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**INTER-DISTRICT DISPARITIES IN HEALTH FACILITIES IN  
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**ABSTRACT**

*Regional disparities in health care infrastructure are a common problem in both developed and developing states. But it differs in certain degrees. Karnataka is one of the above national average states in India facing inter regional and intra regional disparities since 1956. Despite overall improvements in health indicators, inter-district disparities still continue. In this context, this study has made an attempt to analyse the inter-district disparities of health facilities in Karnataka. To analyse inter district disparities the study has used various health indicators and health index values. All the data are collected from reliable secondary sources. The data has been collected from successive Rural Health Statistics Reports, DLHS-3 and Civil Registration System. The data presented in this study and the analysis so far clearly establish that there are considerable disparities in health indicators and facilities across the districts. The forward districts are characterised by better demographic indicators and significantly better infrastructural facilities. On the other hand, the backward districts are still characterised by lower level of demographic development, and underdeveloped infrastructural facilities. Therefore, it is very important that the present trends are arrested and preferably reversed. This will require concerted efforts on the part of the State governments. Resources may be a major constraint, but not necessarily the only or not even the most important one.*

*Key words: Health, Infrastructure, Health Index, Infant Mortality, NRHM, Public Expenditure*

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## INTRODUCTION

The last two decades have been marked by sustained high economic growth but they have also witnessed growing concern about unequal gains in health outcomes. This is partly due to factors pertaining to financing, provisioning, and governance of health services in both, the public and private sectors. Several studies as well as government policy have recognized the lacunae in the present state of health services and the multiple axes of inequities that characterize it. This study provides an overview of the inequities in health outcomes and their variation across districts. It seeks to explain these variations by focusing on health services as a determinant of the health status.

Regional disparities in health care infrastructure are a common problem in both developed and developing states. But it differs in certain degrees. Infrastructure is the foundation for development of any state. Availability of adequate infrastructure facilities is an important pre-condition for sustainable economic and social development. Karnataka is one of the above national average states in India facing inter regional and intra regional disparities since 1956. The Dr. Nanjundappa Committee i.e., High Power Committee for Redressal of Regional Imbalances (HPC-FRRI) 2001 report has highlighted the regional disparities in health infrastructure and service facilities especially between South Karnataka and North Karnataka. The first Karnataka Human Development Report 1999 has also thrown light on the regional disparities in the matter of health status. The National Rural Health Mission has identified improving the availability of and access to quality health care by people, especially for those residing in rural areas, the poor, women and children as its goal. This essentially means that regardless of the socio-economic status of the people in different districts, access to quality health care must be provided on an equitable basis. The expenditure pattern on vulnerable districts and number of facilities available in these districts as against better performing districts distinctly shows that we have a long way to go before we can address the regional disparities in health.

Despite overall improvements in health indicators, inter-district disparities continue. The five districts of Gulbarga Division (Bidar, Koppal, Gulbarga, Raichur, Bellary), with Bijapur and Bagalkote districts of Belgaum division continue to lag behind. Mal-nutrition in under-five children and anemia in women continue to remain unacceptably high. Women's health, mental health and disability care are still relatively neglected. Certain preventable health problems remain more prevalent in certain geographical regions or among particular population groups. Structural reforms, as suggested by the Task Force on Health, have to be

more effective management practices imbued with accountability have to be introduced to ensure swift and effective local responses to health problems.

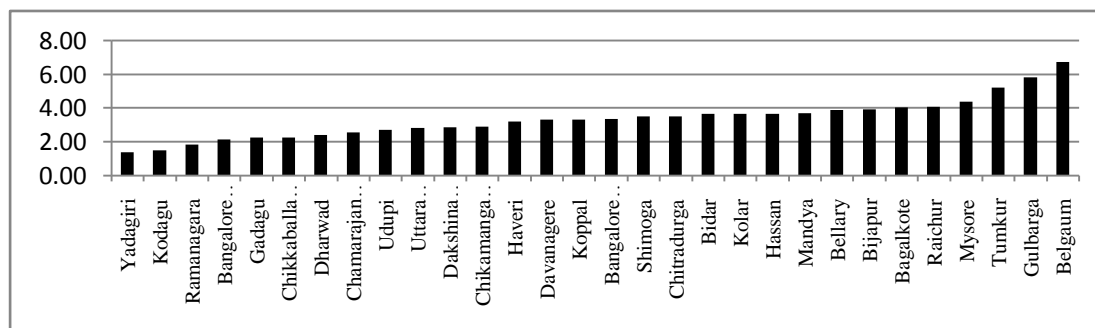
The main objective of this study is to analyse the inter-district disparities of health facilities and health indicators in Karnataka.

Analysis of the data has been done using some simple statistical tools. The analysis of regional disparities in Karnataka was conducted using information available from successive Rural Health Statistics Reports, DLHS-3 and Civil Registration System.

### TRENDS IN FUND FLOWS TO DISTRICTS IN NRHM

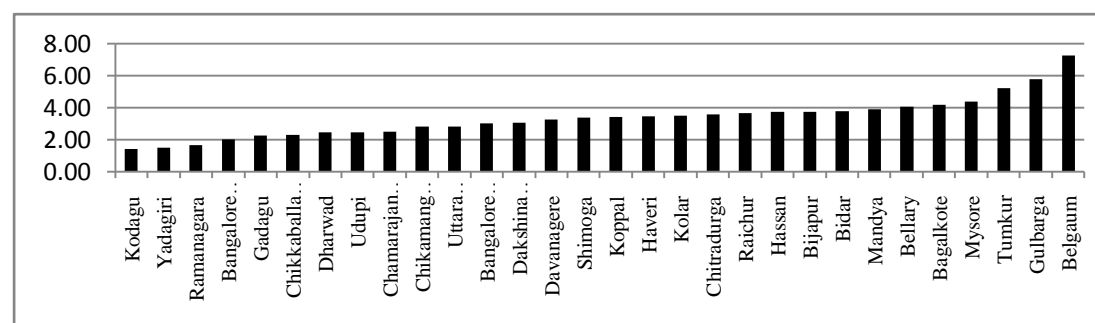
The below graph shows the cumulative funds received and expenditure made by districts of Karnataka under NRHM since 2005. Based on these figures, it can be seen that districts identified to be vulnerable like Gulbarga, Raichur, Bijapur etc have received larger funds. However, the figure also shows that many districts like Bangalore Urban, Hassan and Shimoga (with comparatively lesser rural population) have received more funds than other districts which may have needed more funds. We can notice that there are no clear trends of NRHM prioritizing fund flow to districts identified as vulnerable. Cumulative fund flow of NRHM has not been able to effectively target regional disparities.

Figure 1: District wise Cumulative NRHM Fund Released Since 2005



Source: Department of Medical Health and Family Welfare, GOK.

Figure 2: District wise Cumulative NRHM Expenditure since 2005 (% to the total NRHM Expenditure)



Source: Department of Medical Health and Family Welfare, GOK.

## INEQUALITIES IN HEALTH INDICATORS

Inequalities in health provide a fundamental measure of the fairness of a society. Where they exist, inequalities also have substantial costs. Health inequalities diminish economic productivity and create avoidable health care expenditure. Poor and unequal health is also a key feature of social exclusion; creating a damaging spiral impacting on a range of social outcomes such as educational attainment. There are also personal costs and costs to families and children across generations unnecessarily deprived of opportunity.

Specific indicators of health inequality are important because the overall picture of health can mask discrete challenges and points of opportunity. Providing decision makers with a more comprehensive picture is crucial to selecting the strategies to reduce inequality. This is especially important given the broad and complex factors that influence health and health inequalities. Indicators of health inequality are a powerful tool as they enable governments to monitor progress in meeting public commitments. Finally investments aimed at improving overall health can, inadvertently, widen inequalities between groups – indicators are a necessary tool for appraising impact.

## INFANT MORTALITY RATE

IMR is a health as well as mortality indicator. It is also an indicator used to reflect the health dimensions of the Human Development Index (HDI). The Infant Mortality Rate is defined as the number of infant deaths (deaths below the age of one year) per thousand births. Reduced IMR reveals improved health conditions. Though, infant mortality has declined substantially over the period of time, South and North Karnataka gap in IMR remained significant during the period. Still we can notice that most of the North Karnataka Districts has higher IMR compared to the most of the South Karnataka Districts. Very interesting thing to be noted is that, even though the North Karnataka districts gets more funds the indicators are very poor.

Table 1: District-wise Infant Mortality Rate

Districts	IMR		Ranking	
	2001	2008	2001	2008
Udupi	25.00	26.00	1	2
Dakshin Kannada	31.00	25.00	2	1
Kodagu	34.00	32.00	3	7
Bangalore Urban	36.00	26.00	4	3
Uttar Kannada	37.00	32.00	5	8
Shimoga	42.00	37.00	6	14

Hassan	44.00	33.00	7	9
Bangalore Rural	45.00	30.00	8	5
Bidar	45.00	41.00	9	17
Belguam	49.00	35.00	10	11
Dharwad	52.00	40.00	11	15
Mandya	52.00	29.00	12	4
Chikkamagalur	53.00	31.00	13	6
Raichur	54.00	52.00	14	26
Kolar	56.00	42.00	15	21
Bijapur	57.00	43.00	16	22
Davanegere	59.00	41.00	17	18
Gulbaraga	59.00	49.00	18	23
Mysore	61.00	33.00	19	10
Gadag	62.00	40.00	20	16
Haveri	62.00	41.00	21	19
Bagalkot	64.00	50.00	22	24
Tumkur	64.00	36.00	23	13
Chamrajnagar	66.00	35.00	24	12
Chitradurga	67.00	41.00	25	20
Bellary	75.00	51.00	26	25
Koppal	77.00	61.00	27	27

Source: Karnataka Economic Survey 2012-13

The lowest level of infant deaths was in Dakshin Kannada with 25. The districts like Bagalkot, Bidar, Bijapur, Gulbarga, Raichur and Haveri that have higher level of poverty have higher level of IMR.

### **CRUDE BIRTH RATE (CBR) AND CRUDE DEATH RATE (CDR)**

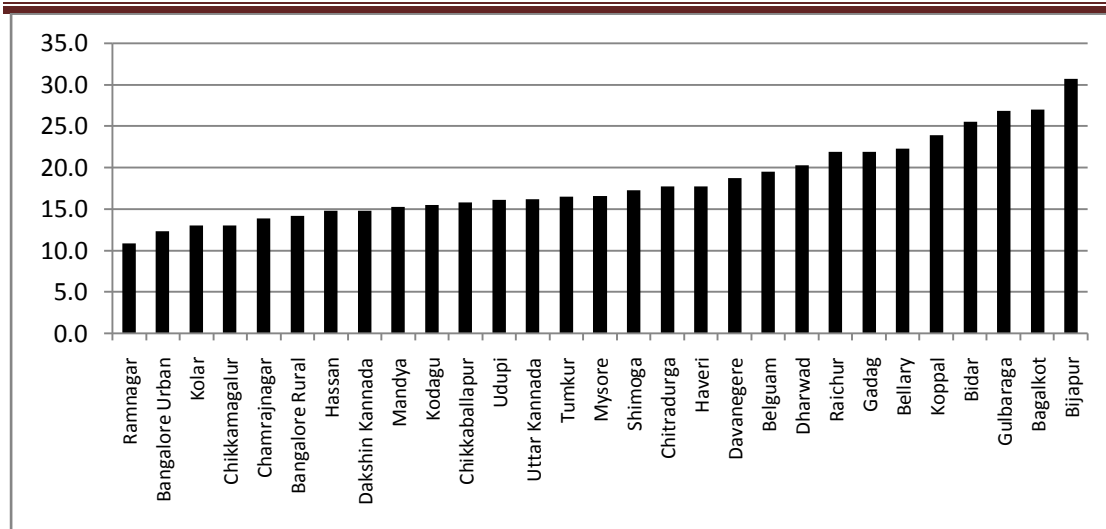
The crude birth rates and crude death rates based on Civil Registration System have been presented in the following graphs. CBR is average number of live births occurring in a year to 1000 individuals whereas CDR is a general measurement of mortality for the population as a whole. CDR is the average number of deaths occurring in the year per 1000 population. Reduced CDR indicates the improvements achieved in health status; hence this is popularly used as a variable in health status. It can be observed from the table that, in the districts like Gulbarga, Raichur, Bidar, Koppal, Bellary and Bijapur, CBR has increased.

Table 2: District-wise Crude Birth Rate and Crude Death Rate

Districts	CBR		Rank		Districts	CDR		Rank	
	2005	2010	2005	2010		2005	2010	2005	2010
Ramnagar	-	10.9	-	1	Kodagu	4.8	6.9	1	11
Chikkaballapur	-	15.8	-	10	Kolar	5.1	3.9	2	1
Bangalore Urban	14.4	12.3	1	2	Bangalore Urban	5.4	4.1	3	2
Chamrajnagar	15.0	13.9	2	4	Bangalore Rural	5.4	5.6	4	4
Gulbarga	15.6	26.8	3	25	Bidar	5.5	6.2	5	8
Kolar	16.1	13.0	4	3	Gulbarga	5.5	7.3	6	14
Bangalore Rural	16.1	14.2	5	5	Chikkamagalur	5.8	6	7	7
Mandya	16.5	15.3	6	8	Chamrajnagar	6.0	7.7	8	15
Kodagu	16.9	15.5	7	9	Hassan	6.1	6.4	9	9
Chikkamagalur	17.0	13.0	8	3	Raichur	6.1	5.7	10	5
Hassan	17.1	14.8	9	6	Uttar Kannada	6.5	6.9	11	11
Tumkur	17.1	16.5	9	13	Koppal	6.7	6.6	12	10
Raichur	17.2	21.9	10	20	Chitradurga	6.8	7.8	13	16
Chitradurga	17.4	17.7	11	16	Dakshin Kannada	6.9	7.2	14	13
Bidar	18.1	25.5	12	24	Haveri	6.9	7.2	15	13
Koppal	19.1	23.9	13	23	Shimoga	6.9	7.1	16	12
Belguam	19.4	19.5	14	18	Belguam	7.1	6.9	17	11
Davanegere	19.7	18.7	15	17	Tumkur	7.2	8.5	18	19
Udupi	19.9	16.1	16	11	Mandya	7.3	6.6	19	10
Dakshin Kannada	20.2	14.8	17	7	Mysore	7.4	5.9	20	6
Mysore	20.2	16.6	18	14	Bellary	7.7	6.2	21	8
Shimoga	20.8	17.3	19	15	Bagalkot	8.0	7.9	22	17
Bellary	20.8	22.3	20	22	Bijapur	8.0	7.1	23	12
Uttar Kannada	20.9	16.2	21	12	Dharwad	8.1	8	24	18
Haveri	21.6	17.7	22	16	Udupi	8.2	8.5	25	19
Dharwad	22.9	20.3	23	19	Davanegere	9.3	7.8	26	16
Gadag	23.1	21.9	24	21	Gadag	9.5	9	27	20
Bijapur	23.3	30.7	25	27	Chikkaballapur	-	5.7		5
Bagalkot	23.3	27.0	26	26	Ramnagar	-	5.1		3

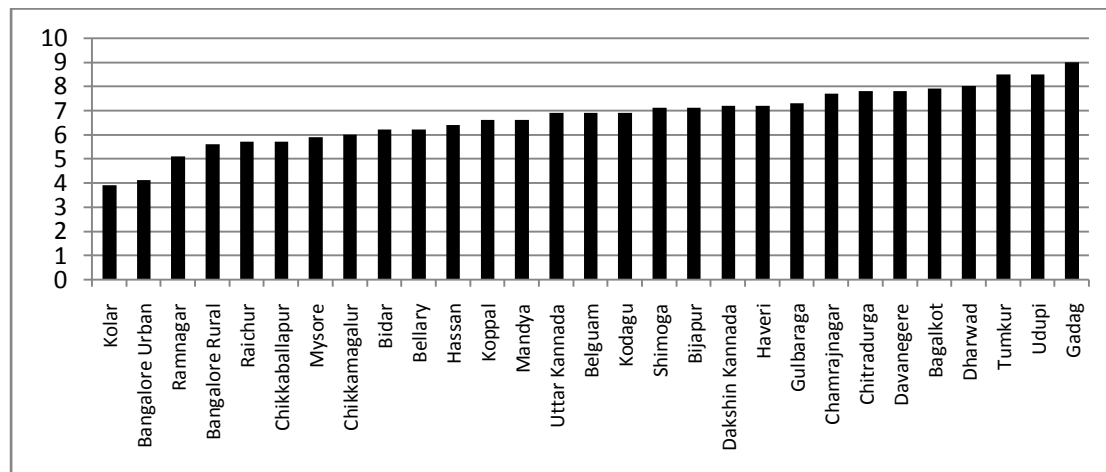
Source: Civil Registration System, 2010

Figure 3: District-wise Crude Birth Rate 2010



Source: Civil Registration System, 2010

Figure 4: District-wise Crude Death Rate 2010



Source: Civil Registration System, 2010

**HEALTH INDEX**

Wide variations are noticed in the health status of districts. The index value varies from a low of 0.024 in Koppal to a high of 0.98 in Dakshin Kannada. Among the regions South Karnataka Region is better placed than North Karnataka Region. The former claims a higher share in the State’s Relatively Developed districts and lower share in the Most Backward districts. Interesting point to note that, even though North Karnataka region receives higher NRHM funds, they are lagging behind in Health Index.

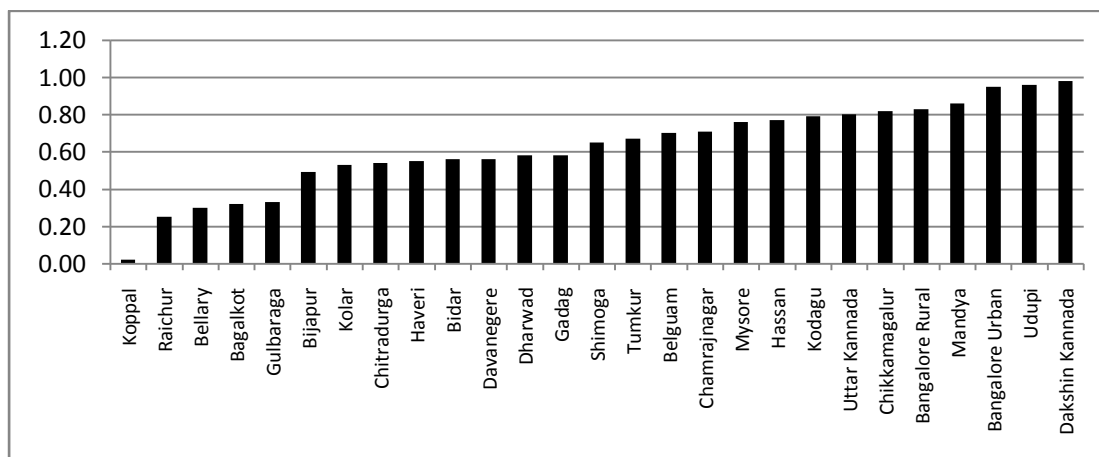
Table 3: District-wise Health Index (2008)

Districts	Health Index	Rank
Dakshin Kannada	0.98	1
Udupi	0.96	2
Bangalore Urban	0.95	3
Mandya	0.86	4
Bangalore Rural	0.83	5
Chikkamagalur	0.82	6
Uttar Kannada	0.80	7
Kodagu	0.79	8
Hassan	0.77	9
Mysore	0.76	10
Chamrajnagar	0.71	11
Belguam	0.70	12
Tumkur	0.67	13
Shimoga	0.65	14
Dharwad	0.58	15
Gadag	0.58	16
Bidar	0.56	17
Davanegere	0.56	18
Haveri	0.55	19
Chitradurga	0.54	20
Kolar	0.53	21
Bijapur	0.49	22
Gulbaraga	0.33	23
Bagalkot	0.32	24
Bellary	0.30	25
Raichur	0.25	26
Koppal	0.02	27
Karnataka		

Source: Karnataka Economic Survey 2012-13



Figure 5 : District-wise Health Index (2008)



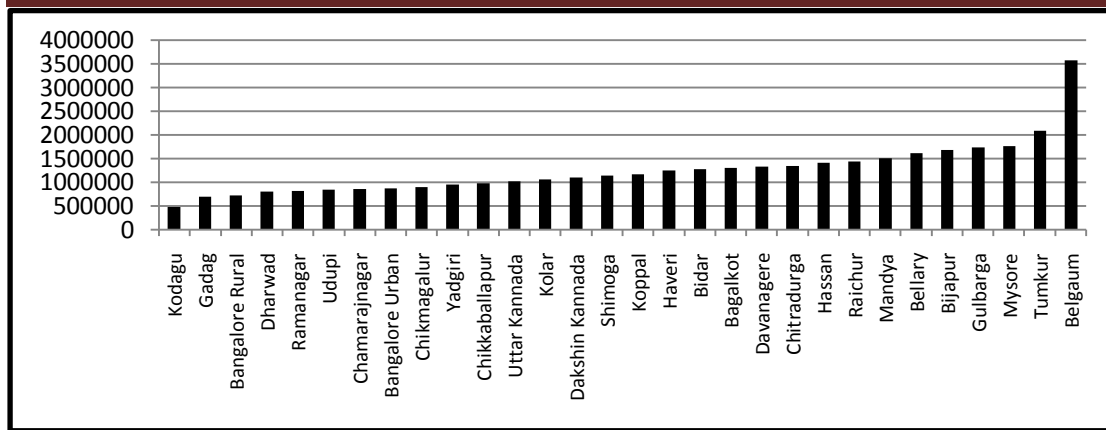
## INEQUALITIES IN AVAILABILITY AND ACCESSIBILITY OF HEALTH SERVICES IN KARNATAKA

Given the federal nature of the State, the major responsibility for financing, provisioning, and administration of health rests with the respective states that influence availability, accessibility, and acceptability of services. This section explains the variation in availability of infrastructure, human resources, and supplies across these districts and the extent inequities within them.

### NUMBER OF SUB-CENTRES AND AVERAGE POPULATION COVERED BY SUB-CENTRES

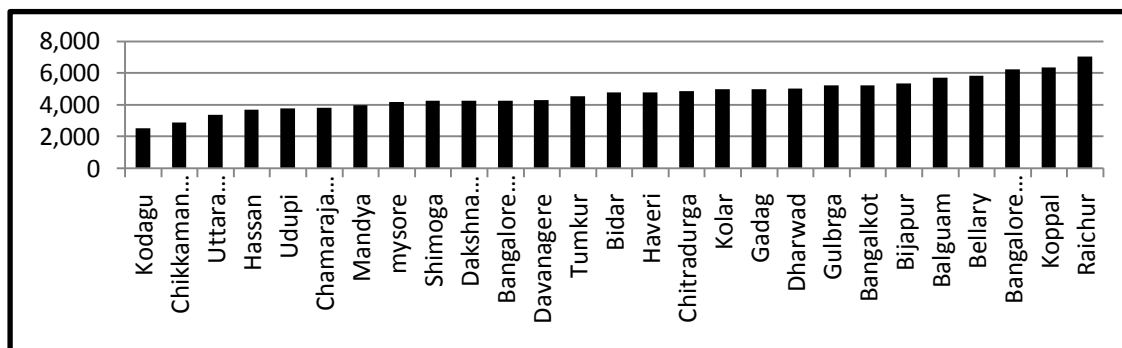
The Sub - Centre is the most peripheral and first contact point between the primary health care system and the community. According to NRHM norms the sub-centre will cover 5000 population. The average population covered by vulnerable districts like Raichur, Bagalkote, Bellary, Kolar, Koppal is more but the number of Sub-centres are less compared to many of the well-off districts like Hassan, Mysore, Dakshin Kannada, Uttar Kannada. Average population covered by SCs ranges from 2552 to 7029.

Figure 6: Rural Population (2011)



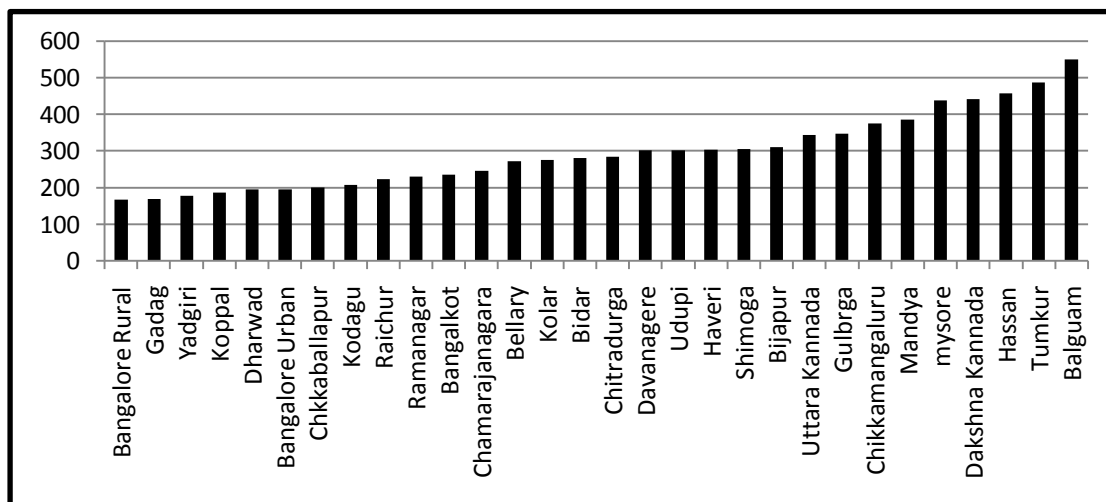
Source: Census 2011

Figure7: District wise Average Population Covered By Sub-Centres 2012



Source: Rural Health statistics 2012

Figure 8: District wise Number of Sub-Centres (2012)



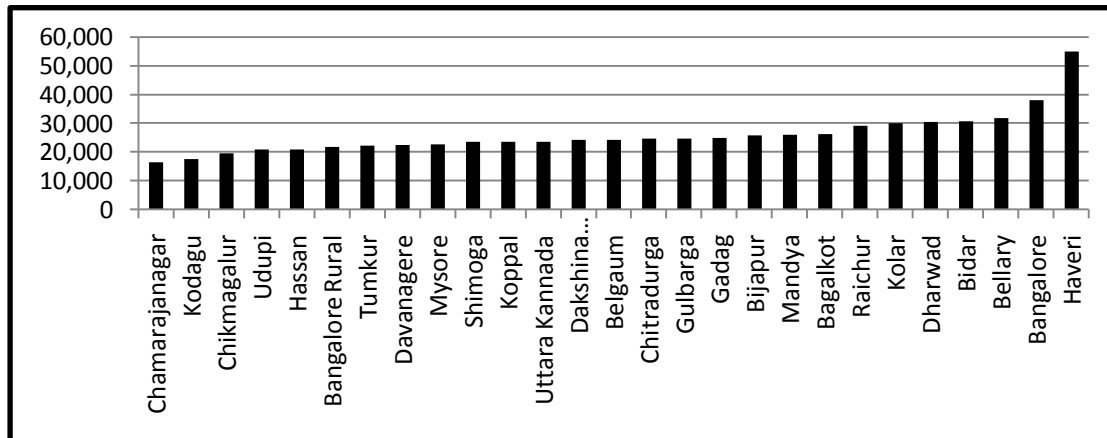
Source: Rural Health statistics 2012

NUMBER OF PHCs AND AVERAGE POPULATION COVERED BY PHCs

PHC is the first contact point between village community and the Medical Officer. The PHCs were envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive aspects of health care. The population covered by

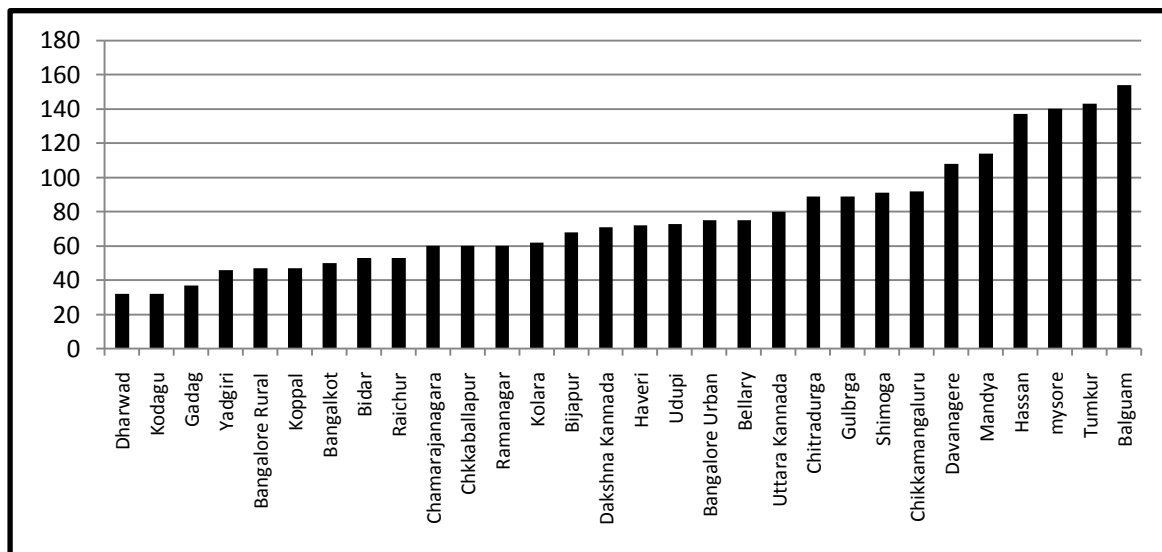
PHCs in different districts also indicate the wide disparities. Average population covered by PHCs ranges from 16428 to 54864. Average population covered by vulnerable districts are more and these districts covers on an average 27500 population whereas the developed districts covers on an average of 22000 population.

Figure 9: District wise Average Population Covered By PHCs 2012



Source: Rural Health statistics 2012

Figure 10: District wise Number of PHCs 2012



Source: Rural Health statistics 2012

### SURPLUS PHCs

A major factor in the continuing regional disparities is the number of surplus PHCs in the better performing districts, while there is a shortage of facilities in the backward districts.

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District	Surplus PHCs
Mysore	81
Hassan	81
Tumkur	74
Davangere	64
Mandya	64
Chikmagalur	47
Bangalore Urban	46
Udupi	45
Chitradurga	45

## CONCLUSION

The data presented in the earlier sections and the analysis so far clearly establish that there are considerable disparities in health indicators and facilities across the districts. The on-going economic reforms since 1991 with stabilisation and deregulation policies as their prime instruments and a very significant role for the private sector seem to have further aggravated the inter-district disparities. A marked dichotomy between the forward and backward groups of States has been emerging. The forward districts are characterised by better demographic indicators and higher per capita resource flows and private investment and significantly better infrastructural facilities. On the other hand, the backward districts are characterised by lower level of demographic development, lower per capita resource flows and private investment and underdeveloped infrastructural facilities.

Therefore, it is very important that the present trends are arrested and preferably reversed. This will require concerted efforts on the part of the State governments. Resources may be a major constraint, but not necessarily the only or not even the most important one. The determination on the part of the State government, the ruling elite and the people at large is even more important. Meaningful decentralisation of decision making and financial powers with appropriate accountability at all levels will facilitate faster socio-economic development of the backward regions where people are likely to take up considerable share of the developmental responsibilities.

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