs run by their owners, only 13.4% were constructed on CIDCO plot. The rest (86.6%) of the labs were on private plots.

Year of Establishment of Private Clinics & Pathology Labs

In case of both clinics and pathology labs, the majority came into existence only after 2000. 76.2% of the clinics and 61.9% of pathology labs were established only in the beginning of the new millennium, respectively. However, their growth accelerated mainly after 2003-2004.

Nodes/villages-wise Average Cost of Construction of Clinics

The highest average construction cost of private clinic ranged from a maximum of Rs. 26 Lac to a minimum of Rs. 6.5 Lac for Vashi. However, the lowest construction cost per clinic was in Uran Municipal Council that ranged from a minimum of Rs. 1 Lac to a maximum of Rs. 2 Lac.

Average Rent per Month by Clinics

The maximum monthly rent paid by private clinics ranged between Rs. 12,000/- to a minimum of Rs. 5000/- for Vashi. Among other nodes, the monthly rent was more for Kharghar (Rs. 9000/-), followed by Airoli (Rs. 6000/-). However, the average rent per month was lowest in villages ranging from Rs. 1200/- to Rs. 2000/-. Interestingly, the rent was higher in more developed nodes like Vashi, Nerul, Airoli, Belapur, New Panvel and Koparkhairane. Although, Kharghar is relatively a new node which is fast developing, the rents are higher. This may be due to higher price of land as compared to other areas.

Average Investment in Private Clinics

The average investment made per clinic was highest (Rs. 14.4 Lac) for Airoli followed by Sanpada

(Rs. 10.5 Lac). The minimum investment was Rs. 1.2 Lac for clinics in UMC followed by clinics of MIDC area (Rs. 2.3 Lac). However, the investment on clinics located in New Panvel, Koparkhairane, Ghansoli, Kharghar Vashi, and Nerul, was also high. The investment was lowest (Rs. 1.2 Lac) in UMC.

Average Monthly Turnover of Private Clinics & Pathology Labs

The highest average monthly turnover was for 'Children's Clinic'. It is found Rs. 7.0 Lac per month. The next highest monthly turnover was for 'ENT Clinic' followed by 'Ayurvedic Clinics'. Their monthly

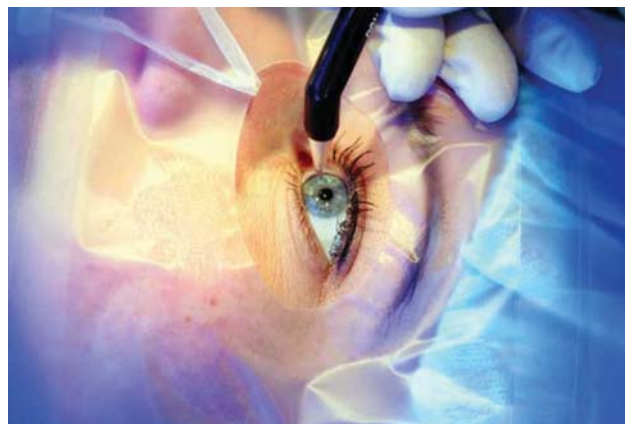


turnover was Rs. 5.5 Lac and Rs. 4.5 Lac, respectively. Both 'Dental' and 'General Physician Clinics' had a turnover of Rs. 4.1 Lac per month. The income of other clinics like 'Eye', 'General Clinic' and 'Homeopathic Clinic' was much lower than the above listed clinics. It varied within a low range of Rs. 2.6 Lac and Rs. 2.8 Lac per month. The earning of 'Dispensaries' on average, was less than Rs. 1.0 Lac per month.

In case of pathology labs, the distribution of monthly average income was slightly positively skewed. The majority (59.2%) of pathology labs had average monthly turnover from Rs. 1.0 Lac to Rs. 4.0 Lac. The monthly average income of about 18% pathology labs was between Rs. 5.0 Lac and Rs. 9.0 Lac. A significant percentage of pathology labs had average turnover of Rs. 25 Lac or more per month. The average monthly income of pathology was much more than the average monthly turnover of private clinics.

II. Health Services

ES Table 3 portrays the number of medical services available in hospitals/nursing homes/



specialty hospitals/health centres and other hospitals. These services include treatment facilities of different diseases by specialists in the field. It also gives the monthly average number of patients visiting OPD's of hospitals and other health facilities for communicable and other diseases.

ES Table 3: Statistics at a Glance - Health Services (1)

Health Services	Number
No. of Medical Services in Hospitals	1515
Monthly Average No. of Patients Visiting OPD's of Hospitals for Different Diseases	15498

ES Table 4 gives the results based on the question asked on the type of other medical services (Medical and Diagnostic, Immunization, and Vaccination) provided per month on average, to the patients of hospitals. The findings suggest that the majority of the patients (both OPD and Indoor) availed of medical and diagnostic services X-Ray, CT Scan, Sonography/Ultrasound, ECG, etc. The services for vaccination and immunization were not in much demand in the hospitals.

ES Table 4: Statistics at a Glance - Health Services (2)

Type of Health Services	Percent
Medical Services	86.2
Vaccination	9.5
Immunization	4.3

III. Health Personnel

Socio-demographic characteristics of Health Personnel of Hospitals, Private Clinics and Pathology Labs.

Age-sex structure

The sex ratio (defined as number of females per 1000 males) is much in favour of females particularly in age groups: < 25, 25-29, and 30-34 years. However, in case of employees of both private clinics and pathology, more males than females were working in this segment of health sector. The favourable sex ratio for females among employees of hospitals/nursing homes & super speciality hospitals/health centres may be due to more number of female nurses working in these health facilities.

The age-sex structures of all the employees of health facilities are young. However, they are more so for the personnel of private clinics and pathology labs. In case of the later, the sex ratio suggests much less female employees were working in pathology labs. Also, the age-sex structure of their employees was relatively much younger than those of working in clinics and hospitals/nursing homes, etc.

Education

ES Table 5 gives the educational level of employees of hospitals/nursing homes/health centres, private clinics and pathology labs. The three distributions mainly differ in the percentages for personnel with HSC and graduate qualifications. The percentage of graduates is higher in clinics and is more so in pathology labs as compared to graduates working in hospital/nursing homes/health centres. If the percentages of last cells are pooled with that of respective previous cells then we find that the bulk of employees were having either Post Graduate degree/Technical Diploma or professional qualifications. These percentages are 58.7, 55.6, and 43.2, for employees of hospitals/nursing homes/health centres, clinics and pathology labs, respectively. Both hospitals and private clinics required more personnel with postgraduate degree or higher professional qualifications. This is quite evident from the statistics presented in the table.

ES Table 5: Percentage Distributions of Employees of Hospitals, Private Clinics and Pathology Labs by Education

Education	Percentage of Health Personnel Working in		
	Hospitals/ Nursing/Homes Health Centres	Private Clinics	Pathology Labs
Below Primary	0.5	--	---
Primary	10.7	2.5	---
SSC	9.5	8.7	13.3
HSC	9.0	18.0	19.8
Graduate	11.6	15.2	23.7
PG/Technical Diploma	29.0	5.3	20.3
Professional	29.7	50.3	22.9
Total	100.0	100.0	100.0

Monthly Income

ES Table 6 gives percentage distributions of average monthly income of employees of hospitals/ nursing homes/health centres, private clinics and pathology labs. The income distributions of the employees of three types of health facilities differ significantly. About 88% of the workers of hospitals/nursing homes/health centres had average monthly income less than Rs. 20,000/-; whereas percentages of employees getting less than Rs. 20,000/- per month in clinics and pathology labs were 70.6% and 79.5%, respectively. Also, the three distributions differ in higher income groups. The average income of the employees of hospitals/nursing homes/health centres, clinics, and pathology labs was Rs. 9,975/-, Rs. 15,687/-, and Rs.12,832/- p.m, respectively. Although, the last income slab for hospital employees was much higher than those for the clinic and pathology workers, the average monthly income of hospital employees was much less than those for clinics and pathology labs employees. The low average income for hospital employees may be due to a large number of health personnel getting less than Rs. 20,000/- p.m. as compared to the employees of clinics and pathology labs.

ES Table 6: Percentage Distributions of Employees of Hospitals, Private Clinics and Pathology Labs by Monthly Income

Monthly Income (Rs.)	Hospitals/ Nursing Homes/ Health Centres	Monthly Income (Rs.)	Private Clinics	Monthly Income (Rs.)	Pathology Labs
Below 5000	1590(45.6)	Less than 5000	349(14.9)	<5000	38(11.0)
5000-9999	943(27.0)	5000-9999	536(22.9)	5000-9999	158(45.7)
10000-19999	533(15.3)	10000-19999	768(32.8)	10000-19999	79(22.8)
20000-49999	379(10.9)	20000-29999	539(23.0)	20000-29999	43(12.4)
50000-74999	27(0.8)	30000-49999	123(5.2)	30000-49999	16(4.6)
75000-99999	8(0.2)	50000-74999	25(1.1)	50000 & above	12(3.5)
1 Lac & above	7(0.2)	75000 & above	4(0.2)	Total	346(100.0)
Total	3487(100)	Total	2344(100)		
Average Salary	Rs.9975/-		Rs. 15687		Rs.12832

Place of Origin of Employees of Private Clinics and Pathology Labs

ES Table 7 gives the percentage distributions of employees of private clinics and pathology labs. The statistics reveal that the bulk of employees of both the health facility units were from Maharashtra. Among 19% migrant employees of clinics came from south zone; whereas this zone attracted 8.1% of the personnel working in pathology labs. A significant percentage of migrants workers of both clinics and pathology was from central zone followed by north zone. The migrant workers were mainly (In order of magnitude) from Uttar Pradesh, Kerala, Karnataka, Punjab, Gujarat, Rajasthan, Bihar and West Bengal.

ES Table 7: Place of Origin of Employees of Private Clinics and Pathology Labs

Place of Origin	% of Employees Working in	
	Private Clinics	Pathology Labs
Maharashtra	81.0	77.5
Central Zone	5.1	7.2
East Zone	1.7	1.7
West Zone	1.8	2.6
North Zone	3.6	2.9
South Zone	6.8	8.1
Total	100.0	100.0

Central Zone : Delhi, Madhya Pradesh, Uttar Pradesh
 East Zone : Assam, Bangladesh, Orissa, West Bengal,
 North Zone : Bihar, Punjab, Rajasthan
 South Zone : Andhra Pradesh, Karnataka, Kerala, Tamil Nadu
 West Zone : Gujarat, Goa (excluding Maharashtra)