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Review Article

Health care delivery - Revisiting the concept of area wide planning with application to Guntur District of Andhra Pradesh

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ABSTRACT

Introduction: For many marginalised families, availability of healthcare is uncertain leading to catastrophic costs. To meet the need in an orderly and efficient manner without duplication, Areawide / Regional planning was envisioned by health planners in the 1950s. This paper aims to revisit the above concept in healthcare with application to the existing system of Guntur district.

Materials and Methods: A search was made for available health facilities and bed strength in the public sector of the district. An effort is made to apply the arewide planning concept to the district in strategic locations.

Discussion: The recent pandemic has shown the need for preparedness across the district in terms of bed strength, equipment and personnel. The urban population of the district is 33.8% (1.5 beds/1000) and the rural population is 66.19% (0.5/1000). Areawide planning envisages Mandal, Division and District level hospitals. The PHCs at the mandal level can be upgraded to have Maternal and Child health units and ICUs with the necessary specialists and equipment in place. The division level hospital must have all primary specialities with consultative support to the lower facilities. The District level hospital must have all the super specialities and provide referral services.

Regionalisation also looks at creating one special care unit like burns, mental health, cancer etc at each strategically located hospital.

Conclusion: Areawide planning will improve efficiency and economy in health care delivery. Gaps in healthcare and wastage due to overlapping can be avoided.

1. Introduction

Quality in healthcare is primarily about the prudent application and provision of medical science and technology to a population to such an extent where the most favorable balance of risks and benefits can be expected.[1] Diseases and injuries can occur or exacerbate at any time of the day and reasonable healthcare facilities must be available within a reachable distance in all parts of the country be it urban or rural. There is a need to define the level of health care to be made available and accessible even at the remotest part of the country with an aim to save and maintain life. A health facility even in the remotest place must have the necessary personnel and equipment to ensure adequate response to a common emergency to maintain life.

The National Health Mission envisages universal access to equitable, affordable & quality health care services that are accountable and responsive to the beneficiaries. However, for a large number of marginalised families, availability of healthcare is uncertain and unpredictable leading to catastrophic costs (Out-Of-Pocket (OOP) expenses and wage losses).[2] Healthcare facilities are only

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shelters in which healthcare functions can be performed and they need not be modeled on those available in the more developed countries.[3]

Areawide or Regional health planning is something that health planners have aspired for many years. Areawide planning of healthcare was seen as an effort to meet the need in an orderly and efficient manner without duplication.[4] It was envisioned as a community oriented process of institutional planning involving negotiation and compromise leading to an effective, innovative health care system.[5]

With rising costs of healthcare, shortages of certain types of facilities, changes in the character and needs of the population, Areawide planning of healthcare infrastructure (hospitals and healthcare facilities) was seen as a logical approach. Health planners in the late 1950s mulled over this approach in response to pressures on urban hospitals and increasing health care costs. Despite early promise, the movement faltered in the face of several problems. Interest in Areawide planning in healthcare was popular in the 60s and 70s but was hence abandoned by policy makers and shifted attention to health care which relied mainly on market mechanisms.[4] Significant reasons were also corporate takeover of health care in a big way and Govt stepping back in the provision of health to the people.

1.1. History of health planning in India

Health care planning in India goes back to the time of Independence when the Health Survey and Development Committee Report of 1946 led by Sir Joseph Bhore set out a detailed plan for the future health system of the country. The committee suggested short term and progressive long term plans. The long-term plan for the country as a whole was to provide health protection for the community and to include within its scope domiciliary and institutional services both curative and preventive based on modern trends of medical practice.[6]

Hospitals in the British era were mainly located in central places for the British soldiers and officers. However there was access to these facilities for the well to do amongst the Indian citizenry. Rural India was still depending on vaids and fakirs. Health care expansion in rural areas commenced from 1920 onwards when the Rockefeller Foundation started preventive health programmes in collaboration with the government. The focus of activities was on developing health units in rural and semi-rural areas. This gave rise to the ideology that rural areas need only preventive health care and public health and not medical care through hospitals and clinics. These same differential treatments for urban and rural areas have continued even after Independence.[7]

1.2. Urban rural divide in healthcare

Though existing infrastructural setup for providing health care in rural India where 70% of the people live is on a right track, yet the qualitative and quantitative availability of primary health care facilities is far less than the defined norms by the World Health Organization.[8] While private specialty hospitals in urban areas boast of international standards and state of the art facilities, government run Primary Health Centers still reel under poor infrastructure, a shortage of qualified doctors and nurses. Rural residents have to travel more than 100 km to access essential healthcare services and costs arising from health care are borne "out-of-pocket" even for outpatient treatment and medicines.[9]

1.3. Govt. role in planning for health care

Healthcare is a Government prerogative and duty. Government has the duty to provide all levels of healthcare to her people. Govt. cannot rely on private health care to do her job. Giving tax money to private sector to develop better equipped and a state of the art private health care facility is detrimental in the long run.[10]

Healthcare should always have remained in the hands of the government for various reasons. Ill health is more often something that comes on without warning and catches people unprepared. Not only should the government provide adequate healthcare thereby preventing financial burden on the family but also it is the duty of the Government to keep up-to-date with knowledge and state of the art technology. The divestiture type of organisational response exemplifies the trend towards greater use of public funds to paying private organisations for performing public functions in health field. Experience tells us that it will not result in good quality of overall care. It is also doubtful that this will save the government substantial money in the long run.[11]

Essential public health services to the poor and vulnerable populations can only be made available by Governmental agencies and not by the private sector. Further, only the Government can provide preventive and promotive health care for the above which is necessary to engage the common citizen to make appropriate health decisions and behave in a rational and responsible manner. Subsequently, three levels of Govt. supported health care was planned for both urban and rural areas in the country manned mainly by health workers with an emphasis on preventive and basic curative care. Development in tertiary level healthcare in the country was mostly left to the private sector. According to William Osler, the essential issue with "tertiary medical care" is that it is focused on the disease rather than on the person who has the disease. Admission into a tertiary care setting may not necessarily be based on the rarity or complexity of the disease condition. Multiple co existing diseases, a person's attitude, perception, personality

and financial situation also play an important role in availing tertiary health care in the private sector.[12]

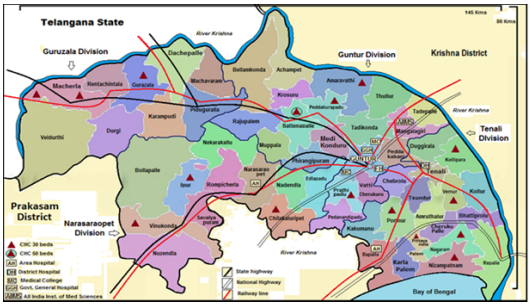

Fig. 1: Heath infrastructure present in Guntur district of Andhra Pradesh

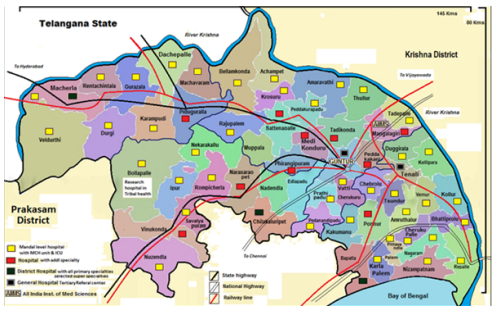

Fig. 2: Proposed health infrastructure under area wide planning in Guntur district of Andhra Pradesh

1.4. Optimum utilization of health care facilities

Kasturi A suggests that the five challenges facing the healthcare in India are; lack of awareness about health amongst the majority of the people, lack of access to adequate health care, inadequate and unbalanced training of personnel causing a human power crisis in healthcare, spiraling costs of healthcare and lack of accountability.[13] Disease prevention and health promotion are the main requirements in any society which helps to strengthen the people to avoid illness and disease. In today's world, incentives driving healthcare favour technology and procedures. There is little inclination for inquiry, reflection, communication, and relationship building which encourage disease prevention and health promotion.[14]

The aim of this paper is to revisit the concept of area wide planning in healthcare and apply it to the existing healthcare system of Guntur district in Andhra Pradesh state of India.

2. Areawide planning or Regional Planning of healthcare

The main aim is to make an administrative district (with clearly defined boundaries) self-sufficient in the provision of all types of healthcare based on major centers of population, existing major hospitals and lines of communication and transportation. Every district should have a district hospital at the secondary referral level with an objective to provide comprehensive secondary health care services to the people in the district at an acceptable level of quality and being responsive and sensitive to the needs of people and referring centres.[15]

Training of health care personnel also must be in line with this approach so that adequate healthcare can be provided closer to the people. Health care in rural areas is unfortunately left to untrained healthcare providers and auxiliaries. There is a need for uniform sharing of senior medical staff through consultation clinics at smaller hospitals, access to second opinions and maintaining a good quality of medical care. The advantages of such a regionalized planning include efficiency, economy and serving the best interests of the majority of people. Large population gaps and overlapping of services can be avoided. There can be a unified general administrative control of hospitals and health care services. New hospitals can be sited in the most strategic places according to population density, means of communication and easy transport.

Other advantages include better and fairer distribution of services (where need is greatest), and uniformity in standards of medical care. Administration and supportive areas such as accounting, statistics, laundry services, bulk purchasing of drugs, hospital supplies etc. can be centralised to ensure better control of the health system. Evaluations, audits, staff counselling, policy making etc. can be organised in a more economical and feasible manner.

2.1. Steps to area wide planning

These include an accurate and up-to-date survey of existing facilities in the region, inventory of existing healthcare buildings and major equipment. There is a need to emphasize the user catchment of each hospital, looking for gaps and overlapping of services. There must be a master plan for the complete region or area concerned keeping in view the existing hospitals, their renovations and improvements and the need for new facilities located strategically. Obstacles to Area wide Planning include unhealthy competition between multiple providers of healthcare (Government, semi government, private, charitable, etc.), poor coordination between private and public institutions, issues concerning movement of personnel, bureaucratic hurdles and lack of continuous effort and team approach.

3. Guntur District, Andhra Pradesh - Healthcare data

Guntur district covers an area of 11391 Square kilometers with a population of 48, 87,813 (2011 census) with a density of 193 inhabitants per square kilometer (500/sq mi).

Table 1: Bed strength available in public sector in Guntur District, Andhra Pradesh

Type of hospital	Number	Places	No. of beds
Guntur General Hospital (Teaching hospital for Guntur Medical College)	1	Guntur	1170
Infectious diseases hospital, Guntur	1	Guntur	
AIMS, Mangalagiri	1	Mangalagiri	960
District Hospital	1	Tenali	200
Area Hospital	2	Bapatla, Narasaraopet	2 x 100 =200
Community Health Center (50 bedded)	1	Sathenapally CHC	50
Community Health Center (30 bedded)	7	Repalle, Amaravathi, Chilakaluripet, Macherla, Vijayapuri South, Gurajala, Ponnoor & 9 others	16 x 30 = 480
Primary Health Centers	67		6 beds x 67 = 402
Health Sub Centers / Health and Wellness Centers	676		Nil
Total Beds			2502

Table 2: Proposed hierarchy of hospitals according tobed strength & care levels

Type of Hospital	No. of Beds	Basic facilities	Additional
Mandal Level Hospital	100 x 58	MCH, FP, Emergency & ICU, Obstetric Unit & OT	Special care unit
Division Level Hospital	200 x 4	All Primary specialities + Emergency & ICU, Referral Obstetric Unit	Special care unit
District Level Hospital	500 x 1	Primary + Essential super specialities	Special care unit
Medical College Hospital	1000 x 1	All Super Specialities	

Population density is 430 per square km. 33.81% of the district is urban.[16]

Literacy rate is 67.40% and a sex ratio of 1003. While Guntur city is the administrative center, the district is divided into 4 revenue divisions – Guntur, Tenali, Narasaraopet and Gurajala. These are sub-divided into 58 mandals, which are in turn divided as 57 Panchayat Samiti (Block)s, 712 villages and 16 towns. The coastal area of Guntur district is mostly urban with the NH5 going along it. The 14 municipalities in the district are Mangalagiri, Sattenapalli, Tadepalle, Tenali, Ponnur, Bapatla, Repalle, Narasaraopet, Chilakaluripet, Vinukonda, Macherla, Piduguralla, Dachepalle and Gurazala. (Figure 1)

The western aspect of the district is mostly rural and backward in development. The total beds available in Guntur District are 2502 (0.5 beds / 1000 population). The regional hospital is the Guntur General Hospital, the District hospital is at Tenali and there are 100 bedded Area hospitals at Bapatla and Narasaraopet. The rural hospitals are made up of the 50 bedded Community Health Center at Sathenapally and 30 bedded CHCs at 16 other locations. (Table 1)

The common health conditions one comes across are infectious diseases like diarrheas, acute respiratory infections (ARIs), typhoid, malaria, dengue fever, chikungunya, other viral fevers, non communicable diseases like diabetes, hypertension, and cardiac disease. Chronic conditions like tuberculosis, leprosy and malnutrition are also common in rural areas. Emergencies include accidents (road traffic, home and farm based) poisoning, animal bites (dogs, snakes, scorpions etc.), dehydration etc.

4. Discussion

The response of the Government since independence has been to create a peripheral health system made up of Primary Health Centers and Sub Centers which largely work on an outpatient basis and provide basic and simple health care which while quite adequate to handle most health issues, does not really stand in place of a regular hospital.[17] What makes a hospital more advantageous is that it is open 24 hours manned by teams of trained personnel rotated in three shifts ensuring alertness and preparedness. There are life saving equipment and supplies like oxygen to save life. An ambulance and a driver are standing by to shift the patient to a higher center. People are aware of the existence of these health facilities and demand the same even in rural and remote areas. Upgrading a PHC to 24 hours one without providing the necessary personnel and facilities is not of much use. A private health facility in a rural area also does not fill in for the above. People have the right to expect from

their government, a certain level of health care covering all sorts of illnesses be they infectious or lifestyle in origin.[18]

4.1. Increasing the bed strength

The urban population of Guntur District is 33.81% with 1.5 beds per 1000 population in the public domain. The rural population is 66.19%, with Govt. hospital bed strength of 0.5/ 1000 population. If every mandal had a 100 bedded hospital, there would be total of 8330 making it 1.7 beds per 1000 population. With the recent Covid pandemic it has become apparent that a certain amount of preparedness is required across the district both in urban and rural areas in terms of bed strength, equipment and personnel.

4.2. Mandal level hospital

A mandal is a local government area which may consist of one or two towns and 10 to 15 villages covering a population of 1 to 2.5 lakhs depending on the remoteness of its location.[19] When a hospital is envisaged at the mandal level, a maternity and paediatric unit is essential. So is an ICU with oxygen and other basic facilities. Specialists like an Obstetrician, a Paediatrician and an Anesthetist have to be made available on a regular basis. The existing PHCs or CHCs must be upgraded to 100 bedded hospitals with Maternal and Child Health (MCH) units and an ICU. In addition, a central pool of specialists from the Division level can be made available for consultations and fixed time clinics.

4.3. Division level hospitals

Guntur district is divided into 4 revenue divisions which are partitions of the district made for better administrative functioning. A division may be made up of 10 to 20 mandals. The biggest town within it is usually the administrative headquarters of the Division. .A division level hospital must have all the primary specialities of medicine like Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics, ENT, Ophthalmology, Orthopedics , Psychiatry etc and serve as a referral center to all the Mandal level hospitals. In addition, a central pool of super specialists stationed at the District level hospital may be made available to conduct clinics. Another concept in regionalization is the establishment of certain special hospitals like burns unit, interventional cardiology, paediatric surgery, cancer, etc which can be developed along with the hospitals in central areas (Table 2).

4.4. District level hospital

The World Health Organization (WHO 1992) envisages that a district hospital should be able to offer diagnostic, treatment, care, counseling, and rehabilitation services. District hospitals must cater to patients with less common problems, for whom skills and resources are most effectively concentrated.[20] It should provide curative and chronic care for patients referred from peripheral units. It should also have district level laboratory services, training and continuing medical education of various health personnel in the periphery.

5. Conclusion

Healthcare is a continuum from promotive and preventive aspects through curative medicine and rehabilitation. Bringing down the health care spectrum to purely curative care is the cause of much of the apathy in today's health systems. As there is not much money to be made by hospitals and healthcare organisations in preventive and promotive medicine, it remains with the Government. However the Govt must incorporate all aspects of healthcare in a dynamic and people oriented healthcare system.

Hospitals are expensive to build and operate. Health services must reach all the people, all the time with best level of care. The need of the hour is secondary level health care which will impact the majority of people. Regional planning will improve efficiency, economy, serving the best interests of the majority of people over a wide area with larger population. Gaps in heath care and wastage due to overlapping can be avoided.

6. Source of Funding

None.

7. Conflict of Interest

None.

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