

**“HEALTH CARE SERVICE IN URBAN-RURAL KARNATAKA:
A STUDY IN SHIVAMOGGA DISTRICT”**

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in fulfilment of the requirements for the Degree of**

**DOCTOR OF PHILOSOPHY
in
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Declaration

I, **Eswara M.G.**, hereby declare that the Thesis entitled, “**Health Care Service in Urban-Rural Karnataka: A Study in Shivamogga District**”, is the outcome of my own study undertaken under the Supervision and Guidance of **Dr. B. Jayarama Bhat**, Professor, Department of P.G. Studies and Research in Economics, Kuvempu University, Jnana Sahyadri, Shankaraghatta for the award of the Degree of **Doctor of Philosophy in Economics** and has not previously formed the basis for the award of any Degree/Diploma or such other similar title.

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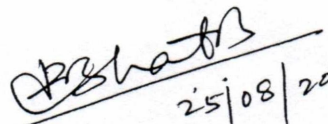
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Certificate

This is to certify that the material presented in this Thesis entitled “**Health Care Service in Urban-Rural Karnataka: A Study in Shivamogga District**”, is a record of bonafide research work carried out by **Mr. Eswara M.G.**, in this Department, under my Supervision and Guidance for the Degree of **Doctor of Philosophy in Economics** of Kuvempu University. The results presented in this Thesis are not previously formed the basis for the award of any Degree/Diploma or such other similar title.

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- *Eswara M.G.*

LIST OF ABBREVIATIONS

Abbreviations	Full form
%	Per cent
χ^2	Chi-square
ANM	Auxiliary Nurse Midwifery
AYUSH	Ayurveda, Unani, Siddha, Naturopathy and Homeopathy
BE	Budget Estimates
CAGR	Compound Annual Growth Rate
CBR	Crude Birth Rate
CHCs	Community Health Centres
CSR	Corporate Social Responsibility
CV	Coefficient of Variation
DH	District Hospital
DoHFW	Department of Health and Family Welfare
DPIIT	Department for Promotion of Industry and Internal Trade
DST	Decision Support Technologies
et al.	And others (Co-authors)
HWC-PHCs	Health and Wellness Centres-Primary Health Centres
IPHS	Indian Public Health Standards
ISM	Indian System of Medicine
MoHFW	Ministry of Health and Family Welfare
MTP	Medical Termination of Pregnancy
NAM	National Ayush Mission
NNMR	Neo-Natal Mortality Rate
NOHP	National Oral Health Programme

Abbreviations	Full form
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
NPHCE	National Programme for the Health care of the Elderly
NPPCD	National Programme for Prevention and Control of Deafness
NRHM	National Rural Health Mission
NTCP	National Tobacco Control Programme
PCP	Primary Care Providers
PPP	Public Private Participation
PHCs	Primary Health Centres
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
RBSK	Rashtriya Bal Swasthya Karyakram
RE	Revised Estimates
RKSK	Rashtriya Kishor Swasthya Karyakram
RSBY	Rashtriya Swasthya Bima Yojana
RBSK	Rashtriya Bal Swasthya Karyakram
RTI	Respiratory Tract Infection
SCs	Sub-Centres
SDH	Sub-Divisional/Sub District Hospital
STI	Sexually Transmitted Infection
TFR	Total Fertility Rate
UPHCs	Urban Primary Health Centres
WHO	World Health Organization

LIST OF TABLES

Table No.	Title of the Table	Page No.
1.1	Distribution of the Respondents	41
2.1	Health Infrastructure in India under Five Year Plans	52
2.2	Mortality Indicators in India, 2001-2016 (Overall)	53
2.3	Gross Domestic Product, Per Capita Income, Public Expenditure on Health and Per Capita Expenditure on Health in India	55
2.4	Cases and Deaths due to Major Diseases in India	57
2.5	Cases and Deaths Recorded due to Major Diseases in India	58
2.6	Registered Allopathic Doctors and Dental Surgeons in India	60
2.7	Registered Practitioners under AYUSH in India	62
2.8	Registered Nurses and Pharmacists in India	64
2.9	Government Doctors and Surgeons Serving and Hospitals Functioning in India	65
2.10	Health Human Resources (Government) in Rural Areas in India as on 2017	67
2.11	Facilities under Central Government Health Scheme in India	68
2.12	Health Services Infrastructure in India	72
2.13	Health Manpower in Rural Areas in India	74
2.14	Hospitals and Beds in Rural and Urban Areas in India	77
2.15	Rural and Urban-wise Health Institutions Functioning in India as on 2019	79
2.16	Shortfall in Health Manpower at Health Institutions in Rural Areas, India as on 2019	80
2.17	Health Manpower at District Hospitals and Sub-District Hospitals/Sub-Division Hospitals in India as on 2019	86

Table No.	Title of the Table	Page No.
3.1	Basic Health Infrastructure in Karnataka under Five Year Plans	108
3.2	Projected Population of Karnataka, 2023 to 2030	110
3.3	Crude Birth Rate and Death Rate in Karnataka from 2001 to 2035	111
3.4	Level of Expectation of Life at Birth in Karnataka, 2001-2035	111
3.5	Infant Mortality Rate by Sex and Residence in Karnataka as on 2015 and 2020	113
3.6	Households by Predominant Material of Roof in Karnataka as per 2011 Census	115
3.7	Households with Safe Drinking Water Facilities in Karnataka as per 2011 Census	116
3.8	Households by Availability of Toilet Connectivity in Karnataka as per 2011 Census	117
3.9	Households by Availability of Type of Bathing, Drainage and Kitchen Facilities in Karnataka as per 2011 Census	119
3.10	Slum Households by their Conditions in Karnataka as per 2011 Census	120
3.11	Cases and Deaths due to Major Diseases in Karnataka	122
3.12	Cases and Deaths due to Other Major Diseases in Karnataka	124
3.13	Registered Allopathic Doctors and Dental Surgeons in Karnataka	128
3.14	Registered Practitioners under AYUSH in Karnataka	129
3.15	Registered Nurses and Lady Health Visitors in Karnataka	131
3.16	Health Institutions Functioning in Rural and Urban Areas of Karnataka as on 2020	134
3.17	Building Positions of Health Institutions Functioning in Rural Areas of Karnataka as on 2018-19	135
3.18	Building Positions of Health Institutions Functioning in Urban Areas of Karnataka as on 2019	137

Table No.	Title of the Table	Page No.
3.19	Health Manpower at Health Institutions in Rural Areas of Karnataka as on 2020	139
3.20	Health Manpower at District Hospitals/Sub-District Hospitals/Sub-Division Hospitals in Karnataka as on 2020	144
3.21	Health Manpower at Health Institutions in Urban Areas of Karnataka as on 2020	145
4.1	Taluk-wise Health Institutions with Bed Strength during 2019-20	159
4.2	Taluk-wise Immunisation given to Children during 2019-20	161
4.3	Taluk-wise Health Institutions during 2019-20	163
4.4	Skilled Birth Attendant Services in Conducting Deliveries	166
4.5	Birth Performance in Shivamogga District	168
4.6	Status of Medical Termination of Pregnancy (MTP) in Shivamogga District	168
4.7	Communicable Diseases in Shivamogga District	170
4.8	Communicable Diseases in Shivamogga District from 2010 to 2020	171
4.9	Status of In-patients and Out-patients in Shivamogga District	172
4.10	Status of In-patients and Out-patients in Shivamogga District	173
4.11	Treatment of In-patients and Out-patients at PHCs in Shivamogga District from January 2020 to June 2020	174
4.12	Deaths Incurred among In-patients at General Hospitals in Shivamogga District from January 2020 to June 2020	178
4.13	Trends in Infant Deaths in Shivamogga District	179
4.14	Operations Conducted in Shivamogga District	180

Table No.	Title of the Table	Page No.
5.1	Gender, Age and Place of Residence of the Respondents (Sub-Centres)	184
5.2	Family Type, Size and Number of Working People in Respondents Family	185
5.3	Educational Level and Occupation of the Respondents	186
5.4	Monthly Income of the Respondents	187
5.5	Subscription to Health Insurance Scheme by the Respondents	188
5.6	Recurring Diseases Normally Suffered by the Respondents Family	189
5.7	Curative Measures followed by the Respondents during Unhealthy	190
5.8	Health Expenditure of the Respondents	191
5.9	Sources of Coverage of Medical Expenses by the Respondents	192
5.10	Benefits of Health Services Availed by the Respondents	193
5.11	Respondents Availing Health Services Provided by the Government	194
5.12	Means of Accessing Government Health Services	194
5.13	Accessibility and Purpose of Visiting Sub-Centres	195
5.14	Distance and Mode of Transport to Access Sub-Centres	196
5.15	Reasons for Using Sub-Centres by the Respondents	197
5.16	Facilities Available at Sub-Centres	198
5.17	Availability of Manpower at Sub-Centres	199
5.18	Reasons for Not Using Sub-Centre Services by the Respondents	200
5.19	Respondents Perception for Not Accessing Government Health Care Facilities	201
5.20	Preference Regarding Using Private Health Services	202
5.21	Designation of the Respondents	203
5.22	Availability and Status of Health Manpower at Sub-Centres	204

Table No.	Title of the Table	Page No.
5.23	Availability of Health Care Infrastructure at Sub-Centres	205
5.24	Assured Services Provided at the Sub-Centres	206
5.25	Average Daily OPD Attendance at Sub-Centres	207
5.26	Treatment of Specific Cases at Sub-Centres	208
5.27	Maternal and Child Health Care Provided at Sub-Centres	210
5.28	Training Provided to Medical and Paramedical Staff	211
5.29	Laboratory Services Provided by the Sub-Centres	212
5.30	Availability of Utility Services at Sub-Centres	213
5.31	Laboratory Services and Ancillary Room Available at Sub-Centres	214
5.32	Availability of Other Facilities at Sub-Centres	215
5.33	Behavioural Aspects of the Staff of Sub-Centres	216
5.34	Interaction Between Health Manpower and Patient	217
5.35	Manpower Required by Sub-Centres	218
5.36	Gender, Age and Place of Residence of the Respondents	219
5.37	Educational Level and Occupation of the Respondents	220
5.38	Monthly Income of the Respondents	221
5.39	Subscription to Health Insurance Scheme by the Respondents	222
5.40	Recurring Diseases Normally Suffered by the Respondents Family	223
5.41	Curative Measures followed by the Respondents When Unhealthy	224
5.42	Health Expenditure of the Respondents	225
5.43	Sources of Coverage of Medical Expenses by the Respondents	226
5.44	Benefits of Health Services Availed by the Respondents	227
5.45	Respondents Availing Health Services Provided by the Government	228

Table No.	Title of the Table	Page No.
5.46	Means of Accessing Government's Health Services by the Respondents	229
5.47	Reasons for Unawareness about Health Services Provided by the Government	230
5.48	Awareness, Accessibility and Purpose of Visiting the PHCs	232
5.49	Distance and Mode of Transport to Access PHCs	233
5.50	Reasons for Using the PHCs by the Respondents	234
5.51	Respondents Perception Towards Facilities Available at PHCs	235
5.52	Respondents Perception Regarding Infrastructure Status at the PHCs	236
5.53	Respondents Perception Regarding Satisfaction by the PHCs Services	237
5.54	Reasons for Not Using the PHCs Services	238
5.55	Preference for Using Private Health Services	239
5.56	Reasons for Not Using Government Health Care Facilities at the PHCs	240
5.57	Suggestions to Improve Health Care System at the PHCs	241
5.58	Doctors Working at the PHCs	242
5.59	Medical Manpower Availability at the PHCs	243
5.60	Respondents Opinion about Infrastructure Status at the PHCs	246
5.61	Assured Services Provided at the PHCs	247
5.62	Bed Facility and Occupancy Rate in the PHCs	248
5.63	Average Daily OPD Attendance in the PHCs	249
5.64	Treatment of Specific Cases in the PHCs	249
5.65	Maternal and Child Health Care Provided in the PHCs	250
5.66	Laboratory Services Provided by the PHCs	251
5.67	Availability of Utility Services in the PHCs	252

Table No.	Title of the Table	Page No.
5.68	Respondents Perception Regarding Operation Theatre in the PHCs	253
5.69	Status of Labour Room in the PHCs	254
5.70	Laboratory Services Available in the PHCs	255
5.71	Availability of Electricity and Laundry Facilities in the PHCs	256
5.72	Communication and Road Facilities Available in the PHCs	257
5.73	Availability, Accessibility and Status of Furniture at the PHCs	258
5.74	Satisfaction Level in Working at the PHCs	259
5.75	Perception Regarding Interaction with People/Patients at the PHCs	260
5.76	Opinion towards Additional Manpower Required to the PHCs	261
5.77	Facilities Available at Sub-Centres	262
5.78	Satisfaction Derived by the Respondents from the Services of Sub-Centres	263
5.79	Perception Regarding Infrastructure Status at Sub-Centres	264
5.80	Utility Services Provided at Sub-Centres	264
5.81	Perception about Facilities Accessed at the PHCs	265
5.82	Availability, Accessibility and Status of Furniture Facilities at the PHCs	266
5.83	Availability of Medical Manpower at the PHCs	267
5.84	Perception Regarding Infrastructure Status at the PHCs	268
5.85	Satisfaction Derived by Respondents from the Services of the PHCs	268
5.86	Perception Regarding Infrastructure Status at the PHCs	269
5.87	Laboratory Services Provided at the PHCs	270
5.88	Perception Regarding Utility Services at the PHCs	271

CONTENTS

Chapter	Page No.
DECLARATION	i
CERTIFICATE	ii
ACKNOWLEDGEMENT	iii
SUMMARY OF CONTENTS	iv-vii
LIST OF ABBREVIATIONS	viii-ix
LIST OF TABLES	x-xvi
1. INTRODUCTION	01-45
2. HEALTH STATUS IN INDIA - AN OVERVIEW	46-94
3. HEALTH CARE SERVICES IN KARNATAKA - AN OVERVIEW	95-152
4. HEALTH PROFILE OF SHIVAMOGGA DISTRICT	153-181
5. DATA ANALYSIS AND INTERPRETATION	182-272
6. FINDINGS, SUGGESTIONS AND CONCLUSION	273-289
BIBLIOGRAPHY	290-299
INTERVIEW SCHEDULES	300-321
PUBLICATION DETAILS	322

SUMMARY OF CONTENTS

	Page No.
Chapter-01. INTRODUCTION	1-45
1.1. Introduction	01
1.2. Health Care in India	01
1.3. Levels of Health Care Providers	02
1.4. Health Status in India - An Overview	04
1.5. Health Status in Karnataka - An Overview	06
1.6. Review of Literature	09
1.7. Statement of the Problem	38
1.8. Objectives	39
1.9. Hypotheses	39
1.10. Methodology	40
1.11. Limitations	44
1.12. Chapter Scheme	44
Chapter-02. HEALTH STATUS IN INDIA - AN OVERVIEW	46-94
2.1. Prelude	46
2.2. Health Status in India	47
2.3. Health Care Schemes	49
2.3.1. General Health Care Schemes/Programmes	49
2.3.2. Communicable Diseases Health Care Schemes	50
2.3.3. Non-communicable Health Care Schemes	50
2.4. Health Profile of India	51
2.4.1. Demographic Indicators	53
2.4.2. Socio-Economic Indicators	54
2.4.3. Health Status Indicators	56
2.4.4. Health Human Resources	60
2.4.5. Health Infrastructure	69
2.5. Conclusion	93
Chapter-03. HEALTH CARE SERVICES IN KARNATAKA - AN OVERVIEW	95-152
3.1. Prelude	95
3.2. Health Programmes under Corporate Social Responsibility Fund in Karnataka	96
3.2.1. Araiike Yojane	97
3.2.2. Dialysis Units	97
3.2.3. Mobile Health Clinic	97
3.2.4. Citizen Help Desk	98
3.2.5. Contracting MBBS Doctors and Specialists	98
3.2.6. Lysosomal Storage Disorders (LSD) Proposal under CSR Funds	99

3.2.7.	Hygiene Kits	99
3.2.8.	<i>Rashtriya Bal Swasthya Karyakram</i>	99
3.2.9.	Nutrition Rehabilitation Centres/Modified Nutrition Rehabilitation Centres	100
3.2.10.	Telemedicine	100
3.3.	Other Major Health Schemes in Karnataka	101
3.3.1.	<i>Jana Sanjivini</i>	101
3.3.2.	Emergency Medical Services	102
3.3.3.	<i>Prasooti Araiike Scheme</i>	102
3.3.4.	e-Hospitals	102
3.3.5.	e-Arogya	103
3.3.6.	Teleradiology	103
3.3.7.	Virtual Clinic	103
3.4.	Health Insurance Schemes in Karnataka	104
3.4.1.	<i>Jyothi Sanjeevini</i>	104
3.4.2.	Universal Health Scheme	104
3.4.3.	<i>Vajpayee Arogya Shree</i>	105
3.4.4.	<i>Rajiv Arogya Bhagya</i>	105
3.4.5.	<i>Janani Suraksha Yojana</i>	105
3.4.6.	<i>Indradhanush</i>	106
3.4.7.	<i>Arogya Karnataka Programme</i>	106
3.5.	Health Profile of Karnataka	107
3.5.1.	Demographic Indicators	109
3.5.2.	Socio-Economic Indicators	113
3.5.3.	Health Status Indicators	121
3.5.4.	Health Human Resources	127
3.5.5.	Health Infrastructure	132
3.6.	Conclusion	151
Chapter-04.	HEALTH PROFILE OF SHIVAMOGGA DISTRICT	153-181
4.1.	Prelude	153
4.2.	An Overview of Shivamogga District	153
4.2.1.	General Information	153
4.2.2.	Area and Population	154
4.2.3.	Agriculture	155
4.2.4.	Industries	156
4.2.5.	Banks	156
4.2.6.	Transport and Communication	157
4.2.7.	Education	158
4.3.	Health Status in Shivamogga District	158
4.3.1.	Health Institutions	158
4.4.	Conclusion	181

Chapter-05.	DATA ANALYSIS AND INTERPRETATION	182-272
	Part-I	183-218
	Health Care Status at Sub-centres	
5.1.	Health Care Status at Sub-Centres Level	183
5.1.1.	Beneficiaries of Sub-Centres	183
5.1.1.1.	Demographic Features	183
5.1.1.2.	Awareness about Health Care Services	193
5.1.1.3.	Sub-Centres Service Utilization	195
5.1.1.4.	Health Services from Other Services (Apart from Sub-Centres)	200
5.1.2.	Staff of Sub-Centres	203
5.1.2.1.	General Features of Sub-Centres	203
5.1.2.2.	Health Manpower at Sub-Centres	204
5.1.2.3.	Health Care Infrastructure at Sub-Centres	205
5.1.2.4.	Services Provided at Sub-Centres	206
5.1.2.5.	Utility, Furniture and Other Services Provided by Sub-Centres	213
	Part-II	218-261
	Health Care Status at PHCs	
5.2.	Health Care Status at PHCs Level	218
5.2.1.	Beneficiaries of PHCs	219
5.2.1.1.	Demographic Features of the Respondents	219
5.2.1.2.	Awareness about Health Care Services	228
5.2.1.3.	Utilization of PHCs Service	231
5.2.1.4.	Health Services from Other Services (Apart from PHCs)	239
5.2.2.	Staff of PHCs	242
5.2.2.1.	Manpower Availability at PHCs	242
5.2.2.2.	Services Provided at PHCs	247
5.2.2.3.	Utility, Furniture and Other Services Provided in PHCs	251
5.3.	Hypotheses Testing	261
Chapter-06.	FINDINGS, SUGGESTIONS AND CONCLUSION	273-289
6.1.	Findings Based on Secondary Data	273
6.1.1.	Health Status in India	273
6.1.2.	Registered Practitioners under AYUSH System	274
6.1.3.	Nurses and Pharmacist Registered in India	274
6.1.4.	Health Manpower in Rural Areas of India	275
6.1.5.	Hospitals and Beds in Rural and Urban Areas in India	275
6.1.6.	Rural and Urban-wise Health Institutions Functioning in India, 2019	275
6.1.7.	Health Human Resources in Karnataka	276
6.1.8.	Hospitals under AYUSH System in Karnataka	276

6.2.	Findings Based on Primary Data	277
	Part-I	277-280
	Health Care Status at Sub-Centres	
6.2.1.	Beneficiaries of Sub-Centres	277
6.2.2.	Awareness about Healthcare Services (Sub-Centres)	277
6.2.3.	Utilization of Services of Sub-Centres	277
6.2.4.	Facilities Available at Sub-Centres	278
6.2.5.	Health Manpower of Sub-Centres	278
6.2.6.	General Features of the Sub-Centres	278
6.2.7.	Satisfaction derived by the Respondents from the Services of Sub-Centres	279
6.2.8.	Other Infrastructure Status at Sub-Centres	279
6.2.9.	Satisfaction of Staff Working at Sub-Centres and Interaction of Health Manpower and Patient	279
	Part-II	280-288
	Health Care Status at PHCs	
6.2.10.	Beneficiaries of PHCs	280
6.2.11.	Utilization of PHCs Services	280
6.2.12.	Facilities Available at PHCs	281
6.2.13.	Satisfaction Derived from the Services of PHCs	282
6.2.14.	Respondents' Perception Regarding Infrastructure Status at PHCs	282
6.2.15.	Health Manpower and Infrastructure at PHCs	283
6.3.	Suggestions	285
6.3.1.	Beneficiaries of Sub-Centres	285
6.3.2.	Staff of Sub-Centres	286
6.3.3.	Beneficiaries of PHCs	287
6.3.4.	Staff of PHCs	288
6.4.	Conclusion	289
	BIBLIOGRAPHY	290-299
	INTERVIEW SCHEDULES	300-321
	PUBLICATION DETAILS	322

Chapter-01

INTRODUCTION

- 1.1. Introduction**
 - 1.2. Health Care in India**
 - 1.3. Levels of Health Care Providers**
 - 1.4. Health Status in India - An Overview**
 - 1.5. Health Status in Karnataka - An Overview**
 - 1.6. Review of Literature**
 - 1.7. Statement of the Problem**
 - 1.8. Objectives**
 - 1.9. Hypotheses**
 - 1.10. Methodology**
 - 1.11. Limitations**
 - 1.12. Chapter Scheme**
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Chapter-01

INTRODUCTION

1.1. Introduction

The traditional concept primary needs have witnessed a paradigm shift. Now it includes education and health with the original food clothing and shelter. The popular saying is that healthy people create healthy society. Any welfare state can't afford to ignore the health needs of its people. Needless to say that, the state have to take leading initiative to provide all kinds of health services to people.

Health care comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian health care sector is growing at a brisk pace due to its strong coverage, services and increasing expenditure by public as well private players. Indian health care delivery system is categorised into two major components the public and the private. The Government or the public health care system, comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic health care facilities in the form of Primary Health Centres (PHCs) in the rural areas. The private sector provides majority of secondary, tertiary, and quaternary care institutions with major concentration in metros and Tier I and II cities. The Indian public health sector encompasses 18 per cent of total outpatient care and 44 per cent of total inpatient care. The middle and the upper-class individuals, in India, tend to use public health care less than those with a lower standard of living. On the other hand, there are four major services of health care *viz.*, health promotion, disease prevention, diagnosis, treatment and rehabilitation.

1.2. Health Care in India

Health care industry in India comprises of hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. Health care services in India are provided under primary care, secondary care, tertiary care and quaternary care where each level is related to the complexity of the medical cases being treated as well as the skills and specialties of the providers.¹

1.3. Levels of Health Care Providers

Primary Care Providers: Essentials

This is the first and most generalized health care facility for symptoms and medical concerns. Primary care is typically responsible for coordinating care among specialists and other levels of care. Primary Care Providers (PCP) are doctors, nurse practitioners, or physician assistants. There are some primary care specialties as well. For instance, OB-GYNs, geriatricians and paediatricians are all primary care doctors; they just happen to specialize in caring for a particular group of people. Studies have shown that primary care providers benefit the health care system as a whole by offering enhanced access to health care services, better health outcomes, and a decrease in hospitalization and use of emergency department visits.²

Secondary Care Providers: Specialists

Secondary care simply means care taken care of by someone who has more specific expertise. Specialists focus either on a specific system of the body or a

¹ [https://www.ibef.org/industry/health-care-presentation\](https://www.ibef.org/industry/health-care-presentation).

² Shi, L. (2012). The impact of primary care: A focused review. *Scientifica (Cairo)*, p. 432892.

specific disease or condition. For example, cardiologists focus on the heart and its pumping system. Secondary care is where most people end up when they have a medical condition to deal with that can't be handled at the primary care level.

Tertiary Care and Hospitalization

Once a patient is hospitalized and needs a higher level of specialty care within the hospital, it is referred to tertiary care which requires highly specialized equipment and expertise. For example, coronary artery bypass surgery, renal or hemodialysis, and some plastic surgeries or neurosurgeries, etc. A small, local hospital may not be able to provide these services, so tertiary level services are required which provides highly specialized services.³

Quaternary Care

Quaternary care is considered to be an extension of tertiary care. It is even more specialized and highly unusual. Because it is so specific, not every hospital or medical centre offers quaternary care. Some may only offer quaternary care for particular medical conditions or systems of the body. The types of care that might be considered to be quaternary would be experimental medicine and procedures as well as highly uncommon and specialized surgeries.⁴

Health Expenditure in India

In the latest Union Budget for 2021-22, the Budget Estimates (BE) for the Department of Health & Family Welfare (DoHFW) under the Ministry of Health & Family Welfare (MoHFW) was ₹ 71.26 thousand crores. It is an increase of

³ Lo, C., Ilic, D., & Teede, H. (2016). Primary and tertiary health professionals' views on the health-care of patients with co-morbid diabetes and chronic kidney disease - A qualitative study. *BMC Nephrol*, 17(1), 50.

⁴ <https://www.verywellhealth.com/primary-secondary-tertiary-and-quaternary-care-2615354>.

nearly 10 per cent compared to the BE of 2020-21 and a decrease of almost 10% compared to the Revised Estimates (RE) of 2020-21.⁵ Between April 2000 and December 2020, FDI inflows for drugs and pharmaceuticals sector stood at US\$ 17.74 billion, according to the data released by Department for Promotion of Industry and Internal Trade (DPIIT). In Budget 2021, India's public expenditure on health care stood at 1.2 as a percentage of the GDP. In Union Budget 2021, the government allocated ₹ 35000 crore for COVID-19 vaccines in 2021-22. The hospital industry is expected to reach ₹ 8.6 trillion by 2023 from ₹ 4 trillion in 2017; growing at a CAGR of 16-17 per cent. Health care market in India is expected to reach ₹ 27704.22 billion by 2022 due to rising income, better health awareness, lifestyle diseases and increasing access to insurance. The Government of India aims to increase health care spending to 3 per cent of the Gross Domestic Product by 2022.

1.4. Health Status in India - An Overview

Demographic Health Indicators of India

The health care of a country is reflected through its basic demographic indicators. As such, the Crude Birth Rate (CBR) which stood at 40.8 births per 1000 population in 1951 decreased to 20.0 births in 2018. Similarly, the Crude Death Rate (CDR) experienced drastic fall from 25.1 deaths per 1000 population in 1951 to 8.4 deaths in 2001 and still further to 6.2 deaths in 2018. The Total Fertility Rate (TFR) declined from 6 children per woman in 1951 to 3.1 in 2001 and then to 2.2 in 2018. With regard to Maternal Mortality Ratio, it stood at 113 maternal deaths per 100000 live births during 2016-18 from 301 during 2001-02.

⁵ <https://factly.in/data-what-is-the-public-health-expenditure-in-india-as-a-share-of-gdp/>.

At the same time, remarkable improvement was recorded in child mortality as Neo-Natal Mortality Rate (NNMR) from 40 deaths per 1000 live births during 2001 to 23 in 2018, while under five mortality rates per 1000 live births decreased from 59 in 2010 to 36 in 2018. On the other hand, the life expectancy stood at 69.4 years in 2014-18.

Health Care Infrastructure in India

As of March, 2020, in the country there were 155404 and 2517 Sub-Centres (SCs), 24918 and 5895 Primary Health Centres (PHCs) and 5183 and 466 Community Health Centres (CHCs) respectively functioning in rural and urban areas. Further, there were 3313 First Referral Units functioning in the country. Out of these 1706, 821, 668 and 118 were operating at CHCs, SDH, DH and Medical College respectively. With regard to Health and Wellness Centres, as of 31st March 2020, totally 18610 SCs were converted into HWC-SCs, 19985 PHCs into HWC-PHCs where 16635 PHCs were converted into HWCs in rural areas and 3350 in urban areas.

As of 31st March 2020, in the country, totally 1193 Sub-Divisional/Sub District Hospital (SDH) and 810 District Hospital (DH) were functioning. There were 13399 & 22827 doctors and 29937 & 80920 paramedical staffs working at SDH and DH respectively. On the other hand, totally 143538 and 287025 beds available at SDH and DHs.

Health Manpower in India

As of 31st March 2020, in the country totally 212593 ANMs were working at Sub-Centres which was about 59.6 per cent increase compared to 2005. However, still there was overall shortage of 2 per cent and 14.1 per cent vacancy against the sanctioned posts. Further, at PHCs, 28516 allopathy doctors were

working with shortfall of 6.8 per cent. The specialist doctors at CHCs stood at 4957 specialist doctors with shortfall of 78.9 per cent of surgeons, 69.7 per cent of Obstetricians and Gynaecologists, 78.2 per cent of Physicians, 78.2 per cent of Paediatricians. However, the overall shortfall stood at 76.1 per cent specialists at CHCs. In addition to the specialists, there were 15342 General Duty Medical Officers (allopathic), 2720 General Duty Medical Officers (AYUSH) and 702 AYUSH specialists were working at CHCs along with 890 Anaesthetists and 301 Eye Surgeons.

Rural Health Infrastructure in India

As of 31st March 2020, in the country, average rural population covered by Sub-Centre stood at 5729 ranging from 300 to 5000 people, PHCs covered an average population of 35730 people which ranged between 20000 and 30000 and CHCs covered an average population of 171779 people ranging from 80000 to 120000 people.

With regard to rural area covered, Sub-Centre covered an average area of 19.87 sq.km, PHCs covered 123.93 sq.kms and CHCs covered 595.82 sq.km. Further, the radial distance covered by various health institutions showed that Sub-Centre, PHC and CHCs covered average radial distance of 2.51, 6.28 and 13.77 km respectively. At the same time, the average number of villages covered by various health institutions revealed that, SC, PHC and CHCs covered 4, 27 and 128 villages respectively.

1.5. Health Status in Karnataka - An Overview

Demographic Health Indicators of Karnataka

The state has a wide network of health care services both at urban as well as rural levels. In the state National Health Mission was launched on 12th April 2005.

As of 2020, the birth rate per 1000 population, in the state, stood at 17.2 per 1000 population and death rate per 1000 population at 6.3 per 1000 population. Further, Infant Mortality Rate stood at 23 per 1000 live births, while Maternal Mortality Rate stood at 92 per 100000 live births and Total Fertility Rate stood at 1.7 children per woman. The Neo Mortality Rate recorded to be at 15.8 deaths per 1000 live births and under 5 Mortality Rate at 29.5 per 1000 live births. The state had average life expectancy of 70.9 years.

Health Care Infrastructure in Karnataka

As of 2020, in the state, 15 District Hospitals, 11 other hospitals under Health and Family Welfare, 36 Autonomous and Teaching Hospitals, 136 Taluk/General Hospitals, 207 CHCs (189 rural and 18 urban), 2359 PHCs (2176 rural and 358 urban) and 9435 Sub-Centres (9188 rural and 247 urban) were functioning both in rural and urban areas. As of 2020-21, in the state, 160 Government Hospitals and 662 Government Dispensaries were functioning. Out of total 160 Government Hospitals, 116 hospitals were Ayurveda with bed strength of 1821 beds, 18 were Unani Hospitals with bed strength of 392 beds, 18 were Homeopathy Hospitals with bed strength of 260 beds, 5 Nature Cure Hospitals with bed strength of 46 beds and 3 were Yoga Hospitals with 15 beds strength. In the state, 150 Sub-Division Hospital, 26 District Hospitals and 19 Medical Colleges are functioning. At the same time, 1517 HWC-SCs, 720 HWC-PHCs and 336 HWC-UPHCs were functioning in the state.

Health Manpower in Karnataka

As of 31st March 2020, in the rural areas of the state, totally 7727 Female Health Workers and 3394 Male Health Workers were working at Sub-Centres. Further, 5644 Female Health Workers, 2914 Health Assistants, 2071 Doctors, 356 AYUSH Doctors, 1549 Pharmacists, 1515 Laboratory Technicians and

3137 Staff Nurse were working at PHCs. At CHCs, 21 AYUSH Specialist, 28 Surgeons, 119 Obstetricians and Gynaecologist, 24 Physicians and 81 Paediatricians were working. Apart from these, 63 anaesthetists, 9 Eye Surgeons, 85 General Duty Medical Officers (AYUSH), 181 General Duty Medical Officers (Allopathic), 122 Radiographers, 200 Pharmacists, 210 Laboratory Technicians and 1604 Staff Nurse were working in CHCs.

As of 31st March 2020, in urban areas of the state, 1039 Female Health Workers, 356 Doctors, 300 Pharmacists, 319 Laboratory Technicians and 584 Staff Nurse were working at PHCs. On the other hand, 60 Specialists, 17 Anaesthetists, 1 Eye Surgeon, 15 Duty Medical Officer (Allopathic), 9 Radiographers, 24 Pharmacists, 28 Laboratory Technicians and 184 Staff Nurse were working at CHCs.

At District Hospitals 677 doctors along with 2311 Para-Medical Staff were working, while at Sub Division Hospitals 1396 Doctors along with 3887 Para-Medical Staff were working.

Rural Health Infrastructure in Karnataka

As of 2020, in rural areas, in the state, 9188 Sub-Centres, 2176 PHCs and 189 CHCs were constituted. Out of 9188 Sub-Centres functioning in the rural areas, 5075 SCs were functioning in government building, 1481 SCs in rented building and 2632 SCs were functioning in rent free panchayat/ voluntary society building. Further, out of total 2176 PHCs operating in rural areas, 2020 PHCs were operating in government building, 69 in rented building and 87 in rent free panchayat/ voluntary society building. At the same time, out of total 189 CHCs functioning in the rural areas, 181 were operating in government building and 8 in rented building.

1.6. Review of Literature

In reviewing the literature accessible to the existing study, more attention was placed on books, various libraries, institutes, and websites in order to acquire information regarding India and world. With the availability of literature relevant to the current study, both general and specific material was gathered. The presentation of review of literature is done under two different parts, where Part-I deals with the review of foreign studies and Part- II with the Indian studies.

1.6.1. Studies made Abroad

Gabraith (1958)⁶ had come up with one apparently unifying argument when he labeled the United States ‘The Affluent Society’. In theory, Americans were now all “middle-class consumers,” with standard expectations. Television, the new vehicle of mass culture, celebrated modern medicine as part of a culture of consumerism. All three of the major television networks carried hospital dramas in the early 1960s, centering Americans in the fictional worlds of Doctor Kildare (NBC), Ben Casey (ABC), and the Nurses (CBS). The main issues for health policy in this context were to define needy groups as middle-class and to ensure that they could behave like middle-class consumers by having the means to do so, that is, by having adequate hospital insurance coverage, backed up where necessary by public assistance.

Klarmen (1962)⁷ did a study of hospital patients in 1957 that described the rigid pattern of stratification and segregation by class and race in New York City.

⁶ Galbraith, J. K. (1959). The Affluent Society. *American Journal of Agricultural Economics*, 41(1), 144–147.

⁷ Klarmen, H. E. (1962). Characteristics of patients in short-term hospitals in New York city. *Journal of Health and Human Behavior*, 3, 48.

In New York's for-profit hospitals and in the private and semi-private accommodations of not-for-profit hospitals, patients designated 'white' were virtually the only patients (97% and 96%, respectively). The wards of not-for-profit hospitals provided accommodations for poorer (or uninsured) members of society; here the proportion of white people was lower (66%). But in the municipal hospitals, the backbone of welfare medical care, the great majority of patients were Puerto Rican, African-American, and members of races other than white.

Henrik et al. (1963)⁸ defined that the spectrum of human activity is as wide and complex as the realm of the phrase 'Health'. Health care can be defined as the delivery of a wide range of medical services by professional, technical, and supportive health professionals in in-patient, out-patient, and home health settings. The appropriate administration and management of health care facilities has a greater impact on the development of health care facilities than the opening of hospitals or health care centres.

According to WHO (1968)⁹ has defined Health care can be defined as 'A programme that should make available to the individual and thereby to the community, all facilities and allied sciences necessary to promote and maintain health of the mind and body'.

Donabedian (1988)¹⁰ developed the most popular Donabedian model of Structure, Process, and Outcome, which has been subject to wide evaluation and

⁸ Henrik, L., Alvin, B., & Leonard, R. (1963). *Public Administration – A Public View Point*. McMillan and Co., New York, pp. 257-265.

⁹ WHO (1968). Report of Expert Committee on Hospital Administration, Geneva.

¹⁰ Donabedian, A. (1988). The Quality of Care: How can it be assessed? *Journal of American Medical Association*, 260, 1743-48.

there after applied in the implementation of quality in health-care services. In his work, the author argued that before we resort to start assessing, we have to first decide as to how quality is to be defined. This depends on whether we are assessing only practitioners' performance or also the contributions made by patients and the health care system; how broadly health as well as responsibility for health are defined; "it is necessary to find out whether it is effective maximally or optimally cared. It is important to know how the optimum has been defined, on the basis of individual or social preferences. We also require complete information about the causal relationships between structural characteristics belonging to care settings, care processes, and care outcomes. The steps that follow are defining the components or outcomes of care to be neatly sampled, creating the relevant terms or criteria and standards, and gathering the necessary data and procuring required data. Even while we understand a lot about evaluating quality, there is still remains a lot which we don't know.

Stokoe (1991)¹¹ concludes declares that maternal mortality is the culmination of a many detrimental events in the life of woman, the last one is the pregnancy. It is found in the study that the underlying pathology is the lack of sanitation, education, accessible health care, in addition to malnutrition and poverty. These factor affect women during pregnancy and childbirth during which time they are more vulnerable.

Perinatal mortality, according to Fazili & Mattoo (1999)¹², brings to limelight the amount of pregnancy waste owing to fetal and neonatal fatalities, as

¹¹ Stokoe, U. (1991). Determinants of maternal mortality in the developing world, Australian and Newzealand. *Journal of Obstretic and Gynecology*, 31(1), 8-16.

¹² Fazili, F., & Mattoo, G. M. (1999). Epidemiology of Peri-natal mortality: a hospital based study, JK Practitioner. *Journal of Current Clinical Medicine and Surgery*, 6(1), 41-5.

well as it is a sensitive indication of mother and child health in particular, in addition to community health in general. The PNMR was significantly higher among illiterate women, women at extremes of age, women living in joint households, and women who had insufficient antenatal care. The upper socioeconomic strata have a low PNMR. Perinatal loss was considerably impacted by maternal weight.

In their study, Hermida et al. (1999)¹³ found out that reading medical records has less specificity for tracing performance, but is recommended for evaluating quality in medicine prescription of medicine. The study also recognized that a mother's exit interview of mother has a greater specificity for health worker performance than availability of medical record review.

In their study, Bang et al. (1999)¹⁴ identified that home-based neonatal care, including sepsis management, is both feasible and acceptable, and brings down neonatal and infant mortality almost by 50% among malnourished, illiterate, rural people. In backward areas, this strategy would significantly reduce infant mortality.

The World Health Report (2000)¹⁵, finding strategies to make health related services in poor countries more customer-centered is a big challenge. Patients are There is frequent indifferently treatment to patents, and there is shortage of medicines and supplies. Views expressed by patients gives users spoke to express their voice, which, if provided timely attention, has the possibility of making

¹³ Hermida, J., Nicholas, D. D., & Blumenfeld, S. N. (1999). Comparative validity of three methods for assessment of the quality of primary health care. *International Journal for Quality in Health Care*, 11(5), 429-33.

¹⁴ Bang, A. T., Bang, R. A., Baitule, S. B., Reddy, M. H., & Deshmukh, M. D. (1999). Effect of home-based neonatal care and management of sepsis on neonatal mortality: field trial in rural India. *Lancet*, 354, 1955–61.

¹⁵ WHO (2000). Report on Health Systems: Improving Performance. Geneva.

services more responsive to people's needs and expectations. These are critical components needed for improving the effectiveness of health care systems.

In their research work Baron-Epel et al. (2001)¹⁶ found out that the degree to which the interaction's expectations were identified as fulfilled was more prominently associated with level of satisfaction, more particularly attributes clarifying interactions and communication with the doctor such as 'explanation and discussion', 'replying questions' and 'listening to problems'. satisfaction of patient is higher when the patient's expectations for these features are fulfilled. The extent to which other parameters, such as referred to specialist or test referral, Provision for medical certificate were complied with may be less significant in determining satisfaction of patients.

Mendoza et al. (2001)¹⁷ in their study identified that satisfaction of clients is influenced by cultural background of people. It demonstrates the conundrum that, whereas ideal care should have capable ability to address both medical and psychosocial requirement, in practice, care that meets all medical demands may fail to meet the client's emotional or social requirement. Care that satisfies psychosocial requirements, on the other hand, may put the clients' health in danger.

According to Kleefield et al. (2001)¹⁸, a specialised private health care institute, its funding, organisation, delivery of service, and quality assurance

¹⁶ Baron-Epel, O., Dushenat, M., & Friedman, N. (2001). Evaluation of the consumer model: relationship between patients' expectations, perceptions and satisfaction with care. *International Journal for Quality Health Care*, 13, 317-23.

¹⁷ Mendoza, A. J., Piechulek, H., & Al-Sabir, A. (2001). Client satisfaction and quality of health care in rural Bangladesh. *Bulletin of World Health Organisation*, 79(6), 512-517.

¹⁸ Kleefield, K. S. S., Hammel, J., & Crone, R. (2001). Privately funded quality health care in India: a sustainable and equitable model. *International Journal for Quality in Health Care*, 13(4), 283-88.

measures are all important factors to consider. Furthermore, the authors assert that privately funded quality health care might be a long-term and egalitarian paradigm "for the developing globe".

In their paper, McDonald et al. (2002)¹⁹ highlight how current health-care funding schemes can put undue strain on rural health-care services. Staff may be short on time, resources, data, and experience to complete complex and time-consuming grant applications. The current research describes an innovative capacity-building method to engaging with Victorian rural towns requesting financing through the Regional Health Services Programme. This strategy included engaging stakeholders in remote communities, generating an information package and conducting a training on preparing submissions to the Regional Health Services Programme, supporting community dialogues, and providing continuing submission support. This approach to capacity-building is both effective and transferable to other health-funding options.

Margaret et al. (2003)²⁰ study demonstrated that provider and setting attributes are major components of patient satisfaction, and that patients in poor general health were significantly less satisfied with organisational factors (such as availability of a seat and toilet in the waiting area, and cleanliness), whereas patients in good general health but poor mental health were significantly less satisfied with organisational factors (such as availability of a seat and toilet in the

¹⁹ McDonald, J., Brown, L., & Murphy, A. (2002). Strengthening primary health care: building the capacity of rural communities to access health funding. *Australian Journal of Rural Health*, 10(3), 173-7.

²⁰ Margaret, S. W., Paul, R., Danie, G., Van-Zyl, & Seager, O. R. (2003). Interpersonal and Organisational dimensions of patient satisfaction: the moderating effects of health status. *International Journal for Quality in Health Care*, 15(4), 337-44.

waiting area, and cleanliness), whereas patients in good general (like support, consideration, friendliness and encouragement).

In their study, Wagstaff et al. (2004)²¹ clearly demonstrated that while child mortality and malnutrition rates are declining in most countries, huge discrepancies exist between poor and better-off children, both between and within nations.

Management and organisational variables, application of evidence-based procedures, professional development, usage of referrals to secondary care and organisational culture are the elements that determine good quality care, according to AL-Ahmadi and Roland's (2005)²² research. The knowledge and skills of employees are two more variables that must be considered in order to increase quality.

Laurant et al. (2005)²³ found that suitably trained nurses may provide high-quality treatment and achieve similar health outcomes for patients, the process of care, resource utilisation, and cost as primary care doctors. While doctor-nurse replacement has the potential to lower doctors' workload and direct health care costs, it depends on the specific circumstances of care. Doctors' workloads may not alter because nurses are deployed to satisfy previously unmet patient needs or because nurses create demand for care where none existed previously. Cost savings are dependent on the size of the wage gap between

²¹ Wagstaff, A., Bustreo, F., Bryce, J., & Claeson, M. (2004). Child Health: Reaching the poor, World Health Organisation - World Bank Child Health and Poverty Working Group. *American Journal of Public Health*, 94(5), 726-736.

²² AL-Ahmadi, H., & Roland, M. (2005). Quality of primary health care in Saudi Arabia: a comprehensive view. *International Journal for Quality in Health Care*, 17(4), 331-46.

²³ Laurant, M., Reeves, D., Braspenning, J., Grol, R., & Sibbald, B. (2005). Substitution of doctors by nurses in primary care. *Cochrane Database of Systematic Reviews*, 18(2), CD001217.

doctors and nurses, and may be mitigated by nurses' poorer output when compared to doctors. Given that just one research was powered to assess equality of care, numerous studies had methodological issues, and patient follow-up was typically 12 months or less, this finding should be considered with caution.

In their study, Peters et al. (2006)²⁴ found that Decision Support Technologies (DST) have significant potential to improve coverage and quality of health care for the poor and where there is no doctor, but that public health workers' scepticism must be overcome. The use of these technologies should take advantage of their popularity among patients as well as the ability to collaborate with the commercial sector. To assess whether health services achieve acceptable standards of quality, various methodologies have been utilised in developed and developing country health delivery systems. Record reviews or audits, interviews with health care providers, written and oral examinations, patient interviews and focus groups, and direct observation of service performance are all examples. Despite their widespread use, there has been little empirical research on their efficacy in assessing the quality of health workers' performance in providing primary health care services.

De-Costa and Diwan (2007)²⁵ empirically demonstrate the domain heterogeneous private health sector and overall disparity in health care provision in rural and urban areas, with 75.6 per cent of qualified doctors working in the private sector, 80 per cent of these private physicians working in urban areas, and 72.1 per cent of all qualified paramedical staff working in the private sector,

²⁴ Peters, D. H., Manish, K., Mascarenhas, M., & Krishna, R. (2006). Can computers improve patient care by primary health care workers in India? *International Journal for Quality in Health Care*, 18(6), 437-45.

²⁵ De-Costa, A., & Diwan, V. (2007). Where is the public health sector? Public and private sector health care provision in Madhya Pradesh, India. *Health Policy*, 84(2-3), 269 -76.

mostly in rural areas. It proposes that the public health sector take on a new role, one of constructive control of the entire health sector (public and private), balanced with direct provision of services as appropriate. It underlines the importance of forging strong public-private partnerships in order to ensure that everyone has equal access to health care.

According to Andaleeb et al. (2007)²⁶, improving medical care necessitates paying attention to service aspects that are regularly rated by patients. Doctors, nurses, tangibles, and process features are among these features. However, in order to strengthen the health-care system, additional organisational and extra-organisational challenges must be addressed.

Collin et al. (2007)²⁷ found that maternal mortality could be reduced by a combination of micronutrient supplementation and presumptive treatment of infection during pregnancy using model-based analysis and adopting effective interventions that have demonstrated potential to prevent maternal deaths. This strategy might be used in resource-constrained situations where antenatal clinic visits are infrequent, and it would complement existing Safe Motherhood initiatives.

Patient assessments of quality of treatment and patient-centeredness were substantially associated with practice and patient characteristics, according to Jayasinghe et al. (2007).²⁸ Patients in smaller offices said they had easier access to

²⁶ Andaleeb, S. S., Siddiqui, N., & Khandakar, S. (2007). Patient satisfaction with health services in Bangladesh. *Health Policy and Planning*, 22, 263-73.

²⁷ Collin, S. M., Baggaley, R. F., Pittorf, R., & Filippi, V. (2007). Could a simple antenatal package combining micronutritional supplementation with presumptive treatment of infection prevent maternal deaths in sub Saharan African? *BMC Pregnancy and Child Birth*, 23(7), 6.

²⁸ Jayasinghe, U. W., Proudfoot, J., Holton, C., Davies, G. P., Amoroso, C., & Burbner, T. (2008). Chronically ill Australians' Satisfaction with accessibility and Patient centeredness. *International Journal for Quality in Health Care*, 20(2), 105-14.

care than those in bigger clinics. Patients in urban regions were also happier with the level of patient-centeredness than those in rural areas. Females were also happier with the patient-centeredness.

In research on boosting access to health workers in remote and rural areas, the World Health Organization (2009)²⁹ discovered that there is more of a problem of geographical maldistribution than a dearth of physicians. The factors impacting the choices and decisions of health workers to practice in remote and rural locations, such as turnover rates, absenteeism, unemployment, or dual employment, have a correlation with the categories of interventions that could respond to such circumstances. When it comes to working in remote and rural locations, health workers' top worries are those linked to the socioeconomic environment, such as working and living conditions, children's access to education, spouses' availability of work, instability, and work overload.

In their investigation of the medical and socio-economic reasons of maternal deaths, Jafarey et al. (2009)³⁰ discovered that high risk categories include women with low socioeconomic level, illiteracy, low-earning employment, parity, and a negative obstetric history. Sixty-nine per cent of deaths happened after delivery, with 51 per cent occurring within 24 hours following delivery. In addition, the study discovered inadequacies in maternal death reporting, as well as the profile of deceased women and their causes of death.

²⁹ World Health Organisation (2009). Increasing access to health workers in remote and rural areas through improved retention, Background paper for the first meeting to develop evidence based recommendations to increase access to health workers, Geneva.

³⁰ Jafarey, S. N., Rizvi, T., Koblinsky, M., & Kureshy, N. (2009). Verbal Autopsy of Maternal Deaths in Two Districts of Pakistan Filling information Gaps. *Journal of Health, Population and Nutrition*, 27(2), 170-183.

In their study, Pena-Rosas & Viteri (2009)³¹ discovered that universal prenatal iron or iron+folic acid supplementation given daily or weekly is helpful in preventing anaemia and iron deficiency at term. However, there was no indication of a significant reduction in serious maternal and neonatal poor clinical outcomes (low birth weight, delayed development, preterm birth, infection, postpartum hemorrhage). Side effects, particularly hemoconcentration during pregnancy, may indicate that iron doses and supplementing schemes should be adjusted during pregnancy, as well as preventive iron supplementation recommendations.

In their study of two-dimensional outcomes in the QSP model: 'Importance' (to satisfaction) and 'Quality' (grade of satisfaction), Rahmqvisti & Bara (2010)³² discovered that younger patients in emergency was the least satisfied group and older patients with excellent health status was the most satisfied group. Patients with a better health status and less education were happier than those with a higher education and a worse health status. "Receiving the expected medical help" and "being treated well by the doctor" were the two variables most strongly connected with overall satisfaction. Patient satisfaction was inversely connected with waiting at the reception desk without receiving information. Participation in medical decision-making is also linked to a better outcome.

Tourigny et al. (2010)³³ found that perceptions of relational and informational continuity increased significantly, whereas organisational and

³¹ Pena-Rosas, J. P., & Viteri, F. E. (2009). Effects and safety of preventive oral iron or iron+folic acid supplementation for women during pregnancy. *Cochrane Database of Systematic Review*, 7(4), CD004736.

³² Rahmqvisti, M., & Bara (2010). Patient characteristics and quality dimensions related to patient satisfaction. *International Journal for Quality in Health Care*, 22(2), 86-92.

³³ Tourigny, A., Aubin, M., Haggerty, J., Morin, B. L. D., Reinharz, D., Leduc, Y., St. Pierre, M., & Houle, N. (2010). Patients' perceptions of the quality of care after primary care reform: Family medicine groups in Quebec. *Canadian Family Medicine*, 56(7), 273-82.

first-contact accessibility and service responsiveness decreased. Physician-nurse coordination was perceived to be stable, whereas primary care physician-specialist coordination was dramatically reduced. In addition, the authors stated in their study that re-organising primary care services resulted in significant changes in care practices, which improved patients' experiences of continuity of care but not their experiences of accessibility to care.

In their study, Hundt et al. (2012)³⁴ discovered that there are concerns of accessibility in terms of distance, as well as acceptability in terms of a lack of local and female employees, cultural competency, and inadequate communication. They also discovered that providing accessible, acceptable health care in remote locations is a barrier for health care providers, and that these health care professionals are building a collaboration that could potentially alleviate this challenge.

1.6.2. Studies made in India

Mukherjee (1987)³⁵, Lord Dawson was the first to introduce the notion of a health centre in England in 1920. The Government of Mysore created the first health institution in the country at Mandya in 1928 (Karnataka). Between 1931 and 1939, the establishment of health clinics at Nazafgarh, Singur, Poonamallie, Trivandrum, Lucknow and other locations in collaboration with the Rockefeller Foundation and the Government of India was a watershed moment in the history of health care delivery.

³⁴ Hundt, L. G., Alzaroo, S., Hasna, F., & Alsmerian, M. (2012). The provision of accessible, acceptable health care in rural remote areas and the right to health: Bedouin in the North East region of Jordan. *Social Science and Medicine*, 74(1), 36-43.

³⁵ Mukherjee, P. K. (1987). Public Health Administration in India. In: *Dr. B. N. Ghosh's - A Treatise on Preventive and Social Medicine*, Academic Publisher, Calcutta, pp. 7-20.

Bhardwaj et al. (1990)³⁶ shows that there is a wide gap between provision and utilisation of maternal care services. Since most of the deliveries are conducted at home by untrained traditional birth attendants, the people must be educated to utilise the services of trained personnel.

In their study, Pillai (1993)³⁷ discovered that pregnancy and birth, as well as the management of problems such as bleeding, toxic and bacterial infections (sepsis), eclampsia, and obstructed labour, are the immediate causes of maternal death. The underlying reasons of maternal death are women's poor health, nutrition, and socio-economic position. Women's health and nutritional status suffers as a result of gender bias in the distribution of scarce food supplies, resulting in a woman's pelvis becoming too narrow, causing obstructed labour and even death. Access to family planning and health services is linked to socio-economic level, which has an impact on mortality and reproductive health.

In rural locations where government centres are particularly desolate, the community has opted to create its own health care system of private practitioners of various types and credentials, according to Nath (1994)³⁸. Even in rural areas where full health care is offered, with health workers visiting each family on a regular basis, residents rely on various sorts of practitioners. After further investigation, it was determined that the reason for utilising such a large number of practitioners had nothing to do with the level of satisfaction with government services or their accessibility. When people become ill, they make a diagnosis and

³⁶ Bhardwaj, N., Yunus, M., Hasan, S. B., & Zaheer, M. (1990). Role of birth attendants in maternal care services a rural study. *Indian Journal of Maternal and Child Health*, 1, 29-30.

³⁷ Pillai, G. (1993). *Reducing Deaths from Pregnancy and Childbirth: Asia*. Links, New York, 9(5), 11-3.

³⁸ Nath, L. M. (1994). Health care in rural areas. *Health for the Millions*, 2(1), 17-8.

then seek care at the appropriate location. They seek a magico-religious practitioner if they feel their ailment is caused by the evil eye, for example. These different sorts of practitioners thrive in locations with the best primary health care because they meet a demand that isn't being supplied by basic health care providers.

In his study on the consumption of health care in India, Duggal (1994)³⁹ discovered that India has a variety of health care systems and medical systems. In hospitals and clinics, the government and local governments offer public health care. In rural areas, public health care is focused on preventive and promotion services at the expense of curative services. Rural primary health facilities are underutilised because they do not provide enough care and medication to their patients, as well as having inconvenient locations and high waiting time. Public hospitals are responsible for 60% of all hospitalisations, whereas the private sector is responsible for 75% of routine care. In the private sector, there are roughly similar numbers of qualified and unqualified doctors, with a higher ratio of unqualified to qualified in less developed countries. Qualified doctors are concentrated in rural locations where government services are provided. With a population that can barely achieve its nutritional needs, India needs universal health-care coverage to ensure equity in health-care access and availability, rather than a huge number of doctors benefitting from the poor people's illnesses.

In their study of the characteristics and practice of private practitioners, Rohde and Viswanathan (1994)⁴⁰ discovered that private practitioners serve the

³⁹ Duggal, R. (1994). Health care utilization in India. *Health for the Millions*, 2(1), 10-2.

⁴⁰ Rohde, J., & Viswanathan, H. (1994). The rural private practitioner. *Health for the Millions*, 2(1), 13-6.

bulk of India's rural population. The findings revealed that private practitioners are virtually invariably male, practice in or around their birthplace, and have attended school, with only 25 per cent of them graduating and nearly half having no official training. Nearly 90 per cent of allopathic practitioners, regardless of training, practice allopathy. Antibiotics and other medications are administered in modest dosages (a practice which is certainly harmful). Difficult situations are referred to government centres by the practitioners. The majority of the practitioners, on the other hand, work alone, with the town chemist as their only professional contact. Another key conclusion is that patients were satisfied with the care they received since private practitioners paid more attention to them than primary health care doctors did. Further research suggests that a cost analysis of this health care reveals that it accounts for a significant amount of rural expenditure and is a significant "hidden industry." According to the authors, the government should prohibit unskilled rural private practitioners from practising, promote the quality of care given by the government network, or acknowledge the existence of private practitioners and provide them with support and training.

In their work, Khare et al. (1996)⁴¹ situates "practised medicine" as an operating cross-cultural analytic concept amid prior important developments and lines of inquiry within anthropological studies of medicine in India, and medical anthropology more broadly. For example, practising medicine in India allows us to better understand how India manages not only numerous traditional and modern medical approaches, languages, therapeutic regimens, and material medica, but it also leads to persistent moral, social, and material critique from within. As India

⁴¹ Khare, R. S., Dava, Daktar, & Dua. (1996). Anthropology of practiced medicine in India. *Social Science and Medicine*, 43(5), 837-48.

grapples with concerns of availability, cost, fairness, and distributive justice in medical care, the author believes that the country's practised medicine poses issues of "critical consciousness" for modern (and traditional) state-supported medicine.

In their study on the access-quality trade-offs, Acharya & Cleland (2000)⁴² found that the evidence strongly suggests that improving Health Facility quality (as measured by the availability of trained staff, equipment, supplies, and facilities) is a higher priority than increasing the number of Health Facilities to improve access. (Travel time was calculated using a standard form of transportation).

In their study, Gokhale et al. (2002)⁴³ found that female illiteracy had a greater negative influence on rural than urban areas. When there was a high percentage of female illiteracy, male literacy helped to improve the use of services and lower infant death rates. All of the primary findings from the national-level aggregate data were supported by the micro-level analysis. Long-term health benefits will result from programmes such as offering free education to girls.

In their study on the use and safety of non-allopathic Indian medicines, Gogtay et al. (2002)⁴⁴ concluded that non-allopathic Indian medicines, Ayurveda, Siddha, Unani and Homeopathy, referred to as complementary and alternative medicine elsewhere in the world, have gained increasing recognition in recent years with regard to both treatment options and health hazards. The patient,

⁴² Acharya, L. B., & Cleland, J. (2000). Maternal and child health services in rural Nepal: Does access or quality matter more? *Health Policy and Planning*, 15, 223-9.

⁴³ Gokhale, M. K., Rao, S. S., & Garole, V. R. (2002). Infant mortality in India: usage of maternal and child health care in relation to literacy. *Journal of Health, Population and Nutrition*, 20(2), 138-47.

⁴⁴ Gogtay, N. J., Bhatt, H. A., Dalvi, S. S., & Kshirsagar, N. A. (2002). The use and Safety of Non allopathic Indian medicines, Drug safety. *International Journal of Medical Toxicology and Drug Experience*, 25(14), 1005-19.

physician, regulatory authorities, abuse/misuse of these medicines, quality and purity difficulties are all challenges in these non-allopathic systems. A changing natural environment, the use of insecticides, and new production techniques all necessitate safety monitoring in the pharmaceutical business, which is still unregulated. From the days when it was thought that testing these formulations before to use was superfluous, the Indian traditional medicine sector has come a long way, with the implementation of Good Manufacturing Practice norms for the industry. There is a pressing need for allopathic and non-allopathic practitioners to collaborate to improve the risk-benefit profile of these drugs.

According to Dilip (2002)⁴⁵, the choice for public vs. private sector services is determined by the nature of the service in demand. In the case of family planning, the role of private providers in health care was found to be minimal, while over half of women used private providers for delivery care. When their children had a fever or cough, the majority of women preferred to seek treatment from private medical service providers. The public sector was the primary provider of Reproductive and Child Health Care services for the poorer sectors of society, resulting in significant class disparities. Regardless of the type of service they sought, people with a larger potential to pay favoured the private sector.

According to the findings of Partha-De and Bhattacharya's (2002)⁴⁶ study, children are more likely to receive immunization, if their parents are a couple,

⁴⁵ Dilip, T. R. (2002). Utilisation of reproductive and child health care services: Some observations from Kerala. *Journal of Health Management*, 4(1), 19-30.

⁴⁶ Partha-De & Bhattacharya, B. N. (2002). Determinants of child immunization in four less developed states of North India. *Journal of Child Health Care*, 6, 134-50.

with a literate father and a mother with at least middle-school education who had received antenatal care or delivered in an institutional setting.

Rani and Bonu (2003)⁴⁷ study the level and connection of care-seeking and provider choice for gynecological symptoms among currently married women in rural India using data from the India National Family and Health Survey-2 performed in 1998-99. The care-seeking behaviour and types of providers consulted by the symptomatic women studied varied significantly among Indian states. Significant differences in care-seeking behaviour by age, caste, religion, education, household wealth, and women's autonomy imply that many cultural, economic, and demand-side barriers to care-seeking exist. Despite the fact that socially disadvantaged women were less likely to contact private providers than better-off women, the majority of even the poorest, uneducated, and lower-caste women did so. Geographical access to public health facilities had no significant relationship with provider choice, whereas private provider access had a somewhat significant relationship with provider choice. Because private services are commonly used for self-perceived gynecological morbidity, private providers should be included in the national reproductive health strategy to improve its effectiveness.

A study conducted by Murthy and Barua (2004)⁴⁸ investigated non-medical causes responsible for India's chronically high maternal mortality rate revealed that the majority of deaths happened at home and during the postnatal period. In

⁴⁷ Rani, M., & Bonu, S. (2003). Rural Indian women's care-seeking behaviour and choice of provider for gynecological symptoms. *Studies in Family Planning*, 34(3), 173-85.

⁴⁸ Murthy, N., & Barua, A. (2004). Non-medical Determinants of Maternal Death in India. *Journal of Health Management*, 6(1), 47-61.

comparison to women with issues, the majority of 'death cases' belonged to high-risk age groups, had high parity, were socially disadvantaged, and had not received prenatal care or advise to go to hospital. As a result, they either did not go to the hospital or arrived too late. Delays in care were also caused by a lack of transportation, improper referrals or referral facilities' lack of emergency readiness. According to the data, approximately half of the deaths may have been averted if the health system had been more aware and accessible. Families' awareness of difficulties, emergency transport, and referral facility readiness were all important factors in unnecessary mortality. The study emphasised the need of health workers emphasising health education, care during the third trimester and postpartum period, and referral to appropriate and accessible facilities, even if that means circumventing the hierarchical referral system.

In their study on the use and acceptability of indigenous systems of medicine to provide an estimate of utilisation of different indigenous systems of medicine in the country, Singh et al. (2005)⁴⁹ found that a very small proportion (around 14%) of sick people use indigenous systems of medicine. Those who preferred Indian System of Medicine and Homeopathy did so for a variety of reasons, the most common of which were "no side effects" and low treatment costs. The primary reasons for not liking the ISM & H treatment were slow improvement and a lack of practitioners.

⁴⁹ Singh, P., Yadav, R. J., & Pandey, A. (2005). Utilization of Indigenous systems of medicine and homeopathy in India. *Indian Journal of Medical Research*, 122(2), 137-42.

In their study, Rao et al. (2006)⁵⁰ have discovered that stronger interpersonal skills among employees and physicians, facility infrastructure, and drug availability have the greatest impact on enhancing patient satisfaction at public health facilities. In addition, they found that in India and many other developing nations, an overemphasis on service coverage and inputs in the provision of health services has overlooked the requirements of the same people for whom these services are provided. One strategy to make health care more responsive to people's needs is to incorporate patient perspectives into quality assessment. It also allows people to express their thoughts on their health-care services. Throughout the course of our research, we discovered numerous instances when patients were eager to document their concerns about the treatments they had gotten in the hopes that action would be made. The act of including people in the evaluation of their health services is likely to make practitioners more attentive and aware of patient requirements.

After controlling other socio-economic and demographic factors, Ram and Singh (2006)⁵¹ found that using antenatal care services can lead to the use of other maternal health services such as institutional delivery, delivery assisted by trained professionals, seeking advice for pregnancy complications, and seeking advice for post-delivery complications. Within the primary sampling units (i.e., villages) and districts, there is a high clustering of service consumption.

⁵⁰ Rao, K. D., Peters, D. H., & Banded-Roche, K. (2006). Towards Patient-centered health services in India a scale to measure patient perceptions of quality. *International Journal for Quality in Health Care*, 18(6), 414-21.

⁵¹ Ram, F., & Singh, A. (2006). Is antenatal care effective in improving maternal health in rural Uttar Pradesh? Evidence from a district level household survey. *Journal of Biosocial Sciences*, 38(4), 433-48.

Mazumdar & Gupta (2007)⁵² in their study shows that, for the majority of women's health problems biomedicine is regarded as the first choice, failure of which leads clients to seek treatment from Indian System of Medicine (ISM) as a final resort. Nevertheless, women showed a preference for ISM treatment for certain specific health problems, strongly backed by a belief in their efficacy. Of the predictors that positively influenced women's choice of ISM treatment, 'strong evidenced-based results' was found to be the most important. Women's preference for ISM was dependent on the availability of competent providers.

Ager & Pepper (2007)⁵³ in their study examined the patterns of service utilisation across the rural population of four districts of Orissa, with special reference to perceptions of the availability and quality of state services at the primary care level. Despite emphasis on strengthening local health care provision, concern remains regarding the rates of utilisation of state provided services. Households reported utilising a wide range of health care providers, although hospitals constituted the most frequently and primary health care centres (PHCs) the least frequently accessed services. Private practitioners (qualified and unqualified) represented a major sector of provision. This included high rates of access by scheduled tribes and castes (running at approximately twice the rate of access to both local and PHC provision). Key factors guiding patterns of utilisation were reputation of the provider, cost and physical accessibility. Local health provision through assistant nurse midwives and male health workers was generally perceived of poor quality, with the lowest rates of resolution of health

⁵² Mazumdar, G. P., & Gupta, K. (2007). Indian system of medicine and women's health: a client's perspective. *Journal of Biosocial Science*, 39(6), 819-41.

⁵³ Ager, A., & Pepper, K. (2005). Patterns of health service utilization and perceptions of needs and services in rural Orissa. *Health Policy and Planning*, 20(3), 176 -84.

problems of all service providers. The location of a Sub-Centre base for assistant nurse midwives within a village had no demonstrable impact on access to services. Acknowledging constraints on broader generalisation, the implications of the findings for informing health policy and programming within Orissa is noted. This includes support for current efforts to strengthen the capacity of PHC and Sub-Centre level provision within the state, and acknowledgement of the potentially growing role of effectively regulated private provision in meeting the needs of the rural poor.

Yadav et al. (2007)⁵⁴, found in their study on acceptability of Indian System of Medicine that a very small proportion of sick people actually availed ISM & H treatment. Majority availed Homeopathy followed by Ayurvedic medicines and use of Unani and Siddha are almost negligible. ISM & H are preferred only in case of minor ailments. In case of serious illnesses, like Jaundice, snake bite, dog bite and „bone setting□, sick people sought treatment from traditional healers. Sizable proportion of sick people used various “kitchen remedies” for conditions like indigestion, fever, body ache, sprain, cough and cold.

Bharati et al. (2007)⁵⁵ showed in their study that the status of literacy of mothers and standard of living of the family are of prime importance in improving obstetric health care practices. The study indicates that educated women with high standards of living have an emphasized role in the practice of more maternal health care. The study shows that rural antenatal care is still, mostly based on the

⁵⁴ Yadav, R. J., Pandey, A., & Singh, P. (2007). A study on acceptability of Indian system of medicine and homeopathy in India: results from the state of West Bengal. *Indian Journal of Public Health*, p. 51.

⁵⁵ Bharati, Pal, & Bharati (2007). Obstetric care practice in Birbhum District, West Bengal, India. *International Journal for Quality in Health Care*, 19(4), 244–249.

Indian traditional system. It is the women who need to be educated and must be made aware of the importance of health care for ensuring healthy pregnancy and safe delivery.

The work of Jawahar (2007)⁵⁶ entitled health care Scenario in India, stated that India, a country with a centuries-old heritage of medical science, first became familiar with the modern systems of medicine in the 17th century. Since its independence, there have been various developments in the health sector in the post-independence era. But, problems like higher population density, low socioeconomic status of a significant number of people and low literacy rate in some parts of the country, have resulted in poor health indicators. However, the study noted that, since independence, considerable progress has been achieved in the promotion of health in India. Smallpox has been eliminated, and mortality from cholera and other related diseases has decreased. But episodes of cholera continue to recur, and the incidence of tuberculosis is not insignificant. The control of communicable diseases and health education needs to be improved. In addition to the diseases of poverty and malnutrition, non-communicable diseases related to urbanization, such as diabetes mellitus, hypertension, cardiovascular diseases and cancer is a cause of concern. Road traffic accidents, geriatric problems and complications of autoimmune deficiency syndrome (AIDS) are also on the increase.

In their study, Dongre et al. (2008)⁵⁷ discovered a gap between mothers' knowledge and their health-seeking behaviour for unwell newborns, as well as

⁵⁶ Jawahar, S. K. (2007). *Health Care Scenario in India*. ICU, 6(4).

⁵⁷ Dongre, A. R., Deshmukh, P. R., & Garg, B. S. (2008). Perceptions and health care seeing about newborn danger signs among mothers in rural Wardha. *Indian Journal of Pediatrics*, 75(4), 325-9.

their underlying perceptions, restrictions, and traditional therapies. The majority of mothers of sick infants were aware that their sick child should be taken to the doctor right away, but only around half of these unwell newborns received treatment from a government or private hospital, with the remaining half receiving no treatment. Parents' ignorance, lack of money, faith in supernatural causes, lack of transportation, home remedy, lack of a doctor, and the absence of a responsible person at home were all reasons for not acting, even though dangerous signs/symptoms were there. For practically all of the warning signs and symptoms, supernatural origins were suspected, and Traditional Faith Healer (Vaidu) was sought as a treatment, followed by a doctor from a primary health centre and a private doctor. To ensure neonatal survival in rural areas, comprehensive intervention techniques are required to influence caregiver behaviour, as well as improvements in the capacity of government health care services and National Health Programmes.

The utilisation of RCH services in government facilities was higher among the backward classes than the general category, according to Srivastava et al. (2009)⁵⁸ studied on the higher the level of education, the lower the utilisation of government services. Users were also dissatisfied with the services given by government health facilities, particularly with the behaviour of medical officers and health personnel, with non-satisfaction being highest among those in the SC group. The authors also determined that all health facilities should be made operational in accordance with the National Rural Health Mission's (NRHM) and Indian Public Health Standards (IPHS).

⁵⁸ Srivastava, R. K., Kansal, S., Tiwari, V. K., Piang, L., Chand, R., & Nandan, D. (2009). Assessment of utilization of RCH services and client satisfaction at different levels of health facilities in Varanasi District. *Indian Journal of Public Health*, 53(3), 183-189.

With the institutional reforms it has made within the health system, Gill (2009)⁵⁹ concluded that the National Rural Health Mission is on the right track in addressing rural health care. However, implementation issues exist, and delivery is falling short of what it should be in terms of physical infrastructure, medicines, and finance. While structural issues of some complexity require careful resolution with a long-term investment in the training and education of paramedical and medical staff, structural issues of some complexity require careful resolution with a long-term investment in the training and education of paramedical and medical staff.

Ghuman and Metha (2009)⁶⁰ examined the problems and prospects of health care services in India in their work entitled 'Health care Services in India: Problems and Prospects' and noted that India as a nation has been growing economically at a rapid pace particularly after the advent of New Economic Policy of 1991. However, this rapid economic development has not been accompanied by social development particularly health sector development. The study, further noted that the meagre resource allocation to health sector has adversely affected both access and quality of health services. The unequal access to health services is reported across strata, gender and location (i.e., urban and rural areas). Further, the study concluded that to improve access and quality of health services, government should enhance public spending on health sector in the vicinity of 3 per cent of GDP.

⁵⁹ Gill, K. (2009). *A Primary Evaluation of Service Delivery under the National Rural Health Mission (NRHM): Findings from a study in Andhra Pradesh, Uttar Pradesh, Bihar and Rajasthan*. Working Paper 1/2009-PEO, Planning Commission of India.

⁶⁰ Ghuman and Metha (2009). Health care services in India: Problems and Prospects. In: *International Conference, The Asian Social Protection in Comparative Perspective*, National University of Singapore, Singapore, 7-9 January.

An article of Baru et al. (2010)⁶¹ entitled ‘Inequalities in Access Health Services in India: Caste, Class and Region’, noted that despite India’s impressive economic performance after the introduction of economic reforms in the 1990s, progress in advancing the health status of Indians has been slow and uneven. Large inequities in health and access to health services continue to persist and have even widened across states, between rural and urban areas, and within communities. Further, the study noted three forms of inequities have dominated India’s health sector. They are, Historical inequities that have their roots in the policies and practices of British colonial India, many of which continued to be pursued well after independence; socio-economic inequities manifest in caste, class and gender differentials; and inequities in the availability, utilisation and affordability of health services. However, the study concluded that, of these, critical to ensuring health for all in the immediate future will be the effectiveness with which India addresses inequities in provisioning of health services and assurance of quality care.

In their study, Sharma (2010)⁶² shows that mother and child health services are underutilised among the tribes of central India. Delivery, cord cutting and care, bathing of mother and newborn, and skin massage are all examples of clinically appropriate maternal and newborn care techniques. As a result, neonates are still vulnerable to hypothermia, sepsis, and other illnesses. Prelacteals, supplementary feeding techniques, and breastfeeding delays are all common, however colostrum is thrown less commonly. Malnutrition is a major issue in tribal communities, and many tribal children and women are chronically malnourished and anaemic.²⁴

⁶¹ Baru et al. (2010). Inequalities in access health services in India: Caste, class and region. *Economic and Political Weekly*, XLV(38), 49-58.

⁶² Sharma, R. K. (2010). Newborn care among Tribes of Central India experiences from micro level studies. *Social Change*, 40(2), 117-137.

Raj et al. (2010)⁶³ found that children born to mothers who are minors are much more likely to be malnourished than children born to women who are adults. The study also found that the link between maternal child marriage and low infant birth weight, as well as infant and child mortality, appears to be a result of early motherhood, low maternal education, and other indicators of poor maternal health and socioeconomic status factors, all of which are significantly linked to early girl marriage.

Most rural people want first-level curative health care near to home, and pay for a composite convenient service of consultation-cum-dispensing of drugs, according to Gautham et al. (2011)⁶⁴. Non-degree allopathic practitioners (NDAPs) serve a significant need for primary curative care that the public system cannot meet, and in most circumstances, they are de facto first-level access.

In their study, Ray et al. (2011)⁶⁵ discovered that a large number of patients did not seek medical help when they became ill, particularly in tribal areas where distance, lack of knowledge about available services, and non-availability of medicine, in addition to the cost of treatment and transportation, all played a role. Government health facilities were used by roughly 38 per cent of the population, followed by unqualified practitioners and private practitioners. Self-referral or near relatives/families were the most common sources of referral. In addition,

⁶³ Raj, A., Saggurti, N., Winter, M., Labonte, A., Decker, M. R., Balaiah, D., & Silverman, J. G. (2010). The effect of maternal child marriage on morbidity and mortality of under 5 in India: cross sectional study of a nationally representative sample. *BMJ*, 340, b4258.

⁶⁴ Gautham, M., Binnendik, E., Koren, R., & Dror, D. M. (2011). First we go to the small doctor: First contact for curative health care sought by rural communities in Andhra Pradesh and Orissa, India. *Indian Journal Medical Research*, 134(5), 627 -38.

⁶⁵ Ray, S. K., Basu, S. S., & Basu, A. K. (2011). An assessment of rural health care delivery system in some areas of west Bengal – An overview. *Indian Journal of Public Health*, 55(2), 70-80.

cleanliness of the premises, safe drinking water, a facelift of PHCs and SCs, and a clean restroom with privacy are all essential. They also came to the conclusion that courteous behaviour, more time for patient care by the doctor and staff, explaining their prescription and report, lowering time for registration as well as waiting, and lastly the cost of medicine they can afford should all be tried to enhance utilisation.

In their study of the role of prevalent culturally driven beliefs and practices in influencing home-based new-born care, Upadhyay et al. (2012)⁶⁶ discovered that a significant portion of mothers have some beliefs/practices regarding cord care and taking the baby out of the house for the first time. In addition, roughly 11% of women did not want their infant to be weighed at regular intervals because they believed it might cause the baby's growth to slow down. Traditional knowledge and practices must be examined before establishing neonatal health care intervention strategies, according to the researchers.

Kamalasanan et al. (2019)⁶⁷, in their work on 'Factors influencing the quality of health care services in Indian hospitals: A systematic review', identified that Quality management culture was still a novel concept which was slowly inculcating into the health care organizations across India. The study further noted that those who are involved in providing health care should be well aware of the quality aspects and its importance to make sure that the patients receive the best quality care in an economical and efficient way. Further, the study also stated that

⁶⁶ Upadhyay, R. P., Singh, B., Rao, S. K., & Anand, K. (2012). Role of cultural beliefs in influencing selected Newborn care Practices in rural Haryana. *Journal of Tropical Pediatrics*, 2, 105-112.

⁶⁷ Kamalasanan et al. (2019). Factors influencing the quality of health care services in Indian hospitals: A systematic review. *Journal of Management Research and Analysis*, 6(2), 71-80.

it was vital to keep track of the growing needs and requirements in terms of quality management and patient safety. This study aimed to review and analyze the factors influencing quality management in the Indian health care organizations, identify the research gap where the major research gap was identified under the areas of planning and documentation, employee participation, policies & procedures, quality and patient safety, quality process and its outcome, perceived effect in quality improvement, training and development opportunities, and the future plans of quality management. The study showed that there existed a gap, which was to be filled through more studies, focusing the different quality aspects.

The study made by Raman et al. (2021)⁶⁸, an impact on health and provision of health care services during the COVID-19 lockdown in India: a multicentre cross-sectional study, while stating that the COVID-19 pandemic resulting in a national lockdown in India from midnight on 25th March 2020, with conditional relaxation by phases and zones from 20th April 2020, made an attempt to evaluate the impact of the lockdown in terms of health care provisions, physical health, mental health and social well-being within a multicentre cross-sectional study in India. The study noted that, the bivariate relationships between the outcomes and lockdown showed significant negative associations, while in the multivariable analyses, the interactions between the red zones and lockdown showed that all five dimensions of health care provision were negatively affected (non-affordability: OR 1.917 (95% CI 1.126 to 3.264), non-accessibility: OR 2.458 (95% CI 1.549 to 3.902), inadequacy: OR 3.015 (95% CI 1.616 to 5.625), inappropriateness: OR 2.225 (95% CI 1.200 to 4.126) and discontinuity of care:

⁶⁸ Raman, R., Rajalakshmi, R., & Surya, J. (2021). Impact on health and provision of health care services during the COVID-19 lockdown in India: A multicentre cross-sectional study. *BMJ Open*, 11, e043590.

OR 6.756 (95% CI 3.79 to 12.042)) and associated depression and social loneliness. The study concluded that the impact of COVID-19 pandemic and lockdown on health and health care was negative. Further, the exaggeration of income inequality during lockdown can be expected to extend the negative impacts beyond the lockdown.

1.7. Statement of the Problem

Over the last few decades, India has made significant advancements in the way health care is delivered in the country. In terms of employment and revenue, it has been one of the largest sectors and is growing at a brisk pace. Health care in India is delivered mainly either by public or private providers. The public health care focuses on delivering primary health care through community-level health programmes mainly focusing on reducing mortality and morbidity caused by various communicable and non-communicable diseases. It follows a tiered system of infrastructure wherein basic health services are provided through Sub-Centres and primary health centres, while secondary and tertiary care is delivered at better equipped establishments such as community health centres, district hospitals and medical colleges that are mostly at district headquarters. The health care system in India can be divided into two parts viz., urban and rural areas and both have a significant differential gap in terms of treatment, not because of uncommon diseases but due to lack of adequate infrastructure and health experts, besides several other challenges in the system. In this context, the present study aims to examining the overall health care services provided at rural level and at urban level. Further, it is essential to study the provision of health care facilities provided at the grass root level that is by Sub-Centres and PHCs. As such, the present study considers in studying health care system at in Shivamogga district particularly at

Sub-Centres and PHCs levels. The problem construed here is that while the demand for health services is quit vast the public sector has not been able to fulfill obligation in terms of both quantity and quality. This is a big problem to people with low income profile this factor has created initiative for this research study.

1.8. Objectives

The major objective of this study is to analyse the health care status particularly at the Sub-Centres and PHCs in Shivamogga district. However, the following are the objectives of this study:

1. To study the changes in demographic health indicators in the study area.
2. To know the demographic features of the respondents in the study area.
3. To examine the status of health institutions and health services infrastructure in the study area.
4. To study the utilization pattern of Sub-Centre and PHCs services by the respondents in the study area.
5. To examine the problems and suggest some remedies for Sub-Centres and PHCs in the study area.

1.9. Hypotheses

Following are the hypotheses framed based on the objectives of the study:

1. There is an insignificant difference in the perception regarding facilities provided at Sub-Centres and PHCs.
2. There is an insignificant difference in satisfaction derived by the respondents from the services of Sub-Centres and PHCs.
3. The perception of beneficiary of Sub-Centres and PHCs insignificantly differ regarding infrastructure status provided at Sub-Centres.

1.10. Methodology

Study Area

The present study is carried out in Shivamogga district of Karnataka state. Further, though health care services are delivered at various levels *viz.*, Sub-Centre at grass root level, PHCs at next level followed by CHCs. At taluk level and district level, taluk hospitals and district hospital provide higher level of health services. Shivamogga district is constituted by seven taluks. In the district, 6 taluk hospitals with 650 beds strength were operating. Further, the district had 6 First Referral Units, 24 '108 Ambulances' where 34813 patients were benefited from 108 Ambulance and 26 hospitals working round the clock all days of the week. In the district, 10269 beneficiaries availed the services of Janani Suraksha Yojana. In the district, 449 government and private doctors were serving the total population of 1752753 where for every 10000 population one doctors was available. Further, for every 10000 population 15 hospital beds were available.

Sampling Design

Simple Random Sampling has been adopted in the selection of the respondents. Target population were the beneficiaries of health services from various health institutions and health manpower working at various health institutions in Shivamogga district. Further, as the present study concentrated in studying the health care services rendered at Sub-Centres and PHCs, selection of the respondents was limited to Sub-Centres and PHCs only. The following table presents the distribution of respondents:

Table 1.1
Distribution of the Respondents

Particulars	Beneficiaries	Health Manpower	Total
Sub-Centres	200	100	300
PHCs	70	30	100
Total	270	130	400

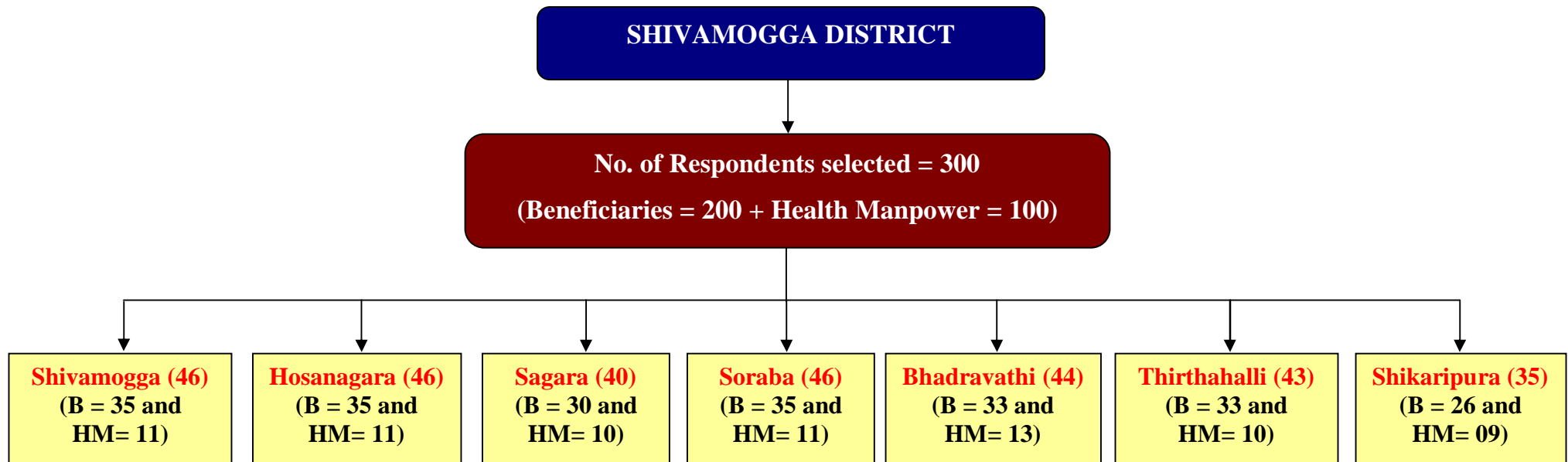
Sources of Data Collection

This study has used both primary data and secondary data. The required primary data was gathered from the respondents by using well structured questionnaire during survey. On the other hand, the required secondary data was collected from various documents and annual reports released by government authorities, journals, websites, articles, etc.

Data Analysis Tools and Techniques

The collected data have been presented in table form and analysed using *Simple Average Method, Percentage, Coefficient of Variation (CV), Compound Annual Growth Rate (CAGR)* and *Trend Values*. Further, data has been analysed using *Garrett's Ranking* in order to identify the more significant and least significant variables for Likert scale data. On the other hand, significance of data was tested through 't' test and χ^2 test.

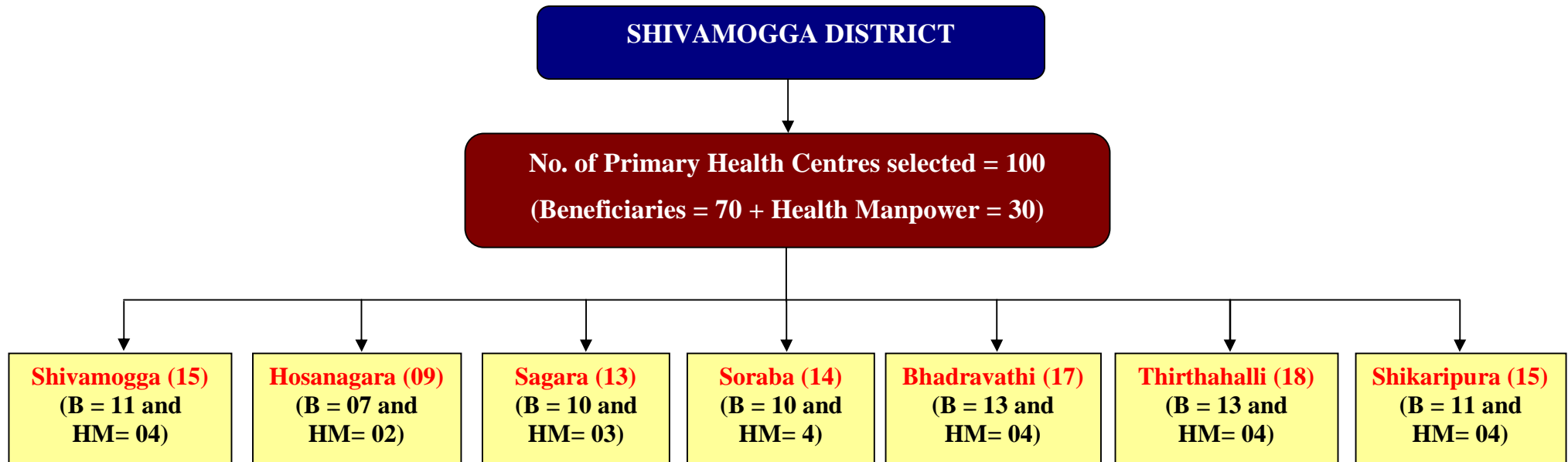
Chart 1.1. Sampling Design for Sub-Centres



Note : B - Beneficiaries and HM - Health Manpower

1. Total Respondents (Beneficiaries)	= 200
2. Total Respondents (Health Power)	= 100
3. Grand Total of Respondents (1+2)	= 300

Chart 1.2. Sampling Design for Primary Health Centres (PHCs)



Note : B - Beneficiaries and HM - Health Manpower

1.11. Limitations

The following are the major limitations of the present study:

1. This study is limited to the Sub-Centres and PHCs only.
2. The primary data analysis of this study is restricted to Shivamogga district only.
3. Inferences have been drawn based on the responses given by the respondents.
4. The time period considered for secondary data analysis is depended upon the availability of the data and uniformity of the data.

1.12. Chapter Scheme

Present study has been planned in six chapters.

Chapter-1: Introduction

An introduction and background of the study, Review of literature and all the required information have been provided in this chapter.

Chapter-2: Health Status in India – An Overview

The second chapter deals with Health scheme, Health profile, Health indicators, health human resources, health service infrastructure in India. Other relevant issues have also been dealt with in this chapter.

Chapter-3: Health Care Services in Karnataka – An Overview

This chapter deals with Health programmes, health insurance scheme, Health profile of Karnataka, health indicators, health infrastructure and human resource have also been analysed.

Chapter-4: Health Profile of Shivamogga District

This chapter deals with Health profile of Shivamogga district selected for the study.

Chapter-5: Data Analysis and Interpretation

This core chapter has been divided into four parts: Part-I: Health Care Status at Sub-Centres (Beneficiaries perception about health services provided at Sub-Centres; Staff opinion on Health care services at Sub-Centre). Part II: Health Care Status at PHCs (Beneficiaries perception on the functioning of the PHCs and their service; Staff opinion about health care services at PHCs). The results are presented, discussion carried out and interpretations has been made.

Chapter-6: Findings, Suggestions and Conclusion

This chapter presents the major findings of the study, suggestions have also been offered based on the problems identified in the study area and a formal conclusion has been arrived at the end.

Chapter-02

HEALTH STATUS IN INDIA - AN OVERVIEW

2.1. Prelude

2.2. Health Status in India

2.3. Health Care Schemes

2.3.1. General Health Care Schemes/Programmes

2.3.2. Communicable Diseases Health Care Schemes

2.3.3. Non-communicable Health Care Schemes

2.4. Health Profile of India

2.4.1. Demographic Indicators

2.4.2. Socio-Economic Indicators

2.4.3. Health Status Indicators

2.4.4. Health Human Resources

2.4.5. Health Infrastructure

2.5. Conclusion

Chapter-02

HEALTH STATUS IN INDIA - AN OVERVIEW

2.1. Prelude

With the study of health concept, its different perspectives, delivery channels, etc. followed with the detailed review of literature carried out in the previous chapter is followed with studying the health status in India in the present chapter. As such, the present chapter analyses the various Health Care schemes and programmes initiated in the country followed by a brief study of health profile of India. The latter part of this chapter is related with demographic indicator, socio-economic indicators, health status indicators, health human resources and health infrastructure.

Wellbeing is a major human right and a worldwide social objective would be appropriate with the acknowledgment of fundamental human needs and superior personal satisfaction. Wellbeing is a causative factor that influences nation's total degree of financial development. Since development is an outcome of good health, all nations should focus on it with considerable investment in health sector. Unfortunately, health sector is neglected with poor investment in most of the developing countries especially in countries having low human development. As such, health sector in general has remained the widely untapped sector in these countries.

Health care is the maintenance or improvement of health via the prevention, diagnosis, treatment or cure of diseases. Health care delivery system in India is provided under three levels. The primary level comprises PHCs and Sub-Centres,

the secondary level of Health care services are provided through sub-district hospitals and CHCs. The third level Health care delivery is carried out by district hospitals and medical colleges.

2.2. Health Status in India

In India, for the year 2017-18, the expenditure on health sector accounted to 1.4 per cent of the total GDP which is found to be less than our neighbouring countries like Sri Lanka and Nepal spending about 2 and 2.3 per cent of their GDP respectively.¹ However, The National Health Policy has estimated this percentage to reach 2.5 per cent of the total GDP by 2025.² The allocation of fund to health sector is considerably increasing as the centre's allocation for health sector increased by 2.4 per cent in the year 2017-18 compared to 2016-17. The report from WHO reveals that about 70 per cent of the total household expenditure is incurred in procuring medicines in India. Further, it also noted in the report that about 469 million Indians are deprived from regular access to essential medicines.³ According to the report of India spend released in January 2018, the health infrastructure in India was very shocking as about 63 per cent of the PHCs lacked operation theatre and 29 per cent were functioning without labour room. With regard to CHCs, majority of them accounting to 81.5 per cent operated with the absence of specialist/ surgeons, gynaecologist and paediatricians.⁴ The report released Public Health Foundation of India-2018 revealed that high-priced medical

¹ [https://www.indiaspend.com/budget-2018-indias-Health care-crisis-is-holding-back-national-potential-29517/](https://www.indiaspend.com/budget-2018-indias-Health%20care-crisis-is-holding-back-national-potential-29517/).

² <http://cdsco.nic.in/writereaddata/National-Health-Policy.pdf>.

³ https://www.who.int/medicines/services/essmedicines_def/en/.

⁴ [https://www.indiaspend.com/budget-2018-indias-Health care-crisis-is-holding-back-national-potential-29517/](https://www.indiaspend.com/budget-2018-indias-Health%20care-crisis-is-holding-back-national-potential-29517/).

facilities about 55 million people in India were thrown to poverty in one singly year. Out of them around 33 million came under poverty line due to high cost medicines.⁵ Hence, it could be inferred that out-of-pocket expenses in acquiring health services have pushed Indians middle class people to below poverty line.⁶ In spite of it, the 71st survey made by National Sample Survey observed that majority of the Indians accounting to 58 and 68 per cent in rural and urban areas respectively preferred private health care facilities for inpatient care.⁷ India spend noted that, though India being the 6th biggest out-of-pocket health spenders among the lower middle-class people, but still more than seven persons out of every 10 persons do not come under the coverage of insurance. However, with the improved awareness about insurance benefits the percentage of population coming under insurance stream, in India, is continuously increasing year by year.⁸

With the view to attain universal access to Health care through strengthening of Health care systems, health institutions and capabilities, National Health Mission (NHM) was launched in India in the year 2013. National Rural Health Mission and National Urban Health Mission both collectively worked to strengthen health services in rural and urban areas under the banner National Health Mission. Though the amount allocated under NHM increased but percentage marginally decreased in the year 2017-18 (₹ 26692 crore) compared to 2016-17 (₹ 22197 crore) which accounted to 56 and 57 per cent respectively.

⁵ https://phfi.org/wp-content/uploads/2018/11/Annual_Report_2017-18.pdf.

⁶ <https://www.firstpost.com/india/shortage-of-medicines-at-public-hospitals-forcing-poor-to-turn-to-private-pharmacies-says-chhattisgarh-study-4509233.html>.

⁷ http://mospi.nic.in/sites/default/files/national_data_bank/ndb-rpts-71.htm.

⁸ National Family Health Survey (NFHS) 2015-16. India. Mumbai IIPS, pp. 347-348.

2.3. Health Care Schemes

As per Human Development Index Report of 2018, among 189 countries, India stood at 130th place which clearly depicts the ignorance of health sector by India.⁹ India being one among the fastest growing economy in the world has to seriously consider the basic factors of health care viz. provision of nutritious food supply along with safe drinking water and basic sanitation facilities. Further, it is necessary to provide qualitative health information enabling its people to take up preventive as well as precautionary measures with regard to prevailing health issues. However, based on the report issued by UNDP, all these issues are yet to be considered to the maximum level. On the other hand, the existence of scarcity of medical and para-medical staffs has hindered the beneficiaries to access health services.¹⁰ Hence, with these bottlenecks' problems, under the National Health Mission, the government has launched several schemes. They are explained below:

2.3.1. General Health Care Schemes/Programmes

- Affordable Medicines and Reliable Implants for Treatment
- Integrated Child Development Service
- Janani Shishu Suraksha Karyakaram
- Janani Suraksha Yojana
- Labour Room Quality Improvement Initiative
- Mission Indradhanush
- National Ayush Mission (NAM)
- National Mental Health Programme

⁹ <http://hdr.undp.org/en/2018-update>.

¹⁰ <http://rchiips.org/NFHS/pdf/NFHS4/India.pdf>.

- National Nutrition Mission
- National Oral Health Programme (NOHP)
- National Programme for Control of Blindness
- National Sub-Mission to provide Safe Drinking Water
- National Viral Hepatitis Surveillance Programme
- Pradhan Mantri National Dialysis Programme
- Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)
- Pulse Polio Programme
- Rashtriya Arogya Nidhi
- Rashtriya Bal Swasthya Karyakram (RBSK)
- Rashtriya Kishor Swasthya Karyakram (RKSK)
- Rashtriya Swasthya Bima Yojana
- Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A)

2.3.2. Communicable Diseases Health Care Schemes

- Integrated Disease Surveillance Programme
- National Leprosy Eradication Programme
- National Programme for Control and Treatment of Occupational Diseases
- Revised National Tuberculosis Control Programme

2.3.3. Non-communicable Health Care Schemes

- National Programme for Prevention and Control of Deafness (NPPCD)
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)
- National Iodine Deficiency Disorders Control Programme

- National Programme for Prevention and Control of Fluorosis
- National Programme for Palliative Care
- National Programme for Prevention and Management of Burn Injuries
- National Tobacco Control Programme (NTCP)
- National Programme for the Health care of the Elderly (NPHCE)

2.4. Health Profile of India

Health care requirements in India are provided through three tier system viz., primary, secondary and tertiary where primary level constitutes PHC and SCS, secondary level constitutes sub-district hospitals and CHCs, while tertiary level constitutes district hospitals and medical colleges. On the other hand, Indian Health care system features both public and private service providers where public Health care system is highly concentrated in urban areas and public Health care system concentrating on rural areas.¹¹ India with vast geographical area and huge population demands huge investment in providing Health care services. Further, provision of affordable Health care services is added challenge to it which is to be done with bulk allocation in budgets.¹² The following table reveals the status of Health care system, health infrastructure and Health care services.

The data in Table 2.1 presents health infrastructure under various plans since Sixth Plan in terms of number of Sub-Centres, PHCs and CHCs functioning in India.

¹¹ Chokshi *et al.* (2016). Health System in India. *Journal of Perinatology*, No. 36, pp. S9–S12.

¹² Ranganandan (2018). Public-private partnership in health sector - Opportunities for better health care delivery. *Journal of Nursing and Health Science*, 7(4), 25-33.

Table 2.1
Health Infrastructure in India under Five Year Plans

Five Year Plans	PHCs	Sub-Centres	CHCs
(01)	(02)	(03)	(04)
Sixth Plan (1981-85)	9115	84376	761
Seventh Plan (1985-90)	18671	130165	1910
Eight Plan (1992-97)	22149	136258	2633
Ninth Plan (1997-2002)	22875	137311	3054
Tenth Plan (2002-2007)	22370	145272	4045
Eleventh Plan (2007-2012)	24049	148366	4833
Twelfth Plan* (2012-2017)	25308	153655	5396

Note: * As on March 2015.

Source: Five Year Plans, Planning Commission, New Delhi.

Accordingly, it could be inferred that from Sixth Five Year Plan to Twelfth Five Year Plan on an average of about 20648 PHCs operated across the country with average growth rate at 15.7 per cent per annum as the result of which total number of PHCs operating in the country increased from 9115 during Sixth Plan to 25308 in Twelfth Plan. Sub-centres which also catered the primary Health care requirements also have increasing trend but lower than the growth of PHCs as it had annual growth rate of 8.9 per cent per annum which increased sub-centres from 84376 in Sixth Plan to 153655 in Twelfth Plan. However, on an average 133629 sub-centres functioning across the country catered the Health care necessities of the people. Further, on an average 3233 CHCs operated spreading to length and breadth of the country in fulfilling the Health care requirements of the people. With the given average growth rate at 32.3 per cent per annum total CHCs operating in the country increased from 761 in Sixth Plan to 5396 CHCs by Twelfth Plan.

2.4.1. Demographic Indicators

A country's demographic indicates its population size, growth rate, provincial distribution, composition and so on. The status of mortality indicators in India is as presented in Table 2.2 which indicates decline trend for the period from 2001 to 2016.

Table 2.2
Mortality Indicators in India, 2001-2016 (Overall)

Year	Crude Death Rate	Infant Mortality Rate	Neo-natal Mortality Rate	Post-natal Mortality Rate	Pre-natal Mortality Rate	Still Birth Rate
(01)	(02)	(03)	(04)	(05)	(06)	(07)
2001	8.4	65.9	40.2	25.7	26.2	9.3
2002	8.1	63.	40.0	24.0	35.0	9.0
2003	8.0	60.0	37.0	23.0	33.0	9.0
2004	7.5	58.0	37.0	21.0	35.0	10.0
2005	7.6	58.0	37.0	22.0	37.0	9.0
2006	7.5	57.0	37.0	22.0	37.0	9.0
2007	7.4	55.0	36.0	19.0	37.0	9.0
2008	7.4	53.0	35.0	18.0	35.0	8.0
2009	7.3	50.0	34.0	16.0	35.0	8.0
2010	7.2	47.0	33.0	14.0	32.0	7.0
2011	7.1	44.0	31.0	14.0	30.0	6.0
2012	7.0	42.0	29.0	13.0	28.0	5.0
2013	7.0	40.0	28.0	13.0	26.0	4.0
2014	6.7	39.0	26.0	13.0	24.0	4.0
2015	6.5	37.0	25.0	12.0	23.0	4.0
2016	6.4	34.0	24.0	11.0	23.0	4.0
Descriptive Statistics						
Average	7.32	50.18	33.08	17.54	31.01	7.14
C V	7.54	19.84	15.96	27.73	16.90	31.71
CAGR	-1.69	-4.05	-3.17	-5.17	-0.81	-5.14

Source: National Health Profile 2018, Central Bureau of Health Intelligence (CBHI), Ministry of Health & Family Welfare (MH&FW), Government of India (GoI), New Delhi, p. 36.

From the data in the Table, it could be inferred that overall average crude death rate was 7.32 and still birth rate was 7.14 and overall infant mortality rate was 50.18, while neo-natal mortality rate and pre and post-natal mortality rates stood at 33.08, 31.01 and 17.54 respectively. Though all mortality indicators exhibited decreasing annual growth rate, but highest rate of decrease was observed in post-natal mortality rate (-5.17 per cent per annum) closely followed by still birth rate (-5.14 per cent per annum) as the result of which post-natal and still birth rates decreased by 57.20 and 56.79 per cent respectively in the year 2016 compared to 2001. Least growth rate of -1.69 per cent per annum was recorded by crude death rate which decreased crude death rate by 23.18 per cent in the year 2016 compared to 2001. However, with least coefficient of variation, crude death rate (7.54%) turned out to be more consistent against highest degree of variation recorded by still birth rate (31.71%) followed by post-natal mortality rate (27.73%).

2.4.2. Socio-Economic Indicators

The status of socio-economic indicators in any country will reflect its health scenario. Few major socio-economic indicators include literacy level, poverty level, housing and amenities, employment position and income level, etc. The data in Table 2.3 shows status of GDP and PCI with public expenditure on health and per capita public expenditure on health.

Table 2.3

**Gross Domestic Product, Per Capita Income, Public Expenditure on Health
and Per Capita Expenditure on Health in India**

Year	Gross Domestic Product	Public Expenditure on Health	Public Expenditure on Health as percentage to GDP (%)	Per Capita Income	Per Capita Public Expenditure on Health (₹)	Per Capita Public Expenditure on Health as percentage to PCI
(01)	(02)	(03)	(04)	(05)	(06)	(07)
2009-10	6477827	72536	1.12	46492	621	1.34
2010-11	7784115	83101	1.07	54835	701	1.28
2011-12	8736329	96221	1.10	63462	802	1.26
2012-13	9944013	108236	1.09	70983	890	1.25
2013-14	11233522	112270	1.00	79118	913	1.15
2014-15 [#]	12467959	121600	0.98	86647	973	1.12
2015-16 [*]	13764037	140054	1.02	94731	1112	1.17
2016-17 ^{**}	15253714	178875	1.17	103870	1397	1.34
2017-18 ^{***}	16751688	213719	1.28	112764	1657	1.47
Average	11379245	125179	1.10	79211	1007	1.27
CV	30.56	36.60		28.27	33.18	
CAGR	11.13	12.76		10.35	11.52	
R - Value	0.96			0.95		

Note: * First Revised Estimates; ** Second Revised Estimates; *** Second Advance Estimates; # Third Revised Estimates

Source: National Health Profile 2018, CBHI, MH&FW, New Delhi, p. 52.

As per the data presented in Table 2.3 for the period from 2009-10 to 2017-18, average GDP stood at ₹ 1139245, which had a growth rate of 11.13 per cent per annum and increased GDP by 158.60 per cent by the year 2017-18 compared to 2009-10. The average per capita income stood at ₹ 79211.33 having annual growth rate of 10.35 per cent per annum as the result of which per capita income increased by 142.54 per cent by the year 2017-18 compared to 2009-10. On the other hand, the average public expenditure on health stood at ₹ 125179.10 with annual growth rate of 12.76 per cent per annum which increased public

expenditure on health by 194.64 per cent by the year 2017-18 compared to 2009-10. Similarly, per capita public expenditure on health recorded an average expenditure of ₹ 1007.33 recording annual growth of 11.52 per cent per annum and increasing per capita public expenditure on health by 166.83 per cent by the year 2017-18 compared to 2009-10.

The average public expenditure on health as percentage to GDP stood at 1.10 per cent which ranged from 0.98 per cent being the lowest in the year 2014-15 to 1.28 per cent being highest in the year 2017-18. Similarly, average per capita public expenditure on health as percentage to per capita income stood at 1.27 per cent which ranged from 1.12 per cent being the lowest in the year 2014-15 to 1.47 per cent being highest in the year 2017-18. With regard to GDP and per capita income, per capita income (28.27%) turned out to be more consistent with least coefficient of variation while GDP (30.56%) exhibited higher degree of variation. Similarly, with respect to public expenditure on health and per capita public expenditure on health, per capita public expenditure on health (33.18) remained to be more consistent with least coefficient of variation as against public expenditure on health (36.60%). Further, based on 'r' value, it could be inferred that there exists strong positive relationship between GDP and public expenditure on health ($r = 0.96$) and in between per capita income and per capita public expenditure on health ($r = 0.95$) indicating that the increase in GDP and PCI increases expenditure on public health.

2.4.3. Health Status Indicators

Health status indicators are used to measure different aspects of health. Further, unhealthy environment, inadequate safe drinking water availability, improper drainage facility, inadequate sanitation, unhygienic latrines and so on

give rises to various diseases which if not treated properly might result in deaths. In India, various communicable and non-communicable diseases have taken numerous lives. Among them TB, leprosy, malaria, Kala-azar, acute encephalitis syndrome, Japanese encephalitis, dengue and Chikungunya are the major diseases ones. Table 2.4 presents cases detected and deaths due to major diseases in India for the period from 2013 to 2017.

Table 2.4
Cases and Deaths due to Major Diseases in India

Major Diseases		2013	2014	2015	2016	2017	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
Malaria	Cases	881730	1102205	1169261	1087285	842095	5082576
	Deaths	440	562	384	331	104	1821
Kala-azar	Cases	13869	9241	8500	6245	5758	43613
	Deaths	20	11	5	0	0	36
Acute Encephalitis Syndrome	Cases	7825	10867	9854	11651	13036	53233
	Deaths	1273	1719	1210	1301	1010	6513
Japanese Encephalitis	Cases	1086	1661	1730	1676	2180	8333
	Deaths	202	293	291	283	252	1321
Dengue	Cases	75808	40571	99913	129166	157996	503454
	Deaths	193	137	220	245	253	1048
Chikungunya*		18840	16049	27553	64057	63679	190178

Note: * Cases Suspected.

Source: National Health Profile 2018, CBHI, MH&FW, New Delhi, pp. 78-87.

As such, it could be studied that, for the period between 2013 and 2017 total cases detected exhibited decreasing trend with regard to malaria and Kala-azar diseased while in other major diseased there existed increasing trend.

The data in Table 2.5 presents descriptive statistics for cases and deaths due to major diseases in India for the period between 2013 and 2017.

Table 2.5
Cases and Deaths Recorded due to Major Diseases in India

Particulars		Average	C V	CAGR	Average % of Deaths
(01)	(02)	(03)	(04)	(05)	(06)
Malaria	Cases	1016515	14.28	-0.92	0.04
	Deaths	364	46.37	-25.06	
Kala-azar	Cases	8723	37.03	-16.12	0.08
	Deaths	7	117.61	--	
Acute Encephalitis Syndrome	Cases	10647	18.40	10.75	12.23
	Deaths	1303	19.89	-4.52	
Japanese Encephalitis	Cases	1667	23.33	14.95	15.85
	Deaths	264	14.56	4.52	
Dengue	Cases	100691	45.32	15.82	0.21
	Deaths	210	22.37	5.56	
Chikungunya*		38036	63.00	27.58	

Source: National Health Profile 2018, CBHI, MH&FW, New Delhi.

From the data in the Table 2.5, it could be noticed that the average malaria cases detected was 1016515 which decreased at the rate of 0.92 per cent per annum as the result of which malaria cases detected declined by 4.50 per cent in the year 2017 when compared to malaria cases detected in 2013. On the other hand, average deaths due to malaria diseases stood at 364 which drastically decreased at the rate of 25.06 per cent per annum as the result of which deaths due to malaria declined by 76.36 per cent by the year 2017 compared to 2013. Similarly, the average Kala-azar cases detected was 8723 which decreased annual at 25.06 per cent per annum as the result of which Kala-azar cases detected declined by 58.45 per cent by the year 2017 compared to 2013. The average deaths due to Kala-azar though recorded to be 7 but all deaths occurred between 2013 and 2015 thereafter no deaths were recorded due to Kala-azar disease.

Among diseases having positive growth rate, it was noticed that on an average, cases detected due to acute encephalitis syndrome stood at 10647

recording positive annual growth rate of 10.75 per cent per annum which increased acute encephalitis syndrome by 66.59 per cent by the year 2017 compared to 2013. The average deaths due to acute encephalitis stood at 1303 which had negative growth rate of -4.52 per cent which decreased deaths due to acute encephalitis by 20.66 per cent by the year 2017 compared to 2013. The situation of Japanese encephalitis was found to be severe than acute encephalitis as the average cases detected due to Japanese encephalitis was 1086 which had growth rate of 14.92 per cent per annum as the result of which cases detected due to this disease increased by 100.74 per cent by the year 2017 compared to 2013. The average deaths due to Japanese encephalitis worked out to be at 264 having growth rate of 4.52 per cent per annum and thereby increasing deaths by 24.75 per cent by the year 2018 compared to 2013. The situation of dengue and Chikungunya was still worse than Japanese encephalitis. The average cases detected due to dengue stood at 75808 which had annual growth rate of 15.82 per cent per annum and increased cases detected due to dengue by 108.42 per cent by the year 2017 compared to 2013. The average deaths due to dengue was 193 having annual growth rate at 5.56 per cent per annum which increased deaths due to dengue by 31.09 per cent by the year 2017 compared to 2013. The average cases detected due to Chikungunya was 38306 which steadily increased year by year at the rate of 27.58 per cent per annum as the result of which Chikungunya cases increased by 238.00 per cent by the year 2018 compared to 2013. The average percentage of deaths due to Japanese encephalitis recording at 15.85 per cent decreased from 18.60 per cent in 2013 to 11.56 per cent by 2017. Similarly, with the average percentage of deaths due to acute encephalitis standing at 12.23 per cent decreased the percentage of deaths from 16.27 per cent in 2013 to 7.75 per cent by the year 2017. The average percentage of deaths due to dengue

recording to be at 0.21 per cent decreased percentage of deaths from 0.25 in 2013 to 0.16 by the year 2017. Similarly, with average percentage of deaths due to malaria standing at 0.04 decreased percentage of deaths due to malaria from 0.05 per cent in 2013 to 0.04 per cent by the year 2017.

2.4.4. Health Human Resources

Health care delivery will not be completed without registered and skilled manpower. As such, along with physical infrastructure, institutional infrastructure is at equal important which produces health manpower. Further, there are various types of Health care services. Among them major ones are allopathic and AYUSH system of Health care delivery system. Ayurveda, Unani, Siddha, Naturopathy and Homeopathy are the major one coming under AYUSH structure.

The data in Table 2.6 presents registered Allopathic doctors and Dental surgeons in India for the period from 2009 to 2017.

Table 2.6
Registered Allopathic Doctors and Dental Surgeons in India

Year	Allopathic Doctors	Dental Surgeons
(01)	(02)	(03)
2009	32276	104603
2010	33301	114047
2011	35044	118370
2012	37017	120897
2013	45106	147159
2014	33536	154436
2015	20422	156391
2016	25282	197734
2017	17982	251207
Total	279966	1364844
Average	31107	151649
CV	27.34	31.08
CAGR	-6.29	10.22

Source: Medical Council of India and Dental Council of India, National Health Profile 2018, CBHI, MH&FW, New Delhi, pp. 217-220.

The data in the table reveals that, on an average 31107 Allopathic doctors and 151649 Dental surgeons were getting registered. From the data in the table it could be noted that supply of Allopathic doctors was decreasing as against to increase in the supply of Dental surgeons. The data in the table exhibits that supply of Allopathic doctors though increased from 2009 to 2013 thereafter it decreased continuously. On the other hand, the supply of Dental surgeons was seen to increase continuously. Further, with the registration of Allopathic doctors decreasing at 6.29 per cent per annum decreased the registration of Allopathic doctors by 44.29 per cent by the year 2017 compared to 2009, while Dental surgeons increasing at the rate of 10.22 per cent increased registration of Dental surgeons by 140.5 per cent by the year 2017 compared to 2009. However, fluctuation among registered Allopathic doctors was observed to be more consistent with least coefficient of variation against high degree of variation among registered Dental surgeons.

AYUSH is another major health manpower generating system which is getting more popular in recent years due to wider awareness in accessing Ayurvedic treatment. The data in Table 2.22 presents the trend regarding various AYUSH practitioners in India for the period from 2000 to 2018.

The data in Table 2.7 presents registered practitioners under AYUSH system in India for the period from 2000 to 2018.

Table 2.7
Registered Practitioners under AYUSH in India

Year	Ayurveda	Unani	Siddha	Naturopathy	Homoeopathy	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
2000	427504	42445	16599	429	194147	681124
2001	430890	43108	17097	455	197252	688802
2002	430263	43330	17392	482	200003	691470
2003	432625	42833	17550	532	201484	695024
2004	436683	42882	6283	532	213503	699883
2005	438721	43578	6286	541	217460	706586
2006	443634	46230	6421	541	216858	713684
2007	453661	46558	6601	888	217860	725568
2008	460001	47963	6687	1049	239285	754985
2009	463485	48679	6877	1172	241859	762072
2010	478750	51067	7195	1401	246772	785185
2011	429246	49431	7568	1597	224279	712121
2012	438864	49078	7612	1508	223875	720937
2013	387976	50475	7600	1620	238648	686319
2014	399400	47683	8173	1764	279518	736538
2015	402079	48213	8388	2043	283840	744563
2016	419217	48196	8528	2220	293307	771468
2017*	420117	50990	4736	2156	279881	757879
2018*	418607	51481	4576	2272	285293	762229
Descriptive Statistics						
Average	432196	47064	9062	1221	236585	726128
CV	5.20	6.68	48.80	55.07	13.93	4.48
CAGR	-0.11	1.02	-6.56	9.17	2.05	0.59
Trend Values						
2019	417097	51971	3739	2389	290705	765901
2020	415587	52462	3207	2506	296117	769878
2021	414077	52953	2674	2623	301529	773856
2022	412567	53443	2142	2739	306941	777833
2023	411057	53934	1610	2856	312353	781810

Note: * Estimated

Source: Statistical Year Book, <http://www.mospi.gov.in/statistical-year-book-india/2018/199>.

From the data in Table 2.7 it could be inferred that on an average out of total AYUSH registered practitioners, 59.52 per cent (432196 out of 726128) of them were Ayurvedic practitioners and 32.58 per cent (236585 out of 726128) of them were Homeopathy doctors, both together accounting to 92.1 per cent of the total AYUSH registered practitioners. However, Unani practitioners accounted to 6.48 per cent, Siddha practitioners accounted to 1.25 per cent and Naturopathy accounted to 0.17 per cent of the total registered AYUSH practitioners. On an average 726128 practitioners registered under AYUSH which had growth rate of 0.59 per cent per annum as the result of which registered AYUSH practitioners increased by 11.91 per cent by the year 2018 compared to 2000. Decrease in the growth of registered Siddha practitioners was at higher level with -6.56 per cent per annum as the result of which registered Siddha practitioners decreased by 72.43 per cent by the year 2018 compared to 2000 followed by Ayurveda practitioners decreasing at the rate of 0.11 per cent per annum which caused decrease of 2.08 per cent in Ayurveda practitioners by the year 2018 compared to 2000.

On the other hand, the growth in Naturopathy practitioners (9.17 per cent per annum) stood at higher level followed by Homeopathy practitioners (2.05 per cent per annum) and Unani practitioners (1.02 per cent per annum). With the given growth rate, the increase in registered Naturopathy, Homeopathy and Unani practitioners was 429.67, 46.95 and 21.29 per cent respectively by the year 2018 compared to 2000. Fluctuation among registered Ayurveda practitioners (5.20%) was observed to be more consistent with least coefficient of variation against Naturopathy practitioners (55.07%) closely followed by Siddha practitioners (48.80%) exhibiting higher degree of variations with high coefficient of variation.

The trend values show that by the end of 2025, registered practitioners under AYUSH might be around 781810 practitioners. Among them registered Ayurveda, Unani, Siddha, Naturopathy and Homeopathy practitioners might be around 411057, 53934, 1610, 2856 and 312353 respectively.

The data in Table 2.8 presents information with regard to registered nurses and pharmacists in India for the period from 2000 to 2018.

Table 2.8
Registered Nurses and Pharmacists in India

Year	Auxiliary Nursing Midwives	Registered Nurses and Midwives	Lady Health Visitors/ Health supervisors
(01)	(02)	(03)	(04)
2000	419077	776355	35890
2001	428568	805827	35904
2002	464268	821795	37448
2003	502503	839862	40536
2004	506924	865135	50393
2005	521593	908962	50715
2006	535444	940268	51106
2007	549292	971574	51497
2008	557022	1043363	51776
2009	576542	1073638	52375
2010	603131	1238874	52963
2011	664453	1406006	54208
2012	726557	1562186	55498
2013	756309	1671096	55706
2014	786061	1780006	55914
2015	789796	1793337	56096
2016	841279	1980536	56365
2017	834984	1897947	61301
Descriptive Statistics			
Avg.	614656	1243154	50316
Std. Dev.	141175	427917	7615
CV	22.97	34.42	15.13
CAGR	3.90	5.09	3.02
Trend Values			
2018-19	860904	1974981	62594
2019-20	886825	2052016	63886
2020-21	912746	2129050	65178
2021-22	938667	2206085	66471
2022-23	964588	2283119	67763

Source: Statistical Year Book, <http://www.mospi.gov.in/statistical-year-book-india/2018/199>.

The data in the above Table presents the status of auxiliary nursing midwives, registered nurses and midwives and lady health visitors/ health supervisors. From the data it was noted that registered nurses and pharmacists gradually increased in the period from 2000 to 2018 where the increase among nurses and midwives (5.09% per annum) was at higher level followed by auxiliary nursing midwives (3.0% per annum) and then lady health visitors/ health supervisors (3.02% per annum). However, on an average 614656 auxiliary nursing midwives, 1243154 registered nurses and midwives and 50316 lady health visitors/ health supervisors were serving. With the given growth rate, auxiliary nursing midwives, registered nurses & midwives and lady health visitors/ health supervisors increased by 99.24, 144.47 and 70.80 per cent by the end of 2018 compared to 2000. However, the trend values denoted that by the end of 2025, there might be 964588 auxiliary nursing midwives, 2283119 registered nurses and midwives and 67763 lady health visitors/ health supervisors.

The data in Table 2.9 presents the growth of government doctors and surgeons serving. The data in the table also presents total number of government hospitals and bed strength functioning in India from 2011 to 2017.

Table 2.9

Government Doctors and Surgeons Serving and Hospitals Functioning in India

Year	Allopathic Doctors	Dental Surgeons	No. of Hospitals	No. of Beds
(01)	(02)	(03)	(04)	(05)
2011	85254	3421	12760	576793
2012	97648	3875	11993	78940
2013	115422	5418	23916	622628
2014	106813	5278	19817	628708
2015	106415	5614	20306	675779
2016	106987	6051	19649	754724
2017	113328	6328	14379	634879
Average	104552	5141	17546	567493
C V	9.80	21.19	25.65	39.20
CARG	4.15	9.18	1.72	1.38

Source: Statistical Year Book, <http://www.mospi.gov.in/statistical-year-book-india/2018/199>.

The data revealing government Allopathic doctors and Dental surgeons serving at government hospitals in India shows increasing trend where increase in dental surgeons was at higher rate compared to allopathic doctors serving in the government hospitals. However, on an average 104552 allopathic doctors and 5141 dental surgeons served at various government hospital in India during the period from 2011 to 2017. Dental surgeons serving in government hospitals recorded higher growth rate of 9.18 per cent per annum which increased their number by 84.98 per cent by the year 2017 compared to 2011. Similarly, allopathic doctors with annual growth rate of 4.15 per cent per annum increased their strength by 32.98 per cent by the year 2017 compared to 2011. Allopathic doctors serving at government hospital was found to be more consistent with least coefficient of variation (9.80%) against dental surgeons exhibiting higher degree of variation with high coefficient of variation (21.19%).

With regard to government hospitals functioning in India, it was observed from the data in Table 2.9 that for the period 2011 to 2017 on an average 17546 government hospitals were functioning in the country with average bed strength of 567493 beds. Both number of government hospitals and number of beds had mixed nature with regard to their growths. However, number of government hospitals function in the country had annual growth rate of 1.72 per cent per annum which increased number of government hospitals functioning in the country by 12.69 per cent by the year 2017 compared to number of government hospitals functioning in 2011. Similarly, annual growth of bed strengths standing at 1.38 per cent per annum increased total number of beds in government hospital by 10.07 per cent by the year 2017 compared to 2011. The variation in total number of government hospitals functioning in the country was found to be more

consistent with least coefficient of variation (25.65%) when compared to high degree of variation with regard to total number of beds in government hospitals (39.20%).

The data in Table 2.10 presents health human resources in rural areas (government) serving in India as on 2017.

Table 2.10

Health Human Resources (Government) in Rural Areas in India as on 2017

Health Human Resources		No. of Persons
(01)		(02)
No. of Doctors at PHCs		27124
Total Specialists at CHCs		4156
Health Assistants	Male	12288
	Female (LHV)	14267
Health Workers	Male	56263
	Female/ ANM	220707

Source: Bulletin on Rural Health Statistics in India 2017, MH&FW, New Delhi, p. 226.

As on 2017, with regard to health human resources operating in rural area, the bulletin on rural health statistics of 2017 revealed that 27124 doctors were serving at PHCs and 4156 specialists at CHCs. Further, 26555 health assistants were serving in rural areas where among them about 46.27 per cent were male health assistants and remaining 53.73 per cent were female health assistants or ANMs. Similarly, 276970 health workers were delivering their services in rural areas out of which about 20.31 per cent of them were serving as male health workers and remaining 79.69 per cent of them were serving as female health workers/ANMs.

Table 2.11 provides information with regard to facilities under Central Government Health Scheme in India under urban and rural break-ups.

Table 2.11
Facilities under Central Government Health Scheme in India

Year	Urban Health Infrastructure		Rural Health Infrastructure	
	District Hospitals	Community Health Centres	Primary Health Centres	Sub-Centres
(01)	(02)	(03)	(04)	(05)
2010	635	4535	23673	147069
2011	635	4809	23887	148124
2012	722	4833	24049	148366
2013	748	5187	24448	151684
2014	755	5363	25020	152326
2015	763	5396	25308	153655
2016	773	5510	25354	155069
2017	779	5624	25650	156231
Average	726	5157	24674	151566
C V	8.11	7.53	3.06	2.25
CAGR	2.59	2.73	1.01	0.76

Source: Ministry of Health and Family Welfare, 2017, New Delhi.

As per the data presented in the table, district hospitals and CHCs form urban health infrastructure, while PHCs and Sub-Centres form rural health infrastructure. For the period 2010 – 2017, on an average, 726 district hospitals along with 5157 CHCs provided Health care services to urban population, while 24674 PHCs and 151566 Sub-Centres provided Health care services at rural level. The growth in urban Health care institution (2.59 and 2.73 per cent per annum) was found to be at higher level compared to growth in Health care institutions (1.01 and 0.76 per cent per annum) serving in rural areas. With the given growth rate, under urban health infrastructure, district hospitals and CHCs increased by 22.68 and 24.01 per cent by the year 2017 compared to 2010, while under rural

infrastructure, PHCs and Sub-Centres increased by 8.35 and 6.23 per cent respectively for the same period. Further, under urban infrastructure, CHCs was found to be more consistent against district hospitals recording least fluctuation with coefficient of variation at 7.53 and 8.11 per cent respectively, while under rural infrastructure, Sub-Centres was more consistent compared to PHCs exhibiting low level of variation with coefficient of variation at 2.25 and 3.06 per cent respectively.

2.4.5. Health Infrastructure

Major components of health infrastructure constitute educational infrastructure and service infrastructure. Education infrastructure comprises medical colleges, dental colleges, AYUSH institutions and nursing colleges, while service infrastructure constitutes number of health manpower, hospitals and bed strength, health institutions, etc.

a) Educational Infrastructure

For the period from 2004-05 to 2017-8, on an average 341 medical colleges with 40469 admission capacity (20624 male and 19845 female) provided medical education to the aspirants. The annual growth of 5Medical colleges at 537 per cent per annum increased total number of medical colleges from 229 colleges in 2004-05 to 476 colleges by the year 2017-18 where the increase in medical colleges was about 107.86 per cent. Similarly, due to admission capacity recording annual growth of 6.38 per cent per annum (male 5.04 per cent per annum and female 7.95 per cent per annum), admission capacity increased by 110.10 per cent (male 80.51 per cent and female 150.39%) that is from admission capacity of 25058 candidates (14449 male and 10609 female) during the period 2004-05 to

52646 candidates (26082 male and 26564 female) by the year 2017-18.¹³ However, it is estimated that by the year 2024-25 there might be 597 medical colleges with admission capacity of 74393 students where admission capacity of male and female might be 33907 and 40486 respectively.

With regard to BDS, for the period 2004-05 to 2017-18, on an average 277 dental colleges with admission capacity of 22705 were operating in the country. The annual growth rate of 3.83 and 5.15 per cent per annum for BDS hospitals and its admission capacity increased by 69.19 and 101.94 per cent respectively by the year 2017-18 compared to 2004-05. Similarly, for the same period MDS and its admission capacity with annual growth rate of 10.57 and 12.67 per cent per annum increased number of colleges by 308.20 per cent and its admission capacity by 431.37 per cent. That means within a span of about 14 years MDS colleges increased by three folds and the admission capacity by more than 4 folds. As such, by the end of 2025, it can be estimated that in the country about 391 BDS with admission capacity of 35538 might be operating. At the same time, 374 MDS colleges with admission capacity of 9671 might be in operation.¹⁴

With regard to AYUSH colleges/ institutions, as on 2017 there were 622 AYUSH under graduate colleges rendering education to 40151 students. Among them, 338 colleges were Ayurveda College with admission capacity of 21387 seats, 201 colleges were Homeopathy College with intake capacity of 13909 seats, 49 colleges were Unani College with intake capacity of 2705 seats, 25 colleges

¹³ <https://www.indiastat.com/education-data/6370/professional-institutions/369745/medical-colleges-institutions-1950-2020/449429/stats.aspx>.

¹⁴ Dental Council of India.

were Naturopathy College with intake capacity of 1630 seats and 9 colleges were Siddha College with intake capacity of 520 students.¹⁵

As on 2017, in the country there were 9547 nursing colleges/ institutions offering nursing training to the aspirants with admission capacity of 369622 students. Among total nursing institutions, 1909 were Auxiliary Nurse Midwives colleges (20.00%) with admission capacity of 55263 students, 3215 were General Nurse Midwives colleges (33.65%) with admission capacity of 129926 students, 1936 were Basic B.Sc. (Nursing) colleges (20.28%) with admission capacity of 96475, 643 were M.Sc. (Nursing) colleges (6.74%) with admission capacity of 12617 students, 775 were Post Basic B. Sc. colleges (8.12%) with intake of 24415 students, 292 were Post Basic Diplomas (3.06%) with intake of 4131 students and 777 were Pharmacy (Diploma) colleges (8.17%) with intake of 46795 students.¹⁶

b) Service Infrastructure

i) Health Services in Rural and Urban Areas

The major sources of health service in rural areas are Sub-Centres, PHCs and CHCs. As on 2019, in India totally 157411 Sub-Centres, 24855 PHCs and 5335 CHCs were functioning in the country which were about 7.80, 6.97 and 59.44 per cent more when compared to Sub-Centres, PHCs and CHCs in 2005.

The data in Table 2.12 presents comparative information of health services infrastructure in India during 2005 and 2019.

¹⁵ Central Council of Indian Medicine, Ministry of AYUSH.

¹⁶ Indian National Council, Pharmacy Council of India.

Table 2.12
Health Services Infrastructure in India

Health Services Infrastructure	2005	2019	% Change
(01)	(02)	(03)	(04)
Sub-Centres	146026	157411	7.80
PHCs	23236	24855	6.97
CHCs	3346	5335	59.44
Building position for Sub-Centres in Rural Areas			
Total No. of Sub-Centres functioning	146026	157411	7.80
Government building	63901	118600	85.60
Rented building	50338	26770	-46.82
Rent free buildings	14295	12041	-15.77
Building under construction		6968	
Building position for Primary Health Centres in Rural Areas			
Total No. of PHCs functioning	23236	24855	6.97
Government building	16023	23497	46.65
Rented building	2826	699	-75.27
Rent free buildings	1687	659	-60.94
Building under construction		997	
Building position for Community Health Centres in Rural Areas			
Total No. of CHCs functioning	3346	5335	59.44
Government building	2822	5299	87.77
Rented building	5	5	0.00
Rent free buildings	254	31	-87.80
Building under construction		354	

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 104-106.

With regard to building position that is the location of Sub-Centres functioning, it can be understood from the data in Table 2.12 that as on 2019, majority of the Sub-Centres were shifted to government buildings. As such, about 75.34 per cent of the total Sub-Centres functioned in government buildings which were about 85.60 per cent more when compared to 2005. However, about 17 per cent of the Sub-Centres were functioning in rented buildings and remaining 7.65 per cent in rent free buildings which were about 46.82 and 15.77 per cent less

when compared to 2005. At the same time, 6968 Sub-Centre buildings were under construction.

According to the data in Table 2.12, with respect to building position of PHCs in rural areas, as on 2019 about 94.54 per cent of the PHCs were operating through government buildings which was about 46.65 per cent more when compared to 2005 respectively. Further, about 2.81 per cent of the total PHCs operated in rental buildings and 2.65 per cent in rent free buildings which were about 75.27 and 60.94 per cent less when compared to PHCs operating in rent and rent free buildings in 2005. However, 997 PHCs buildings were under construction.

With regard to building position of CHCs, it was noted that the percentage of CHCs operating in government buildings has increased from 68.96 per cent in 2005 to 94.54 per cent in 2019 which was about 87.77 per cent more in 2019 when compared to 2005. Further, it was noted that CHCs operating through rented building remained constant as in 2005 and 2019 also 5 CHCs operated through rented buildings. On the other hand, CHCs operating in rent free buildings has drastically decreased as 254 CHCs which were operating in rent free buildings in 2005 dropped down to only 31 CHCs operating in rent free buildings in 2019 where the decrease was about 87.80 per cent in 2019 compared to 2005. However, 354 CHCs buildings were under construction (Table 2.12).

Health manpower in rural areas includes female health workers at Sub-Centres and PHCs, doctors at PHCs, specialists at CHCs, radiographs at CHCs pharmacists, lab technicians and nursing staff.

The data in health manpower is as presented in Table 2.13 for the years 2015 and 2019 in terms of required, sanctioned, in position, vacant and shortfall.

Table 2.13
Health Manpower in Rural Areas in India

Health Manpower (01)	2005 (02)	2019 (03)	% Change (04)
Health Worker (Female)/ ANM at Sub-Centres and PHCs in Rural Areas			
Required	169262	182266	7.68
Sanctioned	139798	209633	49.95
In position	133194	234220	75.85
Vacant/ Excess	6604	24587*	272.30
Shortfall / Excess	36068	51954*	44.04
Doctors at Primary Health Centres in Rural Areas			
Required	23236	24855	6.97
Sanctioned	24476	32824	34.11
In position	20308	29799	46.74
Vacant/ Excess	4168	3025	-27.42
Shortfall / Excess	2928	4944*	68.85
Total Specialists at CHCs in Rural Areas			
Required	13384	21340	59.44
Sanctioned	7582	12597	66.14
In position	3550	3881	9.32
Vacant/ Excess	4032	8716	116.17
Shortfall / Excess	9834	17459	77.54
Radiographers at CHCs in Rural Areas			
Required	3346	5335	59.44
Sanctioned	1669	3813	128.46
In position	1337	2419	80.93
Vacant/ Excess	332	1394	319.88
Shortfall / Excess	2009	2916	45.15
Pharmacists			
Required	26582	30190	13.57
Sanctioned	21072	27867	32.25
In position	17708	26204	47.98
Vacant/ Excess	3364	1663	-50.56
Shortfall / Excess	8874	3986	-55.08
Laboratory Technicians			
Required	26582	30190	13.57
Sanctioned	14571	20640	41.65
In position	12284	18715	52.35
Vacant/ Excess	2287	1925	-15.83
Shortfall / Excess	14298	11475	-19.74
Nursing Staff at PHC and CHCs in Rural Areas			
Required	46658	62200	33.31
Sanctioned	34061	68801	101.99
In position	28930	80976	179.90
Vacant/ Excess	5131	12175*	137.28
Shortfall / Excess	17728	18776*	5.91

Note: * Excess determines manpower working on temporary basis.

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 108-114.

The data in the table shows that in 2019 when compared to 2005 female health workers, doctors and nursing staff were over sanctioned, specialists, radio-graphs, pharmacists and lab technicians' positions faced severe shortages. High shortage was with regard to specialists at CHCs (81.81%) followed by radio-graph (54.66%) and lab technicians (38.01%) respectively.

With regard to female health workers to carry out at Sub-Centres and PHCs, it was noticed that sanctioned posts crossed the required posts. That means from the data in table it was evident that about 15 per cent more posts were sanctioned against the required posts. Further, in-position posts also crossed sanctioned posts. About 11.73 per cent in-position posts were excess against the sanctioned posts. With this context female health workers at Sub-Centres and PHCs were found to be in excess as the result of which there was no question of vacant and shortfall in 2019 when compared to 2005.

In terms of doctors at PHCs, it was noticed that in 2019, about 32 per cent more posts were sanctioned against the required posts. However, about 90.78 per cent of the sanctioned posts were filled leaving 9.22 posts vacant. But still, in-position posts were about 19.89 per cent more than the required posts. However, it could be inferred that 9.22 per cent posts were vacant against sanctioned posts. As such, in this case vacant posts arise and not the shortfall as more posts were sanctioned against required.

With regard to specialists at CHCs, it was noted that in 2005 and 2019 the percentage of sanctioned posts against required accounted to 56.65 and 59.03 per cent respectively and the in-position posts against sanctioned posts stood at 46.82 and 30.81 per cent in 2005 and 2019 respectively indicating that specialists shortage was severe in 2019 compared to 2005. However, the percentage of vacant post against sanctioned posts stood at 53.18 and 69.19 per cent for 2005 and 2019

respectively and the shortfall of specialists at CHCs in 2005 and 2019 against required posts was 73.48 and 81.81 per cent respectively.

The availability of radiographers at CHCs as per data in the table was about 50 per cent of the required posts. The percentage of sanctioned posts against required was 49.88 per cent in 2005 it reached 71.47 I 2019 but the in-position posts of radiographers against sanctioned posts which stood at 80.11 per cent in 2005 decreased to 63.44 per cent in 2019. However, with 19.89 and 36.56 per cent of the sanctioned post being vacant in 2005 and 2019 the shortfall of radiographers at CHCs in 2005 and 2019 worked out to be at 60.04 and 54.66 per cent respectively.

The situation of pharmacists was quite at satisfactory level when compared to the availability of other health manpower services at Sub-Centres, PHCs and CHCs. The sanctioned posts against required post of pharmacists at CHCs stood at 79.27 and 92.31 per cent in 2005 and 2019 respectively where in turn the percentage of in-position of pharmacists against sanctioned stood at 84.04 and 94.03 per cent in 2005 and 2019 respectively leaving 15.96 and 5.97 per cent of the sanctioned posts of pharmacists at CHCs vacant in 2005 and 2019 respectively and short fall against required posts in these two years to be accordingly at 33.38 and 13.20 per cent.

The situation of lab technicians at CHCs showed that in 2005 and 2019 about 54.82 and 68.37 per cent of the required posts were sanctioned and among sanctioned posts about 84.30 and 90.67 per cent were in-position leaving 15.70 and 9.33 per cent of the total sanctioned posts of lab technicians vacant at CHCs in 2005 and 2019 respectively which indicated that shortfall of lab technicians against required posts to be at 53.79 and 38.01 per cent in 2005 and 2019 respectively.

The status of nursing staff denotes that in 2019 the percentage of sanctioned nursing staff against required was about 110.61 indicting that about 10.61 per cent

more posts was sanctioned against the required posts. However, in 2005, the percentage of sanctioned posts against required was 73.00 per cent. Further, the percentage of nursing staff in-position against sanctioned posts stood 84.94 and 117.70 per cent in 2005 and 2019 respectively indicating that in 2019, nursing staff in-position was about 17.70 per cent more than the sanctioned posts. Hence, in 2005, vacant posts of nursing staff against sanctioned posts and shortfall posts against required posts stood at 15.06 and 38.00 per cent respectively which in turn in 2019, about 17.70 per cent of the posts were in excess against sanctioned posts and 30.19 per cent excess against the required posts.

Hospitals and its bed strength operating in rural and urban areas is as presented in Table 2.14 in terms of Government hospitals, Railways hospitals and hospitals under ESI Corporation.

Table 2.14

Hospitals and Beds in Rural and Urban Areas in India

Particulars	No. of Hospitals	No. of Beds
(01)	(02)	(03)
Government Hospitals		
Rural Hospitals	19810	279588
Urban Hospitals	3772	431173
Total Hospitals	23582	710761
Average population served per Government hospital	55591	
Average population served per bed	1844	
Railways		
Total number of Dispensaries	592	
Total number of Hospitals	126	13748
ESI Corporation		
Total number of Dispensaries	1489	
Total number of Hospitals	151	19765

Source: Directorate General of State Health Services, Ministry of Railways and Employees State Insurance Company, National Health Profile 2018, CBHI, MH&FW, New Delhi, pp. 260-262.

From the data in the above Table, out of total government hospitals (23582 hospitals) functioning in the country about 84 per cent (19810 hospitals) are delivering health services in rural areas and 16 per cent (3772 hospitals) in urban areas. Further, with regard to their bed strength, out of total bed strength of the government hospitals 39.34 per cent are present in rural hospitals and 60.66 per cent are in urban hospitals indicating that more numbers of beds are present in urban hospitals with less number of hospitals functioning in urban areas when compared to rural areas. The average population covered by government hospitals recorded to be 592 people per hospital and average population served per bed was 1844.

Hospitals and dispensaries under the control of Railways showed that railways offered health services through 718 health institutions out of which majority of them were dispensaries accounting to 82.45 per cent (592 dispensaries) and remaining 17.53 per cent (126 hospitals) were hospitals with 13748 beds (Table 2.31).

Hospitals and dispensaries functioning under ESI Corporation revealed that out of total 1640 health institutions under the control of ESI 90.78 per cent (1489 dispensaries) of them were dispensaries and 9.22 per cent (151 hospitals) of them were hospitals with bed strength of 19765 beds (Table 2.31).

The data in Table 2.15 presents health institutions functioning in India as on 2019 in terms of Sub-Centres, PHCs, HWC-SC, HWC-PHCs, CHCs in rural areas and Sub-Divisional hospitals, District hospitals, Mobile Medical Units and Medical Colleges in urban areas.

Table 2.15
Rural and Urban-wise Health Institutions Functioning in India as on 2019

Institutions	Numbers			Percentage		
	Rural	Urban	Total	Rural	Urban	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Sub-Centres	149590	3204	152794	97.90	2.10	100
PHCs	16613	3456	20069	82.78	17.22	100
HWC – SC	7821	98	7919	98.76	1.24	100
HWC-PHC	8242	1734	9976	82.62	17.38	100
CHCs	5335	350	5685	93.84	6.16	100
Sub-divisional Hospitals	-	1234	1234	-	-	-
District Hospitals	-	756	756	-	-	-
Mobile Medical Units	-	-	1415	-	-	-
Medical Colleges	-	-	240	-	-	-

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 144-145.

As per the data in the table, majority of the Sub-Centres, PHCs, HWC-SC, HWC-PHCs and CHCs catered to the Health care needs of the rural areas. As such, out of total 152794 Sub-Centres functioning in the country, 97.70 per cent (149590 Sub-Centres) of them were operating in rural areas and 2.10 per cent (3204 Sub-Centres) of them in urban areas. Like that, out of total 20069 PHCs functioning in the country, 82.78 per cent (16613 PHCs) of them were operating in rural areas and 17.22 per cent (3456 PHCs) of them in urban areas. Further, out of total 7919 Health Wellness Centres – Sub-Centres, 98.76 per cent (7821 HWC-SCs) of them were functioning in rural areas and 1.24 per cent (98 HWC-SCs) of them in urban areas. While, out of total 9976 HWC-PHCs functioning in the country, 82.62 per cent (8242 HWC-PHCs) were functioning in rural areas and 17.38 per cent (1734 HWC-PHCs) in urban areas. Out of total CHCs (5685 CHCs) functioning in the country, 93.84 per cent (5335 CHCs) of them were operating in rural areas and 6.16 per cent (350 CHCs) in urban areas. On the other hand, in the country 1234 Sub-divisional hospitals, 756 district hospitals, 1415 mobile medical units and 240 medical colleges were functioning in urban areas only.

The data in Table 2.16 presents status of health manpower break-ups in health institutions functioning in rural areas in terms of required posts, sanctioned posts, in position posts, vacant posts and shortfall posts in Sub-Centres, PHCs and CHCs.

Table 2.16
Shortfall in Health Manpower at Health Institutions in Rural Areas, India
as on 2019

Health Institutions	Required	Sanctioned	In position	Vacant/ Excess	Shortfall/ Excess
(01)	(02)	(03)	(04)	(05)	(06)
Sub-Centres					
Health Worker (Female)/ ANM	157411	183936	205228	21292*	47817*
Health Worker (Male)	157411	82857	59348	23509	98063
Primary Health Centres					
Health Worker (Female)/ ANM	24855	25697	28992	3295*	4137*
Health Assistant (Female)	24855	20712	13786	6926	11069
Health Assistant (Male)	24855	23679	13446	10233	11409
Doctors	24855	32824	29799	3025*	4944*
AYUSH Doctors	24855	10593	13347	2754	11508
Dental Surgeons	24855	1037	1152	115	23703
Pharmacists	24855	19951	18975	976	5880
Laboratory Technicians	24855	14007	12462	1545	12393
Nursing Staff	24855	29476	30071	595*	5216*
Community Health Centres					
AYUSH Doctors	5335	3714	3197	517	2138
Dental Surgeons	10670	2307	1920	387	8750
Surgeons	5335	3201	768	2433	4567
Obstetricians & Gynaecologists	5335	3334	1351	1983	3984
Physicians	5335	2825	683	2142	4652
Paediatricians	5335	3237	1079	2158	4256
Total Specialists	21340	12597	3881	8716	17459
General Duty Medical Officers (Allopathic)	10670	14668	15395	727*	4725*
Radiographers	5335	3813	2419	1394	2916
Pharmacists	5335	7916	7229	687*	1894*
Laboratory Technicians	5335	6730	6253	477*	918*
Nursing Staff	37345	39325	50905	11580*	13560*

Note: * Excess determines Manpower working on temporary basis.

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 153-175.

With regard to female health workers/ ANM at Sub-Centres, the sanctioned posts were 16.85 per cent more than the required posts. Further, in-position post was also found to be about 15.58 per cent more than the sanctioned posts. Hence, female health workers/ANMs working at Sub-Centres were found to be 11.58 excess than the sanctioned posts and 30.38 per cent more than the required posts. On the other hand, with regard to male health workers at Sub-Centres the situation was dead opposite as about 52.64 per cent of the required posts were sanctioned and about 71.43 per cent were in position posts against sanctioned posts leaving 28.37 per cent of the sanctioned posts vacant. Hence, about 62.30 per cent of the required posts were shortfall with regard to male health workers in Sub-Centres as on 2019 in rural areas (Table 2.16).

At PHCs, with respect to female health workers/ ANMS the percentage of sanctioned posts had crossed the required posts as the percentage of sanctioned posts against required posts stood at 103.39 per cent indicating that sanctioned posts were 3.39 per cent more than the required posts. Further, the percentage of in-position posts also exceeded the sanctioned post which accounted to 112.82 per cent indicating that female health workers at PHCs those in position were about 12.82 per cent more than the sanctioned posts. As such, it could be inferred that female health workers at PHCs in rural areas were about 16.64 per cent more against the required posts (Table 2.16).

With respect to female health assistants, it was noted that out of total requirement about 83.33 per cent posts were sanctioned and out of total sanctioned posts about 66.56 per cent were in-position which reveals that 33.44 per cent of the sanctioned posts remained vacant and the shortfall of female health assistants accounted to 44.53 per cent of the required posts. On the other hand, about 95.27 per cent of the required posts were sanctioned with respect to male health

assistants where 56.78 per cent were in position leaving 43.22 per cent as vacant against sanctioned posts. The shortfall of male health assistants worked out to be at 45.90 per cent against the required posts (Table 2.16).

With regard to doctors working at PHCs in rural areas, it was observed that more than the required posts sanctioned were made as the percentage of sanctioned posts accounted to 132.06 per cent of the total requirement of the doctors at PHCs in rural areas. However, the in-position of the doctors at PHCs accounted to 90.78 per cent of the total sanctioned posts leaving 9.22 per cent of the total sanctioned posts vacant. In spite of it, about 19.89 per cent of the doctors were in excess against the required posts (Table 2.16).

The situation with regard to AYUSH doctors at PHCs in rural areas was quite different as about 42.62 per cent of the required posts were sanctioned, but the percentage of AYUSH doctors in-position cross the sanctioned posts by 26 per cent as the percentage of in-position AYUSH doctors accounted to 126.00 per cent. Hence, though AYUSH doctors were 26 per cent excess against the sanctioned posts, but they were 46.30 per cent short against the required posts (Table 2.16).

The situation was very worse with regard to dental surgeons as PHCs suffered acute unavailability of dental surgeons in rural areas. The percentage of sanctioned posts against required posts accounted to only 4.17 per cent. However, in-position dental surgeons accounted to 111.09 per cent of the total sanctioned posts. Though more numbers of dental surgeons were serving at PHCs in rural areas, but still huge gap was existing between in-position posts and required posts. However, the shortfall of dental surgeons at PHCs in rural areas accounted to 97.33 per cent of the required posts (Table 2.16).

The status of pharmacists was far better when compared to dental surgeons. The sanctioned posts accounted to 80.27 per cent of the total required post. Out of total sanctioned posts about 95.11 per cent were in-position pharmacist leaving 4.89 per cent of the total sanctioned posts as vacant. However, 23.66 per cent turned out to be the shortfall against required posts (Table 2.16).

With regard to lab technicians, it was noted that about 56.35 per cent of the required posts were sanctioned posts. Out of total sanctioned posts, 88.97 per cent were in-position posts leaving 11.03 per cent vacant. However, the percentage of shortfall of laboratory technicians accounted to 49.86 per cent of the total required posts (Table 2.16).

It was satisfactory to observed that nursing staff were widely available at PHCs I rural areas. The percentage of sanctioned posts against required posts accounted to 118.59 per cent indicating that 18.59 per cent more posts were sanctioned against the required posts. Out of total sanctioned posts, again the percentage of in-position posts exceeded the sanctioned posts as it accounted to 102.02 per cent indicating that 2.02 per cent of nursing staff were in excess of the sanctioned posts. At the same time, about 20.99 per cent nursing staff were in excess against the required posts (Table 2.16).

At the CHCs General Duty Medical Officers under allopathic, pharmacists, laboratory technicians and nursing staff were found to be in excess than the required posts while other manpower were observed to be in shortfall. On the other hand, except laboratory technicians and to some extent pharmacists and nursing staff all other manpower were found to be in severe shortfall at CHCs operating in rural areas.

From the data in Table 2.16 it was observed that with regard to AYUSH doctors in CHCs in rural areas, the percentage of sanctioned posts against required posts accounted to 69.62 per cent, where out of total sanctioned posts about 86.08 posts were in-position. As such, the percentage of vacant against sanctioned posts worked out to be 13.92 per cent and the percentage of shortfall against required posts recorded to be 40.07 per cent.

With respect to dental surgeons, out of total required posts only 21.62 per cent of the posts were sanctioned and out of total sanctioned posts about 83.22 per cent were in-position which indicated that about 16.78 per cent were vacant against sanctioned posts and about 82.01 per cent of the posts showed to be shortfall against the required posts (Table 2.16).

With regard to surgeons, the percentage of sanctioned posts against required post, the percentage of in-position posts against sanctioned posts, vacant posts against sanctioned post and percentage of shortfall accounted to 60.00, 23.99, 76.01 and 85.60 per cent respectively.

With respect to Obstetricians and Gynaecologists, 62.49 per cent of the required posts were sanctioned and among them 40.52 per cent was in-position leaving 59.48 per cent of the sanctioned posts vacant. However, the shortfall of Obstetricians & Gynaecologists against required posts worked out to be about 74.68 per cent (Table 2.16).

About 52.95 per cent of the required physician's posts were sanctioned for CHCs operating in rural areas where out of total sanctioned posts about 24.18 per cent were in-position and still about 75.82 per cent of the sanctioned physician's posts were left vacant. However, against required physicians, the percentage of shortage physicians recorded to at 87.20 per cent (Table 2.16).

The status of paediatricians also remained almost similar to the status of physicians as the percentage of sanctioned posts against required post stood at 60.67 per cent. Further, the percentage of in-position posts and vacant posts against sanctioned posts of paediatricians stood at 33.33 and 66.67 per cent respectively. The percentage of shortfall of paediatricians at CHCs in rural areas stood at 79.78 per cent (Table 2.16).

With the above situations it could be inferred that specialists at CHCs in rural areas face severe shortages. Out of total required specialists about 59 per cent are sanctioned. Out of total sanctioned posts about one third per cent (30.81%) are in-position posts leaving about three fourth per cent as vacant (69.19%). As such, about one fifth (81.81%) of the total required specialists are in shortfall at CHCs in rural areas.

With regard to the General Duty Medical Officers (allopathic), it was noticed that more than the required posts were sanctioned which accounted to 137.47 per cent. Further, more than the sanctioned posts were in-positions accounting to 104.96 per cent indicating that about 4.96 per cent of the General Duty Medical Officers (allopathic) were in CHCs in rural areas. As such, the percentage of General Duty Medical Officers (allopathic) who were in excess against required posts accounted to 44.28 per cent (Table 2.16).

There was scarcity of radiographers at CHCs in rural areas as about 71.47 per cent of the total required posts were sanctioned and out of total sanctioned posts 63.44 per cent were in-position posts leaving 36.56 per cent vacant and making about 54.66 per cent as shortfall against required posts (Table 2.16).

The status of pharmacists was quite satisfactory because of the percentage of sanctioned posts against required accounted to 148.38 per cent and out of total

sanctioned posts the percentage of in-position posts accounted to 91.32 per cent. Though 8.68 per cent of the sanctioned posts were vacant against sanctioned posts, but still about 35.50 per cent were in excess against required posts (Table 2.16).

The situation of laboratory technicians was similar to pharmacists as the percentage of sanctioned posts against required stood at 126.15 per cent and out of total sanctioned posts the percentage of in-position posts stood at 92.91 per cent leaving 7.09 per cent as vacant against sanctioned posts. As such, in spite of vacant against sanctioned posts, about 17.21 per cent were in excess against required posts.

Nursing staff a CHCs in rural areas showed alike status as of laboratory technicians, pharmacists and general duty medical officers. About 105.30 per cent of the required posts were sanctioned and out of total sanctioned posts 129.45 per cent were in-position posts indicating 29.45 per cent to be excess against sanctioned posts. As such, about 36.31 per cent were found to be in excess to the required posts (Table 2.16).

The status of health manpower at health institutions in urban areas is presented in Table 2.17 in terms district hospital and sub district / sub divisional hospitals.

Table 2.17

Health Manpower at District Hospitals and Sub-District Hospitals/Sub-Division Hospitals in India as on 2019

Health Manpower	Required	In position	Vacant/ Excess
(01)	(02)	(03)	(04)
Doctors (District Hospitals)	28545	24676	3869
Para Medical Staff (District Hospitals)	90969	85194	5775
Doctors (Sub District/ Sub-Divisional Hospitals)	22891	13750	9141
Para Medical Staff (Sub-District/Sub-Divisional Hospitals)	52526	36909	15617
ASHAs	895718	929893	34175

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 176-177.

As such, it can be noticed that at district hospitals the shortage of doctors and paramedical staff was at lower level when compared to shortage of doctors and paramedical staff at sub district/ sub divisional hospitals. However, AHSA workers were not only inadequate number but also excess than the required posts.

The shortfall of manpower as presented in Table 2.17 reveals that the percentage of in-position doctors in district hospitals were 86.46 per cent of the required posts leaving 13.55 per cent vacant against required position. Further, about 93.65 per cent of the percentage of required paramedical staff was in-position staff leaving 6.35 per cent of the required staff as vacant. At the sub-district/ sub divisional hospitals, about 60 per cent of the required doctors were in-position doctors leaving 39.93 per cent vacant against required posts and in-position paramedical staff accounted to the 70.27 per cent of the required posts leaving 29.73 per cent as vacant against required posts. With regard to AHSA workers, it was noted that they were 3.68 per cent excess than the required posts.

ii) Infrastructure Facility Available at Health Institutions

With regard to the infrastructure availability at Sub-Centres, PHCs, CHCs and FRU in rural areas, it was required that out of total 149590 Sub-Centres functioning in the rural areas of the country, 59.2 per cent of them has ANM quarters, 26.3 per cent were without electric supply, 18.9 per cent of them were without regular water supply and 11.5 per cent of them were without all-weather motorable approach road. The percentage of Sub-Centres functioning as per IPHS norms accounted to only 3.39 per cent. Further, about 43094 Sub-Centres including HWC-SCs had separate toilet facilities for male and female patients

separately. Similarly, 70100 Sub-Centres including HWC-SCs had separate toilet facility for staff. At the same time it was noted that 1371 Sub-Centres were functioning without female health workers/ ANMs, 81007 Sub-Centres functioning without male health workers and 5757 Sub-Centres functioning without both female and male health workers.¹⁷ All these indicate that still Sub-Centres at rural level needs to be upgraded.

With regard to infrastructure available at PHCs in rural areas, it was studied that out of total 16613 PHCs functioning in rural areas of the country, 76.8 per cent of them were 7 bedded PHCs, 75.6 per cent of them had computer accessibility, 72.1 per cent of them were equipped with labour room, 57 per cent of them were connected with telephone facility and 56.4 of them had referral transport. The percentage of PHCs functioning on 24x7 bases accounted to 40.5 per cent of the total PHCs functioning in rural areas and PHCs with OT accounted to 36.5 per cent. At the same time, PHCs without regular water supply and without all-weather motorable approach road accounted to 8.2 per cent each, while PHCs functioning as per IPHS norms accounted to 8.3 per cent. Further, the percentage of PHCs functioning in rural areas without electricity supply accounted to 4.8 per cent. Further, 16220 PHCs including HWC-PHCs have separate toilets for male and female patients. The number of PHCs including HWC-PHCs with separate toilet facility for staff stood at 15089 units. PHCs operating with 4+ doctors accounted to 5.92 per cent, with 3+ doctors accounted to 5.38 per cent, with 2+ doctors accounted to 28.14 per cent, with 1 doctors accounted to 50.94 per cent,

¹⁷ Rural Health Statistics – 2018-19.

without doctors accounted to 9.62 per cent, PHCs without pharmacists accounted to 23.90 per cent and PHCs without lady doctor accounted to 31.04 per cent.¹⁸

The facilities with regard to infrastructure facilities available at CHCs in rural areas was at much higher level when compared to Sub-Centres and PHCs functioning in rural areas. As such, out of total 5335 CHCs operating in rural areas of the country, 96.21 per cent of them were equipped with laboratory, 94.70 per cent of them had labour room, 94.68 per cent of them were equipped with allopathic drugs for common ailments and 91.68 per cent of them had referral transport availability. Further, out of total CHCs functioning in rural areas, 88.13 per cent of them were equipped with computer/ statistical assistant for MIS/ accountant, 86.95 per cent of them were equipped with New Born Care Centre, 83.47 per cent of them were functioning with OT and 78.91 per cent of them were having at least 30 beds. Apart from these, 63.06 per cent of them were having AYUSH drugs for common ailments, 55.91 per cent of them had quarters for specialist doctors, 54.79 per cent of them were equipped with X-ray machine functioning, 43.94 per cent of them had the facility of stabilization of units for new born and 37.68 per cent of them had specialist doctors living in quarters. Further, the percentage of CHCs in rural areas functioning with all 4 specialists accounted to only 7.09 per cent. As a result of all these situations, about 21.84 per cent of the CHCs were declared as functioning in accordance with IPHS norms. Further, CHCs having separate toilet facility for male and female patients and separate toilet facility for staff accounted to 76.94 and 74.17 per cent respectively.¹⁹

¹⁸ Rural Health Statistics – 2018-19.

¹⁹ Ibid.

With respect to First Referral Units (FRUs), out of total 3204 FRUs functioning in the country 2.81 per cent of them are operating at PHCs level, 49.25 per cent are operating at CHCs level, 24.72 per cent of them are operating at Sub Division Hospital level and 19.73 per cent of them are operating at district hospital level. Further, out of total FRUs functioning in the country, 89.70 per cent of them are functioning with more than 30 beds, 95.72 per cent of them are equipped with OT, 96.72 per cent of them are functioning with the availability of labour room and 75.28 per cent of them are attached with blood storage/ linkage facility.²⁰

iii) Achievement under Rural Health Care

The achievements under rural health care services are numerous. As such, with regard to coverage of population, as on 2019, the population covered by each Sub-Centre, PHC and CHC stood at 5616, 35567 and 165702 people respectively. With respect to area covered, each Sub-Centre, PHC and CHC covered around 18.90 sq.km with radial distance of 2.46 km, 120.19 sq.km with radial distance of 6.18 km and 559.96 sq.km with radial distance of 13.35 km respectively.²¹

The average number of villages covered by health institutions in India shows that for every four villages one Sub-Centre & HWC-SCs functioned, for every 26 villages one PHC & HWC-PHC functioned and for every 120 villages one CHC functioned. For every 4 Sub-Centres one PHC is functioning and for every 5 PHCs on CHC is functioning. Further, for every four male health workers one male health assistants were there at Sub-Centre & HWA-SCs and for every

²⁰ Rural Health Statistics – 2018.

²¹ Ibid.

17 female health workers one female health assistants were serving at Sub-Centres and at PHCs.

According to Rural Health Statistics of 2018, 12554 PHCs (50.51%) operated under AYUSH facility out of 24855 PHCs operating in rural areas and 333 PHCs (6.42%) operated under AYUSH facility out of 5190 PHCs operating in urban areas. Further, as on 2019, the status of in-position of manpower at Health and Wellness Centres-Primary Health Centres (HWC-PHCs) in rural areas indicated that 8189 female health workers (ANMs), 4532 lady health visitors (LHV), 1781 male health works, 10137 doctors, 248 AYUSH doctors, 5411 pharmacists, 2893 lab technicians and 10195 nursing staff were serving at HWC-PHCs in rural areas. On the other hand, 3551 female health workers, 131 lady health visitors, 77 male health workers, 1844 doctors, 49 AYUSH doctors, 1025 pharmacists, 1028 lab technicians and 2995 nursing staff were serving at HWC-PHCs in urban areas.²²

Health Wellness Centre - PHCs were equipped with various facilities to provide Health care services both in rural as well as in urban areas. As such, as of 2019, out of total 9976 HWC-PHCs, 8242 HWC-PHCs were operating in rural areas and 1734 HWC-PHCs were operating in urban areas accounting to 82.62 and 17.38 per cent respectively. Out of total 8242 HWC-PHCs operating in rural areas, 6508 HWC-PHCs (78.96%) had provision of bio medical waste management, 6298 HWC-PHCs (76.41%) were connected with internet facility, 5298 HWC-PHCs (64.28%) were equipped with desktop/laptop for medical officer, 4763 HWC-PHCs (57.79%) had facilities for people with disabilities, 4667

²² Rural Health Statistics – 2018.

HWC-PHCs (56.62%) were provided with tablets for ANM, 4425 HWC-PHCs (53.69%) had wellness room for physiotherapy/Yoga and 2439 HWC-PHCs (29.59%) had arrangement for tele-consultation. On the other hand, out of total 1734 HWC-PHCs operating in urban areas, 1223 HWC-PHCs (70.53%) have internet facility, 1129 HWC-PHCs (65.11%) have facilities for bio medical waste management, 986 HWC-PHCs (56.86%) were equipped with desktop/laptop for medical officer, 959 HWC-PHCs (55.31%) have facilities for people with disabilities, 866 HWC-PHCs (49.94%) have wellness room for physiotherapy/yoga, 682 HWC-PHCs (39.33%) have arrangement for tele-consultation and 666 HWC-PHCs (38.41%) provided tablet for ANM.

With regard to in-position manpower status at Health and Wellness Centres – Sub-Centres (HWC-SCs), as on 2019, 10527 female health workers/ANMs, 4092 male health workers and 7028 mid-level health providers were serving in HWC-SCs in rural areas. Further, out of total HWC-SCs, 7269 HWC-SCs (92.94%) were having regular supply of drugs for common ailments, 5501 HWC-SCs (70.34%) had designated space for lab/diagnostic, 4387 HWC-SCs (56.09%) were equipped with tablets for MPWs and MLHPs, 4385 HWC-SCs (56.07%) accessed internet, 3612 HWC-SCs (46.18%) facilitated with deep burial pit for bio-medical waste management, 3496 HWC-SCs (44.70%) has electricity supply along with power backup, 3486 HWC-SCs (44.57%) were attached with wellness room and 1433 HWC-SCs (18.32%) were had the arrangement of tele-consultation.²³

²³ Rural Health Statistics – 2018.

2.5. Conclusion

Health care services are rendered at three levels in India namely primary, secondary and tertiary sector. Sub-Centres, PHCs, CHCs, HWC-SCs, HWC-PHCs, Sub-Divisional/Sub-District hospitals, District Hospitals and Medical Colleges are the major providers of Health care services in India. On the other hand various Health care schemes/ projects are implemented by the Government of India in accordance with the requirement mainly under National Health Mission. With the timely implementation of various schemes and provision of better Health care services, birth rate, death rate as well as natural growth rate have reduced to considerable extent. Life expectancy has also improved considerably. At the same time, mortality rates have also witnessed decrease to greater extent. With effective implementation of various schemes in provision of better health services has resulted in successfully providing preventive and precautionary medical services to major portion of the population, as a result of which timely detection of cases of various diseases has been done and through timely treating those diseases, deaths due to major diseases has be considerably brought down. The supply of health manpower has witnessed increasing trend, but in certain category it has witnessed decreasing trend. For instance, the supply of allopathic doctors, Ayurveda doctors, Siddha doctor, etc. However, the supply of para medical staff has shown continuous increase in its supply. The number of Ayurveda hospitals, Unani hospitals, Homeopathy Hospitals and Sowa-Riga Hospitals has decreased in recent years. With regard to the building position of health institutions it was seen that majority of the health institutions both in rural and urban areas were operating through government buildings and the shortage

buildings were under construction. With respect to the supply of manpower, the supply of health manpower was severely lacking its demand particularly in health institutions in rural areas. Apart from this, health institutions in rural areas were severely lacking with required infrastructure facilities as very few PHCs and CHCs were working in accordance to the PPHS norms. Hence, with the provision of sufficient health manpower to the health institutions along with adequate and updated infrastructure to health institutions particularly to PHCs and CHCs, health services in India will no doubt be reaching the third goal of SDG that is ensure healthy lives and promote wellbeing to all ages and attain the WHO goal i.e., to improve equity in health, reduce health risks, promote healthy lifestyles and settings and respond to the underlying determinants of health.

The following chapter provides an overview of health care service in Karnataka, by studying demographic indicators, socio-economic indicators, health status indicators, human health resources, health infrastructure, supply and demand for health manpower at various health institutions and so on.

Chapter-03

HEALTH CARE SERVICES IN KARNATAKA - AN OVERVIEW

3.1. Prelude

3.2. Health Programmes under Corporate Social Responsibility Fund in Karnataka

3.2.1. Araiike Yojane

3.2.2. Dialysis Units

3.2.3. Mobile Health Clinic

3.2.4. Citizen Help Desk

3.2.5. Contracting MBBS Doctors and Specialists

3.2.6. Lysosomal Storage Disorders (LSD) Proposal under CSR Funds

3.2.7. Hygiene Kits

3.2.8. *Rashtriya Bal Swasthya Karyakram*

3.2.9. Nutrition Rehabilitation Centres/ Modified Nutrition Rehabilitation Centres

3.2.10. Telemedicine

3.3. Other Major Health Schemes in Karnataka

3.3.1. *Jana Sanjivini*

3.3.2. Emergency Medical Services

3.3.3. *Prasooti Araiike Scheme*

-
- 3.3.4. e-Hospitals
 - 3.3.5. e-Arogya
 - 3.3.6. Teleradiology
 - 3.3.7. Virtual Clinic
- 3.4. Health Insurance Schemes in Karnataka**
- 3.4.1. *Jyothi Sanjeevini*
 - 3.4.2. Universal Health Scheme
 - 3.4.3. *Vajpayee Arogya Shree*
 - 3.4.4. *Rajiv Arogya Bhagya*
 - 3.4.5. *Janani Suraksha Yojana*
 - 3.4.6. *Indradhanush*
 - 3.4.7. *Arogya Karnataka Programme*
- 3.5. Health Profile of Karnataka**
- 3.5.1. Demographic Indicators
 - 3.5.2. Socio-Economic Indicators
 - 3.5.3. Health Status Indicators
 - 3.5.4. Health Human Resources
 - 3.5.5. Health Infrastructure
- 3.6. Conclusion**
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Chapter-03

HEALTH CARE SERVICES IN KARNATAKA - AN OVERVIEW

3.1. Prelude

After studying the development and status of health care service delivery system in India, the present chapter makes an attempt to study the status and delivery system of health care services in Karnataka state. As such, through its effective measures in health sector, Karnataka state has been providing comprehensive and quality health care services to its people which has resulted in their well-being. With a view to provide better health facilities in rural areas it has implemented various health schemes and programmes. Well in advance the central government initiated PHCs and health centres, the state was providing preventive, promotional and rehabilitation care to the aspirants through primary health units. As of 2019, the state is provided required health care services through 9438 Sub-Centres, 2359 PHCs, 207 CHCs, 146 Sub-Divisional hospitals and 15 District hospitals.¹

With a view to enable its people to access to good health care, the state is providing qualitative health care facilities consistently to its people through its health policy goals which constituted provision of integrated and widespread primary health care, establishment of reliable and justifiable referral system, encouraging PPP, to better served untapped and underserved areas, reinforce health infrastructure, improve health human resources, access quality drugs at inexpensive prices and so on.²

¹ Rural Health Statistics – 2018.

² <https://www.karnataka.com/govt/health/>.

Health care infrastructure in Karnataka is provided through three level system *viz.*, primary, secondary and tertiary level. The Sub-Centres, PHCs and CHCs constitute the primary level, district hospitals at the secondary level and the third level by medical colleges and speciality hospitals. Further, with the intention of Health for all and Health everywhere, the state is providing qualitative health care services under Corporate Social Responsibility (CSR). With the determination that success of public health programmes largely depends in active participation of corporates and NGOs, Karnataka state is open for the CSR way to improve health pointers and health care setup in the state.³

3.2. Health Programmes under Corporate Social Responsibility Fund in Karnataka

In order to meet their social responsibility, enterprises, through Corporate Social Responsibility get involved themselves in the process of integrating social, environmental and consumer concerns in their routine business activities with collaboration with their stakeholders. Government of Karnataka with the motto ‘Health for All and Health Everywhere’ along with the objective of H&FW Department to facilitate qualitative health care services to its people under the vision to guarantee accessibility of quality health care for all with the mission to deliver widespread and quality health care amenities which will equalize regional imbalances, has implemented a series of new programs beside strengthening of the existing ones. On the other hand, in order to ensure the success of the programs through effective execution, the state government has opened up itself for CSR

³ [https://ehealth.eletsonline.com/2017/03/karnataka-hails-csr-in-health care/](https://ehealth.eletsonline.com/2017/03/karnataka-hails-csr-in-health-care/).

support in implementing the schemes. As such, the following schemes/ programs are implemented in the state with CSR support.

3.2.1. Araiike Yojane

The main purpose of this scheme is to provide pure drinking water and room to stay with all facilities equipped. This scheme is for the patient's attendants. However, this scheme is planned to be implemented in 21 district hospitals and 146 taluk hospitals.

3.2.2. Dialysis Units

Dialysis which is indispensable for the end phase renal syndrome patients is to be provided at the affordable cost to the needy particularly to the middle class and poor people. The existing cost of dialysis in private setup is too high. However, dialysis provided through government is out of reach to all as only 6 dialysis machines are functioning in each district headquarters out of them some of not functioning. With a view to provide dialysis facilities at cheaper rate, government is planning to setup dialysis centres equipped with 2 machines at each taluk under PPP mode which will be working through trained nurses. These centres will be functioning six days of the week with two shifts per day.⁴

3.2.3. Mobile Health Clinic

With the view to make stronger the rural health care infrastructure, mobile health clinics were launched which constituted a doctor, nurse, pharmacists, lab technician and junior health assistant. This project was launched with the intention to take health care facilities to the doorsteps of tribals residents of southern forest

⁴ https://idd.karnataka.gov.in/storage/pdf-files/67b_Dialysis_Gulbarga.pdf.

areas of the state. These health clinics equipped with GPS facility and digital recording of the patient's details, daily visited two villages to examine the patients and provide necessary medicines. Apart from this, these mobile clinics created awareness about health care issues.⁵

3.2.4. Citizen Help Desk

Though government has provided effective public health care facilities with considerable infrastructure, but still due to lack of awareness about these particularly in urban and semi-urban areas it was not used to the maximum extent. With the intention to boost the awareness about the available services through counselling, confidence building and redressing patient's grievances, Citizens Help Desk was initiated at district hospitals. Further, the government proposes to establish Citizen Help Desk at 146 taluk level hospitals in association with CSR mode.⁶

3.2.5. Contracting MBBS Doctors and Specialists

In order to overcome the severe scarcity of medical and para-medical manpower of all categories and at all levels, Government of Karnataka under H&FW department in hiring the services of doctors and specialists to serve at district and taluk level hospitals and also to serve at CHCs. Further, private hospitals and practitioners are approached to support in this service by coming forward to serve once or twice in a week in catering to the needs of the poor patients.⁷

⁵ <https://ehealth.eletsonline.com/2018/08/karnataka-16-mobile-clinics-rolled-out-to-strengthen-rural-infrastructure/>.

⁶ <https://dreamindianetworkproject.wordpress.com/projects/citizen-help-desk/>.

⁷ <https://karunadu.karnataka.gov.in/hfw/kannada/Documents/Brief%20note%20on%20C>.

3.2.6. Lysosomal Storage Disorders (LSD) Proposal under CSR Funds

High cost treatment of LSD has made several families to be away from this treatment. At the same time non-coverage of insurance for this treatment under RSBY and RBSK has made the accessibility of this treatment out of reach for many families. In this context, it would be the responsibility of the society to assist those families in economic terms. As such, CSR can come in the way of supporting the patients by assisting them in Enzyme Replacement Therapy.⁸

3.2.7. Hygiene Kits

This scheme was introduced with two major intentions. First to inspire poor pregnant women to get delivered in health centres or at hospitals which will minimise maternal as well as infant mortality and the second intention was to provide effectively postnatal care for both mother and child. This kit is provided free of cost to BPL families upto two live births. In providing this kit CSR support if felt to be very essential by the government.⁹

3.2.8. Rashtriya Bal Swasthya Karyakram

Under this programme, children from new born till 18 years will be put under screening at different levels to identify their health conditions and channelize them for appropriate timely treatment if required. Under this programme, the first level screen will be undertaken at the delivery points, second level will be from 48 hours after the birth upto 6 weeks done by ASHA workers, then outreach screening done from 6 weeks upto 6 years at Anganwadi centres and

⁸ <https://ehealth.eletsonline.com/2017/03/karnataka-hails-csr-in-health-care/>.

⁹ <https://karunadu.karnataka.gov.in/hfw/kannada/Documents/Brief%20note%20on%20C>.

last stage of screening done from 6 years to 18 years in school. However, when child is referred to any treatment, it will be provided free of cost.¹⁰

3.2.9. Nutrition Rehabilitation Centres/Modified Nutrition Rehabilitation Centres

Chronic malnutrition and acute malnutrition considerably contributing to mortality was found more among children aged below 2 years who failing to undergo timely and quality treatment might fail to attain their full potential. Hence, those children are to be treated with intensive feeding to overcome underweight and have physical stimulation in the form of NRCs and MNRCs. Nutrition Rehabilitation Centres are units to treat children with severe malnutrition and MNRCs are rehabilitation centres severe acute malnutrition children referred by PHCs are treated with trained doctors and nurses.¹¹ In Karnataka, 32 NRCs with 10 to 20 bed capacity are functioning at district level out of which 21 are functioning through district hospitals and 11 through medical colleges. At taluk level, 27 MRCs with 5 beds capacity are operating through identified taluk level hospitals.¹²

3.2.10. Telemedicine

On one hand, the scarcity of specialists and on the other hand to provide specialist health care facilities at the grass root level Tele-medicine plays vital role. It is a system where medication at remote locations is carried out through electronic information through video conferencing. Under this system, instant

¹⁰ <https://vikaspedia.in/health/nrhm/national-health-programmes-1/rashtriya-bal-swasthya-karyakram-rbsk>.

¹¹ <http://www.nrhmp.gov.in/sites/default/files/files/Nutrition.pdf>.

¹² https://karunadu.karnataka.gov.in/hfw/nhm/pages/nutrition_nrc.aspx.

medical facilities the centres were able to provide to patients of remote areas which reduced the time in accessing higher level hospitals. This system gave birth to primary health centre management information system which would maintain and make available information with regard to patient treatment, diagnosis, drugs accessibility and so on. This system also provided information regarding execution of welfare schemes at PHCs level. The first stage of telemedicine centres constituted eight district hospitals and three taluk hospitals under the hub centres connecting Jayadeva Institute of Cardiology Bengaluru, St. John's Medical College hospital Bengaluru, Narayana Hrudayalaya Bengaluru, NIMHANS Bengaluru and JSS hospital at Mysuru from where expert advice would be accessed. In the second stage additional 11 district hospitals were networked with hub centres at Bowring and Lady Curzon hospital, Indira Gandhi child health institute and Institute of Nephro and Urology centre. Initially telemedicine operated through V-SAT connectivity by ISRO but later since 2010 telemedicine facilities operated through broadband connectivity. CSR by facilitating technical assistance can considerably improve telemedicine facility.¹³

3.3. Other Major Health Schemes in Karnataka

Other than CSR funded or assisted health schemes, Government of Karnataka has initiated various health schemes and programs, among which few are as follows:

3.3.1. *Jana Sanjivini*

With the main intention of establishing generic counter at hospitals coming under F&W Department this scheme was introduced. Presently, 40 generic

¹³ <https://www.isro.gov.in/update/08-apr-2002/inauguration-of-karnataka-telemedicine-project>.

counters are operating at 40 different hospitals. Under this scheme, the government collaborated with Hindustan Latex Limited to facilitate services in generic counters. Apart from this, this scheme offered surgical implants, diagnostics centres and medical imaging centres at 14 selected hospitals across the state.¹⁴

3.3.2. Emergency Medical Services

To facilitate transportation of the patient to the hospital within 10 minutes for emergency medical services along with first aid facility this scheme was introduced. This emergency facility can be accessed by dialling 108 or 577 round the clock. Under this scheme, 577 state-owned ambulances are operating on 24x7 bases to cater medical emergency.¹⁵

3.3.3. Prasooti Araiike Scheme

This scheme is particularly for SC and ST pregnant women of the state coming under BPL. The main purpose of this scheme is to make available qualitative health care during pregnancy period and also to economically empower them through financial assistance of ₹ 1000 for pregnant women. The scheme is limited for the first two live births.¹⁶

3.3.4. e-Hospitals

In order to facilitate electronic based collection, storage, retrieval and transfer of information to health care providers this project is implemented. This project district and taluk hospitals are networked so that health care providers can

¹⁴ <https://www.medlife.com/blog/karnataka-govt-health-schemes-insurance>.

¹⁵ Ibid.

¹⁶ <https://govinfo.me/prasooti-araiike-scheme-pregnant-women/>.

use this system whenever necessary. This system will bring down the errors as trained manpower enters the data into the system. However, this project was also intended to be expanded to PHCs level through tab-based MIS software.¹⁷

3.3.5. e-Arogya

In the way of digitalising the working process of ASHA, an android tablet-based application was developed by Tejasco Techsoft. This software enabled for quick transfer of information collected at field level to central server which in turn facilitated to generate report and analyse the same for enhanced tele-medicine. It also played crucial role in facilitating video-based health awareness programme.¹⁸

3.3.6. Teleradiology

The H&FW department in association with KEONICS implemented this project to enhance patient care by enabling radiologists to provide services without virtually being present at the location of the patient. This system enabled efficient and effective usage of specialist for remote areas where high level medical facilities were not available to full extent. This service was carried out by ANMs through tabs provided to them. Initially this project was implemented at nine selected hospitals which were later extended to remaining ones.¹⁹

3.3.7. Virtual Clinic

It is a project implemented by the government to provide remote treatment where physical treatment was found to be agnostic. This project operated under cloud technology where through vigorous health record platform, patient's record

¹⁷ <https://ehealth.eletsonline.com/2017/04/karnataka-telemedicine-system-in-2335-phcs/>.

¹⁸ Ibid.

¹⁹ Ibid.

with regard to virtual clinic, real clinic and real hospital along with other treatment procedures were accommodated and were retrieved in accordance with requirement.²⁰

3.4. Health Insurance Schemes in Karnataka

Along with various health schemes, Government of Karnataka has introduced a series of health insurance schemes in the state for the benefit of the people who find it difficult to afford quality health care services both at urban as well as in rural areas. The following are few major health schemes introduced by the state government to economically empower the poor people in accessing qualitative medical facilities.

3.4.1. Jyothi Sanjeevini

This scheme was implemented with the intention to enable state government employees along with their family members to avail medical facilities. Under this scheme the beneficiaries were entitled to avail free of cost doctor consultation, ward, operations and medicines. Also the beneficiaries were entitled to avail cardiology, neurology, paediatric surgery, burns, polytrauma, oncology and neonatal surgery under this scheme.²¹

3.4.2. Universal Health Scheme

This scheme could be availed by all the people of the state. The main purpose of this scheme was to channelize the medical services aspirants from private hospital to government hospitals. As such, those aspirants who have taken

²⁰ <https://ehealth.eletsonline.com/2017/04/karnataka-telemedicine-system-in-2335-phcs/>.

²¹ <http://arogya.karnataka.gov.in/sast/English/index.php/site-map/2017-12-20-22-15-29/jss/50-jyothi-sanjeevini-scheme>.

treatment facilities in government hospital are entitled to avail this facility. However, in the situation of non-availability of required treatment facility at the government hospitals, there is a provision to enable patient to avail the required medical treatment at the private hospital through this scheme.²²

3.4.3. Vajpayee Arogya Shree

For the benefit of BPL families this scheme was implemented. Under this scheme, the beneficiaries covering 5 members of his/her family will be entitled to avail medical treatment upto ₹ 1.5 lakh. Under this scheme, the beneficiary can avail medical treatment with regard to cardiovascular diseases, cancer, neurological diseases, kidney diseases and burns. However, therapy and surgery is also included under this scheme.²³

3.4.4. Rajiv Arogya Bhagya

This scheme is particularly for APL families implemented with the view to enable them to avail faster accessibility of medical services. Under this scheme the beneficiaries are entitled to avail medical facilities with related to cancer, neurology, cardiovascular, burns, paediatric surgery and polytrauma. Under this scheme ICU and medicine expenses were to be borne by the beneficiaries only which accounted to about 30 per cent of the total hospital charges.²⁴

3.4.5. Janani Suraksha Yojana

With the intention to reduce maternal and neo-natal mortality among BPL card holder women this scheme was introduced. In the state this scheme is

²² <https://www.medlife.com/blog/karnataka-govt-health-schemes-insurance/>.

²³ <http://www.sast.gov.in/home/details/>.

²⁴ <https://healthnewsreporting.com/schemes-and-policies/rajiv-arogya-bhagya-rab-scheme-know-in-details-about-it/>.

operating under NHM with the view to offer safe and healthy pregnancy for those who cannot manage to pay for hospitalization. The beneficiaries registered under this scheme will possess JSY card to undergo effective antenatal check-up and post-delivery care through structured medical workers. The beneficiaries under this scheme will be entitled to avail financial benefit of ₹ 700 and 1500 in case of normal and caesarean deliveries. However, minimum age requirement is 19 age.²⁵

3.4.6. Indradhanush

In order to immunize children against polio, measles, tetanus and hepatitis B, Indradhanush was implemented. The main task of this scheme is to look that by 2020, the third world countries are free from these diseases. This mission is being implemented in four phases, first phase from 7th April 2015 covering districts of Bengaluru, Ballari, Kalaburagi, Koppala, Raichur and Yadgir, second phase from October 2015 covering Bagalkot, Bijapur, Dharwad and Ramanagra, third phase from 7th April 2016 remaining districts and fourth phase from 7th February 2017 covering Dakshina Kannada and other districts.²⁶

3.4.7. Arogya Karnataka Programme

This scheme was introduced by the Government of Karnataka in March 2018. With the implementation of this scheme, Karnataka state turned out to be the first state in India to introduce universal health care to its people. Under this scheme all residents of Karnataka can avail quality medical facilities irrespective of caste, creed, sex, etc. Further, under this scheme medical treatment upto ₹ 1.5 lakh would be availed by any single family. However, this scheme provided free

²⁵ https://www.nhp.gov.in/janani-suraksha-yojana-jsy-_pg.

²⁶ <https://vikaspedia.in/health/nrhm/national-health-programmes-1/mission-indhradhanush>.

medical facilities for BPL families and for APL families 30 per cent would be borne by the government. This facility could be availed through registration at any hospital either government or private. Presently, under this network, there are 916 hospitals. However, beneficiaries could avail quality medical treatment in 490 hospitals across the state where majority are private hospitals.²⁷

3.5. Health Profile of Karnataka

Government of Karnataka is playing a vital role in providing quality health care services through its wide range of health institutions. In the state, health care services is offered as offered at the central level in three tier system through Sub-Centres, PHCs, CHCs, Sub-divisional/Sub-district Hospitals, District Hospitals and Medical Colleges. In the state, health care services are provided based on Minimum Needs Programme, NRHM, NLEP, NTCP, NPCB and NVBDCP. Health Services in the state are provided in terms of Urban Health Services, Rural Health Services, Community Health Centres, Family Welfare/ Mother and Child Health Programme, Community Needs Assessment Approach, Reproductive and Child Health Services Programme, Urban Health Centres, etc.²⁸ As on 31st March 2021, the state, with the network of 9724 Sub-Centres, 2400 PHCs, 6314 PHCs/SCs HWCs 204 CHCs, 155 Taluk Hospitals/ Sub-Divisional Hospitals, 25 District Hospitals, 51 other hospitals under HFW and 52 Autonomous and Teaching Hospitals catered the medical needs of the people.²⁹ Table 3.1 presents the status of health infrastructure from Sixth Plan upto Twelfth Plan.

²⁷ <https://pmjandhanyojana.co.in/karnataka-arogyabhagya-scheme-health-card/>.

²⁸ http://www.gazetteer.kar.nic.in/gazetteer/hand%20book/Chapter-11_415-446.pdf.

²⁹ Karnataka at a Glance – 2020-21, p. 245.

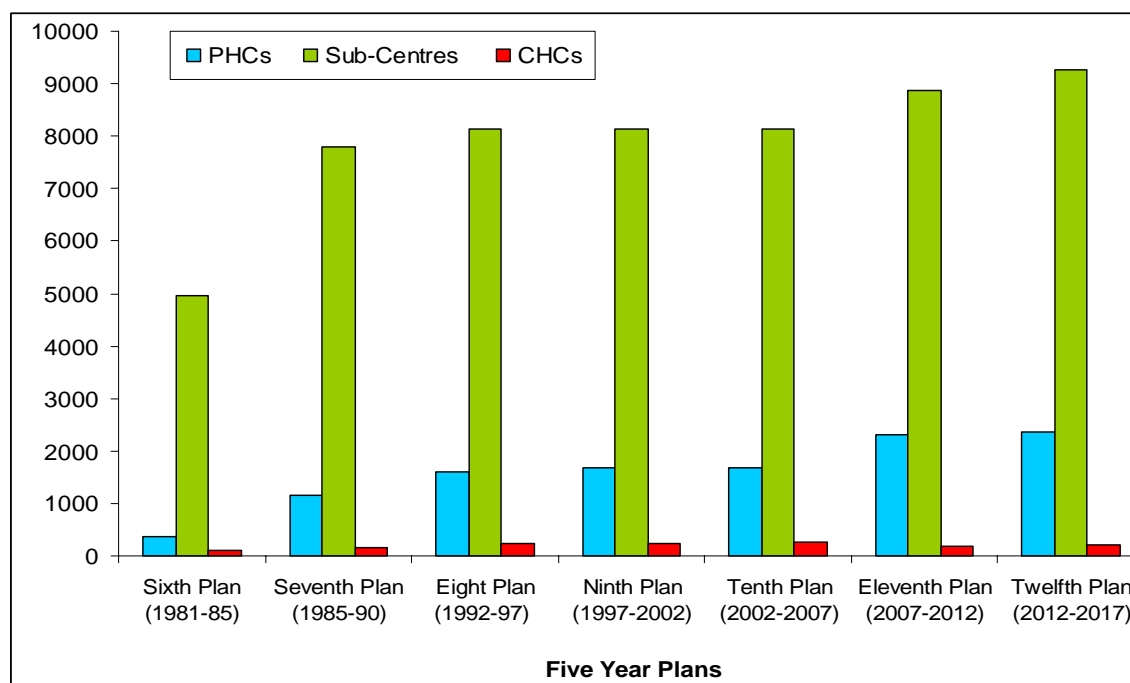
Table 3.1
Basic Health Infrastructure in Karnataka under Five Year Plans

Five Year Plans	PHCs	Sub-Centres	CHCs
(01)	(02)	(03)	(04)
Sixth Plan (1981-85)	365	4964	98
Seventh Plan (1985-90)	1142	7793	156
Eight Plan (1992-97)	1601	8143	242
Ninth Plan (1997-2002)	1676	8143	249
Tenth Plan (2002-2007)	1679	8143	254
Eleventh Plan (2007-2012)	2310	8871	180
Twelfth Plan (2012-2017)	2353	9264	206

Note: * As on March 2015.

Source: Five Year Plans, Planning Commission, New Delhi.

Figure 3.1
Basic Health Infrastructure in Karnataka under Five Year Plans



The data in Table 3.1 and Figure 3.1 presents the status of basis health infrastructure in Karnataka state under various five-year plans. As such, it could be observed that the growth of PHCs Sub-Centres and CHCs had highest growth

from Sixth plan to Seventh plan as the growth in PHCs, Sub-Centres and CHCs accounted to 212.88, 56.99 and 59.18 per cent respectively when compared to growth in other plans. However, the growth in PHCs was found to be at higher level when compared to the growth Sub-Centres and CHCs in the state under various plans. Further, PHCs had growth rate of 30.50 per cent per plan period as against 9.32 and 11.20 per cent per plan period respectively with regard to the growth of Sub-Centres and CHCs. As such, by the end of Twelfth plan, in the state, PHCs increased by 544.66 per cent, while the increase in Sub-Centres and CHCs recorded to be at 86.62 and 110.20 per cent respectively. The growth of PHCs during Eleventh plan was considerably high compared to the growth in Sub-Centres which remained constant from Eighth plan to Eleventh plan. On the other hand, during Eleventh plan CHCs decreased by 29.13 per cent when compared to Tenth plan and slightly increased in the next plan. Figure 3.1 presenting the growth of PHCs, Sub-Centres and CHCs measures various plan periods on the horizontal axis and growth on the vertical axis. The bar representing PHCs exhibits gradual growth, while the bar representing Sub-Centres exhibits higher growth in Eighth plan which remained constant till Tenth plan and bar representing CHCs shows decreased in Eleventh plan.

3.5.1. Demographic Indicators

As per Census 2011, Karnataka state had total population of 61095297 out of which male and female accounted to 50.69 and 49.31 per cent respectively (30966657 and 3012864 out of 61095297) with sex ratio at 973 females for every

1000 male. The population density worked out to be at 319 inhabitants per square kilometre and decadal growth rate stood at 15.6 per cent.³⁰

The following table presents projected population in Karnataka state for the period 2023 to 2030.

Table 3.2
Projected Population of Karnataka, 2023 to 2030 ('000)

Year	Male	Female	Total
(01)	(02)	(03)	(04)
2023	34342	33350	67692
2024	34557	33558	68115
2025	34772	33766	68538
2026	34987	33975	68962
2027	35158	34142	69300
2028	35328	34309	69638
2029	35499	34477	69976
2030	35670	34644	70314

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, pp. 26-30.

The projected population as reported in National Health Profile-2021 is as presented in Table 3.2 which denotes that by 2030 total population, in the state, might reach 70314000 out of which male population might be 35670000 and female population might be 34644000.

The crude birth rate and death rate, in Karnataka, as presented in Table 3.3 reveals decreasing trend in crude birth rate and increasing trend in crude death rate.

³⁰ National Health Profile - 2021, p. 13.

Table 3.3
Crude Birth Rate and Death Rate in Karnataka from 2001 to 2035

Period	Crude Birth Rate	Crude Death Rate
(01)	(02)	(03)
2001–2005	19.3	7.0
2006–2010	17.8	7.0
2011–2015	16.6	7.6
2016–2020	14.6	7.7
2021–2025	13.0	7.8
2026–2030	12.0	8.2
2031–2035	11.7	8.6

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, p. 52-53.

The crude birth rate had decreased at higher rate compared to the increase in the crude death rate as crude birth rate might decrease by 7.60 per cent by 2031-35 compared to 2001-2005, while crude death rate might increase by 1.60 per cent for the same period.

The level of life expectancy at birth for the period 2001-2005 upto 2016-2020 is as presented in Table 3.4 along with prediction for the period 2021-2025 upto 2031-2035.

Table 3.4
Level of Expectation of Life at Birth in Karnataka, 2001-2035

Period	Male	Female	Overall
(01)	(02)	(03)	(04)
2001–2005	64.5	69.6	67.1
2006–2010	66.5	71.1	68.8
2011–2015	67.2	70.9	69.1
2016–2020	68.7	72.1	70.4
2021–2025*	69.7	73.3	71.5
2026–2030*	70.7	74.3	72.5
2031–2035*	71.5	75.3	73.4
Average	68.4	72.4	70.4

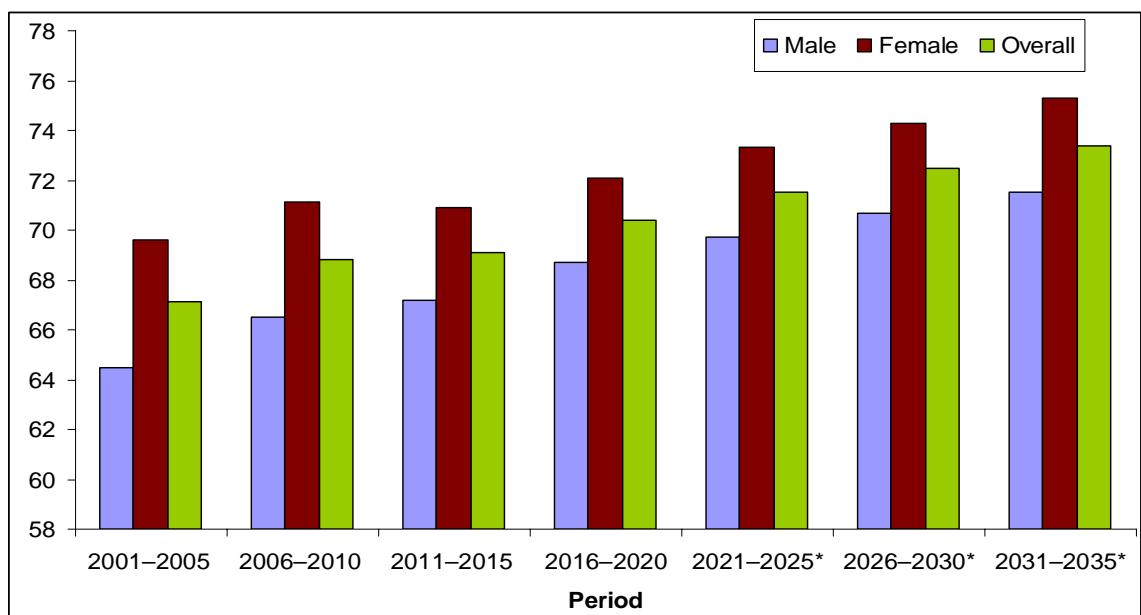
*Note: * Projected.*

Source: National Health Profile 2018, CBHI, MH&FW, New Delhi, pp. 27, 60.

It could be noted by the data in Table 3.4 that, on an average, female (72.4 years) had higher level of life expectancy compared to men (68.4 years), while the overall life expectancy stood at 70.4 years. Further, life expectancy of male recorded steady increase, while that of female dropped during 2011-2015, but increased thereafter. For the period between 2001-2005 upto 2016-2020, life expectancy of male increased by 6.51 per cent against female which increased by 3.59 per cent. The predicted values indicate that by period 2031-2035, overall life expectancy might further increase by 4.26 per cent and reach 73.4 years compared to life expectancy to 2016-2020. Similarly, life expectancy of male and female might increase by 4.08 and 4.44 per cent respectively and accordingly reach 71.5 years and 75.3 years.

Figure 3.2 presenting level of expectation of life at birth in Karnataka state for the period 2001-2035 measures periods on the horizontal axis and life expectation on vertical axis.

Figure 3.2
Level of Expectation of Life at Birth in Karnataka, 2001-2025



The data in Table 3.5 presents infant mortality rates in terms of gender and area of residence in Karnataka during 2015 and 2020 where it was evident that infant mortality rate decreased by 25 per cent during 2020 compared to 2015 where the decrease in rural areas (-23.33%) was at higher level compared to urban areas (-21.74%). At the same time, the decrease in infant mortality rate in female stood at -26.67 per cent against decrease in male infant mortality rate by -23.08 per cent during 2020 compared to 2015.

Table 3.5

Infant Mortality Rate by Sex and Residence in Karnataka as on 2015 and 2020

Particulars		2015	2020	% Change
(01)	(02)	(03)	(04)	(05)
Rural	Male	28	22	-21.43
	Female	32	23	-28.13
	Total	30	23	-23.33
Urban	Male	22	15	-31.82
	Female	25	21	-16.00
	Total	23	18	-21.74
Total	Male	26	20	-23.08
	Female	30	22	-26.67
	Total	28	21	-25.00

Source: National Health Profile 2018, CBHI, MH&FW, New Delhi, pp. 32-33, 63-65.

3.5.2. Socio-Economic Indicators

In examining the socio-economic indicators of the state, it was observed that the according to Census 2011, the state had total literacy rate of 75.4 per cent

where male and female literacy rate stood at 82.5 and 68.1 per cent indicating that literacy rate of male was higher than female. Similarly, literacy rate in urban areas (85.8%) stood at higher level compared to rural areas (68.7). However, in urban areas, male literacy rate was 90 per cent against female with 81.4 per cent. In rural areas, male and female literacy rate stood at 77.6 and 59.7 per cent respectively.³¹

With regard to the gross enrolment of the state, as of 2019-20, girl's gross enrolment in all categories was found to be at higher level compared to boy's enrolment. Further, it was observed that gross enrolment at higher secondary level was very poor which accounted to 52.1 per cent (boys 48.0 and girls 56.5) when compared to gross enrolment rate at elementary level which stood at 105.0 per cent (primary level 107.40 and upper primary level 101.1). However, gross enrolment at primary education stood at 107.4 per cent (boys' 107.9 per cent and girls' 106.9%) and at upper primary level at 101.1 per cent (boys' 101.2 per cent and girls' 100.9%). At the same time, gross enrolment at secondary level stood at 86.4 per cent (boys' 87.4 per cent and girls' 85.3%).³²

Housing and amenities play vital role in determining the status of hygiene. Households dwelling under various roof types, accessibility of safe drinking water, status and type of toilet connectivity, surrounding condition, etc. are few major ones. Couple of concepts regarding housing and amenities are presented in the following tables. As such, the data in Table 3.6 presents households by predominant material of roof in Karnataka as per Census 2011.

³¹ National Health Profile – 2021, p. 105.

³² Ibid, p. 107.

Table 3.6**Households by Predominant Material of Roof in Karnataka as per 2011 Census**

Particulars of Roof	No. of Houses	Percentage
(01)	(02)	(03)
Grass, Thatch, Bamboo, Wood, Mud, etc.	1502510	11.4
Plastic Polythene	65900	0.5
Handmade Tiles	1265271	9.6
Machine made Tiles	3321338	25.2
Brick	65900	0.5
Stone/ Slate	1120292	8.5
GI, Metal, Asbestos Sheets	2174685	16.5
Concrete	3624476	27.6
Other Materials	39540	0.3
Total*	13179911	100

Note: * Households excluding Institutional Households.

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, p. 119.

From the data in the above Table, presenting households dwelling under different types of roof reveals that majority of the households in the state resided in houses either with concrete roof (27.6%) or machine-made tiles roof (25.2%) altogether accounting to 52.8 per cent. Further, residents dwelling under the roof made out of GI, Metal, Asbestos sheets accounted to 16.5 per cent of the total households followed by 11.4 per cent residing under the roof made from grass, thatch, bamboo, wood, and so on. Households dwelling under the roof made with handmade tiles and stone/slate accounted to 9.6 and 8.5 per cent, while marginal percentage of households in the state lived in houses with roof material as plastic polythene (0.5%), brick (0.5%) and other materials (0.3%).

Along with proper housing facility, safe drinking water is another factor in the way of hygiene. Safe drinking water influencing the health condition of human being determines the status of health in the long run. As such, the data in Table 3.7 presents various sources of water in the state to the households.

Table 3.7
Households with Safe Drinking Water Facilities in Karnataka as per 2011 Census

Water Facilities		No. of Houses	Percentage
(01)		(02)	(03)
Tap water		8711921	66.1
Well		1186192	9.0
Hand Pump		724895	5.5
Tube Well		2095606	15.9
Spring		39540	0.3
River/ Canal		105439	0.8
Tank, Pond, Lake		118619	0.9
Other sources		197699	1.4
Total*		1317991	100
Availability of Drinking Water Source	Within the Premises	5865060	44.5
	Near the Premises	4916107	37.3
	Away	2398744	18.2
Total*		13179911	100

Note: * Households excluding Institutional Households.

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, p. 121.

As per the data in the table, tap water forms major sources of drinking water as 66.1 per cent of the households had tap water. The next major source was tube well which accounted to 15.6 per cent. As such, tap water and tube well as the sources of drinking water accounted to 82 per cent of the total households. Further, 9.00 and 5.5 per cent of the total households had well and hand pump as the major sources of drinking water. While remaining 3.5 per cent of the

households had other sources of drinking water like spring, river/canal, tank/pond/lake, etc. On the other hand, the data in the table revealed that 44.5 per cent of the households' availed drinking water within the premises and 37.3 per cent availed drinking water near the premises, while remaining 18.2 per cent had accessibility of drinking water away from their premises.

Toilet facility is also as important as water and housing facility to have good health. The type of toilet used and its connectivity has its own impact on health. The data in Table 3.8 presents households by availability of toilet connectivity in Karnataka state as per Census 2011.

Table 3.8

Households by Availability of Toilet Connectivity in Karnataka as per 2011 Census

Toilet Connectivity		No. of Houses	Percentage
(01)		(02)	(03)
Latrine within premises		6748114	51.2
No latrine within premises		6431797	48.8
Total		13179911	100
Latrine within premises			
Flush/ pour flush latrine connected to	Piped sewer system	2991840	22.7
	Septic tank	1713388	13.0
	Other system	158159	1.2
Pit Latrine	With stab/ ventilated improved pit	1739748	13.2
	Without stab/ open pit	39540	0.3
Service Latrine	Night soil disposed into open drain	65900	0.5
	Night soil removed by human	13180	0.1
	Night soil serviced by animal	26360	0.2
Total*		6748114	51.2
No Latrine within premises	Public Latrine	500837	3.8
	Open	5930960	45.0
Total*		6431797	48.8

Note: * Households excluding Institutional Households.

Source: National Health Profile 2011, CBHI, MH&FW, New Delhi, p. 135.

The data in Table 3.8 reveals that in the state households with latrine and with no latrine within premises were almost evenly divided as both accounted to 51.2 and 48.8 per cent respectively. Further, among those having latrine within premises, majority of them were having flush/ pour flush latrine connected to piped sewer system (22.7%) followed by flush/pour flush latrine connected to septic tank (13.0%). With regard to households having pit latrine, majority of them were having pit latrine with stab/ ventilated improved pit (13.2%), while marginal households were having pit latrine without stab or open pit (0.3%). Among households using service latrine, the percentage of households using service latrine where night soil was disposed into open drain, night soil removed by animal and night soil serviced by human accounted to 0.5, 0.1 and 0.2 per cent respectively. Among 48.8 per cent of the households having no latrine within premises, majority of them used open toilet (45.0%) and marginal percentage of 3.8 per cent used public latrine.

The data in Table 3.9 presents households by availability of type of drainage in Karnataka as per Census 2011.

Table 3.9
Households by Availability of Type of Bathing, Drainage and Kitchen
Facilities in Karnataka as per 2011 Census

Particulars		No. of Houses	Percentage
(01)		(02)	(03)
No. of houses having bathing facility within premises	Bathroom available	9858573	74.8
	Bathing in enclosure without roof	1515690	11.5
	No bathroom	1805648	13.7
	Total*	13179911	100
Type of Drainage	Closed drainage	3439957	26.1
	Open drainage	4560249	34.6
	No drainage	5179705	39.3
	Total*	13179911	100
Kitchen	Kitchen available	11545602	87.6
	Cooking without kitchen	1014853	7.7
	Cooking in open	342678	2.6
	No cooking	276778	2.1
	Total*	13179911	100

Note: * Households excluding Institutional Households.

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, p. 137.

From the data in Table 3.9 presenting the status of bathing facility, drainage facility and availability of kitchen at households it could be inferred that about three fourth of the total households (74.8%) had bathroom facility in their houses, while households with bathing facility in enclosure without roof and household with no bathroom within premises accounted to 11.5 and 13.7 per cent respectively.

With regard to drainage facility, it was observed that in the state drainage facility was not very satisfactory as only about one fourth (26.1%) of the

households had closed drainage against 34.6 per cent of the households having open drainage. Still majority of them accounting to 39.3 per cent had no drainage facility.

With respect to kitchen facility, in the state majority of the households (87.9%) had kitchen facility in their houses and very few (7.7%) cooked without kitchen at their houses. However, the households cooking in open space and households who did not cooked accounted to 2.6 and 0.3 per cent respectively.

The data in Table 3.10 presents slum households by their conditions in Karnataka state as per Census 2011.

Table 3.10

Slum Households by their Conditions in Karnataka as per 2011 Census

Particulars		No. of Houses	Percentage
(01)		(02)	(03)
Residence	Good	411799	57.44
	Liveable	275171	38.38
	Dilapidated	29928	4.17
	Total	716898	100
Residence cum other use	Good	5831	51.24
	Liveable	5119	44.99
	Dilapidated	429	3.77
	Total	11379	100
Total	Good	417630	57.34
	Liveable	280290	38.49
	Dilapidated	30357	4.17
	Total	728277	100

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, p. 139.

The surrounding of the household also influences the health condition of the human being. As such, it is important to have favourable and hygienic surrounding to have better living condition. According to the data, it could be observed that out of total households, 98.44 of the total households used their houses only for dwelling purpose against marginal percentage of 1.56 per cent of the total households using their houses for residence cum other use. However, majority of them had good condition house accounting to 57.34 per cent and 38.49 per cent of them had liveable condition houses against 4.17 per cent of the houses which were dilapidated. Among households using their house only for residence purpose, majority of the household's dwelling premises were good which accounted to 57.44 per cent followed by 38.38 per cent of them at liveable condition. However, 4.17 per cent of them had dilapidated houses to dwell with it. On the other hand, among households using houses for dwelling cum other use, 51.24 per cent of them had good condition houses, 44.29 per cent of them had liveable condition houses and 3.77 per cent of them had dilapidated houses which they use for residence cum other use.

3.5.3. Health Status Indicators

Karnataka government through its series of schemes and programmes is striving hard to provide qualitative health care services through its institutions at various levels which had brought down the cases and deaths due to various diseases. Through its effective programmes and schemes, it is considerably

identifying the cases under various diseases and thorough timely treatment deaths due to various diseases have declined to a considerable extent.

The status of cases detected and deaths occurred due to major diseases in the state for the period between 2017 and 2020 is as presented in Table 3.11 which clearly shows that the cases detected under major diseases has considerably decreased. At the same time, deaths due to malaria has not occurred which indicates that all cases detected under this disease was successfully cured during the period 2017 upto 2020, while in other diseases though deaths have occurred, but stands at marginal per cent against cases detected.

Table 3.11
Cases and Deaths due to Major Diseases in Karnataka

Particulars		2017	2018	2019	2020	Total	Mean	% Change
(01)		(02)	(03)	(04)	(05)	(06)	(07)	(08)
Malaria	Cases	7381	5721	3499	1701	18302	4576	-76.95
	Deaths	0	0	0	0	0	0	--
Acute Encephalitis Syndrome	Cases	332	380	397	310	1419	355	-6.63
	Deaths	2	5	4	0	11	3	--
Japanese Encephalitis	Cases	26	35	33	17	111	28	-34.62
	Deaths	2	5	4	0	11	3	--
Dengue	Cases	17844	4427	16986	3823	43080	10770	-78.58
	Deaths	10	4	13	0	27	7	--
Chikungunya*		32831	20411	43698	16111	113051	28263	-50.93

Note: * Cases Suspected.

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, pp. 153-162.

As such, from the data in the above Table it was observed that decrease in cases detected under Dengue disease stood at 78.58 per cent by 2020 compared to 2017, which was followed by decrease in Malaria disease with 76.95 per cent, Chikungunya by 50.93 per cent Japanese Encephalitis by 34.62 per cent and Acute Encephalitis Syndrome decreasing by 6.63 per cent. Along with decrease in the cases detected under various diseases, deaths due to those diseases was considerably low as the percentage of deaths against Japanese Encephalitis cases detected was 9.91 per cent followed by Acute Encephalitis Syndrome with 0.78 per cent and Dengue with 0.06 per cent, which indicates that in the state, the quality and timely treatment imparted by the concerned authorities was successful in tackling the diseases to the maximum extent.

The data in Table 3.12 presents the status of cases detected and deaths occurred due to other major diseases during 2020 compared to 2016 in gender break-ups. Accordingly, the cases detected recorded considerable decrease in all major types of diseases except cases detected under Pneumonia which increased by 67.50 per cent during 2020 compared to 2016 (from 18377 to 30781 cases) where the increase in male cases was 74.59 per cent against female with 58.61 per cent.

Table 3.12

Cases and Deaths due to Other Major Diseases in Karnataka

Diseases		2016			2020			% Change		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)
Acute Diarrhoeal Diseases	Cases	482730	447722	930452	364060	349804	713864	-24.58	-21.87	-23.28
	Deaths	2	2	4	1	3	4	-50.00	50.00	0.00
Typhoid	Cases	51773	45720	97493	46478	42080	88558	-10.23	-7.96	-9.16
	Deaths	0	1	1	0	0	0	-	-	-
Acute Respiratory Infection	Cases	1081104	991317	2072421	742333	693834	1436167	-31.34	-30.01	-30.70
	Deaths	63	36	99	112	54	166	77.78	50.00	67.68
Tetanus other than Neonatal	Cases	2015	1578	3593	162	94	256	-91.96	-94.04	-92.88
	Deaths	104	54	158	4	0	4	-96.15	-100.00	-97.47
Diphtheria	Cases	1395	1204	2599	1	3	4	-99.93	-99.75	-99.85
	Deaths	101	75	176	0	0	0	-	-	-
Whooping Cough	Cases	306	198	504	192	164	356	-37.25	-17.17	-29.37
	Deaths	0	0	0	0	0	0	-	-	-

Contd....

Measles	Cases	286	238	524	69	84	153	-75.87	-64.71	-70.80
	Deaths	0	0	0	0	0	0	-	-	-
Viral Hepatitis	Cases	3398	2615	6013	2252	1492	3744	-33.73	-42.94	-37.73
	Deaths	11	6	17	0	0	0	-	-	-
Pneumonia	Cases	10221	8156	18377	17845	12936	30781	74.59	58.61	67.50
	Deaths	219	134	353	534	280	814	143.84	108.96	130.59
Meningococcal	Cases	57	150	207	14	17	31	-75.44	-88.67	-85.02
	Deaths	3	3	6	0	0	0	-	-	-
Syphilis	Cases	1009	765	1774	236	303	539	-76.61	-60.39	-69.62
	Deaths	0	0	0	0	0	0	-	-	-
Gonococcal	Cases	1145	2903	4048	897	1606	2503	-21.66	-44.68	-38.17
	Deaths	0	0	0	0	0	0	-	-	-
Chicken Pox	Cases	472	401	873	258	225	483	-45.34	-43.89	-44.67
	Deaths	0	0	0	0	0	0	-	-	-
Encephalitis	Cases	181	130	311	117	86	203	-35.36	-33.85	-34.73
	Deaths	7	3	10	4	5	9	-42.86	66.67	-10.00

Source: National Health Profile 2021, CBHI, MH&FW, New Delhi, pp. 167-209.

In all other major diseases which recorded decreasing trend maximum decrease was recorded with regard to Diphtheria which decreased by 99.85 per cent as in 2020 only 4 cases (1 male and 3 female) were detected against 2599 cases (1395 male and 1204 female) detected during 2016. This was followed by Tetanus other than Neonatal which decreased by 92.88 per cent where 256 cases (162 male and 94 female) were detected against 3593 (2015 male and 1578 female) cases during 2020 and 2016 respectively. The decrease was at lower level with regard to Typhoid as it decreased only by 9.16 per cent during 2020 compared to 2016 as 88558 cases (46478 male and 42080 female) were detected during 2020 against 97493 cases (51773 male and 45720 female) during 2016. However, the decrease in the cases detected under Meningococcal (85.02%), Measles (70.80%), Syphilis (69.62%), Chicken Pox (44.67%), Gonococcal (38.17%), Viral Hepatitis (37.73%), Encephalitis (34.73%), Acute Respiratory Infection (30.70%), Whooping Cough (29.37%) and Acute Diarrhoeal Disease (23.28%) ranged between 23 to 85 per cent.

With regard to deaths due to major diseases, from the data in Table 3.12, it was evident that very low per cent of deaths have occurred on one hand and on the other hand, even if deaths have occurred it was at marginal rate which was less than 6 per cent during 2016 and 4.5 per cent during 2020. However, maximum decrease in deaths was recorded in case of Tetanus other than Neonatal accounting to 97.47 per cent (from 158 to 4 deaths) followed by Encephalitis accounting to 10 per cent (from 10 to 9 deaths), while maximum increase in deaths was recorded by Pneumonia at 130.59 per cent (from 353 to 814 deaths) followed by Acute Respiratory Infection at 67.68 per cent (99 to 166 deaths). In all other cases no

deaths were recorded. At the same time, the percentage of deaths against cases detected during 2020 with regard to Encephalitis stood at 4.43 per cent (9 deaths out of 203 cases detected) followed by Pneumonia (814 deaths out of 30781 cases detected) and Tetanus other than Neonatal (4 deaths out of 256 cases detected) with 5.65 and 1.56 per cent respectively, while in Acute Respiratory Infection (166 deaths out of 1436167 cases detected) and Acute Diarrhoeal Diseases (4 deaths out of 713864 cases detected) with 0.0116 and 0.0006 per cent respectively.

As of 2019, in the state, major causes for deaths were Diseases of Circulatory System (29.7%), Diseases of Respiratory System (10.9%), Certain Infectious and Parasitic Diseases (9.0%), Injury Poisoning and Certain Other consequences of External Causes (8.1%), Neoplasm (7.9%), Endocrine, Nutritional and Metabolic Diseases (7.1%), Certain Conditions Originating in Perinatal Period (6.7%), Symptoms, Signs and Abnormal Clinical and Laboratory Findings (3.0%) and others (17.8%).³³

3.5.4. Health Human Resources

Allopathic doctors, surgeons, practitioners under AYUSH, nurses, pharmacists, health workers, ANMs, ASHA and so on form health human resources. The services of all well trained health human resources are vital to delivery qualitative health care services. As such, the following tables present the status of health human resources in Karnataka state. The data in Table 3.13 presents registered allopathic doctors and dental surgeons in Karnataka state for the period from 2009 to 2020.

³³ National Health Profile – 2021, p. 95.

Table 3.13
Registered Allopathic Doctors and Dental Surgeons in Karnataka

Year	Allopathic Doctors	Dental Surgeons	Year	Allopathic Doctors	Dental Surgeons
(01)	(02)	(03)	(04)	(05)	(06)
2009	3721	25612	2017	5002	41602
2010	4557	27750	2018	5301	41601
2011	3727	29579	2019	6306	43876
2012	4207	29579	2020	NA	43876
2013	4772	32951	Total	47111	421673
2014	833	32951	Average	4283	35139
2015	4251	34768	CV	31.77	18.38
2016	4434	37528	CAGR	5.42	5.02

Note: NA: Not Available

Source: National Health Profile – 2021, CBHI, MH&FW, New Delhi, pp. 352-356.

The data presented in the above Table regarding registered allopathic doctors and dental surgeons in Karnataka state for the period 2009 to 2020 reveals that the supply of dental surgeons was in more compared to allopathic doctors as for the mentioned period totally there were 47111 allopathic doctors and 421673 dental surgeons. On an average 4283 allopathic doctors and 35139 dental surgeons got registered every year in the state. Further, the variations in the supply of allopathic doctors were observed to be at higher level with CV at 31.77 per cent against supply of dental surgeons exhibiting to be slightly consistent with CV at 18.38 per cent. For the period 2009 to 2020, the supply of allopathic doctors increased by 5.42 per cent per annum against the dental surgeons at the rate of 5.02 per cent per annum which increased allopathic doctors by 69.47 per cent

(from 3721 to 6306 allopathic doctors) by 2019 compared to dental surgeons by 71.31 per cent (from 25612 to 43876 dental surgeons) by 2020 when compared to 2009.

The data in Table 3.14 presents information with regard to registered practitioners under AYUSH system of medicines in Karnataka state for the period between 2010 and 2019.

Table 3.14
Registered Practitioners under AYUSH in Karnataka

Year	Ayurveda	Unani	Siddha	Naturopathy	Homoeopathy	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
2010	25246	1487	4	335	6546	33618
2011	26819	1426	4	375	7074	35698
2012	26819	1426	4	375	7541	36165
2013	29904	1620	4	460	7998	39986
2014	30850	1697	4	486	8349	41386
2015	31652	1727	4	554	8553	42490
2016	33334	1840	4	676	8849	44703
2017	33869	1948	4	745	13156	49722
2018	35886	2074	5	911	9450	48326
2019	35886	2074	5	911	9490	48366
Average	31027	1732	4	583	8701	42046
CV	12.30	14.32	10.04	37.22	21.10	13.64
CAGR	3.98	3.77	2.51	11.76	4.21	4.12

Source: 1) Statistical Year Book, <http://www.mospi.gov.in/statistical-year-book-india/2019/199>.
2) National Health Profile – 2020, CBHI, MH&FW, New Delhi, pp. 349, 359.

From the data in Table 3.14 it was studied that registered practitioners under AYUSH system of medicine increased by 43.87 per cent (from 33168 to 48366 AYUSH practitioners) during the period 2010 to 2019. On an average, for the period between 2010 and 2019, the supply of AYUSH practitioners stood at 42046 practitioners per year which had growth rate of 4.12 per cent per annum as a result of which AYUSH practitioners increased from 33618 practitioners in 2010 to 48366 practitioners by the year 2019. In AYUSH practitioners, majority of them were Ayurveda doctors accounting to 73.79 per cent of the total AYUSH practitioners followed by Homeopathy doctors accounting to 20.69 per cent. Further, the share of Unani and Naturopathy practitioners accounted to 4.12 and 1.39 per cent, while Siddha practitioners marginally accounted to 0.01 per cent. Naturopathy practitioners recorded highest growth rate which was closely followed by growth in Homeopathy practitioners and then by Ayurveda, Unani and Siddha practitioners as they had annual growth rate of 11.76, 4.21, 3.98, 3.77 and 2.51 per cent per annum respectively. Higher degree of variations in the supply of Naturopathy practitioners was observed with CV at 11.76 per cent against more consistent in the supply of Siddha practitioners with CV at 2.51 per cent.

Table 3.15 presents status of registered auxiliary nursing midwives, registered nurses and midwives and lady health visitor/ health supervisor in Karnataka for the period between 2008 and 2020. On an average, the supply of registered auxiliary nursing midwives, registered nurses and midwives and lady health visitors stood at 51942, 195795 and 6840 respectively. The supply of lady health visitors/health supervisors was almost stagnant throughout the period, while

the supply of registered nurses and midwives recorded highest growth rate at the rate of 0.96 per cent per annum against registered auxiliary nursing midwives which increased its supply at the rate of 6.47 per cent per annum. By 2020 compared to 2008, with the given growth rates, registered nurses and midwives increased by 112.24 per cent followed by auxiliary nursing midwives increasing by 12.17 per cent and lady health visitors or health supervisors marginally increasing by 0.03 per cent.

Table 3.15
Registered Nurses and Lady Health Visitors in Karnataka

Year	Auxiliary Nursing Midwives	Registered Nurses and Midwives	Lady Health Visitors/ Health supervisors
(01)	(02)	(03)	(04)
2008	48174	109140	6838
2009	48509	136421	6839
2010	49546	163695	6840
2011	51109	187053	6840
2012	52145	202283	6840
2013	NA	NA	NA
2014	54039	231643	6840
2015	54039	231643	6840
2016	54039	231643	6840
2017	55876	268633	6841
2018	54039	231643	8507
2019	NA	NA	NA
2020	54039	231643	6840
Average	52323	202313	6991
CAGR	0.96	6.47	0.00

Source: 1) Statistical Year Book, <http://www.mospi.gov.in/statistical-year-book-india/2018/199>.
2) National Health Profile – 2020, CBHI, MH&FW, New Delhi, pp. 351, 361.

The data in Table 3.16 presents government allopathic doctors and dental surgeons serving in government hospitals in Karnataka state for the period from 2011 upto 2017. The table also presents total number of government hospitals functioning in the state along with bed strength.

3.5.5. Health Infrastructure

a) Educational Infrastructure

As of 2020, in the state, 60 medical colleges with admission capacity of 9345 students were operating out of which 41 (68.33%) were private colleges with admission capacity of 6445 students and 19 (31.67%) were government colleges with admission capacity of 2900 students.³⁴ Under AYUSH system of medicine, as on April 2019, 102 colleges with admission capacity of 8606 students were functioning. Among them, 73.53 per cent (75 out of 102 colleges) were Ayurveda colleges with admission capacity of 6343 students, 13.73 per cent (14 out of 102 colleges) were Homeopathy colleges with admission capacity of 1339 students, 6.86 per cent (7 out of 102 colleges) were Yoga & Naturopathy colleges with admission capacity of 560 students and 5.88 per cent (6 out of 102 colleges) were Unani colleges with admission capacity of 364 students.³⁵

³⁴ National Health Profile – 2021, p. 385.

³⁵ Ibid, p. 411.

b) Service Infrastructure

As of 2020-21, in the state, 36101 hospitals with bed strength of 223954 was functioning along with 38364 doctors (5998 government doctors and 32366 private doctors), 44065 medical shops and 267 blood banks.³⁶

As of 2019, in the state, 227 hospitals and 724 dispensaries were functioning. Among AYUSH hospitals majority of them were Ayurveda hospitals which accounted to 79.30 per cent (180 out of 227 hospitals) followed by Unani hospitals accounting to 8.81 per cent (20 out of 227 hospitals), Homeopathy hospitals with 7.93 per cent (18 out of 227 hospitals), Naturopathy hospitals with 2.64 per cent (6 out of 227 hospitals) and Yoga hospitals with 1.32 per cent (3 out of 227 hospitals).³⁷ For the period from 2010 to 2019, Ayurveda hospitals recorded growth of 35.34 per cent (from 133 to 180 Ayurveda hospitals) and Unani hospitals with 42.86 per cent (from 14 to 20 Unani hospitals), while there was no growth in remaining AYUSH system of hospitals.

At the same time, in the state, 724 dispensaries under AYUSH system of medicine were functioning out of which 577 (79.70%) were Ayurveda dispensaries, 64 (8.84%) were Unani dispensaries, 62 (8.56%) were Homeopathy dispensaries and 21 (2.90%) were Naturopathy dispensaries.³⁸

The status of health institutions under rural and urban break-ups operating in Karnataka state as on 2020 is as presented in Table 3.16.

³⁶ Karnataka at a Glance – 2020-21, p. 247.

³⁷ National Health Profile – 2021, p. 433.

³⁸ Ibid.

Table 3.16
Health Institutions Functioning in Rural and Urban Areas of Karnataka
as on 2020

Health Institutions (01)	In Numbers			In Percentage		
	Rural (02)	Urban (03)	Total (04)	Rural (05)	Urban (06)	Total (07)
Sub-Centres	9188	247	9435	97.38	2.62	100
PHCs	2176	358	2534	85.87	14.13	100
CHCs	189	19	208	90.87	9.13	100
HWC-SC			1517			
HWC-PHC			720			
HWC-UPHCs			336			
Total HWC			2573			
Sub-Divisional Hospitals		150	150			
District Hospitals		26	26			
Medical Colleges			19			

Source: National Health Profile – 2021, pp. 415-416.

From the data in the above Table it could be inferred that Sub-Centres, PHCs and CHCs were widely spread over in rural areas compared to urban areas. With regard to Sub-Centres out of total 9435 Sub-Centres functioning in the state, 97.38 per cent of them were operating in rural areas and only 2.66 per cent operated in urban areas. Further, out of total 2534 PHCs functioning in the state, 85.87 per cent were operating in rural areas and 15.43 per cent in urban areas. Similarly, out of 208 CHCs functioning in the state, 90.87 per cent of them were operating in rural areas, while 9.13 per cent in urban areas. Further, 2573 HWCs were functioning in the state where majority of them were HWC-SC accounting to 58.96 per cent followed by HWC-PHC accounting to 27.98 per cent and remaining 13.06 were HWC-UPHCs. With regard to Sub-Divisional Hospitals and District Hospitals which are the major health care institutions in urban areas, in the state as

of 2020, there were 150 Sub-divisional hospitals, 26 District hospitals and 19 Medical Colleges.

The data in Table 3.17 presents building position of various health institutions functioning in the rural areas of the state.

Table 3.17

Building Positions of Health Institutions Functioning in Rural Areas of Karnataka as on 2018-19

Particulars	2005	2019	% Change
(01)	(02)	(03)	(04)
Building position for Sub-Centres and HWC-SCs			
Total No. of Sub-Centres functioning	8143	9188	12.83
Government building	4460	5075	13.79
Rented building	2893	1481	-48.81
Rent free buildings	790	2632	233.16
Buildings required to be constructed	3683	4113	
Building position for Primary Health Centres and HWC-PHCs			
Total No. of PHCs functioning	1681	2176	29.45
Government building	1439	2020	40.38
Rented building	92	69	-25.00
Rent free buildings	150	87	-42.00
Buildings required to be constructed	242	156	
Building position for Community Health Centres			
Total No. of CHCs functioning	254	189	-25.59
Government building	207	181	-12.56
Rented building	0	8	
Rent free buildings	47	0	
Buildings required to be constructed	47	8	

Source: Rural Health Statistics – 2019-20, MH&FW, New Delhi, pp. 92-94 and 139-141.

According to the data in the above Table, it could be noted that number of PHCs and HWC-PHCs had increased by 26.53 per cent by 2019 compared to 2005, while number of SC and HWC-SC had increased by 12.83 per cent against decrease in the number of CHCs by 25.59 per cent. Majority of the SC & HWC-SCs, PHCs & HWC-PHCs and CHCs were functioning in government buildings which also have increased by 2019 compared to 2005. As such, the increase in SCs & HWC-SCs by 2019 compared to 2005 was about 13.79 per cent (from 4460 to 5075 SC & HWC-SCs), while number of SCs & HWC-SCs functioning in rented building during 2019 decreased by 48.81 per cent (from 4460 to 1481 SCs & HWC-SCs), for the same period, SC & HWC-SC functioning in rent free buildings increased by 233.16 per cent (from 790 to 2632 SCs & HWC-SCs). Similar situation was observed with regard to PHCs & HWC-PHCs where units functioning in government buildings increased by 40.38 per cent (from 1439 to 2020 PHC & HWC-PHCs), while units functioning in rented building and rent free buildings decreased by 25.0 and 42.0 per cent respectively (from 92 to 69 PHC & HWC-PHCs and from 150 to 87 PHC & HWC-PHCs). With respect to the CHCs, it was noted that number of CHCs operating in government building increased decreased by 12.56 per cent (from 207 to 181 CHCs) which was due to the decrease in the number of CHCs operating. However, out of 189 CHCs functioning, 8 CHCs were operating in rented buildings. It was noted that, as on 2019, for about 44.76 per cent (4113 out of 9188 SCs & HWC-SCs) of the total SCs & HWC-SCs functioning in the state buildings were required to be constructed. For PHCs & HWC-PHCs and CHCs buildings required to be constructed was less than 2 per cent of the total units functioning.

The building position of health institution functioning in urban areas of the state, as on 2019, is as presented in Table 3.18.

Table 3.18
Building Positions of Health Institutions Functioning in Urban Areas of Karnataka as on 2019

Particulars		PHCs & HWC-PHCs	CHCs
(01)		(02)	(03)
Total number Institutions functioning		358	19
Institutions functioning in	Government Buildings	234	19
	Rented Buildings	73	0
	Rent Free Panchayat	51	0
Building required to be constructed		124	0

Source: Rural Health Statistics – 2018-19, MH&FW, New Delhi, pp. 186-187.

The data in Table 3.18 reveals that, as of 2019, all CHCs functioning in the urban areas of the state were functioning in government buildings only. With regard to PHCs & HWC-PHCs, out of total 358 PHC and HWC-PHCs, 65.36 per cent (234 out of 358 PHCs & HWC-PHCs) of them were operating through government buildings, 20.39 per cent (73 out of 358 PHCs & HWC-PHCs) of them were operating from rented buildings and remaining 14.25 per cent (51 out of 358 PHCs & HWC-PHCs) in rented buildings which indicated that about 34.63 per cent (124 out of 358 PHCs & HWC-PHCs) of the total PHCs & HWC-PHCs functioning required buildings to be constructed.

c) Health Manpower

The status of health manpower at health institutions in rural areas of Karnataka state is as presented in Table 3.18 which indicated that at manpower at PHCs level were in better off compared to CHCs and SCs. With regard to SCs and HWC-SCs level, it was noted that about 70.07 per cent (7727 in position out of 11028 sanctioned) of the sanctioned female health workers were in position, 29.93 per cent (3301 vacant out of 11028 sanctioned) were vacant against the sanctioned positions and 15.90 per cent (1461 shortfall out of 9188 required) were shortfall against the required manpower, while with regard to male health workers, about 62.99 per cent (3394 in position out of 5538 sanctioned) of the sanctioned were in position, 37.01 per cent (1994 vacant out of 5388 sanctioned) were vacant against the sanctioned positions and 63.06 per cent (5794 shortfall out of 9188 required) were shortfall against the required manpower indicating that shortage of male health workers were severely short against shortage of female health works at SCs and HWC-SCs.

With regard to PHCs and HWC-PHCs, the situation was quite opposite as there were surplus manpower against required ones with regard to female health workers, doctors, AYUSH doctors and nursing staff. As such, 308.82 per cent (6720 sanctioned against 2176 required posts) of the required female health workers were sanctioned out of which 83.99 per cent (5644 in position out of 6720 sanctioned posts) of them were in position leaving 16.01 per cent (1076 vacant out of 6720 sanctioned posts) vacant. However, 159.38 per cent (3468 excess against 2176 required) were in surplus against the required female health workers at PHCs and HWC-PHCs.

Table 3.19

Health Manpower at Health Institutions in Rural Areas of Karnataka as on 2020

Particulars (01)	Required (02)	Sanctioned (03)	In position (04)	Vacant (S-P) (05)	Shortfall (R-P) (06)	
Sub-Centres and HWC-SCs						
Health Worker (Female)/ ANM	9188	11028	7727	3301	1461	
Health Worker (Male)	9188	5388	3394	1994	5794	
Primary Health Centres and HWC-PHCs						
Health Worker (Female)/ ANM	2176	6720	5644	1076	*	
Health Assistant	4352	4129	2914	1215	1438	
Doctors	2176	2323	2071	252	*	
AYUSH Doctors	2176	297	356	*	*	
Pharmacists	2176	2057	1549	508	627	
Laboratory Technicians	2176	1702	1515	187	661	
Nursing Staff	2176	2754	3137	*	*	
Community Health Centres						
AYUSH Specialist	189	27	21	6	168	
Surgeons	189	71	28	43	161	
Obstetricians & Gynaecologists	189	180	119	61	70	
Physicians	189	78	24	54	165	
Paediatricians	189	170	81	89	108	
Total Specialists	756	499	252	160	505	
Anaesthetists	189	157	63	94	126	
Eye Surgeons	189	23	9	14	180	
General Duty Medical Officers	Allopathic	378	190	181	9	197
	AYUSH	189	57	85	*	104
Radiographers	189	152	122	30	67	
Pharmacists	189	310	200	110	*	
Laboratory Technicians	189	220	210	10	*	
Nursing Staff	1323	1820	1604	216	*	

Note: *: Surplus.

Source: Rural Health Statistics – 2019-20, MH&FW, New Delhi, pp. 145-167.

The situation of health assistants was quite opposite to that of health workers where 94.88 per cent (4129 sanctioned against 4352 required) of the required posts were sanctioned and 70.57 per cent (2914 against 4129) of the sanctioned posts were in position leaving 29.43 per cent (1215 in position against 4129 sanctioned) vacant resulting in 33.04 per cent (1438 shortfall against 4352 required) of shortfall against required position.

With regard to doctors, 106.76 per cent (2323 sanctioned against 2176 required posts) of the required post were sanctioned where 89.15 per cent (2071 in position against 2323 sanctioned) of the sanctioned were in position and remaining 10.85 per cent (252 vacant against 2323 sanctioned) were vacant. Doctors at PHCs and HWC-PHCs were about 6.76 per cent (147 excess against 2176 required) surplus against required posts. The situation of AYUSH doctors was totally different as only 13.65 per cent (297 sanctioned against 2176 required) of the required posts were sanctioned, but 119.87 per cent (356 position against 297 sanctioned) of the sanctioned posts were in position indicating that there was no vacant posts or surplus posts. With regard to pharmacists, 94.53 per cent (2057 sanctioned against 2176 required) of the required posts were sanctioned, where 75.30 per cent (1549 in position against 2057 sanctioned) of the sanctioned were in position and 24.70 per cent (508 vacant against 2057 sanctioned) were vacant indicating that 28.81 per cent (627 shortfall against 2176 required) was shortfall against required posts. Similar situation was observed with regard to laboratory technicians where 78.22 per cent (1702 sanctioned against 2176 required) of the required posts were sanctioned and 89.01 per cent (1515 in position against 1702 sanctioned) out of the sanctioned were in position leaving 10.99 per cent

(187 vacant against 1702 sanctioned) vacant and 30.38 per cent (661 shortfall against 2176 required) to be shortfall against required posts. With regard to nursing staff, 126.56 per cent (2754 sanctioned against 2176 required) of the required posts were sanctioned where 113.91 per cent (3137 were in position against 2754 sanctioned) of the sanctioned posts were in position indicating that there were no vacant nor shortfall of nursing staff at PHCs and HWC-PHCs operating in rural areas in the state.

At CHCs majority of the posts were in short except pharmacists, laboratory technicians, nursing staff and AYUSH duty doctor. As such, about 14.29 per cent of the required AYUSH specialists was sanctioned were 77.78 per cent of the sanctioned posts were in position leaving 22.22 per cent vacant and 88.89 per cent short against required posts. Likewise, about 37.57 per cent of the required surgeon posts were sanctioned where 39.44 per cent of the sanctioned posts were in position leaving 60.56 per cent vacant and 85.19 per cent short fall against required posts. With regard to obstetricians and gynaecologists, 95.24 per cent of the required posts were sanctioned out of which 66.11 per cent of the sanctioned posts were in position leaving 33.89 per cent vacant and 37.04 per cent shortfall. With regard to physicians, 41.27 per cent (78 sanctioned against 189 required) of the required posts were sanctioned out of which 30.77 per cent (24 in position against 78 sanctioned) of the sanctioned posts were in position leaving 69.23 per cent (54 vacant against 78 sanctioned) vacant and 87.30 per cent shortfall (165 shortfall against 189 required). With regard to paediatricians, 89.95 per cent (170 sanctioned against 189 required) of the required posts were sanctioned out of which 47.65 per cent (81 in position against 170 sanctioned) of the sanctioned

posts were in position leaving 52.35 per cent (89 vacant against 170 sanctioned) vacant and 57.14 per cent shortfall (108 shortfall against 189 required). Out of total specialists, 66.01 per cent (499 sanctioned against 756 required) of the required posts were sanctioned out of which 50.50 per cent (252 in position against 499 sanctioned) of the sanctioned posts were in position leaving 49.50 per cent (247 vacant against 499 sanctioned) vacant and 66.67 per cent shortfall (504 shortfall against 756 required). With regard to anaesthetists, 83.07 per cent (157 sanctioned against 189 required) of the required posts were sanctioned out of which 40.13 per cent (63 in position against 157 sanctioned) of the sanctioned posts were in position leaving 59.87 per cent (94 vacant against 157 sanctioned) vacant and 66.67 per cent shortfall (126 shortfall against 189 required). With regard to eye surgeons, 12.17 per cent (23 sanctioned against 189 required) of the required posts were sanctioned out of which 39.13 per cent (9 in position against 23 sanctioned) of the sanctioned posts were in position leaving 60.87 per cent (14 vacant against 23 sanctioned) vacant and 95.24 per cent shortfall (180 shortfall against 189 required). With regard to general duty medical officer (allopathic), 50.26 per cent (190 sanctioned against 379 required) of the required posts were sanctioned out of which 95.26 per cent (181 in position against 190 sanctioned) of the sanctioned posts were in position leaving 4.74 per cent (9 vacant against 190 sanctioned) vacant and 52.12 per cent shortfall (197 shortfall against 379 required). With regard to general duty medical officer (AYUSH), 30.16 per cent (57 sanctioned against 189 required) of the required posts were sanctioned out of which 149.12 per cent (85 in position against 57 sanctioned) of the sanctioned posts were in position indicating that 49.12 per cent (28 vacant against sanctioned)

were excess against sanctioned posts and 55.03 per cent shortfall (104 shortfall against 189 required). With regard to radiographers, 80.42 per cent (152 sanctioned against 189 required) of the required posts were sanctioned out of which 80.26 per cent (122 in position against 152 sanctioned) of the sanctioned posts were in position leaving 19.74 per cent (30 vacant against 152 sanctioned) vacant and 35.45 per cent shortfall (67 shortfall against 189 required). With regard to pharmacists, 164.02 per cent (310 sanctioned against 189 required) of the required posts were sanctioned and out of which 64.52 per cent (200 in position against 310 sanctioned) were in position where 35.48 per cent (110 vacant against 310 sanctioned) of the sanctioned posts were vacant. However, 5.82 per cent of the required posts were in surplus (11 excess against 189 required). With regard to laboratory technicians, 116.40 per cent (220 sanctioned against 189 required) of the required posts were sanctioned and out of which 95.45 per cent (210 in position against 220 sanctioned) were in position where 4.55 per cent (10 vacant against 220 sanctioned) of the sanctioned posts were vacant. However, 11.11 per cent of the required posts were in surplus (21 excess against 189 required). With regard to nursing staff, 137.57 per cent (1820 sanctioned against 1323 required) of the required posts were sanctioned and out of which 88.13 per cent (1604 in position against 1820 sanctioned) were in position where 11.87 per cent (216 vacant against 1820 sanctioned) of the sanctioned posts were vacant. However, 21.24 per cent of the required posts were in surplus (281 excess against 1323 required).

The status health manpower at District Hospitals and Sub-District Hospitals is as presented in Table 3.20.

Table 3.20**Health Manpower at District Hospitals/Sub-District Hospitals/Sub-Division Hospitals in Karnataka as on 2020**

Health Manpower	Sanctioned	In position	Vacant
(01)	(02)	(03)	(04)
Doctors (District Hospitals)	595	677	*
Para Medical Staff (District Hospitals)	2539	2311	228
Doctors (Sub District/ Sub Divisional Hospitals)	1769	1396	373
Para Medical Staff (Sub District/ Sub Divisional Hospitals)	5927	3887	2040

Source: Rural Health Statistics – 2019-20, MH&FW, New Delhi, pp. 168-169.

The data in Table 3.19 indicates that except doctors at District Hospitals all other health manpower were in short. As such, about 113.78 per cent (677 in position against 595 sanctioned) of the sanctioned posts were in position indicating that 13.78 per cent (82 excess against 595 sanctioned posts) of the posts were in excess against sanctioned posts. With regard to paramedical staff, 91.02 per cent (2311 in position against 2539 sanctioned posts) of the sanctioned posts were in position leaving 8.98 per cent (228 vacant against 2539 sanctioned posts) vacant. At the sub divisional hospitals, about 78.91 per cent (1396 in position against 1769 sanctioned posts) of the sanctioned posts were in position leaving 21.09 per cent (373 vacant against 1769 sanctioned posts) vacant, while among paramedical staff, about 65.58 per cent (3887 in position against 5927 sanctioned posts) of the sanctioned posts were in position leaving 34.42 per cent (2040 vacant against 5927 sanctioned posts) vacant.

The status of health manpower in health institutions functioning in urban areas of Karnataka state is as presented in Table 3.21 where it was evident that in PHC and HWC-PHCs, except female health workers, other manpower viz. doctors, pharmacists, laboratory technicians and nursing staff, though in position posts were excess than the sanctioned posts, but were less than the required posts. With regard to CHCs, pharmacists were in excess to the required posts.

Table 3.21

Health Manpower at Health Institutions in Urban Areas of Karnataka as on 2020

Health Manpower	Required	Sanctioned	In position	Vacant	Shortfall
(01)	(02)	(03)	(04)	(05)	(06)
Primary Health Centres and HWC-PHCs					
Health Worker (Female)/ ANM	1790	1209	1039	170	751
Doctors	358	350	356	*	2
Pharmacists	358	292	300	*	58
Laboratory Technicians	358	286	319	*	39
Nursing Staff	358	498	584	*	*
Community Health Centres					
Total Specialists	76	64	60	4	16
Anaesthetists	19	16	7	3	12
Eye Surgeons	19	0	1	*	18
General Duty Medical Officers (Allopathic)	38	21	15	6	23
Radiographers	19	10	9	1	10
Pharmacists	19	23	24	*	*
Laboratory Technicians	19	19	28	*	*
Nursing Staff	133	196	184	12	*

Note: *: Surplus.

Source: Rural Health Statistics – 2019-20, MH&FW, New Delhi, pp. 188 -199.

The data in the above Table revealed that about 67.57 per cent (1209 sanctioned against 1790 required posts) of the required posts were sanctioned where about 85.94 per cent (1039 in position against 1209 sanctioned posts) of the sanctioned posts were in position leaving 14.06 per cent (170 vacant out of 1209 sanctioned posts) vacant where shortfall was 41.96 per cent (751 shortfall against 1790 required posts) against required posts. Further, with regard to doctors, about 97.77 per cent (350 sanctioned against 358 required posts) of the required posts were sanctioned, while the percentage of in position accounted to 101.71 per cent (356 in position against 350 sanctioned posts) of the sanctioned posts indicating that in position posts were about 1.71 per cent (6 excess to sanctioned post) excess than the sanctioned posts. However, the percentage of shortfall stood at about 0.56 per cent (2 shortfall against 358 required posts) of the required posts. Further, with regard to pharmacists, though 81.56 per cent (292 sanctioned against 358 required) of the required posts were sanctioned, but the percentage of in position posts stood at 102.74 per cent (300 in position against 292 sanctioned) against the sanctioned posts indicating that 2.74 per cent (8 in excess against 292 sanctioned) of in position posts were in excess against sanctioned post. However, about 16.20 per cent (58 shortfall against 358 required) were shortfall against the required posts. With regard to laboratory technicians, again, though 79.89 per cent (286 sanctioned against 358 required) of the required posts were sanctioned, but the in position posts accounted to 111.54 per cent (319 in position against 286 sanctioned) against the sanctioned posts exhibiting about 11.54 per cent (33 in excess against 286 sanctioned) in position posts to be excess against sanctioned posts. However, about 10.89 per cent (39 shortfall against 358 required) was

shortfall against the required posts. With regard to nursing staff, the sanctioned posts were about 139.11 per cent (498 sanctioned against 358 required) against required posts and in position posts were about 117.21 per cent (584 in position against 498 sanctioned) more against sanctioned posts which indicated that in position posts were about 17.27 per cent (86 in excess against 498 sanctioned) in excess against sanctioned posts and 63.13 per cent (226 in excess against 358 required) in excess against required posts.

Health manpower at CHCs functioning in urban areas was found to be similar to that of PHCs as some were in excess and some were in short. As such, among total specialists, 84.71 per cent (64 sanctioned against 76 required) of the required posts were sanctioned out of which 93.75 per cent (60 in position against 64 sanctioned) were in position leaving 6.75 per cent (4 vacant against 64 sanctioned) vacant against sanctioned posts and 21.05 per cent (16 shortfall against 76 required) shortfall against required specialists. With regard to anaesthetists, 84.21 per cent (16 sanctioned against 19 required) were sanctioned against required posts out of which 43.75 per cent (7 in position against 16 sanctioned) were in position leaving 56.25 per cent (9 vacant against 16 sanctioned) vacant against sanctioned and 63.16 per cent (12 shortfall against 19 required) shortfall against required posts. The situation of eye surgeons was slightly different as out of required 19 posts none were sanctioned, but one post was in position indicating that 94.74 per cent (18 shortfall against 19 required) was shortfall against required posts. With regard to general duty medical officers, 55.26 per cent (21 sanctioned against 38 required) of the required posts were sanctioned out of which 71.43 per cent (15 in position against 21 sanctioned) were

in position leaving 28.57 per cent (6 vacant out of 15 sanctioned posts) vacant against sanctioned posts and 60.53 per cent (23 shortfall against 38 required) shortfall against required posts. The status of radiographers was similar to that of general duty medical officers as 52.56 per cent (10 sanctioned out of 19 required) of the required posts were sanctioned out of which 90 per cent (9 in position out of 10 sanctioned) were in position leaving 10 per cent (1 vacant out of 10 sanctioned) vacant against sanctioned posts and 52.63 per cent (10 shortfall against 19 required) shortfall against required posts. With regard to pharmacists, 121.05 per cent (23 sanctioned against 19 required) of the required posts were sanctioned out of sanctioned post the percentage of in position stood at 104.35 per cent (24 in position against 23 sanctioned) indicating that 4.35 per cent (1 in excess against 23 sanctioned) was in excess against sanctioned posts and 21.05 per cent (10 in excess against required) in excess against required posts. The situation of laboratory technicians was similar to pharmacists as all required posts were sanctioned, but the percentage of in position posts stood at 147.37 per cent (28 in position against 19 sanctioned) against sanctioned posts indicating 47.37 per cent (9 in excess against 19 sanctioned) in excess against sanctioned and required posts. With regard to nursing staff, about 147.37 per cent (196 sanctioned against 133 required) of the required posts were sanctioned where out of total sanctioned posts 93.88 per cent (184 in position against 196 sanctioned) were in position posts leaving 6.12 per cent (12 vacant against 196 sanctioned) vacant against sanctioned posts. At the same time, about 38.35 per cent (51 in excess against 133 required) were shortfall against required posts.

d) Health Infrastructure at Health Institutions

As of 1st July 2020, in Karnataka state, with regard to coverage of rural population, each Sub-Centre covered population of 4116, each PHC covered population of 17378 and each CHC covered population of 200079. Further, the area covered by Sub-Centre, PHC and CHC accounted to 20.22, 85.38 and 982.98 sq.kms. respectively and the radial distance accordingly accounted to 2.54, 5.21 and 17.69 kms. Further, average number of villages covered by each Sub-Centre & HWC-SC, PHC & HWC-PHC and CHC stood at 4, 16 and 182 villages respectively. For every 4 Sub-Centres one PHC was operating and for every 12 PHCs one CHC was functioning. On an average, in rural areas, there were 11124 health workers at SCs and 2914 health assistants at PHCs. Further, 4 health workers per health assistants were there and each health worker at SC and PHCs, in rural areas, were there for every 2828 people. Similarly, out of 9188 SCs functioning in rural area, about 11.24 per cent (1033 out of 9188) of them were providing AYUSH facility, while among 2176 PHCs functioning in rural areas, 4.46 per cent (97 out of 2176) of them were providing AYUSH facility.³⁹

e) Health Infrastructure at Sub-Centres

As of 2020, out of total 9188 Sub-Centre functioning in rural areas of Karnataka state, 59.80 per cent (5495 out of 9188) of them had ANM quarters, 27.1 per cent (2487 out of 9188) of them had no regular water supply and 30.2 per cent (2777 out of 9188) of them were without electric supply. However, none of the SCs were functioning as per IPHS norms.⁴⁰

³⁹ Rural Health Statistics – 2019-20, pp. 206-210.

⁴⁰ Ibid, pp. 173-174.

f) Health Infrastructure at PHCs

As of 31st March 2020, out of total 2176 PHCs functioning in rural areas of Karnataka state, 90.3 per cent (1964 out of 2176) of them were equipped with at least 4 beds, 40.3 per cent (877 out of 2176) of them were functioning on 24x7 basis, 83.8 per cent (1823 out of 2176) of them had labour room, 52.7 per cent (1146 out of 2176) of them were equipped with OT, 67.8 per cent (1476 out of 2176) of them with telephone, 87.3 per cent (1899 out of 2176) of them with computers, 4.3 per cent (93 out of 2176) of them functioned without regular water supply, 1.6 per cent (35 out of 2176) of them operated without electricity supply, 3.6 per cent (78 out of 2176) of them without all-weather motorable and 94.90 per cent (2065 out of 2176) of them were with referral transport.⁴¹

g) Health Infrastructure at Community Health Centres (CHCs)

As of 31st March 2020, out of total 189 CHCs functioning in rural areas of Karnataka state, 96.83 per cent (183 out of 189) were equipped with functional laboratory, 72.49 per cent (137 out of 189) with labour room, 96.83 per cent (183 out of 189) with 30 beds, 17.99 per cent (34 out of 189) of them were connected with computers and had statistical assistants for MIS/accounting, 93.65 per cent (177 out of 189) of them had new born care corner, 98.41 per cent (186 out of 189) of them had OT, 80.42 per cent (152 out of 189) of them had functioning stabilization of units for new born, 92.06 per cent (174 out of 189) had new born care corner, 86.77 per cent (164 out of 189) of them had functional X-ray machine, 93.65 per cent (177 out of 189) of them had referral transport facility and

⁴¹ Rural Health Statistics- 2019-20, pp.175-177.

97.35 per cent (184 out of 189) of them had regular supply of allopathic drugs for common ailments. However, none of the CHCs were functioning as per IPHS norms.⁴²

h) Health Infrastructure at First Referral Units (FRUs)

As of 31st March 2020, out of total 179 First Referral Units functioning in Karnataka state, 12.29 per cent (22 out of 179) of them were functioning at CHC level, 75.98 per cent (136 out of 179) of them at Sub-District Hospital level, 8.38 per cent (15 out of 179) of them at District Hospital level and 3.31 per cent (6 out of 179) at Medical College level indicating that majority of the FRUs operated at Sub-District Hospital level. All FRUs functioning in the state were equipped with 30 beds, OT and labour room. Further, 65.4 per cent of the FRUs had blood storage/ linkage facility.⁴³

3.6. Conclusion

In order to provide qualitative as well as quantitative health care services in the state, the Government of Karnataka state through its various health schemes and programmes has been successful to considerable extent in providing better health care services to its people. Health services provided through PHCs, CHCs, Sub-Centres, Hospitals and Medical Institutions. Urban health infrastructure majorly constitutes with District Hospitals and Community Health Centres, while rural health infrastructure widely comprises PHCs and Sub-Centres. Though Government of Karnataka has implemented various health programmes and schemes to provide good quality health care services, but still there is a long way

⁴² Rural Health Statistics – 2019-20, pp. 177-179.

⁴³ Ibid, p. 181.

to go. This was because, with regard to health manpower, the state was facing severe scarcity or shortfall of health workers particularly male health workers. Further, shortfall of health manpower in all categories was recorded in the state, especially in rural areas. With regard to health manpower in urban areas also, shortage of doctors and paramedical staff was seen widely both at district hospitals as well as sub district/ sub division hospitals. With regard to health institutions, there was scarcity of PHCs in rural areas. Apart from these, the functioning PHCs, CHCs and Sub-Centres especially in rural areas are not equipped with sufficient and adequate infrastructure facilities. All these call for the restructuring the health care delivery system in the state. The following chapter attempts to study the available health care delivery system in the study area that is Shivamogga district.

After analysing the status of health care delivery system in the present chapter, the following chapter makes an attempt to study the status of health care delivery system in the Shivamogga district of Karnataka state which is also the study area.

Chapter-04

HEALTH PROFILE OF SHIVAMOGGA DISTRICT

4.1. Prelude

4.2. An Overview of Shivamogga District

4.2.1. General Information

4.2.2. Area and Population

4.2.3. Agriculture

4.2.4. Industries

4.2.5. Banks

4.2.6. Transport and Communication

4.2.7. Education

4.3. Health Status in Shivamogga District

4.3.1. Health Institutions

4.4. Conclusion

Chapter-04

HEALTH PROFILE OF SHIVAMOGGA DISTRICT

4.1. Prelude

The status of health care and services could be well understood in terms of number of health institutions operating, availability of health manpower, detection and remedial measures taken with regard to communicable diseases and other diseases, precautionary measures taken to control the spread of diseases, status of in-patients and out-patients, family welfare services offered, etc. As such, this chapter is presented in two major parts, where the first part gives a brief profile of Shivamogga district and the latter part deals with health status in Shivamogga district.

4.2. An Overview of Shivamogga District

Shivamogga district is one among 30 districts of Karnataka state located in southern part of the state and surrounded by Udupi, Chikkamagaluru, Davanagere, Haveri and Uttara Kannada districts.

4.2.1. General Information

Shivamogga district constitutes 7 taluks *viz.*, Bhadravathi, Hosanagara, Sagara, Shikaripura, Shivamogga, Soraba and Thirthahalli taluks. The district consists of 1530 villages, out of which 1444 are inhabited and 86 uninhabited. The district comprises 37 Nada Kacheries, 327 Village Accountant Circles, 41 Hoblies and 271 Grama Panchayats. Further, the district has 1 City Corporation, 2 City

Municipal Councils, 1 Town Municipal Council and 5 Town Panchayats.¹ The district had Gross District Domestic Product worth ` 4328303 at current price (2018-19) and ` 2991607 at constant price (2011-12). The Net District Domestic Product of the district at current price and constant price was ` 3863831 and ` 2627669, while the district's Per Capita Income stood at ` 205368 and ` 139665 at current price and constant prices.²

4.2.2. Area and Population

The geographical area of the district stands at 8478 sq.km. with population density of 207 people per sq.km. According to 2011 census, the population of Shivamogga district stood at 1752753 out of which male and female population were 877415 and 875338 respectively. Shivamogga district ranked 14th place in the state by constituting to 2.87 per cent of the total population of the state. Further, urban and rural population of the district stood at 623727 and 1129026 respectively. The projected population showed that by 2022, population in the district might be 1888777, out of which male and female population might reach 945312 and 943465 respectively.³ The sex ratio of the district showed that for every 1000 females there were 998 males. The sex ratio in rural and urban areas stood at 995 and 1002 respectively.

¹ Shivamogga District at a Glance – 2018-19, pp. 41-43 & Karnataka at a Glance – 2020-21, pp. 71-73.

² Ibid, p. 81.

³ Karnataka at a Glance – 2020-21, pp. 84-86, 89.

4.2.3. Agriculture

Out of total 847784 hectares of land area, in the district, 32.66 per cent was forest area, 12.03 per cent was land not available for cultivation and 19.28 per cent was permanent pasture area. In the district, total sown area stood at 292463 hectares which accounted to 29.04 per cent of the total geographical area. Out of total sown area, net sown area was 246159 hectares and more than once sown area was 46304 hectares. With regard to the irrigational facilities, the district had 379 kms length of canals which irrigated 59296 hectares. Further, 5977 tanks irrigated 57854 hectares and 7673 open wells irrigated 5894 hectares. Similarly, 34888 tube wells irrigated 47178 hectares, 4152 lift irrigation irrigated 4184 hectares and other sources irrigated 5605 hectares.

However, 18168.7 hectares was under micro irrigation out of which 8065, 9900 and 203.7 hectares availed micro irrigation facility through agriculture department, horticulture department and sericulture department respectively. Net area accounted to 143934 hectares. Paddy, Jowar, Bajra, Maize, Ragi, etc., were the major cereals grown. Under Pulses, Horse Gram, Green Gram and Bengal Gram were grown. Groundnut, Sunflower and Oil Palm were major oilseeds grown. Banana, Mango, Watermelon, Sapota and Pineapple were major fruits grown. Tomato, Green Chillies and Leaf vegetables were major crops under vegetables. Under commercial crops, Cotton and Sugarcane were major ones.⁴ In the district, there are 7 regulated markets and 15 sub-markets. Seven mandies are linked with electronic market.⁵ In the district, out of total 233924 agricultural land

⁴ Karnataka at a Glance – 2020-21, pp. 120-136.

⁵ Ibid, p. 154.

holders, 62.54 per cent were marginal agricultural land holders holding land below 1 hectare, 24.45 per cent were small agricultural land holders holding land between 1 and 2 hectares, 9.74 per cent were semi medium agricultural land holders holding land between 2 and 4 hectares, 2.95 per cent were medium agricultural land holders holding land between 4 and 10 hectares and 0.31 per cent were large agricultural land holders holding land more than 10 hectares.⁶

4.2.4. Industries

With regard to factories, the district had with it, operating, 11 Readymade Garments with 9672 employees, one textile factory with 3500 employees, one chemical factory with 6 employees, 57 engineering factories with 1698 employees and other 223 factories with 12420 employees. Under small scale units, in the district there were 438 automobile units with 3808 employees, 471 electrical units with 974 employees, 251 chemical units with 2074 employees, 3205 food and intoxicants units with 14392 employees, 791 leather units with 1926 employees, 505 paper and printing units with 2023 employees, 409 rubber and plastic units with 3665 employees, 1899 textiles units with 9925 employees, 338 wood units with 1593 employees and other 2154 units with 8801 employees.⁷ The district also had 11 industrial estates, 225 industrial sheds and 623 industrial plots.⁸

4.2.5. Banks

As of 2020-21, there were 198 branches of PSBs which mobilized deposit worth ` 1192486 lakh and provided loan worth ` 258907 lakh, while 53 branches

⁶ Karnataka at a Glance – 2020-21, pp. 162, 166, 170, 174, 178, 182.

⁷ Ibid, pp. 190-197.

⁸ Ibid, p. 201.

of PVSBS were operating by mobilizing deposit worth ` 329703 lakh and providing loan worth ` 53615 lakh. With regard to RRBs, there were 43 branches of RRBs functioning in the district by mobilizing deposit worth ` 129420.91 lakh and providing ` 79821.92 lakh in the form of loan. Further, 29 branches of DCC Bank were operating with deposit mobilization of ` 107772.06 lakh and providing loan worth ` 112583.36 lakh. Similarly, 8 branches of PLD bank operated with deposit mobilization of ` 904.06 lakh and providing loan worth of ` 1665.14 lakh. Likewise, 308 Credit Co-Operative Societies were operating out of which 173 were Agricultural Credit Co-Operative Societies and remaining 135 were Non-Agricultural Credit Co-Operative Societies. At the same time, 872 Non-Credit Co-Operative Societies were operating out of which 24 belonged to marketing, 29 to housing, 554 to milk and remaining 265 others.⁹

4.2.6. Transport and Communication

As of 31st March 2021, in the district, 17500 goods vehicles, 1917 buses, 2716 motor cabs, 839 maxi cabs, 6345 three seated vehicles, 698922 two wheelers, 66277 cars, 385 jeeps, 343 omni bus, 15705 tractors, 9795 tillers, 800 construction materials carrying vehicles and 7051 other types of vehicles were running. Further, in the district, national highway road runs for 441 km, 1375.6 km of state highway, 2168.87 km of district highway and 8444.86 km of Panchayat roads. In the district, railway lines run for the length of 125 km. With regard to communication, the district had 357 post offices, 113 telephone exchanges, 8853 landline telephone subscribers and 272285 mobile phone subscribers.¹⁰

⁹ Karnataka at a Glance – 2020-21, pp. 202-210.

¹⁰ Ibid, pp. 213-220.

4.2.7. Education

As of 31st March 2021, the district had the literacy rate of 80.45 per cent and stood at 6th position in the state. Literacy rate of male and female stood at 86.07 and 74.84 per cent respectively, while literacy rate in rural and urban areas stood at 76.37 and 87.79 per cent respectively. However, the education requirements were catered by 958 schools with enrolment of 23719 students, 1356 higher primary schools with enrolment of 159745 students, 503 high schools with enrolment of 78339 students, 134 PU colleges with enrolment of 19776 students, 25 degree colleges with enrolment of 19060 students, 3 AYUSH colleges with enrolment of 598 students, 2 medical colleges with enrolment of 1117 students, 2 dental colleges with enrolment of 675 students, 10 polytechnics with enrolment of 3900 students and 2 engineering colleges with enrolment of 5404 students.¹¹

4.3. Health Status in Shivamogga District

4.3.1. Health Institutions

As of 31st March 2021, Shivamogga district with HDI standing at 0.786 against 0.6111 at state level ranks 5th in the state.¹² The district had Maternal Mortality Ratio of 106 and Adolescent Fertility Ratio (15-19) of 24.0.¹³

In the district, 8 taluk hospitals with 650 beds, 1 district hospital with 950 beds and one autonomous and teaching hospital with 950 beds were functioning. Further, there were 7 CHCs with 210 beds, 110 with 654 beds, 357 sub-primary care centres and 480 allopathy hospitals with 3414 beds delivered required health

¹¹ Karnataka at a Glance – 2020-21, pp. 222-243.

¹² Economic Survey of Karnataka – 2020-21, p. 398.

¹³ Economic Survey of Karnataka – 2019-20, p. 704.

care facilities in the district. In the district, 318 PHCs/SCs were converted into health and wellness centres. There were 4 AYUSH hospitals with 130 beds, 34 AYUSH dispensaries, 484 government hospitals with 3544 beds, 654 private hospitals including nursing homes/ clinics with 3399 beds catering the health services of the district. In the district, there were 780 doctors, out of which 141 were government doctors and 639 private doctors, 1052 medical shops and 8 blood banks.¹⁴ In the district, there were 3 doctors for every 10000 population and 15 beds for every 10000 population.¹⁵

Taluk-wise break-ups of health institutions with bed strength in terms of allopathy hospitals, CHCs and PHCs during 2019-20 is as presented in Table 4.1.

Table 4.1
Taluk-wise Health Institutions with Bed Strength during 2019-20

Taluks	Allopathic Hospitals		Community Health Centre		PHC	
	No.	Beds	No.	Beds	No.	Beds
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Bhadravathi	16	236	1	30	17	102
Hosanagara	11	178	0	0	18	108
Sagara	18	284	1	30	19	114
Shikaripura	20	288	1	30	16	96
Shivamogga	18	1108	2	60	14	78
Soraba	18	226	1	30	17	102
Thirthahalli	17	224	1	30	9	54
Total	118	2544	7	210	110	654

Source: Shivamogga District at a Glance – 2020-21, Directorate of Economics and Statistics.

From the data provided in the above table, Shikaripura taluk had more number of allopathic hospitals accounting to 16.95 per cent (20 out of 118) of the total allopathic hospitals functioning in the district during 2019-20 against

¹⁴ Economic Survey of Karnataka – 2019-20, pp. 244-247.

¹⁵ Shivamogga District at a Glance – 2019-20, p. 248.

Hosanagara taluk having least number of allopathic hospitals accounting to 9.35 per cent (11 out of 118). However, in all other taluks it ranged between 13 and 15 per cent. With regard to bed strength, hospitals functioning in Shivamogga taluk had more number of beds in hospitals which accounted to 43.55 per cent (1108 out of 2544 beds) of the total beds available in allopathic hospitals functioning in the district, while Hosanagara taluk had least number of beds accounting to 7.00 per cent (178 out of 2544 beds) of the total available beds in allopathic hospitals of the district.

With regard to CHCs, except Hosanagara taluk, in all the taluks one CHC was operating with 30 bed strength, while in Shivamogga taluk 2 CHCs with 60 bed strength were functioning. With regard to PHCs, except Thirthahalli taluk, all other taluks of the district had good number of PHCs. However, Sagara taluk had more number of PHCs as well as more beds against Thirthahalli taluk having least PHCs accounting to 8.18 per cent (9 out of 110 PHCs) and less beds accounting to 8.26 per cent (54 out of 654 beds).

With regard to the immunisation provided to children, as on 2020-21, 26340 children were provided with DPT, 24797 with Polio, 22187 with BCG, 23939 with MR and 46146 children with TD. Under Family Welfare Services, 13 Vasectomy and 5294 Tubectomy sterilisations were conducted. Further, 209 Aids patients were identified, out of which 18 deaths occurred, 27 leprosy patients were identified and given treatment and 1516 TB patients were notified and treated, out of which 110 deaths occurred.¹⁶

¹⁶ Shivamogga District at a Glance – 2019-20, pp. 248-252.

The data in Table 4.2 presents taluk-wise status of immunisation given to children during 2019-20.

Table 4.2
Taluk-wise Immunisation given to Children during 2019-20

Taluks	DPT	Polio	BCG	Measles	TT	Pentavalent
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Bhadravathi	5416	5251	3867	5445	5183	3260
Hosanagara	1527	1528	361	1398	1293	251
Sagara	2903	2887	3496	2650	2448	3533
Shikaripura	3851	3782	3675	3766	3816	3449
Shivamogga	9087	8975	11849	9637	9578	10039
Soraba	2818	2775	804	2657	2715	549
Thirthahalli	1678	1626	1086	1533	1519	1055
Total	27280	26824	25138	27086	26552	22136

Source: Shivamogga District at a Glance – 2020-21, Directorate of Economics and Statistics.

From the data in the above table it could be inferred that more number of children were given DPT vaccination followed by measles, polio, TT and BCG. Shivamogga taluk recorded highest number of children availing immunization facility against children from Hosanagara taluk standing at the bottom. As such, in Shivamogga taluk, about 33.31 per cent (9087 out of 27280 children) of the total children were vaccinated with DPT, 33.46 per cent (8975 out of 26824 children) of them with Polio, 47.14 per cent (11849 out of 25138 children) of them with BCG, 35.58 per cent (9637 out of 27086 children) of them with Measles, 36.07 per cent (9578 out of 26552 children) of them with TT and 45.35 per cent (10039 out of 22136 children) of them with Pentavalent against Hosanagara taluk where about

5.60 per cent (1527 out of 27280 children) of the total children were vaccinated with DPT, 5.70 per cent (1528 out of 26824 children) of them with Polio, 1.44 per cent (361 out of 25138 children) of them with BCG, 5.16 per cent (1398 out of 27086 children) of them with Measles, 4.87 per cent (1293 out of 26552 children) of them with TT and 1.13 per cent (251 out of 22136 children) of them with pentavalent.

The status of different health facilities showed that, the district had people availed the services of 7 FRU, the services of 25 ambulances (108 ambulance) were utilized by 22632 people, 554 deliveries occurred among 25 hospitals working on 24/7 basis, 15306 beneficiaries availed Jananai Suraksha Yojana and 23 maternal deaths occurred during 2020-21.¹⁷

The data in Table 4.3 presents the facilities and utilization of various health facilities and services in Shivamogga district as on 2019-20 according to which it could be noted that FRU functioned in all taluks except Shivamogga taluk which indicated that 6 FRUs were functioning in the district. Totally 24 ambulances (108 ambulance) were operating in the district for emergency services. Bhadravathi, Hosanagara and Sagara taluks had 4 ambulances, while remaining taluks had 3 ambulances. With available 24 ambulances, 34813 patients were benefited, among them more patients were benefited from Shivamogga taluk accounting to 25.88 per cent and least from Thirthahalli taluk accounting to 6.82 per cent.

¹⁷ Karnataka at a Glance – 2020-21, p. 253.

Table 4.3
Taluk-wise Health Institutions during 2019-20

Taluku	FRU	108 Ambulance		No. of 24/7 Working Hospitals		No. of Beneficiaries Availed Janani Suraksha Yojana	No. of Beneficiaries Received Madilu Kit	Maternal Deaths
		No. of Vehicles	No. of Patients Benefited	No. of Hospitals	No. of Deliveries Occurred in Hospitals			
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)
Bhadravathi	1	4	6499	3	134	210	0	1
Hosanagara	1	4	2703	5	115	98	88	0
Sagara	1	4	4814	5	46	1919	30	2
Shikaripura	1	3	6142	5	342	1920	75	0
Shivamogga	0	3	9010	1	70	5382	51	23
Soraba	1	3	3272	5	104	590	81	0
Thirthahalli	1	3	2373	2	11	150	0	0
Total	6	24	34813	26	822	10269	325	26

Source: Shivamogga District at a Glance – 2020-21, Directorate of Economics and Statistics.

There were 26 hospitals working round the clock for all days of the week to conduct deliveries. Among them, Hosanagara, Sagara, Shikaripura and Soraba taluks had 5 hospitals each functioning on 24x7 basis, where deliveries were conducted, while Bhadravathi had 3 hospitals, Thirthahalli had 2 hospitals and Shivamogga had one hospital functioning round the clock in conducting deliveries. Among the beneficiaries, more number of beneficiaries were from Shikaripura taluk where about 41.61 per cent (342 out of 822 deliveries) of the total deliveries were conducted against least beneficiaries from Thirthahalli taluk accounting to 1.34 per cent (11 out of 822 deliveries).

Out of total 10269 beneficiaries of Janani Suraksha Yojana, majority of them were from Shivamogga taluk accounting to 52.41 per cent (5382 out of 10269 beneficiaries) followed by Sagara and Shikaripura taluks accounting to 18.69 and 18.70 per cent respectively (1919 and 1920 out of 10269 beneficiaries), while Soraba taluk accounted to 5.75 per cent (590 out of 10269 beneficiaries), Bhadravathi taluk for 2.04 per cent (210 out of 10269 beneficiaries), Thirthahalli taluk accounted for 1.46 per cent (150 out of 10269 beneficiaries) and Hosanagara taluk accounted for only 0.95 per cent (98 out of 10269 beneficiaries).

Among 325 pregnant women who received Madilu kit, majority of them were from Hosanagara taluk accounting to 27.08 per cent (88 out of 325 beneficiaries) of the total beneficiaries closely followed by Soraba taluk accounting to 24.92 per cent (81 out of 325 beneficiaries), Shikaripura taluk with 23.08 per cent (75 out of 325 beneficiaries), Shivamogga taluk with 15.69 per cent (51 out of 325 beneficiaries) and Sagara taluk with 9.23 per cent (30 out of 325

beneficiaries), while none of the pregnant women from Bhadravathi and Thirthahalli taluk received Madilu kit.

In the district, 26 maternal deaths have occurred during 2019-20 out of which about 88.16 per cent of the maternal deaths occurred in Shivamogga taluk itself followed by Sagara and Bhadravathi taluks with 2 and 1 maternal deaths respectively.

With regard to services offered to pregnancy women, 23015 pregnant women got registered for antenatal care whereas 19487 women registered for ANC within 1st trimester. Further, 26233 women received 4 and more than 4 antenatal care check-ups, while 8711 pregnant women availed supplementary nutrition. Similarly, 23011 pregnant women were tested for haemoglobin out of which 411 pregnant women were treated for anaemia and 446 pregnant women for severe anaemia. In the district, during 2020-21, it was estimated that 24777 deliveries might have occurred. However, 23576 were institutional deliveries and 17 were home deliveries out of which 8 home deliveries were attended by skilled birth attendants. During 2020-21, new born children stood at 23325 out of which 11860 were female live births against 11465 male live births. Further, out of 22945 live babies weighed at birth, 3121 were low birth weighed babies. Similarly, 6155 children of 5 years old were affected by diarrhoea out of which all were treated with ORS, while 859 children were treated with zinc. Likewise, 979 children were facing acute respiratory infections where all were undergoing treatment. Among 11100 breast feeding children, aged between 6 and 23 months old, 10967 of them received adequate diet, while among 21804 non-breast feeding children aged between 6 and 23 months old, 20105 of them received adequate diet.

Among 24457 children aged between 9 and 11 months, 24050 of them were immunised through vaccination with BCG, DPT3, OPV3 and MR. Among 7 FRUs, one unit was in accordance to one unit per 500000 people, while 6 were in accordance to one unit per 300000 people. However, none of the FRUs was equipped with labour room. At the same time, the district hospital also lacked in providing 25 types of specialist services as per IPHS norms.¹⁸

Table 4.4
Skilled Birth Attendant Services in Conducting Deliveries

Indicators	2017-18	2018-19	2019-20	2020-21	Average
(01)	(02)	(03)	(04)	(05)	(06)
Number of Home deliveries	10	10	13	17	13
Number of home deliveries attended by SBA trained (Doctor/Nurse/ANM)	10	10	12	9	10
Number of home deliveries attended by Non SBA trained (trained TB/Dai)	0	0	1	8	2
SBA attended home deliveries to Total Reported Home Deliveries (%)	100.00	100.00	92.30	52.94	86.31
Deliveries conducted at Public Institutions	18931	18812	18807	17080	18408
Deliveries conducted at Private Institutions	8057	7682	5905	6555	7050
Institutional deliveries (Public +Private Institutions)	26988	26494	24712	23635	25457
Institutional deliveries to total ANC registration (%)	109.00	110.70	106.60	102.69	107.25
Total reported deliveries	26998	26504	24725	23652	25470
Institutional deliveries to Total Reported Deliveries (%)	100.00	100.00	99.90	99.93	99.96
Safe deliveries to Total Reported Deliveries (%)	100.00	100.00	100.00	99.97	99.99

Source: District Health and Family Welfare Office, Shivamogga.

¹⁸ Karnataka at a Glance – 2020-21, pp. 254-259.

The data in Table 4.4 the status of skilled birth attendant services in conducting deliveries for the period 2017-18 upto 2020-21 according to which it was noted that, the incidence of home deliveries has increased during 2019-20 and 2020-21 compared to 2017-18 and 2018-19. On an average 13 home deliveries were conducted, out of which 76.92 per cent (10 out of 13 home deliveries) were attended by skill birth attendants.

Home deliveries attended by skilled birth attendants decreased during 2019-20 and 2020-21 compared to all home deliveries conducted by SBAs during 2017-18 and 2018-19. With regard to deliveries conducted at public hospitals and private hospitals, it was evident that, on an average, 72.31 per cent (18408 out of 25457 deliveries) of the institutional deliveries were conducted at public institutions, while remaining 27.69 per cent (7050 out of 25457 deliveries) were conducted at private institutions. Institutional deliveries conducted both at public as well as private institutions accounted to more than to the total ANC registered as, on an average, the percentage of institutional deliveries accounted to 107.25 per cent of the ANC registered. Further, institutional deliveries were almost equal to the reported delivers during 2019-20 and 2020-21 accounting to 99.90 and 99.93 per cent. At the same time, all reported deliveries were safe delivers except during 2020-21 where 99.97 per cent of the reported deliveries were safe deliveries.

The data in Table 4.5 presents birth performance in Shivamogga district for the period 2017-18 upto 2020-21.

Table 4.5
Birth Performance in Shivamogga District

Indicators	2017-18	2018-19	2019-20	2020-21	Average
(01)	(02)	(03)	(04)	(05)	(06)
Total No. of reported live births	26896	26368	24627	23545	25359
Live Births to Total Deliveries (%)	99.62	99.52	99.66	99.62	99.61
Total No. of reported Still Births	278	308	275	294	289
Sex Ratio at birth (Female Live Births/ Male Live Births *1000)	952	945	932	949	944

Source: District Health and Family Welfare Office, Shivamogga.

According to data in the above Table, it was observed live births accounted to 99.61 per cent of the total deliveries. Further, with an average 289 still births it increased during 2018-19 and 2020-21, while decreased during 2019-20 compared to their respectively previous years. The sex ratio at birth showed that female live births for every 1000 male live births decreased during throughout the period from 2018-19 upto 2020-21 compared to 2017-18.

The data in Table 4.6 presents the status of Medical Termination of Pregnancy (MTP) in Shivamogga district for the period 2017-18 upto 2020-21.

Table 4.6
Status of Medical Termination of Pregnancy (MTP) in Shivamogga District

Indicators	2017-18	2018-19	2019-20	2020-21	Average
Total No. of Abortions (Spontaneous) Reported	925	816	1,248	1003	998
Total No. of MTPs (Public) conducted	534	435	480	518	492
Total No. of MTPs (Private) conducted	496	438	544	478	489
MTPs conducted at Public Institutions to Total MTPs (%)	51.84	49.83	46.88	52.01	50.15
MTPs conducted at Private Institutions to Total MTPs (%)	48.16	50.17	53.13	47.99	49.85

Source: District Health and Family Welfare Office, Shivamogga.

From the data in the above Table, it could be noted that, on an average, 998 abortions were reported for the period 2017-18 to 2020-21 where more number of abortions were conducted during 2019-20. Further, on an average, among MTPs conducted, 50.15 per cent (492 out of 981 MTPs) of them were conducted at public institutions, while remaining 49.85 per cent (489 out of 981 MTPs) of them at private institutions.

Cases detected and deaths due to various communicable diseases is as presented in Tables 4.7 and 4.8 according to which it could be noted that dog bite, gastroenteritis, typhoid and tuberculosis were the major diseases prevailing in the district, on an average, as more number of cases were detected in dog bite which accounted to 61.21 per cent (12754 out of 20835 cases detected) of the total cases detected under various diseases followed by gastroenteritis accounting to 15.30 per cent (3188 out of 20835 cases detected), typhoid and tuberculosis to 7.92 and 7.89 per cent respectively (1651 and 1644 out of 20835 cases detected). On the other hand, more number of deaths occurred due to gastroenteritis, snake bite and H1N1.

Table 4.7
Communicable Diseases in Shivamogga District

Diseases	2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020	
	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death	Case	Death
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
Cholera	0	0	1	0	3	0	10	0	2	0	0	0	5	1	0	0	13	1	0	0	0	0
Gastroenteritis	2691	8	3226	9	3385	9	2891	6	3066	10	3006	3	3073	4	3488	2	3797	9	3885	9	2562	0
Viral hepatitis	173	0	135	2	182	0	144	1	183	0	147	0	153	0	177	0	291	0	242	0	40	0
Typhoid	1333	3	2361	0	1883	1	1581	1	1457	0	1242	1	1451	0	1928	0	1843	0	2244	0	835	0
Leptospirosis	12	0	48	0	189	0	71	0	81	0	17	0	46	0	52	0	62	0	236	0	21	0
Kyasanur forest disease	0	0	13	0	94	1	2	0	147	1	41	1	13	1	37	4	22	0	343	12	184	4
Malaria	104	0	111	0	148	0	117	0	139	0	117	0	70	0	28	0	33	0	15	0	4	0
Dengue fever	33	0	18	0	170	0	582	8	79	0	130	0	412	0	584	0	262	1	623	0	213	0
Leprosy	69	0	57	0	60	0	52	0	53	0	46	0	43	0	46	0	52	0	57	0	40	0
Tuberculosis	1794	3	1781	1	1760	3	1702	2	1688	2	1561	0	1626	4	1719	0	1696	0	1610	0	1142	0
Dog bite	11281	0	10751	0	13888	0	11800	0	12710	0	12646	0	12633	0	14025	0	14796	0	13711	0	12048	0
Snake bite	581	5	583	7	622	5	586	4	541	5	663	5	689	7	835	3	790	5	930	4	719	3
Chikungunya	21	0	70	0	0	0	22	0	20	0	68	0	53	0	43	0	250	0	491	0	114	0
Rabbis	0	0	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	2	0
H1N1	16	7	7	4	14	1	0	0	27	8	45	4	40	3	154	13	97	3	146	6	146	6

Source: District Health and Family Welfare Office, Shivamogga.

Table 4.8
Communicable Diseases in Shivamogga District from 2010 to 2020

Diseases	Average		CAGR	't' value
	Case	Death	Case	Case
(01)	(02)	(03)	(04)	(05)
Cholera	3	0	--	2.276
Gastroenteritis	3188	6	-0.49	25.096
Viral hepatitis	170	0	-13.62	8.921
Typhoid	1651	1	-4.57	12.122
Leptospirosis	76	0	5.76	3.509
Kyasanur forest disease	81	2	34.24	2.543
Malaria	81	0	-27.81	5.104
Dengue fever	282	1	20.50	4.075
Leprosy	52	0	-5.31	20.719
Tuberculosis	1644	1	-4.42	30.065
Dog bite	12754	0	0.66	33.86
Snake bite	685	5	2.15	18.502
Chikungunya	105	0	18.43	2.389
Rabbis	1	0	8.01	2.631
H1N1	63	5	24.75	6.426

Source: Table 4.7.

Among cases detected under dog bite, gastroenteritis, typhoid and tuberculosis, higher degree of variation was observed under typhoid with CV at 27.36 per cent followed by gastroenteritis with CV at 13.22 per cent against variations in the cases detected under dog bite exhibiting to be more consistent with CV at 9.80 per cent. Further, with regard to growth rates among these four major diseases, positive growth rate of 0.66 per cent per annum was recorded by cases detected under dog bite against negative growth rate of -4.57 per cent per annum recorded by cases detected under typhoid followed by tuberculosis with CAGR at -4.42 per cent per annum and gastroenteritis with CAGR at -0.49 per cent per annum. The 't' value of these diseases revealed that growth in cases detected were statistically significant.

The data in Table 4.9 presents the status of in-patient and out-patient in Shivamogga district for the period from 2017-18 upto 2020-21.

Table 4.9
Status of In-patient and Out-patient in Shivamogga District

Indicators	2017-18	2018-19	2019-20	2020-21	Average
(01)	(02)	(03)	(04)	(05)	(06)
IPD	221619	2,38,490	2,65,913	174753	225194
OPD (Allopathic)	3583692	36,25,697	37,60,269	2460986	3357661
Ayush OPD	87636	98,275	98,174	57136	85305
Dental OPD	57082	67,848	85,658	51034	65406
OPD (AYUSH +Allopathic + Dental)	3728410	3791820	3944101	2569156	3508372
IPD to OPD (%)	5.94	6.29	6.74	6.80	6.42
AYUSH OPD to Total OPD (%)	2.35	2.59	2.49	2.22	2.43
Dental OPD to Total OPD (%)	1.53	1.79	2.17	1.99	1.86
In-patient Deaths to Total IPD (%)	1.10	0.80	0.70	1.41	0.87

Source: District Health and Family Welfare Office, Shivamogga.

From the data in the above table it was evident that, the percentage of IPD to OPD saw continuous increase throughout the period where, on an average, IPD constituted to about 6.42 per cent (225194 IPD out of 3442966508372 OPD) of the total OPD. Further, AYUSH OPD accounted to 2.43 per cent (85305 AYUSH OPD out of 3508372 OPD) of the total OPD, while dental OPD accounted to about 1.86 per cent (65406 dental OPD out of 3508372 OPD) of the total OPD. On the other hand, in-patient deaths accounted to 0.87 per cent of the total IPD.

The data in Table 4.10 Table 4.11 presents taluk-wise break-ups of in-patients and out-patients in Shivamogga district at general hospitals and PHCs for the period from January 2020 upto June 2020.

Table 4.10

Status of In-patients and Out-patients in Shivamogga District

Taluks	In-Patients				Out-Patients				Total Patients			
	Male	Female	Children	Total	Male	Female	Children	Total	Male	Female	Children	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
Shivamogga	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bhadravathi	987	3983	987	5957	42172	45578	19779	107529	43159	49561	20766	113486
Shikaripura	2410	4116	637	7163	32272	27926	6197	66395	34682	32042	6834	73558
Soraba	988	1900	582	3470	21052	23446	6723	51221	22040	25346	7305	54691
Sagara	2500	2142	402	5044	33948	34038	9046	77032	36448	36180	9448	82076
Hosanagara	2030	2320	676	5026	15357	16534	6411	38302	17387	18854	7087	43328
Thirthahalli	894	1471	905	3270	40481	39572	19843	99896	41375	41043	20748	103166
Total	9809	15932	4189	29930	185282	187094	67999	440375	195091	203026	72188	470305

Note: NA - Not Available.

Source: District Health and Family Welfare Office, Shivamogga.

Table 4.11

Treatment of In-patients and Out-patients at PHCs in Shivamogga District from January 2020 to June 2020

Taluks	In-Patients				Out-Patients				Total Patients			
	Male	Female	Children	Total	Male	Female	Children	Total	Male	Female	Children	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
Shivamogga	1007	2183	791	3981	61544	80587	32199	174330	62551	82770	32990	178311
Bhadravathi	1137	1605	86	2828	53180	57484	22649	133313	54317	59089	22735	136141
Shikaripura	2111	4037	417	6565	41710	48992	12080	102782	43821	53029	12497	109347
Soraba	1905	3031	177	5113	37267	41586	7464	86317	39172	44617	7641	91430
Sagara	1198	2261	90	3549	26854	29871	9550	66275	28052	32132	9640	69824
Hosanagara	2060	2731	470	5261	26222	27922	6446	60590	28282	30653	6916	65851
Thirthahalli	1311	1701	320	3332	26906	28595	7228	62729	28217	30296	7548	66061
Total	10729	17549	2351	30629	273683	315037	97616	686336	284412	332586	99967	716965

Source: District Health and Family Welfare Office, Shivamogga.

From the data in Table 4.10, among total patients treated, majority of them were from Bhadravathi taluk which accounted to 24.13 per cent (113486 out of 470305 patients) of the total patients treated in the district followed by Thirthahalli taluk accounting to 21.94 per cent (103166 out of 470305 patients) against Hosanagara taluk accounting to 9.21 per cent (43328 out of 470305 patients) of the total patients treated, while Sagara, Shikaripura and Soraba taluks accounted to 17.45, 15.64 and 11.63 per cent respectively (82076, 73558 and 54691 out of 470305 patients). Further, among total patients treated, majority of them were out-patients accounting to 93.64 per cent (440375 out of 470305 patients) against in-patient accounting to 6.36 per cent (29930 out of 470305 patients). Among total patients treated, majority of them were female patients accounting to 43.17 per cent (203026 out of 470305 patients) followed by male patients accounting to 41.48 per cent (195091 out of 470305 patients) and remaining 15.35 per cent (72188 out of 470305 patients) constituted children patients.

Among in-patients treated, majority of them were female patients accounting to 53.23 per cent (15932 out of 29930 patients) followed by male patients accounting to 32.77 per cent (9809 out of 29930 patients) and remaining 14 per cent (4189 out of 29930 patients) being children patients. Likewise, among out-patients treated, marginal difference was observed between female and male out-patients as these two accounted to 42.49 and 42.07 per cent (187094 and

185282 out of 440375 patients) respectively leaving 15.44 per cent (67999 out of 440375 patients) to be constituted by children out-patients.

With regard to patients treated at PHCs, majority of the patients accounting to 24.87 per cent (178311 out of 716965 patients) were from Shivamogga taluk followed by Bhadravathi taluk accounting to 18.99 per cent (136141 out of 716965 patients), Shikaripura taluk accounting to 15.25 per cent (109347 out of 716965 patients) and Soraba taluk accounting to 12.75 per cent (91430 out of 716965 patients) against Sagara, Thirthahalli and Hosanagara taluks accounting to 9.74, 9.21 and 9.12 per cent respectively (69824, 66061 and 65851 out of 716965 patients). On the other hand, among total patients treated, out-patients accounted to 95.73 per cent (686336 out of 716965 patients), while in-patients accounted to 4.27 per cent (30629 out of 716965 patients). Similarly, among total patients treated, female patients constituted to 46.39 per cent (332586 out of 716965 patients), male patients constituted 39.67 per cent (284412 out of 716965 patients) and children patients constituted 13.94 per cent (99967 out of 716965 patients). Further, among in-patients treated, majority of them were female in-patients accounting 57.30 per cent (17549 out of 30629 patients) followed by male in-patients accounting to 35.03 per cent (10729 out of 30629 patients) and children in-patients accounting to 7.68 per cent (2351 out of 30629 patients). Likewise, among out-patients treated, majority of them were female out-patients accounting to 45.90 per cent (315037 out of 686336 patients) followed by male out-patients

accounting to 39.67 per cent (273683 out of 686336 patients) and children out-patients accounting to 13.94 per cent (97616 out of 686336 patients).

The incidence of deaths among in-patients treated in general hospitals in Shivamogga district for the period January 2020 upto June 2020 as presented in Table 4.12 reveals that the incidence of deaths was very low which was less than one per cent. As such, the percentage of death to in-patient stood at 0.42 per cent (125 out of 29930 deaths). Among total deaths, the percentage of male deaths stood at 66.40 per cent (83 out of 125 deaths) against death rate of female patients standing at 32.00 per cent (40 out of 125 deaths) and death rate among children standing at 1.60 per cent (2 out of 125 deaths). On the other hand, with regard to the percentage of deaths, male deaths stood at 0.85 per cent (83 out of 9809 deaths) against female deaths standing at 0.25 per cent (40 out of 15932 deaths) and children at 0.05 per cent (2 out of 4189 deaths). With regard to taluk-wise deaths, majority of the deaths occurred in Shikaripura taluk accounting to 44 per cent (55 out of 125 deaths) followed by Sagara taluk with 32.00 per cent (40 out of 125 deaths), Hosanagara taluk with 12.80 per cent (16 out of 125 deaths), Bhadravathi taluk with 8.80 per cent (11 out of 125 deaths) and Soraba taluk with 2.40 per cent (3 out of 125 deaths), while no deaths occurred in Thirthahalli taluk and data for Shivamogga taluk was not available.

Table 4.12

Deaths Incurred among In-patients at General Hospitals in Shivamogga District from January 2020 to June 2020

Taluku	In-Patients				Death among In-Patients				% of Death to In-Patients			
	Male	Female	Children	Total	Male	Female	Children	Total	Male	Female	Children	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
Shivamogga	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bhadravathi	987	3983	987	5957	6	5	0	11	0.61	0.13	0.00	0.18
Shikaripura	2410	4116	637	7163	38	15	2	55	1.58	0.36	0.31	0.77
Soraba	988	1900	582	3470	2	1	0	3	0.20	0.05	0.00	0.09
Sagara	2500	2142	402	5044	26	14	0	40	1.04	0.65	0.00	0.79
Hosanagara	2030	2320	676	5026	11	5	0	16	0.54	0.22	0.00	0.32
Thirthahalli	894	1471	905	3270	0	0	0	0	0.00	0.00	0.00	0.00
Total	9809	15932	4189	29930	83	40	2	125	0.85	0.25	0.05	0.42

Note: NA - Not Available.

Source: District Health and Family Welfare Office, Shivamogga.

Table 4.13
Trends in Infant Deaths in Shivamogga District

Trends in Infant Deaths	2017-18	2018-19	2019-20	2020-21	Average
(01)	(02)	(03)	(04)	(05)	(06)
Total No. of Infant Deaths reported	433	506	491	417	462
Deaths due to Sepsis to Total Reported Infant Deaths (%)	4.80	6.10	4.90	5.37	5.27
Deaths due to Asphyxia to Total Reported Infant Deaths (%)	12.50	10.50	11.40	10.37	11.47
Deaths due to Pneumonia to Total Reported Infant Deaths (%)	3.70	4.00	5.10	5.67	4.27
Deaths due to Diarrhoea to Total Reported Infant Deaths (%)	0.00	0.40	0.20	0.40	0.25
Deaths due to Fever to Total Reported Infant Deaths (%)	0.20	0.20	0.80	1.00	0.55
Deaths due to Measles to Total Reported Infant Deaths (%)	0.00	0.00	0.00	0.00	0.00

Source: District Health and Family Welfare Office, Shivamogga.

The data in Table 4.13 presents trends in infant deaths in Shivamogga district for the period 2017-18 upto 2020-21. According to the data in the table, it was noted that infant deaths though increased initially, but decreased thereafter. As such, on an average, about 462 infant deaths occurred every year for the period between 2017-18 and 2020-21 whereas more number of deaths occurred during 2018-19. On an average, it was noted that infant deaths due to asphyxia was at higher level accounting to 11.47 per cent of the total infant deaths reported followed by infant deaths to sepsis accounting to 5.27 and infant deaths due to pneumonia accounting to 4.27 per cent. However, infant deaths due to fever and diarrhoea accounted to 0.55 and 0.25 per cent respectively. No infant death has occurred due to measles. As such, it could be inferred that asphyxia was the major cause for more number of infant deaths.

The data in Table 4.14 presents operation conducted in Shivamogga district for the period from 2017-18 to 2020-21.

Table 4.14
Operations Conducted in Shivamogga District

Operations Conducted	2017-18	2018-19	2019-20	2020-21	Average
(01)	(02)	(03)	(04)	(05)	(06)
Number of Major Operations	15820	17532	16436	8597	14596
Number of Minor Operations	31071	48857	73423	54150	51875
Total Operations Conducted	46891	66389	89859	62747	66471
Percentage of Major Operations to Total Operation	33.74	26.41	18.29	13.70	21.96
Percentage of Minor Operations to Total Operation	66.26	73.59	81.71	86.30	78.04
Number of Hysterectomy Surgeries	895	1,056	1,130	1126	1052
Hysterectomy Surgeries to Total Major Operations (%)	5.66	6.02	6.88	13.10	7.21

Source: District Health and Family Welfare Office, Shivamogga.

In accordance with the data in Table 4.14, number of major operations conducted in the district saw decreasing trend. With regard to minor operations conducted, though it increased initially, but considerably decreased during 2020-21. However, on an average, 14596 major operations and 51875 minor operations were conducted every year during the period 2017-18 to 2020-21. Further, out of total operations conducted major operations accounted to 21.96 per cent (14596 major operations out of total 66471 operations), while minor operations accounted to 78.04 per cent (51875 major operations out of total 66471

operations). At the same time, hysterectomy surgeries coming under major operation, on an average, accounting to 7.21 per cent (1052 major operations out of total 14596 operations) of the total major operations conducted saw increasing trend throughout the period.

4.4. Conclusion

This chapter after giving a brief profile of Shivamogga district studied health care services rendered by various health institutions in the district which showed that PHCs were playing vital role in providing required health care services to the people. Further, allopathic hospitals and CHCs were also playing important role in the delivery of health services. The services of 108 Ambulance and the role of hospitals working 24x7 basis in conducting deliveries was noteworthy. Further, beneficiaries under Janani Suraksha Yojana, though was concentrated in Shivamogga taluk was to be balanced to other taluks also particularly in Hosanagara, Thirthahalli and Bhadravathi taluks. Similarly, beneficiaries were to be made accessible to Madilu Kit in Bhadravathi as well as Thirthahalli taluks. Deliveries were widely conducted at public institutions and also safe deliveries were conducted. With regard to MTPs, both public institutions and private institutions were almost equal in conduction MTPs. Dog bite cases were widely witnessed in the district which turned out to be major diseases detected. The study showed wide gap between in-patients and out-patients treated, while occurrence of deaths was at minimum level. In the district operations conducted was observed to be decreasing. The forthcoming chapter concentrates in studying the status of health care services at sub-centres and PHCs levels in the district.

Chapter-05

DATA ANALYSIS AND INTERPRETATION

PART-I

Health Care Status at Sub-Centres

5.1. Health Care Status at Sub-Centres Level

5.1.1. Beneficiaries of Sub-Centres

5.1.1.1. Demographic Features

5.1.1.2. Awareness about Health Care Services

5.1.1.3. Sub-Centres Service Utilization

5.1.1.4. Health Services from Other Services (Apart from Sub-Centres)

5.1.2. Staff of Sub-Centres

5.1.2.1. General Features of Sub-Centres

5.1.2.2. Health Manpower at Sub-Centres

5.1.2.3. Health Care Infrastructure at Sub-Centres

5.1.2.4. Services Provided at Sub-Centres

5.1.2.5. Utility, Furniture and Other Services Provided by Sub-Centres

Part-II

Health Care Status at PHCs

5.2. Health Care Status at PHCs Level

5.2.1. Beneficiaries of PHCs

5.2.1.1. Demographic Features of the Respondents

5.2.1.2. Awareness about Health Care Services

5.2.1.3. Utilization of PHCs Service

5.2.1.4. Health Services from Other Services (Apart from PHCs)

5.2.2. Staff of PHCs

5.2.2.1. Manpower Availability at PHCs

5.2.2.2. Services Provided at the PHCs

5.2.2.3. Utility, Furniture and Other Services Provided in the PHCs

5.3. Hypotheses Testing

Chapter-05

DATA ANALYSIS AND INTERPRETATION

In this chapter an attempt has been made by the researcher to tabulate, interpret and analyse the response of the sample respondents. The responses given by the sample respondents were recorded by the researcher personally in the Interview Schedules designed for the purpose.

Information thus collected has been properly compiled and tabulated for the purpose of data interpretation. The researcher has taken adequate caution to keep in view the objectives and hypotheses of research study while presenting required data in the form of Tables. This interpretation is supported by graphs and diagrams whenever necessary.

The issue of health care service as understood by common man is totally different from the perception of economists and policy makers. For common people health service just implies timely medical attention to cure the diseases. They will be satisfied if this need is fulfilled. It is beyond their comprehension as to how health service system evolves to cater to the needs of society. The common man does not try to bother to know how different agencies and departments have to coordinate and integrate the services to develop health service system and ensure effective delivery mechanism. From this point of view the respondents appear not to have responded fairly. The researcher has noticed this deficiency and tried to cover or minimise the loophole.

For the purpose of primary investigation, a total of 400 respondents were chosen. Among them, 300 from Sub-Centres (200 beneficiaries and 100 health manpower) and 100 from Primary Health Care Centres (70 beneficiaries and 30 health manpower) have been interviewed with the help of separate structured Interview Schedules. The sample size is based on the scientific method as explained in Chapter-1 of the Thesis.

PART-I

Health Care Status at Sub-Centres

5.1. Health Care Status at Sub-Centres Level

Health care status at Sub-Centres is studied with regard to the perception of the beneficiaries receiving health care services at Sub-Centres and from the staff working at Sub-Centres. The information regarding health care status at Sub-Centres were gathered from 300 respondents out of which 200 were beneficiaries and 100 were staff working in Sub-Centres.

5.1.1. Beneficiaries of Sub-Centres

The status of health care services received by the beneficiaries in accordance to their perception is studied in terms of their demographic features, socio-economic indicators, awareness level among the beneficiaries regarding health care services, utilization of services at sub-centres and so on.

5.1.1.1. Demographic Features

The data in Table 5.1 presents information about gender, age and place of residence of the sample respondents at the sub-centres.

Table 5.1**Gender, Age and Place of Residence of the Respondents (Sub-Centres)**

General Profile		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Gender	Male	84	42.00
	Female	116	58.00
Total		200	100.00
Age (Years)	< 30	33	16.50
	30 – 40	93	46.50
	40 – 50	42	21.00
	> 50	32	16.00
Total		200	100.00
Place of Residence	Rural	200	100.00
	Urban	0	0.00
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data provided in Table 5.1 it is understood that while 84 respondents were male the remaining 116 were female. As regards the age of respondents, 33 were below the age of 30 years (16.5%), 93 belong to the age group 31-40 years (46.5%). It may be noted that 42 were in the age group of 40-50 years and the remaining 32 (16%) were above 51 years of age. Further, the Table also throws light on the place of respondent's residence. It was not surprising to find out all the 200 respondents in the study area were rural dwellers.

Table 5.2 provides information about family type, size of family and number of working members in the respondent's family working at sub-centres.

Table 5.2**Family Type, Size and Number of Working People in Respondents Family**

General Profile		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Family Type	Nuclear	167	83.50
	Joint	33	16.50
Total		200	100.00
Family Size (Members)	< 4	133	66.50
	5 – 8	52	26.00
	> 8	15	7.50
Total		200	100.00
No. of Working People in the Family	1	120	60.00
	2	53	26.50
	3	12	6.00
	4	12	6.00
	5	03	1.50
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Out of 200 respondents, 167 (83.5%) are in nuclear family, while 33 (16.5%) are in joint family. With regard to the size of family, it was found that 133 (66.5%) families have less than 4 (26.5%) members, whereas there are 5 to 8 members in 53 families. Further, 15 respondents viewed that there are more than 8 persons in their families. When the respondents were asked to give information about number of working persons in their families, it is found that 120 families have single working person, whereas families of 53 respondents have 2 working persons and 12 respondents stated that the number of earning members in their families were 3. However, only five respondents said that their families have 4 working persons, while 3 families have 5 working persons each.

Table 5.3 explains educational level and occupational status of the respondents in the study area.

Table 5.3
Educational Level and Occupation of the Respondents

General Profile		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Educational Level	Illiterates	21	10.50
	SSLC	14	7.00
	PUC	38	19.00
	Degree	121	60.50
	PG	06	3.00
Total		200	100.00
Occupation	Housewife	92	46.00
	Agriculture	42	21.00
	Self Employed	06	3.00
	Labour/ Daily Wages	06	3.00
	Business	06	3.00
	Government Employee	48	24.00
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table shows that, 21 (10.5%) respondents are illiterates out of 200 and the remaining 179 (89.5%) respondents are educated at different levels like SSLC, PUC, Degree and PG accounting to 14, 38, 121 and 6 respondents respectively. While, coming to the occupation, out of total 200 respondents 46 per cent are housewives, 21 per cent are engaged in agriculture and 24 per cent are government employees. Further, respondents those who were self-employed, Labour/daily wages and business accounted to 3 per cent each.

Income is one of the indicators of development. Income is the money that an individual or business receives in exchange for providing services or through investing capital. Classification of respondents on the basis of their monthly income is shown in Table 5.4.

Table 5.4
Monthly Income of the Respondents

Monthly Income (₹)	No. of Respondents	Percentage
(01)	(02)	(03)
< 10,000	12	6.00
10,000-20,000	127	63.50
20,000-30,000	46	23.00
30,000-40,000	15	7.50
Total	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it was noticed that 12 (6%) respondents stated that the monthly income of the family is below ₹ 10000 whereas the monthly income of 127 family was in the range of ₹ 10000 to 20000. Likewise, the monthly income of 46 respondents falls in the range of ₹ 20000 to 30000 and that of 15 respondents (7.5%) was in the range of ₹ 30000 to 40000 indicating that monthly income of majority of the respondents was between ₹ 10000 and 30000.

The data in Table 5.5 provides information regarding the subscription to health insurance scheme by the respondents.

Table 5.5
Subscription to Health Insurance Scheme by the Respondents

Subscription of Health Insurance Scheme	No. of Respondents	Percentage
(01)	(02)	(03)
Public	00	0.00
Private	43	21.50
Both	00	0.00
Not Subscribed	157	78.50
Total	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The present trend is that people have developed awareness about health insurance coverage due to health services becoming expensive. In this context, the attempt of the researcher to know whether the respondents in the study have taken health insurance coverage by making the payment of required premium or not revealed that out of total number of 200 respondents only 43 persons have taken personal health insurance coverage by making necessary subscription which indicated that majority of the respondents were away from the subscription of health insurance. Further they have taken health insurance coverage from operators in the private sector. This gives them additional insulation against major diseases and health problems.

All most all primary diseases such as cold, cough, diarrhoea, muscular pain, minor injury, stomach pain, food poison, waterborne disease, etc. are very much common in all most every Indian village. Villagers have a habit of visiting to sub-centres for any kind of discrepancy in their health status. They were asked to

reveal for which disease they approach sub-centre for treatment. As such the data in Table 5.6 presents the reply got from these respondents.

Table 5.6
Recurring Diseases Normally Suffered by the Respondents Family

Recurring Diseases	No. of Respondents (N=200)	Percentage
(01)	(02)	(03)
Cold and Cough	200	100.00
Fever	200	100.00
Muscular Pain	200	100.00
Minor Injury	200	100.00
Stomach Pain	185	92.50
Constipency	30	15.00
Food Poison	22	11.00
Water Borne Diseases	200	100.00
Diarrhoea	200	100.00
Pregnancy	75	37.50

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It could be understood from the Table that, all most all the respondents (100%) visited sub-centre for disease such as cold and cough, fever, muscular pain, minor injury, water borne diseases and diarrhoea etc., while around 75 percentage women respondents approached sub-centre for pregnancy related issues. Further, 30 respondents admitted that they visit sub-centres to get treatment for constipation, while 22 respondents confessed that, they visit sub-centre to take treatment for food poisoning. Thus, respondents visit sub-centres whenever required to get immediate treatment for their illness.

When people fall ill, it is quite natural that they prefer to have immediate cure in order to perform routine work. During the process of investigation, the researcher asked the respondents regarding curative measures adopted by the respondents and the responses obtained have been presented in Table 5.7.

Table 5.7
Curative Measures followed by the Respondents during Unhealthy

Curative Measures followed (01)	No. of Respondents (N=200) (02)	Percentage (03)
Ignore	0	0.00
Self-medication	101	50.50
Indigenous System-Homeopathy and Ayurveda	88	44.00
Allopathy	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

As indicated in the Table, all respondents apply one or the other form of curative measure to cure illness. No respondent was ready to ignore unhealthy situation. As such, 101 respondents declared that, initially they opted for self-medication, while 88 respondents revealed that, they choose indigenous curative measures which included both Ayurveda and Homeopathic medicines as curative measures. On the contrary, all the 200 respondents availed allopathic medicines to cure illness. All these indicate that respondents have availed of one or the other form of medicine to get diseases cured and remain healthy.

It is inevitable to spend money to get medicine or to take test prescribed by doctors. Even for self-medication, people need to spend money. The researcher wanted to know the average medical expenditure by the respondents per annum. The reply given by the respondents are tabulated in the Table 5.8.

Table 5.8
Health Expenditure of the Respondents (Per Annum)

Health Expenditure (`)	No. of Respondents	Percentage
(01)	(02)	(03)
1,000-2,500	90	45.00
2,500-5,000	100	50.00
5,000-10,000	10	5.00
Total	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

As indicated in the above Table, average expenditure incurred by 45 per cent of the total respondent surveyed in the study area was below ` 2500, while 100 respondents stated that their average annual medical expenditure exceeded ` 2500 but was below ` 5000 per annum. Further, 10 respondents declared that their annual medical expenditure ranged between ` 5000 and ` 10000 per annum. All these indicate that the medical expenditure of majority of the respondents was less than ` 5000 per annum.

Taking into consideration the data provided in Table 5.9 it can be found out that all the respondents are required to incur medical expenditure. This was an indication revealing that sub-centre cannot meet all the medical needs of the assigned population. Further, expenditure incurred by respondents for curative measures has to be met in one or the other sources. Keeping this aspect in view, the researcher to know from the respondent the source from which they get met medical expenses, the response obtained from the respondent have been presented in Table 5.9.

Table 5.9
Sources of Coverage of Medical Expenses by the Respondents

Sources of Coverage of Medical Expenses		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Personal/Family Earnings	Yes	200	100.00
	No	0	0.00
Total		200	100.00
Reimbursement from Government/Employer	Yes	0	0.00
	No	200	100.00
Total		200	100.00
Health Insurance Coverage	Yes	0	0.00
	No	200	100.00
Total		200	100.00
ESI	Yes	43	21.50
	No	157	78.50
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it can be noted that personal or family earnings was the major sources of meeting medical expenses of the respondents. Reimbursement of medical expense have not been taken by any respondent in the study area, similarly nobody has drawn money from health insurance scheme to cover medical expenses. However, 43 respondents obtained financial support from employee state insurance facility to cover medical expenses.

Various health services are available to people in our country. Even private hospitals extend such facility on contractual basis. As a welfare measure, government has introduced many health services. Among various health services provided by the government, Health Card, Sanjeevini, Arogya Bhagya and

Ayushman are the important ones. The researcher in order to know from the respondents, in the study area, about various health services availed by them collected information and the so obtained responses have been compiled in Table 5.10 which indicated that Health Card, Sanjeevini, and Arogya Bhagya are not used by any respondent in study area. However, 39 persons out of the 200 respondents have availed Ayushman health service.

Table 5.10
Benefits of Health Services Availed by the Respondents

Benefits of Health Services Availed		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Health Card	Yes	00	0.00
	No	200	100.00
Total		200	100.00
Sanjeevini	Yes	00	0.00
	No	200	100.00
Total		200	100.00
Arogya Bhagya	Yes	00	0.00
	No	200	100.00
Total		200	100.00
Ayushman	Yes	39	19.50
	No	161	80.50
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

5.1.1.2. Awareness about Health Care Services

Tables 5.11 and 5.12 highlight with regard to the respondents availing health care services provided by the government and the means of accessing government's health care services by the respondents. As such, it was noted that all respondents accessed health services provided at sub-centres.

Table 5.11**Respondents Availing Health Services Provided by the Government**

Availing Health Services	No. of Respondents	Percentage
(01)	(02)	(03)
Yes	200	100.00
No	00	0.00
Total	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Table 5.12**Means of Accessing Government Health Services**

Means of Accessing	No. of Respondents (N=200)	Percentage
(01)	(02)	(03)
By visiting the Sub-Centres for treatment	200	100.00
Visiting Sub-Centres for the treatment of family members/relatives/friends	200	100.00
Through Social Media	15	7.50
By watching Advertisement	10	5.00
Government Notification	59	29.50

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table 5.12, it could be noted that there are various means of accessing government's health care services by the respondents where among available means, all respondents feel that visiting sub-centres for treatment for themselves and for family members/relatives/friends, they have accessed various health care services provided by the sub-centre. Further, government notification is also responsible for considerable extent to access various health care services available in the sub-centre. However, marginal

percentage of respondents accepted that social media and advertisement were responsible to avail health care services provided by the sub-centre.

5.1.1.3. Sub-Centres Service Utilization

The data in Table 5.13 provides information with regard to accessibility and purpose of visiting Sub-Centres by the beneficiaries availing health care services.

Table 5.13
Accessibility and Purpose of Visiting Sub-Centres

Accessibility and Purpose of Visiting Sub-Centres		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Accessing Sub-Centres services	Yes	200	100.00
	No	00	0.00
Total		200	100.00
Number of times visited Sub-Centres in last one year	1	102	51.00
	2	65	32.50
	3	33	16.50
Total		200	100.00
Reason for visiting Sub-Centres	Curative	200	100.00
	Preventive	00	0.00
	Both	00	0.00
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is evident that all respondents were accessing various health care services provided at sub-centres. Further, majority of the respondents visited sub-centres either once or twice during the past one year to avail of health care services at sub-centres. At the same time, it was noted that the major purpose of visiting sub-centres by the respondents was for curative purpose which indicated that none

of the respondents visited sub-centres to avail of preventive services. All these indicated that health care services provided by sub-centres were only used for curative purpose by the respondents.

The data in Table 5.14 presents information regarding distance and mode of transport to access health care services provided by sub-centres.

Table 5.14
Distance and Mode of Transport to Access Sub-Centres

Distance and Mode of Transport (01)	(02)	No. of Respondents (03)	Percentage (04)
Distance (km) to be covered to access Sub-Centres	Within Village	51	25.50
	< 3	46	23.00
	3-5	30	15.00
	5-10	52	26.00
	> 10	21	10.50
Total		200	100.00
Mode of accessing Sub-Centres	Auto	06	3.00
	Bus	125	62.50
	Walk	51	25.50
	Personal Vehicle	09	4.50
	Others	09	4.50
Total		200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it could be inferred that the average distance to be travelled by the respondents to access health care services provided at sub-centres is less than 3 km as about 50 per cent of the respondents admitted that they travelled less than 3 km to access health care services at sub-centres out of which 25.5 per cent accessed the health care services provided at sub-centre within the village they reside. However, 26 per cent of the respondents admitted

that they travelled between 5 and 10 km to reach sub-centres. At the same time, the percentage of respondents who travelled from 3 to 5 km and above 10 km to access health care services provided at sub-centres accounted to 15.0 and 10.5 per cent respectively. All these indicated that to the majority of respondents, health care services provided by sub-centres were easily accessible.

The data in Table 5.15 throw light on the respondents availing health care services provided at sub-centres.

Table 5.15
Reasons for Using Sub-Centres by the Respondents

Reasons for Using Sub-Centres		No. of Respondents	Percentage
(01)		(02)	(03)
Admitted to Sub-Centres in the last 12 months (Out of 200 respondents)		149	74.50
Purpose of using Sub-Centres	Free of cost	200	100.00
	Total	200	100.00
	Near	200	100.00
	Total	200	100.00
	Easy accessibility	200	100.00
	Total	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it could be noted that about three fourth of the respondents were admitted to the sub-centres in the last 12 months to avail of health care services. Further, it was noted that health care services provided by sub-centres being free of cost, near and easily accessible were the major causes for using health care services provided by sub-centres. This showed that majority of the respondents availing of health care services were economically weak, hence they made use of health care services provided by the government at free of cost.

The perception of the respondents with regard to the facilities available at sub-centres was as presented in Table 5.16 which revealed that none of the Sub-Centre had adequate beds, ambulance service and visitor's room. Further, it is found that majority of the sub-centres were lacking in emergency treatment, wheel chair and parking facility. However, the available facilities at sub-centres were found to be under three different conditions like good, tolerable and bad.

Table 5.16
Facilities Available at Sub-Centres

Facilities Available	Available with Condition			Not Available	Total
	Good	Tolerable	Bad		
(01)	(02)	(03)	(04)	(05)	(06)
Physical Building	109 (54.50)	57 (28.50)	34 (17.00)	-	200 (100.00)
Emergency treatment	08 (4.00)	41 (20.50)	05 (2.50)	146 (73.00)	200 (100.00)
Weighing machine	132 (66.00)	42 (21.00)	26 (13.00)	-	200 (100.00)
Wheel chair	16 (8.00)	12 (6.00)	08 (4.00)	164 (82.00)	200 (100.00)
Adequate beds	-	-	-	200 (100.00)	200 (100.00)
Wash room facilities	81 (40.50)	79 (39.50)	40 (20.00)	-	200 (100.00)
Medicines	173 (86.50)	16 (8.00)	11 (5.50)	-	200 (100.00)
Parking facility	48 (24.00)	57 (28.50)	10 (5.00)	85 (42.50)	200 (100.00)
Lighting facility	169 (84.50)	15 (7.50)	16 (8.00)	-	200 (100.00)
Water Facility	172 (86.00)	18 (9.00)	10 (5.00)	-	200 (100.00)
Ambulance	-	-	-	200 (100.00)	200 (100.00)
Visitors room	-	-	-	200 (100.00)	200 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in Table 5.17 gives us idea about the availability of manpower at sub-centres in accordance to the perception of the respondents.

Table 5.17
Availability of Manpower at Sub-Centres

Availability of Manpower	Available status			Not Available	Total
	Adequately	Manageable	Insufficient		
(01)	(02)	(03)	(04)	(05)	(06)
Doctors	06 (3.00)	10 (5.00)	7 (3.50)	177 (88.50)	200 (100.00)
Nurse	82 (41.00)	106 (53.00)	12 (6.00)	-	200 (100.00)
Nursing assistant	-	-	-	200 (100.00)	200 (100.00)
Ayas/Cleaners	-	-	-	200 (100.00)	200 (100.00)
Security/Watch and ward	-	-	-	200 (100.00)	200 (100.00)
Pharmacist	-	-	-	200 (100.00)	200 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table clearly reveal that the availability of manpower at sub-centres was in very poor condition as none of the sub-centres had nursing assistants, Ayas/cleaners, security/watch & ward and pharmacists. Further, it was also noted that 88.50 per cent of the sub-centres were functioning without doctors. All these indicate that sub-centres lacked badly with the availability of medical and para medical staff which are very much essential to deliver effective health care services.

Table 5.18**Reasons for Not Using Sub-Centre Services by the Respondents**

Reasons	No. of Respondents (N=200)	Percentage
(01)	(02)	(03)
Not happy with the treatment	102	51.00
Medicines are not available	21	10.50
Doctor is absent	98	48.00
Lack of lady doctor	200	100.00
Lack of laboratory	200	100.00
Lack of infrastructure	200	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table shows that the among various reasons, the absence of doctors at sub-centres, lack of lady doctor, lack of laboratory facility and lack of sufficient and proper infrastructure availability at sub-centres were the major reasons for respondents not using health care services provided at sub-centres. Further, it was noted that for 51 per cent of the respondents were unhappy with the treatment provided at sub-centres which made them not to use the health care services. However, non-availability of medicines also mattered in not using health care services provided at sub-centres as the percentage of respondents accounted to 10.5.

5.1.1.4. Health Services from Other Services (Apart from Sub-Centres)

It is already clear that the absence of medical and paramedical staff at sub-centres accompanied by lack of infrastructure being the major reason for not using health care services provided at sub-centres. Various reasons exist for not availing health care services provided at sub-centres. As such, when respondents were asked to respond for not accessing government health care facilities provided at sub-centres, the results are as presented in Table 5.19.

Table 5.19**Respondents Perception for Not Accessing Government Health Care Facilities**

Respondents Perception	No. of Respondents (N=200)	Percentage
(01)	(02)	(03)
Inconvenient location (far)/high transport cost	58	42.30
Less confidence	67	48.90
Poor quality of medicine and service	49	35.80
Non-availability of doctors and nurse	85	62.00
Wrong approach/Behaviour of medical personnel	27	19.70
Long waiting hours	59	43.10
Lack of good infrastructure	54	39.40
Inconvenient timings	38	27.70

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table it can be noted that due to non-availability of doctors and nurses people do not feel to access the health care services provided at sub-centres which accounted to 62 per cent of the total respondents in the study. Further, less confidence in the health care services provided at sub-centres was another reason for not accessing health care facility provided at sub-centres accounting to 48.9 per cent of the total respondents. However, it was also noted that long waiting hours at the sub-centres and their inconvenient location considerably hindered the access to health care services, as these two accounted to 43.1 per cent and 42.3 per cent of the total respondents respectively. At the same time, lack of infrastructure facilities at sub-centres and poor quality of medicine and services also resulted in not accessing health care services which accounted to 39.4 per cent and 35.8 per cent of the total respondents respectively. Similarly, for about one fourth of the total respondents (27.7%), inconvenient timings kept them away in accessing health care services of sub-centres.

The major reasons for the respondents to access private health care services are presented in Table 5.20.

Table 5.20
Preference Regarding Using Private Health Services

Preference	No. of Respondents (N=200)	Percentage
Emergency or Serious Condition	118	86.10
Non-availability of Doctors at Sub-Centres	92	67.20
Long distance or high transportation cost	45	32.80
Lack of confidence on the availability of doctor	39	28.50
Long waiting period	57	41.60
No curative treatment in Govt. Hospital	91	66.40

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The study found that emergency services or treatment for serious condition was the major cause of respondents' preference for private health care services. This is because it was noted that lack of medical and paramedical staff along with inadequate and insufficient infrastructure facility was observed at sub-centres where it would be not only difficult but also hardly possible to treat emergency cases or serious condition patients. Hence, it was obvious that respondents approach private sector health care services for emergency treatment, 86.1 per cent of the total respondents viewed in time with. Further, it was noticed that non-availability of the doctors in the sub-centres and if it was not possible to get curative treatment, respondents opted for private health care services which accounted to 67.2 and 66.4 per cent of the total respondents respectively. However, long distance to be travelled along with high transportation cost incurred

in reaching sub-centres to avail health care services and lack of confidence in the availability of doctor were also responsible for accessing private health care services according to 32.8 and 28.5 per cent of the total respondents respectively.

5.1.2. Staff of Sub-Centres

The perceptions of the health manpower working at sub-centres were analysed in terms of their general features, status of health manpower, availability of infrastructure, services provided at sub-centres and other utilities available at sub-centres. The total number of staff covered in the investigation stood at 100.

5.1.2.1. General Features of Sub-Centres

The general features of the sub-centres were studied in terms of staff working at sub-centres and number of villages covered by sub-centres in the study area. Totally 100 staff members working at sub-centres were interviewed. The data in Table 5.21 presents the designation of the respondents working at sub-centres.

Table 5.21
Designation of the Respondents

Designation	No. of Respondents	Percentage
(01)	(02)	(03)
Auxiliary Nurse Midwife (ANM)	22	22.00
Jr. Health Assistant (Male)	5	5.00
Jr. Health Assistant (Female)	73	73.00
Total	100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is found that majority of the respondents were serving as Jr. Health Assistants (Female) accounting to 73 per cent of the total respondents followed by

ANM and Jr. Health Assistant (Male) without all-time present doctors at sub-centres. Further, it was observed that all were on permanent basis.

It was also noticed that all sub-centres are functioning in government owned buildings and all sub-centres provided 24x7 delivery facilities to villages coming under its service area.

5.1.2.2. Health Manpower at Sub-Centres

The health manpower at sub-centres is measured in terms of its availability, type of medical and para-medical persons working at sub-centres. The data in Table 5.22 provides information on the availability and status of health manpower at sub-centres.

Table 5.22
Availability and Status of Health Manpower at Sub-Centres

Availability and Status	No. of Respondents (N=100)	Percentage
(01)	(02)	(03)
Sub-Centres functioning without Health Worker	00	00.00
Sub-Centres functioning without Health Worker and ANM	00	00.00
Health Worker (Female) ANM	98	98.00
Health Worker (Male)	31	31.00
Additional second ANM (Contract basis)	08	8.00
Voluntary Worker	00	00.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The study found that the availability of health manpower at sub-centres is limited to Health Workers as all sub-centres functioned with Health workers and ANM where 98 per cent of them operated with Female Health Worker, the

availability of Male Health Worker is only 31 per cent. Further, 8 per cent of the respondents admitted that their sub-centres functioned with additional second ANM who were working on contract basis. However, none of the respondents revealed that their sub-centre had voluntary workers.

5.1.2.3. Health Care Infrastructure at Sub-Centres

The availability of infrastructure facilities and their status were studied in terms of availability of residential quarters, medical and paramedical persons living in quarters, water supply, electricity supply, toilet facilities, building status and so on. The data in Table 5.23 presents regarding health care infrastructure availability at sub-centres.

Table 5.23
Availability of Health Care Infrastructure at Sub-Centres

Availability of Health Care Infrastructure	No. of Respondents (N=100)	%
(01)	(02)	(03)
ANM residential quarters	100	100.00
ANM living in Sub-Centre residential quarters	056	56.00
ANM living in Sub-Centre village	072	72.00
Sub-Centre functioning as per IPHS norms	000	00.00
Sub-Centre having regular water supply	100	100.00
Sub-Centre having electricity supply	100	100.00
Sub-Centre having all weather motorable road	100	100.00
Sub-Centre having separate toilet facility for male and female patients	100	100.00
Sub-Centre having separate toilet facility for staff	100	100.00
Sub-Centre having regular supply of generic drugs for common ailments	100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it could be noted that the availability of health care related infrastructure is at satisfactory level as all sub-centres have ANM residential quarters, water supply, electric supply, all-weather motorable road, separate toilet facility for male and female patients, separate toilet facility for staff and regular supply of generic drugs for common ailments. Further, though ANM quarters are available at all sub-centres, the percentage of ANM living in sub-centre quarters accounted to only 56 and ANM living in the village where sub-centres were located accounted to 72.0 per cent. It is observed that in spite of all the facilities available at Sub Centres, none of the sub-centres was functioning in accordance with IPHS norms.

5.1.2.4. Services Provided at Sub-Centres

The services provided at sub-centres were measured in terms of assured services like OPD services, emergency services, referral services and in-patient services, availability of bed facility and bed occupancy rate, OPD attendance, treatment for specific cases like wounds, fracture, poisoning, etc. Maternal and child health care facilities, laboratory services and connectivity with sub-centres while accessing the services.

The data in Table 5.24 presents information regarding assured services provided at the Sub-Centres.

Table 5.24
Assured Services Provided at the Sub-Centres

Assured Services Provided	No. of Respondents (N=100)	Percentage
(01)	(02)	(03)
OPD Services	100	100.00
Emergency services (24 Hours)	100	100.00
Referral Services	100	100.00
In-patient Services	00	00.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table revealed that assured services provided at the sub-centres was acceptable as OPD services, emergency services round the clock and Referral services were available at all sub-centres. On the other hand, none of the sub-centres had in-patient services.

The data in Table 5.25 provides information regarding average daily OPD attendance at sub-centres with respect to male and female patients.

Table 5.25
Average Daily OPD Attendance at Sub-Centres

Average Daily OPD Attendance		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Male	< 5	22	22.00
	5–10	52	52.00
	> 10	26	26.00
Total		100	100.00
Female	< 5	06	06.00
	5–10	39	39.00
	> 10	55	55.00
Total		100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table shows that the percentage of male OPD attendance at sub-centres ranged between 5 to 10 patients which accounted to 52 per cent of the total respondents and the remaining 48 percentage of them were distributed between those being less than 5 patients daily and those more than 10 patients daily, while the percentage of female OPD attendance were more than 10

patients daily which indicated that female patients were more in availing health care services provided at sub-centres compared to male patients followed by 5 to 10 patients accounting to 39.0 per cent and the remaining 6 percentage being less than 5 patients daily. As such, it could be noted that the average cumulative percentage of male and female OPD visiting daily stood at 78 and 94 per cent respectively indicating that more female patients availed health care services at sub-centres.

Sub-centres working at the grassroot level and being the primary health care providers are widely functioning with the presence of ANMs. Further, majority of the sub-centres are functioning without the services of the doctors, the services of other specialists could not be expected at sub-centres. As such, the level of treatment facilities available at sub-centres will be of primary type. The data in Table 5.26 presents treatment of specific case at sub-centres.

Table 5.26
Treatment of Specific Cases at Sub-Centres

Treatment of Specific Cases	No. of Respondents (N=100)	Percentage (%)
(01)	(02)	(03)
Surgery for cataract done at Sub-Centres	00	00.00
Primary management of wounds done at Sub-Centres	62	62.00
Primary management of fracture done at Sub-Centres	00	00.00
Minor surgeries like draining of abscess etc. done at Sub-Centres	00	00.00
Primary management of cases of poisoning/ snake, insect or scorpion bite done at Sub-Centres	00	00.0
Primary management of burns done at Sub-Centres	00	00.0

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it could be understood that sub-centres are not providing the treatment of specific cases like surgery for cataract, primary management of fracture, minor surgeries like draining of abscess, cases of poisoning/ snake, insect or scorpion bite, burns, etc. however, the only treatment provide by sub-centres with regard to management of wound accounted to 62 per cent. All these indicate that sub-centres were limited to provide health care services for elementary sicknesses.

Ante-natal care, intra-natal care and post-natal care are the three major stages through which expecting mother is supposed to pass through. Antenatal care also known as pre-natal care being crucial period to ensure health outcomes in both woman as well as new born requires the nutritional education and counselling in terms of best nutrition, tracking baby's development, screening the conditions affecting pregnancy, appropriate and scheduled immunization, scheduled testing of diabetic and Hepatitis B which influences maternal and child health outcomes. Further, intranatal care stage is one, where care will be given to both the mother and the baby at the time of delivery in terms of cleanliness, smooth delivery without injuring neither the mother nor the baby, preventing complications, delivery artificial respiration for the baby and so on, while postnatal care which is required for 6 to 8 weeks after the birth of the baby involves rest, nutrition and vaginal care. Further, this stage is essential to prevent postpartum complications, restoring mother to original health and ensuring problem free breastfeeding. The data in Table 5.27 provides information related to maternal and child health care facilities provided at sub-centres.

Table 5.27
Maternal and Child Health Care Provided at Sub-Centres

Health Care Provided	No. of Respondents	Percentage
(01)	(02)	(03)
Ante-natal care	100	100.00
Intranatal care (24 hour delivery services both normal and assisted)	100	100.00
Post-natal care	100	100.00
New born care	100	100.00
Child care including immunization	100	100.00
Family planning	100	100.00
MTP	000	00.00
Management of RTI/STI	000	00.00
Facilities under Janani Suraksha Yojana	100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table revealed that sub-centres were at the forefront in providing maternal and child health care services as all sub-centres were providing ante-natal care, intra-natal care and post-natal care, new born care, childcare including immunization, family planning services and facilities under Janani Suraksha Yojana of the state government. However, it was noted that none of the sub-centres provided MTP which means medical terminating pregnancy where by terminating of pregnancy will be done through medicines and management of RTI/STI services. It is to be noted that when pregnancy is within 20 weeks then, medical termination can be availed legally.

Frequent training is very much essential for medical and paramedical personnel to deliver effective services by updating themselves with latest developments and to be more professional in delivering health care services. Table 5.28 presents data on respondents' perception regarding training provided to medical and paramedical staff.

Table 5.28**Training Provided to Medical and Paramedical Staff**

Training Provided	Frequently Provided	Provided	Rarely Provided	Not at all Provided	Total
(01)	(02)	(03)	(04)	(05)	(06)
Tradition birth attendants	31 (31.00)	57 (57.00)	12 (12.00)	-	100 (100.00)
Initial and periodic training of paramedics in treatment of minor ailments	79 (79.00)	12 (12.00)	09 (09.00)	-	100 (100.00)
Training of ASHAs*	72 (72.00)	18 (18.00)	10 (10.00)	-	100 (100.00)
Training of Health Workers in antenatal care and skilled birth attendance	33 (33.00)	48 (48.00)	19 (19.00)	-	100 (100.00)

Note: 1) Figures in the parenthesis show percentage.

*2) * Accredited Social Health Activist.*

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table reveal that majority of the respondents agree that they received frequent training in various areas.

Sub-centres were providing various laboratory services. Table 5.29 presents data about various laboratory services provided by the sub-centres.

Table 5.29
Laboratory Services Provided by the Sub-Centres

Services	Adequately Provided	Provided	Rarely Provided	Not Provided	Total
(01)	(02)	(03)	(04)	(05)	(06)
Routine urine, stool and blood tests	-	-	-	100 (100.00)	100 (100.00)
Blood grouping	-	-	-	100 (100.00)	100 (100.00)
Bleeding time, clotting time	-	-	-	100 (100.00)	100 (100.00)
Diagnosis of RTI/STDs with wet mounting, grams stain, etc.	-	-	-	100 (100.00)	100 (100.00)
Sputum testing for TB	-	-	-	100 (100.00)	100 (100.00)
Blood smear examination for malaria parasite	78 (78.00)	12 (12.00)	10 (10.00)	-	100 (100.00)
Rapid tests for pregnancy	70 (70.00)	14 (14.00)	16 (16.00)	-	100 (100.00)
RPR test for Syphills/YAWS surveillance	-	-	-	100 (100.00)	100 (100.00)
Rapid tests for HIV	-	-	-	100 (100.00)	100 (100.00)

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

According to the data presented in the above Table, it is noted that the laboratory services provided at sub-centres were limited to blood smear examination for malaria parasite and rapid test for pregnancy. However, other laboratory services like routine urine, stool and blood test, blood grouping, bleeding time, clotting time, diagnosis of RTI/STDs with wet mounting, sputum testing for TB, RPR test for Syphills/YAWS surveillance and rapid test for HIV were not available at sub-centres.

5.1.2.5. Utility, Furniture and Other Services Provided by Sub-Centres

The availability of utility, furniture and other services at sub-centres were measured in terms of the availability of OPD rooms, public utilities, waiting room for patient, availability of wards, laboratory status, water supply status, electric supply status, communication facilities and other infrastructure facilities. Data presented in Table 5.30 provides information with regard to the availability of utilities services at the sub-centres.

Table 5.30
Availability of Utility Services at Sub-Centres

Availability of Utility Services (01)	Condition of Availability			Not Available (05)	Total (06)
	Good (02)	Manageable (03)	Intolerable (04)		
Separate public utilities for males and females	40 (40.00)	43 (43.00)	17 (17.00)	-	100 (100.00)
Suggestion/complaint box	22 (22.00)	65 (65.00)	13 (13.00)	-	100 (100.00)
OPD rooms/cubicles	46 (46.00)	36 (36.00)	18 (18.00)	-	100 (100.00)
Family Welfare Clinic	72 (72.00)	18 (18.00)	10 (10.00)	-	100 (100.00)
Waiting room for patients	51 (51.00)	32 (32.00)	17 (17.00)	-	100 (100.00)
Emergency Room/Casualty	-	-	-	100 (100.00)	100 (100.00)
Separate wards for males	-	-	-	100 (100.00)	100 (100.00)
Separate wards for females	-	-	-	100 (100.00)	100 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is found that sub-centres were providing utilities services to their beneficiaries in the form of separate public utilities for male and female patients, suggestion/ complaint box, OPD rooms/cubicles; Family welfare clinics and waiting room for patients were also provided, while it was noticed that emergency room/ casualty and separate wards for male and female patients were absent in the sub-centres.

The laboratory services and ancillary rooms available at the sub-centres is as presented in Table 5.31 where it was evident that only Ancillary rooms/nurse rest rooms were available at sub-centres and none of the sub-centres were functioning with laboratory with it as the result of which there was no question of the availability of adequate equipment and chemicals, whether laboratory was maintained in orderly manner.

Table 5.31
Laboratory Services and Ancillary Room Available at Sub-Centres

Availability of Services	No. of Respondents (N=100)	Percentage
(01)	(02)	(03)
Laboratory available	00	00.00
Adequate equipment and chemicals available	00	00.00
Laboratory maintained in orderly manner	00	00.00
Ancillary Rooms - Nurses rest room	40	40.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in Table 5.32 presents information with regard to the availability of other facilities at sub-centres in terms of office room, store room, kitchen, provision of diet, residential facility for medical and paramedical personnel with all amenities.

Table 5.32
Availability of Other Facilities at Sub-Centres

Other Facilities Available		No. of Respondents (N=100)	Percentage
(01)	(02)	(03)	(04)
The unit has the facility of	Office room	00	00.00
	Store room	00	00.00
	Kitchen	00	00.00
Is diet provided by unit	Yes	00	00.00
	No	100	100.00
Residential facility provided with all amenities for	Medical Officer	00	00.00
	Pharmacist	00	00.00
	Nurses	100	100.00
	Other staff	00	00.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it can be noted that none of the sub-centres were equipped with office room, store room or with kitchen which indicated that the sub-centres were functioning with congested environment. Further, dietary facility was provided in none of the sub-centres and residential facility provided with all amenities at sub-centres was limited to only Nurses, while there was no residential facility provided with all amenities for Medical Officer/Pharmacists or other staff.

The data in Table 5.33 provides information with regard to the behaviour aspects of the staff of the sub-centres with the patients and the responses of the staff at the time of pandemic where it was found that all the staff had either courteous or casual behaviour with the patients where staff having courteous behaviour with patients accounted to 62 per cent, while casual behaviour of staff with patient accounted to 38 per cent which indicated that none of the staff of sub-centres had insulting or derogatory behaviour with patients. Further, the staff

of sub-centres viewed that no fee was collected for any services nor there was any corruption at the sub-centres.

Table 5.33
Behavioural Aspects of the Staff of Sub-Centres

Behavioural Aspects		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Behaviour of the Sub-Centres staff with the patient	Courteous	62	62.00
	Casual	38	38.00
	Insulting / derogatory	00	00.00
Total		100	100.00
Any fee for service charged from the users		00	00.00
Corruption in terms of charging extra money for any of the service provided		00	00.00
Women patients interviewed in an environment that didn't ensures privacy and dignity		00	00.00
Patients with chronic illnesses receiving adequate care and drugs for the entire duration		00	00.00
Publicly displayed mechanism to register complaint/ grievance		100	100.00
Total		100	100.00
Outbreak of any of the following diseases in the Sub-Centres area in the last three years	Malaria	16	16.00
	Measles	02	02.00
	Gastroenteritis	21	21.00
	Jaundice	29	29.00
	Others	32	32.00
Total		100	100.00
If Yes, Sub-Centres staff responding immediately to stop the further spread of the pediments			100.00
Sub-Centres unequipped to provide the services then patients were referred to	Taluk Hospital	86	86.00
	District Hospital	14	14.00
Total		100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It was also found that sub-centres lacked with the facility where woman patients could be interviewed or examined in an environment that ensured privacy and dignity. Further, it was very unsatisfactory to know that patients with chronic illness were not possible to receive adequate care and drugs for the entire duration of the treatment. However, all the sub-centres had publicly displayed mechanism to register complaint or grievance. At the same time, it was noted that at the time of outbreak of pandemic in terms of malaria, measles, gastroenteritis and jaundice, the staff of sub-centres immediately responded to the situation with the view to stop further spread of the pandemic. However, when the sub-centres were unequipped to provide adequate services then the patients were referred to the nearest taluk or district hospitals.

The data in Table 5.34 presents the perception of the respondents regarding integration between health manpower and patient.

Table 5.34
Interaction Between Health Manpower and Patient

Interaction	No. of Respondents	Percentage
(01)	(02)	(03)
Very Friendly	12	12.00
Friendly	61	61.00
Neutral	14	14.00
Unfriendly	08	08.00
Extremely Unfriendly	05	05.00
Total	100	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It was evident from the data in the above Table that majority of the staff had friendly relationship with the patients, while 14 per cent of them remaining neutral and 13 per cent of them accepting as unfriendly.

The data in Table 5.35 presents respondents' perception regarding additional manpower required by sub-centres.

Table 5.35
Manpower Required by Sub-Centres

Manpower Required	No. of Respondents (N=100)	Percentage
(01)	(02)	(03)
Visiting Specialists	23	23.00
Health Worker (Female)	39	39.00
Health Worker (Male)	26	26.00
Transportation required	31	31.00
Better Infrastructure	28	28.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table reveals that visiting specialists, female and male health worker, transportation facility and better infrastructure were additionally required at the sub-centres to provide better health care services to the general public.

Part-II

Health Care Status at PHCs

5.2. Health Care Status at PHCs Level

The status of health care services at PHCs were studied based on the perception of the beneficiaries who availed health care services at the PHCs and from the staff working at the PHCs in the study area. Information with regard to the health care status of the PHCs was collected from 100 respondents out of which 70 were beneficiaries and 30 were staff working at the PHCs.

5.2.1. Beneficiaries of PHCs

The perception of beneficiaries availing health care services at the PHC level were studied in terms of demographic features, socio-economic indicators, awareness about health care services, utilization of services at the PHCs, utilisation of other services provided at the PHCs.

5.2.1.1. Demographic Features of the Respondents

The demographic features of the respondents availing of health care services from the PHCs were determined in terms of gender, age, place of residence, family type and size, educational qualification, occupation, annual income and so on. As Table 5.36 presents the essential statistics.

Table 5.36
Gender, Age and Place of Residence of the Respondents

Demographic Profile		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Gender	Male	27	38.57
	Female	43	61.43
Total		70	100.00
Age (Years)	< 30	16	22.86
	30–40	29	41.43
	40–50	13	18.57
	> 50	12	17.14
Total		70	100.00
Place of Residence	Rural	30	42.90
	Urban	40	57.10
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The basic demographic features of the respondents availing the health care services from the PHCs as presented in Table 5.36 reveals that majority of the beneficiaries surveyed were female against the male accounting for to 38.6 per cent. Further, majority of the respondents were aged between 30 and 40 years (41.43%) followed by those aged less than 30 years of age. Those aged above 40 years accounted for 35.71 per cent and 18.57 per cent found between 40 and 50 years; 17.14 per cent above 50 years.

The educational level and occupation of the respondents availing and health care services from the PHCs is as presented in Table 5.37.

Table 5.37

Educational Level and Occupation of the Respondents

Demographic Profile		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Educational Level	Illiterates	08	11.42
	SSLC	10	14.29
	PUC	17	24.29
	Degree	24	34.29
	PG	11	15.71
Total		70	100.00
Occupation	Housewife	17	24.29
	Farmers	15	21.43
	Self-Employed	14	20.00
	Govt. Employee	12	17.14
	Private Employee	02	02.86
	Business	04	05.71
	Others	06	08.57
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it is evident that about 34.29 per cent of the total respondents were graduates followed by those who were educated upto PUC accounting to 24.29 per cent of the total respondents. The respondents with post-graduation accounted for 15.71 per cent, while those educated upto SSLC accounted for 14.29 per cent and illiterates accounted for 11.42 per cent of the total respondents.

The data in Table 5.38 presents information regarding monthly income of the respondents availing of health care facilities from the PHCs.

Table 5.38
Monthly Income of the Respondents

Monthly Income (₹)	No. of Respondents	Percentage
(01)	(02)	(03)
< 10,000	16	22.86
10,000–20,000	36	51.43
20,000–30,000	13	18.57
30000–40000	05	07.14
Total	70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is found that, 36 respondents (out of 70) had monthly income between ₹ 10,000 and 20,000 which accounted for 51.43 per cent of the total, followed by those earning monthly income of less than ₹ 10,000 accounting for 22.86 percentage against 18.57 per cent of the respondents' monthly ranging from ₹ 20,000 to 30,000, and those earning monthly income of ₹ 30,000-40,000 is 7.14 per cent of the total.

Various health insurance schemes are provided by government and non-governmental institutions. Increased awareness about health care has made people to opt for public and private health insurance schemes in accordance with their requirement. The data in Table 5.39 provides information regarding the subscription to health insurance scheme.

Table 5.39

Subscription to Health Insurance Scheme by the Respondents

Subscription to	No. of Respondents	Percentage
(01)	(02)	(03)
Public	01	01.43
Private	10	14.28
Both	01	01.43
No	58	82.86
Total	70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in Table 5.39 it is revealed that subscription to health schemes by the respondents availing health care facilities from PHCs was found to be very fatal and disappointed as the percentage of respondents who subscribed to various health insurance scheme accounted to only 17.14 per cent of the total respondents. Further, among those who had subscribed for health insurance scheme 14.28 per cent of them opted for private health insurance respondents (10 out of 12 respondents) who subscribed health insurance schemes. Further, only one respondent had subscribed to public health insurance scheme and one for both Public and Private Health Insurance Scheme.

The recurring diseases which normally people suffer from are cold and cough, fever, muscular pain, stomach pain, food poison, water borne diseases

dysentery, etc. The data in Table 5.40 presents information with regard to the recurring diseases suffered by the respondents availing of health care services from the PHCs.

Table 5.40
Recurring Diseases Normally Suffered by the Respondents Family

Recurring Diseases	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Cold and Cough	69	98.57
Fever	69	98.57
Muscular Pain	51	72.85
Minor Injury	29	41.42
Stomach Pain	55	78.57
Constipency	59	84.28
Food Poison	42	60.0
Water Borne Diseases	67	95.71
Loose Motion Dysentery	41	58.57

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in Table 5.40 shows that cold & cough and fever were the widely recurring diseases which almost all respondents suffered as the percentage of respondents suffering from these diseases accounted to 98.57 per cent each. Water borne diseases and constipation was the next recurring diseases which were common among the respondents as the percentage of respondents suffering from these accounted to 95.71 and 84.28 per cent of the respondents respectively. Further, stomach pain and muscular pain were also common to considerable extent as the percentage of respondents suffering from these diseases accounted to 78.57 and 72.85 per cent respectively. However, the percentage of respondents who normally suffered from minor injury, food poison and loose motion ranged

between 40 and 60. All these indicated that in the study area cold and cough, fever and constipancy were the major recurring disease which the respondents normally suffered from.

Apart from ignoring, major curative measures which respondent follow when unhealthy are self-medication, indigenous system of medicine and allopathy. The data presented in Table 5.41 may be noted.

Table 5.41
Curative Measures followed by the Respondents When Unhealthy

Curative Measures	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Ignore	60	85.71
Self-medication	31	44.28
Indigenous System – Homeopathy & Ayurveda	28	40.00
Allopathy	70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It can understood from the above Table that majority of the respondents ignored the illness when they were unhealthy as cold and cough and fever were the common recurring diseases from which they normally suffered as 85.71 per cent of the respondents admitted that they simply ignored the illness. Apart from ignorance, it was noted that 44.28 per cent of the respondents self-medicated when they were ill, while 40 per cent of them approached indigenous system of medicine, that is homeopathy and Ayurveda when illness that too when they find that they could not no longer ignore the illness. However, all approached allopathy to get their illness cured.

Apart from commonly recurring diseases, people will incur expenditure to get treatment for their long-term illness or unhealthy conditions for which they might take medicines for longer period of time or for life time. For instance, sugar patients or BP patients or even for some other purposes. Table 5.42 presents data on health expenditure incurred by the respondents.

Table 5.42

Health Expenditure of the Respondents (Per Annum)

Health Expenditure (`)	No. of Respondents	Percentage
(01)	(02)	(03)
< 1,000	01	01.43
1,000-2,500	08	11.43
2,500-5,000	28	40.00
5,000-10,000	30	42.86
> 10,000	03	04.28
Total	70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Different levels of health expenditure which respondents incurred per annum as presented in the above Table revealed that majority of the respondents incurred between ` 2,500 and ` 10,000 per annum as health expenditure which altogether accounted to 82.86 per cent of the total respondents where 40 per cent incurred between ` 2,500 and ` 5,000 and the remaining 42.86 per cent between ` 5,000 and ` 10,000 per annum, while 12.86 per cent of the total respondents incurred health expenditure of less than ` 2500 where 11.43 per cent incurred between ` 1000 and ` 2500 and 1.43 per cent less than ` 1,000 per annum. Similarly, marginal percentage of the respondents accounting to 4.28 incurred

health expenditure more than ₹ 10,000 per annum. All these indicate that per annum health expenditure incurred by the respondents was high to certain extent.

The data in Table 5.43 reveals about various sources of coverage of medical expenses by the respondents where it was noted that personal earnings or family earnings was the only sources of meeting medical expenses by the respondents.

Table 5.43

Sources of Coverage of Medical Expenses by the Respondents

Sources of Coverage of Medical Expenses		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Personal/Family Earnings	Yes	70	100.00
	No	0	0.00
Total		70	100.00
Reimbursement from Government/ Employer	Yes	0	0.00
	No	70	100.00
Total		70	100.00
Health Insurance Coverage	Yes	0	0.00
	No	70	100.00
Total		70	100.00
ESI	Yes	0	0.00
	No	70	100.00
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table also revealed that none of the respondents is the beneficiary of the ESI facility through which they could meet the medical expenses which they incurred.

The data in Table 5.44 provides information regarding benefits of health services availed by the respondents.

Table 5.44**Benefits of Health Services Availed by the Respondents**

Services Availed		No. of Respondents (N=70)	Percentage
Health Card	Yes	0	0.00
	No	70	100.00
Total		70	100.00
Sanjeevini	Yes	0	0.00
	No	70	100.00
Total		70	100.00
Arogya Bhagya	Yes	0	0.00
	No	70	100.00
Total		70	100.00
Ayushman	Yes	39	55.71
	No	31	44.29
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Out of various health services schemes implemented and provided by the government, it is evident from the data in Table 5.44 that the respondents were either unaware of the benefits of health services or were not interested in availing of the benefits of health services provided by the government as none of the respondents had health card or availed of the facility of Sanjeevini and Arogya Bhagya. To some extent the respondents were availed of the benefits of Ayushman which accounted to 55.71 per cent of the total respondents indicating that still about half of the surveyed respondents were not utilising Ayushman health care scheme provided by the government.

5.2.1.2. Awareness about Health Care Services

The issue of awareness and accessibility about health care services provided by the government has been analysed in terms of the extent the respondents availed of health services provided by the government, means of accessing health services and reasons for not accessing health services provided by the government. Table 5.45 presents information with regard to the respondents' availing of health services provided by the government.

Table 5.45

Respondents Availing Health Services Provided by the Government

Availing Health Services	No. of Respondents	Percentage
(01)	(02)	(03)
Yes	45	64.29
No	25	35.71
Total	70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table indicates that though majority of the respondents were availing of various health services provided by the government (64.29%), still 35.71 per cent of them is not availing of various health services provided by the government. A matter of concern indeed!

The data in Table 5.46 indicates the means of accessing government's health services by the respondents while accessing health care services from the PHCs.

Table 5.46**Means of Accessing Government's Health Services by the Respondents**

Means of Accessing	No. of Respondents	Percentage
(01)	(02)	(03)
By visiting the PHCs for treatment	22	31.43
Visiting the PHCs for the treatment of family members/ relatives/ friends	21	30.00
Through social media	10	14.29
By watching Advertisement	08	11.43
Government Notification	09	12.85
Total	70	100.00

Source: Data gathered through Primary Investigation, February 2021 to May 2021.

Among those who accessed different health services provided by the government (out of 70 respondents), visiting PHCs was observed to be the more acceptable means in accessing various health services provided by the government where visit to PHCs was either for the treatment for the respondents themselves or visiting PHCs for the treatment of family members/friends as these two means in accessing various health services provided by the government accounted to 31.43 and 30.00 per cent respectively. Further, accessing various health services through government notification and through social media were the next major means which accounted to 12.85 and 14.29 per cent respectively. Advertisement as means to access various health services provided by government was found to have least influential as it accounted to only 11.43 per cent.

The data in Table 5.47 provides the perception of the respondents for unaware about various health services provided by the government.

Table 5.47

Reasons for Unawareness about Health Services Provided by the Government

Reasons (01)	No. of Respondents (N=70) (02)	Percentage (03)
Not interested in Government health services	18	25.71
No faith in Government health services	07	10.00
Facilities are not available	31	44.28
Human service is not good	19	27.14
Medical staff is not attentive	21	30.00
Follow-up is not properly done	14	20.00
Timings is not suitable	16	22.85
Poor people are neglected	36	51.42
There is corruption	25	35.71
Medicine is not available	09	12.85
Not modernized	44	62.85
Lack of Cleanliness	49	70.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Among those who were unaware about various health services provided by the government (out of 70 respondents), it was noted that respondents not interested in government health services, prevalent of corruption and lack of cleanliness were the foremost reasons for unawareness about health services provided by the government. Further, non-availability of medicines, poor people to be neglected by the staff and medical staff not attentive were also responsible to considerable extent for unawareness about health services provided by the

government as these accounted to 12, 25.71, 35.7, 70, 51.42 and 30 per cent respectively. At the same time, lack of good human service (27.14%), the PHCs not modernized (62.85%) and lack of faith in government health services (10%) also contributed for the unawareness about health services provided by the government. Still further, the percentage of respondents regarding unawareness about various health services provided by the government due to follow-ups not properly done, timings not to be suitable and non-availability of the facilities accounted to 20, 64 and 44.28 per cent respectively.

5.2.1.3. Utilization of PHCs Service

The utilization of the services provided by PHCs was determined in terms of awareness, accessibility and purpose of visiting the PHCs, distance and mode of transport to access the PHCs, reason for using the PHCs, conditions of the facilities available at the PHCs, availability, accessibility and status of furniture at the PHCs, availability of manpower at the PHCs, status of infrastructure at the PHCs, satisfaction acquired in availing health care services provided by the PHCs and reason for not using services of the PHCs.

The data presented in Table 5.48 provides information related to the awareness, accessibility and purpose of visiting the PHCs from which it was noted that all respondents were aware and accessed the health care services provided by the PHCs. Further, with regard to the number of respondents of visits to the PHCs, it was found that majority of the respondents visited less than 3 time in a year to the PHCs to avail the health care services which accounted to 64.3 per cent of the

total respondents followed by 32.9 per cent visiting the PHCs for 3 to 6 times in a year and remaining 2.86 per cent visiting for more than 6 times in a year to avail of health care services provided at the PHCs.

Table 5.48
Awareness, Accessibility and Purpose of Visiting the PHCs

Awareness, Accessibility and Purpose		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Accessing the PHCs services	Yes	70	100.00
	No	00	00.00
Total		70	100.00
No. of times visited the PHCS in last one year	< 3	45	64.29
	3-6	23	32.86
	> 6	02	02.85
Total		70	100.00
Reason for visiting the PHCs	Curative	48	68.57
	Preventive	10	14.29
	Both	12	17.14
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

With regard to the purpose of visit to the PHCs, it was evident that curative measure was the major purpose for majority of the respondents to visit the PHCs which accounted to 68.6 per cent of the total respondents against 14.3 per cent of them visiting the PHCs for preventive purpose. However, 17.1 per cent of the respondents visited the PHCs for both curative and preventive purposes.

Distance and mode of transport to access the PHCs will definitely influence the utilization of health care services provided at the PHCs. More near the people are to the PHCs more will be its utilization and vice versa. At the same time, easy availability and accessibility of transportation will also increase the utilization of health care services provided by the PHCs.

The data in Table 5.49 reveals the distance to be covered to access the PHCs and the mode of transport in accessing the PHCs where it was evident that the PHCs was accessible within 3 kms for majority of the respondents which accounted to 80 per cent of the total respondents.

Table 5.49
Distance and Mode of Transport to Access PHCs

Distance and Mode of Transport		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Distance (kms) to be covered to access the PHCs	Within Village	15	21.43
	< 3	27	38.57
	3-5	14	20.00
	5-10	06	08.57
	> 10	08	11.43
Total		70	100.00
Mode of accessing the PHCs	Auto	19	27.14
	Bus	20	28.58
	Walk	21	30.00
	Personal Vehicle	03	04.28
	Others	07	10.00
Total		70	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table reveals that for 21.43 per cent of the respondents the PHCs was accessible in the village where they resided, for 38.57 per cent of them it was accessible within 3 km and for 20 per cent of them the PHCs was accessible within the range of 3 to 5 km. However, the accessibility of the PHCs within a range of 5 to 10 km and above 10 km accounted to 8.57 and 11.43 per cent respectively.

The data in Table 5.50 presents information regarding reason for using the PHCs, according to which it was noted that 25.7 per cent of the respondents were admitted to the PHCs in the last 12 months.

Table 5.50
Reasons for Using the PHCs by the Respondents

Reasons		No. of Respondents (N=70)	Percentage
(01)		(02)	(03)
Admitted at the PHCs in the last 12 months		18	25.71
Purpose of using the PHCs	Free service	70	100.0
	Near	69	98.57
	Easy accessibility	69	98.57

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It can be noted from the data in Table 5.50 that health care services offered at free of cost at the PHCs was the major reason for all the respondents for using health care services provided at the PHCs. However, nearness of the PHCs and easy accessibility was also other major cause of using health care services provided by the PHCs as each accounted to 98.57 percentage of the total respondents.

The data in Table 5.51 presents respondents perception regarding facilities available at the PHCs along with their conditions or status.

Table 5.51
Respondents Perception Towards Facilities Available at PHCs

Facilities Available (01)	Available with condition			Not Available (05)	Total (06)
	Good (02)	Tolerable (03)	Bad (04)		
Physical Building	39 (55.71)	23 (32.86)	08 (11.43)	00 (0.0)	70 (100.00)
Testing Lab	29 (41.43)	30 (42.86)	11 (15.71)	00 (0.0)	70 (100.00)
Operation theatre	08 (11.43)	22 (31.42)	07 (10.00)	33 (47.14)	70 (100.00)
Emergency treatment	15 (21.43)	36 (51.43)	04 (05.71)	15 (21.43)	70 (100.00)
Labour ward	23 (32.86)	32 (45.71)	10 (14.29)	05 (07.14)	70 (100.00)
Children ward	00 (0.0)	03 (04.29)	00 (0.0)	67 (95.71)	70 (100.00)
Weighing machine	51 (72.86)	11 (15.71)	08 (11.43)	00 (0.0)	70 (100.00)
Wheel chair	40 (57.14)	20 (28.57)	10 (14.29)	00 (0.0)	70 (100.00)
Oxygen cylinder	41 (58.57)	16 (22.86)	13 (18.57)	00 (0.0)	70 (100.00)
Adequate beds	43 (61.43)	14 (20.00)	10 (14.29)	03 (04.28)	70 (100.00)
Wash room facilities	10 (14.29)	38 (54.28)	22 (31.42)	00 (0.0)	70 (100.00)
Medicines	49 (70.00)	10 (14.29)	11 (15.71)	00 (0.0)	70 (100.00)
Parking facility	56 (80.00)	09 (12.86)	04 (05.71)	01 (01.43)	70 (100.00)
Lighting facility	54 (77.14)	07 (10.00)	08 (11.42)	01 (01.43)	70 (100.00)
Water Facility	47 (67.14)	12 (17.14)	10 (14.29)	01 (01.43)	70 (100.00)
Ambulance	00 (0.0)	01 (01.43)	00 (0.0)	69 (98.57)	70 (100.00)
Visitors room	28 (40.00)	31 (44.29)	07 (10.00)	04 (05.71)	70 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It could be noted from the data in Table 5.52 that, various facilities were available and accessible by the respondents either at good condition or tolerable condition except the services of ambulance, children ward and operation theatre.

Table 5.52
Respondents Perception Regarding Infrastructure Status at the PHCs

Infrastructures	Very Poor	Poor	Neither Poor nor Good	Good	Very Good	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Building status	03 (04.28)	08 (11.43)	15 (21.43)	31 (44.29)	13 (18.57)	70 (100.00)
Bathroom status	10 (14.29)	14 (20.00)	24 (34.28)	12 (17.14)	10 (14.29)	70 (100.00)
Bed management	04 (05.71)	11 (15.71)	22 (31.43)	27 (38.57)	06 (08.58)	70 (100.00)
Water supply	03 (04.29)	04 (05.71)	10 (14.29)	41 (58.57)	12 (17.14)	70 (100.00)
Power supply	04 (05.71)	06 (08.58)	07 (10.00)	43 (61.42)	10 (14.29)	70 (100.00)
Cleanliness inside the hospital	02 (02.86)	03 (04.28)	16 (22.85)	38 (54.28)	11 (15.71)	70 (100.00)
Cleanliness in the premises	01 (01.43)	05 (07.14)	18 (25.71)	36 (51.43)	10 (14.29)	70 (100.00)
Notice Board to display the health programs	04 (05.71)	06 (08.58)	07 (10.00)	31 (44.29)	22 (31.42)	70 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The condition of infrastructure facilities available at the PHCs is as presented in Table 5.52 through which it was evident that though majority of the respondents feel the status of infrastructure facilities available at the PHCs were either good or very good condition, but still there were respondents feeling that the infrastructure facilities available at the PHCs were neither good nor bad and to considerable extent also at bad condition.

The data as presented in Table 5.53 provides information with regard to the satisfaction level derived by the respondents by the services they received from the PHCs.

Table 5.53
Respondents Perception Regarding Satisfaction by the PHCs Services

PHCs Services	Highly Dissatisfied	Dis-satisfied	Neutral	Satisfied	Highly satisfied	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Drugs /medicine availability	02 (02.86)	05 (07.14)	14 (20.00)	40 (57.14)	09 (12.86)	70 (100.00)
Doctor availability	07 (10.00)	11 (15.71)	15 (21.43)	25 (35.72)	12 (17.14)	70 (100.00)
Waiting timings	09 (12.86)	12 (17.14)	19 (27.14)	22 (31.43)	08 (11.43)	70 (100.00)
Treatment Quality (Curable Treatment)	10 (14.29)	09 (12.86)	13 (18.57)	31 (44.28)	07 (10.00)	70 (100.00)
Response from medical personnel and staff	05 (07.14)	11 (15.71)	17 (24.29)	28 (40.00)	09 (12.86)	70 (100.00)
Cleanliness	06 (08.57)	07 (10.00)	14 (20.00)	33 (47.14)	10 (14.29)	70 (100.00)
Infrastructure (bathroom, water supply, etc.)	11 (15.71)	18 (25.71)	22 (31.43)	10 (14.29)	09 (12.86)	70 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Among various services provided by the PHCs, it is noted from the data in the above Table, that majority of the respondents were either satisfied or strongly satisfied with all services provided by the PHCs except infrastructure facility like bathroom, water supply and so on. Further, considerable percentage of respondents remained neutral in expressing their views regarding satisfaction level they derived with various services provided at the PHCs.

As there were various reasons for using services provided by the PHCs, there were various reasons for not using the PHCs services by the respondents which was as presented in Table 5.54.

Table 5.54
Reasons for Not Using the PHCs Services

Reasons	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Not happy with the treatment	15	21.4
Medicines are not available	11	15.7
Doctor is absent	32	45.7
Lack of lady doctor	25	35.7
Lack of laboratory	58	82.9
Lack of infrastructure	38	54.3

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Not happy with the treatment at the PHCs, non-availability of medicines, absence of doctor, lack of lady doctor, laboratory and infrastructure facilities at the PHCs were the major reasons for not using the services of PHCs by the respondents. It was noted that majority of the respondents, accounting to 82.9 per cent, were of the opinion that due to lack of laboratory services they do not wish to use the service of the PHCs. Further, lack of infrastructure facilities at the PHCs, absence of general doctor and lady doctor were also other reasons for not using the services of the PHCs by the respondents. However, low percentage of respondents expressed that they were not willing to use the services of the PHC due to non-availability of medicines as well as they were not happy with the treatment quality provided at the PHCs.

5.2.1.4. Health Services from Other Services (Apart from PHCs)

At the time of survey, it was observed that the respondents using health care services provided by the PHCs were also using health care services from other sources. As such, respondents were questioned about using health care services from other sources and reason for using those services along with reasons for not interested in completely using health care services provided by the PHCs.

The data in the Table 5.55 shows the respondents' perception regarding preference for using private health care services other than they received from the PHCs.

Table 5.55
Preference for Using Private Health Services

Preference	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Emergency or serious condition	70	100.0
Qualitative treatment	40	57.10
Good infrastructure	48	68.57
Confidence on the availability of doctor	30	42.85
Short waiting period	26	37.14
If didn't get curative treatment at PHCs	62	88.57

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in the above Table indicated that among those preferring to use health care services from other sources apart from provided at the PHCs, all respondents feel that to avail treatment during emergency or serious condition they all preferred to avail health care services other than provided at the PHCs which indicated that treatment for emergency or serious conditions was not available at the PHCs. Further, respondents preferred to avail private health care services when

they failed to get effective curative treatment at the PHCs which accounted to 88.57 per cent of the respondents (62 out of 70 respondents). However, good infrastructure accounting to 68.57 per cent (48 out of 70 respondents), qualitative treatment availability in private sector accounting to 57.10 per cent (40 out of 70 respondents), confidence in the availability of doctors at private hospitals accounting to 42.85 per cent (30 out of 70 respondents) and short waiting period accounting to 37.14 per cent (26 out of 70 respondents) were other factors because of which the respondents preferred to avail of private health care services.

Reasons for not preferring government health care facilities has been presented in Table 5.56.

Table 5.56
Reasons for Not Using Government Health Care Facilities at the PHCs

Reasons for Not Accessing	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Inconvenient location (far)/high transport cost	50	71.42
Less confidence	07	10.00
Poor quality of medicine and service	21	30.00
Non-availability of doctors and nurse	22	31.42
Wrong approach/Manners of medical personnel	04	05.71
Long waiting hours	14	20.00
Lack of good infrastructure	38	54.28
Inconvenient timings	16	22.85

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Less confidence on the health care services provided at the PHCs, poor quality of medicine and services at the PHCs and non-availability of doctors and nurses in the PHCs were the major causes for not using health care services provided at the PHCs as these accounted to 100 per cent of the respondents those not preferring to utilize health care services from the PHCs. Further, lack of good

infrastructures at the PHCs accounting to 54.28 per cent (38 out of 70 respondents), long waiting hours to avail treatment at the PHCs, inconvenient timings accounting to 20.00 per cent (14 out of 70 respondents) each and inconvenient location along with transportation cost accounting to 71.42 per cent (50 out of 70 respondents) were also responsible to considerable extent for not preferring the health care services provided at the PHCs.

The data in Table 5.57 presents information related to suggestions provided by the respondents to improve health care system at the PHCs.

Table 5.57
Suggestions to Improve Health Care System at the PHCs

Suggestions	No. of Respondents (N=70)	Percentage
(01)	(02)	(03)
Recruitment of more Doctors	23	32.85
Provision for Specialists	46	65.71
Appointment of Para Medical Staff	39	55.71
Providing better Infrastructure Facilities	27	38.57
Proper Maintenance of the System	19	27.14
Availability of Night Services	21	30.00
Provision for Transportation Facility	18	25.71

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data, it could be noted that requirement of specialists and paramedical staff at the PHCs was at very high level as the percentage of respondents suggesting these two measures accounted to 65.71 and 55.71 per cent respectively of the total respondents. Further, better infrastructure facilities (38.57%), provision of more doctors (32.85%), night services availability (30.00%), Maintenance Required (27.14%) and Transportation Facility Required

(25.71%) were the other major suggestions which were received by the respondents in order to improve health care services provided at the PHCs.

5.2.2. Staff of PHCs

5.2.2.1. Manpower Availability at the PHCs

The manpower availability at the PHCs is measured in terms of the availability of the doctors, surgeons, specialists, pharmacists, lab technicians, nurses, health assistants, health educators, block extension educators and other medical & para-medical personnel at the PHCs.

The data in Table 5.58 presents the availability of allopathy doctors, AYUSH doctors and female doctors at the PHCs which explain that the availability of doctors at PHCs was at very undesirable position.

Table 5.58
Doctors Working at the PHCs

Doctors Working	No. of Respondents	Percentage
(01)	(02)	(03)
With > 4 Doctors	00	00.00
With 3 Doctors	00	00.00
With 2 Doctors	04	13.30
With 1 Doctor	21	70.00
Without Doctor	05	16.66
No. of AYUSH Doctors	00	00.00
Total	30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

In accordance with the perception of the staff working at the PHCs, from the data in the above Table, it is understood that number of doctors was 4, 3, 2 and 1 in PHCs and sub-centres. So many PHCs did not have a single doctor.

The data in Table 5.59 presents the availability of other medical manpower in PHCs according to which it is found that at the outset the overall availability of manpower was very poor except the availability of pharmacist, lab technician and sanitary worker cum watchman and block educators. Further, with regard to the availability of medical manpower, the availability of full time Medical Officer (MBBS) accounted for 60 per cent along with 23.3 percentage of the PHCs are functioning with the part-time Medical Officer (MBBS), while none of the PHCs was functioning with AYUSH Medical Officer. Further, the availability of the service of Dental Surgeon accounted to only 16.66 per cent.

Table 5.59
Medical Manpower Availability at the PHCs

Manpower Availability		No. of Respondents (N=30)	Percentage
(01)		(02)	(03)
Medical Officer (MBBS) (Full time)		18	60.00
Medical Officer (MBBS) (Part Time)		07	23.30
Medical Officer (AYUSH)		00	00.00
Dental Surgeon		05	16.66
Block Extension Educators		25	83.33
Health Educators		15	50.00
Lab Technician		29	96.66
Pharmacist		29	96.66
No. of Nurse Mid-wife/ Staff Nurse (permanent)		20	66.66
No. of Nurse Mid-wife/ Staff Nurse (on contract)		18	60.00
No. of Health Worker (Female) ANMs	< 3	14	46.66
	3 – 6	13	43.33
	> 6	03	10.00
Total		30	100.00

Contd....

No. of Health Assistant (Male)	0	12	40.00
	1	16	53.33
	2	02	06.66
Total		30	100.00
No. of Health Assistant (Female) / LHV	0	23	76.66
	1	05	16.66
	2	02	06.66
Total		30	100.00
Upper Division Clerk	0	18	60.00
	1	11	36.66
	2	01	03.33
Total		30	100.00
Lower Division Clerk	0	10	33.33
	1	19	63.33
	2	01	03.33
Total		30	100.00
Driver	0	26	86.66
	1	04	13.33
Total		30	100.00
No. of Class IV worker	0	12	40.00
	1	11	36.66
	2	07	23.33
Total		30	100.00
Sanitary worker cum watchman	0	01	03.33
	1	29	96.66
Total		30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

With regard to para-medical staff, it is noted that still there was the requirement to have more Nurse Mid-Wife/Staff Nurse working under permanent basis as 66.66 per cent of the PHCs had Staff Nurse working on permanent basis and 66 per cent were working on contract basis. With respect to the Female Health Worker/ANMs it was noted that majority of the PHCs were operating with less than 6 workers where 46.66 per cent of the PHCs were functioning with less than

3 ANMs and 43.33 per cent of them with ANMs between 3 and 6 workers. However, 10 per cent of the PHCs were functioning with more than 6 ANMs.

With regard to Male Health Assistant, it was noted that majority of the PHCs were functioning with only one Male Health Assistant accounting to 53.33 per cent and 06.66 per cent with 2 Male Health Assistant. The remaining 40.00 percentage of the PHCs were functioning without Male Health Assistant. On the other hand, majority of the PHCs were functioning without Female Health Assistant (LHV) which accounted to 76.66 per cent. The remaining PHCs, 16.66 per cent were functioning with one LHV, while 06.66 per cent of the PHCs were functioning with 2 LHV.

Regarding the availability of clerk, it is found that the availability of upper division clerk was less compared to the availability of lower division clerk at PHCs as 60.00 per cent of the PHCs were functioning without upper division clerk against 33.33 per cent of the PHCs functioning without lower division clerk. On the other hand, PHCs functioning with one upper division clerk and lower division clerk accounted for 36.66 and 63.33 per cent respectively. However, only one PHC was operating with 2 upper division and 2 lower division clerks.

The availability of drivers at PHCs was very poor as 86.66 per cent of the PHCs were functioning without driver, while 13.33 per cent functioning with one driver availability. Further, availability of 'D' group worker was found to be absent in 40.00 per cent of the PHCs against 36.66 per cent of the PHCs functioning with one 'D' group worker and 23.33 per cent with 2 workers. At the same time, the availability of sanitary worker cum watchman accounted to 96.66

per cent where only one PHC was deprived from the sanitary worker cum watchman.

The data in Table 5.60 provides the status of infrastructure facility available at PHCs where it was noticed that majority of the respondents accepted that basic infrastructure facilities were available at good condition at PHCs as the percentage of respondents expressing the availability of infrastructure available at good condition stood at the top compared to average or poor condition.

Table 5.60
Respondents Opinion about Infrastructure Status at the PHCs

Infrastructure	Very Poor	Poor	Average	Good	Very Good	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Building status	02 (06.67)	01 (03.33)	07 (23.33)	15 (50.00)	05 (16.67)	30 (100.00)
Bathroom status	04 (13.33)	05 (16.67)	13 (43.33)	07 (23.33)	01 (03.33)	30 (100.00)
Bed management	01 (03.33)	05 (16.67)	09 (30.00)	14 (46.67)	01 (03.33)	30 (100.00)
Water supply	03 (10.00)	02 (06.67)	08 (26.67)	16 (53.33)	01 (03.33)	30 (100.00)
Power supply	02 (06.67)	04 (13.33)	03 (10.00)	18 (60.00)	03 (10.00)	30 (100.00)
Cleanliness inside PHCs	03 (10.00)	05 (16.66)	08 (26.67)	12 (40.00)	02 (06.67)	30 (100.00)
Cleanliness in the premises	05 (16.67)	04 (13.33)	06 (20.00)	14 (46.67)	01 (03.33)	30 (100.00)
Notice Board to display the health programs	04 (13.33)	03 (10.00)	05 (16.67)	15 (50.00)	03 (10.00)	30 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the available infrastructure facilities at PHCs, it is noted from the above Table, that building status where PHCs operated, power supply to PHCs and notice board to display the health programs were at good status. However, respondents were in dilemma to express their view infrastructure available at PHCs in terms of bed management and water supply were in good or poor. At the same time, cleanliness inside the PHCs, cleanliness in the premises of PHCs and bathroom status were at poor status.

5.2.2.2. Services Provided at the PHCs

The data in Table 5.61 presenting assured services provided at the PHCs revealed that in all the PHCs OPD services were provided, referral services and in-patient services were also provided by all PHCs. However, emergency services round the clock was provided by 16.7 per cent of the PHCs.

Table 5.61
Assured Services Provided at the PHCs

Services Provided	No. of Respondents (N=30)	Percentage
(01)	(02)	(03)
OPD Services	30	100.00
Emergency services (24 Hours)	05	16.70
Referral Services	30	100.00
In-patient Services	30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

Among various facilities provided by PHCs, the data in Table 5.62 gives idea about status of bed facility at PHCs along with its occupancy rate.

Table 5.62
Bed Facility and Occupancy Rate in the PHCs

Bed Facility and Occupancy Rate		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
No. of beds available	03	01	03.30
	04	02	06.70
	05	15	50.00
	06	12	40.00
Total		30	100.00
Bed Occupancy Rate in the last 12 months (%)	< 40	21	70.00
	40-60	06	20.00
	> 60	03	10.00
Total		30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The bed strength in PHCs as presented in the above Table is found to be either 5 or 6 in almost all PHCs as the percentage of the PHCs functioning with 5 beds strength and 6 beds strength accounted to 50 and 40 per cent against one PHCs functioning with 3 beds strength and 2 PHCs functioning with 4 beds strength. Further, with regard to the bed occupancy rate, it was studied that majority of the PHCs had bed occupancy rate less than 40 percentage, followed by those between 40 and 60 per cent accounted to 20 per cent and remaining 10 per cent with more than 60 per cent of the bed occupancy rate.

The average daily OPD attendance in the PHCs as presented in Table 5.63 in accordance with the perception of the staff working in PHCs revealed that the average bed occupancy rate of both male and female were from 25 to 50 patients which accounted to 86.7 and 76.7 per cent among male and female respectively

indicating that male percentage was comparatively more compared to female percentage. Number of female patients was more than that of male patients.

Table 5.63
Average Daily OPD Attendance in the PHCs

Average Daily OPD Attendance		No. of Respondents	Percentage
(01)	(02)	(03)	(04)
Male	< 25	03	10.00
	25–50	26	86.70
	> 50	01	03.30
Total		30	100.00
Female	< 25	02	06.70
	25–50	23	76.70
	> 50	05	16.70
Total		30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in Table 5.64 presents information with regard to treatment available at PHCs for specific cases.

Table 5.64
Treatment of Specific Cases in the PHCs

Treatment of Specific Cases	No. of Respondents (N=30)	Percentage
(01)	(02)	(03)
Surgery for cataract	00	00.00
Primary management of wounds	30	100.0
Primary management of fracture	27	90.00
Minor surgeries like draining of abscess etc.	30	100.0
Primary management of cases of poisoning/ snake, insect or scorpion bite	30	100.0
Primary management of burns	30	100.0

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It was evident from the data in Table 5.64 that all PHCs were providing treatment of specific cases except conducting surgery for cataract. However, 90 per cent of the PHCs were providing primary management of fracture.

The data in Table 5.65 provides information as per the perception of the respondents regarding to maternal and child health care provided in PHCs.

Table 5.65
Maternal and Child Health Care Provided in the PHCs

Maternal and Child Health Care Provided	No. of Respondents (N=30)	Percentage
(01)	(02)	(03)
Ante-natal care	30	100.0
Intra-natal care (24 - hour delivery services both normal and assisted)	09	30.00
Post-natal care	30	100.0
New born Care	30	100.0
Child care including immunization	30	100.0
Family Planning	30	100.0
MTP	01	03.33
Management of RTI / STI	30	100.0
Facilities under Janani Suraksha Yojana	29	96.66

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

All the respondents accepted that PHCs they were working provided ante-natal care, postnatal care, new born care, child care including immunization, family planning services and management of RTI/STI, while facilities under Janani Suraksha Yojana was provided by 96.66 per cent of the PHCs. However, intra-natal care was provided by 30 per cent of the PHCs and MTP by only one PHC which accounted for 03.33 per cent. All these indicated that beneficiaries were accessing from the PHCs all major basic maternal and child health care services except intra-natal care and MTP.

Organising antenatal clinics at regular interval, facility for normal deliver facility for tubectomy and vasectomy, internal examination of gynecological conditions and so on are other maternal and child health care services that are provided in PHCs.

The data in Table 5.66 provides details of laboratory services provided at PHCs according to which at the outset it was noticed that various laboratory services were provided at PHCs but it was not provided adequately.

Table 5.66

Laboratory Services Provided by the PHCs

Services	Adequately Provided	Provided	Rarely Provided	Not Provided	Total
(01)	(02)	(03)	(04)	(05)	(06)
Urine, stool and blood tests	02 (06.67)	21 (70.00)	07 (23.33)	00 (00)	30 (100.00)
Blood grouping	07 (23.33)	19 (63.34)	04 (13.33)	00 (00)	30 (100.00)
Bleeding time, clotting time	05 (16.67)	20 (66.66)	05 (16.67)	00 (00)	30 (100.00)
Diagnosis of RTI/STDs with wet mounting, gram stain, etc.	01 (03.33)	18 (60.00)	10 (33.34)	01 (03.33)	30 (100.00)
Sputum testing for TB	02 (06.67)	22 (73.33)	06 (20.00)	00 (00)	30 (100.00)
Blood smear examination for malaria parasite	02 (06.67)	23 (76.66)	05 (16.67)	00 (00)	30 (100.00)
Rapid tests for pregnancy	01 (03.33)	21 (70.00)	08 (26.67)	00 (00)	30 (100.00)
RPR test for Syphills / YAWS surveillance	01 (03.33)	19 (63.34)	09 (30.00)	01 (03.33)	30 (100.00)
Rapid tests for HIV	01 (03.33)	22 (73.34)	07 (23.33)	00 (00)	30 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

5.2.2.3. Utility, Furniture and Other Services Provided in the PHCs

The utilities, furniture and other services provided in PHCs were measured in terms of availability of utilities services in PHCs, availability and status of OT, availability and status of labour room, laboratory services and so on. As such, the

data in Table 5.67 presents information regarding availability of utilities services in PHCs.

Table 5.67
Availability of Utility Services in the PHCs

Utility Services	Condition of Availability			Not Available	Total
	Good	Manageable	Intolerable		
(01)	(02)	(03)	(04)	(05)	(06)
Separate public utilities for males and females	14 (46.66)	11 (36.67)	05 (16.67)	00	30 (100.00)
Suggestion / complaint box	19 (63.34)	07 (23.33)	03 (10.00)	01 (03.33)	30 (100.00)
OPD rooms / cubicles	15 (50.00)	10 (33.33)	05 (16.67)	00	30 (100.00)
Family Welfare Clinic	20 (66.67)	06 (20.00)	03 (10.00)	01 (03.33)	30 (100.00)
Waiting room for patients	02 (06.67)	14 (46.66)	02 (06.67)	12 (40.00)	30 (100.00)
Emergency Room/Casualty	02 (06.66)	05 (16.67)	05 (16.67)	18 (60.00)	30 (100.00)
Separate wards for males	03 (10.00)	01 (03.33)	01 (03.33)	25 (83.34)	30 (100.00)
Separate wards for females	02 (06.67)	04 (13.33)	01 (03.33)	23 (76.67)	30 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it could be noted that utilities services available in PHCs were not at satisfactory level as utilities services were not provided in PHCs. Further, it was noted that among available utilities, majority of them were available either at good or manageable conditions.

The availability of operation theatre at the PHCs along with the No. of Respondents and purpose of conducting operation is presented in Table 5.68.

Table 5.68
Respondents Perception Regarding Operation Theatre in the PHCs

Operation Theatre at PHCs		No. of Respondents	Percentage
(01)		(02)	(03)
Operation Theatre available		30	100.00
Total		30	100.00
If operation theatre is present, are surgeries carried out in the OT?	Yes	04	13.30
	No	25	83.30
	Sometimes	01	3.30
Total		30	100.00
Reason for not conducting surgeries even with the presence of OT	Non-availability of doctors/staff	23	76.70
	Lack of equipment/poor physical state of the operation theatre	02	06.70
	Absence of doctor	05	16.70
Total		30	100.00
Operation Theatre used for obstetric/ gynecological purpose (Out of 30)		04	13.33

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The availability of operation theatre in the PHCs was seen in all surveyed PHCs, but carrying out operation was found to be at very low level which was evident in the data in Table 5.68 as inspite of the availability of operation theatre, 13.3 per cent of the respondents revealed that regularly operations were carried out at PHCs, while one respondent revealed that sometimes operations were carried. Further, the main reason for not conducting operations/surgeries at the PHCs in spite of the availability of operation theatre at PHCs was the non-availability of doctors/staff at PHCs to conduct operations which was in accordance to 76.7 per cent of the respondents. However, 16.7 per cent revealed that absence of doctors, 6.7 per cent lack of equipment or poor physical state of the operation theatre were the major reasons for not conducting operations/ surgeries in PHCs. Further, it is

found that the major purpose of using operation theatre was for obstetric/ gynaecological purpose.

The data in Table 5.69 presents the availability and status of labour ward in PHCs.

Table 5.69
Status of Labour Room in the PHCs

Status of Labour Room in PHCs		No. of Respondents	Percentage
(01)		(02)	(03)
Labour room available		30	100.00
Total		30	100.00
If labour room is present, are deliveries carried out in the labour room	Yes	22	73.30
	No	08	26.70
	Sometimes	0	0.00
Total		30	100.00
If labour room is present. But deliveries are not being conducted there, then what are the reasons for the same?	Non-availability of doctors/ staff	15	50.00
	Poor condition of the labour room	07	23.33
	Patients go for private hospital	08	26.67
Total		30	100.00
Are separate areas for septic and aseptic deliveries available?	Yes	26	86.70
	No	04	13.30
Total		30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It was evident that all the PHCs had the facility of labour room but deliveries were carried out in 73.3 per cent of the PHCs. Further, it is found that in spite of availability of labour room where deliveries were not carried out, non-availability of the doctors/staff accounting to 50 per cent (out of 30 PHCs), poor condition of the labour room and patients opting private hospitals accounting to 26.67 per cent each (out of 30 PHCs) were the major reasons for not conducting deliveries in PHCs. However, it was noticed that in 86.7 per cent of the PHCs separate areas for septic and aseptic deliveries were available in PHCs.

The data in Table 5.70 presents the availability of laboratory services in PHCs along with the required equipment and chemicals.

Table 5.70
Laboratory Services Available in the PHCs

Services Available	No. of Respondents (N=30)	Percentage
(01)	(02)	(03)
Laboratory	30	100.00
Adequate equipment and chemicals	26	86.70
Laboratory maintained in orderly manner	30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It was evident from the data in the above Table that all PHCs were having laboratory facility and were maintained in orderly manner. However, 86.7 per cent of the surveyed PHCs were found to be having adequate equipment and the availability of required chemicals.

The data in Table 5.71 provided information with regard to the availability and status of electricity and laundry facilities available in PHCs.

Table 5.71
Availability of Electricity and Laundry Facilities in the PHCs

Availability of Electricity and Laundry Facilities		No. of Respondents	Percentage
(01)		(02)	(03)
Electric line in all parts of the PHC		30	100.00
Total		30	100.00
Regularity in power supply	Continuous Power Supply	03	10.00
	Occasional power failure	19	63.33
	Power cuts in summer only	06	20.00
	Regular power cuts	02	06.67
Total		30	100.00
Availability of generator as standby facility at PHCs in working condition		30	100.00
Total		30	100.00
Laundry facility available		30	100.00
Total		30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is found from the responses of the staff working in the PHCs, that all parts of the PHCs were connected with electric line which had regular power supply. However, 63.33 per cent of the PHCs surveyed, occasional power failure was encountered, while 20 per cent of the PHCs power cuts were experienced during summer only. Only 10 per cent of the PHCs surveyed had continuous power supply against 6.67 per cent of the PHCs having regular power cut. Further, in order to have uninterrupted power supply generator facility was available in working condition of all PHCs. Though, Laundry facility was available, but it is outsourced.

The data in Table 5.72 revealed information with regard to communication and road facilities available in PHCs.

Table 5.72
Communication and Road Facilities Available in the PHCs

Communication and Road Facilities		No. of Respondents (N=30)	Percentage
(01)		(02)	(03)
Communication facilities available	Telephone	30	100.00
	Personal Computer	30	100.00
	NIC Terminal	00	100.00
	E-Mail	30	100.00
Is the unit accessible by all-weather road		24	80.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table, it is found that all PHCs had telephone connection facilities either in the form of landline or mobile phone services. Further though all PHCs had personal computer facilities but the absence of NIC was observed in all PHCs. However, PHCs were provided with separate email ids but its usage was limited only to received mails. With regard to all-weather road to PHCs, it was noted that 80 per cent of the PHCs surveyed were accessible by all-weather roads which indicated that majority of the PHCs were accessible throughout the year.

The data in Table 5.73 provides information with regard to availability, accessibility and status of furniture in PHCs where at the outset it was noticed that majority of the staff working in PHCs feel furniture was available at good condition.

Table 5.73
Availability, Accessibility and Status of Furniture at the PHCs

Availability, Accessibility and Status	Condition of availability			Not Available	Total
	Good	Tolerable	Bad		
(01)	(02)	(03)	(04)	(05)	(6)
Examination Table	23 (76.66)	05 (16.66)	02 (06.66)	00 (00)	30 (100.00)
Delivery Table	21 (70.00)	06 (20.00)	03 (10.00)	00 (00)	30 (100.00)
Footstep	23 (76.66)	05 (16.66)	02 (06.66)	00 (00)	30 (100.00)
Bed Side Screen	01 (03.33)	01 (03.33)	01 (03.33)	27 (90.00)	30 (100.00)
Stool for patients	24 (80.00)	03 (10.00)	03 (10.00)	00 (00)	30 (100.00)
Arm board for adult & child	10 (33.33)	12 (40.00)	04 (13.33)	04 (13.33)	30 (100.00)
Stretcher on trolley	06 (20.00)	17 (56.66)	06 (20.00)	01 (03.33)	30 (100.00)
Oxygen trolley	21 (70.00)	05 (16.66)	04 (13.33)	00 (00)	30 (100.00)
Height measuring stand	25 (83.33)	02 (06.66)	03 (10.00)	00 (00)	30 (100.00)
Iron bed	24 (80.00)	04 (13.33)	02 (06.66)	00 (00)	30 (100.00)
Bed side locker	01 (03.33)	01 (03.33)	02 (06.66)	26 (86.66)	30 (100.00)
Dressing trolley	20 (66.66)	08 (26.66)	02 (06.66)	00 (00)	30 (100.00)
Mayo trolley	07 (23.33)	13 (43.33)	04 (13.33)	06 (20.00)	30 (100.00)
Instrument cabinet	20 (66.66)	07 (23.33)	03 (10.00)	00 (00)	30 (100.00)
Instrument trolley	19 (63.33)	08 (26.66)	02 (06.66)	01 (03.33)	30 (100.00)
Bucket	21 (70.00)	06 (20.00)	03 (10.00)	00 (00)	30 (100.00)
Attendant stool	22 (73.33)	04 (13.33)	04 (13.33)	00 (00)	30 (100.00)
Instrument tray	23 (76.66)	05 (16.66)	02 (06.66)	00 (00)	30 (100.00)
Chair	19 (63.33)	08 (26.66)	03 (10.00)	00 (00)	30 (100.00)
Wooden Table	19 (63.33)	07 (23.33)	04 (13.33)	00 (00)	30 (100.00)
Almirah	24 (80.00)	03 (10.00)	03 (10.00)	00 (00)	30 (100.00)
Swab rack	22 (73.33)	05 (16.66)	02 (06.66)	01 (03.33)	30 (100.00)
Mattress	19 (63.33)	07 (23.33)	04 (13.33)	00 (00)	30 (100.00)
Pillow	22 (73.33)	06 (20.00)	02 (06.66)	00 (00)	30 (100.00)
Waiting bench for patients	10 (33.33)	17 (56.66)	03 (10.00)	00 (00)	30 (100.00)
Medicine cabinet	10 (33.33)	04 (13.33)	16 (53.33)	00 (00)	30 (100.00)
Side rail	16 (53.33)	05 (16.66)	04 (13.33)	05 (16.66)	30 (100.00)
Rack	21 (70.00)	06 (20.00)	03 (10.00)	00 (00)	30 (100.00)
Bed side attendant chair	17 (56.66)	06 (20.00)	04 (13.33)	03 (10.00)	30 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

The data in Table 5.74 presents the level of satisfaction derived by the staff while working in the PHCs.

Table 5.74
Satisfaction Level in Working at the PHCs

Particulars	Strongly Satisfied	Satisfied	Neutral	Dissatisfied	Strongly Dissatisfied	Total
(01)	(02)	(03)	(04)	(05)	(06)	(07)
Happy for working in PHC	08 (26.66)	12 (40.00)	02 (06.66)	05 (16.66)	03 (10.00)	30 (100.00)
Satisfaction with the salary	07 (23.33)	12 (40.00)	06 (20.00)	03 (10.00)	02 (06.66)	30 (100.00)

Note: Figures in the parenthesis show percentage.

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It is found that majority of the respondents were satisfied with working in PHCs as 66.7 per cent of respondents were satisfied in working in PHCs where 26.7 per cent of them were strongly satisfied and 40 per cent were satisfied. Further, 26.7 per cent of the respondents were dissatisfied in working in PHCs out of which 16.7 per cent were dissatisfied and 10 per cent were strongly dissatisfied. However, 6.7 per cent of the respondents remained neutral in expressing their satisfaction or dissatisfaction in working in the PHCs.

It was also noticed that majority of the respondents were satisfied with the salary they draw for working in PHCs where 23.3 per cent were strongly satisfied and 40 per cent were satisfied with the salary, they received for working in PHCs. On the other hand, 16.7 per cent of the respondents were dissatisfied with the salary they received for working in PHCs. Out of those dissatisfied with the salary, 10 per cent of them were dissatisfied and 6.7 per cent of them were strongly

dissatisfied. However, 20 per cent of them remained neutral in expressing their satisfaction or dissatisfaction for the salary they received for working in PHCs.

The data in 5.75 provides information with regard to the level of interaction the staff with the patients.

Table 5.75

Perception Regarding Interaction with People/Patients at the PHCs

Interaction	No. of Respondents	Percentage
(01)	(02)	(03)
Very Friendly	01	03.30
Friendly	28	93.30
Neutral	01	03.30
Unfriendly	00	00.00
Extremely Unfriendly	00	00.00
Total	30	100.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

It could be noted that 93.30 per cent of the staff agreed that they had friendly interaction with the patients those who received health care services in PHCs which accounted to 93.3 per cent of the total respondents. However, none of the respondents accepted that they had unfriendly or extremely unfriendly interaction with the people those who availed health care services in PHCs.

The data in Table 5.76 provided information with regard to additional manpower required to PHCs with the view to provide more effective health care services to the beneficiaries. As such, it is found that majority of the respondent were of the opinion that more doctors were required at PHCs in order to provide qualitative health care services to the beneficiaries availing health care services from PHCs.

Table 5.76**Opinion towards Additional Manpower Required to the PHCs**

Additional Manpower Requirement	No. of Respondents (N=30)	Percentage
(01)	(02)	(03)
More Doctors	11	36.66
Specialists	16	53.33
Para-Medical Staff	08	26.66
Better Infrastructure Facilities	09	30.00
Maintenance	10	33.33
Night Services	15	50.00
Transportation Facility	09	30.00

Source : Data gathered through Primary Investigation, February 2021 to May 2021.

From the data in the above Table that by deputing specialists to serve at PHCs, it would be possible for PHCs to provide required medical services to the beneficiaries. Similarly, provision of paramedical staff, providing better infrastructure facilities and maintaining the same at higher level would be essential for PHCs to provide better health care services to its beneficiaries. Apart from all these, the requirement of night services and better transportation facility will still improve the quality of health care services provided by PHCs to its beneficiaries.

5.3. Hypotheses Testing

The following section deals with the testing of hypotheses framed for the present study. The results of testing the hypotheses are as presented in the following pages:

Table 5.77
Facilities Available at Sub-Centres

Facilities Available	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Physical Building	42.29	0.000	Significant
Emergency treatment	44.33	0.000	Significant
Weighing machine	97.96	0.000	Significant
Wheel chair	02.67	0.264	Insignificant
Wash room facilities	16.03	0.000	Significant
Medicines	254.59	0.000	Significant
Parking facility	32.47	0.000	Significant
Lighting facility	235.63	0.000	Significant
Water Facility	250.12	0.000	Significant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors determining facilities available at sub-centres was found to be more than the Table value of χ^2 except for the factor wheel chair. Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding facilities available at sub-centres indicating that the difference was statistically significant. However, the perception was insignificant with regard to wheel chair which indicated that the difference in the perception was statistically not significant. ***Hence, the hypothesis set that there is an insignificant difference in the respondents' perception regarding facilities provided at Sub-centres is verified, tested and rejected. For testing this hypothesis χ^2 statistical tool was applied.***

Table 5.78

Satisfaction Derived by the Respondents from the Services of Sub-Centres

Satisfaction Derived	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Drugs/medicine availability	118.55	0.000	Significant
Doctor availability	118.10	0.000	Significant
Waiting timings	100.10	0.000	Significant
Treatment Quality (Curable Treatment)	078.45	0.000	Significant
Response from medical personnel and staff	064.85	0.000	Significant
Cleanliness	144.00	0.000	Significant
Infrastructure	061.10	0.000	Significant

At five percentage of significance for degree of freedom 4, the Table value of $\chi^2 = 9.488$ and the calculated value of χ^2 for all the factors determining satisfaction derived by the services available at sub-centres was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding satisfaction derived by services available at sub-centres indicating that the difference was statistically significant. ***Hence, the hypothesis set that there is an insignificant difference in the respondents' perception regarding satisfaction derived by the respondents from the services of Sub-Centres is verified, tested and disproved. χ^2 statistical tool was used for testing this hypothesis.***

Table 5.79

Perception Regarding Infrastructure Status at Sub-Centres

Infrastructure Status (01)	χ^2 value (02)	P -value (03)	Remarks (04)
Building status	39.7	0.000	Significant
Bathroom status	146.8	0.000	Significant
Bed management	165.3	0.000	Significant
Water supply	108.6	0.000	Significant
Power supply	068.0	0.000	Significant
Cleanliness inside the Sub-Centre	163.7	0.000	Significant
Cleanliness in the premises	052.2	0.000	Significant
Notice board to display the health programs	169.3	0.000	Significant

At five percentage of significance for degree of freedom 4, the Table value of $\chi^2 = 9.488$ and the calculated value of χ^2 for all the factors determining infrastructure status at sub-centres was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding infrastructure status at sub-centres indicating that the difference was statistically significant. *Hence, the hypothesis set that the perception of Staff of Sub-Centres insignificantly differs regarding infrastructure status at Sub-Centres and has been tested by using χ^2 tool and hypothesis is disproved.*

Table 5.80

Utility Services Provided at Sub-Centres

Utility Services Provided (01)	χ^2 value (02)	P -value (03)	Remarks (04)
Separate public utilities for males and females	12.14	0.002	Significant
Suggestion/complaint box	46.34	0.000	Significant
OPD rooms/cubicles	12.08	0.002	Significant
Family Welfare Clinic	68.24	0.000	Significant
Waiting room for patients	17.42	0.000	Significant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors regarding utility services provided at sub-centres was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding utility services provided at sub-centres indicating that the difference was statistically significant.

Table 5.81
Perception about Facilities Accessed at the PHCs

Facilities Accessed	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Physical Building	20.60	0.000	Significant
Testing Lab	09.80	0.007	Significant
Operation theatre	11.41	0.000	Significant
Emergency treatment	28.84	0.000	Significant
Labour ward	11.29	0.003	Significant
Weighing machine	48.40	0.000	Significant
Wheel chair	20.00	0.000	Significant
Oxygen cylinder	20.26	0.000	Significant
Adequate beds	29.25	0.000	Significant
Wash room facilities	16.91	0.000	Significant
Medicines	42.37	0.000	Significant
Parking facility	71.57	0.000	Significant
Lighting facility	62.70	0.000	Significant
Water Facility	37.65	0.000	Significant
Visitors room	15.55	0.000	Significant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors regarding facilities accessed at PHCs was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding facilities accessed provided at PHCs indicating that the difference was statistically significant.

Table 5.82

Availability, Accessibility and Status of Furniture Facilities at the PHCs

Availability, Accessibility and Status	χ^2 value	P -value	Remarks
(01)	(02)	(03)	(04)
Examination Table	18.37	0.000	Significant
Delivery Table	26.17	0.000	Significant
Footstep	02.77	0.250	Insignificant
Stool for patients	34.70	0.000	Significant
Stretcher on trolley	14.36	0.000	Significant
Height measuring stand	34.70	0.000	Significant
Iron bed	55.39	0.000	Significant
Waiting bench for patients	62.70	0.000	Significant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors regarding furniture facilities at PHCs was found to be more than the Table value of χ^2 except for footstep. Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding furniture facilities at PHCs indicating that the

difference was statistically significant, whereas with regard to footstep the difference was found to be statistically not significant. *Hence, the hypothesis set that, there exists insignificant difference in respondent's perception regarding facilities accessed at PHCs is verified, tested and disproved. The hypothesis has been tested by using χ^2 tool* (Hypothesis 01).

Table 5.83
Availability of Medical Manpower at the PHCs

Availability of Medical Manpower	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Doctors	05.18	0.075	Insignificant
Specialist	09.74	0.000	Significant
Ladies' specialists	17.90	0.000	Significant
Nurse	07.4	0.025	Significant
Lab technician	42.37	0.000	Significant
Pharmacist	68.69	0.000	Significant
Ayas/Cleaners	05.47	0.065	Insignificant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors regarding availability of manpower at PHCs was found to be more than the Table value of χ^2 except for doctors and Ayas/cleaners. Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding availability of manpower at PHCs indicating that the difference was statistically significant, whereas with regard to doctors and Ayas/cleaners the difference was found to be statistically not significant.

Table 5.84
Perception Regarding Infrastructure Status at the PHCs

Infrastructure Status	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Building status	32.00	0.000	Significant
Bathroom status	09.71	0.046	Significant
Bed management	29.00	0.000	Significant
Water supply	69.29	0.000	Significant
Power supply	76.43	0.000	Significant
Cleanliness inside the hospital	61.00	0.000	Significant
Cleanliness in the premises	54.71	0.000	Significant
Notice board to display the health programs	40.43	0.000	Significant

At five percentage of significance for degree of freedom 4, the Table value of $\chi^2 = 9.488$ and the calculated value of χ^2 for all the factors determining infrastructure status at PHCs was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding infrastructure status at PHCs indicating that the difference was statistically significant.

Table 5.85
Satisfaction Derived by Respondents from the Services of the PHCs

Satisfaction Derived	χ^2 value	P -value	Remarks
(01)	(02)	(03)	(04)
Drugs/medicine availability	66.14	0.000	Significant
Doctor availability	13.14	0.010	Significant
Waiting timings	11.00	0.027	Significant
Treatment Quality (Curable Treatment)	27.14	0.000	Significant
Response from medical personnel and staff	22.86	0.000	Significant
Cleanliness	35.00	0.000	Significant
Infrastructure	9.29	0.000	Significant

At five percentage of significance for degree of freedom 4, the Table value of $\chi^2 = 9.488$ and the calculated value of χ^2 for all the factors regarding satisfaction derived from the services provided by PHCs was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding satisfaction derived from the services provided by PHCs indicating that the difference was statistically significant. *Hence, the hypothesis set that, there exists insignificant difference in respondent's perception regarding satisfaction derived from the services provided at PHCs is verified, tested and rejected. Researcher has made use of χ^2 tool to test this hypothesis* (Hypothesis 02).

Table 5.86

Perception Regarding Infrastructure Status at the PHCs

Infrastructure Status	χ^2 value	P -value	Remarks
(01)	(02)	(03)	(04)
Building status	20.67	0.000	Significant
Bathroom status	13.33	0.009	Significant
Bed management	20.67	0.004	Significant
Water supply	25.67	0.000	Significant
Power supply	30.33	0.000	Significant
Cleanliness inside PHCs	11.00	0.027	Significant
Cleanliness in the premises	15.67	0.003	Significant
Notice Board to display the health programs	17.33	0.001	Significant

At five percentage of significance for degree of freedom 4, the Table value of $\chi^2 = 9.488$ and the calculated value of χ^2 for all the factors regarding infrastructure status at PHCs was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was

concluded that there exists significant difference in the respondent's perception regarding infrastructure status at PHCs indicating that the difference was statistically significant. *Hence, the hypothesis set that, there exists insignificant difference in respondent's perception regarding infrastructure status at PHCs is verified, tested and rejected. For this purpose the researcher has applied χ^2 tool (Hypothesis 03).*

Table 5.87

Laboratory Services Provided at the PHCs

Laboratory Services	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Routine urine, stool and blood tests	19.4	0.000	Significant
Blood grouping	12.6	0.001	Significant
Bleeding time, clotting time	15.0	0.000	Significant
Diagnosis of RTI/STDs	14.97	0.000	Significant
Sputum testing for TB	22.4	0.000	Significant
Blood smear examination for malaria parasite	25.8	0.000	Significant
Rapid tests for pregnancy	20.6	0.000	Significant
RPR test for Syphilis/YAWS surveillance	16.83	0.000	Significant
Rapid tests for HIV	23.4	0.000	Significant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for all the factors regarding laboratory services provided at PHCs was found to be more than the Table value of χ^2 . Hence, null hypothesis was rejected and by accepting alternative hypothesis it was concluded that there exists significant difference in the respondent's perception regarding laboratory services provided at PHCs indicating that the difference was statistically significant.

Table 5.88
Perception Regarding Utility Services at the PHCs

Utility Services	χ^2 value	P-value	Remarks
(01)	(02)	(03)	(04)
Separate public utilities for males and females	4.20	0.122	Insignificant
Suggestion/complaint box	14.34	0.000	Significant
OPD rooms/cubicles	5.00	0.082	Insignificant
Family Welfare Clinic	17.03	0.000	Significant
Waiting room for patients	16.00	0.000	Significant
Emergency Room / Casualty	1.50	0.472	Insignificant
Separate wards for males	1.60	0.449	Insignificant
Separate wards for females	2.00	0.368	Insignificant

At five percentage of significance for degree of freedom 2, the Table value of $\chi^2 = 5.991$ and the calculated value of χ^2 for the factors viz. separate public utilities for males and females, OPD room/ Cubicles, emergency room/ casualty, separate wards for male and separate wards for females provided at PHCs was found to be less than the Table value of χ^2 . Hence, null hypothesis was accepted and concluded that there exists insignificant difference in the respondent's perception regarding the above-mentioned utility services at PHCs indicating that the difference was statistically not significant. On the other hand, the calculated value of χ^2 for suggestion/ complaint box, family welfare clinic, waiting room for patients was found to be more than the calculated value of χ^2 as the result of which null hypothesis was rejected and by accepting alternative hypothesis it was concluded that the difference in respondent's perception regarding suggestion/ complaint box, family welfare clinic and waiting room for patients was significant.

This chapter deals with the analysis of the data gathered through field survey in two parts; *Part-I* Health Care Status at Sub-centres and *Part-II* is about Health Care Status at PHCs and in the ensuing chapter findings drawn from the study and suggestions are provided for the problems identified during field survey prior to a formal conclusion are discussed.

Chapter-06

FINDINGS, SUGGESTIONS AND CONCLUSION

6.1. Findings Based on Secondary Data

6.1.1. Health Status in India

6.1.2. Registered Practitioners under AYUSH System

6.1.3. Nurses and Pharmacists Registered in India

6.1.4. Health Manpower in Rural areas of India

6.1.5. Hospitals and Beds in Rural and Urban Areas in India

6.1.6. Rural and Urban-wise Health Institutions Functioning in India, 2019

6.1.7. Health Human Resources in Karnataka

6.1.8. Hospitals under AYUSH System in Karnataka

6.2. Findings Based on Primary Data

PART-I

Health Care Status at Sub-Centres

6.2.1. Beneficiaries of Sub-Centres

6.2.2. Awareness about Healthcare Services (Sub-Centres)

6.2.3. Utilization of Services of Sub-Centres

6.2.4. Facilities Available at Sub-Centres

6.2.5. Health Manpower of Sub-Centres

6.2.6. General Features of the Sub-Centres

6.2.7. Satisfaction derived by the Respondents from the Services of Sub-Centres

6.2.8. Other Infrastructure Status at the Sub-Centres

6.2.9. Satisfaction of Staff Working at Sub-Centres and Interaction of Health Manpower and Patients

PART-II

Health Care Status at the PHCs

6.2.10. Beneficiaries of the PHCs

6.2.11. Utilization of the PHCs Services

6.2.12. Facilities Available at the PHCs

6.2.13. Satisfaction Derived from the Services of the PHCs

6.2.14. Respondents' Perception Regarding Infrastructure Status at the PHCs

6.2.15. Health Manpower and Infrastructure at the PHCs

6.3. Suggestions

6.3.1. Beneficiaries of Sub-Centres

6.3.2. Staff of Sub-Centres

6.3.3. Beneficiaries of the PHCs

6.3.4. Staff of the PHCs

6.4. Conclusion

Chapter-06

FINDINGS, SUGGESTIONS AND CONCLUSION

Having presented the analysis of data and interpreted the results in the previous chapter, this chapter proceeds further to present the findings of the study and provides some suggestions prior to a formal conclusion at the end.

For convenience, the Findings are presented by dividing them into Findings based on Secondary Data and the ones based on Primary Investigation.

6.1. Findings Based on Secondary Data

6.1.1. Health Status in India

The study reveals that about 70 per cent of the total household expenditure is incurred on procuring medicines in India. Further, it is also noted that about 469 million Indians are deprived from regular access to essential medicines. The health infrastructure in India is very shocking as about 63 per cent of the PHCs function without operation theatre and 29 per cent were functioning without labour room. The Indians accounting to 58 and 68 per cent in rural and urban areas respectively preferred private health care facilities for inpatient care. A Non-Profit Organization - *India Spend* - noted that, though India being the 6th biggest out-of-pocket health spenders among the lower middle-class people, but still more than seven persons out of every 10 persons do not come under the coverage of insurance. However, with the improved awareness about insurance benefits the percentage of population coming under insurance stream, in India, is continuously increasing year by year.

6.1.2. Registered Practitioners under AYUSH System

The study found that, on an average 726128 practitioners registered under AYUSH which had growth rate of 0.59 per cent per annum as the result of which registered AYUSH practitioners increased by 11.91 per cent by the year 2018 compared to 2000. Decrease in the growth of registered Siddha practitioners was at higher level with -6.56 per cent per annum as the result of which registered Siddha practitioners decreased by 72.43 per cent by the year 2018 compared to 2000. Further, the Ayurveda practitioners decreasing at the rate of 0.11 per cent per annum which caused decrease of 2.08 per cent in Ayurveda practitioners by the year 2018 compared to 2000.

6.1.3. Nurses and Pharmacist Registered in India

It is evident that, the registered nurses and pharmacists gradually increased in the period from 2000 to 2018 where the increase among nurses and midwives (5.09 per cent per annum) was at higher level followed by auxiliary nursing midwives (3.0% per annum) and then lady health visitors/ health supervisors (3.02% per annum). However, on an average 614656 auxiliary nursing midwives, 1243154 registered nurses and midwives and 50316 lady health visitors/ health supervisors were serving. With the given growth rate, auxiliary nursing midwives, registered nurses and midwives and lady health visitors/ health supervisors increased respectively by 99.24, 144.47 and 70.80 per cent by the end of 2018 compared to 2000.

6.1.4. Health Manpower in Rural areas of India

The study found that, in the case of female health workers to carry out work at Sub-Centres and PHCs, sanctioned posts crossed the required posts. That means, it was evident that about 15 per cent more posts were sanctioned against the required posts.

6.1.5. Hospitals and Beds in Rural and Urban Areas in India

The study proved that, out of total government hospitals (23582 hospitals) functioning in the country about 84 per cent (19810 hospitals) are delivering health services in rural areas and 16 per cent (3772 hospitals) in urban areas. Further, with regard to their bed strength, out of total bed strength in the government hospitals 39.34 per cent are present in rural hospitals and 60.66 per cent are in urban hospitals indicating that more numbers of beds are present in urban hospitals with less number of hospitals functioning in urban areas when compared to rural areas.

6.1.6. Rural and Urban-wise Health Institutions Functioning in India, 2019

The study found that, more facilities are available in urban health institution rather than in rural areas. In the country 1234 Sub-divisional hospitals, 756 district hospitals, 1415 mobile medical units and 240 medical colleges were functioning in urban areas only. Out of total 152794 Sub-Centres functioning in the country, 97.70 per cent (149590 sub-centres) of them were operating in rural areas and 2.10 per cent (3204 sub-centres) of them in urban areas. Like that, out of total 20069

PHCs functioning in the country, 82.78 per cent (16613 PHCs) of them were operating in rural areas and 17.22 per cent (3456 PHCs) of them in urban areas.

6.1.7. Health Human Resources in Karnataka

The study proved that, as far as the registered allopathic doctors and dental surgeons in Karnataka for the period 2009 to 2017 is concerned, the supply of dental surgeons was more compared to the allopathic doctors. Further, for the period 2009 to 2017, the supply of allopathic doctors decreased by 0.61 per cent per annum against the increase of dental surgeons at the rate of 5.54 per cent per annum for the same period.

6.1.8. Hospitals under AYUSH System in Karnataka

The researcher found from the study that that in the state, only Ayurveda hospital formed the major portion of the AYUSH system of medicine. However, Unani and Homeopathy hospitals were functioning to some extent, while Yoga and Naturopathy hospitals were in very limited numbers. As of 2016, in the state out of total 213 hospitals functioning under AYUSH system of medicine, 79.81 per cent (170 out of 213 hospitals) of them were Ayurveda hospitals, 8.45 per cent (18 out of 213 hospitals) and remaining 7.5 per cent were Unani hospitals and 7.5 per cent (16 out of 213 hospitals) of them were Homeopathy hospitals against six Naturopathy and three Yoga hospitals constituting for 2.8 and 1.4 per cent respectively.

6.2. Findings Based on Primary Data

The findings based on primary data are presented hereunder:

PART-I

Health Care Status at Sub-Centres

Healthcare status at the Sub-Centres was studied with reference to the perception of the beneficiaries availing of health care services at the Sub-Centres. The opinion of the staff working at these centres have also been gathered and analysed.

6.2.1. Beneficiaries of Sub-Centres

The status of health care services received by the beneficiaries in accordance with their perception was studied in terms of their demographic features, socio-economic indicators, and awareness level among the beneficiaries regarding healthcare services, utilization of services provided at the Sub-Centres and so on.

6.2.2. Awareness about Health Care Services (Sub-Centres)

All respondents under the investigation availed of the health services provided by the government. All were aware about health services provided by the government when they visited the Sub-Centres for treatment or visiting the Sub-Centres with family members or friends or relatives for treatment.

6.2.3. Utilization of Services of Sub-Centres

The respondents accessed the services rendered at the Sub-Centres. Majority of them visited the Sub-Centre once in a year for curative purpose. A high portion of the respondents travelled longer distance to avail healthcare

services provided by the Sub-Centres. Bus was the major mode of transport for the respondents to visit the Sub-Centres. The major reason for utilizing the services provided here was that of free cost free service, nearness and easy accessibility.

6.2.4. Facilities Available at Sub-Centres

The study found that, Majority of the respondents accepted that water facility, medicines and lighting facility were in good conditions, weighing machine, physical building and washroom facilities were in tolerable condition and parking facility, emergency treatment and wheel chair facilities at the Sub-Centres were in bad condition. *Hence, the hypothesis set that there is an insignificant difference in the respondents' perception regarding facilities provided at sub-centres is verified, tested and rejected. For testing the hypothesis χ^2 statistical tool was applied.*

6.2.5. Health Manpower of Sub-Centres

The perception of the health manpower working at these Centres were studied in terms of their general features, status of health manpower, availability of infrastructure, services provided and other utilities available to the stakeholders.

6.2.6. General Features of the Sub-Centres

Majority of the respondents working at the Sub-Centres were Junior Health Assistant (Female) followed by Auxiliary Nurse Midwife (ANMs) and all were permanent employees. All the Sub-Centres under survey were located in the same village and majority of the Sub-Centres covered one village, while 36 per cent of the Sub-Centres covered 2 villages and 16 Sub-Centres covered 3 villages. All the Sub-Centres were working in government building.

6.2.7. Satisfaction derived by the Respondents from the Services of Sub-Centres

It is evident from the present study that, majority of the respondents were satisfied with the quality of treatment provided at the Sub-Centres, while they were moderately satisfied with the availability of drugs & medicines, cleanliness and waiting timing. At the same time, it was noted that the respondents were dissatisfied with the availability of doctors at these Centres of health care. *Hence, the hypothesis set that there is an insignificant difference in the respondents' perception regarding satisfaction derived by the respondents from the services of Sub-Centres is verified, tested and disproved. Here, χ^2 statistical tool was used for testing this hypothesis.*

6.2.8. Other Infrastructure Status at the Sub-Centres

The study found that majority of the respondents felt the status of infrastructure facilities available at the Sub-Centres was either good or very good. However, considerable percentage of respondents felt that the status of infrastructure facilities available was at a moderate level. Further, marginal percentage of respondents felt that the status of infrastructure facilities available was either very poor or poor. *Hence, the hypothesis set that the perception of staff of Sub-Centres insignificantly differs regarding infrastructure status at Sub-Centres and has been tested by using χ^2 tool and the hypothesis is disproved.*

6.2.9. Satisfaction of Staff Working at Sub-Centres and Interaction of Health Manpower and Patient

It was found that majority of the staff working at the Sub-Centres were happy which accounted to 73 per cent against 17 per cent of them being

dissatisfied and 10 per cent of them remaining neutral .It was noticed that majority of the staff working here were satisfied with the salary paid which accounted to 63 per cent against 23 per cent of them being dissatisfied with the present salary drawn, while 14 per cent of them remained neutral. The interaction of health manpower with patients at the Sub-Centres was noticed to be friendly accounting to 61 per cent followed by 12 per cent feeling very friendly and 14 per cent remained neutral. However, 8 per cent of them felt unfriendly and 5 per cent extremely unfriendly. It was noticed that majority of the staff at the Sub-Centres feel the necessity of Female and Male Health workers, transportation facility, visiting specialists and better infrastructure facility.

PART-II

Health Care Status at the PHCs

The status of healthcare services at the PHCs were studied based on the perception of the beneficiaries who availed healthcare services at the PHCs and from the staff working at the PHCs in the study area. Information with regard to the healthcare status of the PHCs was gathered from 100 respondents out of which 70 were beneficiaries and 30 were the staff.

6.2.10. Beneficiaries of PHCs

The perception of beneficiaries availing healthcare services at the PHC level were studied in terms of awareness about healthcare services, utilization of services at the PHCs and utilisation of other services provided.

6.2.11. Utilization of PHCs Services

All the respondents under study have accessed health services provided at the PHCs. Majority of them visited the PHCs for treatment for less than 3 times in

one year and curative was the major reason for visiting the PHCs. The study revealed that, the respondents were required to travel less than 3 km to access healthcare services at the PHCs which accounted to 38.6 per cent followed by 20 per cent of them to travel between 3 and 5 km to access a PHC.

The respondents who accessed services at the PHCs by walk accounted to 30 per cent of the total respondents. However, bus and auto were the other means of transport to access services of the PHCs as these two means of transport accounted to 28.6 and 27.1 per cent of the total respondents respectively. About one fourth of the total respondents were admitted at the PHCs in the last 12 months. Further, majority of them agreed that free of cost, nearness and easy accessibility were the major reasons for using services at the PHCs. With regard to the facilities provided at the PHCs, it was noticed that about 95 per cent of the PHCs lacked with children ward and ambulance facilities, while about 50 per cent of the PHCs lacked with operation theatre. Among the facilities available at the PHCs, like parking facility, lighting facility, weighing machine, medicines and water facility, wheel chair, oxygen cylinder, adequate beds, testing lab and visitor's room were available at a tolerable condition. At the same time, labour ward, washroom facilities, emergency treatment, operation theatre, children ward and ambulance were available in bad conditions.

6.2.12. Facilities Available at PHCs

It was evident that among various facilities available at the PHCs, such as parking facility, lighting facility, weighing machine, medicines, water facility and physical building of the PHCs were available in good condition. Further, wheel chair, oxygen cylinder, adequate beds, testing lab and visitors' room were available in tolerable condition. However, washroom, labour ward, emergency

treatment, operation theatre, children ward and ambulance were available in bad condition. *Hence, the hypothesis set that, there exists insignificant difference in respondent's perception regarding facilities accessed at PHCs is verified, tested and disproved. The hypothesis has been tested by using χ^2 tool.*

6.2.13. Satisfaction Derived from the Services of PHCs

It is evident from the study that majority of the respondents were satisfied with the availability of drugs/ medicines and cleanliness maintained at the PHCs, the respondents remained neutral in expressing their satisfaction regarding response from medical personnel and staff whereas availability of doctors at the PHCs and treatment quality particularly curable treatment they were neither satisfied nor dissatisfied with these services. However, it was evident that the respondents were dissatisfied with the waiting time and infrastructure facility available at the PHCs. *Hence, the hypothesis set that, there exists insignificant difference in respondent's perception regarding satisfaction derived from the services provided at the PHCs is verified, tested and rejected. Researcher has made use of χ^2 tool to test this hypothesis.*

6.2.14. Respondents' Perception Regarding Infrastructure Status at PHCs

The study found that majority of the respondents opined that basic infrastructure facilities available at the PHCs was in good condition. *Hence, the hypothesis set that, there exists insignificant difference in respondents perception regarding infrastructure status at PHCs is verified, tested and rejected. For this purpose the researcher has applied χ^2 tool.*

6.2.15. Health Manpower and Infrastructure at PHCs

The status of at PHCs has been studied in terms of availability of health manpower, infrastructure availability, services provided and so on.

a) Manpower Availability at PHCs

The percentage of PHCs operating with one doctor accounted to 70, while those operating with 2 doctors accounted to 13.33 per cent. Further, 16.7 per cent of the PHCs were functioning without doctor. Majority of the PHCs were operating with Block Extension Educators, Lab Technician and Pharmacists accounting to 83.3, 96.7 and 96.7 per cent respectively. The percentage of the PHCs operating with full time Medical Officer (MBBS) accounted to 60 per cent, while the PHCs operating with part time Medical Officer (MBBS) accounted to 23.3 per cent. Marginal percentage of PHCs functioned with Dental Surgeon accounting to just 16.7 per cent.

The availability of Health Educators at the PHCs accounted to 50 per cent of the total surveyed PHCs. The availability of permanent and on contract Staff Nurse were found in 66.7 and 60.0 per cent of the surveyed PHCs respectively. The availability of Female Health Workers was observed to be not satisfactory as about 50 per cent of the surveyed PHCs functioned with less than 3 Female Health Workers. The PHCs functioning with 1 Male Health Assistant accounted to 53.3 per cent against 40 per cent of them functioning without Male Health Assistant and only 6.7 per cent of the PHCs are found functioning with 2 Male Health Assistants.

Majority of the PHCs were operating without Female Health Assistants accounting to a high of 76.7 per cent. Majority of the PHCs were functioning

without Upper Division Clerk which accounted to 60 per cent against 33.3 per cent of the PHCs working without Lower Division Clerks. However, 63.3 per cent of the PHCs were functioning with Lower Division Clerk. Majority of the PHCs were found functioning without the availability of driver and Class IV worker accounting to 86.7 per cent and 40.0 per cent respectively. However, 36.7 per cent of the PHCs were functioning with at least one Class IV worker. Almost all the PHCs were functioning with sanitary worker cum watchman accounting to 96.7 per cent of the surveyed PHCs in the study area.

b) Services Provided by the PHCs

All the PHCs provide OPD services, referral services and in-patient services, while marginal percentage of PHCs offered emergency services round the clock which accounted to 16.7 per cent. Majority of the PHCs were functioning with 5 to 6 beds altogether accounting to 90 per cent of the total surveyed PHCs, where 50 per cent of the PHCs function with 5 beds strength and 40 per cent of them functioned with 6 beds strength. Majority of the PHCs surveyed had less than 40 per cent bed occupancy rate account to 70 per cent of the surveyed PHCs. The OPD attendance at majority of the PHCs stood between 25 and 50 which accounted to 86.67 and 76.67 per cent among male and female patients respectively. All PHCs provided primary management of wounds, minor surgeries like draining of abscess, cases of poisoning, snake, insect or scorpion bite and management of burns. However, 90 per cent of the PHCs provided primary management of fracture. With regard to maternal and child healthcare facilities at PHCs, it was noted that all PHCs provided ante-natal care, post-natal care, new borne care, childcare including immunization, family planning services and management of RTI/STI. However, 96.7 per cent of the PHCs provided facilities under Janani Suraksha Yojana.

About one third of the surveyed PHCs provided Intra-natal care round the clock. However, only one PHC out of the surveyed PHCs provided MTP service. All PHCs organised antenatal clinics regularly, treatment for anaemia for pregnant and non-pregnant women, had fixed immunization day, provided BCG and Measles vaccine regularly and managed children suffering from diarrhoea with severe dehydration. Majority of the PHCs provided facility for tubectomy and vasectomy, treatment of children with pneumonia and conducted normal delivery round the clock which accounted to 96.6, 96.7 and 86.7 per cent respectively. Marginal per cent of surveyed PHCs provided internal examination for gynaecological conditions, management of low-birth-weight babies and MTP (abortion) facility which accounted to 6.7, 6.7 and 3.3 per cent respectively.

All the PHCs were found conducting School Health Programmes, undertook prevention and control of locally endemic diseases, performed disease surveillance and control of epidemics, performed collection and reporting of vital statistics and AYUSH services as per local preference. Majority of the PHCs provided nutrition services, promotion of safe water supply and basic sanitation, educating about health/behaviour change communication, conducted National Health Programs including HIV/AIDS control programs all accounting to 96.7 per cent each and rehabilitation services accounting to 90 per cent.

6.3. Suggestions

Based on the above findings, the following suggestions are offered :

6.3.1. Beneficiaries of Sub-Centres

6.3.1.1. Awareness about Health Insurance

Majority of the respondents have not subscribed to health insurance schemes; hence the respondents are to be educated with regard to the advantages

and necessity of health insurance scheme, so that more people will subscribe for health insurances either public or private.

6.3.1.2. Assured Facilities

Sub-Centres have to be initiated with emergency treatment, should make provision for wheel chair and additional beds along with ambulance services and visitor's room which were found to be absent in the Sub-Centres.

6.3.1.3. Provision of Additional Man Power

Additional manpower in terms of pharmacists, nursing assistants, ayas/cleaners, security/watch and ward are to be supplied either through fresh appointment or through out sourcing.

6.3.1.4. Supply of Medicines and Assured Associated Services

Supply of drugs and medicines in required qualities, provision of bathroom, water supply and other infrastructure to be provided at the Sub-Centres so that the beneficiaries will be more satisfied with the services provided.

6.3.2. Staff of Sub-Centres

6.3.2.1. More Health Workers

It is also suggested, based on the study, that the Sub-centres are to be provided with adequate number of health workers.

6.3.2.2. More ANMs

The Researcher also suggests for deployment of additional ANMs at the Sub-Centres depending on the requirement.

6.3.2.3. Uninterrupted Power Supply

Uninterrupted power supply is to be ensured and more attention at maintaining cleanliness inside and in the premises of Sub-Centres to be attended to.

6.3.2.4. Manpower Requirement

Provision for increased number of pharmacists, nurse midwife, upper division and lower division clerks along with class IV worker may also be made to overcome the problem of lack of manpower at the Sub-Centres in the study area.

6.3.2.5. Appointment of AUSH Doctors

The Sub-Centres may be equipped with the facility of AYUSH Doctors so that people will be benefited of availing of AYUSH system of medicines, as required by the stakeholders.

6.3.2.6. Capacity Building at Sub-Centres

As well, it is suggested for emergency room/casualty at the Sub-Centres and expansion of the services of Sub-Centres may be attended to by providing separate wards for male and female patients and labour ward facility to carry out deliveries at the Sub-Centres also, which will help the beneficiaries better.

6.3.3. Beneficiaries of the PHCs

6.3.3.1. Children Wards

Separate children ward may be provided at the PHCs and ambulance services at PHCs may be ensured, so that emergency cases could be immediately attended to. As well, bedside screen, arm board for adult and child are to be provided along with bedside locker for the patients availing of health care services at the PHCs.

6.3.3.2. Better Quality Services

It is need of the hour that, the public authority (the government) has to provide better quality health care services to people in the country. Adequate provision has to be made to ensure the supply of better quality health services such as doctors, specialists, lady doctors, gynaecologists, nursing assistants, security, staff and others.

6.3.3.3. Creation of Basic Amenities

Basic amenities such as bathrooms, wash rooms, better bed management at the PHCs are to be ensured, as well arrangements for their regular maintenance.

6.3.4. Staff of PHCs

6.3.4.1. Provision of Additional Man Power

The PHCs in the study area are to be provided with Health Assistants (Female), upper and lower division clerks, drivers and ambulance, and sanitary workers for the benefit of the patients.

6.3.4.2. Provision of Emergency Services

Also, the PHCs are to be upgraded and provided with emergency services round the clock and to be provided with intra-natal care round the clock; provision for MTP, management of low-birth-weight babies, etc., are to be ensured.

6.3.4.3. Training to Staff

Provision for frequent trainings to the paramedical staff in treatment of minor injuries and ancillary rooms/nurses rest rooms at the PHCs are also to be ensured on priority.

6.4. Conclusion

Health is an important dimension of wellbeing. India's achievements in the field of healthcare have been less than satisfactory and the burden of disease among the Indian population remains high. Same situation also exists in Karnataka state and Shivamogga district. Efforts to improve the quality of health care are particularly challenged by the lack of proper infrastructure facilities at various levels, better services to all the stakeholders, irrespective of category involved in the process of delivering clinical and non-clinical health care services. Further, efforts must be made to enhance availability of medical and para-medical personnel, along with provision for frequent training facility to the medical personnel. Campaigns are encouraged to develop better awareness about healthcare services among the people. If these provisions are not made at appropriate time, the delivery of health care services cannot be effective consequent upon which the end user i.e., common man is adversely affected. Let us all hope for the best.

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INTERVIEW SCHEDULES

INTERVIEW SCHEDULES FOR FIELD SURVEY

Research Topic: **HEALTH CARE SERVICE IN URBAN-RURAL KARNATAKA :
A STUDY IN SHIVAMOGGA DISTRICT**

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FOR SUB-CENTRES - BENEFICIARIES

I. Background Characteristics

1. Sex :

Male	Female

2. Place of residence :

Rural	Urban

3. Age :

4. Family type:

Nuclear	Joint

5. Family size:

6. Number of people working in the family:

7. Educational Background of the Respondent :

Illiterates	SSLC	PUC	Degree	PG

8. Occupation of the Respondent:

9. Monthly Income of the family (`):

10. Did you have subscribe for any health insurance scheme?

	Yes	No
Public		
Private		
Both		
Not subscribed		

11. Nature of recurring diseases that you /family members normally suffer from:

Cold and cough	
Fever	
Muscular pain	
Minor injury	
Stomach pain	
Constipency	
Food poison	
Water borne diseases	
Loose motion decency	
Pregnancy	

12. While unhealthy, how do you take curative measures?

Ignore	
Self-medication	
Indigenous- Homeopathy & Ayurveda	
Allopathy	

13. Amount spent for health care (₹ per annum):

1,000-2,500	
2,500-5,000	
5,000 to 10,000	

14. Source of coverage of Medical Expenses:

Personal/ Family earnings	
Reimbursement from Government/Employer	
Health Insurance coverage	
ESI	

15. Are you a beneficiary of any of the following:

Health Card	Sanjeevini	Arogya Bhagya	Ayushman

II. Awareness about Health Care Services

16. Do you avail health services provided by the government? Yes / No

17. If yes, rank the sources of information :

By visiting the Sub-Centres for treatment	
Visiting Sub-Centres for the treatment of family members/ relatives/friends	
Through Social media	
By watching Advertisement	
Government Notification	

III. Sub-Centres Service Utilization

18. Have you accessed Sub-Centres services earlier? Yes / No

19. How many times you visited Sub-Centres in the last one year (approximate figure) :

20. For what reason you visited to Sub-Centres :

Curative	Preventive	Both

21. Distance to the centre from your residence (km) :

< 3	3-5	5-10	> 10

22. Mode of transport (usual mode):

Auto Rickshaw	Bus	Walk	Personal vehicle	Others

23. Mention the reasons for using Sub-Centres :

Free	Near	Easy accessibility

24. Availability of the following in Sub-Centres you visit:

Sl. No.	Services	Available with condition			Not Available
		Good	Tolerable	Bad	
1	Building				
2	Emergency treatment				
3	Weighing machine				
4	Wheel chair				
5	Adequate beds				
6	Wash room facilities				
7	Medicines				
8	Parking facility				
9	Lighting facility				
10	Water Facility				
11	Ambulance				
12	Visitors room				

25. Availability of the following human resources at Sub-Centres:

Sl. No.	Human Resource	Available status			Not Available
		Adequate	Manageable	Insufficient	
1	Doctors				
2	Nurse				
3	Nursing assistant				
5	Ayas/ Cleaners				
6	Security/Watch & ward				
7	Pharmacist				

26. Reasons for not using Sub-Centres services :

Not happy with the treatment	
Medicines are not available	
Doctor is absent	
Lack of lady doctor	
Lack of laboratory	
Lack of infrastructure	

IV. Health Services from Other Sources (Apart from Sub-Centres)

27. Not accessing any of the Govt. health facility (PHC and CHC), mention reason for not accessing Govt. Health care facilities :

Inconvenient location (far)/ high transport cost	
Less confidence	
Poor quality of medicine and service	
Non-availability of doctors and nurse	
Wrong approach /Manners of medical personals	
Long waiting hours	
Lack of good infrastructure	
Inconvenient timings	

28. If using both public and private health services, mention when you prefer private clinics or hospitals:

Emergency or serious condition	
Non availability of doctors in PHCs or Govt. hospital	
Long distance or high transportation cost	
Lack of confidence on the availability of doctor	
Long waiting period	
No curative treatment in Govt. hospital	

29. Any other specific problems you face in connection with healthcare:

30. Your suggestions to improve the system :

Date :

FOR PRIMARY HEALTH CARE CENTRES (SUB-CENTRE STAFF)

1. Designation :
2. Type of appointment : Contract / Permanent
3. Is Sub-Centre located in the same village : Yes / No
4. No. of villages covered by Sub-Centre:
5. State the Building position of the Sub-Centre :

Government Building	Rented Building	Rent Free Building	Building Under Construction

6. Is the Sub-Centre providing 24 hours and 7 days delivery facilities?
: Yes / No

Health Manpower

7. Mention the availability of the following at the Sub-Centre :

Health Worker (Female) ANM	
Additional Second ANM (Contract Basis)	
Health Worker (Male)	
Voluntary Worker	
Sub-Centre functioning without Health Worker (HW)	
Sub-Centre functioning without Health Worker (HW) and ANM	

Health care Infrastructure

8. Mention the availability of the following at the Sub-Centre :

ANM quarters	
ANM living in Sub-Centre quarters	
ANM living in Sub-Centre village	
Sub-Centre functioning as per IPHS norms	
Sub-Centre having regular water supply	
Sub-Centre having Electric Supply	
Sub-Centre having all-weather motorable approach road	
Sub-Centre having separate toilet facility for male and female patients	
Sub-Centre having separate toilet facility for staff	
Sub-Centre having regular supply of generic drugs for common ailments	

9. Mention the services provided at the Sub-Centre :

Sl. No.	Particulars	Tick
1	Assured Services	
a.	OPD Services	
b.	Emergency services (24 Hours)	
c.	Referral Services	
d.	In-patient Services	
2	Average daily OPD Attendance	
a.	Males	
b.	Females	
3	Treatment of specific cases	
a.	Is surgery for cataract done in the Sub-Centre?	
b.	Is the primary management of wounds done at the Sub-Centre?	
c.	Is the primary management of fracture done at the Sub-Centre?	
d.	Are minor surgeries like draining of abscess etc. done at the Sub-Centre?	
e.	Is the primary management of cases of poisoning /snake, insect or scorpion bite done at the Sub-Centre?	
f.	Is the primary management of burns done at Sub-Centre?	

10. Mention the services available regarding Maternal and Child Health Care including Family Planning at the Sub-Centre

Ante-natal care	
Intra-natal care (24 - hour delivery services both normal and assisted)	
Post-natal care	
New born Care	
Child care including immunization	
Family Planning	
MTP	
Management of RTI / STI	
Facilities under Janani Suraksha Yojana	

11. Rank the training facility provided to the medical and paramedical personnel:

Training particulars	Frequently Provided	Provided	Rarely Provided	Not at all Provided
Tradition birth attendants				
Initial and periodic training of paramedics in treatment of minor ailments				
Training of ASHAs				
Training of Health Workers in antenatal care and skilled birth attendance				

12. Mention the essential laboratory services provided by the Sub-Centre:

Services	Adequately Provided	Provided	Rarely Provided	Not Provided
Routine urine, stool and blood tests				
Blood grouping				
Bleeding time, clotting time				
Diagnosis of RTI/STDs with wet mounting, grams stain, etc.				
Sputum testing for TB				
Blood smear examination for malaria parasite				
Rapid tests for pregnancy				
RPR test for Syphills / YAWS surveillance				
Rapid tests for HIV				
Others (specify)				

13. Availability of the Utilities services at the Sub-Centre:

Particulars	Condition of Availability			Not Available
	Good	Manageable	Intolerable	
Separate public utilities for males and females				
Suggestion / complaint box				
OPD rooms / cubicles				
Family Welfare Clinic				
Waiting room for patients				
Emergency Room / Casualty				
Separate wards for males				
Separate wards for females				
No. of beds: Male				
No. of beds: Female				

14. Mention the status of Laboratory services provided at the Sub-Centre:

Particulars	Yes	No
Laboratory available		
Are adequate equipment and chemicals available?		
Is laboratory maintained in orderly manner?		
Ancillary Rooms - Nurses rest room		

15. Other facilities available at the Sub-Centres:

Particulars		
The unit has the facility of	Office room	
	Store room	
	Kitchen	
Is diet provided by unit	Yes	
	No	
Residential facility provided with all amenities for	Medical Officer	
	Pharmacist	
	Nurses	
	Other staff	

16. Evaluate the behavioral aspects of the staff of the Sub-Centre:

Particulars		
How is the behaviour of the Sub-Centre staff with the patient	Courteous	
	Casual/indifferent	
	Insulting / derogatory	
Any fee for service is charged from the users?		
Is there corruption in terms of charging extra money for any of the service provided?		
Are woman patients interviewed in an environment that ensures privacy and dignity?		
Do patients with chronic illnesses receive adequate care and drugs for the entire duration?		
Is there a publicly displayed mechanism, whereby a complaint/ grievance can be registered?		
Is there an outbreak of any of the following diseases in the Sub-Centre area in the last three years?	Malaria	
	Measles	
	Gastroenteritis	
	Jaundice	
If yes, did the Sub-Centre staff responded immediately to stop the further spread of the pediments. Does the doctor do private practice		
If the health centre is unequipped to provide the services how and where the patient is referred and how patients are transported?		

17. How is the people/patient interaction?

Extremely Unfriendly	Unfriendly	Neutral	Friendly	Very Friendly

18. Patient's demand with regard to health manpower in the Sub-Centre:

FOR PHC BENEFICIARIES

I. Background Characteristics

1. Sex :

Male	Female

2. Place of residence :

Rural	Urban

3. Age :

4. Educational Background of the Respondent :

Illiterates	SSLC	PUC	Degree	PG	Others

5. Occupation of the Respondent:

6. Monthly Income of the family (`):

7. Did you have subscribe for any health insurance scheme?

Public	Yes	
	No	
Private	Yes	
	No	
Both	Yes	
	No	
Not subscribed	Yes	
	No	

8. Nature of recurring diseases that you /family members normally suffer from:

Cold and cough	
Fever	
Muscular pain	
Minor injury	
Stomach pain	
Constipency	
Food poison	
Water borne diseases	
Loose motion decentry	
Pregnancy	

9. While unhealthy, how do you take curative measures?

Ignore	
Self-medication	
Indigenous- Homeopathy & Ayurveda	
Allopathy	

10. Amount spent for health care (₹ per annum):

< 1000	
1000 to 2500	
2500 to 5000	
5000 to 10000	
> 10000	

11. Source of coverage of Medical Expenses:

Personal/ Family earnings	
Reimbursement from Government/Employer	
Health Insurance coverage	
ESI	

12. Are you a beneficiary of any of the following:

Health Card	Sanjeevini	Arogya Bhagya	Ayushman	Others

II. Awareness about Health Care Services

13. Do you avail health services provided by the government? Yes / No

14. If yes, rank the sources of information :

By visiting the Sub-Centres for treatment	
Visiting Sub-Centres for the treatment of family members/relatives/friends	
Through Social media	
By watching Advertisement	
Government Notification	

15. If No, the reasons for unaware about health services:

Not interested in Government health services	
No faith in Government health services	
Facilities are not available	
Human service is not good	
Medical staff is not attentive	
Follow-up is not properly done	
Timings is not suitable	
Poor people are neglected	
There is a corruption	
Medicine is not available	
Not modernized	
Lack of Cleanliness maintenance	

III. PHC Service Utilization

16. Have you accessed PHC services earlier? Yes / No

17. How many times you visited PHC in the last one year (approximate figure):

18. For what reason you visited to PHC:

Curative	Preventive	Both

19. Distance to the centre from your residence (km):

Within village	< 3	3-5	5-10	> 10

20. Mode of transport (usual mode):

Auto Rickshaw	Bus	Walk	Personal vehicle	Others

21. What are the reasons for using PHC for maternal and other needs?

Free of cost	Near	Easy accessibility

22. Availability of the following in PHC you visit:

Services	Available with condition			Not Available
	Good	Tolerable	Bad	
Physical Building Hospital				
Testing Lab				
Operation theatre				
Emergency treatment				
Labour ward				
Children ward				
Weighing machine				
Wheel chair				
Oxygen cylinder				
Adequate beds				
Wash room facilities				
Medicines				
Parking facility				
Lighting facility				
Water Facility				
Ambulance				
Visitors room				

23. Rank the infrastructure status of the PHC :

Name of the Item	Very Poor	Poor	Neither poor nor good	Good	Very Good
Building status					
Bath room status					
Bed management					
Water supply					
Power supply					
Cleanliness inside the hospital					
Cleanliness in the premises					
Notice board to display the health programs					

24. Your satisfaction from PHC services :

Response	Highly Dissatisfied	Dis-satisfied	Moderate	Satisfied	Highly satisfied
Drugs /medicine availability					
Doctor availability					
Waiting timings					
Treatment Quality (curable Treatment)					
Response from medical personnel and staff					
Cleanliness					
Infrastructure (bath room, water supply, etc)					

25. Reason for not using PHC services :

Not happy with the treatment	
Medicines are not available	
Doctor is absent	
Lack of lady doctor	
Lack of laboratory	
Lack of infrastructure	

V. Health Services from Other Sources (Apart from PHC)

26. If not accessing any of the Govt. health facility (SC, PHC, CHC), mention reason for not accessing Govt. Health care facilities :

Inconvenient location (far)/ high transport cost	
Less confidence	
Poor quality of medicine and service	
Non-availability of doctors and nurse	
Wrong approach /Manners of medical personals	
Long waiting hours	
Lack of good infrastructure	
Inconvenient timings	

27. If using both public and private health services, mention when you prefer private clinics or hospitals:

Emergency or serious condition	
Non availability of doctors in PHCs or govt. hospital	
Long distance or high transportation cost	
Lack of confidence on the availability of doctor	
Long waiting period	
If didn't get curative treatment in Govt. hospital	

28. Your suggestions to improve the system :

Date :

FOR HEALTH CARE CENTRES (PHC's - SUPERVISOR)

1. Mention total number of doctors working in PHC:

With more than 4 Doctors	
With 3 Doctors	
With 2 Doctors	
With 1 Doctor	
Without Doctor	
No. of AYUSH Doctors	

2. Availability of the following staff at PHC:

Medical Officer (MBBS) (Full time)	
Medical Officer (MBBS) (Part Time)	
Medical Officer (AYUSH)	
Dental Surgeon	
Block Extension Educators	
Health Educators	
Lab Technician	
Pharmacist	
No. of Nurse Mid-wife/ Staff Nurse (permanent)	
No. of Nurse Mid-wife/ Staff Nurse (on contract)	
No. of Health Worker (Female) ANMs	
No. of Health Assistant (Male)	
No. of Health Assistant (Female) / LHV	
Upper Division Clerk	
Lower Division Clerk	
Driver	
No. of Class IV worker	
Sanitary worker cum watchman	

3. Rank the infrastructure status of the PHC :

Name of the Item	Very Poor	Poor	Neither poor nor good	Good	Very Good
Building status					
Bath room status					
Bed management					
Water supply					
Power supply					
Cleanliness inside the hospital					
Cleanliness in the premises					
Notice board to display the health programs					

4. Mention the services provided at the PHC:

Sl. No.	Particulars		
1	Assured Services		
a.	OPD Services		
b.	Emergency services (24 Hours)		
c.	Referral Services		
d.	In-patient Services		
2	Bed Facility		
a.	Number of beds available		
b.	Bed Occupancy Rate in the last 12 months	< 40%	
		40-60%	
		> 60%)	
3	Average daily OPD Attendance		
a.	Males		
b.	Females		
4	Treatment of specific cases		
a.	Is surgery for cataract done in the PHC?		
b.	Is the primary management of wounds done at the PHC?		
c.	Is the primary management of fracture done at the PHC?		
d.	Are minor surgeries like draining of abscess etc. done at the PHC?		
e.	Is the primary management of cases of poisoning /snake, insect or scorpion bite done at the PHC?		
f.	Is the primary management of burns done at PHC?		

5. Mention the services available regarding Maternal and Child Health Care including Family Planning at the PHC:

Ante-natal care	
Intranatal care (24 - hour delivery services both normal and assisted)	
Post-natal care	
New born Care	
Child care including immunization	
Family Planning	
MTP	
Management of RTI / STI	
Facilities under Janani Suraksha Yojana	

6. Mention the essential laboratory services provided by the PHC:

Services	Adequately Provided	Provided	Rarely Provided	Not Provided
Routine urine, stool and blood tests				
Blood grouping				
Bleeding time, clotting time				
Diagnosis of RTI/STDs with wet mounting, grams stain, etc.				
Sputum testing for TB				
Blood smear examination for malaria parasite				
Rapid tests for pregnancy				
RPR test for Syphills / YAWS surveillance				
Rapid tests for HIV				

7. Availability of the Utilities services at the PHC:

Particulars	Condition of Availability			Not Available
	Good	Manageable	Intolerable	
Separate public utilities for males and females				
Suggestion / complaint box				
OPD rooms / cubicles				
Family Welfare Clinic				
Waiting room for patients				
Emergency Room / Casualty				
Separate wards for males				
Separate wards for females				

8. Availability status of the Operation Theatre at the PHC:

Particulars		
Operation Theatre available	Yes	
	No	
If operation theatre is present, are surgeries carried out in the OT?	Yes	
	No	
	Sometimes	
Reason for not conducting surgeries even with the presence of OT	Non-availability of doctors /staff	
	Lack of equipment / poor physical state of the operation theatre	
	No power supply in the operation theatre	
	Any other reason (specify)	
Operation Theatre used for obstetric / gynecological purpose	Yes	
	No	

9. Mention the status of Labor Room at the PHC:

Particulars		
Labour room available	Yes	
	No	
If labour room is present, are deliveries carried out in the labour room	Yes	
	No	
	Sometimes	
If labour room is present. But deliveries are not being conducted there, then what are the reasons for the same?	Non-availability of doctors / staff	
	Poor condition of the labour room	
	No power supply in the labour room	
	Any other reason (specify)	
Are separate areas for septic and aseptic deliveries available?	Yes	
	No	

10. Mention the status of Laboratory services provided at the PHC :

Particulars		
Laboratory available	Yes	
	No	
Are adequate equipment and chemicals available?	Yes	
	No	
Is laboratory maintained in orderly manner?	Yes	
	No	

11. Mention how the waste material is been disposed at the PHC:

12. Availability of electricity and laundry facilities at the PHC:

Particulars			
Is there electric line in all parts of the PHC?	In all parts		
	In some parts		
	None		
Regularity in power supply	Continuous Power Supply		
	Occasional power failure		
	Power cuts in summer only		
	Regular power cuts		
	No power supply		
Stand by facility (generator) availability	Is generator facility available?	Yes	
		No	
	If available, whether it is in working condition?	Yes	
		No	
Laundry facilities	Laundry facility available	Yes	
		No	
	If no, is it outsourced?	Yes	
		No	

13. Communication and Transport facilities available at the PHC:

Particulars			
Communication facilities available	Telephone		
	Personal Computer		
	NIC Terminal		
	e-mail		
Is the unit accessible by	Rail		
	All whether road (Yes / No)		
	Others (Specify)		
	Jeep/other vehicles		

14. Availability, accessibility and status of Furniture at the PHC:

Item	Condition of availability			Not Available
	Good	Tolerable	Bad	
Examination Table				
Delivery Table				
Footstep				
Bed Side Screen				
Stool for patients				
Arm board for adult & child				
Stretcher on trolley				
Oxygen trolley				
Height measuring stand				
Iron bed				
Bed side locker				
Dressing trolley				
Mayo trolley				
Instrument cabinet				
Instrument trolley				
Bucket				
Attendant stool				
Instrument tray				
Chair				
Wooden table				
Almirah				
Swab rack				
Mattress				
Pillow				
Waiting bench for patients				
Medicine cabinet				
Side rail				
Rack				
Bed side attendant chair				

15. Are you satisfied with your salary?

Strongly Dissatisfied	Dissatisfied	Neutral	Satisfied	Strongly Satisfied

16. How is the people/patient interaction?

Extremely Unfriendly	Unfriendly	Neutral	Friendly	Very Friendly

17. Patient's demand with regard to health manpower in the PHCs :

Date:

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