CHAPTER 4

OVERVIEW OF PUBLIC HEALTH CARE SECTOR IN INDIA WITH REFERENCE TO MUMBAI, MAHARASHTRA

“Healthy citizens are the greatest asset any country can have.”

~ Winston S. Churchill

4.1 Introduction

Maharashtra, the third largest state in India, is among the top economically developed states in the country. Maharashtra, one of the wealthiest and the most developed states in India is also a primary financial centre and boasts of the country’s largest industrial economies, contributing 25 per cent of the country's industrial output and 23.2 per cent of its GDP (2010–11). As of 2011, the state had a per capita income of ₹1.0035 lakh (US$1,500), more than the national average of ₹0.73 lakh (US$1,100). Its GDP per capita crossed the ₹1.20 lakh (US$1,800) threshold for the first time in 2013, making it one of the richest states in India.210

4.2 Demographic Profile of Maharashtra and Mumbai

The state of Maharashtra, which is in the western region of India, is the nation's third largest state in terms of both area and population. Maharashtra occupies the western and central part of the country and has a long coastline stretching nearly 720 kilometers along the Arabian Sea. The state’s political capital Mumbai, is considered the country’s financial capital and houses almost all major financial institutions. India’s major capital and commodity exchange markets are located here.

4.2.1 Geographic Location of Maharashtra
The state of Maharashtra covers an area of 307,713 sq. km. and is surrounded by the Arabian Sea in the west, bordered by Gujarat and the Union territory of Dadra and Nagar Haveli to the northwest, Madhya Pradesh to the north and northeast, Chhattisgarh to the east, Karnataka to the south, Andhra Pradesh to the southeast and Goa to the southwest. Maharashtra consists of two major relief divisions. The plateau is a part of the Deccan tableland and the Konkan coastal strip abutting on the Arabian Sea. The Sahyadris mountain ranges or the Western Ghats to west of the state runs almost parallel to the sea coast and at an average elevation of 1,200 metres (4,000 ft), while the Satpuda hills along the north and Bhamragad-Chiroli-Gaikhuri ranges on the east serve as its natural borders. Geographically, Maharashtra has five main regions having 35 districts, which are divided into six revenue divisions of Konkan, Pune, Nashik, Aurangabad, Amravati and Nagpur for administrative purposes.

4.2.2 Geographic Location of Mumbai
Mumbai is positioned on the western sea coast of India between 72° 47’ and 72° 59’ east longitude and between 18° 53’ and 19° 19’ north latitude, it also has an east-west extent of about 12 km at it is broadest and a north-south extent of about 40 km. The city Mumbai was formed by the amalgamation of two groups of seven islands each and is connected to the mainland across the major water bodies surrounding it via roads and railways. Today, the city includes the original island group of Mumbai and most of the island of Salsette. Mumbai is surrounded on three sides by water: the Arabian Sea to the west and south and Harbour Bay and Thane Creek to the east. Mumbai consists of two distinct regions: Mumbai City district also known as the Island City or South Mumbai and Mumbai Suburban district. These form two separate revenue districts of Maharashtra.

4.2.3 Demographic Characteristics of Maharashtra

As per details from the 2011 national census, Maharashtra is the second most populous state in India with a population of 112,374,333 (9.28 per cent of India's population) of which males and females are 58,243,056 and 54,131,277 respectively. The total population growth in 2011 was 15.99 per cent while the growth rate in the previous decade it was 22.57 per cent. Since Independence, the decadal growth rate of population has remained higher (except in the year 1971) than the national average. For the first time, in the year 2011, it was found to be lower than the national average.

The 2011 census for the state found 55 per cent of the population to be rural with 45 per cent being urban based. Maharashtra is among the top five states in the country with the highest share of urban population. The total figure of urban population is 50,818,259 of which 26,704,022 are males and while remaining 24,114,237 are females. The state has the highest level of urbanization among major states in India with 45.22 per cent people living in urban regions in the last 10 years.

The sex ratio in Maharashtra was 929 females per 1000 males, which was below the national average of 943 as per census 2011 (Economic Survey of Maharashtra 2014-15). In 2001, the sex ratio of females was 922 per 1000 males in Maharashtra. The total area of Maharashtra is 307,713 sq. km and the density of Maharashtra was 365 inhabitants per sq. km which was lower than national average 382 per sq. km. In 2001, density of Maharashtra was 315 per sq. km, while which is close to the national average of 324 per sq. km.

As per the 2011 census, the literacy rate in Maharashtra has seen an upward trend and is 82.34 per cent as per the 2011 population census. Of this, male literacy constitutes 88.38 per cent while female literacy is at 75.87 per cent. In 2001, the literacy rate in Maharashtra stood at 76.88 per cent of which male and female were 85.97 per cent and 67.03 per cent literate respectively. In actual numbers, total literates in Maharashtra stands at 81,554,290 of which males were 45,257,584 and females were 213

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214 Ibid.
Average literacy rate in Maharashtra for urban regions was 88.69 per cent in which males were 92.12 per cent literate while female literacy stood at 75.75 per cent. Total literates in urban region of Maharashtra were 40,071,529.

According to the Census reports of 2011, Hinduism was the majority religion in the state at 79.83 per cent of the total population, followed by Islam with approximately 11.54 per cent following it. In Maharashtra state, Christianity is followed by 0.96 per cent, Jainism by 1.25 per cent, Sikhism by 0.20 per cent and Buddhism by 0.20 per cent. Around 0.16 per cent stated ‘Other Religion’; approximately 0.25 per cent stated ‘No Particular Religion’.

4.2.4 Demographic Characteristics of Mumbai

Mumbai, the largest city in India, as well as the sixth largest metropolis in the world is a major business centre. It is considered as the commercial and financial capital of the nation. The city is the administrative headquarters of the state of Maharashtra. Mumbai has not only become the biggest city in India, population-wise, but it is also poised to become the core of the biggest urban agglomerations in the country and the world’s third largest after Tokyo and Mexico city.

In 1661, there were only 20,000 inhabitants in Mumbai. The population grew rapidly to 92,000 in 1901 and to nearly three million in 1951. During the decade 1941–1951 the city experienced an unprecedented growth rate of 75 per cent because of the influx of refugees due to the partition of India.

According to the 2001 census, the population of Mumbai was 11,914,398, a twelve fold increase since 1901, when the population was just 92,000. As per provisional reports of Census India, population of Mumbai in 2011 is 12,442,373; of which male and female are 6,715,931 and 5,726,442 respectively. The population of Mumbai is noticeable by its social heterogeneity traversing across racial, religious, regional and linguistic lines. According to the UN Population Division Reports 2006, Mumbai is

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216 Ibid.
217 Ibid.
expected to be not only to be the world’s second largest city containing 22.6 million people but also to have one of the highest population densities by 2015.

As per details from the 2011 national census, Hinduism is the principal religion in Mumbai city with 65.99 per cent followers. Islam is second most popular religion in city of Mumbai with approximately 20.65 per cent following it. In Mumbai city, Christianity is followed by 3.27 per cent, Jainism by 4.10 per cent, Sikhism by 0.49 per cent and Buddhism by 0.49 per cent. Around 0.40 per cent stated 'Other Religion'; approximately 0.26 per cent stated 'No Particular Religion'.

In Mumbai, the child sex ratio for the 0-6 year’s age group showed that there were 914 girls per 1,000 boys for Mumbai Island City and 913 girls for every 1,000 boys in Mumbai Suburban district. This raises serious concerns as child sex ratio has fallen from the previous census figures which were higher at 922 girls per 1,000 boys for Mumbai Island City and 923 girls for every 1,000 boys in Mumbai Suburban district. These statistical figures of child sex ratio is particularly significant as it provides an indicator of the survival of the girl child as it is influenced by sex ratio at birth as well as child mortality rates, also points out if there has been any untoward intervention against a particular sex before birth.

The sex ratio in Mumbai is 853 females to every 1,000 males, which is significantly lower than the female-male ratio of Maharashtra which is 929 females to 1,000 males, and India which is 940 females to 1,000 males. Most males are concentrated in the age bracket 20-29 years. With the exception of those in the ‘above 70’ age bracket, there are more males than females. This is mainly due to the fact that many males migrate to the city for work, leaving their families in rural areas. With 68 per cent of the population under 34 years of age (2001), the age structure of Mumbai is relatively young, as only 6.5 per cent of the total population is above 60 years.

In 2011 census, Mumbai City had a population of 3,085,411 of which males and females were 1,684,608 and 1,400,803 respectively as against 2001 Census, where out of a population of 3,338,031, males were 1,878,246 and remaining 1,459,785 were females. According to the Census 2011, Mumbai City District population constituted 2.75 per cent of total Maharashtra population while this figure according to 2001 Census, was 3.45 per cent of total Maharashtra population. There was change of -7.57 per cent in the population compared to population as per 2001. In 2011, the average population density for Mumbai city was 19,652 persons per sq. km. While in 2001 it was 21,261 persons per sq.km, one of the highest in the world. 

According to the Census reports of 2011, Mumbai Suburban had population of 9,356,962 of which male and female population were 5,031,323 and 4,325,639 respectively as against 2001 Census where out of a population of 8,640,419 males were 4,741,720 and remaining 3,898,699 were females. According to the 2011 Census, Mumbai Suburban District population constituted 8.33 per cent of total Maharashtra population while this figure according to 2001 Census, was at 8.92 per cent of total Maharashtra population. There was change of 8.29 per cent in the population compared to population as per 2001. In 2011, the average population density for Mumbai Suburban was 20,980 persons per sq. km., the eighth highest in the world. It was 19,373 persons per sq. km. in 2001.

Much of the population growth was in Mumbai’s Island city, until 1960s. From 1961 through 1981, the bulk of the population growth moved to suburbs of Mumbai. Population has moved from the Island City to the Suburbs within Greater Mumbai. Some have moved away to further suburbs or adjacent towns and cities. Populations in the other far-flung areas of the urban agglomeration have been growing faster, as shown by the decadal growth rate during 2001–2011. Effective and planned development of suburbs, however, has not taken place due to lack of supporting infrastructure and a sound environment policy for development of residential and commercial nodes.

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According to the 2011 census, the following demographic features observed in Maharashtra and Greater Mumbai is as follows:

### Table 4.1
**DEMOGRAPHIC FEATURES: MAHARASHTRA AND GREATER MUMBAI - CENSUS 2001 AND 2011**

<table>
<thead>
<tr>
<th></th>
<th>Total Population Census 2001</th>
<th>Total Population Census 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maharashtra:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Land Area (Sq. Km.)</td>
<td>307,713 Sq. Km.</td>
<td></td>
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<tr>
<td>Density per Sq. Km.</td>
<td>315</td>
<td>365</td>
</tr>
<tr>
<td>Total Male Population</td>
<td>50,400,596</td>
<td>58,243,056</td>
</tr>
<tr>
<td>Total Female Population</td>
<td>46,478,031</td>
<td>54,131,277</td>
</tr>
<tr>
<td>Sex Ratio (Per 1000)</td>
<td>922</td>
<td>929</td>
</tr>
<tr>
<td>Proportion to Total Population</td>
<td>9.42%</td>
<td>9.28%</td>
</tr>
<tr>
<td>Decadal Population Growth</td>
<td>22.57%</td>
<td>15.99%</td>
</tr>
<tr>
<td><strong>Municipalitiy of Greater Mumbai:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Land Area (Sq. Km.)</td>
<td>603 Sq. Km.</td>
<td></td>
</tr>
<tr>
<td>Density per Sq. Km.</td>
<td>19,865</td>
<td>20,634</td>
</tr>
<tr>
<td>Total Male Population</td>
<td>6,619,966</td>
<td>6,715,931</td>
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<tr>
<td>Total Female Population</td>
<td>5,358,484</td>
<td>5,726,442</td>
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<tr>
<td>Sex Ratio (Per 1000)</td>
<td></td>
<td>853</td>
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<tr>
<td>Proportion to Maharashtra Population</td>
<td>12.36%</td>
<td>11.07%</td>
</tr>
<tr>
<td>Decadal Population Growth</td>
<td>20.68%</td>
<td>3.87%</td>
</tr>
<tr>
<td><strong>A. Mumbai Island City District:</strong></td>
<td></td>
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<tr>
<td>Land Area (Sq. Km.)</td>
<td>157 Sq. Km.</td>
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<tr>
<td>Density per Sq. Km.</td>
<td>21,261</td>
<td>19,652</td>
</tr>
<tr>
<td>Total Male Population</td>
<td>1,878,246</td>
<td>1,684,608</td>
</tr>
<tr>
<td>Total Female Population</td>
<td>1,459,785</td>
<td>1,400,803</td>
</tr>
<tr>
<td>Sex Ratio (Per 1000)</td>
<td>777</td>
<td>832</td>
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<tr>
<td>Proportion to Maharashtra Population</td>
<td>3.45%</td>
<td>2.75%</td>
</tr>
<tr>
<td>Decadal Population Growth</td>
<td>5.14%</td>
<td>-7.60%</td>
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<tr>
<td><strong>B. Mumbai Suburban District:</strong></td>
<td></td>
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<tr>
<td>Land Area (Sq. Km.)</td>
<td>446 Sq. Km.</td>
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<tr>
<td>Density per Sq. Km.</td>
<td>19,373</td>
<td>20,980</td>
</tr>
<tr>
<td>Total Male Population</td>
<td>4,741,720</td>
<td>5,031,323</td>
</tr>
<tr>
<td>Total Female Population</td>
<td>3,898,699</td>
<td>4,325,639</td>
</tr>
<tr>
<td>Sex Ratio (Per 1000)</td>
<td>822</td>
<td>860</td>
</tr>
<tr>
<td>Proportion to Maharashtra Population</td>
<td>8.92%</td>
<td>8.33%</td>
</tr>
<tr>
<td>Decadal Population Growth</td>
<td>27.99%</td>
<td>8.29%</td>
</tr>
</tbody>
</table>

*Source: Census, 2011, MCGM- Preparatory Studies: Part III*
4.3 Health Infrastructure in Maharashtra - Public Health Department

The public health system in India comprises of a set of state-owned health care facilities funded and controlled by the government of India. The Ministry of Health & Family Welfare is the governmental ministry which controls the central government’s interests in these institutions and therefore most of the treatments in these institutions are either fully or partially subsidized. In Maharashtra, the ministry is divided into two departments the Public Health Department, which includes Family Welfare, Medical Relief and ESIS, and the Department of Medical Education and Drugs. Both these departments have a separate Minister and Minister of State and their Secretariat, and also have technical wings called Directorate of Health and Directorate of Medical Education and Research, respectively.

The following Organograms or organizational charts show the structure of the Public Health Department in Maharashtra and the relationships between the various the positions in the organization.

**FIGURE 4.1**
PUBLIC HEALTH STATE (MANTRALAYA) LEVEL ORGANOGRAM

FIGURE 4.2
PUBLIC HEALTH DIRECTORATE LEVEL ORGANOGRAM

FIGURE 4.3
PUBLIC HEALTH DIVISIONAL LEVEL ORGANOGRAM


Maharashtra has been at the head of health care development in India, as it was one of the first states to achieve the standards required for primary health centres, sub-centres and Rural Hospitals, under the Minimum Needs Programme. One of the unique features of Maharashtra’s health system has been the early decentralization of primary health care execution to the Zilla Parishads. Maharashtra was one of the first states to establish the norm of one PHC per 30,000 populations and one sub-centre per 5000 population in the early eighties itself.  

The public health care delivery system in Maharashtra has at the apex tertiary institutions or teaching hospitals which are located in Mumbai and other larger cities like Pune, Solapur, Nagpur, Thane, Aurangabad, etc. These are big tertiary hospitals that accommodate patients from local areas and also the entire region around them. In fact, public hospitals in Mumbai treat patients within the state and also from all over the country. Many of these cities have specialist hospitals like TB Hospitals, ENT Hospital, etc. The state of Maharashtra has 11 state government-run and two central government-run teaching hospitals and four dentistry teaching hospitals.

The next level of public health care delivery system is Civil Hospitals, usually at the district headquarters that are usually 100-500 bedded hospitals having the most basic specialties. Subsequently, there are Primary Health Centres (PHCs), which are provided in rural areas, with population level of 30,000 (20,000 for tribal and hill areas). The PHCs have a capacity of one doctor and six beds, which provide the first-contact care to villagers and are responsible for implementation of all the national programmes and schemes under public health and family welfare.

4.4 Municipal Corporation of Greater Mumbai (MCGM)

According to the Indian Constitution, land and housing, urban development and provision of civic infrastructure fall within the purview of state governments which are legally empowered to formulate and execute related policies. The Central Government however plays a vital role through the devolution of resources to state governments within the framework of National Five Year Plans. The State Urban Development Department is responsible for the Town Planning Department, Urban

Development Authority, Urban Water Supply and Sewerage. Housing policy, land ceilings, rent control, slum up-gradation and supervision of foreign aid projects is the responsibility of the Housing and Special Assistance Department.

Municipal Corporation of Greater Mumbai (MCGM) also known as the Brihanmumbai Municipal Corporation (BMC) is the civic body that is responsible for the governance of Mumbai, the capital city of Maharashtra. Established under the Bombay Municipal Corporation Act 1888, it is also India's richest municipal organization and relatively most efficient local body in the country. Its range of services includes public transport, electricity, apart from other municipal services. It is responsible for the Master Plan of the city and enforcement of development control regulations. However, in a significant move towards decentralization, the 74th Amendment to the Constitution of India has empowered urban local self-government by devolution of functions like urban planning, slum improvement and poverty alleviation as well as other responsibilities.227

Greater Mumbai Metropolitan area is under the administration of Municipal Corporation of Greater Mumbai (MCGM) or Brihanmumbai Municipal Corporation (BMC). It covers an area of 603 sq. km. that constitutes 0.14 per cent of the total area of the State of Maharashtra and is divided in two revenue districts viz. Mumbai City District and Mumbai Suburban District. The Mumbai City District covers an area of only 157 sq. km., while the Mumbai Suburban District covers an area of 446 sq. km. There is no single organization or body accountable for all of Mumbai as it is governed by fourteen different agencies.228 Each agency operates independently and there is little co-ordination between the different agencies.

Municipal Corporation of Greater Mumbai 229

Municipal Corporation of Greater Mumbai (MCGM) is responsible for the civic and infrastructure needs of the city of Mumbai, which includes the maintenance of roads, streets, flyovers, public municipal schools, water supply and purification, hospitals,

229 Ibid.
street lighting, lighthouses, preservation of parks and open local spaces, sewage treatment and disposal, garbage disposal, street cleanliness, cemeteries and crematoriums, registration of births and deaths in the city as well as prevention of contagious outbreaks through mass production of medicines at the Haffkine Institute.

The Municipal Corporation of Greater Mumbai (the largest local self-government in the Asian Continent) was formed in 1865 as a Corporate Body with a Municipal Commissioner and Justices of Peace. The Regular Corporation was formed with 64 members with Rate (tax) payers having right of voting. The Bombay Municipal Corporation Act of 1888, stipulated nine statutory collateral authorities with separate responsibilities of city government. Each authority operates within the limitations set for it. The nine statutory collateral authorities are given as follows:

1) The Corporation,
2) The Standing Committee,
3) The Improvements Committee,
4) The Brihanmumbai Electric Supply and Transport Committee
5) The Education Committee,
6) The Wards Committees,
7) The Mayor
8) The Municipal Commissioner, and
9) The General Manager, Brihanmumbai Electric Supply and Transport Undertaking

The Mayor is the ceremonial head and chairs Corporation meetings. The Municipal Commissioner, who is appointed by the state government, is the executive head of MCGM. Apart from the above statutory committees there are six other Special Committees, viz:

1) Works Committee (City),
2) Works Committee (Suburbs),
3) Public Health Committee,
4) Markets and Gardens Committee,
5) Law, Revenue and General Purposes Committee,
6) Women and Child Welfare Committee, which deal with specified subjects.

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In addition, the Grants-in-Aid Committee has also been constituted for submitting proposals to the Corporation and for awarding grants to certain institutions.

4.4.1 Municipal Corporation of Greater Mumbai: Organizational Structure

There is a separation of powers between the deliberative and executive functions of the Municipal Corporation of Greater Mumbai. The Deliberative Wing is made of the Deputy Mayor, 227 Councilors – who are directly elected through Ward elections. In addition, there are 5 nominated Councilors by the Corporation, for their special knowledge or experience in municipal administration. The Councilors are responsible for overseeing that their constituencies have the basic civic infrastructure in place and exercise general authority over civic affairs through budgetary and financial controls by determining taxes and allocating expenditure, approving contracts in addition to other financial proposals and approving appointments to senior posts.

The Executive Wing is headed by the Municipal Commissioner and there are four Additional Municipal Commissioners, two Joint Municipal Commissioners, Director (Engineering Service & Projects) and Director (Medical Education and Public Health). In 1964, a decentralized administrative system was introduced to speed disposal, improve efficiency and affect economy. The city is divided into seven administrative zones each consisting of three to five wards named alphabetically from A to T. Mumbai is divided into 24 municipal wards; each is headed by the Assistant Municipal Commissioner AMC (Ward Officer) and is represented by 227 corporators (councilors).231

The main 42 departments of MCGM providing various services to the citizens are:

- Public Relations Department
- General Administration Department
- Information and Technology Department
- Planning & Urban Poverty Eradication Department
- Assessment & Collection Department
- Election Branch
- Estate and Land Department

➢ Education Department
➢ Engineering Unit, which comprises the following departments
  ● Development Plan
  ● Civic Training Institute and Research Centre
  ● Roads, Traffic & Bridges
  ● Mechanical & Electrical Engineering
  ● Storm Water Drains
  ● Water Supply Projects
  ● Sewerage Operations
  ● Sewerage Projects
  ● Mumbai sewerage disposal Project
  ● Building Proposals
  ● Solid Waste Management
➢ Public Health Department which includes the following Municipal Hospitals & Medical Colleges
  ● K.E.M. Hospital and G.S. Medical College
  ● B.Y.L. Nair Charitable Hospital & T.N. Medical College
  ● Nair Hospital Dental College
  ● Lokmanya Tilak Municipal General Hospital & Medical College
  ● Kasturba Hospital
  ● Group of T.B. Hospitals
  ● Acworth Hospital for Leprosy
  ● Eye Hospital
  ● E.N.T. Hospital
  ● Municipal General Hospitals (18)
➢ Municipal Printing Press
➢ Gardens & Zoo Department
➢ Mumbai Fire Brigade
➢ Deonar Abattoir
➢ Security Department
➢ Legal Department
➢ Licences Department
➢ Markets Department
Shops and Establishments
Environment Department
Vigilance
Disaster Management
Heritage Conservation
B.E.S.T.

4.4.2 Municipal Corporation of Greater Mumbai: Public Health Department Organizational Structure

Public health care in Mumbai is run under the jurisdiction of the MCGM, which is responsible in providing affordable and accessible health care to its citizens. Mumbai’s health care system is probably one of the most elaborate urban health systems in the country. It is unique because it provides care at three different levels, and functions to provide health care at a minimum cost to the consumer. The Public Health Department of the MCGM not only provides basic health care facilities but also manages other aspects related to preventive and social or community medicine.

For administrative purposes, the Department is divided into seven zones, which cover 24 Wards (nine City Wards, nine Western suburban Wards and six Eastern suburban Wards). The Deputy Municipal Commissioner handles each zone. Each Ward has a separate Ward Office and the Ward Medical Health Officer (MHO) heads the Public Health Department in that Ward. The Department carries out the following activities:

- Registration of Births and Deaths and Maintenance of Statistics
- Regulation of Places for Disposal of Dead
- Maternity and Child Welfare and Family Welfare Services, School Health Services
- Control of Communicable Diseases
- Food Sanitation and Prevention of Adulteration of Food
- Control of Trades Likely To Pose a Health Hazard
- Insect and Pest Control
- Impounding Stray Cattle, Immunization and Licensing Of Dogs
- Regulation of Private Nursing Homes
- Medical Relief through Hospitals

• Issuance of International Health Certificates for Traveling Abroad
• Ambulance and Hearse Services
• Treatment of Contagious Diseases

The structure of public health care infrastructure in Mumbai can be discussed with the chart below:

**FIGURE 4.4**
PUBLIC HEALTH INFRASTRUCTURE UNDER THE MCGM

As observed from the above figure, the MCGM runs 04 major teaching hospitals, 18 peripheral hospitals, 05 specialized hospitals, 175 dispensaries, 183 health posts, and 30 maternity homes under its programs for public health care, with a staff of over 17,000 employees. Of the total 40,000 plus hospital beds in the city, the MCGM run hospitals have about 11,218 beds. As many as 10 million patients are treated annually in the Out-Patient Departments (OPDs) in the MCGM hospitals.

Municipal hospitals are meant to be the secondary and tertiary points of care for the patient seeking health care in Mumbai and are to be used as referral points. However, when patients have a free range of choices, as is in the case of MCGM health system, most of the primary infrastructure is bypassed. The four major hospitals are also medical colleges which infuse them with a greater amount of financial resources and

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Source: RTI, MCGM

recognition than is available in the peripheral hospitals. The largest hospital, the King Edward Memorial Hospital and Medical College, alone annually treats 1.2 million patients in its OPD.

Each of the peripheral hospitals is linked to one of these four super specialty hospitals. The peripheral hospitals act as a secondary referral point from the primary health care posts. The health posts and the dispensaries are linked to the peripheral hospitals in their respective Wards. These health posts were launched under the World Bank Funded project called IPP-V, and resulted in the set up of the Health Posts which were meant to serve as the primary link between the citizens and the government run health facilities.  

The MCGM has taken over the responsibility of the health posts and dispensaries, which provide medications for Directly Observed Treatment Short Course (DOTS) as well as medications for basic ailments e.g. cough, cold, fever, gastrointestinal issues, while the dispensary has a doctor that is there to provide medical checkups. There are 30 maternity homes run by the MCGM. Maternity homes were meant to be a referral point from the primary health care systems for a pregnant woman to get prenatal care, a doctor there would refer her to a maternity home or peripheral hospital for institutional delivery.

4.4.2.1 Health Programs of the MCGM

The Public health department is important for two major reasons, as it helps to control the spread of infectious diseases and also provides the general public with access to public facilities. Public health progammes have a critical role to play in the control and spread of communicable diseases like malaria, cholera etc. The MCGM undertakes a number of complex set of programs to deal with the major health issues of Mumbai. It also provides access to public facilities such as ambulatory care and emergency services.

Some of the key public health programmes by the MCGM Public Health Department are as follows:

1. **Leprosy Control Program**
   The Leprosy Control Program was started in 1890 and is based out of the Acworth Municipal Hospital in Mumbai. The services provided by Acworth Municipal Hospital include inpatient services, outpatient services, peripheral clinics, field work, re-constructive surgery, training and research.

2. **Revised National Tuberculosis (TB) Control Program**
   The Revised National Tuberculosis Program (RNTCP) is a national initiative that runs under the provision of the Mumbai District Tuberculosis Control Society (MDTCS) since 1999. The RNTCP carries out several health awareness activities including health awareness month, World TB Day, community meetings, street plays and more for the effective control and smooth implementation of the TB control program. MCGM also collaborates with private providers in their PPM (Public Private Mix) Project which was started in 2002 with 2 zones and now covers 5 zones. This program consists of a public-private partnership between the MCGM and private providers to implement the DOTS and RNTCP.

3. **Universal Immunization Program**
   The Expanded Program of Immunization was launched in the year 1978 for covering all children up to the age of five years. In 1985, the Universal Immunization Program was launched to cover all the children less than one year with all vaccines. Specific activities under the Universal Immunization Program include:
   a) Vaccine distribution and maintenance
   b) Collecting data and information
   c) Performance reports and
   d) Extended coverage evaluation survey

4. **Polio Eradication Programme**
   The Polio Programme is a part of the Universal Immunization Program. The Pulse Polio Programme is an administration of extra Oral Polio Vaccine dose to all children irrespective of their immunization status, if they are below 5 years of age.
5. National Malaria Control Programme (NMCP)
The NMCP pursues malaria control through parasite control (surveillance branch) and vector control. The purpose of the programme is to detect malaria cases from the community and to treat them immediately as well as to create health awareness among people. The NMCP also utilizes 3 methods of surveillance:

- Active: House to house survey of fever patients
- Passive: Blood samples of all fever cases are taken by medical personnel of the MCGM
- Mass Surveillance: Looking at high risk communities more broadly

6. Mumbai District AIDS Control Society (MDACS)
MDACS is a program that was started in 1998 as an initiative of the MCGM and functions as an over-seeing body to all the programs related to HIV/AIDS in the city of Mumbai.

7. School Health Program (SHP)
School-going children comprise approximately 20 per cent of the population and it is essential to promote health awareness amongst them and their families. The School Health Program (SHP) is a critical component of community health care and plays an important role in creating and promoting health awareness. The objectives of the school health program include:

- Promotion of Positive Health
- Prevention of Diseases
- Early Diagnosis, Treatment and Follow-Up of Defects
- Awakening of Health Consciousness in Children
- Provision of a Healthy School Environment

4.4.2.2 Health Budget of the MCGM
In Maharashtra, the 18 functions mentioned under Schedule 12 of the constitution were devolved to Urban Local Bodies (ULBs) in 1994. These functions are practiced by the MCGM under the Mumbai Municipal Corporation Act, 1888.

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The Mumbai budget contains four budget heads namely A, B, E and G which are further split into the fund codes are mentioned in the next table:

### TABLE 4.2
FUND CODES OF MCGM BUDGETS

<table>
<thead>
<tr>
<th>Budget Head</th>
<th>Fund Code</th>
<th>Functions Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11</td>
<td>General Budget: Services of Scavenging; Transporting &amp; Disposal of Waste and Street lighting</td>
</tr>
<tr>
<td>A</td>
<td>12</td>
<td>Health Budget</td>
</tr>
<tr>
<td>A</td>
<td>60</td>
<td>Provident Fund</td>
</tr>
<tr>
<td>A</td>
<td>70</td>
<td>Pension Fund</td>
</tr>
<tr>
<td>B</td>
<td>21</td>
<td>Improvement Schemes</td>
</tr>
<tr>
<td>B</td>
<td>22</td>
<td>Slum Clearance</td>
</tr>
<tr>
<td>B</td>
<td>23</td>
<td>Slum Improvement</td>
</tr>
<tr>
<td>E</td>
<td>30</td>
<td>Education Fund</td>
</tr>
<tr>
<td>G</td>
<td>40</td>
<td>Water Supply and Sewerage</td>
</tr>
</tbody>
</table>

*Source: MCGM*

Only four major functions, health, education, water supply & sewerage and slum clearance appear clearly under the budget heads. Other functions, like those of environment, heritage, planning etc., have been clubbed under fund code 11 along with the general budget. As per the Municipal Corporation Act, the MCGM is primarily concerned with providing preventive health care services in the city, but the current focus seems to be leaning toward curative care in a major way.

### 4.5 Municipal Corporation of Greater Mumbai: Number of Wards in Mumbai

Mumbai consists of two separate areas: Mumbai City district and Mumbai Suburban district, which are two distinct revenue districts of Maharashtra. Mumbai has a total area of 603.4 km², out of which the Island City covers 67.79 km², while the Suburban District is made of 370 km², both of which together account for 437.71 km² under the jurisdiction of the Municipal Corporation of Greater Mumbai (MCGM). The remaining areas belong to the various Defence establishments, the Atomic Energy Commission, the Mumbai Port Trust as well as the Borivali National Park, which are outside the authority of the MCGM.

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Municipal Corporation of Greater Mumbai (MCGM) is responsible for the governance of Greater Mumbai and has segregated the city into different administrative zones known as ‘wards’ for ease of governmental day-to-day functioning and for the municipal body's administrative expediency. In all the MCGM is divided the city into 24 municipal wards, out of which Mumbai City District has nine municipal wards and Mumbai Suburban district has 15 municipal districts.

Mumbai City District is divided into two zones viz. Zone 1 contains wards A-E, while Zone 2 contains wards F/South, F/North, G/South and G/North. Mumbai Suburban District is divided into 5 zones viz. Zone 3 contains H West, H East and K East wards, Zone 4 contains K West, P South and P North wards, Zone 5 contains L, M East and M West wards, Zone 6 comprises N, S, T wards and Zone 7 comprises R South, R North and R Central wards. Each zone is in the charge of a Deputy Municipal Commissioner while the administrative head of each ward is an Assistant Commissioner. In addition, there are 15 Deputy Municipal Commissioners who administer the work of the key departments concerning to the civic administration.

4.5.1 Municipal Corporation of Greater Mumbai: Characteristics of these Wards
According Survey of India, the total area of Greater Mumbai is divided into 24 wards and further into 88 sections. In late nineties, some of the wards were divided into east and west or north and south sides. The wards are not alike in their demographics, living conditions, facilities and offer interesting perspectives.

Ward-wise distribution of population shows two distinct trends in the growth of population over the last few decades. The area comprising Wards A to G recorded varying growth rates; it was slow and even negative in Wards A, B, C, D, E, F and G-South, while Ward G-North registered a higher growth. In contrast, wards in the Eastern and Western suburbs recorded very high population growth. All wards in the Western suburbs except H recorded very high growth. All the sections in Eastern suburbs especially of Wards L, M, S, and T increased in absolute number as well as in percentage growth.

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239 Ibid.
According to the Census 2011, the 9 wards of Mumbai Island City is inhabited by 24.8 per cent of total population, while Mumbai Suburbs accounts for the remaining 75.2 per cent of the total population. About 83.48 per cent of total slum population of Mumbai lives in the municipal wards of the Western and Eastern suburbs. Increase in population was noticed in almost all wards of the Eastern and Western suburbs of Mumbai. This burgeoning population was accompanied by a growing population living in slum areas. While the wards of the Island City (Wards A, B, D, E, F/S, and G/S) have about 16.52 per cent of the total slum population in Mumbai, the Census showed that two wards F/N and G/N have the highest per cent of slum population. In Western suburbs of Mumbai, the slum population of wards H/E, H/W, K/E, K/W, P/N, P/S, R/C, R/N and R/S slum population was around 54.26 per cent while slum population of the L, M/E, M/W, N, S and T wards of Mumbai in eastern side had a slum population of 45.74 per cent. No slum population was enumerated in Ward C of the Island city.

The Census defines a slum as ‘residential areas where dwellings are unfit for human habitation’ because they are dilapidated, cramped, poorly ventilated, unclean, or ‘any combination of these factors which are detrimental to the safety and health.’ Slums are often makeshift housing or shanties found especially in urban areas, characterized by lack of basic facilities, squalor and overcrowding with no regular supply of water, electricity or proper sanitation facilities. Slums are densely populated filled with narrow dirty alleys, open sewers filled with trash and the existence of such deplorable conditions makes it easier for people living in slums to contract diseases and easily spread infectious diseases. The latest census of India 2011, states that the total number of slums in Mumbai city numbers at 1,135,514 in which a population of 5,206,473 resides. This is around 41.84 per cent of total population of Mumbai city. The next table shows the ward-wise population of Mumbai.

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242 Ibid.
244 Ibid.
### TABLE 4.3
WARD-WISE POPULATION OF GREATER MUMBAI

<table>
<thead>
<tr>
<th>Ward</th>
<th>Census Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Slum Population in 2011</td>
</tr>
<tr>
<td></td>
<td>2011 (in thousands)</td>
</tr>
<tr>
<td>A</td>
<td>185</td>
</tr>
<tr>
<td>B</td>
<td>127</td>
</tr>
<tr>
<td>C</td>
<td>166</td>
</tr>
<tr>
<td>D</td>
<td>347</td>
</tr>
<tr>
<td>E</td>
<td>393</td>
</tr>
<tr>
<td>F/N</td>
<td>529</td>
</tr>
<tr>
<td>F/S</td>
<td>361</td>
</tr>
<tr>
<td>G/N</td>
<td>599</td>
</tr>
<tr>
<td>G/S</td>
<td>378</td>
</tr>
<tr>
<td></td>
<td>Total: Island City</td>
</tr>
<tr>
<td>H/E</td>
<td>557</td>
</tr>
<tr>
<td>H/W</td>
<td>308</td>
</tr>
<tr>
<td>K/E</td>
<td>824</td>
</tr>
<tr>
<td>K/W</td>
<td>749</td>
</tr>
<tr>
<td>P/N</td>
<td>941</td>
</tr>
<tr>
<td>P/S</td>
<td>464</td>
</tr>
<tr>
<td>R/N</td>
<td>432</td>
</tr>
<tr>
<td>R/C</td>
<td>562</td>
</tr>
<tr>
<td>R/S</td>
<td>691</td>
</tr>
<tr>
<td>L</td>
<td>902</td>
</tr>
<tr>
<td>M/E</td>
<td>808</td>
</tr>
<tr>
<td>M/W</td>
<td>412</td>
</tr>
<tr>
<td>N</td>
<td>623</td>
</tr>
<tr>
<td>S</td>
<td>744</td>
</tr>
<tr>
<td>T</td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>Total: Suburban District</td>
</tr>
<tr>
<td>Greater Mumbai</td>
<td>12443</td>
</tr>
</tbody>
</table>

*Source: Census, 2011; Mumbai Preparatory Studies- Part III*
According to latest statistics from the World Bank, more than half of Mumbai’s population lives in its slum areas. The availability of physical space or lack of it is often a key factor in determining the quality of life of the city’s residents. Overuse and poor maintenance of public toilets makes them unhygienic and lack of water supply along with the absence of electricity connections further limit their usage. As expected, slums have much poorer housing conditions than non-slum areas and the worst housing conditions.

Poor housing and living conditions in Mumbai slums, is a matter of great concern. Most of the people living in slum in Mumbai lack the basic necessities of life and have little or no access to clean, safe drinking water, electricity and proper toilets. Dilapidated and infirm housing as well as lack of such basic services like safe drinking water, improved toilet facilities and clean cooking fuel expose slum residents to a variety of infections. Most of the slums have households that share the community toilets which are usually in bad condition, are unhygienic and unsafe for women and children. As a result it increases the cases of open defecation leading to further problems and unsanitary conditions in these slums.

Sanitation in slums is appalling as many of the slums dwellers depend on community toilets provided by the government, others defecate in the open, some use the pay-to-use toilets managed by NGOs and while only very few have individual toilets. The accessibility to improved toilet facilities is not very high in most of the slums and leads to open defecation. This results in the spread of more frequent diseases like malaria, dysentery, cholera, jaundice and typhoid, which are closely related to poor environmental conditions. Lack of access to clean water causes diarrheal illness in children which lead to poor nutritional status and can increase child mortality rates.

The Municipal Corporation of Greater Mumbai is responsible for solid waste management in Mumbai, which involves the collection and removal of solid waste. There is no organized system of solid waste collection in slums and slum residents

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usually dump garbage in any open place, including lanes and railway tracks. This leads drain blockage as many drains get blocked and become non-functional.

The physical health of a country is influenced by a number of factors such as the health-related behavior and life style maintained by the population, the general environmental conditions, availability and access to health services and also the efficiency of health interventions. The health-seeking behavior of the population is influenced by education, their employment status and occupational characteristics, their awareness of health services and also their concern about their own health. Hence, it is the duty of the public authorities to ensure that the basic facilities are available to all the citizens.

4.6 Municipal Corporation of Greater Mumbai: Health Infrastructure Ward-wise

The MCGM runs an elaborate system of health care which includes dispensaries, health posts, medical colleges and specialty hospitals since it is a primary obligatory duty as per Section 61 of the Municipal Corporation Act of 1888.247

The MCGM’s Public Health Department’s function is to provide a womb-to-tomb health care. However, given the sheer population size and the influx of people seeking medical treatment in Mumbai, the existing municipal public health institutions are grossly inadequate to meet the needs. Hence, a large number of private institutions provide services at the primary, secondary and tertiary level.

4.6.1 Primary Health Care

The MCGM’s range of services are via at the primary level, through the 175 municipal dispensaries and 183 municipal health posts that focus mainly on the preventive aspects of health care. These institutions provide preventive services, such as immunization, family welfare along with maternal and child health care as well as try to create awareness about general health and hygiene, by organizing health camps.

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Such camps are very effective in prevention and control of vector and water-borne diseases.

4.6.2 Secondary and Tertiary Health Care

At the secondary level, there are 30 maternity homes, 18 peripheral hospitals and five specialty hospitals run by the MCGM. At the tertiary level, MCGM operates four major teaching hospitals, the King Edward Memorial Hospital (Seth G.S. Medical College), Nair Hospital (Topiwala Memorial Medical College), the Lokmanya Tilak Memorial Hospital, also known as Sion Hospital (Lokmanya Tilak Memorial College) and Nair Dental College.

The table given below shows the various MCGM Health Care Facilities available to the people living in the Island City of Greater Mumbai.

<table>
<thead>
<tr>
<th>Ward</th>
<th>Municipal Hospitals</th>
<th>Municipal Maternity Homes</th>
<th>Municipal Dispensaries</th>
<th>Municipal Health Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>F North</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>F South</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>G North</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>G South</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: MCGM: RTI - Ward Information

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The following table shows the various MCGM Health Care Facilities available to the people living in the Suburban District of Greater Mumbai.

<table>
<thead>
<tr>
<th>Ward</th>
<th>Municipal Hospitals</th>
<th>Municipal Maternity Homes</th>
<th>Municipal Dispensaries</th>
<th>Municipal Health Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>H East</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>H West</td>
<td>1</td>
<td>0</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>K East</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>K West</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>P North</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>P South</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>R North</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>R Central</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>R South</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>L</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>M East</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>M West</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>S</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>T</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: MCGM: RTI - Ward Information

4.7 Health Care Status in Maharashtra and Mumbai

As one of the richest states in terms of income, Maharashtra is expected to have invested adequately in terms of its social and human development. The State’s performance in terms of the various health indicators like the Total Fertility Rate which is 1.9, the Infant Mortality Rate of 28 and Maternal Mortality Ratio of 104 (SRS 2007 - 2009) which although are lower than the national averages along with a State Sex Ratio of 925 (as compared to 940 for the country)\(^{249}\) shows the need for increased public investments and budgetary allocations in the social sectors.

Among budgetary allocations to social services in Maharashtra, the health care sector has been granted the least in the past decade. As a result of inadequate investments and under-financing in health expenditure through state budgets, the outcomes are seen in the abysmal condition of the public health system with worsening infrastructure, vast vacancies especially of professional positions, etc.

In 2011, Maharashtra’s health care system consisted of about 363 rural government hospitals, around 23 district hospitals which had about 7,561 beds, 4 general hospitals with 714 beds and which were mostly under the Maharashtra Ministry of Health and Family Welfare, along with 380 private medical establishments; altogether these establishments provide the State with more than 30,000 hospital beds. It is the first state in India to have nine women's hospitals serving 1,365 beds.250

As noted earlier, Greater Mumbai the financial capital of India is also one of the largest cities in the country having a population of 12.4 million (Census, 2011). The high density of population in the city has put tremendous pressure on hospitals and other health infrastructure amenities. The growth rate of the slum population and the general conditions like location, density and lack of access to infrastructure, inadequate access to safe drinking water and hygienic sanitation along with open drainage, living within industrial zones or under high tension wires, etc. increases the health vulnerabilities faced by the slums dwellers and make them more prone to health problems. Nearly half of the population in Mumbai lives in slums and only a fraction of the population can afford private health care. Many of the slum population come under below poverty line (BPL) status and are unable to afford costly health care in private hospitals. In spite of such economic hardships many poor households in the city largely pay for health care through the private sector.

Mumbai city’s public health care system built to cater to the demands of a population of the 1950s and 60s is not in a position to meet the demands of the current population levels. Health infrastructure in Mumbai has not kept pace with the growing health care demands of the city. This implies that the hospitalization demand needs of the majority of the people are met by the private sector. Hence, in Mumbai city not only

the rich but also the middle class and poor people utilize private health care facilities. Mumbai’s health care status is seen through the increasing trend in communicable and other non-communicable diseases. Heart diseases, diabetes etc. commonly referred to as lifestyle diseases, are the top killers in the city. Tuberculosis along with cancer and pneumonia is also responsible for the rising deaths in the city.

The civic body needs to realize the dire need for up-gradation of the peripheral hospitals and modernization of the hospitals as it is difficult for patients to travel all the way to the town for minor ailments. The MCGM has various up-gradation plans for the redevelopment of the various hospitals and also to provide enhanced and uniform primary health care services to the citizens right in their neighborhood, thereby decongesting the major hospitals to a considerable extent.251

4.7.1 Public Health Problems in Mumbai: Health Issues and Common Diseases

According to public health experts, public health in urban areas is one of the most vital yet sadly neglected issues faced by the developing world. Solving urban health care problems is especially difficult due to the large number of variables present in cities like immigration, inadequate affordable housing, insufficient infrastructural space, corruption, pollution and dysfunctional health systems. In fact, poor environmental conditions is considered to be one of the main reasons for the frequent diseases reported like malaria, dysentery, cholera, jaundice and typhoid. Over the years, cramped living quarters, lack of sanitation, waste disposal issues and unsafe water have created serious health ramifications for the people.

Although, Maharashtra is India’s second-most populous states, Mumbai - with only 0.19 per cent of the state’s land area, holds 12 per cent of its population (about 1.03 per cent of India’s population). The challenges faced by Mumbai’s public health care provide a fair idea about the health issues faced by the urban India’s health care sector. Mumbai, as one of India’s fastest growing and most densely populated cities, faces a cataclysmic situation in health as urban poverty apparent in the informal

settlements and slums, with little or no access to sanitation, water supply, education, and health infrastructure. This results in enormous pressure on services like water, sewerage, housing, transport and also on the public health facilities.

Although Mumbai does have one of India's best public health facilities, it still needs to increase these facilities to be able to serve its general public. Mumbai’s public health facilities were built to cater to the health needs of a city decades ago, but presently the population of the city has increased beyond these limits. New reports show that more people living in Mumbai are falling ill and dying of various communicable diseases like tuberculosis, dengue and malaria. After tuberculosis, most people died of hypertension, followed by diabetes, the most common lifestyle diseases according to the report. According to the WHO, the five biggest infectious disease killers worldwide are respiratory infections, HIV/AIDS, diarrheal diseases, tuberculosis and malaria. In the overcrowded megalopolis of Greater Mumbai, inadequate sanitation and congested living conditions are some of the factors that contribute to the spread of many preventable communicable diseases like pneumonia, tuberculosis, meningitis, measles etc.

The physical and geographical environment of Mumbai along with the tropical climate has lead to the spread of various tropical vector-borne diseases like malaria, dengue and chikungunya. Studies show that water contamination is one of the major contributing factors for ill-health and places like Andheri (East), Borivali, Kandivali and Kurla have reported a higher incidence of diseases such as malaria, dengue, tuberculosis, diabetes, hypertension and diarrhea. The most essential health requirements for the slum dwellers are clean drinking water and sanitation. Slum children are the most vulnerable to such health hazards caused by water-borne diseases like hepatitis and typhoid. Congestion, lack of ventilation and sunlight in the slums cause people also develop respiratory problems. The city pollution give rise to many respiratory diseases like asthma and allergies.

Malnutrition is another common issue, especially among women and children as it leads to low immunity and increases the susceptibility to diseases. Malnutrition is the one of the major reasons for child deaths among the urban poor. Alarming news reports show that there are cases of malnutrition among children in Mumbai. Another problem experienced is the lack of proper care with respect to ante-natal and post-natal treatment of mothers and also the care of the newborn infants in Mumbai. Unavailability of doctors and nurses, inadequate facilities and lack of communication skills fail to adequately serve the ailing mothers and the problem aggravates with the lack awareness about the importance of both pre-natal and ante-natal check-ups among most women. Most hospitals catering to the needs of these women lack proper ante and post-natal care facilities, which further stresses the women and children as they grapple with lack of medicines, drugs and staff at these hospitals.

4.7.2 Major Factors Causing Health Problems in Mumbai
A number of factors are responsible for the varied health problems faced by the citizens of Mumbai. Some of the social factors responsible for health problems in Mumbai can be traced to its roots in the rapid and unplanned urbanization along with the increasing number of migrants to the city. This has brought into focus the dramatic increase in the population and resultant problems like urban poverty, uncontrolled spread of slums etc. More than fifty per cent of the city’s population lives in slums which has put pressure on services like water, sewerage, housing and transport. Other factors like improper infrastructure and road facilities, insufficient supply of safe drinking water and environmental factors liked pollution caused by improper disposal of garbage and waste products, unsafe sewage disposal, unplanned and exposed drainage along with increased vehicular traffic also adds to the city’s woes. Diseases like malaria, diarrhea, leptospirosis etc. spread resulting in disruption of work and loss of human life, as well as heavy economic losses.

Latest Environment Status Report of Greater Mumbai (2012-13), observes that with widespread construction activities and increasing number of vehicles, has increase the environmental pollution which has adverse effects on health. Some of the factors

Kulkarni, D. (2015, August 10). 16 children die every day in Mumbai: State Health minister. DNA India
responsible for the wide-ranging health problems faced by the people in Mumbai can be listed as follows:

1. **Noisy Silence Zones**
   Increased noise pollution in the city can affect the health of its citizens. In Mumbai, noise levels have exceeded the prescribed standards of Central Pollution Control Board (CPCB) leading to noise pollution all over the city. The effects of high noise pollution are loss of hearing, hearing impairment, ischemic heart disease, heart attacks, sleep disturbance, irritability, hypertension, high blood pressure etc.

2. **Water Contamination**
   A report, prepared by the Municipal Corporation of Mumbai, shows that the contamination level found in the water supplied to the city has increased. Quality of water in creeks and shorelines are worsening due to littering and garbage, open defecation and waste water discharge which are rampant. This report also highlights that irregular hours of water supply along with old corroded water pipelines and illegal connections to the main pipelines, faulty fittings and redundant connections as the major reasons for water contamination. It has been observed that water contamination, generally bacterial, is high during the monsoon leading to the spread of various waterborne diseases, such as gastroenteritis, typhoid and hepatitis (A and E) in the city every year.

3. **Deteriorating Air Quality**
   The city is experiencing acute air pollution on account of population growth, commercial activity, construction boom and vehicular traffic making the quality of air unsuitable for breathing and leading to health problems. Suspended particulate levels in the ambient air exceed the air quality standards set by Central Pollution Control Board. Sulphur dioxide, ammonia and suspended particulates in the air are higher

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256 Desai, G. (2014, June 17). Air, water and noise pollution is steadily going up, says environment status report. *DNA India*.

257 Central Pollution Control Board. Available at: http://www.dnaindia.com/topic/central-pollution-control-board Date accessed on Jan 08 2015
that the CPCB standards across the city leading to air pollution posing serious health concerns.

4.7.3 Impact of Disease Burden in Mumbai

The growing burden of various chronic ailments has social and economic implications at both the micro and macro level. The growing disease burden imposes heavy cost on the society, as it battles the various diseases and sickness, premature death and consequent loss in productivity which lowers the earning potential of its workers.

At macro level, cost of disease burden refers to the increased health expenditures, labour and productivity losses and reduced investment in human and physical capital formation. At micro level, these ailments impose significant cost burden on households, particularly on those belonging to the lower socio-economic strata of the society. The chronic and prolonged nature of the diseases contributes significantly to the associated cost burden. Alongside costs of treatment, households also come under severe financial strain due to decrease in functional capacity or inability of an earning member to go to work. In the absence of any security measures (like health insurance, social security etc.), out-of-pocket health spending can consume a substantial share of budget of a household, irrespective of the type of facility approached by the patient. Hospitalization due to various chronic ailments results in incurring catastrophic health expenditure and greater odds for falling into poverty.

These expenses form a sizable proportion of the annual income of individuals, particularly those belonging to poor households. Overall economic cost of an illness includes not just the direct medical cost of disease but also includes the direct non-medical costs (e.g., travelling costs) and indirect costs (the value of time lost from morbidity and early death). This reflects the extent of financial vulnerability of households belonging to lower economic strata. It is quite possible that the households might have to reduce their consumption of other necessities, liquidate assets or accumulate debts, ultimately leading to further impoverishment. Many families have to bear the brunt of illness of an earning member, which often lead to the discontinuation of child’s education to the female spouse taking up petty jobs to supplement lost family income. This has serious implications for public health
policies and programmes in Mumbai, particularly from the perspective of the accessibility and affordability of health care for poor households living in its slums.

4.8 Conclusion
While India has made rapid strides in raising the economic growth and has brought many out of poverty, its impact in terms of improved health outcomes has been slow. Consequently, India continues to face an extremely high disease burden, which saps the productivity of Indian workers and results in lowered earnings. According to a 2010 World Bank estimate, premature deaths and preventable illnesses cause India to lose 6 per cent of its Gross Domestic Product (GDP) annually.\textsuperscript{258} India carries a dual burden of communicable diseases (an estimated 315 million Indians suffer from tropical diseases) and a non-communicable diseases epidemic (its contribution to mortality will increase from 53 per cent in 2008 to 73 per cent by 2030). Studies show that the out-of-pocket health expenditures accounts for nearly one-sixth of India’s poverty burden.\textsuperscript{259} The high cost of health care also acts as a deterrent for the poor people in seeking treatment, leading many to delaying treatment and aggravating their health problems.

Mumbai, home to more than 12 million people, is beleaguered by poverty, overcrowding and harsh living conditions that are a prime breeding ground for drug-resistant infections. In Mumbai, majority of the slum inhabitants are migrants; belonging to the lower socio-economic group and are more susceptible to the diseases as most of the slums are in the low lying areas prone to water logging along with over flowing drains. These slums are not only congested places, but are also unhygienic with open sewerage and often lack private toilets. Lack of community toilets or badly maintained ones, result in people resorting to open defecation. Poor sanitation is one of the most important fundamental causes in the city’s persistent health problems. The absence of adequate investments in preventive public health facilities such as sanitation and waste management in a densely populated city such as Mumbai adds to the city’s health woes, increasing the rampant spread of infectious diseases which lead

\textsuperscript{258} Jain, D. (2014, December 14). Five charts that explain India’s healthcare crisis. \textit{LiveMint-Hindustan Times}.  
\textsuperscript{259} Bhattacharya, P. (2015, December 2). The growing burden of healthcare costs. \textit{LiveMint-Hindustan Times}.  

to a rise in health costs for the average Mumbaikar. This is a big problem in Mumbai as lack of a hygienic environment and proper sanitation leads to many health issues and warrants immediate attention from the city authorities.

The city of Mumbai needs to reshape the paradigm of care, create a culture of health plus wellness and reduce the burden of disease. Realizing the vision for health care in Mumbai will require a huge financial commitment. Thus, by ramping up investments in health care, the government will have the perfect opportunity to start a virtuous cycle of health. It will improve productivity, enable greater consumption and boost economic growth, as well as help the ‘Make in India’ campaign become a reality. Health care reforms can protect the people of Mumbai from out-of-pocket expenditure burden, create additional health services employment opportunities by 2025 and allow the country to emerge as a global hub for innovative, low-cost health products and services. Hence, achieving the real change in health care will necessitate the government to chart a clear road map with incentives and accountabilities spread across the providers, the payers and the product suppliers, along with the allied industries like consumer goods, education and technology and community organizations.