

Accessibility and Health Infrastructure of Sanguem Taluka

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, “**Accessibility and Health Infrastructure of Sanguem Taluka**” is based on the results of investigations carried out by me in the Political Science Discipline at the D.D. Kosambi School of Social Sciences and Behavioural Studies School, Goa University under the supervision of Prof. Prachi Naik and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not responsible for the correctness of observations / experimental or other findings given the dissertation.

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This is to certify that the dissertation report “**Accessibility and Health Infrastructure of Sanguem Taluka**” is a bonafide work carried out by Ms. Verrell Carvalho under my supervision in partial fulfilment of the requirements for the award of the degree of Masters of Arts in the Discipline of Political Science at the D.D. Kosambi School of Social Sciences and Behavioural Studies School, Goa University.



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ABBREVIATIONS

PHC	Primary Health Center
SGDH	South Goa District Hospital
HO	Health Officer
MPHW	Multi – Purpose Health Worker
NOC	No Objection Certificate
OPD	Out Patient Department
ECG	Electrocardiogram
HIV	Human Immunodeficiency Virus
AIDS	Acquired Immunodeficiency Syndrome
GMC	Goa Medical College
RMDs	Rural Medical Dispensaries
RMO	Resident Medical Officer
SMP	Sulfamethoxypyrazine/ primethamine
EMRI	Emergency Management and Research Institute
GVK	Gunupati Venkata Krishna Reddy
TC	Total Count
DC	Differential Count
BT	Blood Test
RPR	Rapid Plasma Reagin
OGCT	Oral Glucose Challenge Test
FBSL	Fast Blood Sugar Level
RBSL	Random Blood Sugar Level
PPBSL	Postprandial Blood Sugar Level

ZN	Ziehl – Neelsen
RDK	Rapid Diagnostic Kit
HCV	Hepatitis C Virus
HbA1C	Glycated Hemoglobin
TSH	Thyroid Stimulating Hormone
HBB	Hemoglobin Blood Test
S. Fe	Serum Iron Test
S. Creatinine	Serum Creatinine
S. Uric Acid	Serum Uric Acid
PM JAY	Pradhan Mantri Jan Arogya Yojana
SECC	Socio Economic Caste Census
RSBY	Rashtriya Swasthya Bima Yojana
DDSSY	Deen Dayal Swasthya Seva Yojana
BPL	Below Poverty Line
GDP	Good Distribution Practice
SPH	Schools of Public Health
WHO	World Health Organization
IANS	Indo-Asian News Service
BMI	Body Mass Index
AMI	Acute Myocardial Infarction
OHAs	Oral Hypoglycemic Agents
IEC	Information, Education and Communication
MBBS	Bachelor of Medicine & Bachelor of Surgery
RNTCP	Revised National Tuberculosis Control Programme
DOTs	Directly Observed Therapy

CHAPTER I
GENERAL HEALTH PROFILE OF INDIA, GOA AND PRIMARY
HEALTH CENTER - SANGUEM

1.1. INTRODUCTION

Health is the body's natural functional and metabolic efficiency in adapting to physical and mental changes. To live an unrestricted life, it is necessary to consider the activities of the body's essential organs and to appropriately care for them. Many a time we are least bothered to understand the value of physical fitness and keeping good health, and as a result, we disregard physical fitness and activities, which can lead to life-threatening health problems. We should prioritize our health because if we are well, we can enjoy our life to the fullest. Nothing can be enjoyed if we are not in good health. The worth of life is something that everyone studies, but the importance of living a healthy life is something that is constantly mentioned.

Very often we hear the proverb "Health is wealth", it has a very literal meaning that good health is more important than money. It reveals the health of a man is as precious as the wealth to live a healthy, peaceful, and prosperous life.

Everyone knows that nothing is more important in life than good health. No one can be happy and peaceful without good health, but sadly unhealthy people cannot enjoy the real pleasure of life.

A healthy individual is more likely to engage in physical activity and, as a result, can perform longer hours at work than a sick person. Maintaining one's health entails adopting preventive actions to lessen the likelihood of developing various ailments. Having good health allows a person to go about their everyday activities with ease. Physical health refers to a person's body being free of sickness, whereas mental or social health refers to a person's capacity to complete various social tasks assigned to him.

Health is a resource for everyday life, not the objective of living; it is a positive concept, emphasizing social and personal resources, this means that health is a resource to help an individual perform their function in society. A healthy lifestyle allows us to live a full life with

meaning and purpose. Health can be promoted by encouraging healthful activities, such as regular physical exercise and adequate sleep, and by reducing or avoiding unhealthful activities or situations, such as smoking or excessive stress. Health has a variety of definitions that have been used for different purposes over time. World Health Organization defined health as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”. Similarly, J.F. Williams defines “Health as the quality of life that ensures the individual characterized by anatomic, physiologic, and psychological integrity; an ability to perform personally valued family, work, and community roles; an ability to deal with physical, biologic, psychological, and social stress.” Also, Webster Collegiate Dictionary defines as “the state of being hale and sound in body mind or soul especially from physical disease or pain”.

The holistic concept of health is contained in the expression of wholeness. Health is a relative state in which one can function well physically, mentally, socially, and spiritually to express the full range of one’s unique potential within the environment in which one lives. Both health and illness are dynamic processes and each person is located on a graduated scale or continuous spectrum (continuum) ranging from wellness and optimal functioning in every aspect of one’s life, at one end, to illness culminating in death, at the other. Modern concepts of health recognize health as more than the absence of disease, implying a maximum capacity of the individual for self-realization and self-fulfillment. This should equilibrate the human inner forces and possibilities with the feeling of pleasure or dissatisfaction in their relations with the environment.

In reality, health is more valuable for a person than money because money cannot buy good health and happiness. People having sound health enjoy life- physically, mentally, socially, intellectually, and financially. Maintaining health is not so simple, however not so easy either. Good or bad health depends upon several factors including genetic condition, healthy food, environment, lifestyle, sleeping habits, social status, psychological condition, financial condition, family status, air, water, and many more things.

Everybody in this world intends to be healthy, a person’s everyday routine will suffer if they do not have a healthy lifestyle. When the body receives sufficient nutrition, it becomes more fit and healthy, increasing longevity. The most important aspect of living a healthy life is to offer immunity power against various ailments. The immune system is the body’s natural defense

mechanism against external agents that cause harm to the body. A healthy body and mind are essential for total well-being.

Adopting a healthy lifestyle would help to relax the mind and improve one's mood. A healthy body contains all of the key components required for the body to function effectively. The most crucial factor is one's physical condition. Physical fitness can add years to our life expectancy. A healthy lifestyle makes us feel better increases quality of life and also helps in preventing chronic disease, disability, and premature death. A healthy person would give back to his/her society and country.

An individual's health should never be taken for granted. A productive life is inextricably linked to good health. The body's functionality is linked together through several organs. It is critical to keep the organs healthy for them to work properly. Good health is vital because it is the state of physical, mental, and social well-being. Because if we don't have excellent health, no amount of money, fame, or power will be able to satisfy us, health is more important than wealth.

Maintaining one's physical fitness and health is not an option, but rather an important necessity. It is critical for a person's physical health that they have good mental health to have greater physical health. Improving one's mental health can help improve one's physical health. If a person's mental health is stable and acceptable, their body will receive appropriate impulses. On the other side, if a person's mental health is poor, their body will get the wrong impulses, resulting in the loss of their health.

The promotion of health is essential to the national progress of any country, as health is a very significant and vital factor in identifying that a country is prosperous and happy. Nothing could be of greater significance than the health of the people in terms of resources for socio-economic development. In other words, it can be stated that Health is a base or stepping stone on which a country's progress can be measured. The promotion and protection of the Health of the citizen is essential to sustained economic and social development. It contributes to a better quality of life and world peace.

India has made a lot of progress in medicine and health services since independence. India is proud to have specialized and advanced hospitals, both in the government and private sector in recent years. This advancement is possible in the medical field because priority and importance

are given to the overall health of Indian citizens. India has not only made achievements in the field of Medicine but also in General Health, Health education, and overall improvement in Primary Health centers and sub-centers in every state of India. Today we have a large number of State Hospitals, District Hospitals, Primary Health Centers, and Sub-Centers that provide free health services apart from Private Hospitals.

Since independence, India has made revolutionary improvements in medicines and health facilities all over India. Ample efforts have been made to improve Health services in all the Government Hospitals, both in urban and rural areas. Several Health plans have been proposed and implemented successfully by appointing a special committee. Apart from State Hospitals and District Hospital, Primary Health Centers and Sub-Centers are providing better health services to the rural population on a large scale. 31,053 primary health centers were functioning across rural and urban areas in India, as of March 31, 2022. About 24,935 PHCs were located in rural areas and 6,118 in urban areas. As of March 31, 2022, there were 6,064 functional CHCs in the country – 5,480 in rural and 584 in urban areas.

Primary Health Centers are considered the basic health unit at the root level through which different programs and schemes are implemented. Special campaigns are being organized for the control and eradication of different types of diseases such as malaria, tuberculosis, polio, diabetes, mental disorders, etc. Other programs such as Mother and Child Welfare, Nutrition programs, Literacy programs, etc. are also being organized on a mass scale.

All the Health programs and Health Plans are implemented through the Primary Health Centers which is the basic health unit. Primary Health Center cover a population of 30000 individuals on average which provides free Health services to people in India. It comprises Health workers, a Multipurpose Health Officer, a women health worker, and a health assistant. In addition to that a Midwife and social worker is also appointed in every health center. The Medical Officer appointed to run the PHC must be an MBBS degree holder. In addition to the provision of diagnostic and curative services, the Medical Officer acts as the primary administrator for the PHC.

Primary Health Center is defined as the most essential Health Care that provides free and good health care facilities that the community and country can afford. The main goal of the Primary Health Center is to provide the best Health service to every citizen irrespective of caste and

creed, rich and poor. In India Primary Health care is the foundation and the backbone of the Rural Health Care system. India is one of the few countries that have very accurate and planned Health Care in an organized manner.

In Goa, there are 19 Primary Health Centers, 5 Community Health Centers, 172 Sub-Centers, 29 Rural Medical Dispensaries, and 1 Medical Dispensary that collectively provide health and medical care facilities in Goa, especially to those living in the rural areas. There are four Urban Health Centers each located at Panaji, Mapusa, Margao, and Vasco providing public health services in these towns. There are two District Hospitals in Goa, one in South Goa District i.e. South Goa District Hospital, Margao, and one in North Goa District i.e. North Goa District Hospital, Mapusa. In addition, Goa has the biggest State Hospital – The Goa Medical College and Hospital, in Bambolim.

Out of the 19 Primary Health Centers in the State, 13 have attached hospitals with 12-30 beds under the charge of a Health Officer. All 5 Community Health Centers of the State are headed by a Health Officer and four specialist doctors and the Center consists of 30 beds. Goa has 29 Rural Medical Dispensaries (RMD) which are located in remote areas, it is managed by Resident Medical Officers (RMO) and Pharmacist and is equipped with an effective outpatient department (OPD).

Primary Health Centers are functional 24x7 giving health services to both rural and urban populations. It is often called a second home for a common man because the medical staff, especially the Doctors, Nurses take care of them during their difficult time of sickness.

The estimated population of Goa for the year 2023 is 15,75,000 out of which males are estimated to be 7.93 lakhs (50.4%) and females are 7.81 lakh (49.6%) as per the report on population projection for India and States 2011-2036, published by the National Commission on population. Sanguem Taluka of South Goa district has a total population of 65,147 as per the Census 2011. Out of which 32,623 are males while 32,524 are females. In 2011 there were a total of 15,068 families residing in Sanguem Taluka. The Average Sex Ratio of Sanguem Taluka is 997. As per the Census of 2011 out of the total population, 17.7% of people live in Urban areas while 82.3% live in Rural areas. The majority of the people of Sanguem visit the Primary Health Center and Sub Centers to take advantage of all the medical facilities available there.



With regards to the rising population and to gradual increase of migrants in Sanguem Taluka, there is an urgent need for upgrading the present Primary Health Center to meet the rising demand. Earlier there were approximately 300 patients who visited the PHC each day, but as of now, the number of patients is almost double. It is noted that the patients who visit the PHC are usually referred to South Goa District Hospital, Margao, or to Goa Medical College, Bambolim, especially during critical and emergency cases as Sanguem Primary Health Center offers basic Medical Service to the patients. It is interesting to note that the upgrade of the PHC has been in process for a couple of years and the same shall be ready for the public very soon, the Doctors and other medical staff have a very tough time serving the patients in the same old Primary Health Center.

1.2. LITERATURE REVIEW

- 1.2.a. James Colgrove Linda P. Fried, Mary E. Northridge, and David Rosner; January-February 2010; Sage Publications Ltd.; Schools of Public Health: Essential Infrastructure of a Responsible Society and a 21st-Century Health System

Public health is an essential element of a responsible society. First of all, health is a "state of physical, mental and social well-being and not merely the absence of infirmity and disease," as defined by WHO. Public health is defined as "what we as a society do collectively to assure the conditions in which people can be healthy," and encompasses a wide range of activities in the public, private, and nongovernmental sectors. During President Barack Obama's tenure, he signed the American Recovery and Reinvestment Act better known as the Stimulus Package into law in February 2009 with an investment of \$150 billion in the national infrastructure that supports the country's social and economic viability, such as public transportation, roads, bridges, dams, ports, waterworks, and broadband access. Apart from this, schools of public health (SPHs) are also essential to the nation's health, security, and well-being. SPHs collectively serve as a platform for creating the knowledge needed to prevent disease and disability and the knowledge into approaches that protect the health of all and also educate the public health leaders of the future.

There is increasing recognition that public health must be linked to human rights and its activities should extend to political, economic, social, and cultural aspects of human existence in Europe and the United States. Moreover, public health should be thought of as a public good because the term "public goods" describes goods that benefit all members of society, and are available to everyone. A classic example of public goods includes national defense and broadcast television. Many public health achievements, such as the maintenance of clean water supplies and prevention of the spread of infectious diseases, are widely recognized as public goods. Public health activities lead to the absence of disease and healthy populations and should be considered public goods. Collective action on the part of civil society actors and government entities is needed as identified by the federal government for the country's safety and security.

Since the mid-1990s, several government reports, laws, and executive orders have included agriculture and food, water, emergency services, national defense, and banking and finance with public health. SPHs have a uniquely vital role as it is essential infrastructure as the Institute of Medicine (IOM) noted in its 2003 report, that academia is one of the key components of the U.S. public health system. There are 40 accredited SPHs in the U.S., which undergo rigorous, ongoing certification to ensure that their curricula, faculty, and programs meet the highest standards. Academia plays a key role in public health: teaching, research, and practice. SPHs provide education and training of master's and doctoral students and more than 7,300 public health professionals receive master's and doctoral degrees each year. SPHs conduct research that provides a science-based understanding of the origins of public health problems and the basis for effective prevention of disease and disability. They improve practice by translating knowledge into the design of innovative service programs.

With more than two-thirds of the world's population expected to be living in cities by 2050, urban environments must be designed to support healthy lifestyles and prevent environmental degradation that has long-term adverse effects on health.

SPHs can identify and set priorities, envision strategies, and chart courses for many years into the future because it can generate new knowledge and innovation, practices and policies, and create curricula for future leaders. SPH can provide leadership to integrate the efforts from other

professional schools, such as business, engineering, social work, law, and public policy, into public health knowledge and applications.

As Mann and colleagues noted, “Only a small fraction of the variance of health status among populations can reasonably be attributed to health care”. About 95% of health spending in the U.S. is directed toward medicine or medical care and less than 3% toward prevention. SPHs can and should lead efforts to redesign our health system because they have the preventive perspective and expertise that are necessary to bridge clinical and community-based approaches to health promotion, cost-effectiveness and efficiency.

SPHs are well-positioned to provide leadership in this design. There are encouraging signs that the Obama administration and Congress recognize the importance of prevention to a humane, efficient, and cost-effective health system to support the nation's infrastructure, prevention, and wellness activities, chronic disease prevention, immunization, and reducing nosocomial infections.

The federal government provides substantial financial support to education and training in medicine, Medicare's graduate medical education program, SPHs are constrained in their ability to identify cutting-edge issues, develop faculty and facilities, and innovate in curriculum to address the broad systemic problems. President Obama in his speech during Abraham Lincoln's birth, recalled Lincoln's definition of the legitimate object of government: "to do for the people what needs to be done, but which they cannot, by individual effort, do at all, or do so well, by themselves.".

It is noted that even the powerful political and economic interests may resist policies that enhance the public's health. Effectively addressing the global epidemic of tobacco-related morbidity and mortality, for example, has required engagement with one of the country's most powerful industries, which has resisted placing the population's well-being above the pursuit of profits. Similar challenges will no doubt be faced in the efforts to build more sustainable urban environments, confront threats related to climate change, and reduce the burden of morbidities related to diet and obesity. Nevertheless, we must invest in educating future leaders who understand the multiple factors that affect health and, thus, can meet the prevention challenges of

the 21st century. Leaders in accredited SPHs must forcefully and continually demonstrate the value of prevention and the benefits of health promotion as integral to all social policies. They must be skillful communicators and educators of the public to secure the necessary political will to make the vision of a healthy society a reality.

1.2.b. Ted Schrecker and Eugene Milne; September 2017; Oxford University Press; Environment, health and infrastructure: Troubling questions

In this article, the authors thought as much, citing the health consequences of urban air pollution as well as other impacts including road traffic crashes, climate change, and the disruptive impact of heavy traffic on communities. Because of this, an interesting question to note is - ‘Are cars the new tobacco?’ They further cited parallels including the existence of powerful industrial lobbies, and the creation of ‘car dependence’ (drawing a parallel with tobacco dependence, although the relevant mechanisms are different). They emphasized that ‘like tobacco, the harms associated with cars are disproportionately borne in disadvantaged communities.’

In the same year 2011, a report from the UK’s Sustainable Development Commission pointed out the multiple dimensions on which the health and related impacts of a car-dependent society are unequally distributed. Designation by the normally cautious International Agency for Research on Cancer of ambient air pollution as a Group 1 carcinogen; —that is to say, the category for which evidence of carcinogenicity from multiple research designs is strongest—was probably the most under-reported public health story of 2013.

In a previous editorial, the following year, the World Health Organization (WHO) concluded that ambient air pollution accounted for 3.7 million premature deaths in 2012, predominantly in low and middle-income countries. Air pollution impacts are not confined to far-away places. Exposure to particulates and nitrogen dioxide in outdoor air pollution probably accounts for around 40,000 deaths per year in the UK alone.

Residents of leafy suburbs do not face the same exposures as those living, working, and walking in traffic-intensive urban settings; indeed, that leafiness itself is to some degree protective. This issue of the journal includes a special section on environment and health, foregrounding the

findings of a massive effort by Prüss - Ustün et al. to update WHO estimates of the global burden of disease attributable to environmental determinants of health.

They conclude that just under one-quarter of global deaths and disability-adjusted life years were attributable to environmental exposures in 2012—although, of course, ambient air pollution exposures were only one contributor. The lower people's socioeconomic status more likely they are to be exposed to environmental risks. Poor people and communities are therefore likely to benefit most from environmental interventions as they are disproportionately affected by adverse environments. With the incorporation of public health concerns into transport planning, one of us has pointed out the perversity of official algorithms that treat public transport, walking, and cycling as second-class claimants for scarce budgetary resources, even as governments commit to multi-billion-pound road investments.

From a holistic perspective on transport and health, like that adopted by the Sustainable Development Commission, technical fixes like access surcharges for fossil-fueled vehicles and reduced urban speed limits, as important as they may be, only address part of the problem. Reliance on electric vehicles may simply shift the pollution problem elsewhere since electricity is an energy carrier and not a source (with a partial exception for hybrid vehicles); particulate generation may be less reduced than would be expected; and such measures do not address the health equity aspects of vehicle-dependent urban fabric.

In June 2017, at least 79 people are known to have died in the horrific fire at the Grenfell Tower social housing tower block in London. The accumulating evidence of the connections between transport policy and health, should direct the attention of the public health community to the larger, and perhaps more politically disruptive, question of how to ensure that health in all policies, and in particular a concern for health equity, are meaningfully incorporated in policy and budgetary priorities related to the infrastructure that supports our daily lives. These issues are fundamentally about political choices—more bluntly still, about whose lives matter, why, and how much.

1.2.c. Prajoth Kankonkar; Delia Dsouza; Manisha Kankonker; Dineshrajn Vadivel, Oct-Dec 2023, Indian Journal of Public Health, Determinants of Good Glycemic Control among Individuals of

Type II Diabetes Mellitus Seeking Treatment at a Rural Health-care Facility in Goa – A Cross-sectional Study

The prevalence of diabetes in India is 11.4 percent, a study titled Metabolic non-communicable disease health report of India, published in the Lancet journal showed. Goa topped the states with the highest prevalence of diabetes, while Puducherry and Kerala came second and third respectively. Goa had the highest rate of diabetes in the nation for people over 40 years as reported by IANS in 2013. It is noted that "Goa is completely westernized in its eating and lifestyle habits, but our (Indian) body is not attuned to it."

As per the report of the Indian Journal of Public Health – October-December 2023, the total sample of 120 individuals with known diabetes mellitus, the proportion of female participants turned out to be 55%. The proportions of the study participants belonging to different religions are consistent with the population distribution of religions in the state of Goa. The mean age of the study participants was 63.15 years; the mean BMI was 26.46 kg/m²; and the mean HbA1c was 7.69%. Abdominal obesity was present in about 83.3% of the study participants. The majority (78.3%) of the study participants were exclusively on oral hypoglycemic agents (OHAs) in the form of either monotherapy, dual therapy, or triple therapy, whereas the remaining study participants (21.7%) were exclusively on insulin and OHAs.

Participants belonging to the 60–89 years' age group were more likely to have good glycemic control compared to the participants in the 30–59 years' age group. Participants on mono/dual oral therapy were more likely to have good glycemic control compared to those on injectable (insulin) or combination injectable therapy (insulin + OHAs).

The study indicates that older participants and those on mono/dual oral therapy tend to have better glycemic control. Furthermore, it is observed a positive association between age and improved HbA1c levels, while increased abdominal girth was linked to higher HbA1c values, highlighting the importance of considering age, waist circumference, and type of therapy in diabetes management strategies.

The medical expert also noted that Goa is seeing an uptick in obesity, one of the causes of diabetes. Goa already has measures in place and is taking further steps to help diabetics. "There

are dedicated counselors who help diabetics with their medication. A separate diabetes registry is also being maintained in the state since 2011.

1.2.d. Deepa Sankar and Vinish Kathuria, March - April 2004, Economic and Political Weekly, Health System Performance in Rural India: Efficiency Estimates across States

Health systems deserve the highest priorities in any endeavor to improve the health of the people, as they provide the critical interface between life-saving and life-enhancing interventions and the people who need them. However, until recently, the analysis of health systems was centered around indicators that reflect health attainments, such as the levels of infant mortality rates (IMR), life expectancy at birth (LEB), or a combined human development index (HDI), using education and incomes along with some health indicators. Nevertheless, this approach failed to some extent because most of the variations in the health outcomes of different health systems were attributable to the differences in their performance and were not taken into consideration.

The Human Development Report (HDR) of India (2001) assessing the health status of people across various states using a human development index resonated this intra-regional difference in health attainment levels in India, also pointed out the problem in Indian health systems is the persistent gaps in manpower and infrastructure, with wide interstate disparities, especially at the primary health care level, disproportionately affecting less developed and rural areas. Since a majority of the Indian population lives in rural areas, variations in the performances of rural health systems are reflected in the overall health outcomes of different states.

It is widely felt that a better understanding of the factors that underlie the variations in performance at the state level is needed for reform strategies and better management of the health sector. It is also acknowledged that the differences in efficiency are related to the differences in the way health infrastructure and facilities are provided and managed. This requires identifying the non-health-related factors that explain differences in efficiency. Two methods can be employed to estimate what is achievable: (a) detailed analysis of the costs and effects of clinical and public health, health promotion, and other interventions that are available in each society; or (b) statistical analysis of different societies' production possibilities based on their record.

We use access and availability of healthcare infrastructure (which is a result of investments in the health sector) as the inputs into the health sector to achieve the output of health. Efficiency then reflects health programs and interventions that are produced at the lowest possible cost and within the given level of expenditure (sometimes called allocative efficiency in health economics literature).

Focusing on the technical efficiency aspect, the econometric estimation of the frontier is done from a sample of observed infrastructure and accessibility inputs and outputs from various provinces of India. Most studies on frontier estimation have been cross-sectional, which has their limitations. Availability of panel data, that is, repeated observations for states or individuals over time obviates the need for strong distributional assumptions about the error term, as is common in cross-sectional studies. This facilitates the estimation of state-specific technical efficiency. Besides, the assumption that technical efficiency is independent of factor inputs does not have to be imposed.

To estimate equations, several data sources have been used to make a balanced panel of variables from 1986 to 1997 for all the 16 major states of India. The region-wide distribution shows that three zones - north, south, and east, have four states each, while the west has three states, and one state is in the central region. The data for IMR and other relative health indicators were taken from the 'Bulletin on Rural Health Statistics of India' published by the Ministry of Health and Family Welfare for the corresponding years and the data regarding rural health infrastructure were obtained from the Health Information of India, Central Bureau of Health Intelligence, Director of General Health Services for the corresponding years.

To measure the efficiency of health systems using the production function approach, three types of variables are essential. First, it is necessary to identify an appropriate outcome indicator that represents the output of the health system. Second, it is imperative to measure the health system input that contributes to producing that output. And third, it is necessary to include the effect of controllable non-health system determinants of health.

Moreover, identifying relevant variables that are available to all states, but which are not highly correlated with health infrastructure data, is difficult. For example, income per capita - one of the most obvious indicators of general development - is highly collinear with health expenditure per capita. While it would be possible to add income per capita directly into the estimated equations,

income is not a direct determinant of the production of health. It works through other inputs such as education and housing amenities like safe drinking water and sanitation facilities, and it is better to capture these inputs directly. The following input variables were used in the first stage analysis: **(1)** number of primary health centers, **(2)** number of doctors, **(3)** number of paramedical staff, **(4)** number of hospital beds available, and **(5)** percent of institutionalized deliveries.

From a purely practical standpoint, the fixed effects approach is costly in terms of the degrees of freedom lost and in a wide longitudinal data set, and the random effects model has some intuitive appeal. On the other hand, the fixed effects approach has considerable virtue, as there is no justification for treating the individual effects as uncorrelated with the other regressors, which is assumed in the random effects model. It needs to be remembered that the efficiency ranks only show the relative performance and do not indicate any hierarchy in actual health outcomes. For example, Bihar has a relative efficiency score of 81.13 and is fourth in terms of the efficiency ranks, though, in terms of actual attainment, the state is 11th in IMR, which is 81, among the 16 states. The relative efficiency scores of the health systems indicate that given its health investment, the state has attained a little over 81 percent of its potential in reducing the IMR. The state could have reduced the IMR to 66 if it was as efficient as the most efficient state. On the other hand, if the state's health systems were as inefficient as the least efficient state of Orissa, the IMR would have been as high as 96 per 1,000 populations. However, it is important to note that even at the most efficient levels, the state could have reduced IMR to only 66 and not to a further lower and desirable level than that of other efficient states like Kerala and West Bengal. This is due to the lower health inputs used in Bihar than in the other above states.

It is indeed revealing that literacy is the only non-health infrastructure-related variable that contributes to the dispersion of relative efficiencies across states and none of the income or expenditure-related aspects. Based on the sign and significance level, if the literacy level in the state increases, the efficiency of health systems also increases, and hence the variations of states are widened.

At the outset, it is indeed a positive aspect that India's health outcomes have improved over time, as revealed in the decline of infant mortality rates. The IMR in rural areas has declined nearly by half over the past five decades.

States vary enormously in their levels of health outcomes such as mortality levels, and in particular, in the levels of infant mortality. States also differ in their levels of health system efficiencies, which result in varied health system performance, e.g. Bihar was not a badly performing state in the efficiency analysis but states like Tamil Nadu and Karnataka, which are believed to have improved their health indicator, showed poor efficiency in performance.

Kerala states have large private sector health care in their rural areas catering to public health demand and offering preventive and promotive services. The non-inclusion of this complementary sector in our analysis would have resulted in the overestimation of the efficiency of the rural public sector in such states with a large private sector. However, since most other states do not have a qualified private healthcare market significantly operating in rural areas, there was no data available to analyze the impact of the private sector presence in rural health systems and in improving the efficiency of the health sector.

Overall health spending in India is estimated at 4.5 percent of GDP, below the average of 5.6 percent for low and middle-income countries. Of this, public spending on health in India is less than 1 percent of GDP, which is among the lowest in the world. Since sources are limited, they must be used wisely and efficiently.

The analysis points to the existing variations across states in the health systems in rural areas to suggest that there are two critical measures to improve health outcomes. The first is to increase the efficiency of the health sector, that is, moving further to the frontier. The second is to create more health infrastructure and thus provide better access to rural health facilities and make more physicians available in rural areas.

Thus to conclude, the study tries to analyze the performance of health systems of 16 major states in India in improving the health indicators of their population. It has attempted to go beyond looking at actual attainment levels to understand the potential levels that the states can achieve. To measure performance, the study used techniques from the stochastic production function and panel data estimation using data for the period 1986-97. It was found that not all states with better health indicators have efficient health systems. Relative efficiencies differ across states and this is due to differences in not only in the health sector endowment but also its efficient use. It shows that states should not only increase their investment in the health sector but also manage it efficiently to achieve better health outcomes. In an era of liberalization of the health sector and

the diminishing role of government in health provision, the emphasis should be definitely on improving performance despite the current levels of health outcomes.

1.2.e. Monica Das Gupta, December 2005, *Economic and Political Weekly*, Public Health in India: Dangerous Neglect

Public health services, which reduce a population's exposure to disease through such measures as sanitation and vector control, are an essential part of a country's development infrastructure. In the industrial world and East Asia, systematic public health efforts raised labor productivity and life expectancies well before modern curative technologies became widely available, and helped set the stage for rapid economic growth and poverty reduction. The enormous business and other costs of the breakdown of these services are illustrated by the current global epidemic of avian flu, emanating from poor poultry-keeping practices in a few Chinese villages.

For various reasons, mostly due to the political economy, public funds for health services in India have been focused largely on medical services, and public health services have been neglected. This is reflected in a virtual absence of modern public health regulations and systematic planning and delivery of public health services. Various organizational issues also militate against the rational deployment of personnel and funds for disease control. There is strong capacity for dealing with outbreaks when they occur, but not to prevent them from occurring. Impressive capacity also exists for conducting intensive campaigns, but not for sustaining these gains continuingly after the campaign. This is illustrated by the near eradication of malaria through highly organized efforts in the 1950s, and its resurgence when attention shifted to other priorities such as family planning. This paper reviews the fundamental obstacles to effective disease control in India and indicates new policy thrusts that can help overcome these obstacles.

Public health services are conceptually distinct from medical services. They have as a key goal reducing a population's exposure to disease - for example through assuring food safety and other health regulations; vector control; monitoring waste disposal and water systems; and health education to improve personal health behaviors and build citizen demand for better public health outcomes. When public health systems falter people pay a high price in terms of illness, debility,

and death, and if full-fledged outbreaks occur the economic costs can be very large, and poor people pay a higher price than the rich. In India public policies and programs have focused largely on the provision of curative care and personal prophylactic interventions such as immunization, while public health activities have been relatively neglected.

In the last two decades, scientists such as Koch and Pasteur identified several germs responsible for common diseases, and how they were transmitted which gave an impetus to the "sanitary movement" and its implementation improved the well-being of the people. By the mid-20th century, the institutions and procedures for assuring Public Health had become well-established in the developed countries as it helped to keep their populations free of communicable diseases, and the advent of antibiotics made them less life-threatening.

During the colonial period, the focus of public health measures was largely on protecting British civilians and army cantonments. By the time India became independent, mortality from diseases such as cholera and the plague had fallen sharply but diseases such as malaria and gastro-enteric infections continued to take heavy tolls. By 1950, much had changed both globally and in India, due to techniques for mass-production of antibiotics which made it possible for local elites to protect themselves from dying of communicable diseases. The spread of democratic institutions also affected public health services, because electorates typically prefer public funds to be used to provide private goods (such as medical care), rather than public goods (such as sanitary measures to protect the health of the population as a whole).

In India, public funds for health and education have been allocated towards tertiary rather than primary levels. Substantial proportions of the health budgets have been spent on expanding subsidized medical training public sector employment for medical graduates, and high-end tertiary medical services - all of which largely benefit the middle classes and detract from the provision of public health service. The overarching policy vision emphasized developing heavy industry rather than health and education and Senior positions were filled by people with no training or experience in public health, poorly equipped, and poorly motivated to manage public health activities. Moreover, an inconsistency between constitutional provisions starved public health systems of funds. Public health services were designated as the responsibility of the state governments, except for issues such as port quarantine and provisions relating to the spread of diseases between states.

The Prevention of Food Adulteration Act is one of the few pieces of public health legislation, the act has several serious deficiencies that prevent it from effectively protecting food safety

In the mid-1960s, the Indian government embarked on a massive effort to reduce population growth in the country. The central government supported the family planning program, and the health budget has risen sharply, at the expense of other health programs. However, the maintenance of the health infrastructure and the salaries of doctors and other clinic staff have to be met by the states.

Other problems arise from making health primarily a state responsibility, the central government is the key actor in designing health policies and programs, partly because state budgets are highly constrained. However, the central government focuses on planning specific programs, such as malaria eradication or family planning. This means that the bulk of the funds allocated by the central health ministry to the states are tied to specific programs and categories of expenditure within those programs, and states are not free to reallocate the funds to issues that may be of higher local priority.

The reduced focus on public health outcomes was also reflected in other ways in the plans. For example, there is a striking difference between the discussions of the health programs and the high-priority family planning program. In successive plans, the sections on health are concerned with inputs and the current priority thrusts such as universal immunization. For the rest, there is a typically desultory account of policies and programs. Analysis of shortfalls is often devoid of suggested remedies, as in the case of the Ninth Plan on malaria. For example, the new strategies for malaria make no mention of environmental management. By contrast, the sections on family planning begin with a careful review of programme performance, reasons for shortfalls, and how to overcome them. The need for operational research is highlighted, as well as creative suggestions for generating greater demand for family planning. Indeed, the Indian family planning program developed a highly successful IEC campaign to change people's desired family size and bolster program success. Similar efforts have been made in the health sector only sporadically, and typically to bolster campaign efforts such as immunization, rather than seeking to radically alter people's health behaviors to reduce their exposure to communicable diseases.

Encouraging trends have shown that there are many reasons to be hopeful that public health may receive more attention shortly. Financing is available through large programs, for example, the

Rural Health Mission and the renewed support for the Employment Guarantee Scheme. If implemented creatively, these programs can be used to improve public health outcomes. For example, in the US, the depression-era food-for-work programs were used to eradicate malaria from large parts of the South.

The success of this effort resulted from careful planning and oversight of the work by teams of sanitary engineers, entomologists, and administrators. Institutions are also being built at the local and national levels, which can play powerful roles in public health. The Panchayat Raj Act has emphasized building local government and devolving health activities to them.

This makes it possible to build institutions for managing public health activities on the ground, with the requisite inter-sectoral coordination. States such as West Bengal and Kerala are experimenting with these possibilities in ways that can serve as models for other states. At the national level, a new thrust is to build an institution modeled on the US Centers for Disease Control. This model has been adopted across the world, and the component countries need to be coordinated and supported by a "federal" authority. If designed creatively, this could transform the way that the central government shapes and supports public health services in India.

However, it is important to avoid the mistakes made earlier when designing the National Institution. Communicable Diseases as a Centre for Disease Control, without giving it the necessary authorities to fulfill the complex roles of such a center. India has an exceptional capacity to deliver services, as evidenced by its smooth conduct of elections and censuses across a vast population including pavement-dwellers and remote villages. Its inattention to public health is taking a large toll on its economy, as well as on the lives of its citizens, and it is time to recognize that public health is a key part of its development infrastructure.

1.2.f. M. S Kulkarni, Ama Ferreira, Dilip Dajiba Motghare, January 2004, Research Gate Publication, "Potential gain in life expectancy with control of Cardiovascular disease in India: A Case Study from Goa state"

In the last four years, 12,000 heart patients were identified and 5,000 heart attacks were detected, although 1.7 lakh persons were screened in Goa through the STEMI (ST-segment elevation

myocardial infarction) program run by the Goa government in association with Bengaluru-based Tricog Health Services Private Limited, informed.

Coronary Heart Disease (CHD) is a major cause of mortality and is a global health problem.

Aims: A retrospective record-based study is being done in a government medical college. Records of patients with AMI admitted from January 1 to December 31, 2005, were investigated retrospectively. A total of 355 patients admitted to the Department of Medicine with AMI, were analyzed. Patients who were less than 45 years of age were considered young and were compared with those above 45 years.

22.25% (79) of those admitted with AMI were less than 45 years old. 11.39% (9) of the AMIs in young individuals, occurred in females, compared to 27.69% (77) in the old AMI patients. 21.51% (17) of the young AMIs presented with cardiac failure (CF) compared to 41.30% (114) in the older age group. Risk factors like alcohol and smoking were more commonly found in the young AMIs, whereas diabetes mellitus (DM), hypertension (HT), and history of Ischemic Heart Disease (IHD) and AMI were higher in the older patients. 10.12% (8) of the young AMIs died, as compared to 27.53% (76) in the older population.

As per the case study conducted by M. S. Kulkarni of Goa Medical College, Ama Ferreira, and D.D Motghare, the crude death rate for Goa for the year 1991 was 6.74/1000 population. It was higher for males than females which is 7.97/1000 and 5.46/1000 respectively. The cause-specific death rate due to cardiovascular disease was 253.89 per 100000 populations with higher mortality due to cardiovascular disease among males (286.15/100000 population) compared to females (220.52/100000 population).

The potential gain in life expectancy at birth following the elimination of cardiovascular diseases was estimated at 12.95 years (18.86%) in the combined population. In terms of an absolute number of years, the gain in life expectancy would be about 13 years for the population aged above one year. For males, the potential gain in life expectancy at birth due to the prevention of cardiovascular diseases in adult life would be 11.50 years (17.81%). The net gain would be around 12 years for ages above 34 years. Likewise, for females, the potential gain in life expectancy at birth due to control of cardiovascular disease would be 15.24 years (20.74%). The net gain in the life expectancy at subsequent ages would be 15.5 years.

The rising cause of deaths that occur in Goa due to Coronary Heart Disease, is due to unhealthy eating habits and fast life. Other factors such as smoking, alcohol consumption, lack of proper sleep, and hypertension due to workload lead to heart diseases.

1.3. OBJECTIVES OF THE STUDY

- To know the different health problems and difficulties faced by the people of Sanguem Taluka.
- To study the causes of different health issues which are faced by the people of Sanguem.
- To examine the different health policies of the Government of Goa, to know its advantages and its drawbacks.
- To analyze the public assessment of the health services provided by the Primary Health Center and other Sub-Centers of Sanguem Taluka.
- To enquire, compare, and contrast the health facilities provided by the government- in both Primary Health Centers and Sub-Centers in rural and urban areas.
- To suggest different measures to be taken by the government for the enhancement of public health of the Sanguem Constituency.

1.4. HYPOTHESIS

The study tries to test the hypothesis, which says that the health schemes and health services provided by the Government of Goa in different hospitals, Primary Health Centers, and sub-

centers run by the State have been inadequate in controlling different diseases connected to public health.

1.5. METHODOLOGY

The dissertation is based on descriptive and analytical techniques. The data has been collected through primary and secondary sources, and the questionnaires used are both structured and unstructured. The information is collected from ample library reading, newspaper articles, personal interviews, and from internet sources.

1.6. CHAPTERIZATION

The study will have the following chapters:

Chapter I: Introduction – General Health Profile of India, Goa, and Primary Health Center – Sanguem

This chapter throws light on the general health of the people, the importance of good health, factors that affect them, maintenance and promotion of good health both physically and mentally, and a brief description of health in Goa and of Sanguem Taluka.

Chapter II: Structure of the Primary Health Center and Sub-Centers

This chapter focuses on the background and structure of Sanguem Primary Health Center, and the different medical services provided by PHC and Sub-Centers for the people of Sanguem.

Chapter III: Functioning of the Primary Health Center and Sub-Centers

This chapter elaborates on different schemes, policies, programs, and benefits that the Goa Government has envisaged for the general public and how the people of Sanguem are getting benefitted.

Chapter IV: Health Service and Public Response: An Analysis

This chapter is an attempt to assess the overall general health, patient satisfaction, views, and responses of the general public.

Chapter V: Conclusion

This chapter is a summary of all the chapters and the major findings, conclusions, and suggestions of the people.

CHAPTER II

STRUCTURE OF THE PRIMARY HEALTH CENTER AND SUB-CENTERS

Primary Health Center Sanguem is one of the oldest medical institutional centers. It was built during the Portuguese rule in Goa. During that era, the population of Sanguem was very small and hence the structure of the Primary Health Center was built by the requirement of the people of Sanguem. It is located in the heart of Sanguem town, which is just two hundred meters away from Sanguem market. Earlier, the people of Sanguem had a difficult time reaching the Primary Health Center especially those people who were living in faraway places such as Neturlim, Vaddem, Kurpem, Kalem, etc. because of lack of transport and other factors. It was the only Primary Health Center available for the entire Sanguem village, which is one of the largest villages in Goa with an area of 888 square kilometers, including 87.38 km² rural area and 13.06 km² urban area.

Pic 2.1 Primary Health Center Sanguem

Due to the size of Sanguem Taluka in terms of its area, and hence people have to travel long distances to reach the Primary Health Center, many Sub-Centers have been opened in recent years. At present, there are 10 Sub-Centers and 2 RMDs in the Sanguem constituency.

The below mentioned are the Sub Centers and RMDs that provide medical health care for the people of Sanguem:

Table 2.1 Sub-Centers and its working days

Sub Centers	OPD
PHC 1	Monday to Saturday
PHC 2	Monday to Saturday
Cotarli	Every Wednesday
Kalem	Every Thursday
Uguem	Every Tuesday
Valkini	Every Wednesday
Bhati	Every Wednesday
Kurpem	Every Wednesday

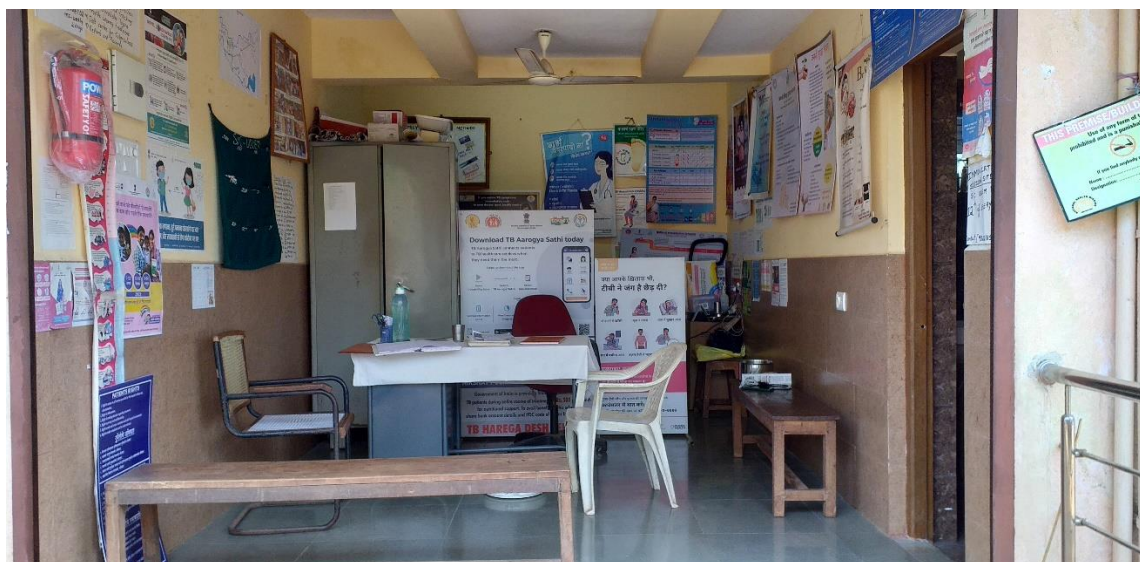
Health and Wellness Center: Neturlim - RMD & Vichundrem	Monday to Saturday
Verie	
RMD Vaddem	Monday to Saturday

PHC 1 and PHC 2, provide medical health care for the people of Sanguem from Monday to Saturday and Emergency service is available 24x7. As mentioned above the Kalem Sub Center is open to the public only once a week on Thursday. Sub Centers such as Uguem, Valkini, Bhati, and Kurpem provide medical health care for locals every Wednesday. Health and Wellness Center - Neturlim-RMD & Vichundrem, Verie, and RMD Vaddem is open from Monday to Saturday. A doctor along with an MPH (Nurse) visits the Sub Centers to provide medical health care on the scheduled day. People living in this area can receive only basic medical facilities at the Sub Centers. Here patients receive basic medical treatment for common sicknesses such as colds, fever, headaches, etc. rest all the tests and laboratory examination is done only at the Primary Health Center Sanguem. So even for a simple ECG test or for any Blood test, people living in this area had to travel to PHC to conduct such a test.

Pic 2.2 Cotarli Sub-Center



Pic 2.3 Uguem Sub-Center



In the Primary Health Center Sanguem, two doctors are allocated in the OPD section who offer medical health care services to the people. On average around 100 patients are being attended by each doctor in the OPD department. During an emergency or in case of accidental cases, one doctor attends such a patient and the other doctor continues attending the other regular patients. Primary Health Center Sanguem (PHC) is a 20-bed hospital, out of which 10 beds are being allocated for women patients and the remaining for general patients.

Here at (PHC), basic health care services are being provided for the general public of Sanguem. When a patient arrives at PHC in critical condition or who has serious health issues, where advanced medical tests need to be carried out or laboratory examination is required, in such cases patients are often referred to either South Goa District Hospital – Margao, or Goa Medical College and Hospital (GMC) – Bambolim. Also, when patients arrive at PHC in critical condition or who met with major accidents are shifted to the District Hospital or at GMC where all the medical facilities are available, and during emergency, patients can receive the required treatment and even surgery can also be performed if needed.

Although all medical facilities are available at Goa Medical College and in South Goa District Hospital, it is not feasible for every local of Sanguem to visit there for treatment, when the same medical facilities are available at PHC. Definitely during emergencies and in critical situations one cannot skip receiving medical treatment at GMC or SGDH, so PHC is the best option for the

people of Sanguem where all the basic medical facilities are available for the general public and it is the basic human right for every individual of this country. The PHC handles patients usually of Sanguem town and patients here can visit the PHC without any difficulty as it is located in the heart of Sanguem town which is an advantage for the people residing in the municipal area.

Below are the facilities enjoyed by the locals at PHC: -

Table 2.2 Facilities available at Primary Health Center, Sanguem

Registration	9:00 a.m. to 1:00 p.m.
General OPD, Pharmacy and Laboratory	9:00 a.m. to 1:00 p.m. 2:00 p.m. to 4:30 p.m.
Emergency Services	24/7
Dental OPD	Monday, Wednesday, Thursday
Diabetes OPD	Every Friday
Geriatric OPD	Every Monday
YUVA Clinic	Every Monday
Ophthalmic OPD	Monday, Thursday, Saturday
Ayurveda OPD	Monday, Wednesday, Saturday

Immunization (OPD)	Every Thursday
Gynecology OPD	Every Thursday
PMSMA Services	9 th day of every month
RNTCP Services	DOTs available at all sub-centers
X-ray Services	Monday, Thursday, Saturday
108 Services	24 hours
STEMI Services	24 hours

As per the recent survey conducted with the doctors at PHC, the majority of the patients who come for treatment are mostly diabetes, cholesterol, and patients with high blood pressure. Patients suffering from regular cold/flu and fever also visit the PHC for medical treatment. Pregnant women usually visit the PHC for regular check-ups when the Gynecologist visits the PHC. Patients often visit a Dentist who is available at PHC thrice a week i.e. on Monday, Wednesday, and Thursday. Patients can take advantage of different doctors who are visiting the PHC every week. Geriatric OPD is scheduled once a week (Monday), Diabetes OPD is available for Diabetes patients every Friday, the YUVA clinic is open to the public every Monday, and Ophthalmic OPD is scheduled on Monday, Thursday, and Saturday. Many patients take advantage of Ayurveda OPD which is available at PHC on Monday, Wednesday, and Saturday. Immunization OPD is open to the public once a week on Monday. PMSMA Services is available on every 9th day of every month and RNTCP Services - DOTs is available at all Sub Centers. Here STEMI service and 108 service are available 24x7. At the PHC, Registration for patients starts from 9.00 a.m. to 1.00 p.m. General OPD, Pharmacy, and Laboratory work in two shifts i.e. from 9.00 a.m. to 1.00 p.m. and from 2.00 p.m. to 4.30 p.m., and as usual emergency service is available 24x7. Two Ambulances are available at PHC to tackle the emergency or to shift the patients either to South Goa District Hospital or to Goa Medical College for further medical treatment.

The Primary Health Center Sanguem was recently renovated in January 2019 by Health Minister Vishwajit Rane, as the entire roof and wiring of the Hospital were in dilapidated condition. The walls of the entire hospital were in bad shape and toilets were in pathetic condition as the structure of PHC was built during Portuguese rule. Now one can notice the walls of the structure

are being plastered, washrooms are clean and the overall appearance of the PHC looks neat and clean.

Apart from renovating the entire PHC hospital in 2019, the Goa State Infrastructure Development Corporation has also placed new beds, X-ray, and ECG machines at PHC. While speaking on the occasion, Rane said that the health of the people is his concern and assured that an emergency room would be opened in the PHC very soon as it will help the doctors providing medical service 24 hours. He also said that the STEMI program, which is the first of its kind in the country, will provide treatment to patients from interior parts of the state, and around 46 doctors have been trained for the task. On this occasion, he also said that he is looking into the possibility of creating a dialysis Centre at Sanguem as the cases of Kidney failure are increasing in the Sanguem constituency. Such an assurance made to the public of Sanguem is yet to be fulfilled.

Although the X-ray machine at PHC was installed recently in January 2019, it has not been functioning for many months due to a shortage of power supply. Since then patients having issues such as broken bones are often referred to Community Health Center, Curchorem. Also, the Power Generator at PHC has been non-functional for quite a long time and hence PHC is forced to manage with the 'Battery Inverter' provided to them. The general public of Sanguem who visit the PHC is facing a lot of difficulty with vehicle parking due to insufficient parking space. Here only a few two-wheelers can be accommodated but people who come with four-wheelers are the worst sufferers. Sometimes people are forced to park their vehicles on the road side which creates inconvenience for the general public. Hope the hospital authorities will take note of it in the days to come.

A hospital, Primary Health Center, or any medical Institution can provide proper medical service to patients only when qualified doctors and other medical staff are appointed for that particular Institution. Apart from qualified Doctors and other medical staff, the work and efforts of other staff are also equally important for the smooth running of the Hospital. The PHC is providing free medical health care to the people of Sanguem. The following hospital staff and personnel who carry out their duties at Primary Health Center- Sanguem, are mentioned below: -

Table 2.3 Medical and Maintenance Staff of PHC Sanguem

Sr. No	Name of Post	Numbers
1.	Chief Medical Officer/ Head Doctor	01
2.	Doctors	05
3.	Nurses	03
4.	LDC, UDC, Clerk	01 each
5.	Drivers	04
6.	Cleaners/ Sweepers/ Servants	05
7.	Cooks	01
8.	Lab Technician	02
9.	Pharmacist	02
10.	Sanitary Inspector	01
11.	Multipurpose Health Workers (MPHW)	14
12.	Electrical maintenance work	Provided by Electricity dept.
13.	Plumbing maintenance work	Provided by PWD (bldg. section)
14.	Peons	02

- a) **Doctors:** The Primary Health Center Sanguem (PHC) has 05 doctors altogether, apart from the Head Doctor/ Health Officer who recently took charge at PHC. Out of these 05 doctors, 02 doctors have regular posts but presently one doctor post is vacant, and the remaining 03 are bond doctors (newly passed out) who offer medical health care along with regular doctors. Usually, the doctor on duty at PHC works 24-hour shifts, having a day off on the following day. The remaining doctors visit each Sub Center, once a week. Usually, one or two doctors attend the regular OPD patients at PHC. They also handle other patients such as accidental cases, assault cases, injuries, and critical cases. After examining the patients, they decide whether the patient has to be admitted, discharged, or shifted to South Goa District Hospital or Goa Medical College and Hospital, according to the health condition of the patient.

- b) **Nurses:** There are altogether 05 nurses available at PHC, out of which 03 are female nurses and 02 are male nurses. There is also a Public Health Nurse and a Lady Health Visitor nurse. All the nurses offer 08 hours of duty each day, having a weekly off day. They keep records of all the patients admitted and discharged and provision of medicines to patients as per doctor's prescription. They keep regular checks and update doctors about the progress of the admitted patient. They also maintain records of receipt and disbursement of medical supplies, hospital census, hospital equipment, linen, furniture, etc. They also maintain hygiene, cleanliness, and sanitation of all the wards with the help of cleaning staff.
- c) **Health Officer/ Head Doctor:** The Health Officer also acts as the grievance officer and is in charge of the overall running of the PHC. He/ She attends all the high-level meetings and also looks after the administrative work of the PHC. He/ She handles requests for NOCs for new house building and business establishments and issues the same after careful study. The HO receives complaints and finds solutions for the complaints received. He/ She is also in charge of all the Sub Center and RMDs and also looks after all the programs, conducted at PHC such as Polio Drive, Free Eye Checkup Camps, awareness and educational programs, etc.
- d) **Pharmacist:** 02 Pharmacists are working at PHC; one post is regular while the other Pharmacist is working on a contract basis. The pharmacy is open from 09.00 a.m. to 01.00 p.m. and from 2.00 p.m. to 04.30 p.m. The Pharmacist provides medication to patients as per the prescription of the doctor. They keep daily records of all the medicine dispersed to patients and the OPD units. The Pharmacist places orders for medicine regularly as per the requirement of the PHC.
- e) **Lab Technician:** Two Lab technicians are presently handling the job of the Laboratory at PHC. One Lab Technician is regular while the other one works on a contract basis. They collect samples from patients and conduct medical tests and examinations as per the request of the doctor. They send certain samples to South Goa District Hospital- Margao, for further investigation, as the facility for conducting such tests is not available at PHC.
- f) **Multipurpose Health Workers (MPHW):** There are altogether 14 MPHWs allotted to Primary Health Service, out of which 03 are male and 11 are female. They provide medical services to PHC and all the sub-centers.

- g) **Sanitary Inspector:** There is one post for Sanitary Inspector at Primary Health Center Sanguem who carries out the work of Sanitary Inspection.
- h) **LDC/UDC/Clerk:** One of each post conducts administrative work at PHC. They handle the administration and clerical work of the Primary Health Center.
- i) **Cook:** There is one post for Cook at PHC Sanguem. She provides food for all the patients admitted to the Primary Health Center.
- j) **Drivers:** 04 Drivers are assigned to Primary Health Center- Sanguem, to handle the driving job for two ambulances that are available at PHC. They also assist Doctors and other medical staff to reach the Sub Center on the scheduled day and time.
- k) **Cleaners:** 06 Cleaners are being allotted for Primary Health Center – Sanguem, who offer their services for 8 hours a day. The Directorate of Health Services has contracted a with Contracting Company that provides cleaning staff to PHC as per the requirement. Such Contracting Companies provide cleaner to most of the Primary Health Centers and Public Hospitals in Goa.
- l) **Technicians:** -
1. **Electricians:** All the Electrical maintenance work at PHC is being handled by the Electricity Department – Sanguem.
 2. **Plumbers:** Public Work Department – Sanguem (Building Section) takes care of all the plumbing work at PHC.
- m) **Security Guards:** There are 06 security Guards allotted to PHC, all such guards are being provided by a Security Company that has a contract with The Directorate of Health Services Goa.

Primary Health Center – Sanguem is equipped with a Laboratory that conducts medical tests and medical investigations for patients visiting PHC as per the instruction of the Doctor. The general public of Sanguem takes advantage of this service without paying any fees. Some of the test results are presented instantly to patients within a few minutes after taking a blood sample, for example, a Diabetes test, but some test result takes time and is available after one or two days,

for example, a Cholesterol test. In some cases, samples are being sent to South Goa District Hospital for further investigation because certain facilities for testing/examination are not available at PHC-Sanguem and in such cases, test results are available within 3-4 working days.

Usually at PHC, Laboratory staff collects samples from patients and conducts medical Investigations as per the direction of the doctor. The following medical tests and laboratory investigation are conducted at PHC Sanguem are mentioned below: -

Table 2.4 Medical tests and Examinations

• SMP (Malaria) • HB / TC / DC • BT / CT • HIV	(1) HbA1C (2) TSH (3) HBB Electrophoresis (4) S. Fe
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• RPR • Blood Group • OGCT • FBSL /RBSL /PPBSL • Urine Routine and Microscopy • Urine Pregnancy Test • Sputum – Microscopy (ZN) - True net • RDK for Malaria • RDK for Dengue • RDK for Hepatitis B • RDK for HCV	The above samples are collected only on Wednesday and sent to SGDH Margao.
	BIOCHEMISTRY TESTS a) Glucose b) S. Urea c) S. Creatinine d) S. Uric Acid e) Total Cholesterol f) Triglyceride.

All the medicines provided to the patient at PHC are also available for free of cost, but in rare cases, a patient has to purchase medicine from a private pharmacy if the required medicine is not available at the PHC pharmacy. The provision/availability of free medicines gives relief to local patients.

It is interesting to note that the Government of Goa under the Health Ministry of Goa has commenced the Expansion and Upgradation of the infrastructural work of the Primary Health Centre, Sanguem (GSIDC) since 2021. It was a long pending demand of the locals to upgrade the infrastructure of the Primary Health Center, as the present structure of PHC was constructed during Portuguese rule in Goa. The good thing is that the stipulated Date of Completion / Likely Date of Completion is by the end of this year. It is said that about 47% of the work has been completed and the remaining work shall be completed by the end of the year. The entire project is estimated to cost Rs. 134,712,342.12. and the same is handled by M/s. DHIPL Projects Pvt. Ltd.

It is learned that more medical facilities will be available for the locals once the structure is ready for the public. The structure consists of two floors and it will have all the medical facilities that the PHC is supposed to have. The expansion of the existing Primary Health Centre, Sanguem by constructing a new 44-bed Hospital. Most of the medical tests and investigations shall be done here. From the present OPD service available, there shall be more specialists visiting the PHC which will be an advantage for the general public. Presently only normal deliveries are being performed at PHC but very soon even a caesarian operation will be conducted which will give relief for young mothers.

It is expected to have enough parking space for both two and four-wheeler vehicles shortly. Hopefully, the Electric Generator and X-ray machine will be in place which is presently not functioning. Many medical schemes and benefits are expected to come up at PHC once the work is complete, also different camps such as free eye camps, free medical guidance, and educational programs for young mothers, pregnant women, tobacco users, drug and liquor consumers, etc. are expected. The availability of various schemes and benefits for the general public will help to improve their quality of living.

CHAPTER III

FUNCTIONING OF THE PRIMARY HEALTH CENTER AND SUB-CENTERS

3.1 INTRODUCTION

The Primary Health Center aims to improve the health status of the people by lowering the mortality and disability ratio. It is the responsibility of the Primary Health Center to provide the best of the best medical health care to the people free of cost. People will benefit only when trained and experienced doctors are available at the Primary Health Center and also when they are aware of all the medical facilities, health schemes, health programs, policies, and benefits that are available at the Primary Health Center. The general public will benefit more when doctors, management, and medical staff of PHC work hand in hand by following the guidelines of the Health Ministry of India.

We have experienced that the medical health services in India have improved tremendously at different Primary Health Centers in recent years. The government of India is giving much importance to public health, and one can notice that India is doing much better concerning public health in primary, secondary, and tertiary levels. The Goa Government (Directorate of Health Service Goa) is much ahead as compared to other States concerning medical health services and medical health infrastructure. Locals visit the primary health center and enjoy many health benefits available at PHC. Earlier, people were unaware of the different schemes and programs that are being conducted at Primary Health Centers. In recent years, different health awareness programs have been conducted by using different media such as Radio, Television, Posters, and Pamphlets to educate people and to make people aware of the different medical facilities, schemes, and programs that are available for the general public at different Primary Health Centers. Hence maximum number of people can take advantage of such medical facilities that are available at Primary Health Centers.

Sanguem is one of the largest taluka in the South Goa district covering an area of 888.44 km². Primary Health Center Sanguem is located in the Municipal area. It is a 20-bed Hospital built during Portuguese rule in Goa. Regular renovation and maintenance work has been done since then. Major renovation and restoration work was conducted recently in 2019. People living in and around the Municipal area are benefiting from the medical facilities that are available at Primary Health Center Sanguem. People of Sanguem enjoy the emergency service (OPD) that is available 24x7 at PHC. But people living in remote areas find it difficult to reach the (PHC) Primary Health Center to enjoy such facilities, due to long distance and many other factors. To

reduce the distance and to avail the benefit of the medical health service for all the people of Sanguem, especially for the people living in remote areas, the Government of Goa has introduced ten Medical Sub Centers at different locations in the Sanguem area so that no one is left behind.

People living in remote areas can visit the nearest sub-center to receive basic medical health care. They may also visit the Primary Health Center Sanguem to enjoy an even better medical facility or to conduct medical tests and examinations as and when required. The following are the ten Sub Centers located in different remote areas in Sanguem taluka that work under Primary Health Center Sanguem: Uguem, Valkini, Bhati, Kalem, Kurpem, Vichundrem, Cotarli, and Verie, whereas Health and Wellness Center Neturlim and Vaddem are running under RMD.

- a. **Doctors:** There are a total of 05 doctors assigned to Primary Health Center Sanguem who provide free medical health services to the people. Out of these 05 doctors, 02 are regular doctors and 03 are bond (newly passed out doctors) doctors. Each doctor on duty at PHC, offers medical health service for 24-hour work shifts, having a day off the following day. On an average a doctor at Primary Health Center Sanguem attends approximately 100 or more patients in a day. Usually, a doctor or two attend to OPD patients at Primary Health Center Sanguem and the remaining doctors visit different Sub Centers along with a Multi-Purpose Health Worker (MPHW) on a specific day, once a week. The doctors on duty at PHC attend to all types of patients, which include regular patients, accidental cases, assault cases, and even emergency and critically ill patients. All the assigned doctors provide free medical health care and consultancy services to the people at the Primary Health Center and all the Sub Centers, in Sanguem Taluka.
- b. **Nurses:** After attending and examining the patient, the doctor decides whether the patient needs to be admitted or not. The procedure for admission and discharge of patients is handled by the duty nurse. She/he makes sure the bed is ready and clean linens (Bedsheets) are available before admitting the patient. She/ He maintains a record of the personal details of the patient, and the reason for admission. She also provides timely medicines to patients as per the doctor's advice. All the health care services provided for patients at PHC are available for free including medicines.

- c. **Lab Technician:** The Lab Technicians collect samples from patients and conduct medical tests and examinations at the PHC laboratory as per the request of the doctor. They send certain samples to South Goa District Hospital- Margao, for further investigation, as and when the facility of conducting such a test is not available at PHC. There are two Lab Technicians assigned to conduct medical tests and examinations at the PHC. All the tests and examinations conducted here at PHC are free of cost which gives great relief to the people of Sanguem.
- d. **Pharmacy:** The Pharmacist provides medication to patients as per the prescription of a doctor. 02 Pharmacists at PHC offer their services of dispersing medication to the patients. All the medicines provided at PHC are free of cost. Such a facility is an advantage for the general public, especially the poor and low-income families.
- e. **Ambulances:** There are two ambulances with life support are allocated for PHC Sanguem. Patients who are critically ill or patients who have major health issues are usually referred either to South Goa District Hospital Margao or Goa Medical College and Hospital - Bambolim. Also, patients who met with major accidents and those who are seriously injured due to assault, are being shifted to such hospitals with the help of these ambulances. There are altogether 4 drivers assigned to perform their duties at PHC. The doctor on duty sometimes takes the assistance of 108 services to tackle the situation during an emergency, when both ambulances are busy with other patients. People of Sanguem enjoy such a life-saving facility without paying any fees.
- f. **Cleaners:** The cleaner does the work of maintaining cleanliness, sanitation, and hygiene for Primary Health Center Sanguem. There are six cleaners assigned to do the cleaning job at PHC. Directorate of Health Service Goa hired such cleaning staff from 'Cleaning Company' who provide cleaning services at different Primary Health Centers in Goa. In recent years one can notice cleanliness in and around PHC premises since the Directorate of Health Service Goa joined hands with the Cleaning Company. People of Sanguem enjoy a clean atmosphere at PHC especially at all public toilets, corridors, OPD units, and in all the wards.
- g. **Meals:** Patients having health issues, especially those patients who need monitoring, are often admitted to PHC to provide better medical treatment. All the admitted patients have the

advantage of having free meals at PHC. Many patients visit the Primary Health Center Sanguem from faraway places such as Bhati, Kalem, Vichundrem, etc. Such a facility is beneficial for patients who come from faraway places and who cannot afford to buy food from restaurants.

- h. Maintenance:** All the Electrical and Plumbing maintenance work is handled by the Electricity Department and PWD Department (Building Section) Sanguem respectively. They are indirectly helping for the smooth function of Primary Health Center Sanguem. Through their service, the general public of Sanguem enjoys uninterrupted medical service at PHC.

Due to the dissertation project work, I have frequently visited the Primary Health Center Sanguem since January 2024. I was constantly in touch with the Health officer (HO), Doctors, Nurses, Pharmacists, Medical staff, drivers, cleaners, technicians, cooks, etc. to collect information for this project. With the meetings and through the conversations with them, I become aware of the actual workings of the Primary Health Center in Sanguem Taluka. Apart from providing free medical health services to the people, the Primary Health Center Sanguem also conducts many medical health programs including free medical camps, family planning programs, health schemes, polio drives, eradication of certain diseases like Malaria and Dengue, educational & health awareness programs and to take preventive measures against many diseases are made known to the people at PHC.

Whenever we pay a visit to Primary Health Center Sanguem, we notice different posters, pamphlets, and tripod poster stands that are being placed at different prime locations. Through such displayed advertisements, people or patients visiting the Primary Health Center become aware of the different medical schemes, programs, policies, and facilities that are available at PHC (Primary Health Center Sanguem). Local people and patients share such valid information with their loved ones, friends, and relatives and hence the maximum number of people are getting benefited.

Through such displayed advertisements, most of the general public of Sanguem for instance are aware of the Immunization doses that are being given every Thursday at the Primary Health Center. Many people visit the PHC to take advantage of this facility.

- i) **RNTCP Service (Tuberculosis):** Under this awareness program people are made aware of this disease through displayed posters at PHC, especially to know and understand the symptoms of tuberculosis. People having a cough for more than 3 weeks, high temperature or night sweating, exhaustion, weight loss, etc. often visit the PHC to conduct tests for Tuberculosis. Such Test/examination is conducted at PHC laboratory as per doctor's request. The necessary treatment is provided, free of cost to all the patients once the test results are available. People living in remote areas can also avail such a benefit of these facilities by visiting their respective Sub Centers on a specific day or during the visit of a doctor.

- ii) **Leprosy:** For early detection of leprosy, treatment, and rehabilitation of leprosy cases, different programs are undertaken by the Primary Health Center. Detection of any leprosy case in the area, a regular house-to-house survey is being conducted by the Primary Health Center. In recent years the cases of leprosy are declining due to awareness programs. A proper Leprosy test is conducted for the patient having symptoms and accordingly, treatment is provided to the patient to come out from the disease.

- iii) **Malaria Eradication Programme:** With the introduction of The National Malaria Education program, Goa is listed among 15 other states under category I to meet the target of 'zero' malaria transmission and zero malaria deaths in 2020. Of the 32 Primary Health Centers of the state, 8 have achieved zero annual parasite incidence (API) level. PHC Sanguem is also working hard to eradicate malaria-related cases by organizing such programs under the Directorate of Health Service. People are educated to maintain cleanliness in and around their homes and also to avoid water stagnation. Timely insecticides are also being sprayed at different mosquito-prone areas to control malaria cases. All the fever patients visiting PHC during monsoon are screened for malaria check. Proper medical treatment is offered to malaria patients once the test result is available.

- iv) **Free eye check-up camps** are also being organized regularly at Primary Health Center Sanguem in collaboration with the Directorate of Health Service Goa. Before the Free Eye check-up camp, an awareness campaign is being organized through posters and pamphlets at different locations at PHC. A team of eye specialists visits the premises to attend to the patients having eyesight

issues. Quick eye tests are being conducted and proper medication is also being provided to the patients for free of cost. Many locals mostly poor and needy take advantage of this program. Patients having major eye illness or other eyesight complications are usually referred to South Goa District Hospital- Margao or Goa Medical College and Hospital- Bambolim, to conduct surgery or to do further medical treatment. The general public of Sanguem benefits from such facilities to conduct major surgeries through **the Deen Dayal Swasthya Seva Yojana (DDSSY)** health scheme by paying minimum annual fees.

- v) **Sexually transmitted diseases (STD):** Awareness against sexually transmitted disease (STD) and Acquired Immune Deficiency Syndrome (AIDS) are conducted at different Primary Health Centers in Goa as well as at PHC Sanguem under the Directorate of Health Service Goa. HIV (AIDS) prevention campaigns through posters and pamphlets are often seen at different prime locations of PHC especially on the occasion of World AIDS Day on the first of December. Such awareness programs help people to know the different causes of HIV disease, to understand the serious effects of this virus, and to educate them to take preventive measures to avoid getting infected by such a disease. Free HIV tests are regularly conducted on patients visiting the PHC as per the request of the doctor. HIV patients who are in the advanced stage are often referred to Goa Medical College and Hospital or the concerned medical center for further treatment.

As per the discussion I had with the Health Officer of PHC Sanguem, it has been noted that the Primary Health Center collects vital statistics about the health standards of the locals, different health problems they face and medical facilities needed for the village, all such information are being forwarded to the Directorate of Health Service Goa, who intern does the necessary arrangement for the benefit of the locals. PHC also takes care of Environmental sanitation, providing safe drinking water to the locals, disinfection of wells, ponds, water tanks, testing of water, and purification are undertaken by the health center. PHC places special emphasis on the improvement of the health of the school-going children by ensuring clean and safe drinking water, hygienic mid-day meals, and sanitary facilities at the school premises.

The Health Officer explained further saying that the PHC is conducting different health-related educational programs such as sanitation, nutrition, maternal and child care. Such educational programs help the locals to realize the importance of maintaining hygiene and sanitation. It also

gives information to the people about the causes of different diseases like Smallpox, Malaria, Hepatitis B (liver infection caused by hepatitis B virus), etc., and how to prevent such diseases.

1. **Dental OPD:** The people of Sanguem also enjoy the facility of Dental OPD at PHC premises. A Dentist is available for consultation, three days a week, that is on Monday, Thursday & Saturday. The dentist examines the teeth of the patient, cleanses the teeth plaque if any, does tooth filling, etc., and advises the patient accordingly to take precautionary measures to avoid further tooth decay. All such dental health care and consultation services are available for the general public without paying any fees. Patients having serious dental issues or if the case is sensitive then the patient is advised to visit either South Goa District Hospital- Margao or Goa Medical College and Hospital Bambolim, for further examination or for conducting surgery.
2. **Ophthalmology OPD** (a physician who specializes in the diagnosis and treatment of diseases of the eye), is also available at PHC Sanguem for three days a week – Monday, Wednesday & Thursday, and provides consultation service for the locals. Here at Ophthalmologist OPD, the Eye Specialist carefully examines the eyesight of the patient and prescribes medication accordingly. All the people of Sanguem take advantage of this facility free of cost. Patients having major eye issues are often referred to GMC for further examination or for conducting surgery.
3. **Diabetes OPD:** With the recent survey conducted during the last couple of months, it is noted that the majority of the patients visiting the PHC are diabetes patients. The doctor on duty examines the diabetes patient, does medical tests, and accordingly prescribes medicine for the patient. Patients are usually advised to do diabetes tests before and after breakfast to examine their sugar levels. The medications provided for the diabetes patient are usually for a month. The diabetes OPD is available for the general public of Sanguem every Friday. People take advantage of this facility without paying any fees, plus the medications provided to the patients are also available free of cost.
4. **Ayurveda OPD:** Ayurveda OPD is open to the public three days a week - Monday, Wednesday, and Saturday. Doctors conduct careful examinations of patients and prescribe medicines

accordingly. All the medicines provided here are free and without any side effects and hence many people of Sanguem take advantage of this facility.

5. **YUVA Clinic:** It focuses on reorganizing the existing public health system to meet the service needs of adolescents. Under this program counseling services, routine checkups, and treatment facilities are available at PHC every Monday. To make the clinics adolescent-friendly, the State has branded the clinics in the name of YUVA Clinic. The objective is being address the stigma behind accessing adolescent services. This program provides medical health care and is very beneficial for adolescents, married and unmarried boys and girls.
6. **Geriatric OPD:** This medical treatment is for elderly persons above the age of 65 years. Geriatric assessment includes a detailed medical history and physical examination, with a particular focus on problems such as vision, hearing, nutrition, fall prevention, urinary, incontinence, osteoporosis, and preventative health. Many elderly people visit the Geriatric OPD on Monday and take the benefit of this facility at PHC Sanguem.
7. **X-ray Services:** This has recently been introduced at Primary Health Center Sanguem during the major renovation work conducted in the year 2019. People take advantage of this facility three days a week on Monday, Thursday, and Saturday. The X-ray technician conducts the test as per the request of the doctor. Patients with fractured or broken bones visit the PHC and get the X-ray done accordingly to receive treatment. Many people have benefited since the introduction of this facility, but sadly the X-ray service is currently not available to the general public for a couple of months due to a power shortage. Hope such a facility will be restored soon.

Apart from different medical facilities that are available for the general public at PHC, the Goa government is also providing different medical health schemes for the betterment of the people of Goa: –

1. Many schemes are being introduced by the Government for improving public health. One such scheme is **(PMSMA) Pradhan Mantri Surakshit Matritva Abhiyan**. It has been launched recently by the Ministry of Health and Family Welfare, Government of Goa. The program aims

to provide assured, comprehensive, and quality antenatal care, free of cost to all pregnant women on the 9th of every month. Apart from such a facility, a Gynecologist visits the Primary Health Center Sanguem, every Thursday to attend pregnant women once a week. Many pregnant women from the Sanguem Municipal area as well as women from different parts of Sanguem, visit the Primary Health Center Sanguem to avail the benefit of such a facility. The gynecologist examines the patient and prescribes proper medication to the pregnant woman free of cost. He may also request the patient to conduct certain medical tests and prescribe medicine accordingly once the medical test is available. All the normal deliveries are conducted at Primary Health Center Sanguem. It also provides free Birth Certificates for newborn children born at the Primary Health Center. Pregnant women having health complications or other health issues are often referred either to South Goa District Hospital- Margao or to Goa Medical College and Hospital Bambolim due to the lack of advanced medical facilities at PHC.

2. **Deen Dayal Swasthya Seva Yojana (DDSSY)** is one such health scheme. This scheme aims to offer medical benefits to the local people of Goa. The main objective of this scheme is to offer annual medical coverage which ranges between Rs.2.5 lakhs to Rs.4.00 lakhs per family. The scheme offers high-quality treatment, hospitalization, and surgery expenses at a minimal cost. A family having 3 or fewer family members can pay Rs.200 and a family having 4 or more family members can pay Rs.300 to get the benefit of this scheme. A 50% concession on the annual premium amount is offered to people under Scheduled Castes, scheduled tribes, and other backward classes. To avail the benefit of this scheme, people must reside in Goa for at least five years.

Individuals covered under the scheme can avail of cashless medical facilities in its network of hospitals in Goa. It covers the facilities referred to in the list of 447 procedures that may need hospitalization and adopts higher interest rates as subsumed from Central Government Health Schemes, States, and Institutes of National Excellence. It also provides free Outpatient Department (OPD) and primary care facilities available in the General Medical Council and District Health Society. The insured family can receive coverage for Diabetes and hypertension up to Rs. 15,000. Individuals who need hospitalization for Ayurveda treatment or mental health issues should be treated only at government centers.

3. **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY)** is a Health Assurance Scheme for citizens, especially the poor and vulnerable groups as per the latest Socio-Economic Caste Census (SECC) data of 2011. It provides health cover of up to Rs.5, 00,000 per family per year. No restrictions on family size, age, or gender. PM-JAY has defined around 1,650 medical packages in Goa for covering surgery, medical, and daycare treatments. A total of 36 hospitals (22 Public & 14 private) are empaneled in the state of Goa. Families having an active RSBY card as of 28 February 2018 are eligible under AB PM-JAY. To find eligibility one can visit <https://mera.pmjay.gov.in/search/login> or can visit the nearest DDSSY Center/Kendra. The list of Kendra is as follows:
Citizen Service Centre Mapusa, Citizen Service Centre Honda, Citizen Service Centre Ponda, Citizen Service Centre Margao Collect orate, Citizen Service Centre Quepem, Citizen Service Centre Sanguem, and Citizen Service Centre, Canacona.
4. **Beti Bachao Beti Padhao:** Such a scheme was introduced by Hon'ble Prime Minister Shri Narendra Modi in the year 2015. The overall goal of this scheme is to celebrate the girl child and enable her education. The objective of the scheme is to prevent gender-biased sex selective elimination, to ensure the survival and protection of the girl child, and to ensure the education and participation of the girl child.
5. **Janani Suraksha Yojana:** It is a safe motherhood intervention under the National Health Mission. It is being implemented to reduce maternal and neonatal mortality by promoting institutional delivery among poor pregnant women. Under this scheme, entitlement for pregnant women includes free delivery, free caesarian section, free drugs and consumables, free diagnostics, etc. are provided to pregnant women. All pregnant women belonging to below-poverty line (BPL) households and of the age of 19 years or above up to two live births are eligible for this scheme.

CHAPTER IV

HEALTH SERVICE AND PUBLIC RESPONSE: AN ANALYSIS

Health is one of the most important things in our life for each one of us. It affects our physical, mental, and emotional well-being. That is why it is very important to be proactive about our health and take steps to prevent illness and disease. Being proactive in health means taking steps to improve our health before we get sick.

Primary health care focuses on preventive measures. It also includes building the right infrastructure and creating enough awareness amongst the masses about public health and wellness so that they can make the most of the resources available to them and stay healthy in the long run. Primary healthcare is the provision of health services, including diagnosis and treatment of a health condition, and support in managing long-term healthcare, including chronic conditions like diabetes.

Under the National Health Mission (NHM), the Primary Health Centre (PHC) is established to cover a population of 30,000 in rural areas and 20,000 in hilly, tribal, and deserted areas. PHCs are established to cover a defined population. As per the Rural Health Statistics 2019, a total of 24,855 rural PHCs and 5,190 urban PHCs have been functional in the country. It provides whole-person care for health needs throughout the lifespan, not just for a set of specific diseases. Primary health care ensures people receive comprehensive care - ranging from promotion and prevention to treatment, rehabilitation, and palliative care - as close as feasible to people's everyday environment. The PHCs were envisaged to provide integrated curative and preventive health care to the rural population with an emphasis on preventive and promotive aspects of health care. The PHCs are established and maintained by the State Governments under the Minimum Needs Programme (MNP)/ Basic Minimum Services Programme (BMS).

Primary Health Centers are the backbone for the development of the general health of the people, hence World Health Organization defined Primary health care an essential health care made accessible to individuals and families in the community, by means acceptable to them, through their full participation and at a cost that the community and the country can afford. The concept of Health care, or healthcare, is the improvement of health via the prevention, diagnosis, treatment, amelioration, or cure of disease, illness, injury, and other physical and mental impairments in people.

The primary duty of primary health care (PHC) is to prevent health-related problems and also provide outpatient treatment and rehabilitation services. That is, PHC provides health-promoting, preventive, therapeutic, and rehabilitative services by prioritizing key health problems in the community.

Goa has one of the most extensive health infrastructures in India. The Directorate of Health Services has an important role to perform in Health delivery by providing preventive, promotive, curative, and rehabilitative health services to the people through a primary healthcare approach. The healthcare infrastructure has been developed as a three-tier system namely, Primary, Secondary, and Tertiary care.

- A. Sub-Centers:** The sub-center is the most peripheral contact point between the Primary Health Care System and the community and is manned generally by Multi-Purpose Health Workers (Male & Female) and an Attendant.
- B. Primary Health Centers:** Primary Health Centers catering 24x7 emergency services with attached hospitals ranging from 12 to 70 beds. In all, there are 25 Primary Health Centers. Out of which 15 have attached hospitals and are headed by a Health Officer and the remaining 10 PHCs are non-bedded providing only OPD facilities and headed by Medical Officers. The PHCs are the nodal agencies to provide preventive, promotive, and curative services.

Goa is considered one of the best-performing states in health & medical care. The Directorate of Health Services (DHS) has an important role in the provision and administration of health services. To raise the quality, extend accountability, and deliver the services fairly, effectively, and courteously, the 'Citizen's Charter' for the Directorate of Health Services has been prepared. The charter seeks to provide a framework which enables our users to know:

- The services are available in the hospitals and other institutions under the Directorate.
- The quality of services they are entitled to.
- The means for redressal of complaints regarding denial or poor quality of service.

Thus, the essential principles behind the charter are to ensure transparency, public participation, and accountability as well as quality service, besides information, choice, and redressal mechanisms wherever possible. Goa has achieved much in Health Care system in recent years, few of the achievements are listed below: -

- Goa has been able to reduce the birth, death, and Infant Mortality Rate more drastically after Liberation from Portuguese rule.
- The healthcare system has been able to make a positive contribution towards increasing life expectancy.
- The healthcare system has been able to reduce Maternal Mortality by achieving almost 99% (HMIS-2017-18) institutional deliveries and vigorous antenatal checkup programs.
- The Child Immunization coverage is over 95% (HMIS 2017-18).
- There is a significant decline in Anemia in mothers and children malnutrition and Communicable diseases.

Along with the achievements, there are many challenges faced by the present health care system in Goa which hinder the overall progress and development of: -

- The size of the elderly population (65+) has increased.
- The declining sex ratio in the age group 0-6 years.
- Increase in lifestyle disorders (Non-Communicable Diseases) and road traffic accidents.

To improve the health services at Primary Health Centers or any Medical Institution, public response and patient satisfaction are equally important. Public response and Patient satisfaction are the most important aspects to be considered for the improvement and development of different Primary Health Centers in Goa. It is difficult to evaluate patient satisfaction and responsiveness to the health system, hence patients' perceptions about the healthcare system seem to have been largely ignored by healthcare authorities at different levels. Patient satisfaction depends upon many factors which include - the quality of clinical services provided at PHC, the behavior of doctors and other medical staff, availability of medicines in the hospital, infrastructure of the hospital, emotional support, and respect for patient preferences, etc. A mismatch between patient expectations and the services received by them may adversely affect or reduce patient satisfaction. Therefore, assessing patient perspectives gives the general public a voice, which can make public health services more responsive to people's needs and expectations. It is the need of the hour to know and understand the views and responses of the general public about the functioning of the Primary Health Center and the difficulties they face during their visit to PHC as well as to know their expectations or the improvements they are looking forward to shortly.

The study of patient satisfaction is very useful as it allows Primary Health Care providers/ Authorities to improve the services in the public health facilities. Patient feedback is equally important to identify their problems and to take suitable steps to resolve the issues in improving the services at the Primary Health Center. To complete the dissertation project work, I have extensively visited the Primary Health Center in Sanguem as well as different Sub Centers to know the response of the people of Sanguem and also to understand their point of view. It also helped me to understand the difficulties faced by the people of Sanguem while they visit the PHC, and their expectations towards the PHC and Sub Centers in the days to come.

About the dissertation project, I have reached over 100 respondents living in and around Sanguem village. The maximum number of respondents (approx. 90%) are happy about the services available at the Primary Health Center, but 10% of the respondents especially those living in remote areas are unhappy about the services provided to them. They feel that doctors should visit the Sub Center at least 3 times a week. Around 95% of the respondents mentioned that the behavior of doctors and other medical staff towards them is good, only 5% of the respondents had bad experiences when they were admitted at PHC. They felt that they were not treated well by the nurses and other medical staff as and when they were admitted at PHC. Most of the respondents (approx. 95%) said that the doctors are available at PHC for 24 hours, only a few of the respondents (approx. 5%) said that doctors are not found in OPD at late night, sometimes the doctor needs to be called by the medical staff from their rest room when a patient arrives at OPD during late hours.

Around 80% of the respondents believe that the waiting area, dispensary room, and dressing room are neat and clean while 20% of the respondents are not satisfied with the cleanliness of toilets and in the wards. More than 97% of the respondents agreed to receive free medicines prescribed by the doctors from the pharmacy, but 3% of the respondents said that they had not received all medicines at the pharmacy and hence they had purchased the same from a private pharmacy. Many schemes, policies, programs, and facilities available at PHC are free, but only 70% of the respondents are aware of such facilities available at PHC hence they took advantage

of such facilities, but the remaining 30% of the respondents are ignorant about such facilities or maybe they are least bother to know about it, hence they were unable to get benefitted.

Overall people living in Sanguem town are happy about the medical facilities available at PHC, but only a section of people are unhappy especially those who are living in remote areas because they are unable to get all the facilities at Sub Centers. They said that they can get the benefits only when they visit the PHC. Many respondents feel that no proper arrangement has been made to create awareness among the people regarding such medical schemes, programs, and facilities. A large section of people suggested that efforts should be made to reduce the patient load at the higher level facilities so that doctors and other medical staff can give more attention and time to the patients. They also feel that efforts should be made to strengthen the infrastructure and human resources at lower levels of health facilities.

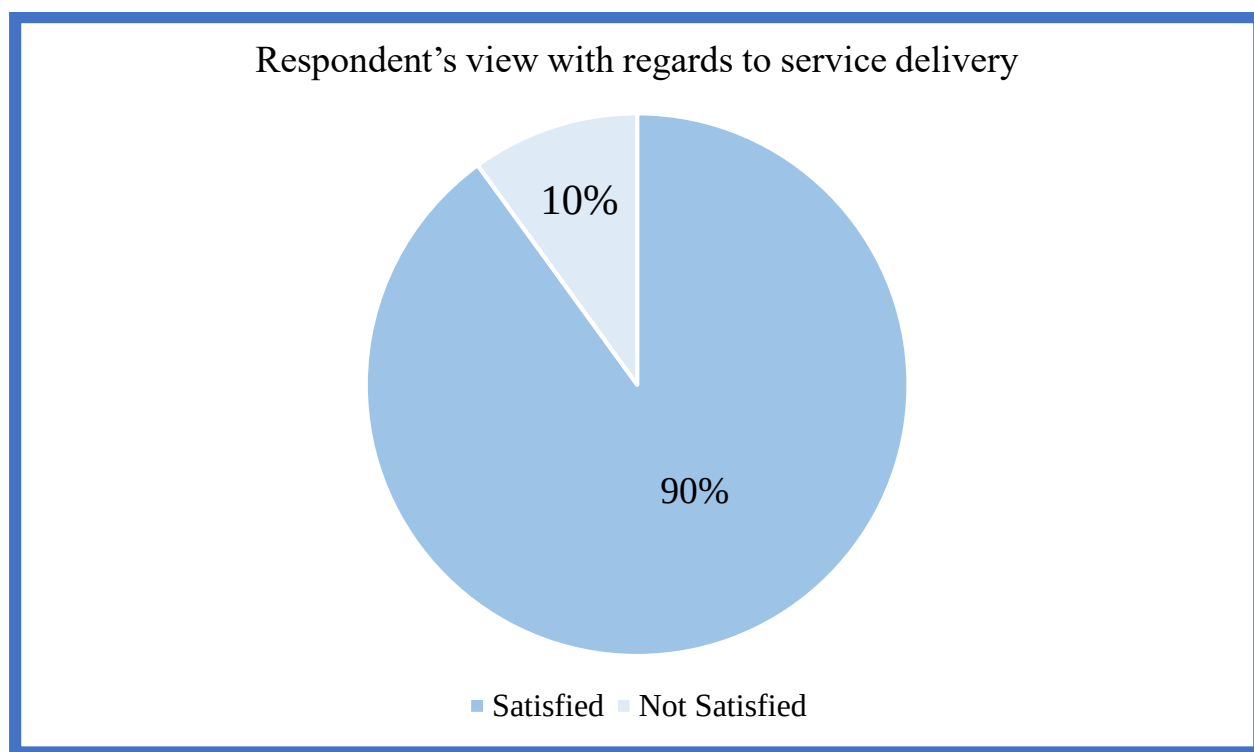
Public Response: -

The below-mentioned is the tabulation of the field survey conducted in and around the Primary Health Center, Sanguem. This tabulation will provide information on the overall functioning of the Primary Health Center. To give a clearer view of the field survey, efforts have been made to analyze the information.

Table 4.1

Respondent's views with regards to service delivery at PHC, Sanguem

Satisfied	Percentage (%)	Not satisfied	Percentage (%)	Total in percentage
90	90%	10	10%	100%

Figure 4.1

The above pie graph clearly illustrates that out of 100 respondents being interviewed during the survey conducted recently at Sanguem, especially for this Dissertation project work, 90% of the respondents are satisfied with the services available at the Primary Health Center, whereas only 10% of the respondents are unhappy, especially those who are living in a remote area and who are the regular visitors of Sub Centers. Such people feel that all the medical facilities are not available at Sub Centers but people living in Municipal areas enjoy all such benefits. In other words, such people can enjoy all the facilities available only when they visit the Primary Health Center Sanguem. Most of the respondents are happy with the facilities available because they are aware of the different facilities available at PHC. People who are not satisfied are either ignorant or do not bother to know about such facilities. People living in remote areas could be one of the reasons. They also feel that there should be a proper awareness campaign to make people aware of all the facilities that are available at the Primary Health Center and Sub Centers at all levels.

The below table helps us to understand the respondent's views on the availability of doctors for consultation at the Primary Health Center.

Respondent's view on the availability and behavioral aspects of doctors and nursing staff at Primary Health Center, Sanguem

Figure 4.2

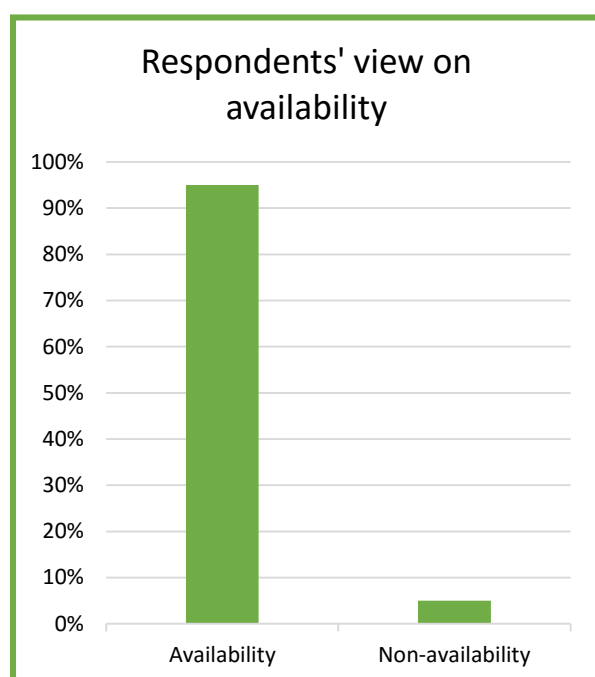
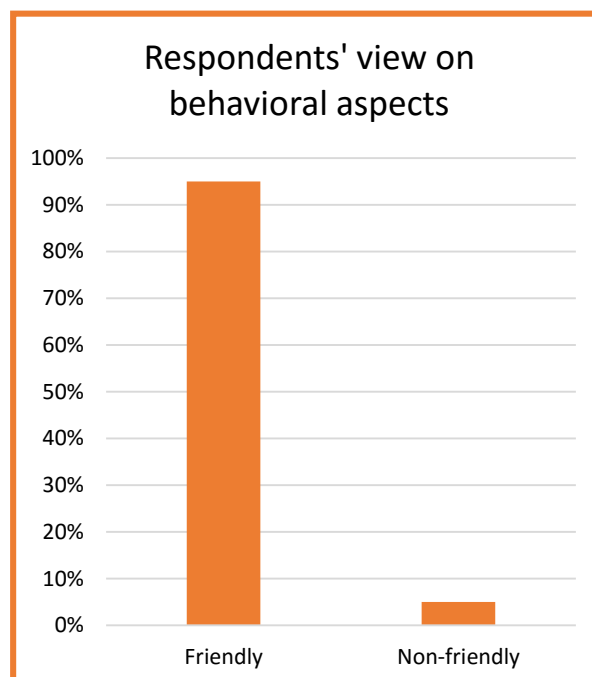


Figure 4.3



Out of the 100 respondents being interviewed, 95% of them agreed that doctors at PHC are available for consultation for 24 hours. Only 5% of the respondents said that doctors are sometimes not found at Primary Health Service, especially at late night. They have noticed that Nurses on duty or other medical staff call the doctor to attend the patients who come at late night during an emergency. This might be one of the reasons that the doctor on duty is taking rest at late night when no patients are arriving at late hours.

An equal percentage of respondents (95%) agreed that doctors, Nurses, and other medical staff at Primary Health Centers are friendly and supportive. Such a friendly approach of Doctors and medical staff helps the patients to get moral support and also helps them to ease relief from their illness. Only 5% of the respondents are not happy with the behavior of nursing staff especially

when they were admitted at PHC. They said that they were not timely attended by nurses especially at night when they need assistance.

Figure 4.4

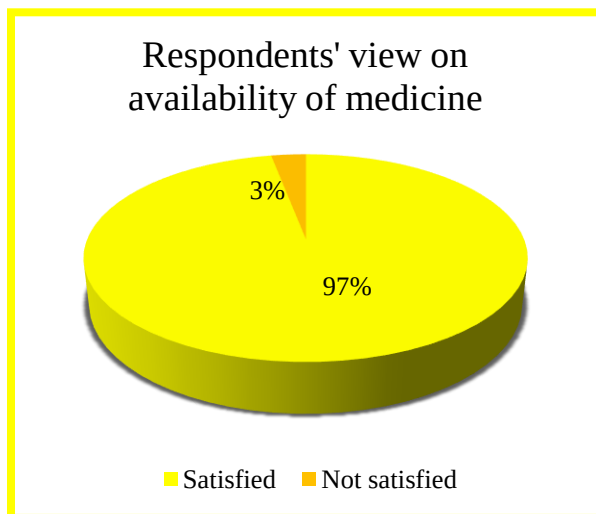
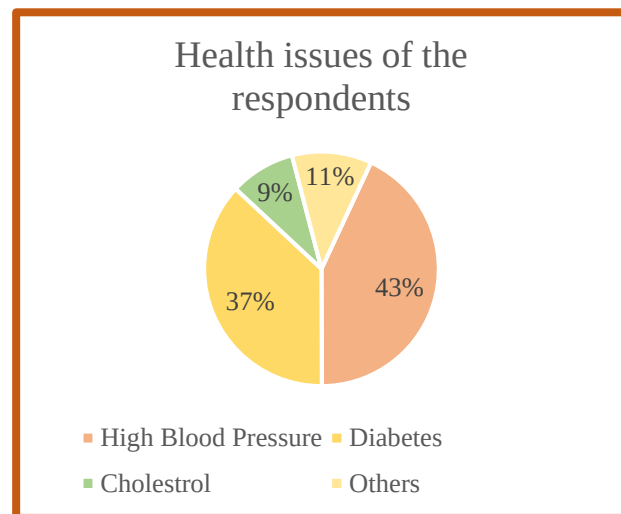


Figure 4.5



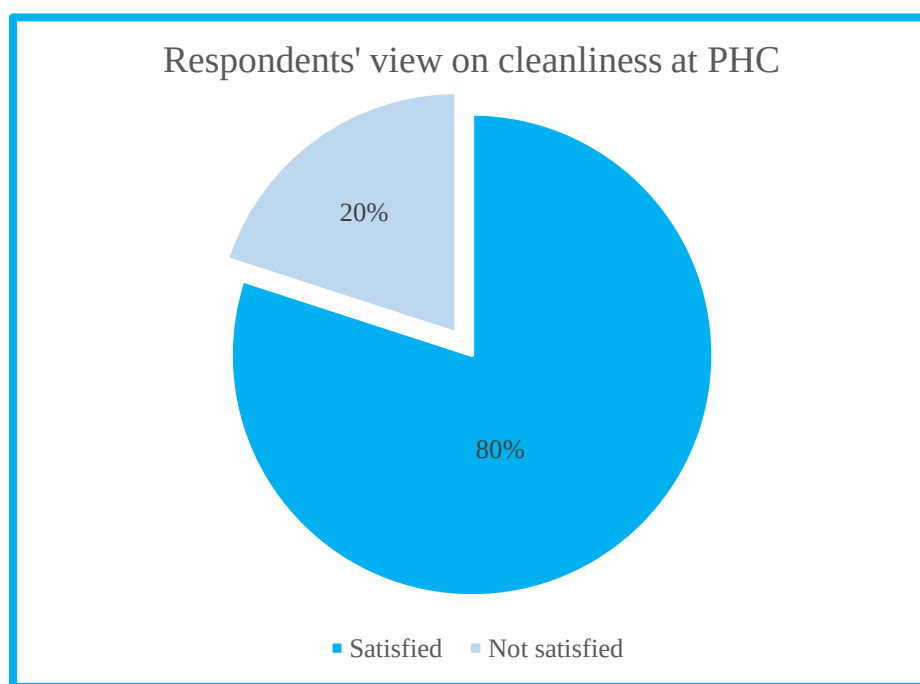
It has also been noted that 97% of the respondents are satisfied with the availability of medicines at the pharmacy and they have not purchased medicines from private pharmacies. Diabetes patients usually receive medication for a month, sometimes they receive medicines for 15 days, and therefore asked to come after 15 days to receive the remaining medicine in case there is a shortage of medicines at the pharmacy. Only 3% of the respondents have purchased medicine from private pharmacies as the prescribed medicines were not available at the PHC pharmacy.

It has been noted from the survey conducted recently that, the maximum number of respondents as shown in Fig. 4.5, that is 43% of the respondents who visited the Primary Health Center Sanguem are suffering from High Blood Pressure, 37% of the patients are Diabetics, 09% of the respondent are having cholesterol issue and the remaining 11% of the patients who visited the PHC are suffering from other health issues such as cold, fever, body pain, headache, etc.

As many as 65% of the respondents took advantage of blood tests and examinations for illnesses such as Diabetes, Fever, HIV, Jaundice, etc. from the laboratory of PHC Sanguem. 21% of the respondents were referred to conduct ECG tests, and the remaining 24% took the benefit of conducting other tests such as cholesterol, High Blood Pressure, Thyroid, etc.

Through the survey conducted recently, 31% of the respondents were admitted to receive medical treatment at PHC, due to different health issues such as High Blood Pressure, Fever, high diabetes, etc. The respondents who were admitted at Primary Health Center Sanguem were discharged only when their health condition returned to normal. 23% of the respondents were referred to South Goa District Hospital (SGDH) Margao, with the help of an ambulance for further medical treatment. Such patients were referred to SGDH to avail better medical facilities, which a patient cannot receive medical treatment at PHC. 11% of the respondents were shifted to Goa Medical College and Hospital (GMC), due to their critical health condition and also to avail all the required medical facilities at GMC. The rest of the respondents (45%) said that they had never been admitted to any hospital.

Figure 4.6

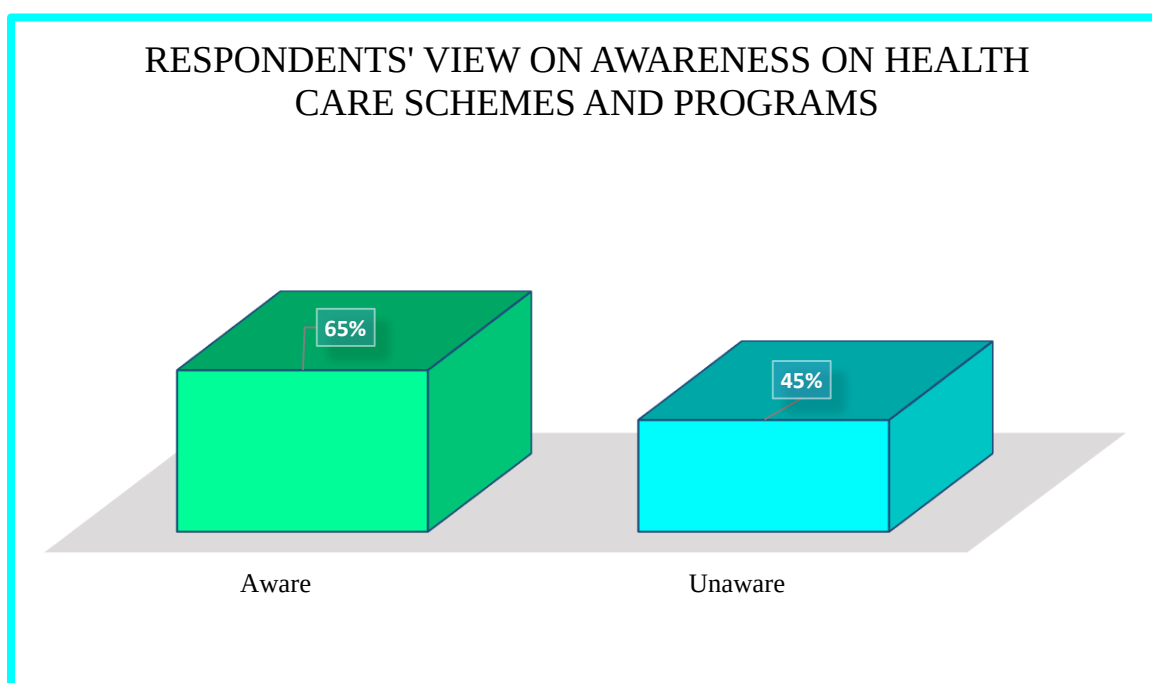


Out of the 100 respondents being interviewed, 80% of the respondents said that cleanliness at Primary Health Center is satisfactory because the waiting area, dispensary room, corridors, and dressing room are neat and clean, while 20% of the respondents are not satisfied with the

cleanliness of toilets and wards (especially the ceiling of the wards). A small margin of respondents also said that the linens available on hospital beds at PHC are not to the mark.

A portion of respondents said that cleanliness at PHC has improved much in recent years because most of the cleaning staff are hired from cleaning companies on a contract basis. The Directorate of Health Services Goa hires cleaning staff from cleaning companies who in turn provide cleaning staff to PHC as per their requirement. Few respondents said that earlier cleanliness was not so good at PHC because the cleaning staff were recruited by the Directorate of Health Services Goa. The Health Officer of the PHC or the concerned person remained busy with other responsibilities and hardly had time to monitor the cleaning job of the PHC.

Figure 4.7



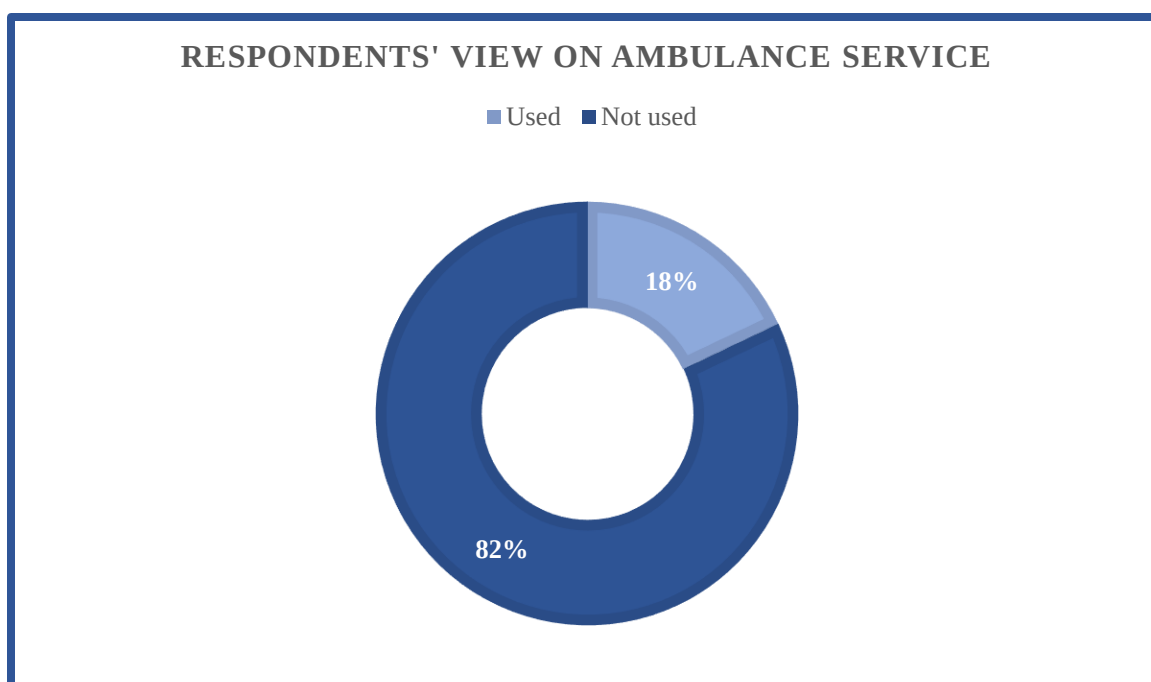
All medical schemes, programs, policies, and facilities are available at different Primary Health Centers and Sub-Centers are free. Some people living in Sanguem are not aware of such Schemes, Programs, Policies, and different Facilities that are available at Primary Health Center Sanguem. 65% of the respondents are aware of such facilities that are available at PHC, hence they managed to take advantage of such facilities. They usually keep a check on the available schemes and the different programs that are being conducted at PHC.

Around 45% of the respondents interviewed, are not aware of the schemes, programs, policies, and facilities that are available at Primary Health Center. Hence they were unable to take advantage of such facilities. Many such respondents felt that the Primary Health Center is only meant for consulting a doctor and receiving medication. They were least bothered to know the different schemes that are available and various Programs that are being conducted at PHC. Many such respondents were surprised to know the availability of different medical schemes and programs that are being provided by the government for Primary Health Centers.

Many respondents came to know about the different schemes, programs, policies, and facilities that are available at Primary Health Center Sanguem, only when they were asked about it. The majority of the respondents feel that they should know all medical facilities available at PHC, to take advantage of all the Schemes, Programs, Policies, and Facilities available.

A margin of respondents said that the introduction of an X-ray unit at PHC Sanguem in 2019, had benefitted many people. They enjoyed the service for a short period because the X-ray machine had not been functioning for a long time due to the power shortage. They also feel that the concerned authorities should look into the matter as soon as possible because patients are often referred to Community Health Center Curchorem to conduct such an X-ray test.

Figure 4.8



With regards to the Ambulance service, only 18% of the respondents used the ambulance service, as and when they were referred to either South Goa District Hospital, Margao (SGDH) or to Goa Medical College, Bambolim (GMC). About 82% of them never used the Ambulance to date. As there are 02 Ambulances assigned for PHC Sanguem, 18% of the respondents who used the ambulance service said that they had not faced any issues. Only a couple of respondents used 108 ambulance services when both the assigned ambulances were busy with other patients. They further said that 108 ambulances reached PHC within minutes to take them to GMC for further treatment.

People living in remote areas such as Bhati, Kalem, Valkini, Vichundrem, etc. usually face problems in reaching the PHC. Patients have to wait for long hours for an ambulance to reach their destination, sometimes they reach PHC by arranging their vehicle. Such people felt that their concerns had to be considered by the health authority.

The majority of the people (Respondents) are satisfied with the structure of Primary Health Center Sanguem even though it was built during Portuguese rule in Goa. They said that they are happy because it serves the purpose. A major renovation and restoration work for PHC was conducted in 2019, and since then people have enjoyed many more facilities and benefits. Work

for a separate new building structure of PHC has commenced since 2021, hence people have high hopes for better medical facilities once it is ready for the general public.

Before I wind up my interview, a question was raised to each respondent to know their views and opinions towards the overall functioning of the Primary Health Center Sanguem. I also asked for their suggestions for improvement of PHC in the days to come. A few of their views, opinions, and suggestions are mentioned below:

- To create more awareness among the people about different medical schemes, programs, policies, and facilities that are available at PHC and Sub Centers.
- Better infrastructure with advanced machinery and medical equipment for PHC.
- Restoration of X-ray service and replacement of Electricity Generator for PHC.
- Need for a better parking facility for vehicles at PHC.
- Request for more doctors and nurses in the OPD section, and more doctor visits at Sub Centers (at least thrice a week).
- Keep proper checks on doctors, medical staff, and other staff to avoid misuse of duties.
- Check on medicines (to keep enough stock) to avoid shortage of medicines at PHC and Sub Centers.
- Arrangement for separate OPD for senior citizens.
- To provide clean and hygienic meals for all the admitted patients.
- Request for maternity ward specially for pregnant women.
- Advance laboratory to conduct all medical tests without sending the sample to SGDH.
- More frequent visits of doctors at PHC such as Gynec., Dental OPD, Ayurveda OPD, Ophthalmology OPD, Geriatric OPD, etc.

CHAPTER V

CONCLUSION

Development does not only mean infrastructure development such as building highways, bridges, and airports. Development also, and more importantly, means Human Development. Apart from quality education, quality healthcare is an important pillar of human development.

Goa is doing well as compared to other states concerning health care. It has an elaborate health infrastructure right from the Primary Health Centers (PHC) at the village level, the Community Health Centers (CHC) at the Block level, the District Hospitals in the major towns and districts, and the tertiary hospital – the Goa Medical College and Hospital (GMC) – at the State level. Added to this is the new Super Specialty block at Bambolim. Besides, there are several private hospitals across the State, mostly in towns.

However, having an elaborate healthcare infrastructure is not enough. There is a need for ensuring quality healthcare in all Primary Health Centers which is paramount for the well-being and prosperity of its people. Goa takes pride in having high development indicators like high literacy and low infant mortality rate, but its health infrastructure would have been one of the best in the country if we considered its geographical area, literacy, and size of the population. States like Tamil Nadu, Kerala, and Maharashtra are often cited as having relatively better healthcare systems with a higher concentration of quality hospitals, medical schools, and healthcare professionals. Goa can also learn from such states and achieve success in health care in the days to come.

In quality health care, the safety of the patient is of prime importance. Goa's PHCs, CHCs, district hospitals, GMC, and private hospitals must minimize the risk of harm to patients from medical errors, infections, or other adverse events. Similarly, there should be proper sanitation, infection control, and the use of evidence-based practices to ensure patients' safety. The Health Department (Directorate of Health Service Goa) should have a team that does regular checks and audits to ensure that hospitals make the safety of the patient their priority. Quality health care should also be based on the latest scientific evidence and proven best practices. Treatments should be beneficial to the patients bring about the desired positive result and improve the health of a patient.

Above all, quality involves patient-centric health care, according to the patient's or family's needs, and should respect their choices. More importantly, quality health care should be timely. Health care should minimize waiting time and provide prompt responses to patients in need of medical attention. Diagnosis should be correct and should positively impact the patient.

Efficiency is another important aspect of quality health care. The GVK EMRI 108 Ambulance services should reach the patient, especially critical patients, within a maximum of 10 minutes and take the patient to the nearest medical facility depending on the criticality of the patient, after giving first-aid.

Most importantly, quality health care should be affordable and should not fall beyond the reach of a common man. Though for the most part, the government health infrastructure is free, there is a general preference for private medical care. It is noted that private health care is prohibitive as far as costs and affordability are concerned. Since health care is a service and not a business, the State government should review the pricing of health services, especially by private hospitals, within the parameters of law.

Since health is a vital service, quality healthcare should be accessible to all regardless of status, ethnicity, gender, etc.

Given the government and private healthcare infrastructure in the State, there is a need for a holistic approach that involves collaboration among healthcare providers, policymakers, and the community. The government, through the Department of Health Services, should indulge in continuous monitoring, evaluation, and improvement of healthcare services. Additionally, the involvement of patients in the decision-making processes and the promotion of a culture of safety contribute to a comprehensive understanding and implementation of quality healthcare.

Overall wellness and health of the population is vital to the vibrancy of the State. A healthy population is the backbone of a thriving society. Quality healthcare in Goa specially in all Primary Health Centers is vital to address the health concerns of its residents and to ensure that preventable diseases are managed effectively. By promoting wellness and providing timely medical interventions, a robust healthcare system can contribute to an overall improvement in the health indicators of the State.

The healthcare system should be proactive to ensure disease prevention, which brings us to preventive healthcare. Our medical professionals at the State, district, block, and village levels should educate the population to stay fit and healthy. They should introduce public health initiatives, vaccination programs, and disease awareness campaigns to prevent the outbreak of illnesses. Additionally, a well-equipped healthcare system is essential for effective disease management, ensuring that outbreaks are controlled swiftly and efficiently.

Such a healthcare system will not only enhance the overall quality of life and produce a productive workforce but will lead to the overall prosperity of the State.

Though quality health care may look like a routine activity, the State has to prioritize quality healthcare in Goa through Primary Health Center, as a matter of strategic investment in the State's future. By doing so, Goa can set a benchmark for healthcare excellence, ensuring a healthy and prosperous future for its residents.

The functioning of the Primary Health Center is further divided among Sub Centers that systematically perform the task under the guidance of the Directorate of Health Service Goa. Medical health services at PHC Sanguem have improved in recent years. Such improvement in health care is seen at PHC through many programs that are being organized at all levels. Different health programs such as Immunization, polio drives, free eye check-up camps, HIV awareness programs, blood donation camps, etc. are organized regularly. Such programs are organized by using posters, and pamphlets, at different locations at PHC and Sub Centers.

Primary Health Center Sanguem also provides many facilities for the general public which include a free consultation, medical tests and examinations, ECG, availability of different OPDs such as Ayurveda, Dental, Gynecology, Ophthalmology, YUVA Clinic, Geriatric, etc., all such facilities including medicines are provided free of cost to the people of Sanguem. Two ambulances are assigned for PHC to overcome the emergency. Different educational programs are also being conducted at PHC to maintain cleanliness to prevent various diseases like Malaria and dengue. People of Sanguem can take advantage of all such programs, schemes, and facilities that are available at PHC. However, a large section of people is not aware of such facilities, programs, and schemes that are available. Hence proper awareness among people is the most important factor to be considered on an urgent basis.

PHC Sanguem is working hard to provide better health care to the people of Sanguem under the leadership of the Health Officer, in doing so, they are going through many challenges. There is a shortage of staff at PHC which hinders its performance. There are only 04 doctors available (from the required 07) to attend to patients at PHC and all the 08 Sub Centers in Sanguem. These 04 doctors (one regular & 3 bond doctors) attend to all patients at PHC and also visit each Sub Center, once a week. Since a couple of months ago, two posts for Pharmacists are lapsed at PHC Sanguem. At present 02 hired staff work as Assistant Pharmacists on a contract basis. Also, 04 nurses from the required 07, are struggling hard to serve patients at PHC Sanguem.

For a long time, the people of Sanguem have faced hardship due to the discontinuation of X-ray service due to power shortage, since then patients are often referred to Community Health Center Curchorem to conduct an X-ray test. Similarly, the Electric Generator at PHC has also been out of order for a couple of years, since then they have managed their job with a Battery Inverter. There is no proper parking facility for two and four-wheeler vehicles hence, patients at PHC have to park their vehicles alongside the main road causing inconvenience to the passersby. The Health Officer at PHC is doing her level best to put everything in place at the earliest. Hope the Health Authorities will take suitable steps to sort out all the issues soon and the people of Sanguem may enjoy a happy and healthy life always....

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APPENDIX I

Questionnaire for Respondents

Verrell Carvalho

(M.A. in Political Science)

Department of Political Science

Goa University.

I am surveying “Accessibility and Health Infrastructure of Sanguem Taluka” as a part of my Master's degree in Political Science, under the guidance of Ms. Prachi Naik. The information provided by you will be kept confidential and will be used for academic purposes only.

Name: _____

Age: _____ Sex: _____ Marital status: _____ Date: _____

1. Do you visit the Primary Health Center, Sanguem? How often did you visit the PHC?

2. Do you have any health issues? If yes, what? Since how long do you have health issues?

3. Are doctors regularly available for consultation? Yes___ No___? How are doctors on duty at PHC? Are they: - a) Rude? ___ b) Patient? ___ c) Careless? ___ d) Good? ___

4. How long do you have to wait to see a doctor at PHC? What changes are required?

5. Have you ever returned home due to heavy rush at PHC & the doctors were busy?

6. Are you happy with the medicines received at PHC? How often do you buy medicine from a private pharmacy? Does it affect you financially?

7. Do you think the medicines provided by PHC is of good quality?

8. How much time do you spend overall visiting the hospital (PHC) each visit?

9. How do the other medical staff such as Nurses, Pharmacist, treated you? Are they

a) Rude? _____ b) Patient? _____ c) Careless? _____ d) Good? _____

10. Have you ever taken advantage of conducting medical tests at PHC? Are you satisfied with the service?

Eye test ____; X-ray ____; ECG ____; Blood test ____; Or any other _____ Satisfied? _____

11. Are you aware of health schemes, programs and facilities available at PHC? Have you taken advantage out of it?

12. Have you ever been shifted from PHC to District Hospital or GMC for further treatment by ambulance? If yes, why?

13. Was the ambulance equipped with life support? How long have you waited for the ambulance to arrive?

14. Have you ever been admitted to PHC and for how many times? Why you were admitted? Are you happy about the cleanliness in and around the hospital?

15. How was your overall experience when you were admitted at PHC?

16. Some Doctors such as Eye Specialist, Dentist, Gynecologist, Ayurveda doctor etc. consult the patients once or twice in a week, how does it affect you?

18. Do you think the PHC is lacking any facilities? If yes, what? How the PHC can do better?

19. How is your overall experience during your visit at PHC? What additional facilities does the PHC should have?

20. What changes you are looking forward to see in future at PHC?

APPENDIX II

Questionnaire for Doctors

Verrell Carvalho

(M.A. in Political Science)

Department of Political Science

Goa University.

I am surveying “Accessibility and Health Infrastructure of Sanguem Taluka” as a part of my Master's degree in Political Science, under the guidance of Ms. Prachi Naik. The information provided by you will be kept confidential and will be used for academic purposes only.

Date: _____

Name: _____ Degree: _____

Gender: _____

1. Since how long are you practicing as a doctor in this PHC hospital?

2. Do you practice as a general doctor or are you a specialist in any field?

3. How many days are you working in a week? How many hours in each shift?

4. Do you visit/ attend patients in any other hospital other than this hospital? If yes, where?

5. How many patients do you attend in each shift on an average?

6. What type of medical tests are generally conducted here for the patients? Do you have a full-fledged laboratory here?

7. Do this PHC have services such as Morgue? Fire Emergency service? Generator?

8. All medicines are available for patients at PHC pharmacy? How often patients have to buy medicine from private pharmacy?

9. What type of patients do you attend on regular basis? Why do you think such cases are more in Sanguem?

10. How many beds are there in PHC? Male? Female? Maternity, Pediatric, and General?

11. Do you conduct deliveries for pregnant women in this primary health center? Do you have all the medical equipment?

12. How do you decide to admit a patient at PHC or to refer the patients to District hospital (Margao) or to Goa Medical College (GMC)?

13. How many ambulances are available at PHC? Are they equipped with life support and 24x7 emergency service?

14. What are the different OPD facilities available at PHC?

15. What difficulty do you face while attending the patients due to lack of equipment, medicines, machinery etc.?

16. Do you get support of other medical staff while you were on duty?

17. What according to you, this Primary Health Center is lacking which hinders your performance?

18. How many sub-clinics are there in Sanguem apart from this Primary Health Center? Do you visit and attend patients at sub-centers?

19. How often doctor visit each Sub-Center? What type of medical treatment is available at Sub Center? How many staff are assigned in each Sub Centers? Is there a Pharmacy as well?

21. Some sub-clinics are located in remote areas and are very far from PHC. How do you manage to reach there on time? What are your working timing there?

22. If you are a Head Doctor of Primary Health Center, what changes would you like to do in PHC Sanguem?

23. What new services will be available for patients once the new building structure of PHC is complete?

APPENDIX III

M.A. DISSERTATION
POLITICAL SCIENCE PROGRAMME
D.D. KOSAMBI SCHOOL OF SOCIAL SCIENCES AND BEHAVIOURAL STUDIES
GOA PROGRAMME
PERSONAL DIARY/ FIELD RECORD

Name of the Researcher: *Virell Carvalho* Name of the Guide: *Ms. Praachi Naik*
Title: *Accessibility and Health Infrastructure of Sanguem Taluka*

SR. NO.	DATE	PLACE VISITED	PURPOSE OF VISIT	TIME	SIGNATURE OF OFFICIAL
1	12/09/23	Goa University Library	Book Reference	11:45 a.m. - 1:20 p.m.	
2	18/09/23	Goa University Library	Book Reference	9:45 a.m. - 9:46 a.m.	
3	06/12/23	Goa University Library	Book Reference	9:35 a.m. - 11:30 a.m.	
4	14/12/23	Goa University Library	Book Reference	9:25 a.m. - 9:35 a.m.	
5	17/01/24	Primary Health Center Sanguem	Interview / Workings of PHC Sanguem	2:30 p.m. - 3:45 p.m.	<i>Dr. Aniket Naik</i>
6	30/01/24	PHC Sanguem (Office of H.O.)	Enquiry on PHC structure & workings	11:00 a.m. - 12:30 p.m.	<i>Dr. Tulsi M. Kakadkar</i>
7	07/02/24	Cotari Sub-Centre (Sanguem)	To enquire its workings & facilities	9:30 a.m. - 10:15 a.m.	<i>Lady Doctor & MPHW</i>
8	15/02/24	PHC Sanguem	Interview on workings and responsibilities	4:00 p.m. - 5:00 p.m.	<i>Dr. Jilda Fernandes</i>
9	22/02/24	Uquem Sub-Centre (Sanguem)	To enquire its workings & facilities	11:00 a.m. - 12:10 p.m.	<i>MPHW</i>
10	28/02/24	Primary Health Centre Sanguem	To enquire programs, scheme & facilities	11:30 a.m. - 12:45 p.m.	<i>Dr. Tulsi M. Kakadkar (H.O.)</i>

Signature of the Researcher: *Virell Carvalho*

Signature of the Guide: *Praachi Naik*

M.A. DISSERTATION
POLITICAL SCIENCE PROGRAMME
D.D. KOSAMBI SCHOOL OF SOCIAL SCIENCES AND BEHAVIOURAL STUDIES
GOA PROGRAMME
PERSONAL DIARY/ FIELD RECORD

Name of the Researcher: Vennell Carvalho

Name of the Guide: Ms. Prachi Nair

Title: Accessibility & Health Infrastructure of Sangrem Taluka

SR. NO.	DATE	PLACE VISITED	PURPOSE OF VISIT	TIME	SIGNATURE OF OFFICIAL
11	05/03/24	PHC Sangrem	Interview on workings & facilities	9:30 a.m - 10:15 a.m	Lab Technician (Sangrem)
12	15/03/24	PHC Sangrem	Enquiry & workings	10:00 a.m - 10:30 a.m	Pharmacist (PHC Sangrem)
13	19/03/24	PHC Sangrem	Enquiry & its workings	9:35 a.m - 10:00 a.m	Security Guard (PHC Sangrem)
14	02/04/24	Goa University Library	Book Reference	12:15 p.m - 12:45 p.m	
15	04/04/24	Goa University Library	Book Reference	9:00-9:15 a.m 1:30-4:28 p.m	
6					
7					
8					
9					
10					

Signature of the Researcher: Vennell

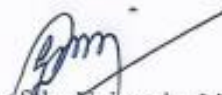
Signature of the Guide: Prachi

VISIT TO GOA UNIVERSITY LIBRARY

Serial No.	Date of Visit	Time In	Time Out	Total No. of Hours
1	24.07.2023	10:20 a.m.	11:15 a.m.	55 minutes
2	01.08.2023	9:45 a.m.	9:46 a.m.	1 minute
3	07.08.2023	11:00 a.m.	11:01 a.m.	1 minute
4	22.08.2023	09:35 a.m.	09:40 a.m.	5 minutes
5	08.09.2023	09:25 a.m.	09:26 a.m.	1 minute
6	12.09.2023	11:45 a.m.	01:20 p.m.	1 hour 35 minutes
7	18.09.2023	9:45 a.m.	9:46 a.m.	1 minute
8	06.12.2023	9:35 a.m.	11:30 a.m.	1 hour 55 minutes
9	14.12.2023	9:25 a.m.	9:35 a.m.	10 minutes
10	02.04.2024	12:15 p.m.	12:45 p.m.	30 minutes
11	04.04.2024	9:00 a.m.	9:15 a.m.	15 minutes
		1:30 p.m.	4:28 p.m.	2 hours 55 minutes
Total = 8 hours 24 minutes spent in the Library				

The following are the dates and time spent at the University library for the purpose of Dissertation project work.


 Signature of the Guide
 (Asst. Prof. Ms. Prachi Naik)


 Signature of the University Librarian
 Dr. Sandesh B. Dessai
 UNIVERSITY LIBRARIAN
 Goa University
 Taleigao - Goa.


 Signature of the Student
 Miss Verrell Carvalho