CH-16

Health Care Infrastructure for Development
Karnataka

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"Health and sustainable development are inter-linked", -
Brundtland, Gro Harlem. Address to World Health Assembly, 1988

"Without good health, individuals, families and communities and nations cannot hope to achieve their social and economic aspirations" - Health For All for the 21st Century,
World Health Organisation, Geneva, March 1997.

What is the status of health of the people and health care infrastucture in Karnataka? Is it conducive to development?

Factors affecting health of the people

Many factors play a role in determining the health of the people

- Food and nutrition, adequate in quantity and quality
- Safe water supply and sanitary disposal of waste
- Quality and extent of coverage of health care services
- Education, particularly female education
- Improved purchasing power with equity
- Housing and shelter
- Clean air, water and soil and quality environment

There is need for intersectoral action for health.

Health problems

If we consider the health of the people of the whole of India, Karnataka is an average State. If we consider our neighbours Kerala and Tamilnadu, Karnataka lags behind. All the health indices are worse. Further, there are great disparities between the districts within the State, with respect to Health and Health Care Services and development. While Bangalore, Dakshina Kannada, Mandya and Shimoga are better off, Bellary, Bidar, Bijapur, Gulbarga, Raichur and Tumkur are worse off.

Existing health problems

The major existing health problems are microbiological (gastro-enteritis, diarrhoeas, acute respiratory infections and other communicable diseases), malnutrition, inadequate basic services (such as water supply, sanitation and waste disposal, health care) and pollution.

Evolving health problems

Industrial growth and urbanization bring on more problems. The most important is pollution. Related to this are micro-chemical problems. An area of growing concern is psychosocial. This is shown by the climbing suicide rate, increasing violence and crime, drug abuse, alcoholism, stress and anxiety and increasing incidence of diseases of heart and blood vessels. Added to this is poor housing and shelter.

The two sets of problems have additive effects. All of them lead to lower productivity, increased absenteeism at work and poor quality of life.

Tackling the problem helps to enhance productivity and development.

Infectious Diseases

While many countries have been able, or are on their way, to control infectious diseases, the situation in India (including Karnataka) is different. There is progressive deterioration over the years. Control of communicable diseases has shown a negative trend in Karnataka. A few examples are given.

	Number of cases	
Year	1990	1993
Gastro-enteritis	8,565	36,206
Acute respiratory infections	4,23,803	8,96,076
Malaria 70,012	1,96,466*	

*Smear positive. There is significant increase in P.falciparum infection.

"State still caught in the grip of gastro-enteritis wave".

"Out of 16 water samples collected, 10 were unfit for human consumption".
___ Dr. G. Rangaswamy, Joiont Director, Directorate of Health and Family Welfare, Karnataka as quoted in Indian Express, Bangalore, May 14, 1997.

Other major infectious diseases

Tuberculosis continues to take its heavy toll. Karnataka, as most other States in India, has failed to control it. The new method of treatment, Directly Observed Treatment Short Course (DOTS) is being tried. Whether it will make a better impact is to be seen.

In 1993, 41,786 cases and 537 deaths from pulmonary tuberculosis have been reported from the State. If the percentage distribution of deaths by major groups is considered, 'coughs' accounted for 19.7%. Of these, TB of lungs accounted for 29.4%

HIV/AIDS : The number of persons infected with Human Immuno-deficiency virus and progressing to Acquired Imune Deficiency Syndrome is alarmingly increasing. It is the major

emerging disease. The combination of tuberculosis and AIDS is the greatest threat to public health, killing the young adults in their productive life.

Diseases peculiar to Karnataka : Handigodu syndrome (a permanently crippling genetic disorder) and Kysanoor Forest Disease (commonly known as monkey disease) are special for Karnataka.

Urbanization ; migration ; slums

Uncontrolled urban growth leads to spread of infectious diseases and other health problems. The growth is mainly of slums with all attendant social and health problems. Urban overcrowding and poor working and living conditions can lead to anxiety, depression and chronic stress. Changes in family structure and living arrangements have significant impact on peoples' health and their capacity to cope with health and social problems.

Karnataka is more urbanized than the Indian average.

Ratio of urban population to total (%) = 1991 Census

India : 25.70
Karnataka : 30.90

A few centres in Karnataka are growing very rapidly. The decennial growth rate has been 39.9% in Bangalore, 39.1% in Mangalore and 36.2% in Mysore.

Growth of towns and cities strain the health care services but it has an advantage also; delivery of services can be more efficient if planned properly and the plans are implemented.

Industrialisation can help in alleviating poverty and improve health. but, Industrialization without proper consideration of posible impact on the health of the people, can lead to deterioration of the workers, their families and the community.

Types of industries

The type of industry has an effect on the health of the people. Distinguish between one kind of industry and another. Choice of socially appropriate technology and promoting such industries lead to better qualitative development.

Plastic industry

Tests done in Britain, Australia, New Zealand and Taiwan in recent years have shown that toxic chemicals in plastics can leach into a wide range of foods from plastic packaging materials - Utusan Konsumer, 1996.

Toxic waste recycling

There is a tendency to transfer 'dirty' (meaning most polluting) industries to less developed countries. Government had declared itself against dumping of toxic waste by the developed countries. But now the opposite is being done. An example is the Bharat Zinc plant near Bhopal (Bhopal again?), which is recycling hazardous waste shipped from Germany and Holland chiefly.

Granite quarrying and stone crushing

This is an industry present very much in Karnataka. It leads to silicosis and other respiratory conditions.

Silk reeling and powerlooms

The industry produces dust and other particles. There is also noise pollution.

Every type of industry has some social/health costs that have to be minimised by built in safety/preventive provisions. It is important that the plans of development that evolve must

include health and environmental impact assessments as an integral part of the planning/management process. The unintended health and social consequences of economic development should not become counter productive to sustainable development.

According to size

Larger units are often healthier because it is easier to "police" them. But large industries have greater clout and may get away with greater violation of the rules. Also, large industries may contract out "dirty and dangerous" work.

Smaller industries are desirable on economic and social considerations. They are also happier places to work.. The psychosocial factors are better. The morale is high. Small industries use batch processing, whereas large factories often use automated flow processes or the conveyor belt system of production. Health hazards are considerable. If we can organize preventive health services, small industries will be better suited.

Cottage industries are satisfying. But the environmental sanitation and working conditions (ventilation, heat and light) are often apalling. There may be high morbidity related to respiratory diseases, accidents and heat exhaustion.

Infrastructure for industrial development

There is need for development of supportive infrastructure : transport and communication, power and increased availability of water, leading to additional demands on improved water management and waste disposal. All these dimensions of infrastructure also have their social costs and health consequences, not always positive. Poor quality road infrastructive and uncontrolled / unregulated transportation leads to increased road traffic accidents and injuries. Power plants add to pollution of air, water and soil unless properly regulated. Poor water management increases vector/mosquitogenic potential and causes the ill-effects of poor environmental sanitation.

Environment

Adoption of sustainable development policies, whether industrial or agricultural, which seek to conserve, protect and restore the health and integrity of the earth's ecosystem is essential for health. Environmental protection and health promotion are inseparable. This is the challenge to all development planners and decision - makers.

The environment has a tolerance limit, beyond which it will not be able to sustain life and health. Meddling with the environment without thinking of the adverse effects for some immediate economic gains in the name of development leads to disaster. Our activities should not irreparably disrupt the health and stability of the ecosystem.

Pollution

Pollutants of various kinds are thrown into the environment. The pollutants emitted from factories and vehicular exhausts are poured into the atmosphere, river and soil, adding on to the pollutants due to burning of domestic fuel, waste and other human activities. This double burden can cause breakdown of the ability of the environment to cope with them.

Air

The main cause of pollution is vehicular and industrial emissions, the primary components being hydrocarbons, carbon monoxide, and oxides of sulphur and nitrogen. Lead contamination occurs due to lead in petrol. Symptoms of lead poisoning in children in Bangalore has become a cause for worry. Air pollution can cause diseases like chronic bronchitis. Reeling of silk, a common activity in Karnataka, can cause dust and fibres being inhaled. Spraying with pesticides and insecticides can be hazardous.

Water

The natural cycles of hydrology may be affected by our 'developmental' programmes. Contamination due to industrialization -distilleries, textile industries and organochemicals - occur frequently; so also, microbiological contamination can occur. Contaminated water causes gastro-intestinal disorders. Granite quarrying, carried out extensively in Karnataka produces dust, which gets into the air and water systems , affecting the health of the people.

Building of canals for irrigation can lead to mosquito breeding, if precautions are not taken; so also stagnant waters in ponds, cisterns and other places.

Soil

Excess use of pesticides, herbicides, fungicides and other chemicals affect the soil. Human activities like construction may remove the top soil.

Noise

Constant loud noise of particular frequencies can produce deafness to those frequencies. This can occur in people involved in the powerloom industry.

Karnataka State Pollution Board

The Board is expected to ensure compliance with the various pieces of legislation, designed to control pollution.

The Water (Prevention & Control of Pollution) Act, 1974.
The Air (Prevention & Control of Pollution) Act, 1981.
The Environmental Protection Act, 1986.

The Board is also the implementing authority under the Hazardous Waste Management Rules, 1989.

The Board, with its headquarters at Bangalore, has 11 Regional Offices, a Central laboratory and Regional Laboratories.

The effectiveness of the Board has been limited. Even where the board wishes to take action for the improvement of the environment, it has often found its hands tied. Prosecutions, when launched, may not lead to results. There are delays and court rulings in the majority of cases had gone against the Board. But recently, the courts in the State and at the Centre seem to be seized of this problem.

There is need to forbid production of toxic chemicals, rather than limit its release into air and water. Factories must adopt environmentally sustainable production processes. Pollution must be seen as an economic waste; resources are being used inefficiently.

Bhopal Disaster

It is within our memory the worst human made disaster in history - the Bhopal tragedy.

Molasses leakage

"30,000 in 56 villages affected by molasses leak, Kampli town worst hit" - Indian Express, Bangalore, May 14, 1997.

Polluted molasses containing hazardous chemicals leaked into the Thungabhadra river, when the tank of the sugar factory burst. Kampli town, which depends on Thungabhadra river for drinking water suffered most.

Injuries

Accidents and injuries lead to death and disability in increasing measure in recent years. These result from rapid urbanization, motorisation, industrialisation and changing lifestyles. A number of social factors contribute:

* migration into cities
* large scale construction activities
* import of machines, without safety devices
* lack of safety measures: road, home, worksite, playsite
* problem of alcohol and drugs
* increase in violence and crimes
* steep increase in number of vehicles
* adverse road situation
* meagre facilities to attend to accidents

The estimated number of deaths annually in Karnataka from injuries is about 56,000 and about 10 times this number would suffer from disabilities.

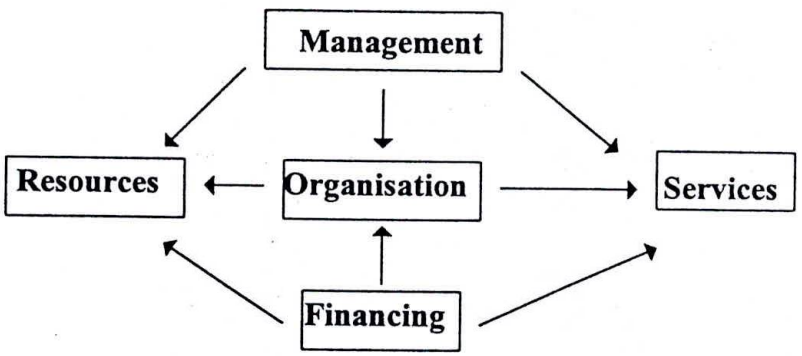
Causes of injuries : Bangalore : percentage

Road traffic accidents	:	51.6
Violence	:	27.0
Domestic falls	:	10.8
Burns	:	5.1
Industrial Injuries	:	3.2
Fall of objects	:	1.1
Others	:	1.2
Total		100.0

Motor vehicle injury rates have been on the decline in different parts of the world. But in Karnataka, the rates are increasing. There is need for scientifically designed, culturally appropriate and economically feasible strategies based on epidemiological analysis of traffic injuries. These must be adapted for pedestrians, two wheelers, cyclists, cars, buses and trucks.

Health Care Infrastructure

The health system needs an infrastructure to make available health care services. It has many components :



There are many factors which play upon the health infrastructure and modify health.

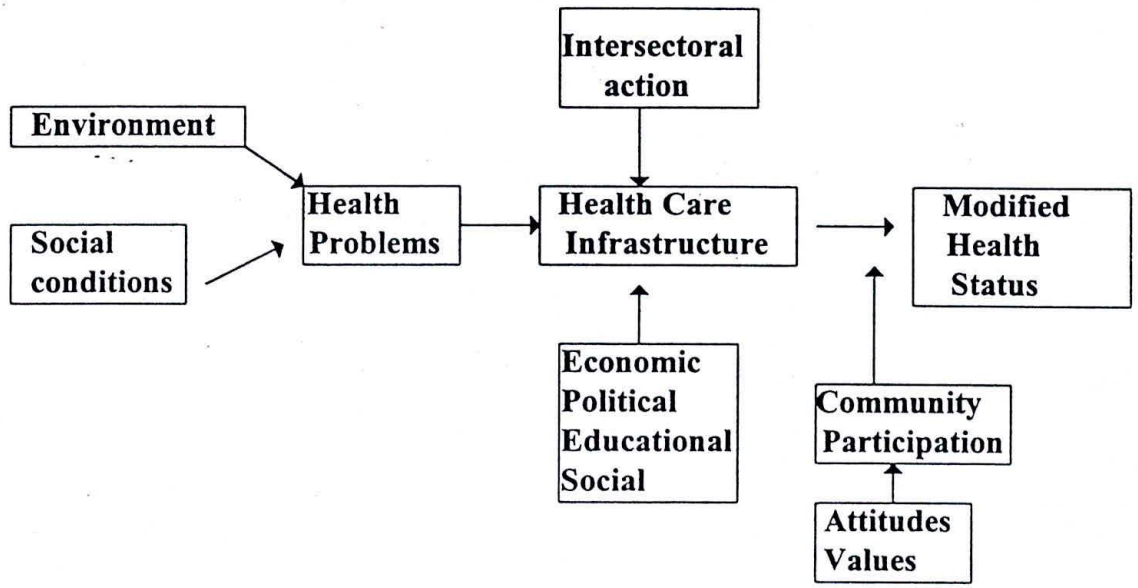
Resources : Technical and skilled personnel
Building and equipment
Drugs and Supplies
Scientific knowledge and technology

Finances : Government : State, Central, Local
Voluntary Contributions
Insurance

Private : Individuals, families, communities

Management : Planning, Communication, Coordination
Regulation, Supervision
Delegation of authority and responsibility
Monitoring and Evaluation
Community Participation

There are many factors which play upon the health infrastructure and modify health.



Health Care Facilities

The health care facilities in Karnataka are not adequate. There is need and scope for improvement. The financial allocation by Government is not sufficient. Even the amount allocated is not utilized efficiently.

The Voluntary sector is tending to become stagnant. The dynamism and growth seen earlier are lacking now.

The private-for-profit sector shows a different trend. There is increase in the larger, tertiary care hospitals, utilizing costly technology. They are situated in the cities and, to some extent, in the larger towns.

Primary Health Care (Government)

Primary health centres	:	1,253 (1994)
Sub-centres	:	7,793
Primary health units	:	621
Community health centres	:	146 (1990)

Hospitals (as on 1.1.1991)

		Karnataka	Kerala	Tamilnadu
Number	rural	25	2328	89
	urban	263	596	319
Beds	rural	2,526	37,589	4,235
	urban	31,951	32,490	44,545

Population served per hospital bed

Karnataka	:	1,311*
Kerala	:	427
Tamilnadu	:	1,139

* There is wide disparity in the number of hospital beds in the various districts : (Examples) :

District	Population per hospital bed
Mysore	935
Bangalore	1,1015
Tumkur	2,450
Raichur	2,552

Specialised hospitals and institutions

- Minto Ophthalmic Hospital, Bangalore
- T.B. Hospitals, Bangalore, Mandya, Gadag, Kolar, Bijapur & Madshedde (D.K.)
- Leprosy Hospitals, Bangalore, Dharwad
- National Institute of Mental Health & Neurosciences-Bangalore, Mental Hospital, Dharwad.
- Kidwai Memorial Institute of Oncology, Bangalore.
- Sri Jayadeva Institute of Cardiology, Bangalore.
- Sanjay gandhi Institute of Accidents, Rehabilitation and Physical Medicine, Bangalore.
- Epidemic Diseases Hospitals, Bangalore, KGF and Mysore.
- Institute of Child Health, Bangalore.

Private for Profit

The major part of health care is provided by private practitioners. This is estimated to be 70% including practitioners in modern (allopathic) medicine and other systems of medicine.

There are some hi-tech hospitals. Though their number is small and the number of patients catered for is small, they have high visibility, because of the sophisticated

technologies. They cater mainly to the elite population and to the higher paid management and administrative staff of the corporate sector. These hospitals often have health check-up and health care packages.

Industries

Some of the larger indsutries in the corporate sector (public and private) have their own hospitals. These are small or medium-sized. The staff and employees often depend on other hospitals for major part of health care.

All these institutions must be linked together in a referral services complex. All of them must be sensitized to the possible negative health and social consequences of development so that their responses may be need based and adequate.

Health Insurance

Karnataka (and the country) has not caught on with health insurance. Only about 2 million persons, out of a population of 950 millions have health insurance. The way the insurance schemes - mediclaim, Bhavishya arogya, Jan arogya and others -

are functioning, it is very unlikely that insurance will have a major impact on the health of the people of Karnataka. Even the new proposals for opening up health insurance to outside agencies may not help much, except to make available sophisticated procedures to the

fortunate few. Health insurance should lead to better health care to the large majority of the people.

Employees' State Insurance

This is a major social security programme. It provides some protection for workers in the organized sector. Medical assistance is made available to the immediate family members also. the working of the Employees' State Insurance Scheme is not satisfactory. There is need to have promotive and preventive orientation and positive lifestyles. It should consider the adverse conditions prevailing and take concrete measures.

Regional Occupational Health Centre, Bangalore.

The National Institute of Occupational Health, Ahmedabad, has a Regional branch at Bangalore to study the health hazards of occupations, both industrial and agriculture in South India. It is also expected to monitor the environmental hazards of industries. A centre such as this should be closely involved with development in Karnataka. Its monitoring and research activities should respond to local needs and priorities and help to assess the human factors in development.

Karnataka Health Systems Development

The Government is now in the process of implementing a programme for the strengthening of the infrastructure for secondary health care with the assistance of the World Bank. The Systems Development could have been utilised as an opportunity to tackle emerging health problems. The plans for industrialisation are known. The health problems associated with particular industries should have been taken into consideration and steps taken to anticipate and prevent those problems. It is assumed that primary health care is already catered for, though many will question this assumption. The need is to strengthen primary health care. It is true of Karnataka as the whole of India.

"We have completely ignored primary education and primary health sectors which has resulted in 70 per cent of the population still not having access to primary health and 50 per cent of the population still being illiterate". _ Finance Minister P. Chidambaram, The Economic Times, Bangalore, 5 May, 1997.

Other systems of medicine

The indigenous systems of medicine are very popular in Karnataka. Apart from Ayurveda, Unani, Naturopathy and Yoga, other systems like homoeopathy, acupuncture, acupressure and magnetotherapy are practised widely. Herbal medicine is also practised extensively, though this is threatened by the deteriorating conditions of medicinal plants.

Indian Systems of Medicine & Homoeopathy

Number of hospitals and beds (31.3.91)

System	Hospitals	Beds
Ayurveda	12	573
Unani	4	111
Homeopathy	15	350
Siddha	1	10
Yoga	3	15
Naturopathy	1	6

The practitioners of the alternative systems of medicine must be considered as an integral part of the health care system and, therefore, of the health care infrastructure.

Expenditure on Health

State Plan allocations for health have been always meagre and it has been coming down. The actuals for 1988-89 were 4.24 per cent of the total outlay and the budget estimates for 1995-96 came down to 3.32 per cent.

The expenditure on health, per capita, in Rupees in 1994-95 was Rs.103.84 while it was 122.07 for Kerala.

What is to be done?

1. Health has to be considered as central to sustainable human development. The currently dominating economic approaches with negative health and social consequences must give way to ones which are **human-centred and economically and environmentally sustainable.**

   Think 'health' when planning developmental projects and programmes.

2. There is need to ensure that **primary health care** is made available to all. It has to be affordable, accessible and acceptable.

   Disparities between different regions must be minimised.

   Budget allocation for health care services must be increased. The services must be made more effective and efficient. There has to be better commitment and motivation on the part of all the health personnel. while quantititive increase is necessary, more importantly, there has to be **qualitative** improvement.

3. Health care must be **participatory**. The community must be enabled to take care of their health and demand that their **right to health** be honoured.

4. There is need for caring for the **environment,** so that it is stable and healthy. Undue exploitation leading to irreparable damage must be prevented.

5. There has to be legislation, both **prescriptive** (what shall be done to improve health and **proscriptive** (what shall not be done so that health is not damaged).

6. Newer industries should use **technologies** which do not add on to pollution; this is especially so for the chemical industries. **The location** should also be carefully considered. In the already existing industries, measures should be taken to bring pollution much below the limits prescribed, by way of dispersion, suppression, change of fuel, etc.

7. Continuous monitoring of developmental activities should be done to see the impact on the health of the people - health check-ups, mortality rates and causes, morbidity rates and causes, traffic and other accidents, absenteeism from work.

   This monitoring of the human/community factor should be done by a network of agencies which include centres such as ISEC, ROHC, Departments of Community Health/Social and Preventive Medicine of the local Medical Colleges and Departments of Social Work /Sociology of the local Universities. Voluntary Organizations, Consumer groups and representatives of people's organizations should also be included, so that all aspects of development are appraised, positive features enhanced and negative features kept in check.