Development of Hierarchy of Settlements of Health Facility of Rashmi Block of Chittaurgarh District-Using Gis

Geography

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ABSTRACT *Better health central to human happiness and well-being. Many factors influence health status and a country's ability to provide quality health services for its people Medical and health related institutions on a widespread level are established during post independence period. However, still these amenities are not effective to serve the people distributed in numerous settlements, particularly those in remote areas and of smaller size and thus disparity also persists in the distribution of these amenities. In this regard an attempt has been made in present paper developed hierarchy of settlement by Health Facility in Rashmi Block of Chittaurgarh District Using GIS. (Arc Info 10.1)*

INTRODUCTION:

Distribution of medical and health services developed during last fifty years are example of dissemination of welfare activities in a democratic set up. This is not to say that these amenities are effectively serving the people distributed in all types of settlements or with varied income capabilities. People of remote areas and of smaller size habitations are still prone to discrimination in accessing these facilities. Thus, a spatial distribution of these facilities in different settlements shows aggregate locational socio-economic conditions of the people residing there. With these points in mind medical and health facilities of Rashmi block are analysed.

METHODOLOY:

Hierarchy of settlement according to health services is made on the basis of their centrality. Thus the centrality of a settlement with reference to helth service centers is computed as follows:

$$C_j = \frac{P_j}{\sum_{i=1}^{N} P_j} \times N$$

Where,

C_{ij} = Centrality of ith settlement with reference to jth function
P_{ij} = Population being served by ith settlement for jth function
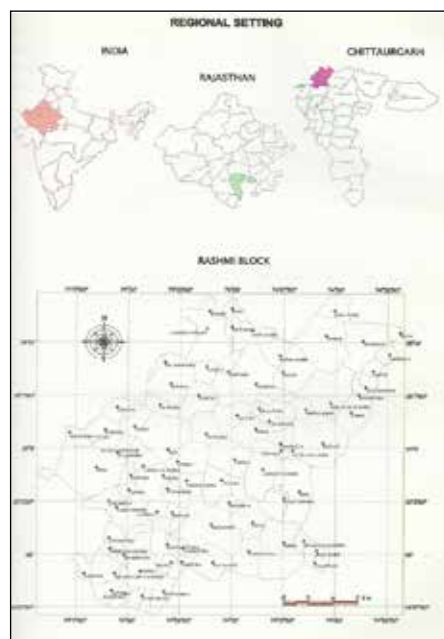N = Number of settlements in the system

Analysis involving computation and delineating of served area of central functions of each location is done using Voronoi polygon technique. To draw Voronoi polygon extra point locations of neighboring blocks and of other districts are also considered

The analysis is carried out in ARC INFO using the methodology described as above. The information pertains to the status of facilities as existed on May 2010.

STUDY AREA:

As per the objectives and hypotheses of the study Rashmi block of Chittaurgarh district is chosen for detail investigation. Rashmi block extends between 24° 57' 09" and 25° 12' 17" north latitudes and between 74° 15' 38" and 74° 33' 19" east longitudes (Fig. 1.1). It is situated on the north-western border of the district. It is second smallest block of the district with a reporting area of 449 km². Administratively it comprises of eighty-nine revenue villages out of which and as per 2001 census, eighty-one villages are inhabited and eight are still uninhabited. All the villages are administered by twenty-three gram panchayats Thus the block is a representative administrative unit suitable to be identified as a region of micro level planning or a suitable unit for the study of spatial and stratal dimensions of development.

Fig:1

MEDICAL AND HEALTH:

Facilities of various status and nature are grouped into two categories as basic and higher order medical and health facilities. Like other social amenities medical and health services are also hierarchic in nature and location of these centres is regulated by the agglomeration of population or the threshold size.

BASIC MEDICAL AND HEALTH CENTRES:

Ayurvedic dispensaries, sub-health centres and high sub-health centres are grouped under the category of basic medical and health centres. Distribution of these centres according to size of settlement is summarized in Table 1. In all there are 37 centres extending basic medical and health services in the block.

It is significant to note that all these centres are located in villages with population above 500 persons. Similarly nine large size villages have got more than one type of these facilities. All these locations are inhabited by more than 1,000 persons. Of all these facilities sub health centres are numerous and located in 23 villages. Another important facility of this nature is in the form of 12 Ayurvedic dispensaries. There is one high sub health centre located in Rewara and one additional post dispensary at Rood.

HIGHER ORDER MEDICAL AND HEALTH CENTRES:

Only two types of centres are of this category. These include one community health centre located at Rashmi and other two are primary health centres located at Pahoona and Rood (Fig.2). Rashmi and Pahoona are large size as well as principal settlements of the block, whereas Dindoli in far south is one of the

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second order settlements of moderately large size (Table 1). A part from these three centres few villages of southeast on the border area are also served by higher order medical and health facilities of Singhpur, a neighbouring village of Kapasan block. It is also shown by the Voronoi region depicting served area in Fig. 2

Table:- 1. Basic and higher order medical and health centres

Basic Medical & Health Centres				Higher Order Medical & Health Centres	
Ayurvedic Dispensaries	Sub Health Centres	High Sub-Health Centres	Add. Post Dispens-aries	Primary Health Centres	Commu-nity Health Centres
-	-	-	-	-	-
-	-	-	-	-	-
Harnathpura	6	-	--	-	-
Rewara, Baroo, Jadana & Bawlas	13	Rewara	-	-	-
5	Arni, Bheemgarh, Rood & Sihana	-	Rood	Dindoli	-
Pahoona & Rashmi	-	-	-	Pahoona	Rashmi
12	23	1	1	2	1

Source: Office of the district medical and health officer, Pratapgarh

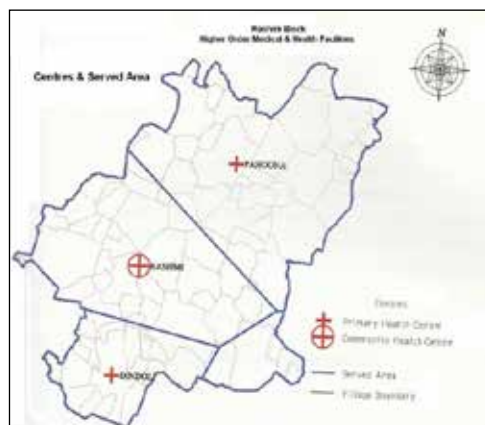**Hierarchic Order of Settlements by Medical and Health Amenities**

Locational hierarchy or the centrality of each settlement is computed with respect to medical and health facilities on basis of methodology discussed above. The hierarchic order of rural settlements is summarized in Table 2.

Table:- 2. Hierarchic Order of Settlements by Medical and Health Amenities

Hierarchic Order	Name/Number of Settlements
First	Rashmi, Pahoona (2)
Second	Dindoli (1)
Third	(8)
Fourth	18
Fifth	52
All	81

Source: Analysis and computation based on location data of population and medical & health.

Conclusion and Suggestions:

- As observed during the field work, villages with more than one service centre are not only of large size but also benefited by the politically enlightened leadership to get these facilities located in these villages.
- Large size villages with a population of more than 750 persons but not having any of the medical and health facilities are Jalampura, Heera Kheri, Lalpura, Devipura and Darba are examples of dormant leadership.
- Another form of disparity is in the form of medicinal system of the service centre. In general allopathic system being considered more effective is allocated to villages with effective leadership in contrast to allocation of ayurvedic dispensaries.
- A significant observation about this facility is this that the variability of centrality index of medical and health (330.3 per cent) is higher than that of educational one (240.4 per cent) because of its limited distribution in twenty-nine villages.

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