SUMMARY AND CONCLUSION

Infact every disease exhibits spatial variation. One of the major goals of medical geography is to describe and explain that variation (Majid Hussain, 1993). A good number of studies in different levels of medical geography like spatial distribution of diseases and their mapping, epidemiological studies, diffusion studies, locational and behavioral analysis were carried out by many geographers like Ramesh (1976), Learmonth (1977 and 1978), Akthar and Learmonth (1977), Akthar (1981), Akthar and Izar (1985), John Mohan (1983), Daksha Barai (1984), Murugesan (1987) etc. Based on the earlier studies, an attempt is made here to study the spatial patterns of diseases, spatial and temporal patterns of Malaria prevalence and trends of malaria and a brief account on existing health care delivery in Karimnagar district.
The important objectives of the present study are:

1. To study the spatial patterns of diseases.
2. To study the spatial and temporal patterns of malaria prevalence and trends.
3. To study the existing health care delivery in brief.

For the purpose of present study, Karimnagar district of Andhra Pradesh state has been chosen. The study area is geographically situated between the latitudes 17°59’ and 19°5’ north and longitude 78°31’ and 80°22’ east. It is one of the districts of Telangana region. The district is spread over an area of 11,824 Sq. Km. The altitude of the district generally varies from 100mts. to 600mts. River Godavari is the major river flowing in the northern boundary of the district. Maneru is the important tributary of Godavari in the district. The climate of the district is characterized by a hot summer and is generally dry except in monsoon season. The average annual rainfall of the district is 914mm. In Godavari basin the forest area is more valuable consists of teak. The soils are predominantly red soils. The major crops cultivated are paddy, groundnut, cotton, Sesamum, sugarcane etc. According 1991 census, the total population of the district is 30,37,486 with 79.45 percent of rural people. The industries are mostly agro-based except some chemical and mechanical industries. Coal mining is also going on in Karimnagar district. There are 56 mandals in the district which is the basic unit for the present study.

The spatial patterns of morbidity inferred that more number of cases related to bites are noticed in Dharmapuri and Manakondur mandals; Blood
diseases in Karimnagar, Boinapally and Vemulawada mandals; cases related to burns, wounds and injuries in Karimnagar, Mutharam (M.Pur) and Dharmaram mandals; Cardio-vascular diseases in Karimnagar and Ramadugu mandals; CNS diseases in Kamalapur mandal; Dental diseases in Jammikunta and Karimnagar mandals; ENT diseases in Karimnagar, Jammikunta, Huzarabad, Mutharam (M.Pur) and Manakondur mandals; Digestive system diseases in Ramadugu, Husnabad, Kesavapatnam and Choppadandi mandals; Female genital diseases in Ramadugu and Huzarabad mandals; Infectious diseases in Kamalapur and Karimnagar mandals; Nutritional deficiency diseases in Velgatoor, Karimnagar and Boinapalli mandals; respiratory diseases in Vemalawada and Kamalapur mandals; musculo-skeletal diseases in Saidapar and Ellanthakunta mandals; Skin diseases in Husnabad and Manakondur mandals and STDs in Karimnagar, Elkathurthi, Ramadugu and Kesavapatnam mandals.

With regard to malaria, all the mandals in Karimnagar district reported more than 40 cases except Jagtial mandal in the year 1990. Relatively, there are more P. Falciparum cases than P. vivax cases in the district. More P. vivax cases are observed in Karimnagar and Gangadhar mandals. Sarangapur mandal registered highest number of P. falciparum cases in the year 1990.

In 10 years period, the prevalence of malaria is decreased remarkably. Only 9 mandals recorded more than 40 cases in the district during 1999. It is also inferred that P. falciparum cases are reduced during the study period.
compared to P.vivax cases. More vivax cases are appeared in Raikal mandal and falciparum cases in Dharmapuri, Raikal and Kataram mandals.

Pertaining to temporal changes of malaria prevalence, there is an overall decrease of 2566 cases between 1990 and 1999. In only four mandals, namely, Raikal, Dharmapuri, Maidipalli and Kataram, increase is noticed and in the remaining mandals decrease is observed. Decrease of 1171 cases is also reported in vivax cases during a decade period. In only eight mandals, such as Raikal, Dharmaram, Yellareddypeta, Siricilla, Kathalapoor, Maidipalli, Kataram and Husnabad increase is registered in vivax cases. Maximum increase is appeared in Raikal mandal and maximum decrease in Gangadhar mandal. With regard to P. falciparum, a decrease of 1232 cases is observed in Karimnagar district in 10 years period. Only 9 mandals namely, Raikal, Karimnagar, Dharmapuri, Maidipalli, Mustabad, Vemulawada, Kamanpur, Mutharam (Mant) and Kataram mandals experienced increase in falciparum cases with maximum increase in Raikal. In the other 47 mandals decrease is noticed with highest decrease in Yellareddypeta.

With reference to trend in malaria prevalence, negative trend is reported in a decade period i.e., 1990 to 1999. The same is established in regression trend analysis also. The coefficient of determination values indicate that the decreased trend is moderately gradual with slight fluctuations.
The analysis of existing health care delivery revealed that there are imbalances in the spatial distribution. All together there are 5 community hospitals, 11 civil hospital, 4 civil dispensaries and 61 primary health centres in Karimnagar district (including one maternity hospital and one TB hospital) with 153 doctors, 982 beds and treated 22,15,537 patients during the study period. The doctors ratio per one lakh population is 5.03 and per one lakh patients it is 6.9. With regard to bed strength, there are 32.3 beds per one lakh population and 44.33 beds per one lakh patients. On an average 6154 patients are being treated per day at various health centres.

Among the Vydya Vidhana Parsihad hospitals, the performance of district head quarter’s hospital is more than the other hospitals. Jagtial hospital occupies second position in the performance and also infrastructural facilities. With reference to civil hospitals, Huzarabad hospital is treating highest number of patients and it is also having more infrastructural facilities than the others. Sultanabad TB hospital and Korutla maternity hospital are having more inpatients, since they are specialized for treatment. Of the 61 primary health centres situated in all the mandals (except Veenavanka, Jagtial, Metpally and Sultanabad, where the other health centres are present). The PHC of Husnabad is treating more patients and Nerella PHC treating lowest number of patients. The Srirampur PHC is having more doctros and PHCs of Husnabd, Vangara, Vemulawada, Srirampur are having more bed strength too. With regard to traditional health centres, there are 11 homeo, 25 Ayurvedic and 17 Unani dispensaries in different mandals of Karimnagar district.