Annex - I

# PUBLIC HEALTH IN GOA.

## PUBLIC HEALTH FOCUS - GOA

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REPORT

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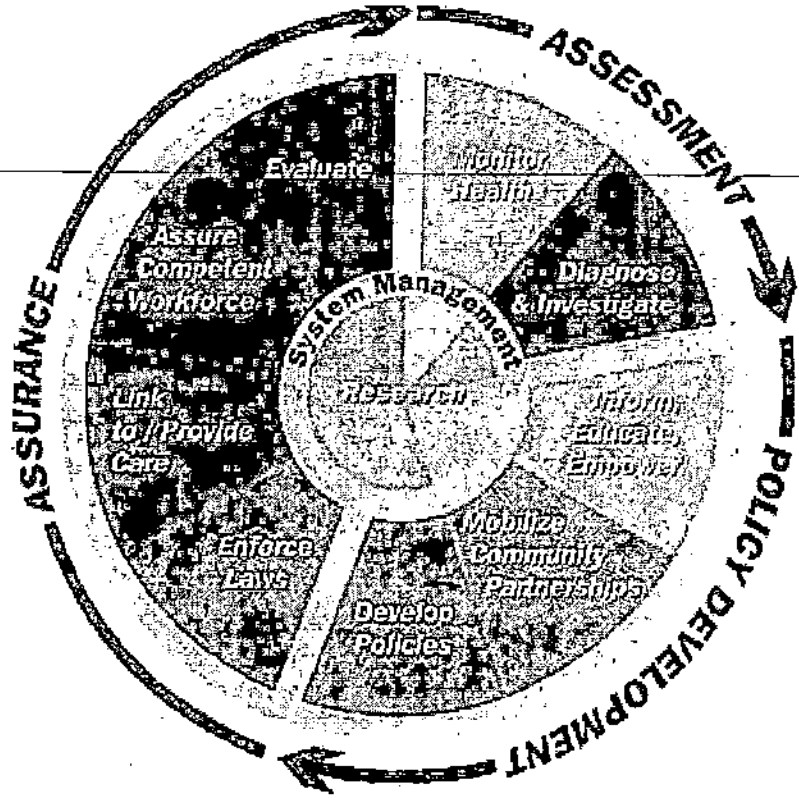
## 1. Public Health and Its Evolution

Globally public health is defined as the science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society.

### 1.1. Public Health Approach

The government approach to the public health:
is population based
emphasises collective responsibility for health, its protection and disease prevention
recognises the key role of the state, linked to a concern for the underlying socio-economic and wider determinants of health, as well as disease
emphasises partnerships with all those who contribute to the health of the population.

### 1.2 10 Essential Services of Public Health




**Key domains of public health practice:**

- Health Improvement
- Inequalities
- Education
- Housing
- Employment
- Family/Community
- Lifestyles
- Surveillance and Monitoring of specific diseases and risk factors

**Improving services**

- Clinical effectiveness

- Efficiency
- Service planning
- Audit and evaluation
- Clinical governance
- Equity

**Health Protection**

- Infectious diseases
- Chemicals and poisons
- Radiation
- Emergency response
- Environmental health hazards

**The core values are that public health practice should be:**

- Equitable
- Empowering
- Effective
- Evidence-based
- Fair
- Inclusive

**In light of these core values, and the three domains of public health practice, we see nine key areas for public health practices**

These nine areas are at the basis of all standards of training and practice that we should follow

**The nine key areas are:**

- Surveillance and assessment of the population's health and wellbeing
- Assessing the evidence of effectiveness of health and healthcare interventions, programmes and services
- Policy and strategy development and implementation
- Strategic leadership and collaborative working for health
- Health Improvement
- Health Protection
- Health and Social Service Quality
- Public Health Intelligence
- Academic Public Health

**1.3 Difference between Medicine and Public Health**

| Medicine | Public health |
|---|---|
| • Focus on individuals<br>• Diagnosis & treatment<br>• Clinical interventions<br>• Well-established profession, standardized education & certification<br>• Clinical sciences integral; social sciences less emphasized<br>• Experimental studies with control groups: RCTs. | • Focus on populations<br>• Prevention & health promotion<br>• Environment & human behavior interventions<br>• Diverse workforce, variable education & certifications<br>• Social sciences integral; clinical sciences peripheral to education<br>• Observational studies: case control & cohort studies |

**Based on these parameter, the knowledge domain of public health is defined as:**

| The knowledge domain of public health | |
|---|---|
| • Biostatistics | • Health Services Administration |
| • Chronic Diseases | • HIV/AIDS |
| • Communicable Diseases | |
| • Community Health | • Maternal & Child Health |
| • Disaster Control & Emergency Services | • Nutrition |
| • Environmental Health | • Occupational Health |
| • Epidemiology | • Public Health Informatics |
| • General Public Health | • Public Health Laboratory Sciences |
| • Global Health | • Public Health Nursing |
| • Health Promotion & Education | • Social & Behavioral Sciences |
| | • Vital Statistics & Surveillance |

| Public Health has a diverse workforce | |
|---|---|
| • Epidemiologists | • Mental Health Workers |
| • Statisticians | • Substance Abuse Counselors |
| • Environmental Engineers | • Doctors |
| • Animal Control Officers | • Nurses |
| • Sanitarians | • Teachers |
| • Food Scientists | • Disaster Relief Workers |
| • Industrial Hygienists | • Nutritionists |
| • Health Care Administrators | • Lab Technicians |
| • Health Economists | • Librarians |
| • Politicians | • Communication |
| • Social Workers | • Security & Enforcement / Health Police |

## 2. Public health infrastructure

### 2.1 What we need and what we have

*We need 7,415 community health centers per 100,000 populations. We have less than half the number. Worse, of the healthcare facilities we do have; the basic staff is not in place: Only 38% of our primary health centers have all the required medical personnel. With the public health infrastructure in such a shambles, how can the poor count on government health centers?*

India's achievements in controlling infectious diseases present a mixed picture of good and bad news. Once goals were set, smallpox, guinea worm disease and yaws were eliminated, virtually on time. The National AIDS Control Programme (NACP) has achieved stabilization of the epidemic in most states and reduction of prevalence in Tamil Nadu.

The National Rural Health Mission has re-invigorated health care in rural communities through strengthened primary health centers and sub-centers. Tamil Nadu has sustained >90 per cent 3rd dose DPT coverage in infants for over a decade, virtually eliminated child death due to measles and drastically reduced the incidence of Japanese encephalitis (JE). Nationally, over 99 per cent reduction of annual polio cases has been achieved. These successes were achieved through 'vertical' (Centrally sponsored) disease-specific or project-specific special vehicles.

*On the negative side, too many infectious diseases are either not in control mode or not controlled in spite of efforts through special vehicles. Even measles and diphtheria are not adequately controlled in spite of over decades of attempt through the national immunization programme. Malaria control is not sustained and there is resurgence of Falciparum malaria in many States. Neither the prevalence of adult TB nor the incidence of Mycobactrium tuberculosis infection in children has declined in spite of a well-run [Revised] National TB Control Programme that had its beginnings in 1962.*

*Although leprosy prevalence (cases under treatment) has been brought down through short course multi-drug therapy, new cases continue to be detected at an unacceptable rate; yet active case search has been [prematurely] discontinued. Kalazar incidence has increased in recent decades. When chikungunya virus entered the country, most States were unprepared to face the consequent enormous epidemic - this could be directly associated with continued systemic failure in controlling dengue virus diseases, as both are transmitted by the same vector mosquitoes.*

Many other rampant infectious diseases such as cholera, typhoid and paratyphoid fevers, shigellosis, amoebiasis, cysticercosis, viral hepatitis (A, B, C, E), influenza, brucellosis, hydatidosis, paragonimiasis, rabies, Leptospirosis, anthrax, scrub typhus etc., have not been assigned any priority for control. These failures are the tell-tale symptoms of the lack of a functional public health infrastructure in India.

*The Ministry of Health and Family Welfare (MoHFW) in the Government of India (GoI) consists of Departments of Health, Family Welfare, Indian Systems of Medicine and Health Research. There is no Public Health Department.*

*Physicians often have an inherent but silent conflict of interests between public health and medical care. They focus on individual need, including preventive medicine, but have no skill or opportunity to address risk factors of diseases in the community or environment. Even when placed in leadership positions, they tend not to play an advocacy role for public health. After all, their self-interest lies in clientele with diseases.*

Since 2000 the GoI had two medical doctors as Ministers for MoHFW, from different political ideologies, serving several years in office, but they did not take the initiative for developing public health – such is the negative bias against public health in our country.

*Ministries of Health in most States (except Tamil Nadu) also do not have public health departments.* While medical care and training of health care professionals are under State jurisdiction, disease control is under GoI. Some of the functions of public health, for the control of infectious diseases, have been assigned to a

few 'vertical' (Centrally sponsored) projects, such as the national immunization programme, single-disease- control projects (against TB, AIDS, Malaria, Filariasis and Leprosy) and Integrated Disease Surveillance Project (IDSP).

Unfortunately, this organizational style has severe limitations; many vertical programmes are faltering in all States except Tamil Nadu. The GoI should evaluate the health system performance of Tamil Nadu in comparison with that in other States in order to understand the contribution of the State Department of Public Health in achieving better health parameters for the people.

*It is imperative that Departments of Public Health be established in the Central and State MoHFW. They require defined cadre and career structures for personnel specially trained in public health. The functional coordination of public health activities at Central and State levels will have to be carefully designed. Public health actions are needed both at the national level and at the local levels. Without close interfacing of health care and public health at State and district levels, disease prevention and outbreak control cannot be successful.*

*Countries that have succeeded to control a broad spectrum of infectious disease achieved it through a functional public health infrastructure. Disease- prevention, outbreak-control and health promotion are the functions of public health - thus the lack of a public health arm within the health system is the major reason why India has not been able to control the many infectious diseases.*

*Un-prevented diseases consume resources of the health care enterprise, which is woefully inadequate in the public sector, creating the demand for private sector health care. Thus some 70-80 per cent of sick persons seek care in the private sector - paying all expenses from family resources or borrowed money this inequity promotes poverty.*

*Public health is infrastructure, crucial for human development. India ranks 132$^{nd}$ among 179 nations according to the Human Development Index (2008), while India ranks 5th in global economy. This strange disparity is mainly due to low investments in health and education, which allows the perpetuation of family-level poverty and unsatisfactory living standards - the parameters for assessing human development of any nation.*

*Every district ought to have a professionally trained public health officer under whom the currently fragmented public health activities should be integrated. The health care system within the district should be mandated by law to be answerable to the district health officer with regards to the detection and management of any disease that has public health implications. For example, every case of Tuberculosis, Malaria and HIV infection (to cite the glaring examples of commonly mis-managed diseases with the threat of emergence of drug resistance) must be treated according to national treatment protocols and captured in the district disease information data base.*

*Thus India needs over 600 trained district health officers. Each State will need a cadre of State level public health officers to supervise the activities within the State. The Centre requires a full complement of public health officials to preside over all public health functions including policy formulation, creation of protocols, standardization of public health interventions and procurement and supply of quality assured material. All public health officials, including the head of the department must have adequate training, skills and experience in public health and epidemiology.*

*The functional components of public health includes case-based and real-time disease surveillance; detection of early signals of outbreaks and immediate interventional response; coordinated control and monitoring of trends of all endemic infectious diseases which will vary from region to region; the maintenance of microbiology laboratories in all districts and their quality management; and the coordination of all currently vertical disease control programmes.*

The population in a district may range from 1 to 3 millions. There may be several public sector and private sector health care institutions with microbiology laboratories for diagnostic purposes. In addition there may be privately run laboratories also. Yet, there is a glaring lack of public health laboratories at the

district level. Such laboratories are essential to play a supporting role in the diagnosis and management of all diseases currently under vertical programmes as well as all others not under control mode as yet.

*There is currently no functional infectious disease surveillance programme - IDSP, established in 2002, has not succeeded in helping timely interventions against any outbreaks.* It has prevented the replication of the model of decentralized district level disease surveillance (DLDS), which had proved effective for monitoring infectious disease trends over time and for detecting early signals of outbreaks to enable their control. Unless disease surveillance is closely inter-faced with health care across public and private sectors we cannot expect success of surveillance or its utility for disease control. While DLDS is based in the health care sub-system under State control, IDSP is 'vertical' (under Central control) and not integrated with health care or even other vertical disease control programmes.

This is the best time for the GoI to re-engineer the nation's health system and bring it on par with other nations that have achieved successes in public health, such as Sri Lanka and Thailand, to cite two examples in South Asia. The need is extremely urgent since India is already facing the emergence of high burdens of diseases due to life-style changes, such as diabetes, hypertension, obesity and consequent cardiac, brain and renal catastrophes.

The public health infrastructure that learns from managing infectious diseases is essential for monitoring and managing their control. Infectious disease control is the school from which classical public health has to graduate into modern public health that deals with all diseases.

**2.2 Public health Infrastructure in Rural India**

Recognizing the importance of Health in the process of economic and social development and improving the quality of life of our citizens, the Government of India has resolved to launch the National Rural Health Mission to carry out necessary architectural correction in the basic health care delivery system.

The Mission adopts a synergistic approach by relating health to determinants of good health viz. segments of nutrition, sanitation, hygiene and safe drinking water. It also aims at mainstreaming the Indian systems of medicine to facilitate health care. The Plan of Action includes increasing public expenditure on health, reducing regional imbalance in health infrastructure, pooling resources, integration of organizational structures, optimization of health manpower, decentralization and district management of health programmes, community participation and ownership of assets, induction of management and financial personnel into district health system, and operationalizing community health centers into functional hospitals meeting Indian Public Health Standards in each Block of the Country.

The Goal of the Mission is to improve the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women and children.

Introduction

National Rural Health Mission (NRHM) is not a first program on rural health in independent India, even then, the enthusiasm and attention of the health personnel and people toward the program is phenomenal. This may partially be attributed to the apparent commitment and sincerity of the government, which was rightly reflected in the confessional speech of the Prime Minister of India, on April 12, 2005, on the launch of this program, when he said "***We have grievously erred in the design of many of our health programs. We have created a delivery model that fragments resources and dissipate energies. Most importantly, we have paid inadequate attention to the public health issues.***"

The attempts to improve rural health through various programs were started as early as in 1940 when, then British government in India set up 'Bhore Committee' (This committee also known as Health Survey and Planning Committee was set up by Government of India in 1943 to understand the health situation in the

country. The committee was headed by Sir Joseph Bhore and it got this name of Bhore Committee. The committee submitted its recommendations in 1946 with elaborate planning for health services delivery in India.) to find out the ways to improve the health of the people.

This was followed by a number of other committees and programs i.e. Balawant rai Mehta Committee (After the initial developments followed by Bhore Committee report, this committee was set up to know the progress since Bhore committee recommendations and, to give further suggestions to improve the health scenario in the country), Community Development program and Basic need programs etc. These attempts were only partially successful in changing prevailing health scenario. The successive governments started their own program and strategy to change the health conditions of the people without understanding or fully investigating the reasons for the failure of the previous programs.

The National Rural Health Mission (2005-12) seeks to provide effective healthcare to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. These 18 States are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttarakhand and Uttar Pradesh. The Mission is an articulation of the commitment of the Government to raise public spending on Health from 0.9% of GDP to 2-3% of GDP.

NRHM aims to undertake architectural correction of the health system to enable it to effectively handle increased allocations as promised under the National Common Minimum Programme and promote policies that strengthen public health management and service delivery in the country. It has as its key components provision of a female health activist in each village; a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat; strengthening of the rural hospital for effective curative care and made measurable and accountable to the community through Indian Public Health Standards (IPHS); integration of vertical Health & Family Welfare Programmes, optimal utilization of funds & infrastructure, and strengthening delivery of primary healthcare.

It seeks to revitalize local health traditions and mainstream AYUSH into the public health system. It further aims at effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through a District Plan for Health. It seeks decentralization of programmes for district management of health and to address the inter-State and inter-district disparities, especially among the 18 high focus States, including unmet needs for public health infrastructure. It also seeks to improve access of rural people, especially poor women and children, to equitable, affordable, accountable and effective primary healthcare.

## 3. History of Healthcare in Goa

History of medicine in Goa is fascinating. It had its ups and downs and it is quite well documented in contrast to in any other part of the Country. It tells us the tales of romance, bravery and rebellion against unjust authority and also it is interesting to go through biographies of pioneering geniuses such as Gracia da Orta.

The primary reason behind the advanced stage of healthcare and medical education in Goa was due to the approach which the Portuguese rulers had towards local people or natives viz a viz the British rulers of India. The Portuguese didn't treat their overseas territory as colony like the Britishers. They wanted to integrate the overseas populations with the Portuguese way of life. They encouraged the marriage of the Portuguese nobility and soldiers with the populace of the overseas territory and the men of these territories with the Portuguese women.

So there was very conscious effort to integrate the populace of the overseas territories with the Portuguese way of life. Goa never witnessed any General Dyer as in the case of British, only attrocities committed by them was for conversion of local population to Christianity. That's why even during the British period and intial stages of the Independent India, the standard of healthcare in Goa was better than most parts of the British India except Metropolis.

Attempts at teaching western medicine to the natives started around 1546. The Jesuit priests at the Collegio de Sao Paulo dos Arcos or the Seminario da Santa Fe, founded in 1541 taught medicine along with theology, mathematics, astronomy and philology. This institution is claimed to be Asia's first Western Style University. A Jesuit letter dated December 1, 1560 mentions: "In January 1560, philosophy began to be read for those who had finished their lessons in logic; to three lay brothers of the house and to the boys of the college, eleven of whom are Malabaris and three external students.

Father Francisco Cabral lectures on medicine every morning from 7 to 9". The conferment of degrees at this college often took place in the presence of the Viceroy and other high officials. In many of these functions, Gracia d'Orta is reputed to have taken an active part. It is not clear if he himself ever taught medicine. From simple beginnings the Collegio grew in shape, in amplitude of structure, in the number of disciplines as well as in the exercise of knowledge and virtue that it can be compared to all of Europe's colleges. The teaching of medicine started here was later augmented by the fisico-mors. In 1591, the administration of the Royal Hospital was placed in the hands of the Jesuits.

Goa has the distinction of having one of the first medical schools in Asia. This was started in 1842, as 'Escola Medico-Cirurgica da Goa'. Even before that as early as on St. Catherine's day – 25th November 1510, the Royal Hospital was founded by Afonso de Albuquerque soon after his conquest of Goa. From small beginning near the chapel of St. Catherine (west of the present Archeological museum in old Goa) it grew in stature. It was the pride of successive viceroys of Goa and rulers of Portugal who bestowed great care on it. It was rapidly acclaimed as one of the best hospitals in the world.

Francois Pyrard de Laval, French seaman, was an inpatient for 3 weeks in 1608 and has left a vivid description: "Viewing it from outside, we could hardly believe it was an hospital; it seemed to us a grand palace, saving the inscriptions above the gate: Hospitale dil Rey Nostro Seignoro. The beds are beautifully shaped and lacquered with red varnish; the sacking is of cotton; the mattresses and coverlets are of silk or cotton, adorned with different patterns, pillows of white calico. Patients were provided with pajamas, cap and slippers, bed-side table on which was a fan, drinking water, a clean towel and hanker-chief, a chamber pot under the bed. Each patient served with a complete fowl and the plates, bowls and dishes were of Chinese porcelain. In the evening they brought us supper at the appointed hour, to each a large fowl roasted with some desert so we were astonished at the good cheer we received. This hospital is, as I believe, the finest in the world, whether for beauty of the building and its appurtenances, the accommodation being in all respects excellent, or for the perfect order, regulation and cleanliness observed, great care taken of the sick, and the supply of all comforts that can be wished for."

However, by mid 17th century the hospital had decayed, with poor treatment of the patients. There was a lack of steady supply of young well trahined doctors. One fisico-mor had to look after more than hundred patients and very often he would not even look at the patients and just pass by their side.

'Hospital Real do Espirito Santo' (Real Hospital of the Holy Spirit), was run by Jesuits. It was here that medical studies began in 1691 with the help of two professors from University of Coimbra, Portugal. In 1801, a three year course called "Aula de Medicina e Cirurgica de Hospital Militar de Goa" (Class of Medical and Surgery of the Military Hospital of Goa) was started, its duration being extended to four years in 1821 by Surgeon-General Lima Leitao. This course continued up to 1840. The title Medicos de Sua Magestade was bestowed on the graduate. Rodrigues Moacho, the founder of Escola in 1842, further reformed the course and also founded a 3 years course in pharmacy. In 1865 the course was extended to cover 5 years. The same medical school was upgraded to the present Goa Medical College in 1963 after liberation.

In the Pre-Portuguese era it was mainly the practitioners of traditional Indian system of Medicine (Ayurveda) called Vaidyas who looked to the ailments of the body and sometimes of the mind as well. These Vaidyas were held in high esteem by the public and were honoured by custom. The diseases treated by these Vaidyas were mostly the common one that came with change of time and weather. The care was mostly in the form of herbs and ointment. However these heaqlers had no knowledge of modern human anatomy or physiology. Most of their skills of medicine were confined to certain number of recipes, which they had received from their ancestors. In addition, they used to prescribe drinking large quantity of water and gave the patients Cange (Made of rice, salt and pepper).

In spite of limited number of these remedies, the results of treatment of these Vaidyas were much better than their counterparts - the most learned foreign physicians. Some of the strange remedies included 400 years old butter that was much prized as Gold. The Vaidyas were well to do and used to move on horseback, palanquins or on andores.

Unani was practiced at a much smaller scale in Goa. The best-known hakim in Goa was an outsider Abu Ali Hussein ben Abdullah ben Sina, earlier personal physician to the emperor Akbar. He later converted to Christianity in 1610.

Thus Goa has a long and prestigious history of not only medical services, but also of medical education. However, the medical services in Goa at the time of liberation were restricted to only primary and secondary health care. For most of the serious medical problems, the patient had to be rushed to neighbouring states or cities like Mumbai. Since liberation the successive governments have strived hard to uplift the stature of Goa Medical College by bestowing upon it generous amount of funds and also by taking keen interest in its functioning.

The government has paid attention to all aspects of healthcare starting with primary healthcare where in many Primary Health Centres have been upgraded to the extent that they have become a source of envy for the visiting experts. Similarly at secondary health care level also the North Goa District hospital has been built as a State of the Art Hospital with all the facilities under one roof, including C.T. scan. South Goa District hospital is taking shape at a rapid pace and will be able to compete with many medical colleges in the country.

There are more than 120 hospitals in Goa with total bed strength of around 4600 beds. Almost half of these are in public sector while the rest are in private sector. Goa can boast of the best doctor patient ratio as well as best patient bed ratio in the country.

*Goa can also boast of some of the best Tertiary care facilities in the public sector in the country. Goa Medical College has got the best possible facilities under one roof. These facilities were non- existent in Goa at the time of liberation. Not only that, all these facilities are available to any patient totally free of cost. Some of the facilities that have been added in last few years are:*
*New 450 bedded medical block with all modern facilities.*

*Yatri Niwas; for the relations of the patients who had to sleep on the floor, will now be able to rest comfortably in well equipped rooms.*

*Ultramodern state of the art pathology laboratory that gives accurate results for practically all kind of tests.*

*Emergency services providing excellent pre-hospital care through EMRI; bringing relief not only to the trauma cases, but also all other kind of medical emergencies.*

*Diabetes detection facilities have been made available for whole of the population of Goa.*

*New super specialties of Pediatric surgery and Urology have been established so that the patients do not have to seek treatment elsewhere.*

*Renal Implants as well as medicines required for its acceptance and longevity are provided free.*

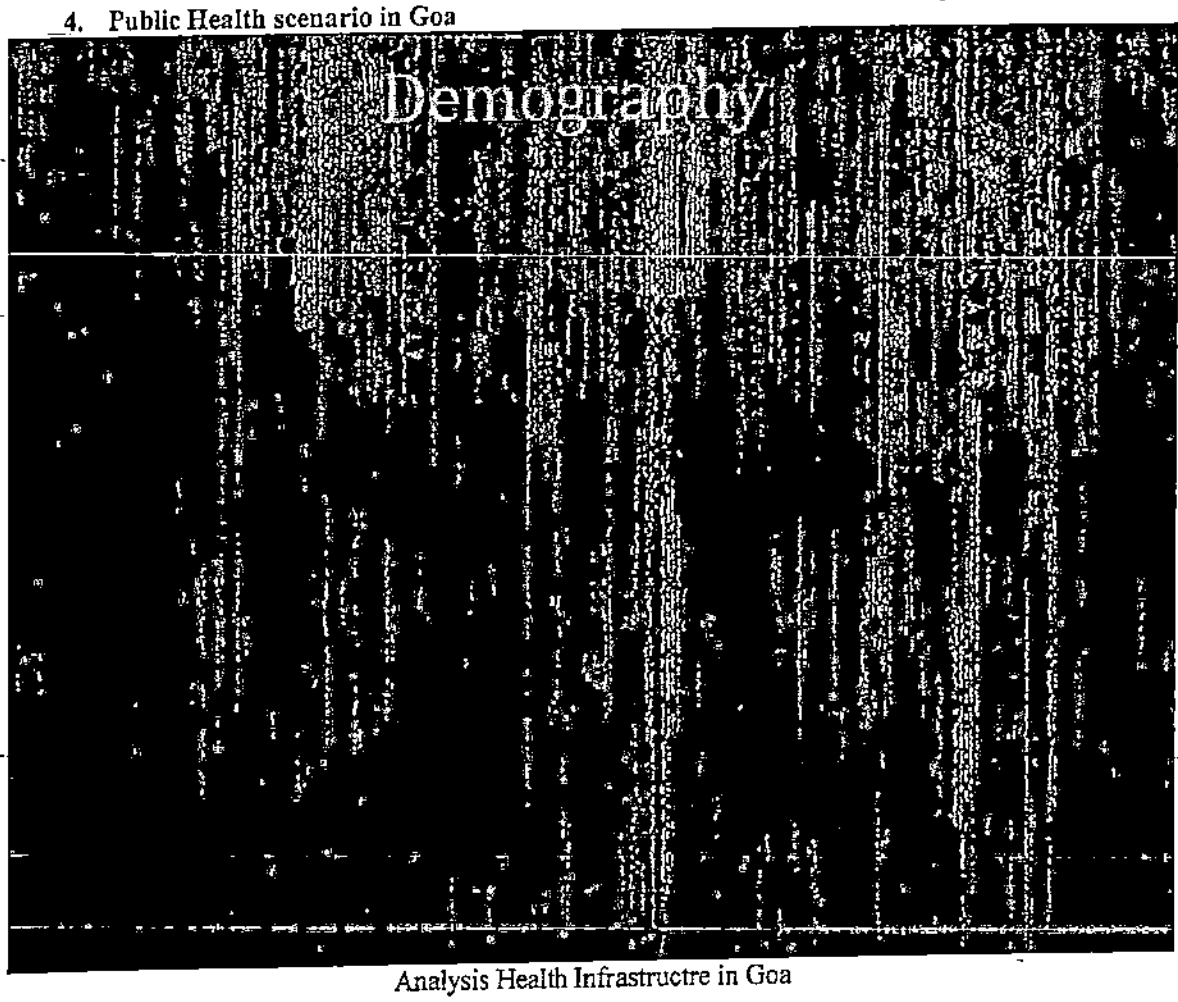
*All anticancer drugs, irrespective of the cost are given free to all the citizens of Goa.*

*All orthopedics implants including joints are provided totally free to needy patients.*

Very soon cardiac care facilities will be available in GMC. A separate super-specialty block is likely to come up at GMCH soon. A state of the art cancer treatment centre is also in the pipeline. Paramedical courses will soon start in Goa thus putting to an end the shortage of these personnel.

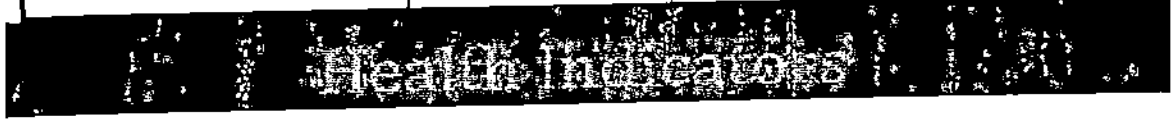
This all is being done to ensure that the people of Goa have access to the best of the healthcare. We have seen the effect of all these developments in the form of best health parameters that Goa has in our country. This has resulted in Goa being adjudged the best state in matters of healthcare for many years in a row.

4. Public Health scenario in Goa




Analysis Health Infrastructre in Goa

| Item | Pre-liberation 1961 | At the time of statehood 1987 | 2011 Census |
|---|---|---|---|
| Population served per bed | 211 | 310 | 269 |
| Population served per hospital | 34814 | 10316 | 8878 |
| Area Served per hospital (sq. kms) | 34.27 | 32.16 | 21.65 |
| Doctor popln. Ratio (2004) | --- | --- | 1:636 |
| Life Expectancy (2004) | --- | --- | Males –68 Females -72 |
| | | | |



| Item | Preliberation 1961 | At the time of statehood 1987 | 2011 | Goals for 2012-13 |
|---|---|---|---|---|
| Birth Rate per thousand popl. | 31.99 | 18.24 | 13.2 | 13.2 |
| Death Rate per 1000 popl. | 13.59 | 6.72 | 6.74 | < 6 |
| IMR per 1000 live births | 69.92 | 24.88 | 10 | 8 |
| Maternal Mortality Rate per lakh live births. | 144 | 48 | <40 | Negligible |
| Total fertility rate | --- | --- | 1.8 | 2.1 |
| Mean Age at marriage for females | | | 25 | |

4.1 Health Structure & Services in Goa

Goa has got one of the most extensive health systems in India. Apart from Goa Medical College, the Directorate of Health Services seeks to provide preventive, promotive, curative & rehabilitative health care services to the people. In the rural areas, services are provided through a network of integrated health family welfare delivery system comprising of Sub-centers, Primary health centers, Community health centers & District hospitals in ascending order

| **Unit** | **Sanctioned** | **Functioning** |
|---|---|---|
| Sub- center | 172+64 | 205 |
| RMDs | 29 | 29 |
| UHC | 4 | 4 |
| PHC without Hospitals | 6 | 6 |
| PHC with Hospitals | 13 | 13 |
| CHC | 5 | 5 |
| Cottage Hospital | 1 | 1 |

| | | |
|---|---|---|
| Other Hospitals | 2 | 2 |
| District Hospital | 2 | 2 |
| Goa Medical College & Hospital | 1 | 1 |

**Health Indicators**

**Current Status of Goa Healthcare**

**Suicide Status**

Suicide rate for the state of Goa: 18.5 per lakh per year (**11th in the country**)
Male to female ratio for suicides = 73: 27 (almost 2.7 times, rate for India—65:35)
Overall highest rate of suicide in 15-29 years age group (33%), followed by 30-44 years age group (31.6%).
Among males, highest rates in the 30-44 years age group (34%) and in females, it was 15-29 years age group (43%). [Trends shifting towards younger population].
Marital status of suicide victims shows majority were married (56.5%).
Majority of suicide victims had not attained higher levels of education. 31% had attained upto primary level and 84.5% upto 10th standard.
Most common means adopted for suicide was hanging (56%) followed by drowning (17%) and poisoning (13%). Among both men and women, most common method adopted was hanging (62.7% and 37.2% respectively) followed by drowning (14% and 25.6% respectively).

## 5. Physical Infrastructure

### 5.1 Hospicio Hospital

**HISTORY OF THE HOSPITAL:**
It is a matter of great pride to mention here that the Hospicio Hospital is a very old hospital founded on 13th December 1867 by late Rev. Fr. Antonio J. De Miranda. It is one of the major Hospitals in South Goa District, a referral centre to all CHC's, PHC's , UHC's in the South District and as such due consideration is given to it by the Goa Government.

**REPORT OF THE FACILITIES AT HOSPICIO HOSPITAL MARGAO**

**ENT**
All Routine operation including Microsurgery of Ear, Nose, Throat

Infrastructure :
Operating Microscopes
Equipments for FESS surgeries

Staff
2 Senior ENT Surgeon
1 Junior ENT Surgeon posts filled

Vacant
1 Junior ENT surgeon
1 Audiologist own speech therapist

**Medicine**
Infrastructures present:
Oxygen cylinder, Central Oxygen Supply for Coronary room, Monitors with defibrillator, Monitors with NIBP, Pulse Oximeter, ECG Machines, Infusion Pumps, Syringe Pumps, Nebulizers.
1 Senior Physician
1 Junior Physician
1 Respiratory chest Physician
6 Medical Officers

Need for ICU setup with ventilator & Staff for ICU.
Need for one more Physicians.

**Anesthesiology**
Anesthesiologists – 5
2 posts of Junior Anaesthetists vacant.

Infrastructure
4 - Anesthesia machinery in working and 2 Anesthesia Machinery with Ventilators not used for giving Anesthesia as there is no vaporizer attached to it.
Pulse oximeter 5 working and OK.

Procedures done:
General Anesthesia
Regional Anesthesia
Local

Needs
2 - Vaporizers for sirofloran

**Paediatric**

Services Provided

For Paediatric inflection

Emergency services round the clock by medical officer on duty and consultants as and when require in addition to routine hours.

In Patient services (30 bedded ward)

OPD Services

Neonatal Intensive Care Unit (NICU) – 3 beds

Preventive Services

Immunization daily

Parenting program monthly

Child Development Clinic weekly

Adolescent Clinic weekly

Staff

2 - Consultant Junior & Senior ( 1 each filled);
Medical Officers posted in Paediatric Department ( 7 Nos)

2 - Post Junior & Senior (vacant 2)

**Forensic**

Conducting Medico Legal Post Mortem & allied work.

1 Medico Legal Officer} – 2 posts
2 Medical officers – 2 posts
3 Morgue Attendants – 2 posts
} All posts filled

**Orthopaedic**

Facility Routine / Emergency Ortho Surgeon

OPD's Ward rounds

2- Sr. Ortho surgeon posts - filled

2 -Junior Ortho Surgeon - Post vacant

3- Physiotheraphist

**Radiology**

Infrastructure

i) Two Fixed X ray machines with CR system 500 mA (FUJI)
300 mA with Image intensifier

ii) Two Portable (Mobile) X-rays machines
(i) 60mA ii) Multimobil 2.5.

Ultrasound Machines

Black & white - Two probes 3.5 AbH
6.5 Transvajinal

ii) Color Doppler - 3 probes
Cardiac
Abd
Small part 10 MHZ

CT Scanner, Single slice spiral CT Somatom Espirit

Facilities Provided

Conventional X rays
Specialized X rays investigation
Barium meal, Swallow, Enema, follow through
Intravenous paleography, urethrogram, Hysterosalpingogram etc.
Ultrasound exam including doppler study.
CT scan of Brain, Chest, Abdomen, Plain & Contrast.

Existing Staff Pattern

Two Senior Radiologist
Two Junior Radiologist posts filled
X ray Technicians 8
Dark Room Assistant – 1 Posts filled
Servants – 1
Staff Nurse – 1

**Ophthalmic**

Equipments
Vision testing Drum, Tonometer, Kerotometer, A Scan, Autorefractometer, Split Lamp
Operating Microscopes.

2) Existing Staff
Senior Ophthalmic Surgeon
Junior Ophthalmic Surgeon posts filled
iii)Ophthalmic assistant.

1 Senior Ophthalmic Surgeon
1 Junior Ophthalmic Surgeon posts vacant

**Surgery**

Infrastructure
34 Male surgery Beds & 22 Orthopaedic Beds = Total 56.
24 Female surgery Beds & 8 Orthopaedic Beds = Total 32.
Surgical OPD's 4 times a week (Mon/Tue/Thur/Fri)
Operation Theatre (Routine) 4 times a week (Mon/Wed/Thur/Sat)
Emergency operation daily as per necessity.

Facilities provided
Surgical OPD/ Orthopaedic OPD - 4 times a week.
Admission for patients requiring treatment – 24 hours.
Operations performed 4 times weekly as per routine operation lists.
Operation performed include all minor procedure and major operation under local / spinal / Epidural and general Anesthesia E.g. Hernia, Hydrocole, Cholecystectomy, Abdominal Surgeries, Appendisectomy, Varicose Veins, Amputations etc
Emergency operation performed daily / as per necessity

Existing Staff
2 – Senior Surgeon - Posts filled

**Gynecology**

Infrastructure

All basic infrastructures.

OPD all days of the Week

Gynaec (Postnatal & Family planning)

Antenatal

High risk Pregnancy OPD

Ward

Antenatal Ward

Postnatal & Postpartum ward

Gynaec Ward

OT

Routine twice a week Tuesday & Friday

Emergency OT round the clock.

Facilities Provided

**Obstetric**

Antenatal care (normal and high risk Pregnancy)

Intranatal care and normal delivery

Postnatal & postpartum care

LSCS – routine and emergency

Obstetric surgical procedure

Emergency Obstetric care

Family planning procedure.

viii) All Gynaec procedure major and minor under local, general or spiral Anaesthesia e.g D & C, Hystrectomy – abdominal and vaginal.

Existing Staff

2- Doctor Senior consultant

2- Doctor Junior consultant

6- Medical officers}

17-Staff Nurses – (Matty/Labour Room / Postnatal)

6- Staff Nurses - Gynaec Posts filled

7-Servants – (Matty/Labour Room / Postnatal

6- Servants - (Gynaec)

Beds

Antenatal – 53

Labour room – 5

Gynaec ward – 15

Requirements:-

Labour Room – 12 to 15 Nurses

Maternity Ward – 22 Nurses

Gynaec Ward – 12 Nurses

Servants – (15 Servant in Maternity & 6 Servants in Gynaec)

**DEPARTMENT OF PSYCHIATRY – HOSPICIO HOSPITAL**

Hospicio Hospital services;

Outpatient clinics on Mondays, Wednesdays, Thursdays and Saturdays.

Daily psychiatric emergencies.

Certification of patients under Mental Health Act brought by police to emergency.
Consultation Liaison services with other specialties.
Child Development Clinic every Tuesday jointly with Paediatric Department.
Conducting monthly parenting workshops jointly with paediatric department.
Certification of mental retardation and psychiatric disabilities under State and Central Schemes.

District Mental Health Programme - Out reach clinics on Tuesdays and Fridays.
Health Centers covered;
PHCs – Balli, Cansaulim, Loutolim, Sanguem, Shiroda.
CHCs – Canacona, Curchorem, Ponda.

National Tobacco Control Programme – Tobacco Cessation Centre at Hospicio Hospital. Counselling services and medical management provided. Screening, counselling & medical assistance is also provided at District Mental Health Programme Clinics.

A 14 bedded Alcohol and Drug De-addiction Center at Monte Hill Margao.

Training programmes for medical and paramedical personnel. Awareness and sensitization programmes for patients and care givers and school programmes.

Infrastructure available at Hospicio Hospital/ South Goa District

Mental Health Professionals
One position of Senior Psychiatrist at Hospicio Hospital only for entire South Goa.
One position of Psychiatrist (specialist) on contractual basis under District Mental Health Programme.
One position of Counsellor on contractual basis under National Tobacco Control Programme.
One Medical Officer in OPD
(Above all posts filled)

STAFF POSITION IN LABORATORY WITH REQUIREMENTS

| Designation | Staff Present |
|---|---|
| Pathologist (also managing blood bank ) | 01 |
| Senior Biochemist | 01 |
| Biochemist | 01 |
| Assistant Biochemist | 01 |
| Technicians-Lab | 07 (Permanent) |
| Technicians- Lab | 01 (deputation ) |
| Clerk | 01 |
| Attendant | 04 |
| Data Entry operator | 00 |
| Microbiologist | 1 |
| Technician for Microbiologist | 00 |
| Attendant for Microbiologist | 00 |

STAFF POSITION IN BLOOD BANK WITH REQUIREMENTS

| Designation | Staff Present |
|---|---|
| Medical Officer | 01 |
| Staff Nurse | 01 |
| Technicians-Lab | 01(Permanent) |
| Technicians- Lab Contract -GSACS | 03 |
| Clerk | 00 |
| Attendant | 01 |
| Data Entry operator | 00 |
| Medical Social worker | 01 (on deputation ) |

| | |
|---|---|
| Counsellor -Contract -GSACS | 01 |

**DIALYSIS SERVICES.**

Free dialysis is provided with the State of Art most advanced dialysis machines. There are altogether 12 machines which can cater to about 60 dialysis a day. More than 100 patients are leading a normal life in the society with this free services which is first of its kind in the Country. It is a miracle that patients have not passed a drop of urine for almost a decade with the help of the State of Art dialysis machine, every alternate day 3 to 5 ltrs of urine is separated from the blood and removed from the body of the patient, otherwise, which is a poison to the patient, leading to death and al consumables, injectables, medicines and expensive hormones viz Erythropoiten are provided absolutely free to the patients who are living for more than a decade have not spent a penny from their pockets for their survival.

With the above achievements, they were planning to forward the profiles of longest living kidney patients at there hospital to the "Guinness Book of World Records". The mortality rate in the dialysis unit is absolutely zero for the last decade and more.

LIST OF STAFF (ESSENTIAL SERVICIES) HOSPICIO HOSPITAL MARGAO

| Sr. Sr .No | Staff | Total Posts | Post Vacant |
|---|---|---|---|
| 1.1.1. 1. | Matron | 1 | 1 |
| 2. | Asst.Matron | 1 | 1 |
| 3. | Ward Sisters | 13 | - |
| 4. | Staff Nurses | 129 | 2 |
| 5. | MPHW(F) | 6 | - |
| 6. | Xray tech | 8 | 2 |
| 7. | Laboratory Technician | 8 | 3 |
| 8. | ECG Tecnhician | 3 | - |
| 9. | Barber | 3 | - |
| 10. | Electrician | 1 | - |
| 11. | Dietician | 1 | - |
| 12. | Biochemist | 1 | - |
| 13. | Asst. Biochem | 1 | - |
| 14. | Blood Bank Technician | 1 | - |
| 15. | Driver | 9 | 2 |
| 16. | Generator Operator | - | 1 |
| 17. | PRO | 4 | - |
| 18. | Plumber | 1 | - |
| 19. | Peon | 7 | 1 |
| 20 | Morgue Attendant | 3 | Nil |
| 21 | Chowkidars | 5 | 1 |
| 22 | Mali | 5 | 2 |
| 23 | Servant/Attendants | 58 | 4 |
| 24 | Sweepers | 7 | 3 |
| 25. | Cooks | 2 | Nil |
| 26. | Asst.Cooks | 3 | Nil |

**HOSPICIO HOSPITAL – MARGAO**

**HOSPITAL ACTIVITIES**

| | | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| 1 | OPD Attendance | 144106 | 156097 | 162033 |
| 2 | Casualty Attendance | 38397 | 39605 | 43484 |
| 3 | Total | 182503 | 195702 | 205517 |
| 4 | Admission | 28891 | 30606 | 32878 |
| 5 | Total Deliveries | 2028 | 2293 | 2591 |
| 6 | Laboratory Investigation | 242551 | 279242 | 315131 |
| 7 | X-rays | 21673 | 22487 | 21571 |
| 8 | Total operation | 4506 | 4800 | 4790 |
| 9 | Death | 433 | 457 | 400 |
| 10 | CT Scan | 2580 | 2710 | 3105 |
| 11 | ECG | 13825 | 14120 | 15910 |
| 12 | Post Mortems | 520 | 479 | 484 |

*CHALLENGES OF THE HOSPITAL:*

*Quality care to all the patients visiting the Hospital, is hampered by the load of patients, shortage of doctors and para-medical staff, limited facilities and equipments, financial and other constraints. Besides, there is a paucity of space due to increased in flow of patients.*

*This difficulty will be solved once we shift to the new spacious District Hospital which is under construction in the next 2-3 years time. In spite of all these constraints, we strive to provide all our users courteous and prompt service within our limited scope.*

*All life saving and essential drugs are made available to the patients by this Hospital.*

***Suggestions for improvement of Hospicio Hospital***

*Beds: To accommodate extra load of patients wherever possible, since no place for extra beds. Mattresses are provided on floor.*

*Medical Facilities:*
*If possible ICU facilities to be started. Place can be earmarked near male medicine Ward.*
*Separate, independent casualty unit with doctors, staff, paramedics and class IV.*

*Personnel:*
*All vacancies to be filled on priority basis.*
*Doctors consultants minimum 4 in each Department.*

*Medical officer-It is ideal to have separate team of Doctor/Nurse/Servant during transport of patients to Goa Medical College (GMC), Medical cover of matches etc. Increase number of medical officers, to make provision of leave reserve.*

*Nurses –post to be filled.*

*Servant- dedicated servants for Radiology, Sweepers – separate dedicated sweepers for each ward.*

*Technician-Laboratory technicians*

*Social workers, psychiatrics assistant.*

*Continuous un interrupted Water supply to improve to the new toilet wing.*

*Improve Bio-medical Waste disposal.*

5.2 Goa Medical College

**HISTORY OF THE HOSPITAL:**
Goa has the distinction of having one of the first medical schools in Asia. This was started in 1842, as 'Escola Medico-Cirurgica da Goa'. The same medical school was upgraded to the present Goa Medical College in 1963 after liberation.

Goa Medical College has 3 important functions.
*Medical teaching of Undergraduate and Post Graduate students.*
*Patient care.*
*Research*
To achieve this Goa Medical College has:

***FACILITIES AT THE HOSPITAL:***
Goa Medical College & Hospital, Bambolim Goa has the facilities in General Medicine, General Surgery, Orthopedic Surgery, Ophthalmology, ENT, Skin & VD, Obstetric & Gynecology, Pediatric and Super – Specialties in Neurosurgery, Neurology and Nephrology. Investigation facilities in Radiology, Microbiology, Pathology and biochemistry are available at the hospital for Cancer patients facilities in Radiotherapy are also available. There is a Department of Anesthesiology backing up the surgical specialties. There are 12 Routine operation theaters and 6 Emergency Operation theatres. Department of TB & CD is functioning at St.Inez Panaji Goa.

***SERVICES:***
The above facilities are backed up by the following services:
A/C plants,33K V sub station, Generator, Boilers, Water tank, Fire fighting and Detection system, Sewage treatment plant, Incinerator, Laundry unit, central sterile department, Pharmacy, Lifts, Kitchen , Manifold room for oxygen & Compressed Air.

***EQUIPMENTS:***
The Hospital is equipped with all basic as well as Hi-tech equipments. The Radiology department is equipped with 6 slice CT Scan and 1.5 Tesla MRI, besides color Doppler, Ultra Sound and X- ray Machines. The Department of Medicine has a stress test and ECHO Machine Auto Analyzer are available in the Biochemical Laboratory. Also the facilities for ECG and EMG are available.

***PHYSICAL ACHIEVEMENT OF THE DEPARTMENT:***
Goa Medical College has increased Under graduate seats from 100 to 150. MD Skin and Forensic Medicine have been recognized by MCI. Also there has been overall increase in the work load at Goa Medical College.
Statistic for the year 2011 are as follows:

| | |
|---|---|
| OUTPATIENTS | 517180 |
| DAILY AVERAGE OF OPD | 1416.9 |
| INDOOR PATIENTS | 55960 |
| DAILY AVERAGE OF IN PATIENTS | 153.32 |
| NO. OF DELIVERIES | 5766 |
| NO. OF DISCHARGES | 52929 |
| TOTAL N.O. OF DEATHS | 2601 |

The Total no. of OPD Attendance for the period from April 2010 to March 2011 is as follows:
The no. of OPD Attendance

| | | |
|---|---|---|
| New cases: 268740 | Old Cases: 202001 | Total Cases: 470741 |

The no. of operations:

| | | |
|---|---|---|
| Major: 7869 | Minor: 769 | Emergency: 7657....Total:16295 |

*FINANCIAL ASPECTS OF PLAN AND NON-PLAN SCHEMES:*

(Rupees in lakhs)

| | | 2011-2012 | | | | | |
|---|---|---|---|---|---|---|---|
| | | Plan | | | Non-Plan | | |
| Major Head | Name of the Scheme | B.E. | R.E. | Actual Exp. | B.E. | R.E. | Actual Exp. |
| 2210- | Medical & Public Health | 3485.00 | 4262.00 | 3430.00 | 12500.00 | 12500.00 | 12077.00 |
| 4210- | Capital Outlay on Medical and Public Health | 1015.00 | 2315.00 | 1600.00 | 0.00 | 0.00 | 0.00 |
| | Total | 4500.00 | 6577.00 | 5030.00 | 12500.00 | 12500.00 | 12077.00 |
| | Grand Total | 4500.00 | 6577.00 | 5030.00 | 12500.00 | 12500.00 | 12077.00 |

In addition to above following are the highlights of achievements of Goa Medical College

**Achievements of Goa Medical College**

**1. Patient Welfare Measures:**

A large number of new facilities have been created keeping in mind the convenience to the patients and their attendants. These include:

**Orthopedics implants** at an annual cost of around Rs 2 crores are provided to all the patients free of cost by the government. This also includes knee and hip joints that may cost up to Rs. 70,000.

Free **anticancer medicines** are provided to all the patients irrespective of their financial status. Some of these drugs cost Rs. 100,000 per injection.

A new scheme to **detect diabetes** early has been initiated in Goa. Under this whole of the population will be screened so as to detect diabetes at an early stage with an aim to prevent complications of diabetes. This is also a totally free scheme and those requiring insulin, will be given the same free of cost.

**Renal Transplant** has been recently started, not only it is done free even extremely expensive medicines are also provided free.

MRI and other radiological scan and services done free

A very ambitious scheme of **new born screening for metabolic disorders** has been started for the first time in the country. The aim is to detect inborn metabolic disorders at an early stage to prevent mortality and morbidity amongst new born. This is also done free for all the deliveries that are conducted in government hospitals.

**The paitents have to get himself registered only after that everything is free whether he is rich or poor. Many people from neighbouring state are availing these services at GMC.This kind of facility is not available even in Delhi.**

**Some of these services are not free even in All India Insitute of Medical Sciences**

**Public Relation Officers** guide the patients and their attendants about various facilities available in GMC and will also help them in locating their near and dear ones in the hospital.

For the first time **Patient attendants** will be taking care of the patients' all needs in the wards.

**Sweeping and Swabbing** has been outsourced to a very efficient organization so as to provide clean and hygienic atmosphere in the hospital.

All the blood tests and other sophisticated investigations are carried out in a state of the art **centralized laboratory** that caters to the needs of not only GMC but the whole of the state. This is done by a special arrangement with a company they have supplied the equipment free of cost and we will only buy the reagents from them.

All the admitted patients in GMC are provided free medicines to the extent possible. They are in the process of further strengthening this procedure with an aim that no admitted patient has to buy any medicines or appliances.

Upgradation of Critical care areas including Casualty, ICU and Emergency OT's is almost complete.

Paying wards have been totally revamped and upgraded.

2. **Student Welfare:**

GMC being a teaching hospital with under as well as post-graduate students various student welfare measures have been adopted in last year:

Fifty computers with broad-band connection for browsing internet are available in the library complex both for the students as well as consultants. This has been done with an aim to provide means to update their knowledge.

Extensive renovation of boys and girls hostels has been carried out.

3. **Staff Welfare Measures**:

Various staff welfare measures have been adopted in last three years with an aim to provide conducive working conditions. Some of these are:

Regular CMEs are conducted in GMC so as to give an opportunity to the staff to update their knowledge. These are in the form of lectures, bedside demos as well as operative workshops. Eminent medical personnel are invited for the CMEs and government bears all the expenses. These are accredited by Goa Medical Council.

The faculty is encouraged to attend conferences, workshops and seminars etc. in India as well as abroad so as to update their knowledge.

Additional staff is being recruited on an ongoing basis so as to reduce the workload.
Nurses are provided with enhanced uniform and washing allowance.

*CHALLENGES OF THE HOSPITAL:*
***Following facilities are not availabe at Goa Medical college***

*1.Cardiology and Cardiothoracic Surgery.*
*2:Advanced Cancer treatment e.g. Radiotherapy with linear accelerator or Brachytherapy, though cobalt unit is unavailable.*
*3.Gamma knife Radio surgery*
*4.Epilepsy surgery*
*5.Deep Brain Stimulation*
*6.Hair Transplant*
*7. Liver Transplant*
*8. Corneal Transplant*
*9.Dedicated Geriatric medicine ward*
*10. Bone Tumor Surgery*
*11. Digital substraction Angiography*
*12. Palliative Care and pain clinic*

The Goa Govt has just announced that they are going to start Cardiology and Cardiothoracic Surgery facility in GMC,

**5.3 ASILO Hospital (North Goa Dist Hospital popularly known as Asilo)**
Foundation Stone for old Asilo hospital was laid on 16th April 1923. Formally inaugurated on 27October 1945. Initially run on donations, lotteries and voluntary services rendered by private doctors during Portuguese regime, it was then taken over by Govt. Of Goa, Daman & Diu (Union Territory) in 1975. On 21st Nov. 2004 Foundation stone was laid for the new District Hospital Mapusa (ASILO Hospital) where it is presently housed and has been functioning from October 2011.

The hospital is functioning as one of the District level hospitals (NORTH GOA DISTRICT) other being Hospicio Hospital in Margao (SOUTH GOA DISTRICT) with Goa Medical College as Tertiary Centre.
This is a state of art hospital at District level
Services Rendered at Asilo Hospital
(a)Ground Floor:
(b) Casualty/ Emergency dept., Out Patient Departments of Medicine , Surgery , Obs./ Gynaecology, Orthopaedics, Paediatrics, Ophthalmology , ENT, Dermatology, Dentistry, Psychiatry, Pathology including Blood storage facility, Radiology , Pharmacy Operation Theatres (1 ) Diabetic Foot clinic, Plaster Room, Dressing room & Administrative office.
(c) First floor: Operation Theatres (4 Nos), Labour room, Antenatal Ward, NICU.
(d)Second Floor: Inpatient wards: Medicine-Male/Female, Surgery- Male/female, Paediatric-1, and Postnatal.
(e)Separate Wing-Mortuary.
(f)Staff Position: Sanctioned: 514, In Place: 440 (Some staff is also deployed in PHC/CHC as and when required)
(g)Contract Staff: 15
(h) People treated/investigated in last 3 years: 4.5 Laths (apron.)
(i)Population being served: 7 lakhs approx from Goa and south of Maharashtra
8) PHC --6 CHC-2

Some of the challenges faced by Asilo or North Goa District Hospital are same as South Goa Hospital At Mapusa except space as it is a new planned hospital.Major constraint is manpower as on date 74 positions are vacant.

Software develoed for the hospital has not been opretationalised.

Blood Bank has to become functional. Some of the facilities have to shift from old facility likewise some new essential facilities are to be provided.

## 6. Medical Care – Public & Private

The health of a society is directly related to the provision of systems of helath care that are approvpriate and sensititive to the needs of people. We know that good health care must available, accessible, affordable and acceptable. Despite the popularity of this catchy aphorism, one would be hard pressed to find a system that actually fits the bill. In Goa the health scenario appears more salburious than most states of India, However it is clearlty evident that there are many gaps that need to be filled and situations that require unique approaches in the search for solutions.

In the present day, the health agencies that provide health Care in Goa include Government institutions such as the Goa Medical College Hospital, the Directorate of Health Services and its network of health centres and private organisations, hospitals or doctors. *The major problem facing health care at present is the equitable distribtution of these facilities between urban and rural areas. It is a fact that majority of doctors and health care facility remain concentrated in urban areas. The main stumbling block is the apprehension among doctors that practive in rural areas tends to cut one off from the mainstream both financially and professionaly. Thus there is a need to build rural health care and foucs more on preventive medicine, as lifestyle and infectious diseases become more prevalent.*

### 6.1 Public health

*One of the significant concerns in medical practive is the area of public health care. More than sixty years ago the Bhore Committee report and Alma Ata declaration asserted that no person should be denied good quality of health care because of his financial status. This therefore calls for strengthening of the public health care system. This system promoted by the state has at one level remained underdeveloped, particularly in the regions where the awareness of the healthcare is at the lowest.*

*The limited state resources are maximally used in urban areas where there is alternative private sector hospitals and clicnics. The greatest malady plaguing the public health care system at present is the unethical nexus between it and profit oriented private practice. Inspite of drawing no practising allowance, clinicians and surgeons attached to public hospitals indulge in massive private practive at their places of residence or in clinics, ofter registered in the name of their spouses or family members. Most of them avoid residing on the campuses of the hospitals wehre accomodation is provided.*
*In fact, there are large number of doctors who redirect patients from the public hospitals to their private clinics with the promise of superiour and more expeditious services. In a reverset yet equally dishonourable trend, private patients are referred to the public hospital for laboratory or radiological investigations so that these can be done at subsidised rates. The obvious result of this unethical practice is that the general and genuinely poor patients in public hospitals are treated with little or no concern.*

### 6.2 Public Spending on health in Goa

*India's public spending on health as a proportion of GDP is among the lowest in the world. While Sri Lanka spends 1.8 per cent of GDP, figures in China and Thailand are 2.3 per cent and 3.3 per cent, respectively. The corresponding figure for the US is in excess of 7 per cent while European nations like the UK, Spain, Germany, Italy spend 6.5-8 per cent of their GDP on healthcare.*
*While public spending on health in India may not appear to be so low per se compared with other emerging economies, economists point out that the differences become stark once a more revealing indicator such as per capita government spending on health is taken into account. While the India spends $43 per head, counterparts in Sri Lanka invest $87, China spends $155 and Thailand over six times at $261.*

Goa government allocates about 1.5% of its GDP on Healthcare services, though hightest as compared to big states of India. Goa allocates about 5.5% of its annual budget to healthcare. In 2012 allocation of Rs. 198 Crores to DHS and Goa Medical College 120 crores and 18 crores was allocated to Indian Institute of Pshychiatry and Human Behavior.

The contribution of health spending to national income in India that is around 6% of GDP is amongst the highest levels estimated for developing countries. This includes both private and public spending on preventive or curative care or for family planning and welfare. The expenditure on Public Health comprise of expenditures on various national health program and medical education, training and research. The latter expenditures are focussed on Goa Medical College and affiliated colleges such as the Goa Pharmacy and Goa Dental College.

The health status of the population in Goa as evinced by social indicators such as above average literacy rates and low birth and death rates is excellent. However we must treat with caution any attempt to correlate health states of height leavels (appx 11%) of state domestic products on health expenditure. Socio economic development is the crucial factor that determines health status as well as the level of spending and unless we account for this it would be wrong to conclude that public spending on health has a direct positive impact on health status. It is disheartening that public spending on health has been declining.

The major component of health expenditures has been salaries, which crowds out expenditure on materials and supplies. This can be constraint on the effectiveness of the public health system in Goa. A major challenge will therefore be to reverse the burgeoning salary expenses and to initiate user charges for public medical care in a graded manner that ensures that affording patients pay a reasonable sum for the services provided.

There are in all 1162 beds in the hospitals under the Directorate of which 352 beds are attached to CHCs / PHCs.

**6.3 Private Health Care**

A substantial financial burden is borne by households for meeting health care needs privately. This is probably because of relative inaccessibility of government resources due to distance, non availability on holidays or after office hours, long queues in government hospitals, crowded in-patient wards and the widely prevalent impression that "Government Services" are inferior in quality.
The private sector is large and an important constituent in Goa's health care system. It has expanded greatly in the last two decades. The private health care consists of both the "not for profit" and "for profit" agencies. The Not for Profit health sector, which is diminutive by comparison, includes various health services provided by non government organisation, charitable institutions, missions and trusts.

Various types of medical practitioners and institutions provide health care in the for profit health sector. These practitioners range from General practitioners to super specialists, nurses and paramedics, licentiates, registered Rural Medical practitioners and physicians of alternative system of medicine. There is an informal sector that consists of practitioners not having any formal qualification like faith healers, bhagats, hakims, vaidyas and priests who also provide health care.

The hospitals and nursing homes in Goa have a bed strength ranging from 10 to 110 beds. Most of the hospitals provide maternity, general surgery, internal medicine, orthopaedics, ophthalmology, otorhinolaryngology and paediatric services.

*The bulk of population, rich and poor alike utilize the private health facilities. There are several shortcomings in this sector. The charges in Private hospitals and clinics are not standardised across Goa and most health facilities do not display the tariff for consultation, rooms etc.*

*Specialist fees are usually not fixed and can vary depending upon the case and the severity. Staffing pattern and qualifications of personnel don not always conform to standards prescribed by Medical Council of India.*

*Almost all the private hospitals lack proper ICU, blood banks, ambulances or life saving equipments like respirators. There are other ills associated with private health care such as high drug prescription, unregulated practise by quacks and a lack of integration between different systems of Medicine.*

**There are two hospitals in Goa whose track record in term of number of deaths are alarming and needs to be thoroughly investigated. At the top of chart is Grace Cardiac Hospital which is a 25 bedded Hospital. Between 2005 to 2012, 1052 deaths have been reported. It is running a dialysis unit headed by Dr Sunil Bode who has no degree in nephrology. The other is hospital is Victor Apollo Hospital. Between 2004-2012 nearly 1084 death have been reported.**

This figure has been obtained from Goa Govt Deptt of Planning, Statics and Evaluation.

### 6.4 Lacunae in the Current health care system

*Despite having very impressive health indicators, many super specialities are unavailable in Goa due to lack of infrastructure. About 200 patients are referred every month to Mumbai, Bangalore, Manipal and Belgaum for want of diagnostic and therapeutic facilities in the areas of super speciality especially cardiothoracic surgery and oncology. In the face of financial crunch, the government pleads helplessness in developing these services. Financial restriction naturally compromise quality and adequacy of manpower, materials, machines and infrastructure. The Private Sector too is unwilling to invest heavily in an area where the returns on investment are not assured. A state of the art facility which is available at value for money terms can fail miserably when it is prices at a level that is out of reach of the majority of the populace.*

### 6.5 Legislations and health care

*If there is one outstanding feature of health care facilities in Goa, or for that matter in many parts of India, it is the dismal lack of legislation and regulations. The vast majority of hospitals in private sector work on a for profit basis. Yet even today, there are no standards to define and differentiate between a hospital, a maternity home and a nursing home. A survey of private health facilities in Goa revealed an appalling state of affairs, 39% of hospitals were run by totally unqualified person.*

## 7. The Pharmaceutical Industry in Goa

### History of Pharmacy in Goa

The initiation of modern medical in Portuguese-Goa took place when a hospital bun by the Jesuits at Old Goa opened in the year 1512. With the evolution of Pharmacy in Europe coupled with the latest improvements at the time, the Portuguese introduced the system of pharmacy in Goad in the middle of 19th century. In 1842, the Portuguese founded an institution for medical education, the Escola Medico de Goa, producing qualified Physicians, Surgeons & Pharmacists. The Pharmacists, who graduated from this institution, now holding the certificate of "FARMACEUTICO", could either work in hospitals, or open their own private pharmacies for assistance and benefit to the public. A pharmacy was not allowed to function without a pharmacist.

In the Portuguese days there was a law restricting the number of pharmacies in order to avoid unhealthy competition. There was law specifying timings and compulsory day and night service by rotation. The legislation relating to pharmacies in Goa was clear in content and rigorous in its implementation. The Pharmacy Council of India Conference was held in Goa in 1962. The delegates were really impressed with the set up in Goa.

### The Present Scenario

After Goa attained liberation in 1961 and became a part of India, the Indian government extended Drugs and Cosmetics Act to Goa too. Soon the licensing of pharmacies was liberalised and many drug stores began to flood this tiny state. Today, there are more than 400 retails shops. Goa has been strict at giving chemist shop licenses, it doesn't give license to anyone without qualified pharmacist. Compared to other states, in Goa the number of pharmacies in proportion to the populations and area is much less.

In keeping with the national trend, in Goa too the standards maintained by the pharmacists have reduced considerably over the years. A large part of success of medical practice can be attributed to the significant contribution of professionals in pharmaceutical industry. Over a last couple of decades a close nexus between the profits oriented pharmaceutical industries and doctors has developed, resulting in unethical practice and the exploitation of patients in various ways. It is common knowledge that the sales representatives of pharma companies not only aggressively sell their products, but also entice the doctors with gifts and even shared profits for prescribing specific drugs. Various drug companies sponsor doctors' conference trips abroad, children's education and provide other benefits.

### Rationale Drug Policy for Goa

A rationale Drug policy and its proper implementation will certainely changes lives of people of Goa. We in India have been swept off our feet by the overwhelming presence and pernicious marketing influences of pharmaceutical companies. In a country where most peple cant afford a square meal everday, drugs and combinations which have high costs, are available in irrational, sometimes uselfess formulations of doubtful efficacy.

What would Rational Drug Therapy include?

a. Restricting the use to limited number of Essential Drugs, chosen through scientific means, by experts in the field (consisting of physicians and pharmacists).
b. Treatment guidelines
c. The procurement and stocking of drugs in public hospitals should be based on entirely on the Esssentials Drug List.
d. Educating Health Care Professional
e. Educating the Public

Advantage of Rationale Drug Policy

1. Better availability of esssential drugs
2. Cheaper, yet good quality durgs are availabe at prices afoordable to the patients.
3. Patients are prescribed only the required drugs and are spared of irrational, toxic, unnecessary drugs.
4. Existing resources (smaller budgets) is enough for more number of good quality drugs so that they are freely available.

*Major Concerns:*

Based on my visit and interaction with variety of people associated with major health concerns facing the Goan community are as follows. We may also consier the key strategies which are needed to tacke these

- The high school drop out rates in the state, despite the low incidence of absolute poverty and child labor, demand attention. A comprehensive state level program to study reasons and develop interventions for children leaving schools is necessary. The teachers must be trained to tackle this situation.
- Road traffic accidents are poosibly the single most important cause of death and disability amongst young people in Goa. Srict enforcement of road traffic rules, building and maintaining pedestrian amenities and roads and education of the community need to be adoped on a war footing.
- Poor quality of public health care in hospitals: the quality of care, including ethical practices, in public hospital is very variable. Greater quality control will require less interference by politicians and greater trasnparency and accountability of doctors and administrators. Autonomy and professional managment of public health service may provide an answer for the current crises in public health service,

- Poor quality of private health care: Private nursing homes are operating with little monitoring of quality or ethical standards. A set of regulations governing the operation governing the operation of nursing homes and tight monitoring and enforcement of these regulations is needed.
- Irrational use of medications: the prescribing of excessive and unnecessary medicines can be countered by education of doctors, pharamcists and patients. Greater Control and restriction on production of unnessary pharmaceutical preparations is needed.

- Health impact of unplanned economic development: the chaotic deevelopment of urban, coastal and mining areas in Goa are leading to the rise of number of health problems as a results of enviornment degradation. Keeping a clear health perspective is in essential component of all economic development activites.

## 8. Report of Health Services for the Year 2011-12

Goa has one of the most extensive health systems in India. The Directorate of Health Services has an important role to perform in the Administration as far as health system & services are concerned. The Directorate of Health Services primarily seeks to provide preventive, promotive, curative and rehabilitative health services to the people through primary health care approach which has been accepted as one of the main instruments of action for development of human resources, accelerating the socio-economic development and attaining improved quality of life. Primary health care is essential health care for all citizens, easily accessible and at a cost which the citizens and community can afford. In the rural areas services are provided through a network of integrated health and family welfare delivery system.

### 8.1 The primary health care infrastructure has been developed as a three tier system.

**Sub- Centres**
Sub-Centre 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 a Peon/Attendant.

**Primary Health Centres**
Primary Health Centre is manned by a Medical Officer supported by para-medical and other staff. Some of the PHCs (13 in number) have attached hospitals ranging with 12 to 30 beds and are headed by a Health Officer.
The PHCs act as referral units for the sub-centres and provide preventive, promotive, curative and family welfare services.

**Community Health Centres**
The Community Health Centres (5 in number) are headed by a Health Officer generally with four specialist doctors and a minimum of 30 beds. It serves as a referral centre for PHCs. In addition, there are Rural Medical Dispensaries (RMDs 29 in number) in remote and inaccessible areas manned by a R.M.O. and a Pharmacist where regular OPDs are conducted. The Directorate of Health Services with its network of 5 CHCs, 20 PHCs (13 with attached hospitals), 305 Sub-Centres, 29 R.M.Ds, and one Medical Dispensary, provides basic health care services to the people of Goa particularly to those living in rural areas.

The two District Hospitals viz. Hospicio Hospital, Margao in South Goa District and Asilo Hospital, Mapusa in North Goa District, and three other specialized/general hospitals viz. Leprosy Hospital, Macazana; T.B. Hospital, Margao; Cottage Hospital, Chicalim; under the Directorate also serve as Referral Hospitals.

There are in all 1356 beds in the hospitals under the Directorate of which 424 beds are attached to CHCs / PHCs. There are 18 Dental clinics and other special clinics for implementation of various programmes such as Family Welfare, T.B., NCD, STD Malaria, Leprosy, Control of Blindness, etc.
There are 13 Homeopathic Dispensaries 11 Ayurvedic Dispensaries There are 4 Urban Health Centres in the four major towns viz. Panaji, Margao, Vasco and Mapusa and one Medical Dispensary at Sada, Vasco and a STD Clinic at Baina, Vasco.

### 8.2 National Vector Borne Diseases Control Programme

The National Vector Borne Diseases Control Programme functions as per the guidelines laid down by the NVBDCP, Govt. of India to prevent and control diseases like Malaria, Filaria, Dengue, Chikungunya & Japanese Encephalitis in order to detect early and treat promptly. Measures undertaken are:
Surveillance measures including active and passive. Rapid Diagnostic Kits are introduced at all centres.
Vector control measures comprising of both Anti-Larval and anti-adult. Ultra low volume fogging is introduced in addition to thermal fogging.
Bio-environmental control measures comprising of fish introduction for anti larval, Bti.
Source reduction by simple physical manoevres and cleanliness drives.
Promotion of personal protection methods namely use of insecticides treated bednets.

Behaviour Change Communication strategies to create mass awareness.

**Functions and duties carried out by the Department:**

National Vector Borne Disease Control Programme – Govt. of Goa has a well setup action plan to prevent and control the spread of Vector Borne Diseases, which is carried out regularly throughout the year:

Surveillance and case management:

1) Early Detection and Complete Treatment wherein Active/Passive surveillance is undertaken by testing blood for malarial parasite so also Rapid Diagnostic Testing is extended to all the health centres. This reduces the parasite in the population. Treatment for malaria is available at all the peripheral health centers and incase of complications cases are referred either to District Hospitals or Goa Medical College.

2) Public Health Act Measures:
It is mandatory for every labourer to have the health card after getting screened for malaria. This card has to be renewed every three months.

Integrated Vector Control measures
Anti larval measures both chemical and bio-environmental comprising of spraying of Abete / Temephos, Malaria Larvicidal Oil , Bti & introduction of fish in stagnant water.
Anti adult measures comprising of fogging with pyrethrum, Ulta Low Volume fogging (Aqua Fog) in the areas where malaria cases/ deaths are reported.

Use of Long Lasting Insecticide treated bednets is promoted at the construction sites for labourers, to stop the transmission to population around. It is also given to pregnant women in BPL and JSY beneficiaries.

Cleanliness drives are carried out at Village, Panchayat, SubCentre level with involvement of Village Health & Sanitation Committees, local bodies such as Panchayat, Municipality, MLA's, Sarpanchas, Panch Members, NGO's, Consumer Forum Members, etc. This has helped in taking care of mosquito breeding sites and in turn bringing down the incidence of Vector Borne Diseases.

Epidemic Preparedness and Rapid Response

Rapid response teams are setup at each districts consisting of Epidemiologist, Entomologist, Health Officers, Physician. Labs are well equipped to carry out emergency slides testing and reporting. Sentinel Site Hospitals are also well equipped for ELIZA testing of Dengue.

Supportive intervention:
Information Education Communication (IEC)/ Behaviour Change Communication (BCC): Massive Awareness Campaigns are conducted through mass media channels in various forms to bring about a behavior change.
Monitoring and Evaluation:
Regular monitoring by state every month.
Weekly level monitoring at State level.
Evaluation of BCC, MDA programme, Parasite surveys, Vector surveys to be done once a year by an independent team from Goa Medical College.
State task force meetings.
Core committee meetings and site inspections to problematic areas.
Review of complicated case management and death audits.
Block level meetings under deputy collectors.
District level meetings under district collectors.
All the epidemiological report is regularly reported to NVBDCP-GOI.
Operational Research
Is carried out in collaboration with NIMR & Goa Medical College to design strategies for control & prevention of Vector Borne Diseases.

Quality Assurance
Slides cross checked at the state level.
Slides referred to Regional Health & FW centre, Pune as per the guidelines for cross-checking.

**Acts and Rules implemented by the Department:**
Legislative measures at construction sites are carried out as per the provisions of the Goa Public Health Act 1985 and Rules 1987.

Penalty for offence under section 75A.
Under sec. 75 AA
A fine of Rs. 1000/- per person each time and if the offence is continuing one a daily fine of Rs. 50/- during the period of continuation of the offence.
Act of contravention of the provision of section 75A continuing beyond a period of 7 days from the date of imposition of daily fine @ Rs. 50/- per day under sub-section (1) local health authority can request to suspend / cancel the construction license issued to the contractor till such time the contractor continues and the concern local authority shall act accordingly.
Under section 76A Builder to take anti-larval measures.
Under section 76 B Levy of fees for anti-larval measures at construction sites.

**8.3 Review of Healthcare status**

**8.3.1 Women and Health**

*As with other indicators of health reflected both in the unique civil code of Goa which gurantees equal tratment for boys and girls in inhertance issue, but also in low fertility rates. Reassuringly only 11% of women with no children express a preference for child to be male. The sex ratio, one of the basic demographic characteristics which is a mirror of gender discrimination in India, was was glorious prior to libration 1066 out of 1000 from that to 920 out 0f 1000 as per 2011 census is atrocious. However the balace is heavily still in favour of men which may, in part, be attributd to the emigration of men in search of jobs to other parts of the the country and overseas.*

Life expectancy at birth for women is comparatively high against national average. Around 90% of all births take place in medically supervised situations. Maternal mortality rates in Goa are negligible. Fertility is now at replacement level, women are marrying in their 20s and having their first child in the mid 20s. These are remarkable indicators which approach the standards for women's health in highly developed societies.

On the other hand the sex ratio in Goa parallels that for the rest of the country with an excess of men (Kerala being the only exception), literacy in women is still 15% less than men, girls are much likely than bory to drop out of school, and issues such as domestic violence are increasingly being higlighted as markers of persisting gender inequality. Current models of development may serve to reinforce the biases against by devaluing the significance of women's work, particularly their invisible contribution to child care and house work.

Violence in families, most commonaly directed at women and children, remains another rarely reported prevailing attitudes towards women. A recent report by the state commission for women showed that Goa ranked 11th in India in the proportion of reported offences against women. The reported are, by most account only the tip of the iceberg.

The tragedy is that there are few facilities for women to escape from such men, and even fewer facilities to help men who are abusive return to some form of decency in their lives. Negative practices relating to women continue to be practised. For example, in many households, after delivery the mother is not allowed to touch anything for 12 or more days because she is unclean.

*There are other factors like hight incidence of abortions, 30% of babies being born low birth weight, 40% rates of anaemia in women are all indicative that there is still tremendous scope for imporvement in the*

*state of women's health. According to the national health survey Goa, 98-99, female sterlization is the most popular family planning method, male sterlization is less than 1 percent.*

As in many parts of India, many parents and their next of kin desire male offspring and despite the high literacy rate among women in Goa, women are often blamed for giving birth to girls. A recent study of depression in mothers based in a district hospital in Goa has shown the powerful role of boy preference as a determinant of depression in the post- natal period.

Special incentive should be provided for girl child in every respect of life as well as a well planned IEC highlighting the advantages of having a girl child.

**Family Planning – Goa's Achievement**

| 2011-2012 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| Vasectomy | 68 | 55 | 81% |
| Tubectomy | 4150 | 4081 | 98% |
| IUD | 2515 | 2426 | 96% |
| CC Users | 8840 | 11431 | 129% |
| OP Users | 3295 | 3724 | 113% |

*Rural women: for many Goans in Rural areas, the girl child is a working girl. They are engaged in caring for younger siblings, cooking and cleaning, fetching fodder, fuel and water. As they grow older, girls are involved in sowing, transplanting, weeding and harvesting. In the area of Canacona, young girls are prone to die of a strange virus in November/December each year, which for want of a name has been dubbed „Monkey" disease.*

***Women in Unorganised Sector** —The unorganised sector includes domestic help, scrap collection, begging, rag-picking, construction, agriculture and fish work. The key factor in all these occupations is the hazards the workes face and lack of safeguards. Fish processing workers, for instance, develoop numb and sore fingers in the absence of gloves and proper medical facilities. Domestic workers are migrants and poorer Goans who, beside other negative factors of their work, are alos bulnerable to sexual assault.*

***Commercial Sex Workers:** The poor health status of commercial sex workers (CSW) speciall their vulnerbility to sexually transmitted diseases, is well documented. Most of the CSWs in Goa are young women/girls are brought from other states and therefore considered outsiders by the locals and government.*

### 8.3.2 Child Health

The well being of children is of priority in the state of Goa. The history of child health in goa is a chronicle of achievements as well as some caution, as the state is in the core of a demographic change that can not be ignored. Goa has achieved health for all status well before the 2000 deadline.

*Goa has has a long history of comprehensive records of births. Compulsory registration of births was initiatited in 1914, in the territory of Goa, Daman and Due with publication of the Civil Registry Code. Prior to this, the local administraive bodies in the respective villages collected information. Under the code, every newborn had to be registered within 30 days of birth.*

**Mortality**

There has been a general decrease in the infant and under five mortality rates with a marked decrease in deaths due to vaccine preventable diseases, malnutrition and gastroenteritis. The IMR in Goa is now around 10/1000 live births and the goal is to bring it to8 during 2012-13 much lower than national average of 74. *However 1 in 13 children still die before reaching first birthday. Respiratory infections are the major killer of chidren after netonatal period.*
The poorest level of coverage of full immunisation is more than 85% and another 10% are partially covered. Thge state of Goa has received almost 100% of immmunisation for children.

**Developmental & Mental Health Problems in Children**

It is heartening to note the rapid improvements that have been made in the control of infectious diseases and reduction of childhood mortality in Goa. There are no statistics for the prevalence of behavior problems in children in the community or schools. This field is s specialised branch of medicine by itself. The Child Guidance Clinic at the Institue of Psychiatry and Human Behavior and the Sangath Centre for Child Developmental & Family Guidance are the 2 major institutions providing care in the area of childhood developmental, behavioral and emotional problems. Most of the children that attend the CGC at the IPHB have mental retardation and behavior problems.

**Childrens with Special Needs**

The state of Goa has an Assistant Director (Handicapped) in tis directorate of Social Welfare who works on a full time basis to look into the girevances of the disabled and offer them guidance on the welfare schemes being implemented by the government. The Directorate of Scoial Welfare has also completed the survey of all disabled person in the state. The survey suggests that just under 1% of persons in goa are suffering from some type of disability. Currently not more than 3% disabled chidren are in school. This percentage should be raised to 10%. There is urgent need to set up a some Schools for Children with learning disability as well as to subsidise Trusts or other NGO.s working in this area.

**8.3.3 Specific diseases common in vulneralbe groups**

**Malaria**

Malaria has emerged as major public health problem in recent times in Goa. Once rampant along the eastern hilly tract, malaria was almost eradicated in the 1960s. But spurt of construction activities has led to rise of Malaria in Goa. Goa has witnessed a sudden rise of malaria cases in 2012, breaking a 4-year declining trend. By mid 2012 the state has registered a total of 1145 cases compared to last year's [2011] total of 935 cases. September registered the 2nd highest number of cases (210) this year, with the highest number of 309 cases registered in July at the peak of the monsoon followed by August, which recorded 145 cases of malaria, according to statistics made available by Directorate of Health Services.

About 418722 patients were screened for malaria during 2011. A total of 1187 were found positive for malaria and of these 135 were Plasmodium Falciparum cases. Three deaths were reported during the period. Local affected by malaria were only 196 patients with 25 being of Plasma Falciparum. Thus over 83.5 % of cases were amongst migrant population at the construction sites.

**Some Key responsible factors for Malaria in Goa:**

1. Suitable weather for perennial transmission of malaria, temprature range of 28-30 degree Celsius and 18-27 degree C, relative humidity 75-94% and average rainfal of 2500 mm from May to october.
2. An efficient vector living in close association with man and breeding in innumerable sites, mostly man made, viz, wells, overhead tanks, sumps, gardenting tanks, water coolers, masonry tanks, fountains, roof gutters blocked terraces and lintels during monsoon, barrels, disused swimming pools, rain pools in abandoned and active construction sties, laterite pits, smalls domestic containers, scrap, tyres etc.

3. Expanding vector distribution and invasion in to newer areas.

4. Migrant labour froce: construction boom since 1980s and a vulnerable migrant labour moving from place to place in serach of job, aggregating and living around construction sites which have great epidemiological significance due to prolific vector breeding in stagnat waters and sleeping habits of labour in open or in surrounding hutment exposed to mosquito bites.
5. Some other vulnerable sections of the society like hotel and restaurant workers, rag pickers, street children, porters and homeless persons sleeping in open suffering from and disseminating malaria.

***Some important observations:***

1. *Drug polices ovserved by the Govt and private sectors is at variance. Restriced drugs such as mefloquine are quite freely prescribed.*
2. *There have been many out breaks of malaria since 1986 in those coastal areas that witnessed boom in construction activity.*
3. *Trousim and malaria: In Goa, malaria is mostly coastal in distribution and has strong presence (92-96% of annual incidence) in areaswhich attract over 90% domestic and international tourists.*
4. *Stabilising tendency of malaria: The analysis of incidence of malaria has shown its gradual stabilizing trend over the years. The cooler lean months from Novermber to February have also shown quite high incidence of malaria in the recent years. This trend was not witnessed int he earlier years.*
5. *The vector builds up from March-april and peak populations are encountered in June-July followed by declining trend. Vector control needs proper planning in tune with its population dynamics and breeding ecology.*

***Current Malaria control strategy and its impact***

*The DHS shoulders the bulk of responsibility of malaria control in Goa. None of the municipalities or panchayats have basic infrastructure for the purpose. Small size of towns and duplicity of responsibility is cited as reasons for not encouraging this. The anti-mosquito measures undertaken by the health services comprise pyrethrum fogging as adulticide. The anti parasitic measures include mopping up and treatment of cases through active case detection, passive case detection and mass survey by the UHCs, PHCs and CHCs in both rural and urban areas.*

**Recommendations**

*For durable malaria transmission control, the antimalaria programme needs strenghtening and adjustments. There are*

1. *Bio enviornmental strategy should be made an integral part of malaria intervention strategy as per the recommendation of NAMP. There should be a shift from envoirnment polluting chemical based approach to eco-friendly bio-enviornmental malaria control approach.*
2. *Recurrent training and optimum utilization of manpower following bottom up approach.*
3. *Effective implementation of legislative measures and creation of legal back up support sytem of speedy action, particularly in the construction sector.*
4. *Monitoring of parasite and vector resistance on a recurrent basis followed by approporate remedial action.*
5. *Monitoring of mega projects in the region for their impact on mosquite-borne diseases as a part of over all health impact assesment.*
6. *Availability of life-saving drugs at the peripheral and the district level. Also a referral system should be developed for handling complicated cases.*
7. *A uniform anti-malarial durg policy should be well advertised and promoted equally in public and private sectors.*
8. *Periodic mass blood surveys are extremely important to mop up and treat asymptomatic malaria parasite carriers among migrant labour.*
9. *Supervision of the field activites to achieve desired malaria transmission control.*

10. *Involvement of local self government bodies in malaria control process so that there is sense of ownership of malaria control activities among these bodies leading to their increased involvement in terms of allocation of resources and manpoer over a period of time.*
11. *Make recurrent entomological and epidemiological assesment of situation of the state.*
12. *It is recommended to hold regular programmes to create awareness among public on breeding sites of mosquitoes like plastic cups, bottles, utensils, containers, tanks, flower-pots etc. Collection of tyres and its proper disposal, enforcement of health act, issuing of health cards to contract labours, preventive measures to control vector-borne diseases and other related issues Rusty river barges, lying idle and unused because of the mining ban in Goa, are now becoming breeding grounds for mosquitoes. As a result, a numbers of employees working on the barges as well as the local population residing around are also infected with malaria. This will lead to serious consequences if the rate of infection goes on increasing.*

**Filaria**

During the year 2011, a total of 20222 persons were screened for microfilaria and out of these none were found positive

The Mass Drug Administration (M.D.A) as a measure for elimination of filaria was observed in Goa on 11th November 2011. A total population of 1390747 received Diethyl Carbamazine Citrate (DEC) tablets on this National Filaria Day. Thus the total coverage was to the tune of 96.20%.

**Dengue Fever/Japanese Encephalitis/Chikungunya**

During the year 2011 there were 26 cases of Dengue. Similarly there were 91 cases of Acute Encephalitis Syndrome (AES) and out of these only 1 confirmed for Japanese Encephalitis (JE).

During the year 2011, there were 660 suspected cases of Chikungunya, out of which 47 were confirmed for Chikungunya serologically.

**Japanese Encephalitis Challenges**

To reduce morbidity and case fatality rate.
To prevent outbreaks.
Prevent mortality due to Japanese Encephalitis.
Strengthening of sentinel site hospitals.

**Integrated Disease Surveillance Project (IDSP)** is a decentralized, state based surveillance programme which intends to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner.

**Functions and duties carried out by the Department :**

IDSP is a district based surveillance programme intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It also provides trend of on going diseases in the state.

**National Iodine Deficiency Disorders Control Programme**

It has been implemented in order to prevent, control and eliminate Iodine Deficiency Disorders in Goa, by banning the sale of noniodised salt for edible purpose, which was notified from 15th August, 1997. The IDD Control cell which was created in September 1996, looks after monitoring and co-ordinating the NIDDCP and ensure mplementation of ban Notification, Orientation/Awareness on importance of iodised salt, offering technical expertise on micro nutrition deficiencies and iodisation process, conducting study/survey to asses iodine deficiency disorders and other allied subjects and field testing of iodine content in salts.

**Functions and duties carried out by the Programme:**

i) Surveys to assess the magnitude of the Iodine Deficiency Disorders.
ii) Supply of Iodated salt in place of common salt.
iii) Resurvey after every 5 years to assess the extent of Iodine Deficiency Disorders and the Impact of Iodated salt.
iv) Laboratory monitoring of iodated salt and urinary iodine excretion.

v) Health education & Publicity.

**Physical Achievements of NIDDCP** :-

a) Celebration of Iodine Deficiency Disorders Prevention Day every year, by conducting various IEC activities under all PHC's, CHC's and UHC's on awareness of importance of iodated salt and Iodine Deficiency Disorders.

b) Public awareness about iodated salt and Iodine Deficiency Disorders by various mass media like News daily, Television etc..

c) Awareness on importance of Iodine and Diet under Nutritional awareness programme.

d) Training of Medical Officers on National Iodine Deficiency Disorders Control Programmeand importance of iodated salt and Iodine Deficiency Disorders.

**Challenge for future** :-

Setting up of Iodine Deficiency Disorders Monitoring Laboratory in Goa for the present financial year.

Goal – To reduce the prevalence of Iodine Deficiency Disorders below 10%.

### 8.3.4 FAMILY WELFARE BUREAU :RCH –II PROGRAMME IN GOA

**Janani Suraksha Yojana:** Janani Suraksha Yojana is a scheme implemented by the Government of India in 2002 wherein married pregnant women above 19 years of age can avail of monetary benefit i.e. Rs.700/- for rural and Rs.600/- for urban area if they belong to the BPL family or any women of the SC/ST community irrespective of their income, for the first two live births. The incentives are released at the time of delivery in Public Health Hospitals.

RCH outreach camps are being held in all peripheral units wherein the local people are enlightened on the services provided under the RCH programme for the urban poor, especially for the migrant population.

**FAMILY PLANNING:** Promotion of various contraceptive methods for spacing as well as permanent sterilization are undertaken, including the role of the emergency contraceptive pill which is used as an 'emergency' measure to prevent pregnancy in an event following unprotected sex. Sterilization services are held at hospitals and selected health centers on different days of the week.

Family Planning –Goa's achievements

| 2007-2008 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| Vasectomy | 70 | 21 | 30 |
| Tubectomy | 5735 | 5045 | 88 |
| IUD | 3132 | 2617 | 84 |
| CC Users | 11583 | 11328 | 98 |
| OP Users | 4354 | 3429 | 79 |

| 2008-2009 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| **Vasectomy** | 63 | 28 | 44 |
| **Tubectomy** | 4797 | 5268 | 110 |

| | | | |
|---|---|---|---|
| IUD | 2875 | 2615 | 91 |
| CC Users | 8900 | 10508 | 118 |
| OP Users | 3370 | 3248 | 96 |

**Adolescent Reproductive & Sexual Health:** 'Adolescent Reproductive & Sexual Health Program' (ARSH) is a significant component of RCH II. OPDs are being conducted in all peripheral units on a fixed day of the week wherein the adolescents can avail of counseling as well as treatment facilities. Teen clinics are functioning at all the peripheral units wherein privacy & confidentiality of the client is maintained

SCHOOL HEALTH PROGRAMME: Hemoglobin level estimation is being carried out in the schools across Goa so as to know the hemoglobin status of the school going children, as anemia is prevalent among school children especially adolescent girls. Prophylaxis / Treatment is given to anemic adolescents girls. De-worming is also carried out twice a year.

**Universal Immunization Programme:** In Goa the universal immunization programme was introduced in the year 1985-86 as part of national health policy. The child is immunized at birth with BCG, OPV & Hep.-B in an institutional delivery. Pentavalent vaccine has been introduced in the entire state wherein the infant is immunized with three doses of Pentavalent Vaccines at 6, 10 & 14 weeks in lieu of DPT and Hep-B, a booster dose of DPT & OPV at 1 ½ year, DT at 5 years, TT at 10 and 16 years.

Measles vaccine is administered as per the immunization schedule to children at 9 months of age. MMR vaccine is administered to children at the age of 15 months to boost the immunity against Measles, Mumps and Rubella. Rubella Vaccine is to be given to adolescent girls in schools and out of schools.

During the first pregnancy the mother-to-be receives two doses of Tetanus Toxoid. If the second pregnancy occurs within the first 3 years she receives one booster dose. In addition to the above, mothers are also provided with iron and folic acid tablets to lower the incidence of anemia among pregnant women.

**Maternal Child Health Care:**
Antenatal / Natal / Post Natal care
New born/ Infant Care
Prevention of Diarrhea and Promotion of Oral Rehydration Salts (ORS)
Management of Acute Respiratory Infections.
Nutrition Education, especially for mothers.
Prevention of Malnutrition in Children.
Promotion of Breast feeding.
Prevention and treatment of anemia in Mother and Children.

**Physical Achievements for the year 2011-12**

Janani Suraksha Yojana: 1675 beneficiaries have availed of this benefit.
The Institutional Deliveries are to the extent of 96%
The Pulse Polio Immunization Programme was conducted in the state as a part of Nationwide programme of eradication of Polio on 19th February 2012, where 130387 children on under five years were administered the polio vaccine dose in addition to the routine immunization. No single case of polio is reported ever since 1999.
The Infant Mortality Rate for this state is 10 per 1000 live births (SRS)
The Maternal Death Rate is 30 deaths per lakh live births which is much below the national goal of 100 per lakh live births. Every pregnant woman attends the antenatal clinic and on an average a pregnant woman has at least 6-7 antenatal checkups done.
The birth rate in Goa is 13.2 per thousand.
The number of children per ever married women in the age group of 15-45 years is 1.7 when the national goal replacement level is 2.1.

**Challenge for Future:**

The main goals are as follows:-
IMR to be 8 per 1000 live births for 2012.
MMR to be at negligible levels
Birth Rate to be sustained at 13.2 per 1000 population.
TFR to be sustained at 1.7 for women.

**Sexually Transmitted Diseases:**

Sexually Transmitted Disease Control Programme, Directorate of Health Services, Panaji is a Non Plan Programme with three STD Clinics at Mapusa, Margao and Vasco.
S.T.D. Programme closely co-ordinates with The Goa State Aids Control Society (GSACS) and we execute Sexually Transmitted Disease control measures via The STD Clinics,the Community Health Centres,Urban Health Centres, Primary Health Centres and the Community.
The infrastucture under The STD Control Programme consists of three main STD Clinics at,

1. Asilo Hospital Mapusa.
2. Hospicio Hospital Margao
3. Baina Vasco.

There is separate Unit of Skin And STD at Bambolim under Goa Medical College. presently all four STD Clinics/Units also report to Goa State Aids Control Society.(GSACS) and GSACS further sends a consolidated Report to National Aids Control Organisation (NACO) New Delhi.

**Functions and duties carried out by the Programme**

Sexually Transmitted Diseases Control Activities Include
Sexually Transmitted Diseases Control activities are being conducted among Adolescent population at peripheral level.
Early diagnosis and prompt treatment as per the syndromic approach and use of kits provided via Clinics at PHC/CHC &STD clinics and specialised refferals to skin and VD Department Goa Medical Collage,Bambolim.
Promoting contacts tracing and counselling through The STD Clinics And Government Health Centers.
Reducing the sexually Transmitted Disease stigma through Information Education & Counselling (IEC).
Promoting condoms and safe sex and behavioural changes through health education.
Collecting Blood samples for V.D.R.L. in antenatal cases and patients referred in Primary Health Centers in order to rule out diseases like syphilis to prevent adverse effect on the children.
Spreading of STD/RTI/HIV/AIDS awarenes to rural population and Urban slums.
Advocating the syndromic management of STD at Primary Health Centers/Community Health Centres
RPR testing by Lab Technician at PHC STD Clinics

**Physical Achievements of the Department**

This Department has been actively working as per the norms set and there has been a reduction in New HIV positive cases and VDRL test positives
With referrals from NGO's and PHC staff the number of tests carried out have increased as well as clinic attendees.
Patients are being treated by the syndromic approach and treatment is given

**Challenge for the Future**

Challenges for the future envisages
Safe and protected sex through education and counselling
No new HIV positive cases
Early detection and prompt treatment of those afflicted so the disease is not spread
Adolescent Education
Increased referrals

**Environment Pollution Control Wing**

**Functions and Duties**

(a)This laboratory caters to the needs of Public, Industries, Centre / State Government agencies and institutions for conducting all the desired test on water, Industrial effluent, sewage effluent etc. for physical, chemical and bacteriological parameters

(b) The Public, Industries, mining industries, hotels, restaurants, Government agencies and institutions are availing services/facilities of this laboratory on payment of analytical charges.

(c) This laboratory is equipped with sophisticated instruments/equipments for conducting various test , water, industrial effluent, domestic effluent etc.

**Non Communicable Diseases :**

Taking into consideration the various risk factors for Non Communicable Diseases viz Cigarette and other forms of smoking, alcohol abuse, drug abuse, non availability of health facility for control measures of diabetes, hypertension, cancer etc, life style changes such as improper diet, fast food and lack of physical activities, environmental factors viz occupational hazards, accidents, possession of destructive weapons and stress factors; the following programmes are undertaken by this Directorate.

**NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS**

Ophthalmic Cell implements National Programme for Control of Blindness under Chief Medical Officer assisted by 17 Ophthalmic Assistants posted at PHC/ CHC and District Hospitals. State Health Society (NPCB) has been established. Free spectacles are provided to poor patients.
During 2011-12, 97,151 patients were examined 7548 cataract operations performed and 20,932 spectacles prescribed during the same period.

Under School Health Programme 286 schools were visited in which 28,796 students were screened of these 857 students suffered from refractive errors and 113 student glasses prescribed.
Special Cataract Detection Camps were organized all over Goa during 2011-12 wherein patients detected with cataract were provided free of cost IOL and medicines at Goa Medical College. 36 operative camps were conducted and 433 cataract operations were performed till March'12.

**TUBERCULOSIS IN GOA**

Tuberculosis (TB) kills 1 person every minute in India. In Goa, TB kills 15 people who undergo TB treatment every year. Incidentally, Goa has a high prevalence of tuberculosis as compared to other states. It is estimated that 20 lakh people in Goa are at present suffering from pulmonary TB, of which nearly 5000 are infectious. An average 2,100 new TB cases are detected every year, of which 50 per cent are sputum positive.

'In terms of numbers, the number of sputum cases that are investigated has increased. We are now getting cases from the remote areas even without holding medical camps or door-to-door medical check-ups. This shows that people are becoming more and more aware of the possibility of them having TB.'

**Women matter**

It is fact that TB is curable and the treatment for TB is absolutely free, it needs to be propogated Worse still, for her, TB meant a disease in which a person ended up in some sanatorium, rejected and isolated by the family. To get across the message that TB is curable and treatment is free of cost for women, the 'hidden section' of the society, it has been decided to approach the mahila mandals and women's self-help groups with the aim to ensure that women have access to adequate and important information.

A DOTS provider has to ensure that the patients swallow the medicines under their direct supervision. DOTS prevents the spread of TB bacilli, thus reducing the incidence and prevalence of TB and providing credence to TB control efforts. The state government has been putting in efforts through health department to make Goa free from tuberculosis. There is need to give emphasis on awareness about precautions, preventions and treatment of TB. The case detection rate for tuberculosis in Goa has improved from 65% in 2011 to 67% this year, but the state's 'cure rate' of 84% has remained unchanged.

TB control in Goa

The national tuberculosis programmed in Goa was started in September 1963 and is implemented in this state through the District TB Centre, at Panaji, which also functions as TB clinic in the city. This centre maintains the index register of all the patients detected in the state, in order to avoid duplication of the treatment, to montor patients for their follow up and to supervise the case detection and treatment at all the medical and health instituions. Drugs, labarotary facilites and other material are supplied by DTC until TB patients are cured.

*The Revised National Tuberculosis Control Programme (RNTCP) estimates that there are 160 cases of TB per one lakh of population in Goa. The RNTCP began in September 2004 in Goa, and provides free treatment to patients through Directly Observed Treatment (DOT) provided at their nearest government health centre. The health worker at the public health centre ensures drug compliance and follows up if the patient fails to turn up regularly for treatment. The illness is first detected during the patient's visit to a public health centre, where the doctor, upon suspecting TB, refers the patient to one of the 18 designated microscopy centres specially set up by the RNTCP to ensure accurate TB diagnosis. Each TB Unit, covering a population of five lakhs ensures supervision of the RNTCP in their area.*

*However, many patients are unaware of the RNTCP; those who are seeking treatment often fail to show up because of the distance they have to travel to reach a DOT centre. Meanwhile the programme depends on the Medical Officer in the health centre OPD to identify and refer suspected cases. Any patient having a cough for more than two or three weeks must be referred to the TB programme for sputum tests, but PHC doctors fail to make such referrals, an RNTCP official revealed, also speaking on condition of anonymity. Inevitably, this leads to an artificially low detection rate for the illness.*

**Dental Cell**

It is responsible for the overall supervision of all the dental clinics in Goa. There are 4 dental clinics at UHC's at Panaji , Margao, Mapusa ,Vasco & 5 at CHC's at Canacona, Pernem , Curchorem, Ponda , Valpoi and at PHC,s at Balli, Sanguem, Curtorim, Cansaulim, Aldona, Candolim, Betki, Sanquelim & Bicholim. Incharge of the Cell is supervising overall smooth functioning of the clinics and administration.

**Challenges for the future**

New dental clinics have to be set up at non bedded PHC's located at Siolim, Casarvanem, Madkai, Shiroda, Cortalim, Loutolim, Quepem & Chinchinim with a view to make dental treatment more accessible to the public. X-ray facilities are being planned at the district hospital – North Goa at Mapusa and South Goa at Margao- so as to be able to start root canal treatment facilities. Challenge is to make dental treatment available
to the public and to increase the awareness of dental hygiene and the importance of treatment.

**Mediclaim.** The limit for financial assistance in cases of Open Heart Surgery, Kidney Transplant, Cancer and Neuro Surgery, has been enhanced to Rs.3.00 lakhs including post operative care, while the limit of financial assistance for cancer patients is enhanced to Rs.5.00 Lakhs and for Bone Marrow transplant, cancer/disease, Spastic Child, Cerebral Palsy, Skeletal deformities to Rs.8.00 lakhs, The scheme is available to the permanent residents of Goa.

An amount of Rs.57.20 lakhs has been incurred on State Illness Assistance Society and 69 patients were referred under the scheme. This Scheme is meant for the persons living below poverty line.

**Swarnajayanti Aarogya Bima Yojana**

The Swarnajayanti Aarogya Bima Yojana was implemented on 20th day of the September 2011. with ICICI Lombard General Insurance Company Ltd. has been selected as the Agency to implement the Scheme in the State.

To provide social security to the resident population of the whole of the State of Goa by insurance coverage upto Rs.60,000/- per family per year for meeting expenses of hospitalization for medical and / or surgical procedure including maternity benefits.

Around 104654 households were enrolled during the year 2011-12.

**National Leprosy Eradication Programme (NLEP)**

National Leprosy Eradication programme is working towards reducing the disease burden in the state. Early detection and release from treatment. Also reduces stigma & distinguish by taking care of 1010 cured patients.

IEC/IPC for general public & capacity building of AWWs worker, Health workers, Medical worker & Private Doctors/practitioners in leprosy.
Patient management at PHC, reconstructive surgery at GMC Bambolim Goa and Monitoring Supervision of programme by District Nucleus.

**Acts and Rules Implemented by the Department:-**

All disability acts implemented in Goa by Social Welfare Department are applicable for Leprosy Affected People (LAPs). In addition to the schemes, like Indira Awas Yojna (housing), free electricity under Rajiv Kutir Yojna & loans under DRI (Differential Rate 0f Interest) Scheme to run small shops/Gadas.

**Physical achievements of the Department:-**

The stage of elimination are present in Goa, the prevalence rate is 0.27 per 10,000 population.
43 local cases & 68 outsider cases in hand.

**Challenge for future:-**

*Leprosy in Goa DPMR (Disability Prevention and Medical Rehabilitation) for cured patient.*

**8.3.5 DISEASE SURVEILLANCE PROJECT (IDSP) IN GOA**

The Government of India has initiated a decentralized, state based Integrated Disease Surveillance Project (IDSP) in the country in response to a long felt need expressed by various expert committees.
The project would be able to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It is also expected to provide essential data to monitor progress of on-going disease control programs.
Goa has commenced the implementation of the project from 1st of April 2005.
IDSP has replaced the NSPCD (National Surveillance Programme for Communicable Diseases), which was operational in the state since 1999.

**Objective**

The project development objective is to improve the information available to the government health services and private health care providers on a set of high-priority diseases and risk factors, with a view to improving the on-the-ground responses to such diseases and risk factors.

**Project Highlights**

District and State Surveillance Units have been set up to gather weekly uniform high quality surveillance data from Reporting Units in Government and Private sectors at all levels.
The project responds in a timely manner to surveillance challenges in the state including emerging epidemics.
Surveillance activities under various programs in the state have been integrated and existing infrastructure is used maximally.
A system of regular feed back to the participants of the surveillance activity has been put in place.

All the personnel of the Directorate of Health Services have been trained in the programme. These include Medical Officers, Laboratory Technicians and Para-medical Workers. Anganwadi Workers have also been trained to look out for Warning Signals in the population.

A fully-equipped Regional Laboratory has been established at the Dept. of Microbiology, Goa Medical College to enhance capacity for diagnosis and investigation of epidemics.
District and peripheral Public Health Laboratories have been strengthened.
The state has been integrated into the national surveillance network with the use of information technology for communication, data entry, analysis, reporting and feedback.

**Diseases and Conditions under Surveillance**

1. Malaria
2. Acute Diarrhoeal Disease (Cholera)
3. Typhoid
4. Tuberculosis
5. Measles
6. Polio
7. Plague
8. Dengue
9. Leptospirosis
10. Sexually transmitted/ Blood borne diseases like HIV, HBV, HCV
11. Unusual clinical syndromes (Causing death or hospitalization) such as Menigoencephalitis, Respiratory Distress, Hemorragic fevers and other undiagnosed conditions

**Expectations**

It is expected that IDSP will avert disease outbreaks and epidemics and reduce human suffering and improve the efficiency of all existing health programs.

**Administrative set-up**

Under the IDSP programme, a Goa State Surveillance Unit and a Goa State Surveillance Committee have been constituted. Secretary (Health), Govt. of Goa, is the chairperson of both the committees.

## SOCIAL DEVELOPMENT IN GOA: ACHIEVEMENTS & CHALLENGES IN HEALTH CARE SYSTEM

Goa's experience of social and human development is a unique model. Goa has been able to achieve exceptionally high physical quality of life. Its achievements are commendable in areas like health, education, and demographic transition.

Good health care has significantly contributed to the social development of Goa. Goa's excellent performance in social sector development is the end-product of the optimum interaction between a host of socioeconomic variables like health, education, social security, high per capita income, etc.

### 8.3.6 ACHIEVEMENTS OF THE PRESENT HEALTH CARE SYSTEM IN GOA

Goa has been able to reduce the birth, death, and infant mortality rates more drastically in the post-Liberation period. A dynamic health care system along with other social development mechanisms is responsible for the same. The health of the society is judged by improvements in basic health indices like crude birth rate (CBR), crude death rate (CDR), infant mortality rate (IMR), life expectancy, and susceptibility to communicable and non-communicable diseases. Table 1.1 shows the declining trend of selected demographic variables between 1961 and 2002.

**Table1.1: TRENDS IN DEMOGRAPHIC VARIABLES, 1961-2002**

| Year | Crude Birth Rate (Per 1000) | Crude Death Rate (Per 1000) | Infant Mortality Rate (Per 1000) |
|---|---|---|---|
| 1960-61 | 32.36 | 11.31 | 69.77 |
| 2012-13 | 13.2 | 7.20 | 8 |

Source: Census Reports & SRS.

As society achieves a certain level of economic development, diseases associated with poverty begin to disappear and diseases associated with urbanization and affluence begin to be evident.

The health care system has made a positive contribution towards increasing life expectancy. The achievements in demographic variables in Goa are comparable with those of developed countries like Sweden, Japan, Singapore, and USA. Table 1.2 shows the relative position of Goa with respect to developed countries.

**TABLE 1.2 INTERNATIONAL COMPARISON OF DEMOGRAPHIC VARIABLES**

| Country | Crude Birth Rate (Per 1000) | Crude Death Rate Rate (Per 1000) | Infant Mortality Rate (Per 1000) |
|---|---|---|---|
| Sweden | 13 | 10 | 04 |
| Japan | 10 | 07 | 04 |
| Singapore | 16 | 05 | 04 |
| Germany | 09 | 11 | 06 |
| U.S.A | 15 | 08 | 08 |
| Goa | 16.5 | 7.2 | 12.48 |

*Source: Social Infrastructure: The Western Region States: A Comparison, The Western Regional Office, Confederation of Indian Industry, Mumbai, (1998-99).*

**Census-2001 (Provisional) & Health Profile of Goa (2004).*

The child immunization coverage in Goa is almost 100.The development in the health care system has contributed to the epidemiological transition. Diseases associated with poverty and backwardness like malnutrition, diarrhea, etc. have been insignificant in Goa (The State of Goa's Health Report, 2000).

The gains in social sector development can also be attributed to the development of health care infrastructure. Table 1.4 presents the achievements in health infrastructure during the period 1961-2004.

## 9. Review of NRHM in Goa

Goa has been a State with good health indicators since the start of NRHM. The indicator show that NRHM has contributed to strengthening of the health system of the State.

**Analysis of Improved Health Indicators**

Just as a complete dish is an amalgamation of many ingredients, improvement is a product of a host of factors acting together and not an outcome of a single input. It is important to remember this fact when one tries to analyze the reasons for Goa's success. During the CRM visit the team members tried to explore the basis for Goa's achievements and based on their interactions, observations and consideration of secondary data the team analyzed that the following reasons have contributed to the improved health indicators of Goa:

*Goa caters to a population of around 14.5 lakh people. Thus one is automatically compelled to compare this State not to another State in the country but infact to one of the districts. To fully understand the reasons for Goa's good performance especially in terms of maternal and child health indicators the team has compared the situation in Goa with that of Samastipur district in Bihar in 2010 which caters to a population of 35.94 lakhs.*

***Awareness among people of the importance of ANC and other positive health seeking behavior from portugal times***

*The axiom 'Rome was not built in a day' is well known to all. Goa's improvement in health indicators needs to be viewed against this backdrop. Since Portugese times, Goan population has been made aware of the importance of ANC and other positive health seeking behavior so much so that interactions with beneficiaries (even from the BPL category) revealed that they were well aware of the importance of complete ANC and institutional deliveries contributing to almost 100 % institutional delivery. This awareness is definitely lacking in people staying in the Samastipur District in Bihar. This acts as an important contributor towards positive health seeking behavior which inturn contributes majorly to lesser maternal and infant deaths.*

***Fully functional One Tertiary care and two secondary care Hospitals to cater to 14 lakh population – 'Ensuring availability and quality'***

*Goa has two fully functional district hospital with C. Section facilities in each district thus having two secondary care hospitals and one Goa Medical College to cater to a population of 14 lakhs. Moreover, ANC fixed day ANC clinics by Gyneacologists at PHCs and CHCs have been operationalized in the State. In comparison, Samastipur District of Bihar catering to a population of 33.95 lakhs has only one secondary level facility conducting C. Sections. This is the District Hospital. There is no tertiary care facility in the district.*

**Completely FREE Services including diagnostics and drugs to those who come to the government facilities – 'Ensuring affordability and removing barriers to access'**

*In Goa, even though almost 50 % of the deliveries take place in the private facilities, the ones that come to government facilities receive completely free care. This includes free drugs and diagnostics; there were very few instances of out of pocket expenditures at least for MCH facilities. Thus all those who need free care are in a position to get it. In May 2010, most facilities in Samastipur, did not provide diagnostic facilities to patients and patients even from the BPL category had to pay for diagnostics due to absence of facilities in the Government Sector. The increased out of pocket expenditure acts as a deterrent for people to access health facilities.*

**Availability of assured referral transport and shorter distances: 'Improving Access'**

In Goa, 108 services are available to ensure that all patients get free and assured referral transport to hospitals in case of emergencies. Even the absences of referral transport, families have their own

vehicles or have easy availability of means to transport to the district hospitals in case of emergencies. *The distance to the GMC (Goa Medical College) at any point is not more than one-to-one and a half hour since the GMC is located centrally. Though the total area of Goa is more than that of Samastipur, it takes at least 2 hours to reach the district hospital from certain places in Samastipur District and sometimes even more. Moreover there is no assured referral transport.*

**High Public Pressure and in built community monitoring mechanisms: 'Accountability to the Society'**

In Goa, political pressure on the health care providers is extremely high. Multiple interactions with health care providers revealed that if doctors are not available at the health care facilities, the local panchayat and political leaders inform the higher up politicians, sometimes even the health minister, as Goa being a small State, access to Health Minister is not very difficult. The political pressure ensures that the system performs upto the mark, absenteeism is minimized and facilities are functional. Such in built community monitoring mechanisms are absent in Samastipur District.

*South Goa Hospital has a very detailed Citizens Charter which may not be available with national facilities.*

**Progress under NRHM, Challenges and Way Forward**

*Areas that require attention*

*Restructure and Redefine Service Delivery Packages: Develop a Health Package that clearly defines as part of the entitlement of every citizen the services that each of the facilities are going to provide in respect of primary and secondary level facilities in the State. In Goa, since sub centres and many PHCs do not provide delivery services and CHCs do not provide C- Section services, the State should clearly define and specify entitlements at the different health facilities. Efforts should also be made to redistribute the delivery load and case loads at facilities from the centre to the periphery using a two pronged approach namely: Mapping of facilities catering to slum areas/ migrant areas/ floating population and ensuring availability of normal delivery services at these PHC/ CHC*

*Reduce load at the GMC by Ensuring availability of full complement of Gynae, Paeds and Anesthetist at least one more facility in each district to provide EmOC services*

*This will particularly help in addressing the needs of the migrant population which is the major issue for the State in current times.*

*Regulations: State should ensure that regulations such as the Clinical Establishment Act are implemented so that the private sector can be regulated*

*Irrational Distribution of Specialists: Performance appraisal of specialists should be conducted to map out the work load of the specialists at the various facilities and redistribution as per work load should be the aim of the State. There are 19 Gynecologists and 8 Pediatricians to cater to the population of Goa. The human resources should be redistributed to ensure the operationalization of one more level 3 facility in each district.*

*Training: The State needs to urgently establish a training institute. Training calendars and schedules need to be put in place. Training consultant needs to be recruited immediately.*

*Quality Assurance Committees, Accreditation of Hospitals, Putting in place Hospital Managers: The State needs to go in for quality certification of hospitals and also put in place hospital managers to assist the head of the hospital in managing the hospital. It should strive to ensure adherence to quality assurance standards in the provision of health care at all levels of service delivery. The State should ensure that the*

*continuous medical education receives due focus to strengthen the capacities of staff employed under the public health sector.*

*A formal grievance redressal mechanism needs to be established and grievance boxes need to be set up at the facilities.*

*Use of PROMIS and Display of Drug Lists: PROMIS has not yet been initiated in the State and efforts should be made to implement the same at the earliest. This would help in addressing shortages of drugs at facilities. The essential drug list needs to be displayed at all facilities. There is also a need to revise and expand the Essential Drugs List.*

**Areas that have not been addressed during conceptualization**

***Public Private Partnerships and Regulation of Private Sector-*** *There is a lack of comprehensive directives from the Central level on ways to promote public private partnerships for service delivery except for family planning and JSY issues. However, there is lack of direction on addressing this issue, if the private sector is not willing to accept the compensation provided by the Government Sector. More important is the issue of regulation of private sector which is the need of the hour.*

***HR policy directives and State Programme Management Units***
*Even though the State has introduced benefits for contractual employees such as maternity benefits and an informal mechanism for performance appraisal exists, there is no concrete HR policy for the contractual employees. This is because there is lack of directives from the Centre on the policy for more than 1 lakh human resources employed under the Mission under the guise of HR being a State subject. This is a lacuna that needs to be addressed from the Central level and during conceptualization of the next phase of NRHM. There is a need to adopt better human resource practices to improve recruitment, retention motivation and performance; rationalize pay and incentives; and assure career tracks for competency-based professional advancement.*

***Decentralization***
*Even though there are clear cut directives for decentralization and formation of DHAPs from the centre, the same have not been followed at the State level. Even if the State finds that given its administrative structure DHAPs are not feasible, there should be an urgent move towards Block Health Action Plans.*

***MMUs and Referral transport***
*The utilization of Mobile Mammography Vans needs to be increased substantially with a view to ensure that each area is covered. With regards to EMRI, State needs to realize that this is a major cost factor and an important pillar for addressing access. Even though the system is functioning well as of now, it is essential that the same is maintained and made cost effective so that the heath system is not overly burdened in the long run.*

**Communitization**
*Even though informal methods of community involvement are in place, the formal systems introduced under NRHM, require to be strengthened. For example, only 14 out of 26 RKS have been constituted. Only 4 out of the 172 subcentres have utilized more than 50 % of their untied grants. VHSNC role is restricted to conducting cleanliness drives. ASHAs need to be introduced although with a different roles and training structures as compared to other States. ASHAs may be focused on addressing the needs of the migrant population and the non communicable diseases*

**Strategies employed by the state that are apart from the ones enumerated in the framework**

The State has been active in taking initiatives to address the needs of the population and has developed strategies that are quite unique. Some of the initiatives with support of NRHM are Diabetes Registry, Cancer Registry – Mammography Vans, Pediatric Oncology at GMC, Pediatric ambulances under EMRI, Hypertension screening. Other initiatives taken up by the State are screening for Infant Metabolic Disorders, Tobacco Control activities and activities for addressing Mental Health issues Introduction of pentavalent vaccines, MMR and Rubella vaccines in 2008, infant death audits and gestational thyroid screening are some of the other significant initiatives taken up by the State.

**Contribution of NHRM**

In some sense it can be stated that NRHM funds have contributed majorly in two important aspects. One, they have acted like the very essential untied funds for the improvement of the existing system of the State and have also contributed completely or partially towards initiatives such as assured emergency and referral transport (EMRI) and two, they have been successful in initiating action against other non-communicable diseases such as cancers, diabetes etc.

## 10. CHALLENGES BEFORE THE PRESENT HEALTH CARE SYSTEM IN GOA

*Goa's "epidemiological transition" itself has presented the State with a lot of concerns and challenges. There has been a sporadic increase in the new 'lifestyle' and social 'status enhancing' diseases like chronic obstructive pulmonary disease, cancer, diabetes, heart ailments, depression, HIV/AIDS, obesity, etc. The health care system should become more dynamic to face the challenges created by the amoebic expansion of 'knowledge-economy diseases'.*

*With successful demographic transition, the age composition of the population has undergone changes. The size of elderly population (65+ years) has increased from 3% in 1961 to 7.3% in 2000 whereas the population in the age group 15 years has declined from 42.8% to 26.7% during the same period. Hence, the State should devise new health care policy measures to provide elaborate geriatric health care system with facilities for psychological and biological counselling.*

*Goa has a strong traditional system of herbal medicines commonly known as zhadpalyachem vokot or palamulachem vokot. Goa requires a dynamic health care policy to revitalize and rejuvenate the traditional system. The system can be a panacea for many of the 'globalization-ushered diseases'. Further, it can also provide an economical and patient-friendly alternative health care system. The export potential of the health care system based on herbal medicines is tremendous.*

*Many of the available hospitals lack quality services, and suffer from infrastructure deficit and manpower bottlenecks. The condition of government-aided hospitals, community, primary and urban health centres is pathetic. These hospitals urgently require the deployment of a financial package to make them optimally usable, sustainable, and patient-friendly. The present infrastructure facilities are inadequate and in bad shape. Continuous upgradation and modernization of infrastructure can be brought about by promoting private-public partnership. This assumes importance at a time when public health expenditure as a proportion of Goa's total Domestic Product is actually declining.*

*Goa urgently requires more 'super and multi-specialty' hospitals to provide world-class health care facilities. These hospitals should be able to provide health care facilities at affordable rates. Voluntary organizations can be roped in to set up such specialty hospitals. In this respect, huge resources available with many churches and temples in Goa should be tapped. Moreover, schemes need to be evolved for bringing the weaker sections and BPL families within the reach of such facilities.*

*Health care managers should evolve benchmarks and certifications for the existing and new hospitals. The health care managers of the State should immediately devise measures to check the mushrooming ayurvedic clinics along the coastal lines and private allopathic practitioners with dubious intentions in the towns & cities. Their unethical deeds, wrong diagnosis, and medication can lead to deterioration in the physical and mental health of innocent patients.*

*The health care needs of the migrant workers in the construction industry and those employed in various non-formal sectors are completely neglected. These sections of the floating population are the flag bearers of many of the 'poverty-induced-diseases'. The health care managers should evolve policy measures to tackle their health, sanitation and hygiene related problems. The employers of migrant workers need to play a proactive role in addressing the health concerns of migrant workers.*

*Another lacuna with the present health care system is the absence of an effective guideline for disposal of hospital waste. Further, there is no effective mechanism for supervising the environment-friendly disposal of hospital waste. If the present trend continues, the day-to-day functioning of hospitals can have an adverse impact on the health of the population in catchment areas.*

*The declining female sex ratio is yet another concern for social sector development in Goa. The child sex ratio in the age group (0-6) has declined from 964 (1991 Census) to 920 (2011).. A number of factors have contributed to the phenomenon of female foeticide. The misuse of easily accessible and affordable modern sex determination technology is one of the contributing factors.*

*Studies in primary care clinics show that a third of all adults in Goa have some degree of anxiety or depression. Suicides are the tragic outcome of depression (The State of Goa's Health Report, 2000). The National Crime Record Bureau in its report titled "Accidental Deaths & Suicides in India" (1998) has recorded that in Goa the suicide rate was 14.39 per one lakh population, when the all India average was 10.3. The number of suicides in Goa was reported to be 302 in 2003 and 277 in 2004. (Assembly Question January 2005). In the present era of market economy, a large number of people suffer from 'burnout stress syndrome' (BOSS) in many countries of the world. In order to arrest this trend in the present globalized economy, the health care system in Goa also should provide more counselling facilities under trained and mature counsellors.*

*The working conditions of health care workers, especially nurses, need improvement. They should be provided with better facilities to equip them to meet the increasing challenges posed by the 'new-generation diseases'. Further, by improving the working conditions, the best talents available in the sector can be attracted to the hospitals in Goa.*

In order to consolidate and to skyrocket the social development achievements especially in the health care sector, the state government should formulate innovative policy measures with the co-operation and involvement of all the stakeholders to triumph over the challenges. The emerging new paradigm in the health care sector can ensure the sustainability of social sector development.

**Goa has been adjudged amongst the top states in the country both by the planning commission and reporting media.**

**Goa's health care challenges**

Recent data on health indicators suggest that while health care in Goa remains far ahead of the national average, there are many cracks in the system. Indeed, on many counts the state appears to be losing the ground gained earlier, even as new challenges loom.

Goa has 19 primary health centres, five community health centres and a number of sub-health centres. Of these 13 PHCs and all CHCs provide 24 hour healthcare and have gynaecological and paediatric facilities,. The establishment of this network has kept Goa's health indicators considerably better than the national average for as long as anyone can remember.

*Notwithstanding this, however, several studies now suggest that in recent years, there have been few new gains; indeed, on many counts the state appears to be losing the ground gained earlier.*
*In August 2006, Goa's local newspapers carried a series of reports on the inadequacies of the state's primary health system. Patients testified to the loss of family members due to lack of access to health services in their vicinity.*

*There is a classic case from a village in corla which is 35 kms from the nearest health centre. Four years ago a villager lost her baby because she could not access its services in time. In these interior districts of Goa there is a wide need and availability gap - the 41,000 residents of Canacona have recourse to no more than 60 beds at the health centre. The centre's x-ray machine has not worked for over a year; the kidney dialysis machine is rendered useless by unreliable electricity and the absence of a generator.*

*These myriad problems result in health services that do not match up to the investments made in buildings and equipment. A large number of vacant posts, ill-motivated staff and non-availability of essential drugs undermine curative services at the PHC.*

**New challenges**

But tackling the woes in the state's health care system will be no easy matter. Social and economic changes are rapidly bringing in a new set of problems. The state is witnessing a rapid rise in chronic diseases such as cancer, heart disease, and mental health problems, and addressing these requires far more than mere infrastructure and rudimentary support.

**Older battles still to be won**

While the complex new problems demand urgent attention, there are still a number of older battles to be fully won. The infrastructure for detecting and responding to many illnesses is much better in Goa than elsewhere in the country. Nonetheless, there is much that remains to be done to ensure that well understood illnesses are properly tackled.

*Yet another disturbing feature is seen in the Infant Mortality Rate, which has risen in the past decade according to the NFHS. The Goa government says IMR in 2003 was 11.67 per 1000 births, considerably better than the all India average of 70 per 1,000 births. But NFHS data from 1998-99 suggests that these figures may be wrong, and if fact there may have been a worsening of the situation in the state in the last decade. Analysing the NFHS data on IMR, researcher Siddharth Ramji notes that despite the decline in the national infant mortality rates between 1988-92 and 1994-98, in eight states incluing Goa, the IMR rates actually worsened. In Goa, the rise is estimated to be from 31.9 deaths per 1000 births to 36.7. (Indian Pediatrics, 2001).*

**Rethinking Public Health**

Can these problems ever be sorted out? Our experience has repeatedly shown that the country will never have enough trained medical professionals willing to work in the rural areas, and that the emphasis on vaccines, allopathic drugs and technology has not turned out to be the promised magic wand.
The experience of a number of groups whose work in community health provides invaluable contemporary heritage, may offer an alternative course, one that places the country's neediest at its core. One such approach is developing a cadre of village based health workers trained in preventive and curative health. This is now a key recommendation of the National Rural Health Mission which requires that such a cadre, supported by a strong primary based referral system be created across the country.

But here too, there is a wide gap between the plan and its achievements. Goa has yet to identify this cadre and put such a programme in place, admits Goa's Director of Health Services. For most of the state's residents, their vulnerability to the cracks in the health system is still a long way from being tackled.

*Medical Tourism:*
Even though the health or medical tourism sector is growing at a very fast pace with around 30 per cent annual growth seen in most part of the world over the years, medical tourism sector's development in the state has not been able to keep pace with the global growth.

This is despite the fact that the state has excellent healthcare facilities in the private sector along with a highly qualified English speaking medical staff.

The private sector operators in the health sector, especially those offering tertiary care facilities at a very cheap rate which are sought by foreigners, have claimed that Goa has been witnessing around 5-10 per cent growth in the number of the foreigners seeking medical assistant in the state.

*The government should play the role of a facilitator for the sector, the operators feel.*
*The private sector healthcare operators want the government to take advantage of the situation and facilitate growth of the healthcare sector besides promoting Goa's healthcare facilities abroad so as to attract foreigners to the state for medical treatment.*

*The private operators also want the government to help the sector in getting necessary international accreditation and registration of foreign insurance companies that would go a long way in attracting the foreign clients as well as attracting more tourists to the state.*

Research in Indian health requires partnership with local communities to understand and articulate their concerns. It needs field-based epidemiology rather than extrapolations that have no basis in ground reality.

It calls for an understanding of the wider socio-economic linkages to understand what factors shape people's health and health seeking behaviour.

*Without such insightful research states health agenda will continue to lurch from one meaningless priority to the next. Its public primary health system will remain a mere shell while its referral services will continue to be overloaded and increasingly at the receiving end of public rage when patients continue to die from negligence, wrong diagnoses and lack of drugs. The current push towards privatization and reduced subsidy to public health care will meanwhile leave the poor with little option but to quietly lie down and die.*

*The perfomance of the health system in Goa, despite the State's remarkable achievements of over 82% literacy rate and second highest per capita income in India, is symptomatic of all these challenges. "A huge work burden and ill-motivated staff plague the primary health system in Goa."*

*Cancer and cardiovascular disease*

*Although there is no official data on cancer incidence in Goa, the state records around 250 new cases of breast cancer every year. Going by figures, based on actual cases detected, it would imply that Goa's female population of 650 000 would see an incidence of 35 breast cancer cases per 100 000 people.*

*The all-India figure for breast cancer cases is estimated to be 80 000 [in a population of 1.1 billion, ie about 8 per 100 000, a quarter of the Goa figure] .*

*"The rate of breast cancer cases in Goa is very high – and is comparable to the incidence in Indian metros. Goa sees around 600 people dying of communicable diseases but 5 000 from non-communicable diseases each year. It is high time the health system is geared to early detection and prevention of non-communicable diseases like cancer, diabetes and hypertension which are on the rise here*

**The anganwadi**

One element of Goa's health system that does seem to be working well is its 'anganwadi', a network of localized crèches that are part of a nation-wide programme. The 'anganwadi bai' (worker), supported by a helper, takes care of children between 2-6 years old for a couple of hours each morning. These workers provide a nutritious cooked mid-day snack to all the children attending the informally run nursery school.

The main task of the anganwadi workers is to monitor the growth of these children by a standardized measurement of weight for age along with some other growth indicators. Those children that do not match up to the required measurements are graded on a scale of 1-4 of malnutrition. The first two categories are considered to be at risk and need to be closely monitored, while the latter two are in a serious stage and require additional supplementary food or hospitalization.
The state provides a rich fare of ragi (finger millet, which is sprouted and roasted), gram flour (ground chick peas), groundnut, jaggery (unrefined sugar), dried green peas, mung (sprouted beans), rice and ghee (clarified butter).

Supplies are received regularly, said, the anganwadi worker. Packets of dry supplementary food are prepared by the anganwadi workers and delivered to the homes of all pregnant and lactating mothers as also to infants from six months to two years of age.

Children attending the anganwadi, though cramped into a small rented room, are fed a nourishing mid-morning snack cooked by the anganwadi helper. Sprouted mung usal (mung bean curry), misi roti (a Rajasthani bread), rice idlis (rice with dal), groundnut ladoo (a sweet), kabuli chana (a chickpea dal) and mixed ladoo (sweets), are on the weekly menu. The idlis offered to me that day were fresh and delicious. The children are obviously at home and comfortable with their teachers and entertain the visitor with action songs and stories. Such supportive care for young children has clearly been a boon to rural women, particularly those working in agriculture.

Other states that only offer calorie support through khichdi (rice and lentils) through their anganwadi programme, could draw inspiration from Goa's commitment to the health of its children. The Goa government should additionally consider support for a kitchen garden that provides fresh green vegetables and fruits for the children. Maintained by the community, it would further enhance the need for micronutrients that enhance immune status, and ensure against leakages and corruption, which is commonly seen in other states.

A doctor visits the Bicholim anganwadi once a month. The anganwadi workers are able to administer oral rehydration treatment to diarrhoea cases and refer those that require medical attention. The contribution of these anganwadi workers to the community, both in Bicholim and in Madkai, where I had an opportunity to observe their work, is incalculable.

The efforts of Sangath have helped to sensitise anganwadi workers in identifying children with learning disabilities or dealing with child sexual abuse.

A senior official of the Integrated Child Development Services said a new innovative dimension to Goa's Integrated Child Development Services (ICDS) programme has been nutrition education camps for adolescent girls, including school dropouts and young women, in the 14-45 age group. Here they are taught the importance of nutritious food along with cooking demonstrations emphasizing low cost and locally available food with an emphasis on salad recipes. At these camps issues such as relationship problems are discussed and vocational training skills related to tailoring, catering and craft are taught.

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**MoHFW Reports**

Annex - I

# PUBLIC HEALTH IN GOA.

## PUBLIC HEALTH FOCUS - GOA

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REPORT

By Ajay Kumar
Special Rapproteur

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Table of Content

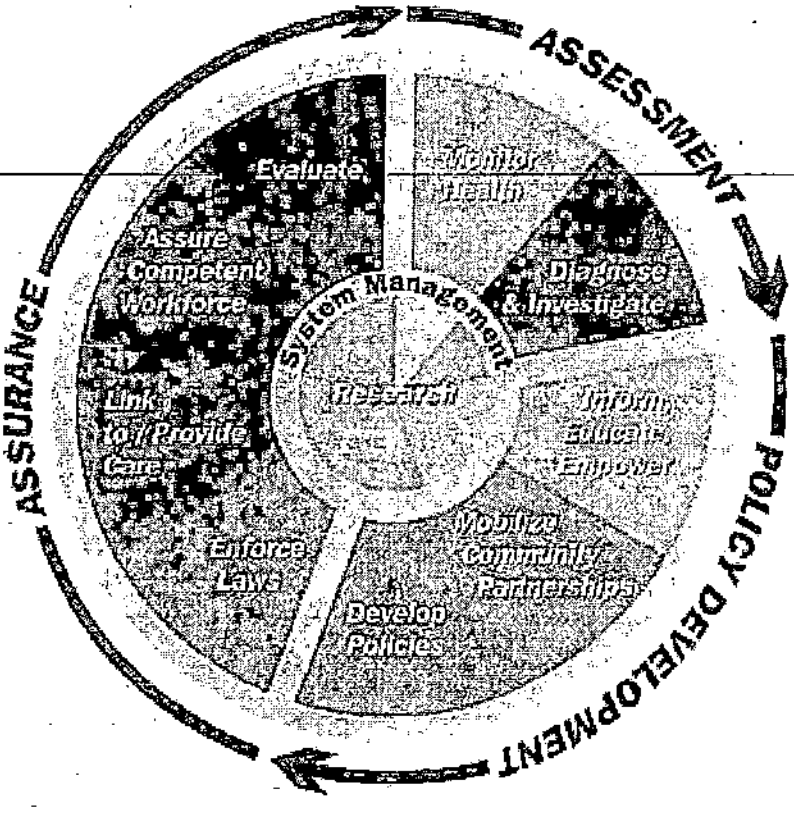
## 1. Public Health and Its Evolution

Globally public health is defined as the science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society.

### 1.1. Public Health Approach

The government approach to the public health:
is population based
emphasises collective responsibility for health, its protection and disease prevention
recognises the key role of the state, linked to a concern for the underlying socio-economic and wider determinants of health, as well as disease
emphasises partnerships with all those who contribute to the health of the population.

### 1.2 10 Essential Services of Public Health




**Key domains of public health practice:**

- Health Improvement
- Inequalities
- Education
- Housing
- Employment
- Family/Community
- Lifestyles
- Surveillance and Monitoring of specific diseases and risk factors

**Improving services**

- Clinical effectiveness

- Efficiency
- Service planning
- Audit and evaluation
- Clinical governance
- Equity

**Health Protection**

- Infectious diseases
- Chemicals and poisons
- Radiation
- Emergency response
- Environmental health hazards

**The core values are that public health practice should be:**

- Equitable
- Empowering
- Effective
- Evidence-based
- Fair
- Inclusive

**In light of these core values, and the three domains of public health practice, we see nine key areas for public health practices**

These nine areas are at the basis of all standards of training and practice that we should follow

**The nine key areas are:**

- Surveillance and assessment of the population's health and wellbeing
- Assessing the evidence of effectiveness of health and healthcare interventions, programmes and services
- Policy and strategy development and implementation
- Strategic leadership and collaborative working for health
- Health Improvement
- Health Protection
- Health and Social Service Quality
- Public Health Intelligence
- Academic Public Health

**1.3 Difference between Medicine and Public Health**

| Medicine | Public health |
|---|---|
| • Focus on individuals<br>• Diagnosis & treatment<br>• Clinical interventions<br>• Well-established profession, standardized education & certification<br>• Clinical sciences integral; social sciences less emphasized<br>• Experimental studies with control groups: RCTs. | • Focus on populations<br>• Prevention & health promotion<br>• Environment & human behavior interventions<br>• Diverse workforce, variable education & certifications<br>• Social sciences integral; clinical sciences peripheral to education<br>• Observational studies: case control & cohort studies |

**Based on these parameter, the knowledge domain of public health is defined as:**

| The knowledge domain of public health | |
|---|---|
| • Biostatistics | • Health Services Administration |
| • Chronic Diseases | • HIV/AIDS |
| • Communicable Diseases | |
| • Community Health | • Maternal & Child Health |
| • Disaster Control & Emergency Services | • Nutrition |
| • Environmental Health | • Occupational Health |
| • Epidemiology | • Public Health Informatics |
| • General Public Health | • Public Health Laboratory Sciences |
| • Global Health | • Public Health Nursing |
| • Health Promotion & Education | • Social & Behavioral Sciences |
| | • Vital Statistics & Surveillance |

| Public Health has a diverse workforce | |
|---|---|
| • Epidemiologists | • Mental Health Workers |
| • Statisticians | • Substance Abuse Counselors |
| • Environmental Engineers | • Doctors |
| • Animal Control Officers | • Nurses |
| • Sanitarians | • Teachers |
| • Food Scientists | • Disaster Relief Workers |
| • Industrial Hygienists | • Nutritionists |
| • Health Care Administrators | • Lab Technicians |
| • Health Economists | • Librarians |
| • Politicians | • Communication |
| • Social Workers | • Security & Enforcement / Health Police |

## 2. Public health infrastructure

### 2.1 What we need and what we have

*We need 7,415 community health centers per 100,000 populations. We have less than half the number. Worse, at the healthcare facilities we do have, the basic staff is not in place. Only 38% of our primary health centers have all the required medical personnel. With the public health infrastructure in such a shambles, how can the poor count on government health centers?*

India's achievements in controlling infectious diseases present a mixed picture of good and bad news. Once goals were set, smallpox, guinea worm disease and yaws were eliminated, virtually on time. The National AIDS Control Programme (NACP) has achieved stabilization of the epidemic in most states and reduction of prevalence in Tamil Nadu.

The National Rural Health Mission has re-invigorated health care in rural communities through strengthened primary health centers and sub-centers. Tamil Nadu has sustained >90 per cent 3rd dose DPT coverage in infants for over a decade, virtually eliminated child death due to measles and drastically reduced the incidence of Japanese encephalitis (JE). Nationally, over 99 per cent reduction of annual polio cases has been achieved. These successes were achieved through 'vertical' (Centrally sponsored) disease-specific or project-specific special vehicles.

*On the negative side, too many infectious diseases are either not in control mode or not controlled in spite of efforts through special vehicles. Even measles and diphtheria are not adequately controlled in spite of over decades of attempt through the national immunization programme. Malaria control is not sustained and there is resurgence of Falciparum malaria in many States. Neither the prevalence of adult TB nor the incidence of Mycobactrium tuberculosis infection in children has declined in spite of a well-run [Revised] National TB Control Programme that had its beginnings in 1962.*

*Although leprosy prevalence (cases under treatment) has been brought down through short course multi-drug therapy, new cases continue to be detected at an unacceptable rate; yet active case search has been [prematurely] discontinued. Kalazar incidence has increased in recent decades. When chikungunya virus entered the country, most States were unprepared to face the consequent enormous epidemic - this could be directly associated with continued systemic failure in controlling dengue virus diseases, as both are transmitted by the same vector mosquitoes.*

Many other rampant infectious diseases such as cholera, typhoid and paratyphoid fevers, shigellosis, amoebiasis, cysticercosis, viral hepatitis (A, B, C, E), influenza, brucellosis, hydatidosis, paragonimiasis, rabies, Leptospirosis, anthrax, scrub typhus etc., have not been assigned any priority for control. These failures are the tell-tale symptoms of the lack of a functional public health infrastructure in India.

*The Ministry of Health and Family Welfare (MoHFW) in the Government of India (GoI) consists of Departments of Health, Family Welfare, Indian Systems of Medicine and Health Research. There is no Public Health Department.*

*Physicians often have an inherent but silent conflict of interests between public health and medical care. They focus on individual need, including preventive medicine, but have no skill or opportunity to address risk factors of diseases in the community or environment. Even when placed in leadership positions, they tend not to play an advocacy role for public health. After all, their self-interest lies in clientele with diseases.*

Since 2000 the GoI had two medical doctors as Ministers for MoHFW, from different political ideologies, serving several years in office, but they did not take the initiative for developing public health – such is the negative bias against public health in our country.

*Ministries of Health in most States (except Tamil Nadu) also do not have public health departments.* While medical care and training of health care professionals are under State jurisdiction, disease control is under GoI. Some of the functions of public health, for the control of infectious diseases, have been assigned to a

few 'vertical' (Centrally sponsored) projects, such as the national immunization programme, single-disease- control projects (against TB, AIDS, Malaria, Filariasis and Leprosy) and Integrated Disease Surveillance Project (IDSP).

Unfortunately, this organizational style has severe limitations; many vertical programmes are faltering in all States except Tamil Nadu. The GoI should evaluate the health system performance of Tamil Nadu in comparison with that in other States in order to understand the contribution of the State Department of Public Health in achieving better health parameters for the people.

*It is imperative that Departments of Public Health be established in the Central and State MoHFW. They require defined cadre and career structures for personnel specially trained in public health. The functional coordination of public health activities at Central and State levels will have to be carefully designed. Public health actions are needed both at the national level and at the local levels. Without close interfacing of health care and public health at State and district levels, disease prevention and outbreak control cannot be successful.*

*Countries that have succeeded to control a broad spectrum of infectious disease achieved it through a functional public health infrastructure. Disease- prevention, outbreak-control and health promotion are the functions of public health - thus the lack of a public health arm within the health system is the major reason why India has not been able to control the many infectious diseases.*

*Un-prevented diseases consume resources of the health care enterprise, which is woefully inadequate in the public sector, creating the demand for private sector health care. Thus some 70-80 per cent of sick persons seek care in the private sector - paying all expenses from family resources or borrowed money this inequity promotes poverty.*

*Public health is infrastructure, crucial for human development. India ranks 132$^{nd}$ among 179 nations according to the Human Development Index (2008), while India ranks 5th in global economy. This strange disparity is mainly due to low investments in health and education, which allows the perpetuation of family-level poverty and unsatisfactory living standards - the parameters for assessing human development of any nation.*

*Every district ought to have a professionally trained public health officer under whom the currently fragmented public health activities should be integrated. The health care system within the district should be mandated by law to be answerable to the district health officer with regards to the detection and management of any disease that has public health implications. For example, every case of Tuberculosis, Malaria and HIV infection (to cite the glaring examples of commonly mis-managed diseases with the threat of emergence of drug resistance) must be treated according to national treatment protocols and captured in the district disease information data base.*

*Thus India needs over 600 trained district health officers. Each State will need a cadre of State level public health officers to supervise the activities within the State. The Centre requires a full complement of public health officials to preside over all public health functions including policy formulation, creation of protocols, standardization of public health interventions and procurement and supply of quality assured material. All public health officials, including the head of the department must have adequate training, skills and experience in public health and epidemiology.*

*The functional components of public health includes case-based and real-time disease surveillance; detection of early signals of outbreaks and immediate interventional response; coordinated control and monitoring of trends of all endemic infectious diseases which will vary from region to region; the maintenance of microbiology laboratories in all districts and their quality management; and the coordination of all currently vertical disease control programmes.*

The population in a district may range from 1 to 3 millions. There may be several public sector and private sector health care institutions with microbiology laboratories for diagnostic purposes. In addition there may be privately run laboratories also. Yet, there is a glaring lack of public health laboratories at the

district level. Such laboratories are essential to play a supporting role in the diagnosis and management of all diseases currently under vertical programmes as well as all others not under control mode as yet.

*There is currently no functional infectious disease surveillance programme - IDSP, established in 2002, has not succeeded in helping timely interventions against any outbreaks.* It has prevented the replication of the model of decentralized district level disease surveillance (DLDS), which had proved effective for monitoring infectious disease trends over time and for detecting early signals of outbreaks to enable their control. Unless disease surveillance is closely inter-faced with health care across public and private sectors we cannot expect success of surveillance or its utility for disease control. While DLDS is based in the health care sub-system under State control, IDSP is 'vertical' (under Central control) and not integrated with health care or even other vertical disease control programmes.

This is the best time for the GoI to re-engineer the nation's health system and bring it on par with other nations that have achieved successes in public health, such as Sri Lanka and Thailand, to cite two examples in South Asia. The need is extremely urgent since India is already facing the emergence of high burdens of diseases due to life-style changes, such as diabetes, hypertension, obesity and consequent cardiac, brain and renal catastrophes.

The public health infrastructure that learns from managing infectious diseases is essential for monitoring and managing their control. Infectious disease control is the school from which classical public health has to graduate into modern public health that deals with all diseases.

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**2.2 Public health Infrastructure in Rural India**

Recognizing the importance of Health in the process of economic and social development and improving the quality of life of our citizens, the Government of India has resolved to launch the National Rural Health Mission to carry out necessary architectural correction in the basic health care delivery system.

The Mission adopts a synergistic approach by relating health to determinants of good health viz. segments of nutrition, sanitation, hygiene and safe drinking water. It also aims at mainstreaming the Indian systems of medicine to facilitate health care. The Plan of Action includes increasing public expenditure on health, reducing regional imbalance in health infrastructure, pooling resources, integration of organizational structures, optimization of health manpower, decentralization and district management of health programmes, community participation and ownership of assets, induction of management and financial personnel into district health system, and operationalizing community health centers into functional hospitals meeting Indian Public Health Standards in each Block of the Country.

The Goal of the Mission is to improve the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women and children.

Introduction

National Rural Health Mission (NRHM) is not a first program on rural health in independent India, even then, the enthusiasm and attention of the health personnel and people toward the program is phenomenal. This may partially be attributed to the apparent commitment and sincerity of the government, which was rightly reflected in the confessional speech of the Prime Minister of India, on April 12, 2005, on the launch of this program, when he said "***We have grievously erred in the design of many of our health programs. We have created a delivery model that fragments resources and dissipate energies. Most importantly, we have paid inadequate attention to the public health issues.***"

The attempts to improve rural health through various programs were started as early as in 1940 when, then British government in India set up 'Bhore Committee' (This committee also known as Health Survey and Planning Committee was set up by Government of India in 1943 to understand the health situation in the

country. The committee was headed by Sir Joseph Bhore and it got this name of Bhore Committee. The committee submitted its recommendations in 1946 with elaborate planning for health services delivery in India.) to find out the ways to improve the health of the people.

This was followed by a number of other committees and programs i.e. Balawant rai Mehta Committee (After the initial developments followed by Bhore Committee report, this committee was set up to know the progress since Bhore committee recommendations and, to give further suggestions to improve the health scenario in the country), Community Development program and Basic need programs etc. These attempts were only partially successful in changing prevailing health scenario. The successive governments started their own program and strategy to change the health conditions of the people without understanding or fully investigating the reasons for the failure of the previous programs.

The National Rural Health Mission (2005-12) seeks to provide effective healthcare to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. These 18 States are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttarakhand and Uttar Pradesh. The Mission is an articulation of the commitment of the Government to raise public spending on Health from 0.9% of GDP to 2-3% of GDP.

NRHM aims to undertake architectural correction of the health system to enable it to effectively handle increased allocations as promised under the National Common Minimum Programme and promote policies that strengthen public health management and service delivery in the country. It has as its key components provision of a female health activist in each village; a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat; strengthening of the rural hospital for effective curative care and made measurable and accountable to the community through Indian Public Health Standards (IPHS); integration of vertical Health & Family Welfare Programmes, optimal utilization of funds & infrastructure, and strengthening delivery of primary healthcare.

It seeks to revitalize local health traditions and mainstream AYUSH into the public health system. It further aims at effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through a District Plan for Health. It seeks decentralization of programmes for district management of health and to address the inter-State and inter-district disparities, especially among the 18 high focus States, including unmet needs for public health infrastructure. It also seeks to improve access of rural people, especially poor women and children, to equitable, affordable, accountable and effective primary healthcare.

## 3. History of Healthcare in Goa

History of medicine in Goa is fascinating. It had its ups and downs and it is quite well documented in contrast to in any other part of the Country. It tells us the tales of romance, bravery and rebellion against unjust authority and also it is interesting to go through biographies of pioneering geniuses such as Gracia da Orta.

The primary reason behind the advanced stage of healthcare and medical education in Goa was due to the approach which the Portuguese rulers had towards local people or natives viz a viz the British rulers of India. The Portuguese didn't treat their overseas territory as colony like the Britishers. They wanted to integrate the overseas populations with the Portuguese way of life. They encouraged the marriage of the Portuguese nobility and soldiers with the populace of the overseas territory and the men of these territories with the Portuguese women.

So there was very conscious effort to integrate the populace of the overseas territories with the Portuguese way of life. Goa never witnessed any General Dyer as in the case of British, only attrocities committed by them was for conversion of local population to Christianity. That's why even during the British period and intial stages of the Independent India, the standard of healthcare in Goa was better than most parts of the British India except Metropolis.

Attempts at teaching western medicine to the natives started around 1546. The Jesuit priests at the Collegio de Sao Paulo dos Arcos or the Seminario da Santa Fe, founded in 1541 taught medicine along with theology, mathematics, astronomy and philology. This institution is claimed to be Asia's first Western Style University. A Jesuit letter dated December 1, 1560 mentions: "In January 1560, philosophy began to be read for those who had finished their lessons in logic; to three lay brothers of the house and to the boys of the college, eleven of whom are Malabaris and three external students.

Father Francisco Cabral lectures on medicine every morning from 7 to 9". The conferment of degrees at this college often took place in the presence of the Viceroy and other high officials. In many of these functions, Gracia d'Orta is reputed to have taken an active part. It is not clear if he himself ever taught medicine. From simple beginnings the Collegio grew in shape, in amplitude of structure, in the number of disciplines as well as in the exercise of knowledge and virtue that it can be compared to all of Europe's colleges. The teaching of medicine started here was later augmented by the fisico-mors. In 1591, the administration of the Royal Hospital was placed in the hands of the Jesuits.

Goa has the distinction of having one of the first medical schools in Asia. This was started in 1842, as 'Escola Medico-Cirurgica da Goa'. Even before that as early as on St. Catherine's day – 25th November 1510, the Royal Hospital was founded by Afonso de Albuquerque soon after his conquest of Goa. From small beginning near the chapel of St. Catherine (west of the present Archeological museum in old Goa) it grew in stature. It was the pride of successive viceroys of Goa and rulers of Portugal who bestowed great care on it. It was rapidly acclaimed as one of the best hospitals in the world.

Francois Pyrard de Laval, French seaman, was an inpatient for 3 weeks in 1608 and has left a vivid description: "Viewing it from outside, we could hardly believe it was an hospital; it seemed to us a grand palace, saving the inscriptions above the gate: Hospitale dil Rey Nostro Seignoro. The beds are beautifully shaped and lacquered with red varnish; the sacking is of cotton; the mattresses and coverlets are of silk or cotton, adorned with different patterns, pillows of white calico. Patients were provided with pajamas, cap and slippers, bed-side table on which was a fan, drinking water, a clean towel and hanker-chief, a chamber pot under the bed. Each patient served with a complete fowl and the plates, bowls and dishes were of Chinese porcelain. In the evening they brought us supper at the appointed hour, to each a large fowl roasted with some desert so we were astonished at the good cheer we received. This hospital is, as I believe, the finest in the world, whether for beauty of the building and its appurtenances, the accommodation being in all respects excellent, or for the perfect order, regulation and cleanliness observed, great care taken of the sick, and the supply of all comforts that can be wished for."

However, by mid 17th century the hospital had decayed, with poor treatment of the patients. There was a lack of steady supply of young well trahined doctors. One fisico-mor had to look after more than hundred patients and very often he would not even look at the patients and just pass by their side.

'Hospital Real do Espirito Santo' (Real Hospital of the Holy Spirit), was run by Jesuits. It was here that medical studies began in 1691 with the help of two professors from University of Coimbra, Portugal. In 1801, a three year course called "Aula de Medicina e Cirurgica de Hospital Militar de Goa" (Class of Medical and Surgery of the Military Hospital of Goa) was started, its duration being extended to four years in 1821 by Surgeon-General Lima Leitao. This course continued up to 1840. The title Medicos de Sua Magestade was bestowed on the graduate. Rodrigues Moacho, the founder of Escola in 1842, further reformed the course and also founded a 3 years course in pharmacy. In 1865 the course was extended to cover 5 years. The same medical school was upgraded to the present Goa Medical College in 1963 after liberation.

In the Pre-Portuguese era it was mainly the practitioners of traditional Indian system of Medicine (Ayurveda) called Vaidyas who looked to the ailments of the body and sometimes of the mind as well. These Vaidyas were held in high esteem by the public and were honoured by custom. The diseases treated by these Vaidyas were mostly the common one that came with change of time and weather. The care was mostly in the form of herbs and ointment. However these heaqlers had no knowledge of modern human anatomy or physiology. Most of their skills of medicine were confined to certain number of recipes, which they had received from their ancestors. In addition, they used to prescribe drinking large quantity of water and gave the patients Cange (Made of rice, salt and pepper).

In spite of limited number of these remedies, the results of treatment of these Vaidyas were much better than their counterparts - the most learned foreign physicians. Some of the strange remedies included 400 years old butter that was much prized as Gold. The Vaidyas were well to do and used to move on horseback, palanquins or on andores.

Unani was practiced at a much smaller scale in Goa. The best-known hakim in Goa was an outsider Abu Ali Hussein ben Abdullah ben Sina, earlier personal physician to the emperor Akbar. He later converted to Christianity in 1610.

Thus Goa has a long and prestigious history of not only medical services, but also of medical education. However, the medical services in Goa at the time of liberation were restricted to only primary and secondary health care. For most of the serious medical problems, the patient had to be rushed to neighbouring states or cities like Mumbai. Since liberation the successive governments have strived hard to uplift the stature of Goa Medical College by bestowing upon it generous amount of funds and also by taking keen interest in its functioning.

The government has paid attention to all aspects of healthcare starting with primary healthcare where in many Primary Health Centres have been upgraded to the extent that they have become a source of envy for the visiting experts. Similarly at secondary health care level also the North Goa District hospital has been built as a State of the Art Hospital with all the facilities under one roof, including C.T. scan. South Goa District hospital is taking shape at a rapid pace and will be able to compete with many medical colleges in the country.

There are more than 120 hospitals in Goa with total bed strength of around 4600 beds. Almost half of these are in public sector while the rest are in private sector. Goa can boast of the best doctor patient ratio as well as best patient bed ratio in the country.

*Goa can also boast of some of the best Tertiary care facilities in the public sector in the country. Goa Medical College has got the best possible facilities under one roof. These facilities were non- existent in Goa at the time of liberation. Not only that, all these facilities are available to any patient totally free of cost. Some of the facilities that have been added in last few years are:*
*New 450 bedded medical block with all modern facilities.*

*Yatri Niwas; for the relations of the patients who had to sleep on the floor, will now be able to rest comfortably in well equipped rooms.*

*Ultramodern state of the art pathology laboratory that gives accurate results for practically all kind of tests.*

*Emergency services providing excellent pre-hospital care through EMRI; bringing relief not only to the trauma cases, but also all other kind of medical emergencies.*

*Diabetes detection facilities have been made available for whole of the population of Goa.*

*New super specialties of Pediatric surgery and Urology have been established so that the patients do not have to seek treatment elsewhere.*

*Renal Implants as well as mrdicines required for its acceptance and longevity are provided free.*

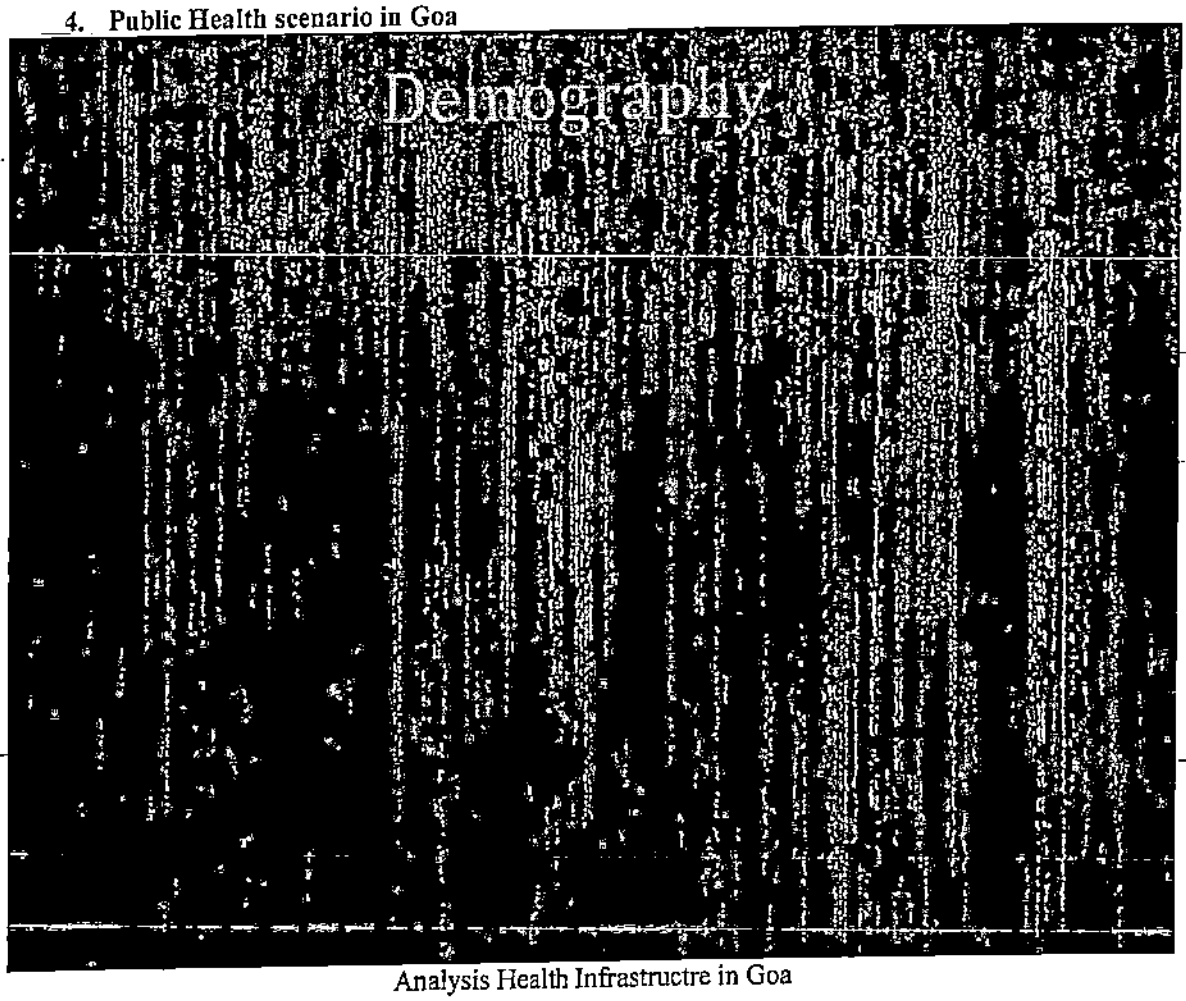
*All anticancer drugs, irrespective of the cost are given free to all the citizens of Goa.*

*All orthopedics implants including joints are provided totally free to needy patients.*

Very soon cardiac care facilities will be available in GMC. A separate super-specialty block is likely to come up at GMCH soon. A state of the art cancer treatment centre is also in the pipeline. Paramedical courses will soon start in Goa thus putting to an end the shortage of these personnel.

This all is being done to ensure that the people of Goa have access to the best of the healthcare. We have seen the effect of all these developments in the form of best health parameters that Goa has in our country. This has resulted in Goa being adjudged the best state in matters of healthcare for many years in a row.

4. **Public Health scenario in Goa**




Analysis Health Infrastructre in Goa

| Item | Pre-liberation 1961 | At the time of statehood 1987 | 2011 Census |
|---|---|---|---|
| Population served per bed | 211 | 310 | 269 |
| Population served per hospital | 34814 | 10316 | 8878 |
| Area Served per hospital (sq. kms) | 34.27 | 32.16 | 21.65 |
| Doctor popln. Ratio (2004) | --- | --- | 1:636 |
| Life Expectancy (2004) | --- | --- | Males –68<br>Females -72 |
| | | | |

| Item | Preliberation 1961 | At the time of statehood 1987 | 2011 | Goals for 2012-13 |
|---|---|---|---|---|
| Birth Rate per thousand popl. | 31.99 | 18.24 | 13.2 | 13.2 |
| Death Rate per 1000 popl. | 13.59 | 6.72 | 6.74 | < 6 |
| IMR per 1000 live births | 69.92 | 24.88 | 10 | 8 |
| Maternal Mortality Rate per lakh live births. | 144 | 48 | <40 | Negligible |
| Total fertility rate | --- | --- | 1.8 | 2.1 |
| Mean Age at marriage for females | | | 25 | |

4.1 Health Structure & Services in Goa

Goa has got one of the most extensive health systems in India. Apart from Goa Medical College, the Directorate of Health Services seeks to provide preventive, promotive, curative & rehabilitative health care services to the people. In the rural areas, services are provided through a network of integrated health family welfare delivery system comprising of Sub-centers, Primary health centers, Community health centers & District hospitals in ascending order

| Unit | Sanctioned | Functioning |
|---|---|---|
| Sub- center | 172+64 | 205 |
| RMDs | 29 | 29 |
| UHC | 4 | 4 |
| PHC without Hospitals | 6 | 6 |
| PHC with Hospitals | 13 | 13 |
| CHC | 5 | 5 |
| Cottage Hospital | 1 | 1 |

| | | |
|---|---|---|
| Other Hospitals | 2 | 2 |
| District Hospital | 2 | 2 |
| Goa Medical College & Hospital | 1 | 1 |

## Health Indicators

### Current Status of Goa Healthcare

**Suicide Status**

Suicide rate for the state of Goa: 18.5 per lakh per year (**11th in the country**)
Male to female ratio for suicides = 73: 27 (almost 2.7 times, rate for India—65:35)
Overall highest rate of suicide in 15-29 years age group (33%), followed by 30-44 years age group (31.6%).
Among males, highest rates in the 30-44 years age group (34%) and in females, it was 15-29 years age group (43%). [Trends shifting towards younger population].
Marital status of suicide victims shows majority were married (56.5%).
Majority of suicide victims had not attained higher levels of education. 31% had attained upto primary level and 84.5% upto 10th standard.
Most common means adopted for suicide was hanging (56%) followed by drowning (17%) and poisoning (13%). Among both men and women, most common method adopted was hanging (62.7% and 37.2% respectively) followed by drowning (14% and 25.6% respectively).

## 5. Physical Infrastructure

### 5.1 Hospicio Hospital

**HISTORY OF THE HOSPITAL:**
It is a matter of great pride to mention here that the Hospicio Hospital is a very old hospital founded on 13th December 1867 by late Rev. Fr. Antonio J. De Miranda. It is one of the major Hospitals in South Goa District, a referral centre to all CHC's, PHC's , UHC's in the South District and as such due consideration is given to it by the Goa Government.

**REPORT OF THE FACILITIES AT HOSPICIO HOSPITAL MARGAO**

**ENT**
All Routine operation including Microsurgery of Ear, Nose, Throat

Infrastructure :
Operating Microscopes
Equipments for FESS surgeries

Staff
2 Senior ENT Surgeon
1 Junior ENT Surgeon posts filled

Vacant
1 Junior ENT surgeon
1 Audiologist own speech-therapist

**Medicine**
Infrastructures present:
Oxygen cylinder, Central Oxygen Supply for Coronary room, Monitors with defibrillator, Monitors with NIBP, Pulse Oximeter, ECG Machines, Infusion Pumps, Syringe Pumps, Nebulizers.
1 Senior Physician
1 Junior Physician
1 Respiratory chest Physician
6 Medical Officers

Need for ICU setup with ventilator & Staff for ICU.
Need for one more Physicians.

**Anesthesiology**
Anesthesiologists – 5
2 posts of Junior Anaesthetists vacant.

Infrastructure
4 - Anesthesia machinery in working and 2 Anesthesia Machinery with Ventilators not used for giving Anesthesia as there is no vaporizer attached to it.
Pulse oximeter 5 working and OK.

Procedures done:
General Anesthesia
Regional Anesthesia
Local

Needs
2 - Vaporizers for sirofloran

**Paediatric**

Services Provided
For Paediatric inflection
Emergency services round the clock by medical officer on duty and consultants as and when require in addition to routine hours.
In Patient services (30 bedded ward)
OPD Services

Neonatal Intensive Care Unit (NICU) – 3 beds
Preventive Services
Immunization daily
Parenting program monthly
Child Development Clinic weekly
Adolescent Clinic weekly

Staff
2 - Consultant Junior & Senior ( 1 each filled);
Medical Officers posted in Paediatric Department ( 7 Nos)
2 - Post Junior & Senior (vacant 2)

**Forensic**

Conducting Medico Legal Post Mortem & allied work.

1 Medico Legal Officer} – 2 posts
2 Medical officers – 2 posts
3 Morgue Attendants – 2 posts
} All posts filled

**Orthopaedic**

Facility Routine / Emergency Ortho Surgeon
OPD's Ward rounds
2- Sr. Ortho surgeon posts - filled
2 -Junior Ortho Surgeon - Post vacant
3- Physiotheraphist

**Radiology**

Infrastructure

i) Two Fixed X ray machines with CR system 500 mA (FUJI)
300 mA with Image intensifier
ii) Two Portable (Mobile) X-rays machines
(i) 60mA ii) Multimobil 2.5.

Ultrasound Machines
Black & white - Two probes 3.5 AbH
6.5 Transvajinal
ii) Color Doppler - 3 probes
Cardiac
Abd
Small part 10 MHZ

CT Scanner, Single slice spiral CT Somatom Espirit

Facilities Provided

Conventional X rays
Specialized X rays investigation
Barium meal, Swallow, Enema, follow through
Intravenous paleography, urethrogram, Hysterosalpingogram etc.
Ultrasound exam including doppler study.
CT scan of Brain, Chest, Abdomen, Plain & Contrast.

Existing Staff Pattern

Two Senior Radiologist
Two Junior Radiologist posts filled
X ray Technicians 8
Dark Room Assistant – 1 Posts filled
Servants – 1
Staff Nurse – 1

**Ophthalmic**

Equipments
Vision testing Drum, Tonometer, Kerotometer, A Scan, Autorefractometer, Split Lamp
Operating Microscopes.

2) Existing Staff
Senior Ophthalmic Surgeon
Junior Ophthalmic Surgeon posts filled
iii)Ophthalmic assistant

1 Senior Ophthalmic Surgeon
1 Junior Ophthalmic Surgeon posts vacant

**Surgery**

Infrastructure
34 Male surgery Beds & 22 Orthopaedic Beds = Total 56.
24 Female surgery Beds & 8 Orthopaedic Beds = Total 32.
Surgical OPD's 4 times a week (Mon/Tue/Thur/Fri)
Operation Theatre (Routine) 4 times a week (Mon/Wed/Thur/Sat)
Emergency operation daily as per necessity.

Facilities provided
Surgical OPD/ Orthopaedic OPD - 4 times a week.
Admission for patients requiring treatment – 24 hours.
Operations performed 4 times weekly as per routine operation lists.
Operation performed include all minor procedure and major operation under local / spinal / Epidural and general Anesthesia E.g. Hernia, Hydrocole, Cholecystectomy, Abdominal Surgeries, Appendisectomy, Varicose Veins, Amputations etc
Emergency operation performed daily / as per necessity

Existing Staff
2 – Senior Surgeon - Posts filled

**Gynecology**

Infrastructure

All basic infrastructures.

OPD all days of the Week

Gynaec (Postnatal & Family planning)

Antenatal

High risk Pregnancy OPD

Ward

Antenatal Ward

Postnatal & Postpartum ward

Gynaec Ward

OT

Routine twice a week Tuesday & Friday

Emergency OT round the clock.

Facilities Provided

**Obstetric**

Antenatal care (normal and high risk Pregnancy)

Intranatal care and normal delivery

Postnatal & postpartum care

LSCS – routine and emergency

Obstetric surgical procedure

Emergency Obstetric care

Family planning procedure.

viii) All Gynaec procedure major and minor under local, general or spiral Anaesthesia e.g D & C, Hystrectomy – abdominal and vaginal.

Existing Staff

2- Doctor Senior consultant

2- Doctor Junior consultant

6- Medical officers}

17-Staff Nurses – (Matty/Labour Room / Postnatal)

6- Staff Nurses - Gynaec Posts filled

7-Servants – (Matty/Labour Room / Postnatal

6- Servants - (Gynaec)

Beds

Antenatal – 53

Labour room – 5

Gynaec ward – 15

Requirements:-

Labour Room – 12 to 15 Nurses

Maternity Ward – 22 Nurses

Gynaec Ward – 12 Nurses

Servants – (15 Servant in Maternity & 6 Servants in Gynaec)

**DEPARTMENT OF PSYCHIATRY – HOSPICIO HOSPITAL**

Hospicio Hospital services;

Outpatient clinics on Mondays, Wednesdays, Thursdays and Saturdays.

Daily psychiatric emergencies.

Certification of patients under Mental Health Act brought by police to emergency.
Consultation Liaison services with other specialties.
Child Development Clinic every Tuesday jointly with Paediatric Department.
Conducting monthly parenting workshops jointly with paediatric department.
Certification of mental retardation and psychiatric disabilities under State and Central Schemes.

District Mental Health Programme - Out reach clinics on Tuesdays and Fridays.
Health Centers covered;
PHCs – Balli, Cansaulim, Loutolim, Sanguem, Shiroda.
CHCs – Canacona, Curchorem, Ponda.

National Tobacco Control Programme – Tobacco Cessation Centre at Hospicio Hospital. Counselling services and medical management provided. Screening, counselling & medical assistance is also provided at District Mental Health Programme Clinics.

A 14 bedded Alcohol and Drug De-addiction Center at Monte Hill Margao.

Training programmes for medical and paramedical personnel. Awareness and sensitization programmes for patients and care givers and school programmes.

Infrastructure available at Hospicio Hospital/ South Goa District

Mental Health Professionals
One position of Senior Psychiatrist at Hospicio Hospital only for entire South Goa.
One position of Psychiatrist (specialist) on contractual basis under District Mental Health Programme.
One position of Counsellor on contractual basis under National Tobacco Control Programme.
One Medical Officer in OPD
(Above all posts filled)

STAFF POSITION IN LABORATORY WITH REQUIREMENTS

| Designation | Staff Present |
|---|---|
| Pathologist (also managing blood bank ) | 01 |
| Senior Biochemist | 01 |
| Biochemist | 01 |
| Assistant Biochemist | 01 |
| Technicians-Lab | 07 (Permanent) |
| Technicians- Lab | 01 (deputation ) |
| Clerk | 01 |
| Attendant | 04 |
| Data Entry operator | 00 |
| Microbiologist | 1 |
| Technician for Microbiologist | 00 |
| Attendant for Microbiologist | 00 |

STAFF POSITION IN BLOOD BANK WITH REQUIREMENTS

| Designation | Staff Present |
|---|---|
| Medical Officer | 01 |
| Staff Nurse | 01 |
| Technicians-Lab | 01(Permanent) |
| Technicians- Lab Contract -GSACS | 03 |
| Clerk | 00 |
| Attendant | 01 |
| Data Entry operator | 00 |
| Medical Social worker | 01 (on deputation ) |

| | |
|---|---|
| Counsellor -Contract -GSACS | 01 |

**DIALYSIS SERVICES.**

Free dialysis is provided with the State of Art most advanced dialysis machines. There are altogether 12 machines which can cater to about 60 dialysis a day. More than 100 patients are leading a normal life in the society with this free services which is first of its kind in the Country. It is a miracle that patients have not passed a drop of urine for almost a decade with the help of the State of Art dialysis machine, every alternate day 3 to 5 ltrs of urine is separated from the blood and removed from the body of the patient, otherwise, which is a poison to the patient, leading to death and al consumables, injectables, medicines and expensive hormones viz Erythropoiten are provided absolutely free to the patients who are living for more than a decade have not spent a penny from their pockets for their survival.

With the above achievements, they were planning to forward the profiles of longest living kidney patients at there hospital to the "Guinness Book of World Records". The mortality rate in the dialysis unit is absolutely zero for the last decade and more.

LIST OF STAFF (ESSENTIAL SERVICIES) HOSPICIO HOSPITAL MARGAO

| Sr. Sr .No | Staff | Total Posts | Post Vacant |
|---|---|---|---|
| 1.1.1. 1. | Matron | 1 | 1 |
| 2. | Asst.Matron | 1 | 1 |
| 3. | Ward Sisters | 13 | - |
| 4. | Staff Nurses | 129 | 2 |
| 5. | MPHW(F) | 6 | - |
| 6. | Xray tech | 8 | 2 |
| 7. | Laboratory Technician | 8 | 3 |
| 8. | ECG Tecnhician | 3 | - |
| 9. | Barber | 3 | - |
| 10. | Electrician | 1 | - |
| 11. | Dietician | 1 | - |
| 12. | Biochemist | 1 | - |
| 13. | Asst.-Biochem | 1 | - |
| 14. | Blood Bank Technician | 1 | - |
| 15. | Driver | 9 | 2 |
| 16. | Generator Operator | - | 1 |
| 17. | PRO | 4 | - |
| 18. | Plumber | 1 | - |
| 19. | Peon | 7 | 1 |
| 20 | Morgue Attendant | 3 | Nil |
| 21 | Chowkidars | 5 | 1 |
| 22 | Mali | 5 | 2 |
| 23 | Servant/Attendants | 58 | 4 |
| 24 | Sweepers | 7 | 3 |
| 25. | Cooks | 2 | Nil |
| 26. | Asst.Cooks | 3 | Nil |

**HOSPICIO HOSPITAL – MARGAO**

**HOSPITAL ACTIVITIES**

| | | 2010 | 2011 | 2012 |
|---|---|---|---|---|
| 1 | OPD Attendance | 144106 | 156097 | 162033 |
| 2 | Casualty Attendance | 38397 | 39605 | 43484 |
| 3 | Total | 182503 | 195702 | 205517 |
| 4 | Admission | 28891 | 30606 | 32878 |
| 5 | Total Deliveries | 2028 | 2293 | 2591 |
| 6 | Laboratory Investigation | 242551 | 279242 | 315131 |
| 7 | X-rays | 21673 | 22487 | 21571 |
| 8 | Total operation | 4506 | 4800 | 4790 |
| 9 | Death | 433 | 457 | 400 |
| 10 | CT Scan | 2580 | 2710 | 3105 |
| 11 | ECG | 13825 | 14120 | 15910 |
| 12 | Post Mortems | 520 | 479 | 484 |

*CHALLENGES OF THE HOSPITAL:*
*Quality care to all the patients visiting the Hospital, is hampered by the load of patients, shortage of doctors and para-medical staff, limited facilities and equipments, financial and other constraints. Besides, there is a paucity of space due to increased in flow of patients.*

*This difficulty will be solved once we shift to the new spacious District Hospital which is under construction in the next 2-3 years time. In spite of all these constraints, we strive to provide all our users courteous and prompt service within our limited scope.*

*All life saving and essential drugs are made available to the patients by this Hospital.*

***Suggestions for improvement of Hospicio Hospital***

*Beds: To accommodate extra load of patients wherever possible, since no place for extra beds. Mattresses are provided on floor.*

*Medical Facilities:*
*If possible ICU facilities to be started. Place can be earmarked near male medicine Ward.*
*Separate, independent casualty unit with doctors, staff, paramedics and class IV.*

*Personnel:*
*All vacancies to be filled on priority basis.*
*Doctors consultants minimum 4 in each Department.*

*Medical officer-It is ideal to have separate team of Doctor/Nurse/Servant during transport of patients to Goa Medical College (GMC), Medical cover of matches etc. Increase number of medical officers, to make provision of leave reserve.*

*Nurses –post to be filled.*

*Servant- dedicated servants for Radiology, Sweepers – separate dedicated sweepers for each ward.*

*Technician-Laboratory technicians*

*Social workers, psychiatrics assistant.*

*Continuous un interrupted Water supply to improve to the new toilet wing.*

*Improve Bio-medical Waste disposal.*

## 5.2 Goa Medical College

**HISTORY OF THE HOSPITAL:**
Goa has the distinction of having one of the first medical schools in Asia. This was started in 1842, as 'Escola Medico-Cirurgica da Goa'. The same medical school was upgraded to the present Goa Medical College in 1963 after liberation.

Goa Medical College has 3 important functions.
*Medical teaching of Undergraduate and Post Graduate students.*
*Patient care.*
*Research*
To achieve this Goa Medical College has:

***FACILITIES AT THE HOSPITAL:***
Goa Medical College & Hospital, Bambolim Goa has the facilities in General Medicine, General Surgery, Orthopedic Surgery, Ophthalmology, ENT, Skin & VD, Obstetric & Gynecology, Pediatric and Super – Specialties in Neurosurgery, Neurology and Nephrology. Investigation facilities in Radiology, Microbiology, Pathology and biochemistry are available at the hospital for Cancer patients facilities in Radiotherapy are also available. There is a Department of Anesthesiology backing up the surgical specialties. There are 12 Routine operation theaters and 6 Emergency Operation theatres. Department of TB & CD is functioning at St.Inez Panaji Goa.

***SERVICES:***
The above facilities are backed up by the following services:
A/C plants,33K V sub station, Generator, Boilers, Water tank, Fire fighting and Detection system, Sewage treatment plant, Incinerator, Laundry unit, central sterile department, Pharmacy, Lifts, Kitchen , Manifold room for oxygen & Compressed Air.

***EQUIPMENTS:***
The Hospital is equipped with all basic as well as Hi-tech equipments. The Radiology department is equipped with 6 slice CT Scan and 1.5 Tesla MRI, besides color Doppler, Ultra Sound and X- ray Machines. The Department of Medicine has a stress test and ECHO Machine Auto Analyzer are available in the Biochemical Laboratory. Also the facilities for ECG and EMG are available.

***PHYSICAL ACHIEVEMENT OF THE DEPARTMENT:***
Goa Medical College has increased Under graduate seats from 100 to 150. MD Skin and Forensic Medicine have been recognized by MCI. Also there has been overall increase in the work load at Goa Medical College.
Statistic for the year 2011 are as follows:

| | |
|---|---|
| OUTPATIENTS | 517180 |
| DAILY AVERAGE OF OPD | 1416.9 |
| INDOOR PATIENTS | 55960 |
| DAILY AVERAGE OF IN PATIENTS | 153.32 |
| NO. OF DELIVERIES | 5766 |
| NO. OF DISCHARGES | 52929 |
| TOTAL N.O. OF DEATHS | 2601 |

The Total no. of OPD Attendance for the period from April 2010 to March 2011 is as follows:
The no. of OPD Attendance

| | | |
|---|---|---|
| New cases: 268740 | Old Cases: 202001 | Total Cases: 470741 |

The no. of operations:

| | | |
|---|---|---|
| Major: 7869 | Minor: 769 | Emergency: 7657....Total:16295 |

*FINANCIAL ASPECTS OF PLAN AND NON-PLAN SCHEMES:*

(Rupees in lakhs)

| | | 2011-2012 | | | | | |
|---|---|---|---|---|---|---|---|
| | | Plan | | | Non-Plan | | |
| Major Head | Name of the Scheme | B.E. | R.E. | Actual Exp. | B.E. | R.E. | Actual Exp. |
| | | | | | | | |
| 2210- | Medical & Public Health | 3485.00 | 4262.00 | 3430.00 | 12500.00 | 12500.00 | 12077.00 |
| 4210- | Capital Outlay on Medical and Public Health | 1015.00 | 2315.00 | 1600.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | |
| | Total | 4500.00 | 6577.00 | 5030.00 | 12500.00 | 12500.00 | 12077.00 |
| | Grand Total | 4500.00 | 6577.00 | 5030.00 | 12500.00 | 12500.00 | 12077.00 |

In addition to above following are the highlights of achievements of Goa Medical College

**Achievements of Goa Medical College**

**1. Patient Welfare Measures:**

A large number of new facilities have been created keeping in mind the convenience to the patients and their attendants. These include:

**Orthopedics implants** at an annual cost of around Rs 2 crores are provided to all the patients free of cost by the government. This also includes knee and hip joints that may cost up to Rs. 70,000.

Free **anticancer medicines** are provided to all the patients irrespective of their financial status. Some of these drugs cost Rs. 100,000 per injection.

A new scheme to **detect diabetes** early has been initiated in Goa. Under this whole of the population will be screened so as to detect diabetes at an early stage with an aim to prevent complications of diabetes. This is also a totally free scheme and those requiring insulin, will be given the same free of cost.

**Renal Transplant** has been recently started, not only it is done free even extremely expensive medicines are also provided free.

MRI and other radiological scan and services done free

A very ambitious scheme of **new born screening for metabolic disorders** has been started for the first time in the country. The aim is to detect inborn metabolic disorders at an early stage to prevent mortality and morbidity amongst new born. This is also done free for all the deliveries that are conducted in government hospitals.

**The paitents have to get himself registered only after that everything is free whether he is rich or poor. Many people from neighbouring state are availing these services at GMC.This kind of facility is not available even in Delhi.**

**Some of these services are not free even in All India Insitute of Medical Sciences**

**Public Relation Officers** guide the patients and their attendants about various facilities available in GMC and will also help them in locating their near and dear ones in the hospital.

For the first time **Patient attendants** will be taking care of the patients' all needs in the wards.

**Sweeping and Swabbing** has been outsourced to a very efficient organization so as to provide clean and hygienic atmosphere in the hospital.

All the blood tests and other sophisticated investigations are carried out in a state of the art **centralized laboratory** that caters to the needs of not only GMC but the whole of the state. This is done by a special arrangement with a company they have supplied the equipment free of cost and we will only buy the reagents from them.

All the admitted patients in GMC are provided free medicines to the extent possible. They are in the process of further strengthening this procedure with an aim that no admitted patient has to buy any medicines or appliances.

Upgradation of Critical care areas including Casualty, ICU and Emergency OT's is almost complete.

Paying wards have been totally revamped and upgraded.

**2. Student Welfare:**

GMC being a teaching hospital with under as well as post-graduate students various student welfare measures have been adopted in last year:

Fifty computers with broad-band connection for browsing internet are available in the library complex both for the students as well as consultants. This has been done with an aim to provide means to update their knowledge.

Extensive renovation of boys and girls hostels has been carried out.

**3. Staff Welfare Measures:**

Various staff welfare measures have been adopted in last three years with an aim to provide conducive working conditions. Some of these are:

Regular CMEs are conducted in GMC so as to give an opportunity to the staff to update their knowledge. These are in the form of lectures, bedside demos as well as operative workshops. Eminent medical personnel are invited for the CMEs and government bears all the expenses. These are accredited by Goa Medical Council.

The faculty is encouraged to attend conferences, workshops and seminars etc. in India as well as abroad so as to update their knowledge.

Additional staff is being recruited on an ongoing basis so as to reduce the workload.
Nurses are provided with enhanced uniform and washing allowance.

*CHALLENGES OF THE HOSPITAL:*
***Following facilities are not availabe at Goa Medical college***

*1.Cardiology and Cardiothoracic Surgery.*
*2:Advanced Cancer treatment e.g. Radiotherapy with linear accelerator or Brachytherapy, though cobalt unit is unavailable.*
*3.Gamma knife Radio surgery*
*4.Epilepsy surgery*
*5.Deep Brain Stimulation*
*6.Hair Transplant*
*7. Liver Transplant*
*8. Corneal Transplant*
*9.Dedicated Geriatric medicine ward*
*10. Bone Tumor Surgery*
*11. Digital substraction Angiography*
*12. Palliative Care and pain clinic*

The Goa Govt has just announced that they are going to start Cardiology and Cardiothoracic Surgery facility in GMC,

**5.3 ASILO Hospital (North Goa Dist Hospital popularly known as Asilo)**
Foundation Stone for old Asilo hospital was laid on 16th April 1923. Formally inaugurated on 27October 1945. Initially run on donations, lotteries and voluntary services rendered by private doctors during Portuguese regime, it was then taken over by Govt. Of Goa, Daman & Diu (Union Territory) in 1975. On 21st Nov. 2004 Foundation stone was laid for the new District Hospital Mapusa (ASILO Hospital) where it is presently housed and has been functioning from October 2011.

The hospital is functioning as one of the District level hospitals (NORTH GOA DISTRICT) other being Hospicio Hospital in Margao (SOUTH GOA DISTRICT) with Goa Medical College as Tertiary Centre.
This is a state of art hospital at District level
Services Rendered at Asilo Hospital
(a)Ground Floor:
(b) Casualty/ Emergency dept., Out Patient Departments of Medicine , Surgery , Obs./ Gynaecology, Orthopaedics, Paediatrics, Ophthalmology , ENT, Dermatology, Dentistry, Psychiatry, Pathology including Blood storage facility, Radiology , Pharmacy Operation Theatres (1 ) Diabetic Foot clinic, Plaster Room, Dressing room & Administrative office.
(c) First floor: Operation Theatres (4 Nos), Labour room, Antenatal Ward, NICU.
(d)Second Floor: Inpatient wards: Medicine-Male/Female, Surgery- Male/female, Paediatric-1, and Postnatal.
(e)Separate Wing-Mortuary.
(f)Staff Position: Sanctioned: 514, In Place: 440 (Some staff is also deployed in PHC/CHC as and when required)
(g)Contract Staff: 15
(h) People treated/investigated in last 3 years: 4.5 Laths (apron.)
(i)Population being served: 7 lakhs approx from Goa and south of Maharashtra
8) PHC --6 CHC-2

Some of the challenges faced by Asilo or North Goa District Hospital are same as South Goa Hospital At Mapusa except space as it is a new planned hospital.Major constraint is manpower as on date 74 positions are vacant.

Software develoed for the hospital has not been opretationalised.

Blood Bank has to become functional. Some of the facilities have to shift from old facility likewise some new essential facilities are to be provided.

## 6. Medical Care – Public & Private

The health of a society is directly related to the provision of systems of helath care that are approvpriate and sensititive to the needs of people. We know that good health care must available, accessible, affordable and acceptable. Despite the popularity of this catchy aphorism, one would be hard pressed to find a system that actually fits the bill. In Goa the health scenario appears more salburious than most states of India, However it is clearlty evident that there are many gaps that need to be filled and situations that require unique approaches in the search for solutions.

In the present day, the health agencies that provide health Care in Goa include Government institutions such as the Goa Medical College Hospital, the Directorate of Health Services and its network of health centres and private organisations, hospitals or doctors. *The major problem facing health care at present is the equitable distribtution of these facilities between urban and rural areas. It is a fact that majority of doctors and health care facility remain concentrated in urban areas. The main stumbling block is the apprehension among doctors that practive in rural areas tends to cut one off from the mainstream both financially and professionaly. Thus there is a need to build rural health care and foucs more on preventive medicine, as lifestyle and infectious diseases become more prevalent.*

### 6.1 Public health

*One of the significant concerns in medical practive is the area of public health care. More than sixty years ago the Bhore Committee report and Alma Ata declaration asserted that no person should be denied good quality of health care because of his financial status. This therefore calls for strengthening of the public health care system. This system promoted by the state has at one level remained underdeveloped, particularly in the regions where the awareness of the healthcare is at the lowest.*

*The limited state resources are maximally used in urban areas where there is alternative private sector hospitals and clicnics. The greatest malady plaguing the public health care system at present is the unethical nexus between it and profit oriented private practice. Inspite of drawing no practising allowance, clinicians and surgeons attached to public hospitals indulge in massive private practive at their places of residence or in clinics, ofter registered in the name of their spouses or family members. Most of them avoid residing on the campuses of the hospitals wehre accomodation is provided.*
*In fact, there are large number of doctors who redirect patients from the public hospitals to their private clinics with the promise of superiour and more expeditious services. In a reverset yet equally dishonourable trend, private patients are referred to the public hospital for laboratory or radiological investigations so that these can be done at subsidised rates. The obvious result of this unethical practice is that the general and genuinely poor patients in public hospitals are treated with little or no concern.*

### 6.2 Public Spending on health in Goa

*India's public spending on health as a proportion of GDP is among the lowest in the world. While Sri Lanka spends 1.8 per cent of GDP, figures in China and Thailand are 2.3 per cent and 3.3 per cent, respectively. The corresponding figure for the US is in excess of 7 per cent while European nations like the UK, Spain, Germany, Italy spend 6.5-8 per cent of their GDP on healthcare.*
*While public spending on health in India may not appear to be so low per se compared with other emerging economies, econoinists point out that the differences become stark once a more revealing indicator such as per capita government spending on health is taken into account. While the India spends $43 per head, counterparts in Sri Lanka invest $87, China spends $155 and Thailand over six times at $261.*

Goa government allocates about 1.5% of its GDP on Healthcare services, though hightest as compared to big states of India. Goa allocates about 5.5% of its annual budget to healthcare. In 2012 allocation of Rs. 198 Crores to DHS and Goa Medical College 120 crores and 18 crores was allocated to Indian Institute of Pshychiatry and Human Behavior.

The contribution of health spending to national income in India that is around 6% of GDP is amongst the highest levels estimated for developing countries. This includes both private and public spending on preventive or curative care or for family planning and welfare. The expenditure on Public Health comprise of expenditures on various national health program and medical education, training and research. The latter expenditures are focussed on Goa Medical College and affiliated colleges such as the Goa Pharmacy and Goa Dental College.

The health status of the population in Goa as evinced by social indicators such as above average literacy rates and low birth and death rates is excellent. However we must treat with caution any attempt to correlate health states of height leavels (appx 11%) of state domestic products on health expenditure. Socio economic development is the crucial factor that determines health status as well as the level of spending and unless we account for this it would be wrong to conclude that public spending on health has a direct positive impact on health status. It is disheartening that public spending on health has been declining.

The major component of health expenditures has been salaries, which crowds out expenditure on materials and supplies. This can be constraint on the effectiveness of the public health system in Goa. A major challenge will therefore be to reverse the burgeoning salary expenses and to initiate user charges for public medical care in a graded manner that ensures that affording patients pay a reasonable sum for the services provided.

There are in all 1162 beds in the hospitals under the Directorate of which 352 beds are attached to CHCs / PHCs.

**6.3 Private Health Care**

A substantial financial burden is borne by households for meeting health care needs privately. This is probably because of relative inaccessibility of government resources due to distance, non availability on holidays or after office hours, long queues in government hospitals, crowded in-patient wards and the widely prevalent impression that "Government Services" are inferior in quality.
The private sector is large and an important constituent in Goa's health care system. It has expanded greatly in the last two decades. The private health care consists of both the "not for profit" and "for profit" agencies. The Not for Profit health sector, which is diminutive by comparison, includes various health services provided by non government organisation, charitable institutions, missions and trusts.

Various types of medical practitioners and institutions provide health care in the for profit health sector. These practitioners range from General practitioners to super specialists, nurses and paramedics, licentiates, registered Rural Medical practitioners and physicians of alternative system of medicine. There is an informal sector that consists of practitioners not having any formal qualification like faith healers, bhagats, hakims, vaidyas and priests who also provide health care.

The hospitals and nursing homes in Goa have a bed strength ranging from 10 to 110 beds. Most of the hospitals provide maternity, general surgery, internal medicine, orthopaedics, ophthalmology, otorhinolaryngology and paediatric services.

*The bulk of population, rich and poor alike utilize the private health facilities. There are several shortcomings in this sector. The charges in Private hospitals and clinics are not standardised across Goa and most health facilities do not display the tariff for consultation, rooms etc.*

*Specialist fees are usually not fixed and can vary depending upon the case and the severity. Staffing pattern and qualifications of personnel don not always conform to standards prescribed by Medical Council of India.*

*Almost all the private hospitals lack proper ICU, blood banks, ambulances or life saving equipments like respirators. There are other ills associated with private health care such as high drug prescription, unregulated practise by quacks and a lack of integration between different systems of Medicine.*

**There are two hospitals in Goa whose track record in term of number of deaths are alarming and needs to be thoroughly investigated. At the top of chart is Grace Cardiac Hospital which is a 25 bedded Hospital. Between 2005 to 2012, 1052 deaths have been reported. It is running a dialysis unit headed by Dr Sunil Bode who has no degree in nephrology. The other is hospital is Victor Apollo Hospital. Between 2004-2012 nearly 1084 death have been reported.**

This figure has been obtained from Goa Govt Deptt of Planning, Statics and Evaluation.

## 6.4 Lacunae in the Current health care system

*Despite having very impressive health indicators, many super specialities are unavailable in Goa due to lack of infrastructure. About 200 patients are referred every month to Mumbai, Bangalore, Manipal and Belgaum for want of diagnostic and therapeutic facilities in the areas of super speciality especially cardiothoracic surgery and oncology. In the face of financial crunch, the government pleads helplessness in developing these services. Financial restriction naturally compromise quality and adequacy of manpower, materials, machines and infrastructure. The Private Sector too is unwilling to invest heavily in an area where the returns on investment are not assured. A state of the art facility which is available at value for money terms can fail miserably when it is prices at a level that is out of reach of the majority of the populace.*

## 6.5 Legislations and health care

*If there is one outstanding feature of health care facilities in Goa, or for that matter in many parts of India, it is the dismal lack of legislation and regulations. The vast majority of hospitals in private sector work on a for profit basis. Yet even today, there are no standards to define and differentiate between a hospital, a maternity home and a nursing home. A survey of private health facilities in Goa revealed an appalling state of affairs, 39% of hospitals were run by totally unqualified person.*

## 7. The Pharmaceutical Industry in Goa

History of Pharmacy in Goa

The initiation of modern medical in Portuguese-Goa took place when a hospital bun by the Jesuits at Old Goa opened in the year 1512. With the evolution of Pharmacy in Europe coupled with the latest improvements at the time, the Portuguese introduced the system of pharmacy in Goad in the middle of 19th century. In 1842, the Portuguese founded an institution for medical education, the Escola Medico de Goa, producing qualified Physicians, Surgeons & Pharmacists. The Pharmacists, who graduated from this institution, now holding the certificate of "FARMACEUTICO", could either work in hospitals, or open their own private pharmacies for assistance and benefit to the public. A pharmacy was not allowed to function without a pharmacist.

In the Portuguese days there was a law restricting the number of pharmacies in order to avoid unhealthy competition. There was law specifying timings and compulsory day and night service by rotation. The legislation relating to pharmacies in Goa was clear in content and rigorous in its implementation. The Pharmacy Council of India Conference was held in Goa in 1962. The delegates were really impressed with the set up in Goa.

### The Present Scenario

After Goa attained liberation in 1961 and became a part of India, the Indian government extended Drugs and Cosmetics Act to Goa too. Soon the licensing of pharmacies was liberalised and many drug stores began to flood this tiny state. Today, there are more than 400 retails shops. Goa has been strict at giving chemist shop licenses, it doesn't give license to anyone without qualified pharmacist. Compared to other states, in Goa the number of pharmacies in proportion to the populations and area is much less.

In keeping with the national trend, in Goa too the standards maintained by the pharmacists have reduced considerably over the years. A large part of success of medical practice can be attributed to the significant contribution of professionals in pharmaceutical industry. Over a last couple of decades a close nexus between the profits oriented pharmaceutical industries and doctors has developed, resulting in unethical practice and the exploitation of patients in various ways. It is common knowledge that the sales representatives of pharma companies not only aggressively sell their products, but also entice the doctors with gifts and even shared profits for prescribing specific drugs. Various drug companies sponsor doctors' conference trips abroad, children's education and provide other benefits.

### Rationale Drug Policy for Goa

A rationale Drug policy and its proper implementation will certainely changes lives of people of Goa. We in India have been swept off our feet by the overwhelming presence and pernicious marketing influences of pharmaceutical companies. In a country where most peple cant afford a square meal everday, drugs and combinations which have high costs, are available in irrational, sometimes uselfess formulations of doubtful efficacy.

What would Rational Drug Therapy include?

a. Restricting the use to limited number of Essential Drugs, chosen through scientific means, by experts in the field (consisting of physicians and pharmacists).
b. Treatment guidelines
c. The procurement and stocking of drugs in public hospitals should be based on entirely on the Esssentials Drug List.
d. Educating Health Care Professional
e. Educating the Public

Advantage of Rationale Drug Policy

1. Better availability of esssential drugs
2. Cheaper, yet good quality durgs are availabe at prices afoordable to the patients.
3. Patients are prescribed only the required drugs and are spared of irrational, toxic, unnecessary drugs.
4. Existing resources (smaller budgets) is enough for more number of good quality drugs so that they are freely available.

*Major Concerns:*

Based on my visit and interaction with variety of people associated with major health concerns facing the Goan community are as follows. We may also consier the key strategies which are needed to tacke these

- The high school drop out rates in the state, despite the low incidence of absolute poverty and child labor, demand attention. A comprehensive state level program to study reasons and develop interventions for children leaving schools is necessary. The teachers must be trained to tackle this situation.
- Road traffic accidents are poosibly the single most important cause of death and disability amongst young people in Goa. Srict enforcement of road traffic rules, building and maintaining pedestrian amenities and roads and education of the community need to be adoped on a war footing.
- Poor quality of public health care in hospitals: the quality of care, including ethical practices, in public hospital is very variable. Greater quality control will require less interference by politicians and greater trasnparency and accountability of doctors and administrators. Autonomy and professional managment of public health service may provide an answer for the current crises in public health service,

- Poor quality of private health care: Private nursing homes are operating with little monitoring of quality or ethical standards. A set of regulations governing the operation governing the operation of nursing homes and tight monitoring and enforcement of these regulations is needed.
- Irrational use of medications: the prescribing of excessive and unnecessary medicines can be countered by education of doctors, pharamcists and patients. Greater Control and restriction on production of unnessary pharmaceutical preparations is needed.

- Health impact of unplanned economic development: the chaotic deevelopment of urban, coastal and mining areas in Goa are leading to the rise of number of health problems as a results of enviornment degradation. Keeping a clear health perspective is in essential component of all economic development activites.

## 8. Report of Health Services for the Year 2011-12

Goa has one of the most extensive health systems in India. The Directorate of Health Services has an important role to perform in the Administration as far as health system & services are concerned. The Directorate of Health Services primarily seeks to provide preventive, promotive, curative and rehabilitative health services to the people through primary health care approach which has been accepted as one of the main instruments of action for development of human resources, accelerating the socio-economic development and attaining improved quality of life. Primary health care is essential health care for all citizens, easily accessible and at a cost which the citizens and community can afford. In the rural areas services are provided through a network of integrated health and family welfare delivery system.

### 8.1 The primary health care infrastructure has been developed as a three tier system.

**Sub- Centres**
Sub-Centre 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 a Peon/Attendant.

**Primary Health Centres**
Primary Health Centre is manned by a Medical Officer supported by para-medical and other staff. Some of the PHCs (13 in number) have attached hospitals ranging with 12 to 30 beds and are headed by a Health Officer.
The PHCs act as referral units for the sub-centres and provide preventive, promotive, curative and family welfare services.

**Community Health Centres**
The Community Health Centres (5 in number) are headed by a Health Officer generally with four specialist doctors and a minimum of 30 beds. It serves as a referral centre for PHCs. In addition, there are Rural Medical Dispensaries (RMDs 29 in number) in remote and inaccessible areas manned by a R.M.O. and a Pharmacist where regular OPDs are conducted. The Directorate of Health Services with its network of 5 CHCs, 20 PHCs (13 with attached hospitals), 305 Sub-Centres, 29 R.M.Ds, and one Medical Dispensary, provides basic health care services to the people of Goa particularly to those living in rural areas.

The two District Hospitals viz. Hospicio Hospital, Margao in South Goa District and Asilo Hospital, Mapusa in North Goa District, and three other specialized/general hospitals viz. Leprosy Hospital, Macazana; T.B. Hospital, Margao; Cottage Hospital, Chicalim; under the Directorate also serve as Referral Hospitals.

There are in all 1356 beds in the hospitals under the Directorate of which 424 beds are attached to CHCs / PHCs. There are 18 Dental clinics and other special clinics for implementation of various programmes such as Family Welfare, T.B., NCD, STD Malaria, Leprosy, Control of Blindness, etc.
There are 13 Homeopathic Dispensaries 11 Ayurvedic Dispensaries There are 4 Urban Health Centres in the four major towns viz. Panaji, Margao, Vasco and Mapusa and one Medical Dispensary at Sada, Vasco and a STD Clinic at Baina, Vasco.

### 8.2 National Vector Borne Diseases Control Programme

The National Vector Borne Diseases Control Programme functions as per the guidelines laid down by the NVBDCP, Govt. of India to prevent and control diseases like Malaria, Filaria, Dengue, Chikungunya & Japanese Encephalitis in order to detect early and treat promptly. Measures undertaken are:
Surveillance measures including active and passive. Rapid Diagnostic Kits are introduced at all centres.
Vector control measures comprising of both Anti-Larval and anti-adult. Ultra low volume fogging is introduced in addition to thermal fogging.
Bio-environmental control measures comprising of fish introduction for anti larval, Bti.
Source reduction by simple physical manoevres and cleanliness drives.
Promotion of personal protection methods namely use of insecticides treated bednets.

Behaviour Change Communication strategies to create mass awareness.

**Functions and duties carried out by the Department:**

National Vector Borne Disease Control Programme – Govt. of Goa has a well setup action plan to prevent and control the spread of Vector Borne Diseases, which is carried out regularly throughout the year:

Surveillance and case management:

1) Early Detection and Complete Treatment wherein Active/Passive surveillance is undertaken by testing blood for malarial parasite so also Rapid Diagnostic Testing is extended to all the health centres. This reduces the parasite in the population. Treatment for malaria is available at all the peripheral health centers and incase of complications cases are referred either to District Hospitals or Goa Medical College.

2) Public Health Act Measures:
It is mandatory for every labourer to have the health card after getting screened for malaria. This card has to be renewed every three months.

Integrated Vector Control measures
Anti larval measures both chemical and bio-environmental comprising of spraying of Abete / Temephos, Malaria Larvicidal Oil , Bti & introduction of fish in stagnant water.
Anti adult measures comprising of fogging with pyrethrum, Ulta Low Volume fogging (Aqua Fog) in the areas where malaria cases/ deaths are reported.

Use of Long Lasting Insecticide treated bednets is promoted at the construction sites for labourers, to stop the transmission to population around. It is also given to pregnant women in BPL and JSY beneficiaries.

Cleanliness drives are carried out at Village, Panchayat, SubCentre level with involvement of Village Health & Sanitation Committees, local bodies such as Panchayat, Municipality, MLA's, Sarpanchas, Panch Members, NGO's, Consumer Forum Members, etc. This has helped in taking care of mosquito breeding sites and in turn bringing down the incidence of Vector Borne Diseases.

Epidemic Preparedness and Rapid Response

Rapid response teams are setup at each districts consisting of Epidemiologist, Entomologist, Health Officers, Physician. Labs are well equipped to carry out emergency slides testing and reporting. Sentinel Site Hospitals are also well equipped for ELIZA testing of Dengue.

Supportive intervention:
Information Education Communication (IEC)/ Behaviour Change Communication (BCC): Massive Awareness Campaigns are conducted through mass media channels in various forms to bring about a behavior change.
Monitoring and Evaluation:
Regular monitoring by state every month.
Weekly level monitoring at State level.
Evaluation of BCC, MDA programme, Parasite surveys, Vector surveys to be done once a year by an independent team from Goa Medical College.
State task force meetings.
Core committee meetings and site inspections to problematic areas.
Review of complicated case management and death audits.
Block level meetings under deputy collectors.
District level meetings under district collectors.
All the epidemiological report is regularly reported to NVBDCP-GOI.
Operational Research
Is carried out in collaboration with NIMR & Goa Medical College to design strategies for control & prevention of Vector Borne Diseases.

Quality Assurance
Slides cross checked at the state level.
Slides referred to Regional Health & FW centre, Pune as per the guidelines for cross-checking.

**Acts and Rules implemented by the Department:**
Legislative measures at construction sites are carried out as per the provisions of the Goa Public Health Act 1985 and Rules 1987.

Penalty for offence under section 75A.
Under sec. 75 AA
A fine of Rs. 1000/- per person each time and if the offence is continuing one a daily fine of Rs. 50/- during the period of continuation of the offence.
Act of contravention of the provision of section 75A continuing beyond a period of 7 days from the date of imposition of daily fine @ Rs. 50/- per day under sub-section (1) local health authority can request to suspend / cancel the construction license issued to the contractor till such time the contractor continues and the concern local authority shall act accordingly.
Under section 76A Builder to take anti-larval measures.
Under section 76 B Levy of fees for anti-larval measures at construction sites.

**8.3 Review of Healthcare status**

**8.3.1 Women and Health**

*As with other indicators of health reflected both in the unique civil code of Goa which gurantees equal tratment for boys and girls in inhertance issue, but also in low fertility rates. Reassuringly only 11% of women with no children express a preference for child to be male. The sex ratio, one of the basic demographic characteristics which is a mirror of gender discrimination in India, was was glorious prior to libration 1066 out of 1000 from that to 920 out 0f 1000 as per 2011 census is atrocious. However the balace is heavily still in favour of men which may, in part, be attributd to the emigration of men in search of jobs to other parts of the the country and overseas.*

Life expectancy at birth for women is comparatively high against national average. Around 90% of all births take place in medically supervised situations. Maternal mortality rates in Goa are negligible. Fertility is now at replacement level, women are marrying in their 20s and having their first child in the mid 20s. These are remarkable indicators which approach the standards for women's health in highly developed societies.

On the other hand the sex ratio in Goa parallels that for the rest of the country with an excess of men (Kerala being the only exception), literacy in women is still 15% less than men, girls are much likely than bory to drop out of school, and issues such as domestic violence are increasingly being higlighted as markers of persisting gender inequality. Current models of development may serve to reinforce the biases against by devaluing the significance of women's work, particularly their invisible contribution to child care and house work.

Violence in families, most commonaly directed at women and children, remains another rarely reported prevailing attitudes towards women. A recent report by the state commission for women showed that Goa ranked 11th in India in the proportion of reported offences against women. The reported are, by most account only the tip of the iceberg.

The tragedy is that there are few facilities for women to escape from such men, and even fewer facilities to help men who are abusive return to some form of decency in their lives. Negative practices relating to women continue to be practised. For example, in many households, after delivery the mother is not allowed to touch anything for 12 or more days because she is unclean.

*There are other factors like hight incidence of abortions, 30% of babies being born low birth weight, 40% rates of anaemia in women are all indicative that there is still tremendous scope for imporvement in the*

*state of women's health. According to the national health survey Goa, 98-99, female sterlization is the most popular family planning method, male sterlization is less than 1-percent.*

As in many parts of India, many parents and their next of kin desire male offspring and despite the high literacy rate among women in Goa, women are often blamed for giving birth to girls. A recent study of depression in mothers based in a district hospital in Goa has shown the powerful role of boy preference as a determinant of depression in the post- natal period.

Special incentive should be provided for girl child in every respect of life as well as a well planned IEC highlighting the advantages of having a girl child.

**Family Planning – Goa's Achievement**

| 2011-2012 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| Vasectomy | 68 | 55 | 81% |
| Tubectomy | 4150 | 4081 | 98% |
| IUD | 2515 | 2426 | 96% |
| CC Users | 8840 | 11431 | 129% |
| OP Users | 3295 | 3724 | 113% |

*Rural women: for many Goans in Rural areas, the girl child is a working girl. They are engaged in caring for younger siblings, cooking and cleaning, fetching fodder, fuel and water. As they grow older, girls are involved in sowing, transplanting, weeding and harvesting. In the area of Canacona, young girls are prone to die of a strange virus in November/December each year, which for want of a name has been dubbed „Monkey" disease.*

***Women in Unorganised Sector** – The unorganised sector includes domestic help, scrap collection, begging, rag-picking, construction, agriculture and fish work. The key factor in all these occupations is the hazards the workes face and lack of safeguards. Fish processing workers, for instance, develoop numb and sore fingers in the absence of gloves and proper medical facilities. Domestic workers are migrants and poorer Goans who, beside other negative factors of their work, are alos bulnerable to sexual assault.*

***Commercial Sex Workers:** The poor health status of commercial sex workers (CSW) speciall their vulnerbility to sexually transmitted diseases, is well documented. Most of the CSWs in Goa are young women/girls are brought from other states and therefore considered outsiders by the locals and government.*

**8.3.2 Child Health**

The well being of children is of priority in the state of Goa. The history of child health in goa is a chronicle of achievements as well as some caution, as the state is in the core of a demographic change that can not be ignored. Goa has achieved health for all status well before the 2000 deadline.

*Goa has has a long history of comprehensive records of births. Compulsory registration of births was initiatited in 1914, in the territory of Goa, Daman and Due with publication of the Civil Registry Code. Prior to this, the local administraive bodies in the respective villages collected information. Under the code, every newborn had to be registered within 30 days of birth.*

**Mortality**

There has been a general decrease in the infant and under five mortality rates with a marked decrease in deaths due to vaccine preventable diseases, malnutrition and gastroenteritis. The IMR in Goa is now around 10/1000 live births and the goal is to bring it to8 during 2012-13 much lower than national average of 74. *However 1 in 13 children still die before reaching first birthday. Respiratory infections are the major killer of chidren after netonatal period.*
The poorest level of coverage of full immunisation is more than 85% and another 10% are partially covered. Thge state of Goa has received almost 100% of immmunisation for children.

**Developmental & Mental Health Problems in Children**
It is heartening to note the rapid improvements that have been made in the control of infectious diseases and reduction of childhood mortality in Goa. There are no statistics for the prevalence of behavior problems in children in the community or schools. This field is s specialised branch of medicine by itself. The Child Guidance Clinic at the Institue of Psychiatry and Human Behavior and the Sangath Centre for Child Developmental & Family Guidance are the 2 major institutions providing care in the area of childhood developmental, behavioral and emotional problems. Most of the children that attend the CGC at the IPHB have mental retardation and behavior problems.

**Childrens with Special Needs**

The state of Goa has an Assistant Director (Handicapped) in tis directorate of Social Welfare who works on a full time basis to look into the girevances of the disabled and offer them guidance on the welfare schemes being implemented by the government. The Directorate of Scoial Welfare has also completed the survey of all disabled person in the state. The survey suggests that just under 1% of persons in goa are suffering from some type of disability. Currently not more than 3% disabled chidren are in school. This percentage should be raised to 10%. There is urgent need to set up a some Schools for Children with learning disability as well as to subsidise Trusts or other NGO.s working in this area.

**8.3.3 Specific diseases common in vulneralbe groups**

**Malaria**

Malaria has emerged as major public health problem in recent times in Goa. Once rampant along the eastern hilly tract, malaria was almost eradicated in the 1960s. But spurt of construction activities has led to rise of Malaria in Goa. Goa has witnessed a sudden rise of malaria cases in 2012, breaking a 4-year declining trend. By mid 2012 the state has registered a total of 1145 cases compared to last year's [2011] total of 935 cases. September registered the 2nd highest number of cases (210) this year, with the highest number of 309 cases registered in July at the peak of the monsoon followed by August, which recorded 145 cases of malaria, according to statistics made available by Directorate of Health Services.

About 418722 patients were screened for malaria during 2011. A total of 1187 were found positive for malaria and of these 135 were Plasmodium Falciparum cases. Three deaths were reported during the period. Local affected by malaria were only 196 patients with 25 being of Plasma Falciparum. Thus over 83.5 % of cases were amongst migrant population at the construction sites.

**Some Key responsible factors for Malaria in Goa:**

1. Suitable weather for perennial transmission of malaria, temprature range of 28-30 degree Celsius and 18-27 degree C, relative humidity 75-94% and average rainfal of 2500 mm from May to october.
2. An efficient vector living in close association with man and breeding in innumerable sites, mostly man made, viz, wells, overhead tanks, sumps, gardenting tanks, water coolers, masonry tanks, fountains, roof gutters blocked terraces and lintels during monsoon, barrels, disused swimming pools, rain pools in abandoned and active construction sties, laterite pits, smalls domestic containers, scrap, tyres etc.

3. Expanding vector distribution and invasion in to newer areas.

4. Migrant labour froce: construction boom since 1980s and a vulnerable migrant labour moving from place to place in serach of job, aggregating and living around construction sites which have great epidemiological significance due to prolific vector breeding in stagnat waters and sleeping habits of labour in open or in surrounding hutment exposed to mosquito bites.
5. Some other vulnerable sections of the society like hotel and restaurant workers, rag pickers, street children, porters and homeless persons sleeping in open suffering from and disseminating malaria.

***Some important observations:***

1. *Drug polices ovserved by the Govt and private sectors is at variance. Restriced drugs such as mefloquine are quite freely prescribed.*
2. *There have been many out breaks of malaria since 1986 in those coastal areas that witnessed boom in construction activity.*
3. *Trousim and malaria: In Goa, malaria is mostly coastal in distribution and has strong presence (92-96% of annual incidence) in areaswhich attract over 90% domestic and international tourists.*
4. *Stabilising tendency of malaria: The analysis of incidence of malaria has shown its gradual stabilizing trend over the years. The cooler lean months from Novermber to February have also shown quite high incidence of malaria in the recent years. This trend was not witnessed int he earlier years.*
5. *The vector builds up from March-april and peak populations are encountered in June-July followed by declining trend. Vector control needs proper planning in tune with its population dynamics and breeding ecology.*

***Current Malaria control strategy and its impact***

*The DHS shoulders the bulk of responsibility of malaria control in Goa. None of the municipalities or panchayats have basic infrastructure for the purpose. Small size of towns and duplicity of responsibility is cited as reasons for not encouraging this. The anti-mosquito measures undertaken by the health services comprise pyrethrum fogging as adulticide. The anti parasitic measures include mopping up and treatment of cases through active case detection, passive case detection and mass survey by the UHCs, PHCs and CHCs in both rural and urban areas.*

**Recommendations**

*For durable malaria transmission control, the antimalaria programme needs strenghtening and adjustments. There are*

1. *Bio enviornmental strategy should be made an integral part of malaria intervention strategy as per the recommendation of NAMP. There should be a shift from envoirnment polluting chemical based approach to eco-friendly bio-enviornmental malaria control approach.*
2. *Recurrent training and optimum utilization of manpower following bottom up approach.*
3. *Effective implementation of legislative measures and creation of legal back up support sytem of speedy action, particularly in the construction sector.*
4. *Monitoring of parasite and vector resistance on a recurrent basis followed by approporate remedial action.*
5. *Monitoring of mega projects in the region for their impact on mosquite-borne diseases as a part of over all health impact assesment.*
6. *Availability of life saving drugs at the peripheral and the district level. Also a referral system should be developed for handling complicated cases.*
7. *A uniform anti-malarial durg policy should be well advertised and promoted equally in public and private sectors.*
8. *Periodic mass blood surveys are extremely important to mop up and treat asymptomatic malaria parasite carriers among migrant labour.*
9. *Supervision of the field activites to achieve desired malaria transmission control.*

10. *Involvement of local self government bodies in malaria control process so that there is sense of ownership of malaria control activities among these bodies leading to their increased involvement in terms of allocation of resources and manpoer over a period of time.*
11. *Make recurrent entomological and epidemiological assesment of situation of the state.*
12. *It is recommended to hold regular programmes to create awareness among public on breeding sites of mosquitoes like plastic cups, bottles, utensils, containers; tanks, flower pots etc. Collection of tyres and its proper disposal, enforcement of health act, issuing of health cards to contract labours, preventive measures to control vector-borne diseases and other related issues Rusty river barges, lying idle and unused because of the mining ban in Goa, are now becoming breeding grounds for mosquitoes. As a result, a numbers of employees working on the barges as well as the local population residing around are also infected with malaria. This will lead to serious consequences if the rate of infection goes on increasing.*

**Filaria**

During the year 2011, a total of 20222 persons were screened for microfilaria and out of these none were found positive

The Mass Drug Administration (M.D.A) as a measure for elimination of filaria was observed in Goa on 11th November 2011. A total population of 1390747 received Diethyl Carbamazine Citrate (DEC) tablets on this National Filaria Day. Thus the total coverage was to the tune of 96.20%.

**Dengue Fever/Japanese Encephalitis/Chikungunya**

During the year 2011 there were 26 cases of Dengue. Similarly there were 91 cases of Acute Encephalitis Syndrome (AES) and out of these only 1 confirmed for Japanese Encephalitis (JE).

During the year 2011, there were 660 suspected cases of Chikungunya, out of which 47 were confirmed for Chikungunya serologically.

**Japanese Encephalitis Challenges**

To reduce morbidity and case fatality rate.
To prevent outbreaks.
Prevent mortality due to Japanese Encephalitis.
Strengthening of sentinel site hospitals.

**Integrated Disease Surveillance Project (IDSP)** is a decentralized, state based surveillance programme which intends to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner.

**Functions and duties carried out by the Department :**

IDSP is a district based surveillance programme intended to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It also provides trend of on going diseases in the state.

**National Iodine Deficiency Disorders Control Programme**

It has been implemented in order to prevent, control and eliminate Iodine Deficiency Disorders in Goa, by banning the sale of noniodised salt for edible purpose, which was notified from 15th August, 1997. The IDD Control cell which was created in September 1996, looks after monitoring and co-ordinating the NIDDCP and ensure implementation of ban Notification, Orientation/Awareness on importance of iodised salt, offering technical expertise on micro nutrition deficiencies and iodisation process, conducting study/survey to asses iodine deficiency disorders and other allied subjects and field testing of iodine content in salts.

**Functions and duties carried out by the Programme:**

i) Surveys to assess the magnitude of the Iodine Deficiency Disorders.
ii) Supply of Iodated salt in place of common salt.
iii) Resurvey after every 5 years to assess the extent of Iodine Deficiency Disorders and the Impact of Iodated salt.
iv) Laboratory monitoring of iodated salt and urinary iodine excretion.

v) Health education & Publicity.

Physical Achievements of NIDDCP :-
a) Celebration of Iodine Deficiency Disorders Prevention Day every year, by conducting various IEC activities under all PHC's, CHC's and UHC's on awareness of importance of iodated salt and Iodine Deficiency Disorders.
b) Public awareness about iodated salt and Iodine Deficiency Disorders by various mass media like News daily, Television etc..
c) Awareness on importance of Iodine and Diet under Nutritional awareness programme.
d) Training of Medical Officers on National Iodine Deficiency Disorders Control Programmeand importance of iodated salt and Iodine Deficiency Disorders.

Challenge for future :-
Setting up of Iodine Deficiency Disorders Monitoring Laboratory in Goa for the present financial year.

Goal – To reduce the prevalence of Iodine Deficiency Disorders below 10%.

### 8.3.4 FAMILY WELFARE BUREAU :RCH –II PROGRAMME IN GOA

**Janani Suraksha Yojana:** Janani Suraksha Yojana is a scheme implemented by the Government of India in 2002 wherein married pregnant women above 19 years of age can avail of monetary benefit i.e. Rs.700/- for rural and Rs.600/- for urban area if they belong to the BPL family or any women of the SC/ST community irrespective of their income, for the first two live births. The incentives are released at the time of delivery in Public Health Hospitals.
RCH outreach camps are being held in all peripheral units wherein the local people are enlightened on the services provided under the RCH programme for the urban poor, especially for the migrant population.

**FAMILY PLANNING:** Promotion of various contraceptive methods for spacing as well as permanent sterilization are undertaken, including the role of the emergency contraceptive pill which is used as an 'emergency' measure to prevent pregnancy in an event following unprotected sex. Sterilization services are held at hospitals and selected health centers on different days of the week.

Family Planning –Goa's achievements

| 2007-2008 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| Vasectomy | 70 | 21 | 30 |
| Tubectomy | 5735 | 5045 | 88 |
| IUD | 3132 | 2617 | 84 |
| CC Users | 11583 | 11328 | 98 |
| OP Users | 4354 | 3429 | 79 |

| 2008-2009 | | | |
|---|---|---|---|
| **Methods Used** | **Needs** | **Achievements** | **%** |
| **Vasectomy** | **63** | **28** | **44** |
| **Tubectomy** | **4797** | **5268** | **110** |

| | | | |
|---|---|---|---|
| IUD | 2875 | 2615 | 91 |
| CC Users | 8900 | 10508 | 118 |
| OP Users | 3370 | 3248 | 96 |

**Adolescent Reproductive & Sexual Health:** 'Adolescent Reproductive & Sexual Health Program' (ARSH) is a significant component of RCH II. OPDs are being conducted in all peripheral units on a fixed day of the week wherein the adolescents can avail of counseling as well as treatment facilities. Teen clinics are functioning at all the peripheral units wherein privacy & confidentiality of the client is maintained

SCHOOL HEALTH PROGRAMME: Hemoglobin level estimation is being carried out in the schools across Goa so as to know the hemoglobin status of the school going children, as anemia is prevalent among school children especially adolescent girls. Prophylaxis / Treatment is given to anemic adolescents girls. De-worming is also carried out twice a year.

**Universal Immunization Programme:** In Goa the universal immunization programme was introduced in the year 1985-86 as part of national health policy. The child is immunized at birth with BCG, OPV & Hep.-B in an institutional delivery. Pentavalent vaccine has been introduced in the entire state wherein the infant is immunized with three doses of Pentavalent Vaccines at 6, 10 & 14 weeks in lieu of DPT and Hep-B, a booster dose of DPT & OPV at 1 ½ year, DT at 5 years, TT at 10 and 16 years.

Measles vaccine is administered as per the immunization schedule to children at 9 months of age. MMR vaccine is administered to children at the age of 15 months to boost the immunity against Measles, Mumps and Rubella. Rubella Vaccine is to be given to adolescent girls in schools and out of schools.

During the first pregnancy the mother-to-be receives two doses of Tetanus Toxoid. If the second pregnancy occurs within the first 3 years she receives one booster dose. In addition to the above, mothers are also provided with iron and folic acid tablets to lower the incidence of anemia among pregnant women.

**Maternal Child Health Care:**
Antenatal / Natal / Post Natal care
New born/ Infant Care
Prevention of Diarrhea and Promotion of Oral Rehydration Salts (ORS)
Management of Acute Respiratory Infections.
Nutrition Education, especially for mothers.
Prevention of Malnutrition in Children.
Promotion of Breast feeding.
Prevention and treatment of anemia in Mother and Children.

**Physical Achievements for the year 2011-12**

Janani Suraksha Yojana: 1675 beneficiaries have availed of this benefit.
The Institutional Deliveries are to the extent of 96%
The Pulse Polio Immunization Programme was conducted in the state as a part of Nationwide programme of eradication of Polio on 19th February 2012, where 130387 children on under five years were administered the polio vaccine dose in addition to the routine immunization. No single case of polio is reported ever since 1999.
The Infant Mortality Rate for this state is 10 per 1000 live births (SRS)
The Maternal Death Rate is 30 deaths per lakh live births which is much below the national goal of 100 per lakh live births. Every pregnant woman attends the antenatal clinic and on an average a pregnant woman has at least 6-7 antenatal checkups done.
The birth rate in Goa is 13.2 per thousand.
The number of children per ever married women in the age group of 15-45 years is 1.7 when the national goal replacement level is 2.1.

**Challenge for Future:**

The main goals are as follows:-
IMR to be 8 per 1000 live births for 2012.
MMR to be at negligible levels
Birth Rate to be sustained at 13.2 per 1000 population.
TFR to be sustained at 1.7 for women.

**Sexually Transmitted Diseases:**

Sexually Transmitted Disease Control Programme, Directorate of Health Services, Panaji is a Non Plan Programme with three STD Clinics at Mapusa, Margao and Vasco.
S.T.D. Programme closely co-ordinates with The Goa State Aids Control Society (GSACS) and we execute Sexually Transmitted Disease control measures via The STD Clinics,the Community Health Centres,Urban Health Centres, Primary Health Centres and the Community.
The infrastucture under The STD Control Programme consists of three main STD Clinics at,

1. Asilo Hospital Mapusa.
2. Hospicio Hospital Margao
3. Baina Vasco.

There is separate Unit of Skin And STD at Bambolim under Goa Medical College. presently all four STD Clinics/Units also report to Goa State Aids Control Society.(GSACS) and GSACS further sends a consolidated Report to National Aids Control Organisation (NACO) New Delhi.

**Functions and duties carried out by the Programme**

Sexually Transmitted Diseases Control Activities Include
Sexually Transmitted Diseases Control activities are being conducted among Adolescent population at peripheral level.
Early diagnosis and prompt treatment as per the syndromic approach and use of kits provided via Clinics at PHC/CHC &STD clinics and specialised refferals to skin and VD Department Goa Medical Collage,Bambolim.
Promoting contacts tracing and counselling through The STD Clinics And Government Health Centers.
Reducing the sexually Transmitted Disease stigma through Information Education & Counselling (IEC).
Promoting condoms and safe sex and behavioural changes through health education.
Collecting Blood samples for V.D.R.L. in antenatal cases and patients referred in Primary Health Centers in order to rule out diseases like syphilis to prevent adverse effect on the children.
Spreading of STD/RTI/HIV/AIDS awarenes to rural population and Urban slums.
Advocating the syndromic management of STD at Primary Health Centers/Community Health Centres
RPR testing by Lab Technician at PHC STD Clinics

**Physical Achievements of the Department**

This Department has been actively working as per the norms set and there has been a reduction in New HIV positive cases and VDRL test positives
With referrals from NGO's and PHC staff the number of tests carried out have increased as well as clinic attendees.
Patients are being treated by the syndromic approach and treatment is given

**Challenge for the Future**

Challenges for the future envisages
Safe and protected sex through education and counselling
No new HIV positive cases
Early detection and prompt treatment of those afflicted so the disease is not spread
Adolescent Education
Increased referrals

**Environment Pollution Control Wing**

**Functions and Duties**

(a)This laboratory caters to the needs of Public, Industries, Centre / State Government agencies and institutions for conducting all the desired test on water, Industrial effluent, sewage effluent etc. for physical, chemical and bacteriological parameters

(b) The Public, Industries, mining industries, hotels, restaurants, Government agencies and institutions are availing services/facilities of this laboratory on payment of analytical charges.

(c) This laboratory is equipped with sophisticated instruments/equipments for conducting various test , water, industrial effluent, domestic effluent etc.

**Non Communicable Diseases :**

Taking into consideration the various risk factors for Non Communicable Diseases viz Cigarette and other forms of smoking, alcohol abuse, drug abuse, non availability of health facility for control measures of diabetes, hypertension, cancer etc, life style changes such as improper diet, fast food and lack of physical activities, environmental factors viz occupational hazards, accidents, possession of destructive weapons and stress factors; the following programmes are undertaken by this Directorate.

**NATIONAL PROGRAMME FOR CONTROL OF BLINDNESS**

Ophthalmic Cell implements National Programme for Control of Blindness under Chief Medical Officer assisted by 17 Ophthalmic Assistants posted at PHC/ CHC and District Hospitals. State Health Society (NPCB) has been established. Free spectacles are provided to poor patients.
During 2011-12, 97,151 patients were examined 7548 cataract operations performed and 20,932 spectacles prescribed during the same period.

Under School Health Programme 286 schools were visited in which 28,796 students were screened of these 857 students suffered from refractive errors and 113 student glasses prescribed.
Special Cataract Detection Camps were organized all over Goa during 2011-12 wherein patients detected with cataract were provided free of cost IOL and medicines at Goa Medical College. 36 operative camps were conducted and 433 cataract operations were performed till March'12.

**TUBERCULOSIS IN GOA**

Tuberculosis (TB) kills 1 person every minute in India. In Goa, TB kills 15 people who undergo TB treatment every year. Incidentally, Goa has a high prevalence of tuberculosis as compared to other states. It is estimated that 20 lakh people in Goa are at present suffering from pulmonary TB, of which nearly 5000 are infectious. An average 2,100 new TB cases are detected every year, of which 50 per cent are sputum positive.

'In terms of numbers, the number of sputum cases that are investigated has increased. We are now getting cases from the remote areas even without holding medical camps or door-to-door medical check-ups. This shows that people are becoming more and more aware of the possibility of them having TB.'

**Women matter**

It is fact that TB is curable and the treatment for TB is absolutely free, it needs to be propogated Worse still, for her, TB meant a disease in which a person ended up in some sanatorium, rejected and isolated by the family. To get across the message that TB is curable and treatment is free of cost for women, the 'hidden section' of the society, it has been decided to approach the mahila mandals and women's self-help groups with the aim to ensure that women have access to adequate and iimportant information.

A DOTS provider has to ensure that the patients swallow the medicines under their direct supervision. DOTS prevents the spread of TB bacilli, thus reducing the incidence and prevalence of TB and providing credence to TB control efforts. The state government has been putting in efforts through health department to make Goa free from tuberculosis. There is need to give emphasis on awareness about precautions, preventions and treatment of TB. The case detection rate for tuberculosis in Goa has improved from 65% in 2011 to 67% this year, but the state's 'cure rate' of 84% has remained unchanged.

TB control in Goa

The national tuberculosis programmed in Goa was started in September 1963 and is implemented in this state through the District TB Centre, at Panaji, which also functions as TB clinic in the city. This centre maintains the index register of all the patients detected in the state, in order to avoid duplication of the treatment, to montor patients for their follow up and to supervise the case detection and treatment at all the medical and health instituions. Drugs, labarotary facilites and other material are supplied by DTC until TB patients are cured.

*The Revised National Tuberculosis Control Programme (RNTCP) estimates that there are 160 cases of TB per one lakh of population in Goa. The RNTCP began in September 2004 in Goa, and provides free treatment to patients through Directly Observed Treatment (DOT) provided at their nearest government health centre. The health worker at the public health centre ensures drug compliance and follows up if the patient fails to turn up regularly for treatment. The illness is first detected during the patient's visit to a public health centre, where the doctor, upon suspecting TB, refers the patient to one of the 18 designated microscopy centres specially set up by the RNTCP to ensure accurate TB diagnosis. Each TB Unit, covering a population of five lakhs ensures supervision of the RNTCP in their area.*

*However, many patients are unaware of the RNTCP; those who are seeking treatment often fail to show up because of the distance they have to travel to reach a DOT centre. Meanwhile the programme depends on the Medical Officer in the health centre OPD to identify and refer suspected cases. Any patient having a cough for more than two or three weeks must be referred to the TB programme for sputum tests, but PHC doctors fail to make such referrals, an RNTCP official revealed, also speaking on condition of anonymity. Inevitably, this leads to an artificially low detection rate for the illness.*

**Dental Cell**

It is responsible for the overall supervision of all the dental clinics in Goa. There are 4 dental clinics at UHC's at Panaji , Margao, Mapusa ,Vasco & 5 at CHC's at Canacona, Pernem , Curchorem, Ponda , Valpoi and at PHC,s at Balli, Sanguem, Curtorim, Cansaulim, Aldona, Candolim, Betki, Sanquelim & Bicholim. Incharge of the Cell is supervising overall smooth functioning of the clinics and administration.

**Challenges for the future**

New dental clinics have to be set up at non bedded PHC's located at Siolim, Casarvanem, Madkai, Shiroda, Cortalim, Loutolim, Quepem & Chinchinim with a view to make dental treatment more accessible to the public. X-ray facilities are being planned at the district hospital – North Goa at Mapusa and South Goa at Margao- so as to be able to start root canal treatment facilities. Challenge is to make dental treatment available
to the public and to increase the awareness of dental hygiene and the importance of treatment.

**Mediclaim.** The limit for financial assistance in cases of Open Heart Surgery, Kidney Transplant, Cancer and Neuro Surgery, has been enhanced to Rs.3.00 lakhs including post operative care, while the limit of financial assistance for cancer patients is enhanced to Rs.5.00 Lakhs and for Bone Marrow transplant, cancer/disease, Spastic Child, Cerebral Palsy, Skeletal deformities to Rs.8.00 lakhs, The scheme is available to the permanent residents of Goa.

An amount of Rs.57.20 lakhs has been incurred on State Illness Assistance Society and 69 patients were referred under the scheme. This Scheme is meant for the persons living below poverty line.

**Swarnajayanti Aarogya Bima Yojana**

The Swarnajayanti Aarogya Bima Yojana was implemented on 20th day of the September 2011. with ICICI Lombard General Insurance Company Ltd. has been selected as the Agency to implement the Scheme in the State.

To provide social security to the resident population of the whole of the State of Goa by insurance coverage upto Rs.60,000/- per family per year for meeting expenses of hospitalization for medical and / or surgical procedure including maternity benefits.

Around 104654 households were enrolled during the year 2011-12.

**National Leprosy Eradication Programme (NLEP)**

National Leprosy Eradication programme is working towards reducing the disease burden in the state. Early detection and release from treatment. Also reduces stigma & distinguish by taking care of 1010 cured patients.

IEC/IPC for general public & capacity building of AWWs worker, Health workers, Medical worker & Private Doctors/practitioners in leprosy.
Patient management at PHC, reconstructive surgery at GMC Bambolim Goa and Monitoring Supervision of programme by District Nucleus.

**Acts and Rules Implemented by the Department:-**
All disability acts implemented in Goa by Social Welfare Department are applicable for Leprosy Affected People (LAPs). In addition to the schemes, like Indira Awas Yojna (housing), free electricity under Rajiv Kutir Yojna & loans under DRI (Differential Rate 0f Interest) Scheme to run small shops/Gadas.

**Physical achievements of the Department:-**
The stage of elimination are present in Goa, the prevalence rate is 0.27 per 10,000 population.
43 local cases & 68 outsider cases in hand.

**Challenge for future:-**
*Leprosy in Goa DPMR (Disability Prevention and Medical Rehabilitation) for cured patient.*

**8.3.5 DISEASE SURVEILLANCE PROJECT (IDSP) IN GOA**
The Government of India has initiated a decentralized, state based Integrated Disease Surveillance Project (IDSP) in the country in response to a long felt need expressed by various expert committees.
The project would be able to detect early warning signals of impending outbreaks and help initiate an effective response in a timely manner. It is also expected to provide essential data to monitor progress of on-going disease control programs.
Goa has commenced the implementation of the project from 1st of April 2005.
IDSP has replaced the NSPCD (National Surveillance Programme for Communicable Diseases), which was operational in the state since 1999.

**Objective**
The project development objective is to improve the information available to the government health services and private health care providers on a set of high-priority diseases and risk factors, with a view to improving the on-the-ground responses to such diseases and risk factors.

**Project Highlights**
District and State Surveillance Units have been set up to gather weekly uniform high quality surveillance data from Reporting Units in Government and Private sectors at all levels.
The project responds in a timely manner to surveillance challenges in the state including emerging epidemics.
Surveillance activities under various programs in the state have been integrated and existing infrastructure is used maximally.
A system of regular feed back to the participants of the surveillance activity has been put in place.

All the personnel of the Directorate of Health Services have been trained in the programme. These include Medical Officers, Laboratory Technicians and Para-medical Workers. Anganwadi Workers have also been trained to look out for Warning Signals in the population.

A fully-equipped Regional Laboratory has been established at the Dept. of Microbiology, Goa Medical College to enhance capacity for diagnosis and investigation of epidemics.
District and peripheral Public Health Laboratories have been strengthened.
The state has been integrated into the national surveillance network with the use of information technology for communication, data entry, analysis, reporting and feedback.

**Diseases and Conditions under Surveillance**

1. Malaria
2. Acute Diarrhoeal Disease (Cholera)
3. Typhoid
4. Tuberculosis
5. Measles
6. Polio
7. Plague
8. Dengue
9. Leptospirosis
10. Sexually transmitted/ Blood borne diseases like HIV, HBV, HCV
11. Unusual clinical syndromes (Causing death or hospitalization) such as Menigoencephalitis, Respiratory Distress, Hemorragic fevers and other undiagnosed conditions

**Expectations**

It is expected that IDSP will avert disease outbreaks and epidemics and reduce human suffering and improve the efficiency of all existing health programs.

**Administrative set-up**

Under the IDSP programme, a Goa State Surveillance Unit and a Goa State Surveillance Committee have been constituted. Secretary (Health), Govt. of Goa, is the chairperson of both the committees.

## SOCIAL DEVELOPMENT IN GOA: ACHIEVEMENTS & CHALLENGES IN HEALTH CARE SYSTEM

Goa's experience of social and human development is a unique model. Goa has been able to achieve exceptionally high physical quality of life. Its achievements are commendable in areas like health, education, and demographic transition.

Good health care has significantly contributed to the social development of Goa. Goa's excellent performance in social sector development is the end-product of the optimum interaction between a host of socioeconomic variables like health, education, social security, high per capita income, etc.

### 8.3.6 ACHIEVEMENTS OF THE PRESENT HEALTH CARE SYSTEM IN GOA

Goa has been able to reduce the birth, death, and infant mortality rates more drastically in the post-Liberation period. A dynamic health care system along with other social development mechanisms is responsible for the same. The health of the society is judged by improvements in basic health indices like crude birth rate (CBR), crude death rate (CDR), infant mortality rate (IMR), life expectancy, and susceptibility to communicable and non-communicable diseases. Table 1.1 shows the declining trend of selected demographic variables between 1961 and 2002.

**Table1.1: TRENDS IN DEMOGRAPHIC VARIABLES, 1961-2002**

| Year | Crude Birth Rate (Per 1000) | Crude Death Rate (Per 1000) | Infant Mortality Rate (Per 1000) |
|---|---|---|---|
| 1960-61 | 32.36 | 11.31 | 69.77 |
| 2012-13 | 13.2 | 7.20 | 8 |

Source: Census Reports & SRS.

As society achieves a certain level of economic development, diseases associated with poverty begin to disappear and diseases associated with urbanization and affluence begin to be evident.

The health care system has made a positive contribution towards increasing life expectancy. The achievements in demographic variables in Goa are comparable with those of developed countries like Sweden, Japan, Singapore, and USA. Table 1.2 shows the relative position of Goa with respect to developed countries.

**TABLE 1.2 INTERNATIONAL COMPARISON OF DEMOGRAPHIC VARIABLES**

| Country | Crude Birth Rate (Per 1000) | Crude Death Rate Rate (Per 1000) | Infant Mortality Rate (Per 1000) |
|---|---|---|---|
| Sweden | 13 | 10 | 04 |
| Japan | 10 | 07 | 04 |
| Singapore | 16 | 05 | 04 |
| Germany | 09 | 11 | 06 |
| U.S.A | 15 | 08 | 08 |
| Goa | 16.5 | 7.2 | 12.48 |

*Source: Social Infrastructure: The Western Region States: A Comparison, The Western Regional Office, Confederation of Indian Industry, Mumbai, (1998-99).*

**Census-2001 (Provisional) & Health Profile of Goa (2004).*

The child immunization coverage in Goa is almost 100.The development in the health care system has contributed to the epidemiological transition. Diseases associated with poverty and backwardness like malnutrition, diarrhea, etc. have been insignificant in Goa (The State of Goa's Health Report, 2000).

The gains in social sector development can also be attributed to the development of health care infrastructure. Table 1.4 presents the achievements in health infrastructure during the period 1961-2004.

## 9. Review of NRHM in Goa

Goa has been a State with good health indicators since the start of NRHM. The indicator show that NRHM has contributed to strengthening of the health system of the State.

**Analysis of Improved Health Indicators**

Just as a complete dish is an amalgamation of many ingredients, improvement is a product of a host of factors acting together and not an outcome of a single input. It is important to remember this fact when one tries to analyze the reasons for Goa's success. During the CRM visit the team members tried to explore the basis for Goa's achievements and based on their interactions, observations and consideration of secondary data the team analyzed that the following reasons have contributed to the improved health indicators of Goa:

*Goa caters to a population of around 14.5 lakh people. Thus one is automatically compelled to compare this State not to another State in the country but infact to one of the districts. To fully understand the reasons for Goa's good performance especially in terms of maternal and child health indicators the team has compared the situation in Goa with that of Samastipur district in Bihar in 2010 which caters to a population of 35.94 lakhs.*

***Awareness among people of the importance of ANC and other positive health seeking behavior from portugal times***

*The axiom 'Rome was not built in a day' is well known to all. Goa's improvement in health indicators needs to be viewed against this backdrop. Since Portugese times, Goan population has been made aware of the importance of ANC and other positive health seeking behavior so much so that interactions with beneficiaries (even from the BPL category) revealed that they were well aware of the importance of complete ANC and institutional deliveries contributing to almost 100 % institutional delivery. This awareness is definitely lacking in people staying in the Samastipur District in Bihar. This acts as an important contributor towards positive health seeking behavior which inturn contributes majorly to lesser maternal and infant deaths.*

***Fully functional One Tertiary care and two secondary care Hospitals to cater to 14 lakh population – 'Ensuring availability and quality'***

*Goa has two fully functional district hospital with C. Section facilities in each district thus having two secondary care hospitals and one Goa Medical College to cater to a population of 14 lakhs. Moreover, ANC fixed day ANC clinics by Gyneacologists at PHCs and CHCs have been operationalized in the State. In comparison, Samastipur District of Bihar catering to a population of 33.95 lakhs has only one secondary level facility conducting C. Sections. This is the District Hospital. There is no tertiary care facility in the district.*

**Completely FREE Services including diagnostics and drugs to those who come to the government facilities – 'Ensuring affordability and removing barriers to access'**

*In Goa, even though almost 50 % of the deliveries take place in the private facilities, the ones that come to government facilities receive completely free care. This includes free drugs and diagnostics; there were very few instances of out of pocket expenditures at least for MCH facilities. Thus all those who need free care are in a position to get it. In May 2010, most facilities in Samastipur, did not provide diagnostic facilities to patients and patients even from the BPL category had to pay for diagnostics due to absence of facilities in the Government Sector. The increased out of pocket expenditure acts as a deterrent for people to access health facilities.*

**Availability of assured referral transport and shorter distances: 'Improving Access'**

In Goa, 108 services are available to ensure that all patients get free and assured referral transport to hospitals in case of emergencies. Even the absences of referral transport, families have their own

vehicles or have easy availability of means to transport to the district hospitals in case of emergencies. *The distance to the GMC (Goa Medical College) at any point is not more than one-to one and a half hour since the GMC is located centrally. Though the total area of Goa is more than that of Samastipur, it takes at least 2 hours to reach the district hospital from certain places in Samastipur District and sometimes even more. Moreover there is no assured referral transport.*

**High Public Pressure and in built community monitoring mechanisms: 'Accountability to the Society'**

In Goa, political pressure on the health care providers is extremely high. Multiple interactions with health care providers revealed that if doctors are not available at the health care facilities, the local panchayat and political leaders inform the higher up politicians, sometimes even the health minister, as Goa being a small State, access to Health Minister is not very difficult. The political pressure ensures that the system performs upto the mark, absenteeism is minimized and facilities are functional. Such in built community monitoring mechanisms are absent in Samastipur District.

*South Goa Hospital has a very detailed Citizens Charter which may not be available with national facilities.*

**Progress under NRHM, Challenges and Way Forward**

*Areas that require attention*

***Restructure and Redefine Service Delivery Packages:*** *Develop a Health Package that clearly defines as part of the entitlement of every citizen the services that each of the facilities are going to provide in respect of primary and secondary level facilities in the State. In Goa, since sub centres and many PHCs do not provide delivery services and CHCs do not provide C- Section services, the State should clearly define and specify entitlements at the different health facilities. Efforts should also be made to redistribute the delivery load and case loads at facilities from the centre to the periphery using a two pronged approach namely: Mapping of facilities catering to slum areas/ migrant areas/ floating population and ensuring availability of normal delivery services at these PHC/ CHC*

*Reduce load at the GMC by Ensuring availability of full complement of Gynae, Paeds and Anesthetist at least one more facility in each district to provide EmOC services*

*This will particularly help in addressing the needs of the migrant population which is the major issue for the State in current times.*

***Regulations:*** *State should ensure that regulations such as the Clinical Establishment Act are implemented so that the private sector can be regulated*

***Irrational Distribution of Specialists:*** *Performance appraisal of specialists should be conducted to map out the work load of the specialists at the various facilities and redistribution as per work load should be the aim of the State. There are 19 Gynecologists and 8 Pediatricians to cater to the population of Goa. The human resources should be redistributed to ensure the operationalization of one more level 3 facility in each district.*

***Training:*** *The State needs to urgently establish a training institute. Training calendars and schedules need to be put in place. Training consultant needs to be recruited immediately.*

***Quality Assurance Committees, Accreditation of Hospitals, Putting in place Hospital Managers:*** *The State needs to go in for quality certification of hospitals and also put in place hospital managers to assist the head of the hospital in managing the hospital. It should strive to ensure adherence to quality assurance standards in the provision of health care at all levels of service delivery. The State should ensure that the*

*continuous medical education receives due focus to strengthen the capacities of staff employed under the public health sector.*

*A formal grievance redressal mechanism needs to be established and grievance boxes need to be set up at the facilities.*

*Use of PROMIS and Display of Drug Lists: PROMIS has not yet been initiated in the State and efforts should be made to implement the same at the earliest. This would help in addressing shortages of drugs at facilities. The essential drug list needs to be displayed at all facilities. There is also a need to revise and expand the Essential Drugs List.*

**Areas that have not been addressed during conceptualization**

*Public Private Partnerships and Regulation of Private Sector- There is a lack of comprehensive directives from the Central level on ways to promote public private partnerships for service delivery except for family planning and JSY issues. However, there is lack of direction on addressing this issue, if the private sector is not willing to accept the compensation provided by the Government Sector. More important is the issue of regulation of private sector which is the need of the hour.*

*HR policy directives and State Programme Management Units*
*Even though the State has introduced benefits for contractual employees such as maternity benefits and an informal mechanism for performance appraisal exists, there is no concrete HR policy for the contractual employees. This is because there is lack of directives from the Centre on the policy for more than 1 lakh human resources employed under the Mission under the guise of HR being a State subject. This is a lacuna that needs to be addressed from the Central level and during conceptualization of the next phase of NRHM. There is a need to adopt better human resource practices to improve recruitment, retention motivation and performance; rationalize pay and incentives; and assure career tracks for competency-based professional advancement.*

*Decentralization*
*Even though there are clear cut directives for decentralization and formation of DHAPs from the centre, the same have not been followed at the State level. Even if the State finds that given its administrative structure DHAPs are not feasible, there should be an urgent move towards Block Health Action Plans.*

*MMUs and Referral transport*
*The utilization of Mobile Mammography Vans needs to be increased substantially with a view to ensure that each area is covered. With regards to EMRI, State needs to realize that this is a major cost factor and an important pillar for addressing access. Even though the system is functioning well as of now, it is essential that the same is maintained and made cost effective so that the heath system is not overly burdened in the long run.*

**Communitization**
*Even though informal methods of community involvement are in place, the formal systems introduced under NRHM, require to be strengthened. For example, only 14 out of 26 RKS have been constituted. Only 4 out of the 172 subcentres have utilized more than 50 % of their untied grants. VHSNC role is restricted to conducting cleanliness drives. ASHAs need to be introduced although with a different roles and training structures as compared to other States. ASHAs may be focused on addressing the needs of the migrant population and the non communicable diseases*

**Strategies employed by the state that are apart from the ones enumerated in the framework**

The State has been active in taking initiatives to address the needs of the population and has developed strategies that are quite unique. Some of the initiatives with support of NRHM are Diabetes Registry, Cancer Registry – Mammography Vans, Pediatric Oncology at GMC, Pediatric ambulances under EMRI, Hypertension screening. Other initiatives taken up by the State are screening for Infant Metabolic Disorders, Tobacco Control activities and activities for addressing Mental Health issues Introduction of pentavalent vaccines, MMR and Rubella vaccines in 2008, infant death audits and gestational thyroid screening are some of the other significant initiatives taken up by the State.

**Contribution of NHRM**

In some sense it can be stated that NRHM funds have contributed majorly in two important aspects. One, they have acted like the very essential untied funds for the improvement of the existing system of the State and have also contributed completely or partially towards initiatives such as assured emergency and referral transport (EMRI) and two, they have been successful in initiating action against other non-communicable diseases such as cancers, diabetes etc.

## 10. CHALLENGES BEFORE THE PRESENT HEALTH CARE SYSTEM IN GOA

*Goa's "epidemiological transition" itself has presented the State with a lot of concerns and challenges. There has been a sporadic increase in the new 'lifestyle' and social 'status enhancing' diseases like chronic obstructive pulmonary disease, cancer, diabetes, heart ailments, depression, HIV/AIDS, obesity, etc. The health care system should become more dynamic to face the challenges created by the amoebic expansion of 'knowledge-economy diseases'.*

*With successful demographic transition, the age composition of the population has undergone changes. The size of elderly population (65+ years) has increased from 3% in 1961 to 7.3% in 2000 whereas the population in the age group 15 years has declined from 42.8% to 26.7% during the same period. Hence, the State should devise new health care policy measures to provide elaborate geriatric health care system with facilities for psychological and biological counselling.*

*Goa has a strong traditional system of herbal medicines commonly known as zhadpalyachem vokot or palamulachem vokot. Goa requires a dynamic health care policy to revitalize and rejuvenate the traditional system. The system can be a panacea for many of the 'globalization-ushered diseases'. Further, it can also provide an economical and patient-friendly alternative health care system. The export potential of the health care system based on herbal medicines is tremendous.*

*Many of the available hospitals lack quality services, and suffer from infrastructure deficit and manpower bottlenecks. The condition of government-aided hospitals, community, primary and urban health centres is pathetic. These hospitals urgently require the deployment of a financial package to make them optimally usable, sustainable, and patient-friendly. The present infrastructure facilities are inadequate and in bad shape. Continuous upgradation and modernization of infrastructure can be brought about by promoting private-public partnership. This assumes importance at a time when public health expenditure as a proportion of Goa's total Domestic Product is actually declining.*

*Goa urgently requires more 'super and multi-specialty' hospitals to provide world-class health care facilities. These hospitals should be able to provide health care facilities at affordable rates. Voluntary organizations can be roped in to set up such specialty hospitals. In this respect, huge resources available with many churches and temples in Goa should be tapped. Moreover, schemes need to be evolved for bringing the weaker sections and BPL families within the reach of such facilities.*

*Health care managers should evolve benchmarks and certifications for the existing and new hospitals. The health care managers of the State should immediately devise measures to check the mushrooming ayurvedic clinics along the coastal lines and private allopathic practitioners with dubious intentions in the towns & cities. Their unethical deeds, wrong diagnosis, and medication can lead to deterioration in the physical and mental health of innocent patients.*

*The health care needs of the migrant workers in the construction industry and those employed in various non-formal sectors are completely neglected. These sections of the floating population are the flag bearers of many of the 'poverty-induced-diseases'. The health care managers should evolve policy measures to tackle their health, sanitation and hygiene related problems. The employers of migrant workers need to play a proactive role in addressing the health concerns of migrant workers.*

*Another lacuna with the present health care system is the absence of an effective guideline for disposal of hospital waste. Further, there is no effective mechanism for supervising the environment-friendly disposal of hospital waste. If the present trend continues, the day-to-day functioning of hospitals can have an adverse impact on the health of the population in catchment areas.*

*The declining female sex ratio is yet another concern for social sector development in Goa. The child sex ratio in the age group (0-6) has declined from 964 (1991 Census) to 920 (2011).. A number of factors have contributed to the phenomenon of female foeticide. The misuse of easily accessible and affordable modern sex determination technology is one of the contributing factors.*

*Studies in primary care clinics show that a third of all adults in Goa have some degree of anxiety or depression. Suicides are the tragic outcome of depression (The State of Goa's Health Report, 2000). The National Crime Record Bureau in its report titled "Accidental Deaths & Suicides in India" (1998) has recorded that in Goa the suicide rate was 14.39 per one lakh population, when the all India average was 10.3. The number of suicides in Goa was reported to be 302 in 2003 and 277 in 2004. (Assembly Question January 2005). In the present era of market economy, a large number of people suffer from 'burnout stress syndrome' (BOSS) in many countries of the world. In order to arrest this trend in the present globalized economy, the health care system in Goa also should provide more counselling facilities under trained and mature counsellors.*

*The working conditions of health care workers, especially nurses, need improvement. They should be provided with better facilities to equip them to meet the increasing challenges posed by the 'new-generation diseases'. Further, by improving the working conditions, the best talents available in the sector can be attracted to the hospitals in Goa.*

In order to consolidate and to skyrocket the social development achievements especially in the health care sector, the state government should formulate innovative policy measures with the co-operation and involvement of all the stakeholders to triumph over the challenges. The emerging new paradigm in the health care sector can ensure the sustainability of social sector development.

**Goa has been adjudged amongst the top states in the country both by the planning commission and reporting media.**

Goa's health care challenges

Recent data on health indicators suggest that while health care in Goa remains far ahead of the national average, there are many cracks in the system. Indeed, on many counts the state appears to be losing the ground gained earlier, even as new challenges loom.

Goa has 19 primary health centres, five community health centres and a number of sub-health centres. Of these 13 PHCs and all CHCs provide 24 hour healthcare and have gynaecological and paediatric facilities,. The establishment of this network has kept Goa's health indicators considerably better than the national average for as long as anyone can remember.

*Notwithstanding this, however, several studies now suggest that in recent years, there have been few new gains; indeed, on many counts the state appears to be losing the ground gained earlier.*
*In August 2006, Goa's local newspapers carried a series of reports on the inadequacies of the state's primary health system. Patients testified to the loss of family members due to lack of access to health services in their vicinity.*

*There is a classic case from a village in corla which is 35 kms from the nearest health centre. Four years ago a villager lost her baby because she could not access its services in time. In these interior districts of Goa there is a wide need and availability gap - the 41,000 residents of Canacona have recourse to no more than 60 beds at the health centre. The centre's x-ray machine has not worked for over a year; the kidney dialysis machine is rendered useless by unreliable electricity and the absence of a generator.*

*These myriad problems result in health services that do not match up to the investments made in buildings and equipment. A large number of vacant posts, ill-motivated staff and non-availability of essential drugs undermine curative services at the PHC.*

New challenges

But tackling the woes in the state's health care system will be no easy matter. Social and economic changes are rapidly bringing in a new set of problems. The state is witnessing a rapid rise in chronic diseases such as cancer, heart disease, and mental health problems, and addressing these requires far more than mere infrastructure and rudimentary support.

**Older battles still to be won**

While the complex new problems demand urgent attention, there are still a number of older battles to be fully won. The infrastructure for detecting and responding to many illnesses is much better in Goa than elsewhere in the country. Nonetheless, there is much that remains to be done to ensure that well understood illnesses are properly tackled.

*Yet another disturbing feature is seen in the Infant Mortality Rate, which has risen in the past decade according to the NFHS. The Goa government says IMR in 2003 was 11.67 per 1000 births, considerably better than the all India average of 70 per 1,000 births. But NFHS data from 1998-99 suggests that these figures may be wrong, and if fact there may have been a worsening of the situation in the state in the last decade. Analysing the NFHS data on IMR, researcher Siddharth Ramji notes that despite the decline in the national infant mortality rates between 1988-92 and 1994-98, in eight states incluing Goa, the IMR rates actually worsened. In Goa, the rise is estimated to be from 31.9 deaths per 1000 births to 36.7. (Indian Pediatrics, 2001).*

**Rethinking Public Health**

Can these problems ever be sorted out? Our experience has repeatedly shown that the country will never have enough trained medical professionals willing to work in the rural areas, and that the emphasis on vaccines, allopathic drugs and technology has not turned out to be the promised magic wand.
The experience of a number of groups whose work in community health provides invaluable contemporary heritage, may offer an alternative course, one that places the country's neediest at its core. One such approach is developing a cadre of village based health workers trained in preventive and curative health. This is now a key recommendation of the National Rural Health Mission which requires that such a cadre, supported by a strong primary based referral system be created across the country.

But here too, there is a wide gap between the plan and its achievements. Goa has yet to identify this cadre and put such a programme in place, admits Goa's Director of Health Services. For most of the state's residents, their vulnerability to the cracks in the health system is still a long way from being tackled.

*Medical Tourism:*
Even though the health or medical tourism sector is growing at a very fast pace with around 30 per cent annual growth seen in most part of the world over the years, medical tourism sector's development in the state has not been able to keep pace with the global growth.

This is despite the fact that the state has excellent healthcare facilities in the private sector along with a highly qualified English speaking medical staff.

The private sector operators in the health sector, especially those offering tertiary care facilities at a very cheap rate which are sought by foreigners, have claimed that Goa has been witnessing around 5-10 per cent growth in the number of the foreigners seeking medical assistant in the state.

*The government should play the role of a facilitator for the sector, the operators feel.*
*The private sector healthcare operators want the government to take advantage of the situation and facilitate growth of the healthcare sector besides promoting Goa's healthcare facilities abroad so as to attract foreigners to the state for medical treatment.*

*The private operators also want the government to help the sector in getting necessary international accreditation and registration of foreign insurance companies that would go a long way in attracting the foreign clients as well as attracting more tourists to the state.*

Research in Indian health requires partnership with local communities to understand and articulate their concerns. It needs field-based epidemiology rather than extrapolations that have no basis in ground reality.

It calls for an understanding of the wider socio-economic linkages to understand what factors shape people's health and health seeking behaviour.

*Without such insightful research states health agenda will continue to lurch from one meaningless priority to the next. Its public primary health system will remain a mere shell while its referral services will continue to be overloaded and increasingly at the receiving end of public rage when patients continue to die from negligence, wrong diagnoses and lack of drugs. The current push towards privatization and reduced subsidy to public health care will meanwhile leave the poor with little option but to quietly lie down and die.*

*The perfomance of the health system in Goa, despite the State's remarkable achievements of over 82% literacy rate and second highest per capita income in India, is symptomatic of all these challenges. "A huge work burden and ill-motivated staff plague the primary health system in Goa."*

*Cancer and cardiovascular disease*

*Although there is no official data on cancer incidence in Goa, the state records around 250 new cases of breast cancer every year. Going by figures, based on actual cases detected, it would imply that Goa's female population of 650 000 would see an incidence of 35 breast cancer cases per 100 000 people.*

*The all-India figure for breast cancer cases is estimated to be 80 000 [in a population of 1.1 billion, ie about 8 per 100 000, a quarter of the Goa figure].*

*"The rate of breast cancer cases in Goa is very high – and is comparable to the incidence in Indian metros. Goa sees around 600 people dying of communicable diseases but 5 000 from non-communicable diseases each year. It is high time the health system is geared to early detection and prevention of non-communicable diseases like cancer, diabetes and hypertension which are on the rise here*

**The anganwadi**

One element of Goa's health system that does seem to be working well is its 'anganwadi', a network of localized crèches that are part of a nation-wide programme. The 'anganwadi bai' (worker), supported by a helper, takes care of children between 2-6 years old for a couple of hours each morning. These workers provide a nutritious cooked mid-day snack to all the children attending the informally run nursery school.

The main task of the anganwadi workers is to monitor the growth of these children by a standardized measurement of weight for age along with some other growth indicators. Those children that do not match up to the required measurements are graded on a scale of 1-4 of malnutrition. The first two categories are considered to be at risk and need to be closely monitored, while the latter two are in a serious stage and require additional supplementary food or hospitalization.
The state provides a rich fare of ragi (finger millet, which is sprouted and roasted), gram flour (ground chick peas), groundnut, jaggery (unrefined sugar), dried green peas, mung (sprouted beans), rice and ghee (clarified butter).

Supplies are received regularly, said, the anganwadi worker. Packets of dry supplementary food are prepared by the anganwadi workers and delivered to the homes of all pregnant and lactating mothers as also to infants from six months to two years of age.

Children attending the anganwadi, though cramped into a small rented room, are fed a nourishing mid-morning snack cooked by the anganwadi helper. Sprouted mung usal (mung bean curry), misi roti (a Rajasthani bread), rice idlis (rice with dal), groundnut ladoo (a sweet), kabuli chana (a chickpea dal) and mixed ladoo (sweets), are on the weekly menu. The idlis offered to me that day were fresh and delicious. The children are obviously at home and comfortable with their teachers and entertain the visitor with action songs and stories. Such supportive care for young children has clearly been a boon to rural women, particularly those working in agriculture.

Other states that only offer calorie support through khichdi (rice and lentils) through their anganwadi programme, could draw inspiration from Goa's commitment to the health of its children. The Goa government should additionally consider support for a kitchen garden that provides fresh green vegetables and fruits for the children. Maintained by the community, it would further enhance the need for micronutrients that enhance immune status, and ensure against leakages and corruption, which is commonly seen in other states.

A doctor visits the Bicholim anganwadi once a month. The anganwadi workers are able to administer oral rehydration treatment to diarrhoea cases and refer those that require medical attention. The contribution of these anganwadi workers to the community, both in Bicholim and in Madkai, where I had an opportunity to observe their work, is incalculable.

The efforts of Sangath have helped to sensitise anganwadi workers in identifying children with learning disabilities or dealing with child sexual abuse.

A senior official of the Integrated Child Development Services said a new innovative dimension to Goa's Integrated Child Development Services (ICDS) programme has been nutrition education camps for adolescent girls, including school dropouts and young women, in the 14-45 age group. Here they are taught the importance of nutritious food along with cooking demonstrations emphasizing low cost and locally available food with an emphasis on salad recipes. At these camps issues such as relationship problems are discussed and vocational training skills related to tailoring, catering and craft are taught.

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