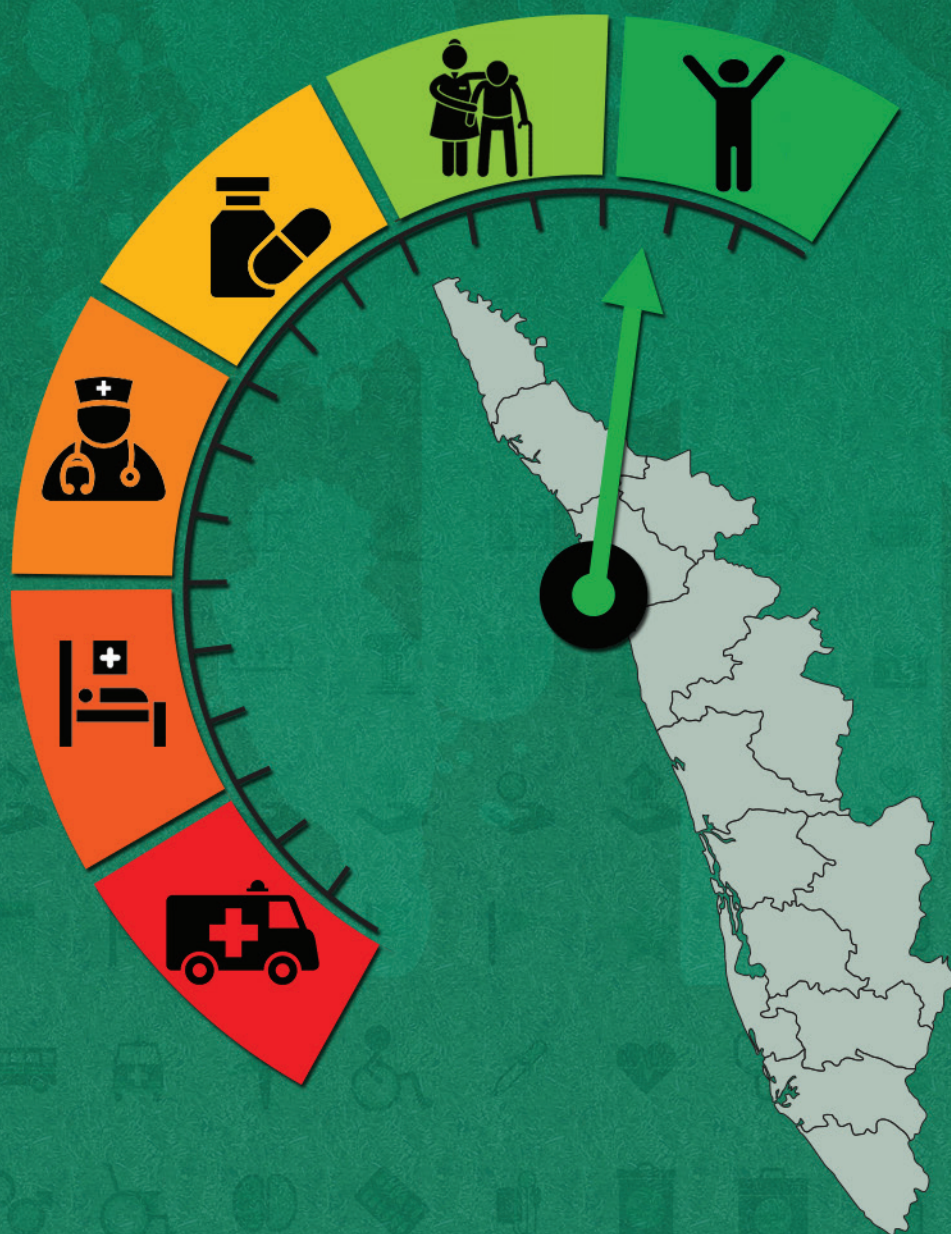


HEALTH DOSSIER 2021

Reflections on Key Health Indicators



KERALA

DISTRICTS VISITED IN COMMON REVIEW MISSIONS

CRM	Districts Visited	
2 nd	Thiruvananthapuram & Directorate of Health Services etc.	
4 th	Kozhikode	Kottayam
6 th	Malappuram	Alappuzha
8 th	Palakkad	Ernakulum
10 th	Idukki	Kollam

KERALA

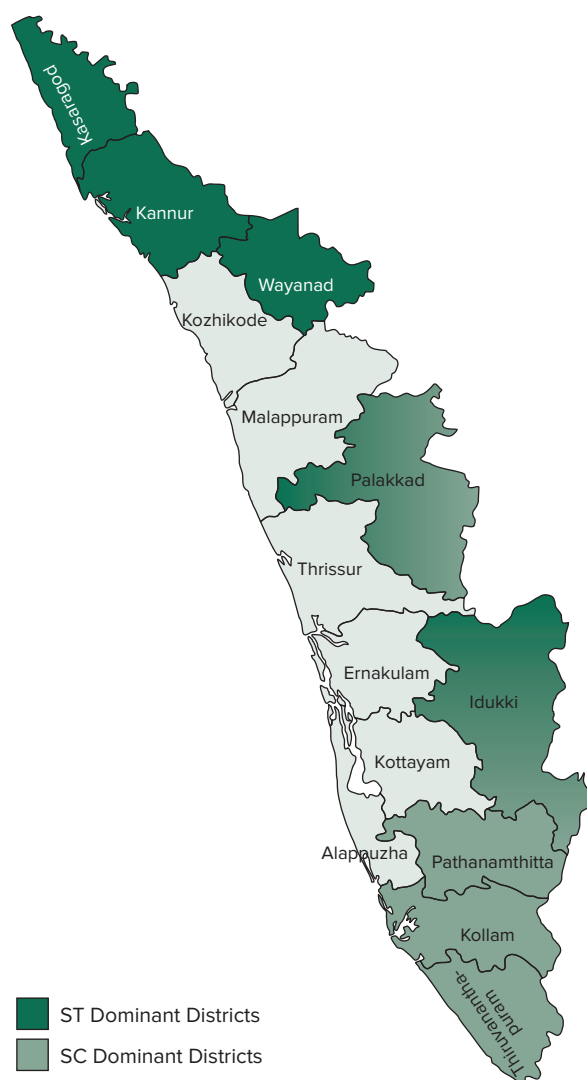
1. BACKGROUND

1.1 State Profile

Kerala is positioned^a 22nd in India for a geographical spread of 38,863 km² (RHS 2019). The State is divided into 14 districts and is estimated to have a population of over 3.34 crores^b, which accounts for approximately 2.75% of India's total population (RHS 2019). It is projected that the population would reach around 3.54 crores by 2021 (Census Population Projection 2019 Report). As per Census 2011, the Scheduled Caste (SC) and Scheduled Tribe (ST) population is 3.04 crores (9.10%) and 0.5 crores (1.45%), respectively. Out of the 14 districts, top five ST dominant districts account for 71.46% of ST population, and top five SC dominant districts account for 46.55% of SC population in the State (Annexure 1.1; fig 1). In the State, 52.3% of the population reside in rural areas, while 47.70% constitute the urban population.

The total length of roads^c in the State is 2,40,562 km (4.81%^d), in which, the length of the national highways is 1,811 km (1.6%^e) and state highways is 4,342 km (2.48%^f). In terms of agriculture^g, about half of the main worker population workers in the State participate in agricultural activities.

Figure 1: Top 5 ST & SC Dominant Districts



^a Including all States & UTs

^b Census 2011

^c Basic Road Statistics 2019, MoRTH

^d Percentage of total length of roads in Kerala

^e Percentage of total length of National Highways in the country

^f Percentage of total length of State Highways in the country

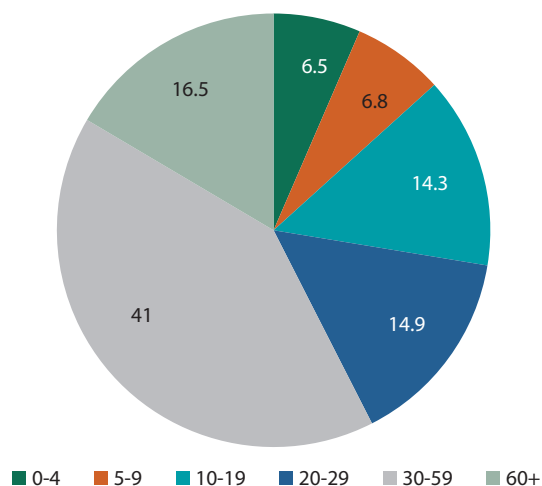
^g <https://indiawris.gov.in/wiki/doku.php?id=kerala>

A detail report on the key indicators has been attached as Annexure 1.

1.2 Demography

Out of the 14 districts, 5 districts have population of 30 lakhs and above, 4 districts have a population between 20-30 lakhs, 4 districts have a population between 10-20 lakhs, and 1 district has a population less than 10 lakhs (Annexure 1.1 State profile). The State's Sex ratio at birth of 957 females for every 1000 males is higher than the national average of 899 (Annexure 1.2). It is estimated that there are 14.3% of the total population in the age group of 10-19 years, 55.9% within 20 to 59 years; while 16.5% are 60 years and above (Figure 2). The crude birth rate and the crude death rate have declined from 15 & 6.4 in 2005 to 13.5 & 7.1 in 2019, respectively (Annexure 2; figure2). The literacy rate increased from 90.9% in 2001 to 94.0% in 2011, with male & female literacy rates being 96.1% and 92.1%, respectively (Annexure 1.1). As per the ESAG 2018 report, the Gross Enrollment Rate (GER)^h is 30.8% for higher education, 77.56% for senior secondary education, 102.44% for secondary education, 95.42% for elementary education, and 95.44% for primary education.

Figure 2: Kerala - distribution of estimated population 2021 (%)



1.3 Elderly

Population ageing has profound social, economic, and political implications. Elderly people aged 60 years and above constitute 16.5% of the State's total population. The life expectancy at 60 years of age is 17.9 and 21.9 for males and females, respectively (2014-2018). In Kerala, 61.0% of elderly females and 25.0% elderly males living in rural areas are economically fully dependent on others. Whereas in urban areas, 50.0% of elderly females and 20.0% elderly males are economically fully dependent on others. The old age dependency ratio is 19.6 in 2011; which is 18.6 for males and 20.6 for females, 19.8 in rural & 19.5 in urban areas. The illness (any deviation from the state of physical and mental well-being) perception among the elderly is reported as 57% for men and 60% for women, as opposed to the national average of 31% for both (Elderly in India 2016).

2. HEALTH STATUS AT A GLANCE

2.1 Maternal Health

The State has been able to provide RMNCHA+Nⁱ services with major focus on primary and secondary care services under the NHM. Indicators for Antenatal care (ANC)^j, institutional deliveries, C sections,

^h Gross Enrolment Rate (GER): Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school-year. School-age Population: Population of the age group which officially corresponds to the relevant level of education; senior secondary education is XI-XII, secondary is IX-X, primary is I-V and elementary is I-VIII

ⁱ Reproductive, Maternal, Newborn, Child, Adolescent Health & Nutrition

^j Antenatal Check up

distribution of IFA^k tablets, follow up of high-risk pregnancies, provision of postnatal and newborn care - have shown substantial improvement since 2005 (NFHS 4 & 5). The maternal mortality ratio has significantly declined from 81 (SRS MMR Bulletin 2007-09) to 43 (SRS MMR Bulletin 2016-18) per 1,00,000 live births. In Kerala, 99.1% of women received 4 ANC check-ups (Annexure 1.4). As per the NFHS 5 report- Kasaragod, Kozhikode, Malappuram, Pathanamthitta and Wayanad districts reported high ANC coverage, ranging between 83.9% - 94.2%. Whereas, Alappuzha, Idukki, Kottayam, Palakkad and Thiruvananthapuram districts reported low ANC coverage, ranging between 55.37% - 74.3%. As reported in HMIS 2019-20, around 99.9% of the deliveries took place in institutions, out of which 31.8% took place in public health facilities. Total percentage of C-sections (40.8%) is higher than the WHO's standard (10-15%); and out of the total reported C-sections, about 41.7% is conducted at private facilities in the State. Around 113.7% of women are tracked for the first postpartum check-up between 48 hours and 14 days (Annexure 1.4). Prevalence of anemia in women aged 15-49 years increased from 34.3% (NFHS-4) to 36.3% (NFHS-5). Anemia in females of reproductive age group is almost twice than that in men of similar age group (Annexure 2, figure 5).

Refer Annexure 3 for a detailed district wise comparison.

2.2 Newborn, Infant & Child Health

Ever since the inception of NHM in 2005, the State has shown a significant decline in IMR from 14 (2005) to 6 (2019), which is exceptionally lower than the national average of 30 (Annexure 2, Figure 1). Similarly, NNMR^l and Still Birth (per 1,000 live births) rates have also significantly decreased from 10.9 and 8.8 (2005) to 5 and 5 (2018) respectively (Annexure 2, figure 4). Improvement in the indicators can be attributed to several interventions at the State level, including infrastructure strengthening under NHM, such as establishment of SNCUs, NBSUs and NBCCs (Annexure 1.4). The life expectancy at birth has also improved from 74.2 (2006-10) to 75.3 (2014-18), which is above the national average of 69.4 years (Annexure 2, Figure 3). As per the NFHS 5, the lowest SRBs^m ranging between 763 - 880 are reported in Thrissur, Malappuram, Idukki, Kottayam and Kannur districts; while the highest ones, ranging between 1003-1485 are reported in Wayanad, Palakkad, Ernakulam, Kollam and Alappuzha districts.

Full vaccinationⁿ coverage for children between 12 – 23 months of age has improved from 88.3% (NFHS 4) to 85.2% (NFHS 5). The proportion of under 6-months children exclusively breastfed has also increased from 53.3% (NFHS 4) to 55.5% (NFHS 5). An increase in childhood anemia from 35.7% to 39.4% in children aged 6-59 months has been reported in NFHS 5 (Annexure 2, Figure 5). As per the NFHS 5 report, relatively low stunting rates, ranging from 15.5 to 21.3, are reported from Alappuzha, Kannur, Kollam, Kozhikode & Thiruvananthapuram districts. While relatively higher stunting rates, ranging from 24.3 to 31.3, are reported from Idukki, Kasaragod, Malappuram, Palakkad & Wayanad districts. For under-5 wasting – Kannur, Kasaragod, Kottayam, Pathanamthitta & Thrissur districts reported a low burden, which ranged from 8.4% to 14%; while Ernakulum, Kollam, Malappuram, Palakkad & Thiruvananthapuram districts reported a relatively higher burden, which ranged from 17.1% to 21.7%.

^k Iron Folic Acid Tablets

^l Neonatal Mortality Rate

^m Sex Ratio at Birth

ⁿ NFHS 5 Kerala Factsheet, based on information from vaccination card only

2.3 Family Planning

The TFR^o of Kerala is constant (1.7) since 2005 with minor increase in 2010 & 2015 (Annexure 2, Figure 4). As per the NFHS 5 report, the total unmet need in the State is reported as 12.5%, while the unmet need for spacing is 7.0% (NFHS 5). Thiruvananthapuram district reported the highest total unmet need of 19.3%, while Wayanad reported the lowest (5.6%). Approximately 52.8% of married women reported to avail any modern method of family planning in the State (NFHS 5); with sterilization acceptance among females being 46.6% and 0.1% among males.

2.4 Communicable Diseases

The State has 14 functional IDSP units in place^p. The proportion of communicable, maternal, neonatal, and nutritional diseases [CMNND] contribute to 11.83% of total disease burden (Annexure 1.4). Diarrheal diseases, Neonatal preterm birth, lower respiratory infection & drug susceptible TB are the leading causes of deaths due to CMNND in the State (Annexure 2, Figure 6). As per QPR, for TB, the annualized total case notification rate is 74% and NSP^q success rate is 83% as opposed to the national averages of 163 and 79, respectively. For NLEP^r, the reported prevalence rate of 0.23 per 10,000 population is less than the national average of 0.61. In FY 2019-20, 17 deaths due to Dengue are reported in the State.

2.5 Non-Communicable Diseases (NCDs)

It is reported that as high as 54.8% of all deaths are premature in the State, while disability or morbidity accounts for 45.2%. Ischemic heart disease, COPD, Diabetes type 2, other musculoskeletal are the major causes of DALYs in the State (Annexure 2, Figure 6). NCDs contribute^s to 76.92% of DALYs; whereas, injuries contribute to 11.25% of DALYs in the State. The State is positioned 16th in the country for the total number of fatal road accidents with respect to other States (Annexure 1.4). It is found in the recent NFHS 5 report that 2.2% of women and 16.9% of men used any kind of tobacco, while 0.2% of women and 19.9% of men consumed alcohol. Overall, metabolic factors (high systolic blood pressure, high fasting plasms glucose, high body mass index, high LDL cholesterol) and behaviour (smoking) are the major risk factors for all DALYs and YLLs (Annexure 2, figure 7).

2.6 Health Care Financing

The State's Net State Domestic Product (NSDP) for FY 2018-19 is ₹ 7,07,542 crores. The State is positioned 9th out of 32 states in terms of per capita^t of ₹ 2,04,105. According to NHA 2017-18, the per capita Government Health Expenditure in the State is ₹ 2,272, which is above the national average of ₹ 1,753. On the other hand, the OOPE^u as a share of Total Health Expenditure was 68.7%, which is also above the national average of 48.8%. As per NSS 2017-18, the OOPE for IPD care per hospitalized case in rural areas is estimated to be around ₹ 5,827 in public facilities, ₹ 25,812 in private facilities; whereas for urban areas, it is around ₹ 5,295 in public facilities and ₹ 30,370 in private facilities. For childbirth in rural areas, OOPE is estimated to be around ₹ 7,650 in public facilities & ₹ 30,441 in private facilities; whereas in

^o Total Fertility Rate

^p QPR NHM MIS Report (status as on 01.03.2020)

^q New Smear Positive

^r National Leprosy Eradication Programme

^s <https://vizhub.healthdata.org/gbd-compare/india>

^t Directorate of Economics & Statistics

^u Out of Pocket Expenditure

urban areas - OOPE is estimated to be around ₹ 7,552 in public facilities and ₹ 31,096 in private facilities. In public health facilities, the share of expenditure on medicines as a proportion of inpatient medical expenditure is estimated to be 44% in rural and 43% in urban areas; whereas for diagnostics, it is 25% in rural and 27% in urban areas (Annexure 1.6).

2.7 Health Infrastructure

As per the recent RHS data, the number of SCs, PHCs and CHCs have been increasing since 2005 (Annexure 2, Figure 8). Public health facilities have increased over time with no shortfall in public health facilities in rural areas (Annexure 2, Figure 9). Currently, there are 5410 SCs, 784 PHCs and 211 CHCs are in place, against the required 2191 SCs, 363 PHCs and 90 CHCs. Similarly, in urban settings, there are 148 PHCs in place against the required 492, which accounts to a shortfall of 70%. The State has 48 DHs, 86 SDHs and 10 government medical colleges. In the State, 77.08% of DHs (37), and 50% of SDHs (43) serve as functional FRUs. In tribal catchments, there are 272 SCs, 150 PHCs and 35 CHCs in place, against the required 89 SCs, 13 PHCs and 3 CHCs, accounting for an excess of the required SCs, PHCs and CHCs in the tribal areas.

Under the recently introduced Ayushman Bharat – Health and Wellness Centres (AB-HWCs), a total of 2451 HWCs (1517 SHCs, 840 PHCs & 94 UPHCs) are operationalized in the State as of 22nd December 2021^v.

In the State, 12 districts are equipped with MMUs under the NRHM, and none under the NUHM. The State has 84% of required ASHAs in position under the NRHM and 100% under the NUHM. The doctor to staff nurse ratio in place is 1:2, with 4 public health providers (MO, specialists, staff nurse & ANM) per 10,000 population (Annexure 1, Table 1.5).

Recent data (Annexure 1.3) reveals that out of 1000 population who availed services from public health facilities, 101.64 availed (events) IPD services and 3910.05 availed (events) OPD services. As per the NSSO data (2017-18), 52% of all OPD cases in rural areas and 42% in urban areas; and 40% of all IPD cases in rural areas & 36% in urban areas utilized public health facilities. The public health facility utilization in the State is below the national averages for both (Annexure 1.6).

^v AB-HWC Portal

ANNEXURE 1: KEY INDICATORS

1.1 State Profile^w

Indicator	Kerala 2011 ¹	India
Total Population (In Crore)	3.34	121.08
Rural (%)	52.30	68.85
Urban (%)	47.70	31.14
Scheduled Caste population (SC) (in crore)	3.04 (9.10%)	20.14 (16.63%)
Scheduled Tribe population (ST) (in crore)	0.5 (1.45%)	10.45 (8.63%)
Total Literacy Rate (%)	94	72.99
Male Literacy Rate (%)	96.1	80.89
Female Literacy Rate (%)	92.1	64.64
Number of Districts in the Kerala ²	14	
Number of districts per lakh population in Kerala (Census 2011)	Population ¹	Districts ¹ (Numbers)
	<10 Lakhs	1
	≥ 10 Lakhs - <20 Lakhs	4
	≥20 Lakhs - <30 lakhs	4
	≥30 Lakhs	5
ST SC Dominant (Top 5) Districts of Kerala ¹		
ST Dominant Districts (%)	SC Dominant Districts (%)	
Wayanad - 18.53%	Palakkad - 14.37%	
Idukki - 5.03%	Pathanamthitta - 13.74%	
Palakkad - 1.74%	Idukki - 13.12%	
Kasaragod - 3.74%	Kollam - 12.46%	
Kannur - 1.64%	Thiruvananthapuram - 11.3%	
Top 5 ST dominant district accounts for - 71.46%	Top 5 SC dominant district accounts for - 46.55%	

1.2 Key Health Status & Impact Indicators

Indicators	Kerala	India
Infant Mortality Rate (IMR) ³	6	30
Crude Death Rate (CDR) ³	7.1	6

^w Sources are mentioned at the end of Annexure 1

Crude Birth Rate (CBR) ³	13.5	19.7
Maternal Mortality Ratio (MMR) ³	43	113
Neo Natal Mortality Rate (NNMR) ⁴	5	23
Under Five Mortality Rate (U5MR) ⁴	10	36
Still Birth Rate ⁴	5	4
Total Fertility Rate (TFR) ⁴	1.7	2.2
Life expectancy at birth ⁵	75.3	69.4
Sex Ratio at Birth ⁴	957	899

1.3 Key Health Infrastructure Indicators^x

Indicators				Numbers (Total)
Number of District Hospitals ²				48
Number of Sub District Hospital ²				86
Number of Government (Central + State) Medical College ⁶				10
Number of Private (Society + Trust) Medical Colleges ⁶				21
Number of AB-HWCs functional as of 22 nd December 2021 ¹⁶	Status (Total)	Target FY (2020-21)	Target FY (2021-22)	Target FY (2022-23)
SHC-HWC	1517	1636	3111	4094
PHC-HWC	840	849	849	849
UPHC-HWC	94	83	83	83
Total-HWC	2451	2568	4043	5026
Rural ²	Required (R)	In place (P)	Shortfall (S) (%)	
Number of Community Health Centres (CHC)	90	211	-134.44	
Number of Primary Health Centres (PHC)	363	784	-115.98	
Number of Sub Centres (SC)	2,191	5,410	-146.92	
Number of functional First Referral Units (FRUs)	DH	SDH	CHC	
	37	43	0	
Urban ²	Required (R)	In place (P)	Shortfall (S) (%)	
Number of PHC	492	148	69.92	
Tribal ²	Required (R)	In place (P)	Shortfall (S)%	
Number of CHC	3	35	-1066.67	
Number of PHC	13	150	-1053.85	
Number of SC	89	272	-205.62	

^x Sources are mentioned at the end of Annexure 1

Patient Service ⁹	Kerala	India
IPD per 1000 population	101.64	62.6
OPD per 1000 population	3910.05	1337.1
Operation (surgeries) major (General and Spinal Anaesthesia) per 10000 population	95.43	36.4

1.4 Major Health Indicator^y

% Share of DALYs to Total Disease Burden (GBD 2019) ⁷	Kerala	India
% DALY ^z accountable for CMNNDs ^{aa}	11.83	27.46
% DALY accountable for NCDs	76.92	61.43
% DALY accountable for Injuries	11.25	11.11
Birth, Death Registration & Medical Certification of Cause of Death (MCCD) Indicator ⁸	Kerala	India
Level of Birth Registration (%)	98.2	92.7
Level of Death Registration (%)	100	92
Percentage of medically certified deaths to total registered deaths (%)	11.6	20.7
RMNCHA+N		
Maternal Health ⁹	Kerala	India
% 1st Trimester registration to Total ANC Registrations	83	71.9
% Pregnant Woman received 4 ANC check-ups to Total ANC Registrations	99.1	79.4
Total Reported Deliveries	4,60,850	21410780
% Institutional deliveries to Total Reported Deliveries	99.9	94.5
% Deliveries conducted at Public Institutions to Total Institutional Deliveries	31.8	67.9
% Deliveries conducted at Private Institutions to Total Institutional Deliveries	68.2	32.1
% C-section deliveries (Public + Pvt.) to reported institutional (Public + Pvt.) deliveries	40.8	20.5
% C-sections conducted at public facilities to Deliveries conducted at public facilities	38.9	14.1
% C-sections conducted at Private facilities to Deliveries conducted at private facilities	41.7	34.2
% Women getting 1st Post-Partum Checkup between 48 hours and 14 days to Total Reported Deliveries	113.7	53.4
Neonatal ⁹	Kerala	India
% live birth to Reported Birth	99.6	98.8
% Newborns having weight less than 2.5 kg to Newborns weighed at birth	11.3	12.4
% Newborns breast fed within 1 hour of birth to Total live birth	92.4	89.9

^y Sources are mentioned at the end of Annexure 1

^z Disability Adjusted Life Years

^{aa} Communicable, Maternal, Neonatal, and Nutritional Diseases

New Born Care Units Established¹¹	Kerala	India
Sick New Born Care Unit (SNCU)	17	895
New Born Stabilization Unit (NBSU)	68	2418
New Born Care Corner (NBCC)	101	20337
Child Health & Nutrition¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Prevalence of diarrhoea (reported) in the last 2 weeks preceding the survey (%)	4.3	7.3
Children with diarrhoea in the last 2 weeks who received oral rehydration salts (ORS) (%)	61.1	60.6
Children under 5 years who are underweight (weight-for-age) (%)	19.7	32.1
Child Immunization¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Children age 12-23 months fully vaccinated based on information from vaccination card only (%)	85.2	83.8
Children age 12-23 months who have received BCG (%)	97.6	95.2
Children age 12-23 months who have received first dose of measles containing vaccine (%)	88.3	87.9
Family Planning¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Unmet need for spacing (%)	7	4
Communicable Diseases		
Integrated Disease Surveillance Programme (IDSP)¹¹	Kerala	India
Number of districts with functional IDSP unit	14	720
Revised National Tuberculosis Control Programme (RNTCP)¹¹	Kerala	India
Annualized total case notification rate (%)	74	163
New Smear Positive (NSP) Success rate (in %)	83	79
National Leprosy Eradication Programme (NLEP)¹¹	Kerala	India
Prevalence Rate/10,000 population	0.23	0.61
Number of new cases detected	675	114,359
Malaria, Kala Azar, Dengue¹¹	Kerala	India
Deaths due to Malaria ¹¹	0	79
Deaths due to Kala azar reported ¹¹	0	0
Deaths due to Dengue reported ¹¹	17	168
Number of Kala Azar Cases reported ¹¹	0	3,706
HIV¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Women (age 15-49 years) who have comprehensive knowledge of Human Immunodeficiency Virus (HIV)/Acquired immunodeficiency syndrome (AIDS) (%) ¹⁰	34.8	21.6
Men (age 15-49 years) who have comprehensive knowledge of HIV/AIDS (%) ¹⁰	45.4	30.7

Non-Communicable Disease		
Diabeties and Hypertension ¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Women - Mildly elevated Blood Pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)	15.5	12.4
Men - Mildly elevated Blood Pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)	19.2	15.7
Women - Blood sugar level - high (141-160 mg/dl) (%)	8.3	6.1
Men - Blood sugar level - high (141-160 mg/dl) (%)	9.8	7.3
Tobacco Use and Alcohol Consumption among Adults (age 15 years & above) ¹⁰	Kerala (NFHS 5)	India (NFHS 5)
Women who use any kind of tobacco (%)	2.2	8.9
Men who use any kind of tobacco (%)	16.9	38
Women who consume alcohol (%)	0.2	1.3
Men who consume alcohol (%)	19.9	18.8
Injuries		
Road Traffic Accident ¹²	Kerala	India
Rank (Total number of fatal Road Accidents in State/UT wrt other States/UTs)	16	N/A
Total number of fatal Road Accidents	4,183	137,689
Severity (Road accident deaths per 100 accidents) of Road Accidents	10.8	33.7
Number of persons killed in Road Accidents	4440	115113

1.5 Access to Care^{bb}

Health Systems Strengthening		
Ambulances & Mobile Medical Units (MMU) ¹¹	Kerala	India
Number of Districts equipped with MMU under NRHM	12	506
Number of Districts equipped with MMU/Health Units under NUHM	0	31
Number of ERS vehicles operational in the States/UTs Under NHM	Kerala	India
102 Type	0	9955
104 Type	0	605
108 Type	43	10993
Others	0	5129
Number of Ambulances functioning in the State/UTs other than NHM (At PHC/CHC/SDH/DH)	447	11070

^{bb} Sources are mentioned at the end of Annexure 1

Key Domain Indicators			
ASHA ¹³	Kerala	India	
Total number of ASHA targeted under NRHM	30927	946563	
Total number of ASHA in position under NRHM	26057	904211	
% of ASHA in position under NRHM	84.25	96	
Total number of ASHA targeted under NUHM	1927	75597	
Total number of ASHA in position under NUHM	1927	64272	
% of ASHA in position under NUHM	100	85	
Community Process ¹¹	Kerala	India	
Number of Village Health Sanitation and Nutrition Committees (VHSNCs) constituted	19692	554847	
Number of Mahila Arogya Samitis (MAS) formed	1048	81134	
Number of Rogi Kalyan Samitis (RKS) registered (Total) ¹¹	Kerala	India	
DH	53	796	
CHC	227	6036	
PHC	848	20273	
UCHC	0	126	
UPHC	76	3229	
Human Resource for Health ¹⁴			
HRH Governance		Kerala	
Specialist Cadre Available in the state (Y/N)		Yes	
HR Policy available (Y/N)		No	
Implementation of HRIS (Y/N)		Yes	
HR Integration initiated (Y/N)		Yes	
Public Health Cadre available (Y/N)		No	
Overall Vacancies (Regular + contractual)	Specialists (%)	79	
	Dentists (%)	22	
	MO MBBS (%)	23	
	Nurse (%)	39	
	LT (%)	38	
	ANM (%)	7	
HRH Distribution		Sanctioned	In Place
Doctors (MO & specialists) to staff nurse ¹⁴		1:1	1:1
Availability of public healthcare providers (MO, specialists, staff nurse & ANM) in district healthcare system ¹⁴		6 per 10,000	4 per 10,000
Regular to contractual service delivery staff ratio ¹⁴		5:1	5:1

Ranking: Human Resource Index of Kerala¹⁵

Category	Total (Regular + NHM)					Ranking: HR Gap Index
	Required (R)	Sanctioned (S)	In-Place (P)	Vacancy (V)	Actual Gap# (R-P)	
MPW ^{cc}	12358	6141	5722	419	6636	67.16
Staff Nurse	16805	9125	8579	546	8226	
Lab Technician	3511	1882	1768	114	1743	
Pharmacists	2051	1989	1903	86	148	
MO MBBS ^{dd}	4434	4437	4307	130	127	
Specialist ^{ee}	3808	2347	2219	128	1589	

1.6 Healthcare Financing^{ff}

National Health Accounts (NHA) (2017-18)	Kerala		India	
Per Capita Government Health Expenditure (in ₹)	2,272		1753	
Government Health expenditure as % of Gross Domestic Product (GSDP)	1.1		1.35	
Government Health Expenditure as % of General Government Expenditure (GGE)	7.3		5.12	
OOPE as a Share of Total Health Expenditure (THE) %	68.7		48.8	
National Sample Survey Office (NSSO) (2017-2018)	Kerala		India	
	Rural	Urban	Rural	Urban
OPD - % of non-hospitalized cases using public facility	52	42	33	26
IPD - % of hospitalized cases using public facility	40	36	46	35
Out of Pocket Expenditure (OOPE) (NSSO)*	Rural	Urban	Rural	Urban
OPD - Per non-hospitalized ailing person (in INR) in last 15 days - Public	252	367	472	486
OPD - Per non-hospitalized ailing person (in INR) in last 15 days - Private	843	743	845	915
IPD - Per hospitalized case (in INR) - Public	5,827	5,295	5,729	5,939
IPD - Per hospitalized case (in INR) - Private	25,812	30,370	28,816	34,122
IPD - % of diagnostics expenditure as a proportion of inpatient medical expenditure in Public (NSSO)	25	27	18	17
IPD - % of drugs expenditure as a proportion of inpatient medical expenditure – Public (NSSO)	44	43	53	43

^{cc} MPW – Multi Purpose Health Worker (Female + Male)

^{dd} MO MBBS (Full Time)

^{ee} Specialist (All Specialist)

^{ff} Sources are mentioned at the end of Annexure 1

* Estimated by NHSRC using unit level data of NSSO 2017-18, where OOPE = [Total Medical Expenditure + Transportation Cost] – Reimbursement

Childbirth - Average out of pocket expenditure per delivery in public health facility (₹) (NSSO)	7650	7552	2,402	3,091
Childbirth - Average out of pocket expenditure per delivery in private health facility (₹)	30441	31096	20,692	26,701
State Health Expenditure	Kerala		All India Average	
State Health Department expenditure as a share of total expenditure (%) (2017-18)**	5.5		5 ⁹⁹	

Sources used for Annexure 1

- ¹ Census 2011
- ² Rural Health Statistic (RHS) 2019-20
- ³ Sample Registration Survey (SRS) Bulletin 2018 & 2019
- ⁴ Registrar General of India (RGI) Statistical Report (SRS) 2018
- ⁵ SRS Based Abridged Life Tables 2014-18
- ⁶ National Health Profile 2020
- ⁷ Global Burden of Disease Data 2019, <https://vizhub.healthdata.org/gbd-compare/>
- ⁸ Annual Report on Vital Statistics of India based on CRS 2019 & Medical Certification of Cause of Death 2019
- ⁹ HMIS (2019-20)
- ¹⁰ NFHS 4 & 5
- ¹¹ QPR NHM MIS Report [Status as on 01.03.2020 & recent 31.12.2020 (some indicators removed from the recent report have been taken from report released on 01.03.2020)]
- ¹² Ministry of Road Transport & Highways (MoRTH) - Road Accidents in India 2019
- ¹³ Update on ASHA Programme July 2019 (NHSRC Publication)
- ¹⁴ Human Resources for Health in District Public Health Systems of India: State Wise Report 2020
- ¹⁵ HRH Division NHSRC
- ¹⁶ As per HWC Portal

⁹⁹ Represents data for all states and 2 UTs with legislative assembly (Puducherry + Delhi)

** RBI, State Finances: Study of Budgets 2019-20

ANNEXURE 2

Figure 1: IMR Trend

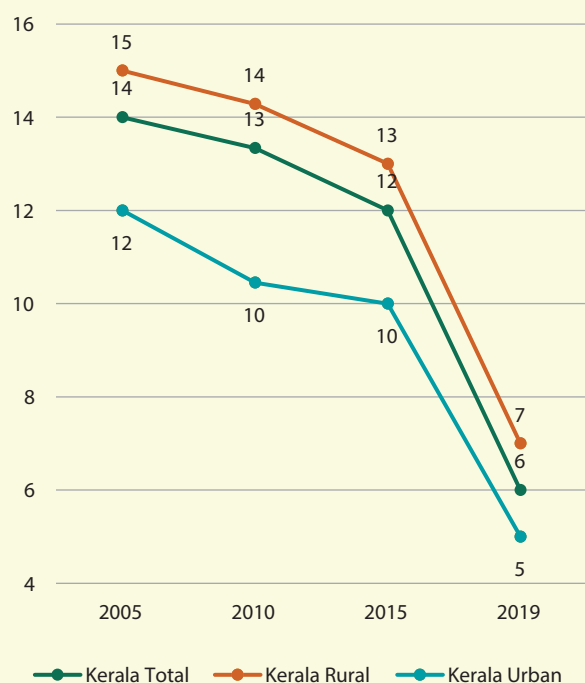


Figure 2: CBR & CDR Trend

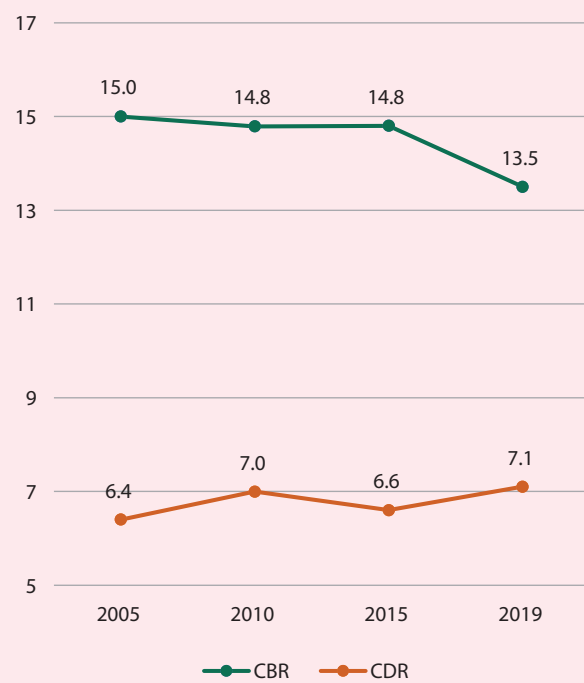


Figure 3: Life Expectancy At Birth Trend

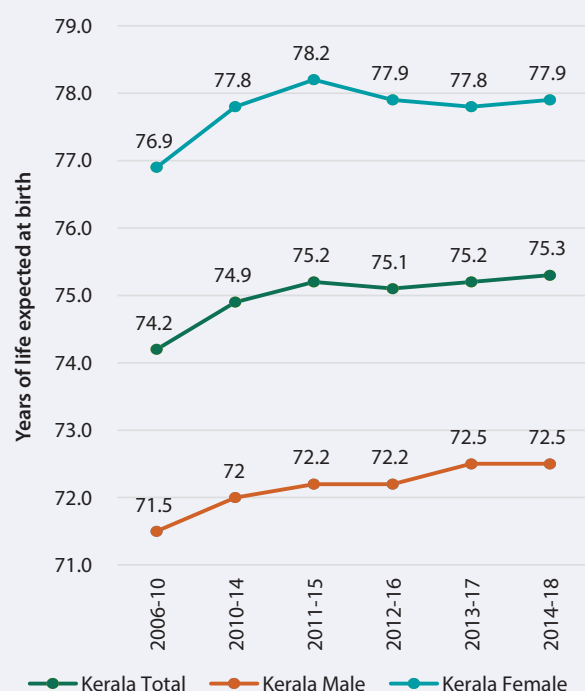


Figure 4: NNMR, TFR & Still Birth Trend

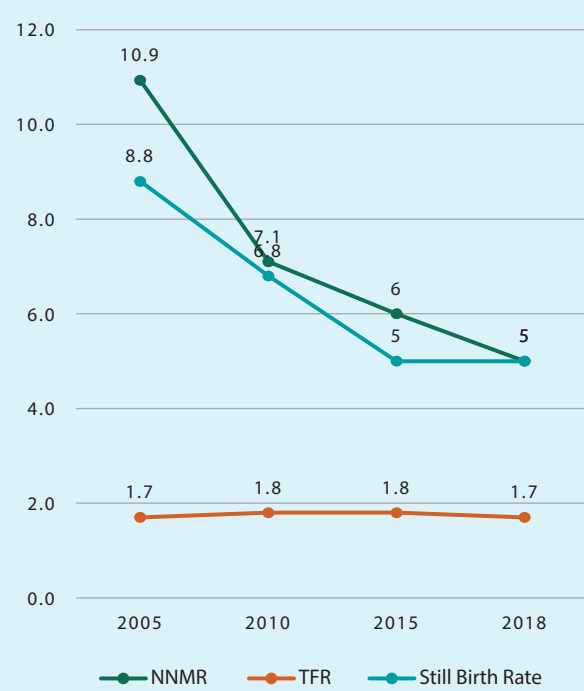


Figure 5: Comparison of Key NFHS 5 & 4 Indicators

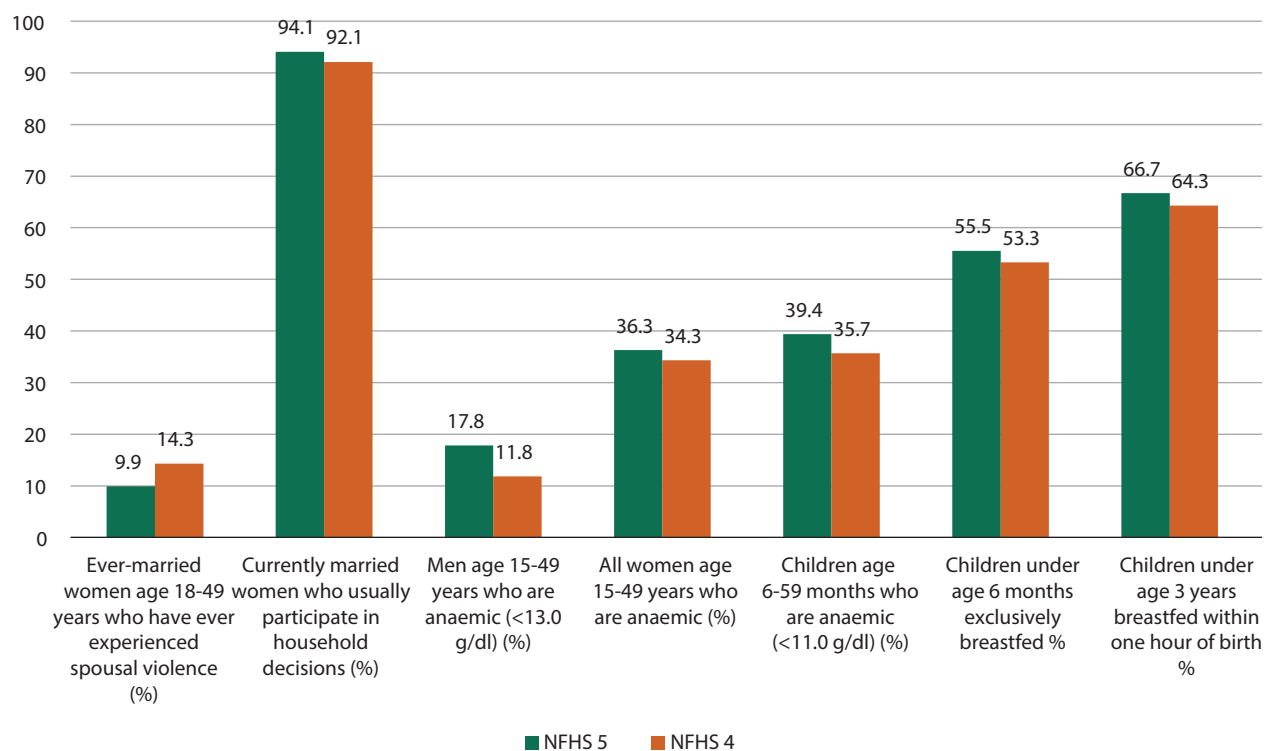


Figure 6: Top 15 causes of DALYs, 1990-2019

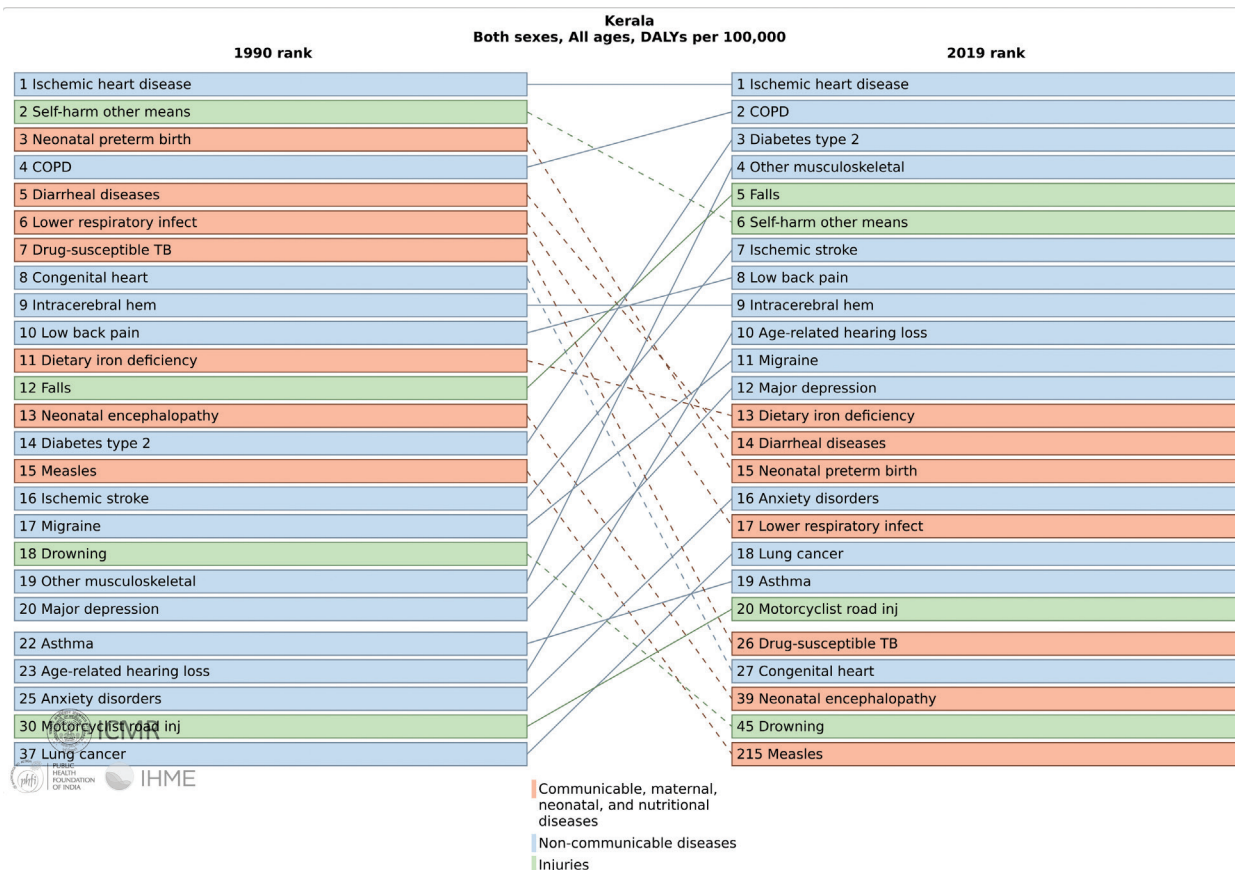


Figure 7: Top 15 risk of DALYs, 1990-2019

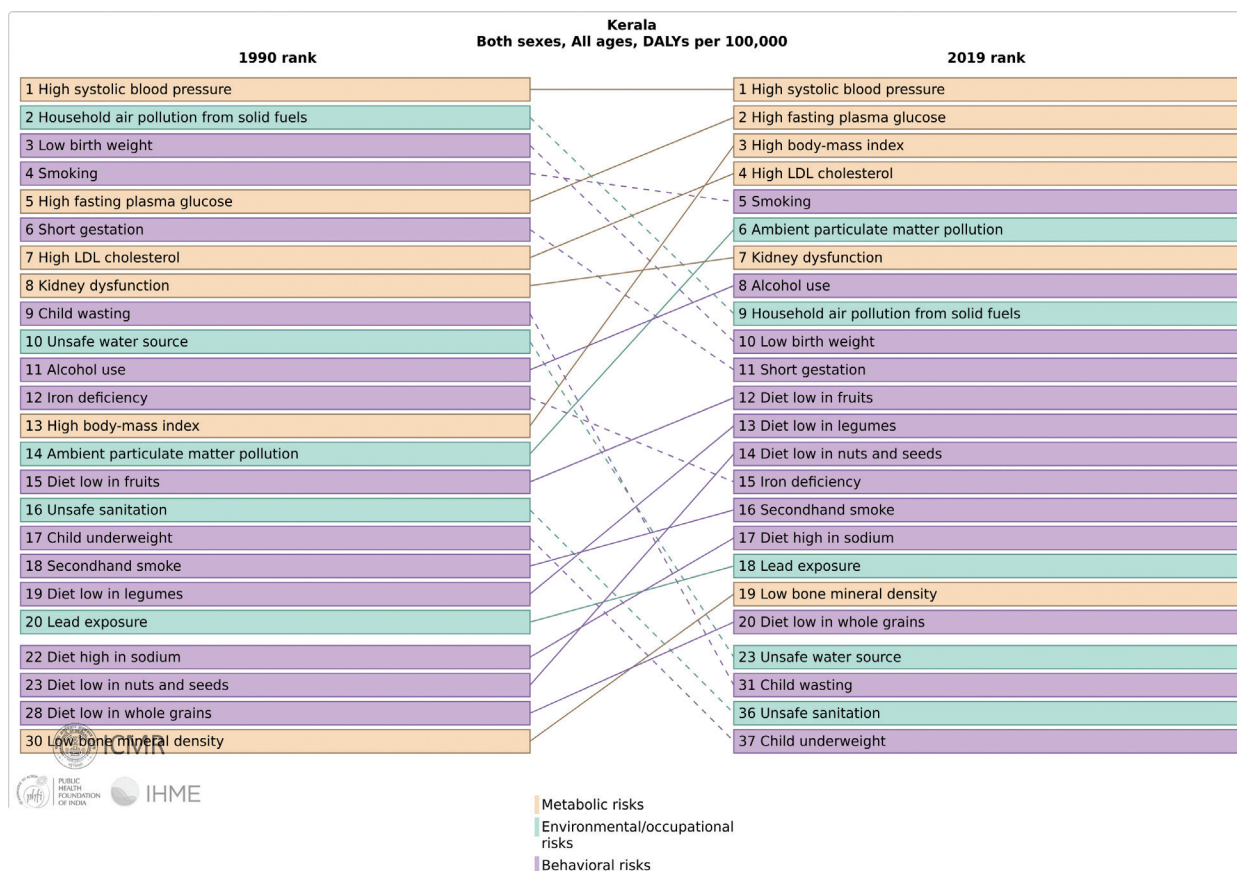


Figure 8: Year Wise Required/In Position Health Infrastructure Status in Rural Area (In numbers)

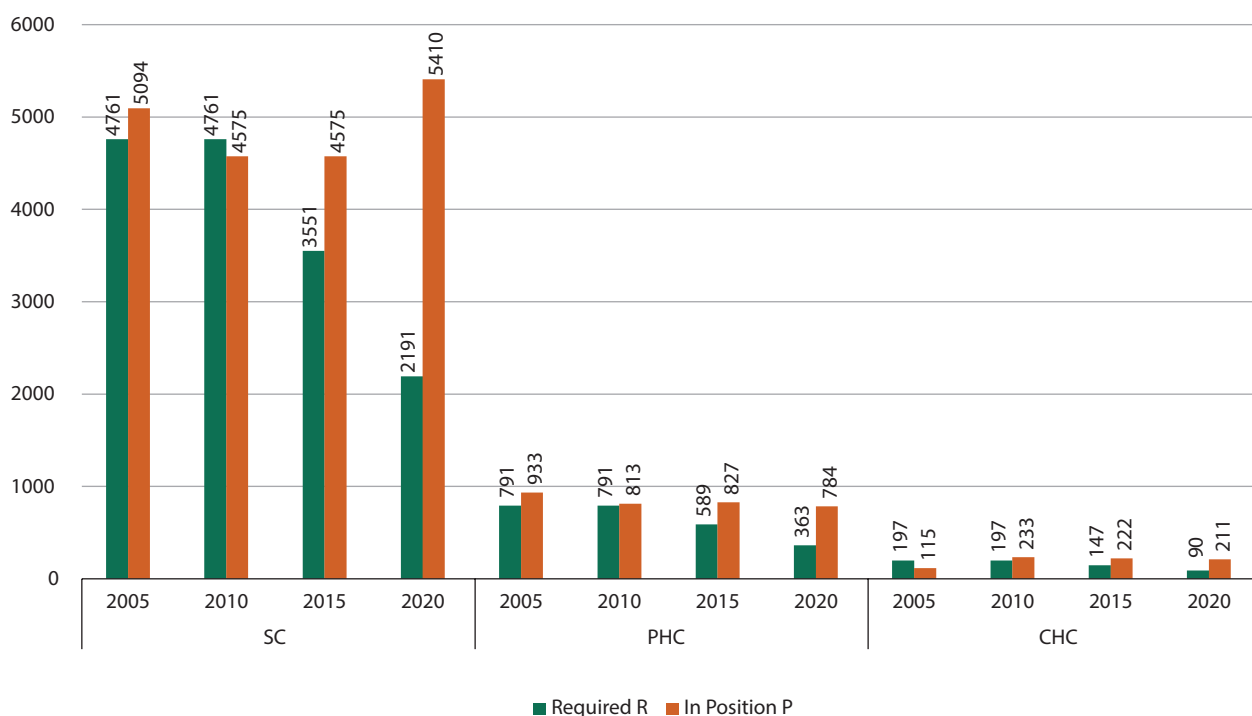
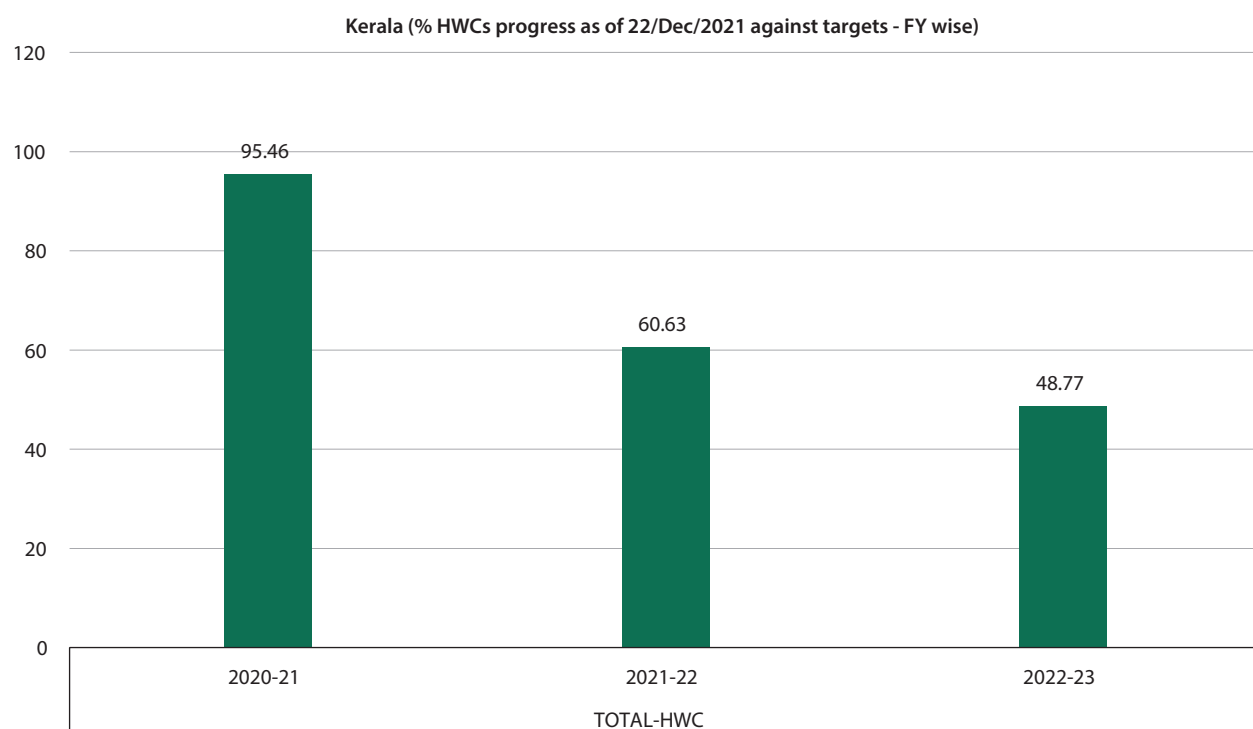


Figure 9: Year Wise Health Infrastructure Shortfall (%)



Figure 10: Percentage HWCs progress against target - FY wise (%)



ANNEXURE 3: DISTRICT WISE PERFORMANCE WITH RESPECT TO KEY NFHS 5 INDICATORS

S. No.	States/Districts	Data Source	Sex Ratio At Birth (Females/1000 Males)	Households with any usual member covered under a health insurance/financing scheme (%)	Women Literate 15-49 Age (%)	Women Age 20-24 Years Married Before 18 (%)	Any Method Used For Family Planning By Currently Married Women Age 15-49 years (%)	IUD/PPIUD (%)	Condom Use (%)	Total Unmet Need (%)	Mother Who Had At Least 4 Antenatal Care Visits (%)	Institutional Births (%)	Children Age 12-23 Months Fully Vaccinated Based On Information From Vaccination Card Only* (%)	Total Children Age 6-23 Months Receiving Adequate Diet**, # (%)	Children Under 5 Years - Stunted ^Δ (Height For Age) (%)	Children Under 5 Years - Wasted ^Δ (Weight For Height) (%)
1	Kerala	NFHS 4 Total	1047	47.7	NA	7.6	53.1	1.6	2.6	13.7	90.1	99.8	88.3	21.4	19.7	15.7
2	Kerala	NFHS 5 Urban	983	47.2	99.1	4.1	61.4	1.6	4	13	79.3	99.7	83.3	21.5	20.1	16
3	Kerala	NFHS 5 Rural	922	55.4	97.5	8.2	60.1	1.5	2.9	12	78	99.8	87.1	25.4	26.4	15.5
4	Kerala	NFHS 5 Total	951	51.5	98.3	6.3	60.7	1.5	3.4	12.5	78.6	99.8	85.2	23.5	23.4	15.8
5	Alappuzha	NFHS 5 Total	1485	60.4	99.7	3.8	61.5	1.3	4.3	12.3	65.7	99.4	NA	17.9	20.1	14.4
6	Ernakulam	NFHS 5 Total	1034	46.2	99.3	2.9	69.7	1.5	6.1	10.7	82.2	99.1	96.9	11.3	22	17.1
7	Idukki	NFHS 5 Total	859	58.1	94.4	7.1	72.3	2.1	5.2	9.4	74.3	100	89.6	36.5	24.3	14.5
8	Kannur	NFHS 5 Total	880	47.9	99.1	5.4	61.9	1.3	4.3	12.7	78.3	100	88.4	38.4	19.4	14
9	Kasaragod	NFHS 5 Total	984	44	95.9	4.7	56.4	2.4	3.5	12.5	91.2	100	98	12.2	25.3	12.6
10	Kollam	NFHS 5 Total	1135	56	98.2	1.8	62.9	0.6	1.7	11.9	79.3	100	NA	17.3	15.5	21.4
11	Kottayam	NFHS 5 Total	865	53.2	99.7	1.6	44.7	1.9	3.6	16.1	55.1	98.7	NA	19	23.4	8.4
12	Kozhikode	NFHS 5 Total	1000	61.1	99.1	4.2	67.7	1.4	3.4	9.6	91.8	100	92.3	25.1	21.3	14.1
13	Malappuram	NFHS 5 Total	807	42.8	99.2	15.3	58.6	0.8	1.9	13.8	90.4	100	82.6	26.1	29.4	18.2
14	Palakkad	NFHS 5 Total	1012	53.8	94.4	14.1	58.9	1.7	1.9	10.8	68.4	100	73.2	23.7	29.7	21.7
15	Pathanamthitta	NFHS 5 Total	916	50.1	99.7	0	59.3	2.6	3.4	12.3	83.9	99.1	NA	50.1	22.7	11.4

16	Thiruvananthapuram	NFHS 5 Total	1000	48.7	98.5	6.2	41.3	1.2	3.4	19.3	55.3	99.5	NA	32.3	19.5	17.4
17	Thrissur	NFHS 5 Total	763	48.7	99.4	1	69.7	2.9	4.6	10.9	82.4	100	NA	14.3	22	9.6
18	Wayanad	NFHS 5 Total	1003	64.8	93.7	8.4	78.9	2.7	1.1	5.6	94.2	100	88.4	14.1	31.3	16.1

* NFHS5 replaced 'immunized' (word) from NFHS4 to 'Vaccinated'; Out of two indicators with 'either vaccination card or mother's recall' & 'vaccination card only' - 'vaccination card only' indicator was used to reduce the recall bias, among children whose vaccination card was shown to the interviewer, percentage vaccinated with BCG, measles-containing vaccine (MCV)/MM/MN/Measles, and 3 doses each of polio (excluding polio vaccine given at birth) and DPT or penta vaccine

** Based on the youngest child living with the mother

Breastfed children receiving 4 or more food groups and a minimum meal frequency, non-breastfed children fed with a minimum of 3 Infant and Young Child Feeding Practices (fed with other milk or milk products at least twice a day, a minimum meal frequency that is receiving solid or semi-solid food at least twice a day for breastfed infants 6-8 months and at least three times a day for breastfed children 9-23 months, and solid or semi-solid foods from at least four food groups not including the milk or milk products food group)

^ Below -2 standard deviations, based on the WHO standard. 13 Below -3 standard deviations, based on the WHO standard

A. **Green Color** – Best five performing districts within the districts for a particular indicator

B. **Red** – Worst five performing districts within the districts for a particular indicator

C. * Full antenatal care is at least four antenatal visits, at least one tetanus toxoid (TT) injection and iron folic acid tablets or syrup taken for 100 or more days

D. ** Based on the youngest child living with the mother

E. # Breastfed children receiving 4 or more food groups and a minimum meal frequency, non-breastfed children fed with a minimum of 3 Infant and Young Child Feeding Practices (fed with other milk or milk products at least twice a day, a minimum meal frequency that is receiving solid or semi-solid food at least twice a day for breastfed infants 6-8 months and at least three times a day for breastfed children 9-23 months, and solid or semi-solid foods from at least four food groups not including the milk or milk products food group)

F. ^ Below -2 standard deviations, based on the WHO standard. 13 Below -3 standard deviations, based on the WHO standard

NOTES

[illegible]

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