



CHILD HEALTH

DEPARTMENT OF HEALTH & FAMILY WELFARE
GOVERNMENT OF KERALA

KERALA.HEALTH

Kerala Health after achieving the single digit infant mortality rate

Posing the question to themselves WHAT NEXT?

And answer is to strive to ensure ZERO PREVENTABLE INFANT DEATHS

This book gives information of the committed work of all the State level officers of Family Welfare division, RCH officers and field functionaries in the partnership with the private sector striving to achieve ZERO PREVENTABLE INFANT DEATHS.

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Chapter 1: Introduction

1.1 Overview of Child Health

Kerala has consistently demonstrated exemplary performance in child health indicators and is widely recognised as a model for public health in India. The state's child health achievements are the result of sustained investments in primary healthcare, maternal and newborn services, nutrition, immunization, and social development, combined with strong community participation and decentralized governance.

Kerala currently records one of the best child survival indicators in the country, with an Infant Mortality Rate (IMR) of about 5 per 1,000 live births, which is comparable to developed countries and significantly lower than the national average of around 25. The Neonatal Mortality Rate is below 4, and the Under-Five Mortality Rate is around 8, well below the Sustainable Development Goal target of 25.

These achievements have been supported by a strong continuum of care approach, integrating reproductive, maternal, newborn, child and adolescent health services through programs under the National Health Mission and state initiatives.

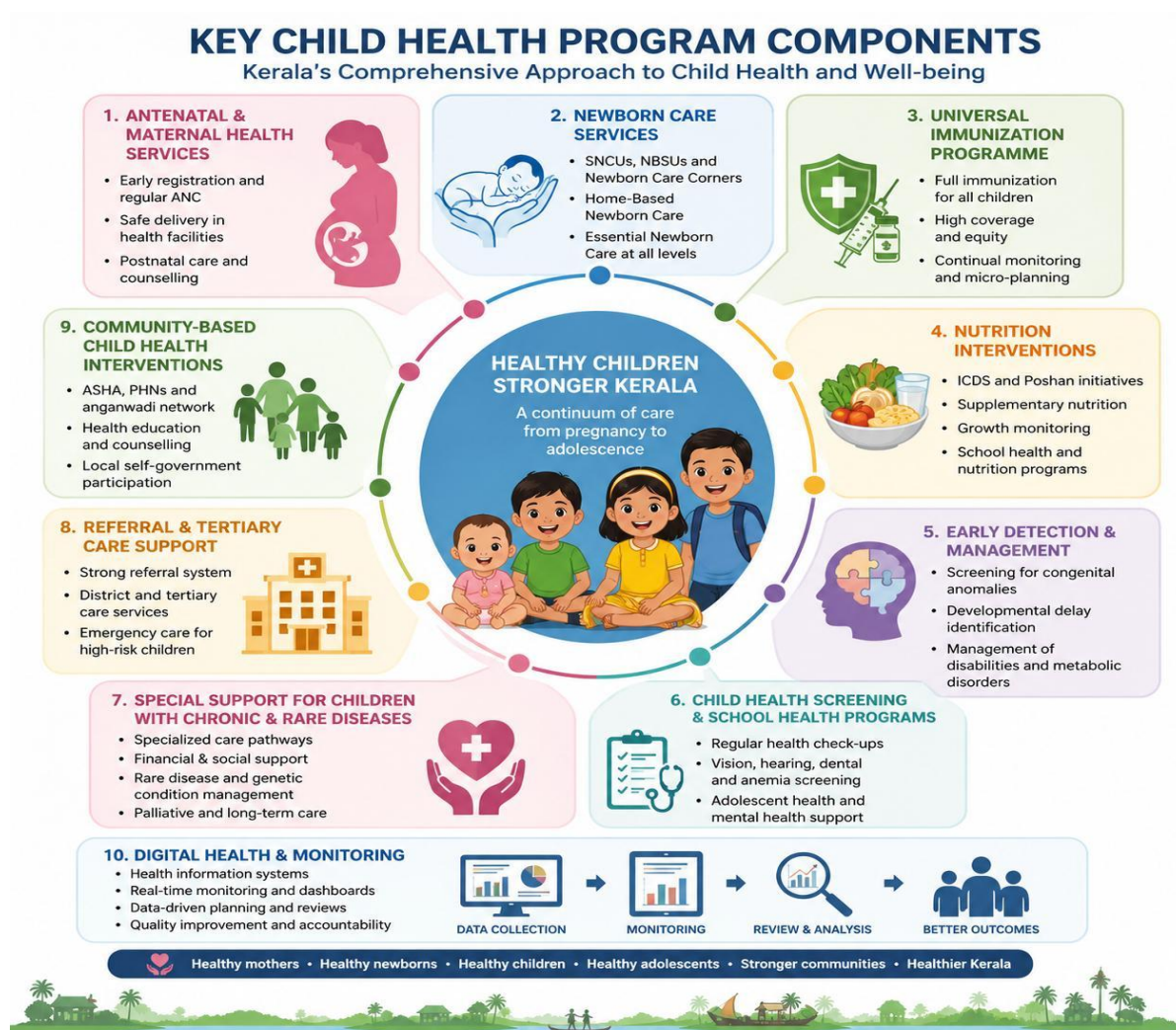
Key Achievements

- Kerala has achieved single-digit infant mortality, among the lowest in India and comparable to developed nations.
- The state has very low neonatal and under-five mortality rates, demonstrating strong early-life care systems.
- High levels of institutional deliveries, skilled birth attendance, and neonatal care services across public facilities.
- High immunization coverage, with routine immunization coverage exceeding 85% in many surveys and districts.
- Expansion of quality-certified maternal and child health facilities, including hospitals with national quality accreditation.

- Implementation of innovative programs such as comprehensive newborn screening, congenital anomaly management programs, rare disease management program and specialized neonatal intensive care units.

Key Child Health Program Components

Kerala's child health outcomes are supported through a comprehensive set of interventions including:



- Antenatal and maternal health services ensuring safe pregnancy and delivery
- Newborn care services, including SNCUs, NBSUs, and home-based newborn care
- Universal Immunization Programme with high coverage

- Nutrition interventions through ICDS, school health and nutrition initiatives
- Early detection and management of congenital and developmental disorders
- Child health screening and school health programs
- Special support for children with chronic diseases and rare diseases

Public Health Principles Underpinning Success

Kerala's progress in child health reflects several fundamental public health principles:



1. Primary Health Care Approach

A strong network of primary health centres, family health centres and community health workers ensures early access to care.

2. Equity and Universal Access

Health services are widely accessible regardless of socioeconomic status, including outreach in tribal and remote areas.

3. Continuum of Care

Integrated services covering the entire life cycle from pregnancy to adolescence improve child survival and development.

4. Preventive and Promotive Health

Emphasis on immunization, nutrition, breastfeeding promotion, and early screening reduces preventable morbidity and mortality

5. Community Participation and Decentralized Governance

Local self-governments and community health workers play a critical role in service delivery and monitoring.

6. Intersectoral Convergence

Education, sanitation, nutrition, women's empowerment and social welfare policies contribute significantly to child health outcomes.

7. Evidence-Based Policy and Surveillance

Kerala relies on strong health information systems, routine monitoring and public health research to guide policy decisions.

Kerala's child health achievements illustrate how strong public health systems, social development, and equitable healthcare policies can significantly improve child survival and well-being. The state's experience demonstrates that sustained investments in primary healthcare, maternal and newborn services, and preventive interventions are critical for achieving national and global child health targets.

1.2 Objectives of the Report

The present report aims to provide a comprehensive overview of child health initiatives implemented in Kerala and to document the progress achieved in improving the survival, growth, and development of children in the state. It seeks to highlight the policies, programs, and service delivery mechanisms that have contributed to Kerala's strong child health outcomes.

The specific objectives of the report are:

1. To present an overview of the child health scenario in Kerala, including key indicators related to survival, nutrition, growth, and development.
2. To document the major child health programs and interventions implemented through the Department of Health and Family Welfare and allied sectors.
3. To highlight key achievements and best practices that have contributed to improvements in child health outcomes in the state.
4. To examine the public health strategies and system strengthening measures that support effective delivery of child health services across the continuum of care.
5. To identify emerging challenges and priority areas in child health that require focused policy attention and programmatic response.
6. To provide a consolidated reference for policymakers, program managers, and health professionals involved in planning, implementation, and monitoring of child health initiatives.

Through this report, the Government of Kerala aims to strengthen evidence-based planning and reinforce its commitment to ensuring equitable, accessible, and high-quality health services for every child in the state.

1.3 Factsheet of Major Child Health Indicators

Kerala's position — while the state consistently records India's lowest NMR (3.4), IMR (4.4), and U5MR (5.4), the pace of improvement has slowed considerably between NFHS-4 and NFHS-5, a pattern also noted in Tamil Nadu and Maharashtra.

Nutrition paradox in Kerala — despite excellent mortality outcomes, stunting has worsened in Kerala (a high socio-demographic index state), pointing to dietary adequacy gaps rather than healthcare access as the bottleneck. This is consistent with what the CDR analyses have surfaced: the burden is shifting from preventable infections toward prematurity, LBW, and nutritional quality.

Major child health indicators

Sources: NFHS-5 (2019–21) · SRS 2021 · UN IGME 2025 · India: national figures unless noted

MORTALITY INDICATORS

Neonatal mortality rate (NMR)
24.9
per 1,000 live births · India
▼ from 30 (NFHS-4)

Infant mortality rate (IMR)
35.2
per 1,000 live births · India
▼ from 41 (NFHS-4)

Under-5 mortality rate (U5MR)
42
per 1,000 live births · India
▼ from 50 (NFHS-4) · 27 in 2024 (IGME)

Perinatal mortality rate
32
per 1,000 pregnancies · India
▼ from 36 (NFHS-4)

NMR — Kerala (NFHS-5)
3.4
lowest in India

IMR — Kerala (NFHS-5)
4.4
lowest in India

U5MR — Kerala (NFHS-5)
5.4
lowest in India

MMR — India (SRS 2018–20)
97
per 1,00,000 live births
▼ from 130

NUTRITION INDICATORS (CHILDREN UNDER 5)

Indicator	NFHS-4	NFHS-5	Trend
Stunting (low ht-for-age)	38%	35.5%	▼ Improved
Wasting (low wt-for-ht)	21%	19.3%	▼ Improved
Severe wasting	7.5%	7.7%	▲ worsened
Underweight	36%	32.1%	▼ Improved
Low birth weight	18%	18%	— No change

Indicator	NFHS-4	NFHS-5	Trend
Full immunization (12–23 m)	62%	77%	▲ Improved
Early initiation of BF	41%	41%	— No change
Exclusive BF (< 6 months)	~55%	~64%	▲ Improved
Median BF duration (mo)	2.9	3.9	▲ Improved
Prelacteal feeding	20%	16%	▼ Improved

ANTENATAL & MATERNAL CARE

Pregnancy registration
94%
NFHS-5 (▲ from 85%)

≥4 ANC visits
59%
NFHS-5 (▲ from 51%)

1st-trimester ANC
70%
NFHS-5 (▲ from 59%)

Institutional deliveries
89%
NFHS-5 (▲ from 79%)

IFA ≥ 100 days
44%
NFHS-5 (▲ from 30%)

PNC within 2 days
61%
NFHS-5 (▼ from 65%)

STATE COMPARISON — MORTALITY (NFHS-5)

State	NMR	IMR	U5MR	Status
Kerala	3.4	4.4	5.4	Lowest in India
India (national avg)	24.9	35.2	41.9	NHM targets: NMR 16, U5MR 23 by 2025
Bihar	34	47	56	Highest in India

LEADING CAUSES OF UNDER-5 DEATHS (GLOBAL & INDIA)

Cause	Notes
Prematurity & neonatal complications	Primary driver of NMR; dominant in Kerala CDR data
Birth asphyxia / birth injury	Second major neonatal cause
Pneumonia (ARI)	13% under-5 morbidity (NFHS-5); leading post-neonatal cause
Diarrhoeal diseases	7% prevalence in under-5 (NFHS-5); 86% decline in mortality since 1980
Severe acute malnutrition (SAM)	Directly caused >100,000 deaths (1–59 m) globally in 2024 (IGME)
Malaria / sepsis / meningitis	Contribute to global burden; lower in Kerala

GLOBAL CONTEXT (UN IGME 2025)

Global under-5 deaths (2024)
4.9M
incl. 2.3M newborns

India U5MR (2024)
27
per 1,000 live births (IGME)
▼ significant long-term decline

Southern Asia share
25%
of global under-5 deaths

Pace of reduction since 2015
>60%
slower than pre-2015 rate
▲ deceleration (concern)

Stunting has worsened in 11 of 18 states including Kerala (NFHS-5). Severe wasting also increased nationally. Anemia measurement methodology changed — anemia data excluded from NFHS-6 and moved to ICMR's DABS-I survey. Kerala maintains consistently the lowest mortality rates in India across all age categories but faces emerging challenges in stunting and nutrition quality.

Executive Summary

Kerala has long been recognized as a national leader in public health, particularly in the area of maternal and child health. Sustained investments in primary healthcare, high literacy levels, strong social development, and an extensive public health infrastructure have contributed to remarkable improvements in child survival and well-being. The state's child health indicators are among the best in India and are comparable with those of several developed regions. Kerala has achieved significant progress in reducing child mortality. The Neonatal Mortality Rate is approximately 4 per 1,000 live births, the Infant Mortality Rate is around 5 per 1,000 live births, and the Under-Five Mortality Rate is estimated at around 7–8 per 1,000 live births. These figures are well below the targets set under the Sustainable Development Goals (SDGs), demonstrating the effectiveness of the state's maternal and child health programs. The strong performance in child health is supported by a well-developed healthcare delivery system that ensures access to services across all levels of care. The state has established a robust network of facilities providing maternal and newborn care, including First Referral Units, Special Newborn Care Units, Newborn Stabilization Units, and High Dependency Units. Dedicated Women and Children Hospitals and Baby-Friendly Hospitals further strengthen service delivery for mothers and children.

Kerala has also implemented comprehensive child health programs that emphasize prevention, early detection, and timely intervention. The Universal Immunization Programme continues to maintain high vaccination coverage across the state. Programs such as Rashtriya Bal Swasthya Karyakram enable early identification of birth defects, developmental delays, deficiencies, and childhood diseases, while District Early Intervention Centres provide multidisciplinary care and rehabilitation services for affected children. The state has pioneered several innovative initiatives aimed at improving child health outcomes. Programs such as newborn screening initiatives, the Hridayam programme for congenital heart disease, and the Kerala Rare Disease Programme have enabled early diagnosis and treatment for complex medical conditions affecting children. Specialized clinics and early intervention systems further support children with developmental disorders and congenital conditions.

Nutrition and early childhood development remain key priorities. Growth monitoring, supplementary nutrition through the Integrated Child Development Services, and micronutrient supplementation programs help address nutritional deficiencies and support healthy growth. At the same time, the state has begun addressing emerging concerns such as childhood obesity and lifestyle-related health risks.

Despite its strong achievements, Kerala faces several evolving challenges in child health. These include increasing recognition of developmental disorders,

rising childhood obesity, mental health concerns among children and adolescents, and the growing burden of congenital and rare diseases. Addressing these challenges requires continued strengthening of early detection systems, expansion of specialized services, and enhanced intersectoral collaboration. Moving forward, Kerala's child health strategy will focus on strengthening maternal and newborn care, expanding early childhood development programs, improving nutrition interventions, and enhancing mental health support for children and adolescents. Continued investments in health infrastructure, workforce capacity, and health information systems will be essential to sustain progress. Kerala's experience demonstrates that strong public health systems, community participation, and evidence-based policies can significantly improve child health outcomes. By building on its existing strengths and addressing emerging challenges, the state aims to ensure that every child has the opportunity to survive, grow, and thrive in a healthy and supportive environment.

Chapter 2: District Child Health Profile

Demographic Profile of Children

2.1 Child Population Trends by Age Group

Table 1 : Child Population distribution (0–1, 1–5, 5–9, 10–19 years)

Distribution of child population by Age group(0-19)															
State/Districts	0-1			0-4			5-9			10-14			15-19		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Kerala	982695	498856	483839	2453092	1247534	1205558	2555112	1303190	1251922	2822770	1438917	1383853	2610552	1328299	1282253
Kasargod	46223	23550	22673	110718	56396	54322	110107	56329	53778	121871	62341	59530	114473	57765	56708
Kannur	82786	41944	40842	196829	99755	97074	189594	96283	93311	207988	106226	101762	195500	99226	96274
Wayanad	26168	13238	12930	65082	33062	32020	69746	35656	34090	77418	39481	37937	63919	32424	31495
Kozhikode	95379	48300	47079	236427	119951	116476	247158	125979	121179	266107	136111	129996	245547	125167	120380
Malappuram	163932	83346	80586	410106	208636	201470	407354	207693	199661	424031	216411	207620	393009	198452	194557
Palakkad	85735	43383	42352	214550	108923	105627	219514	111856	107658	244128	123988	120140	228471	115748	112723
Thrissur	84690	43318	41372	213202	109165	104037	224690	115107	109583	250700	127773	122927	239833	121875	117958
Ernakulam	84332	43018	41314	214713	109407	105306	226293	115494	110799	252209	128742	123467	229573	118577	110996
Idukki	29382	14876	14506	73798	37443	36355	81682	41740	39942	91858	46763	45095	79704	40943	38761
Kottayam	47080	23950	23130	120699	61477	59222	137235	69895	67340	155915	79113	76802	138696	72099	66597
Alappuzha	53040	27099	25941	134233	68661	65572	146499	75050	71449	165547	84279	81268	147508	75552	71956
Pathanamthitta	26872	13639	13233	67294	34022	33272	76061	38863	37198	89315	45295	44020	84509	43388	41121
Kollam	70772	35511	35261	178550	90349	88201	192036	97758	94278	212437	108388	104049	194497	98395	96102
Thiruvananthapuram	86304	43684	42620	216891	110287	106604	227143	115487	111656	263246	134006	129240	255313	128688	126625

Source: Census 2011

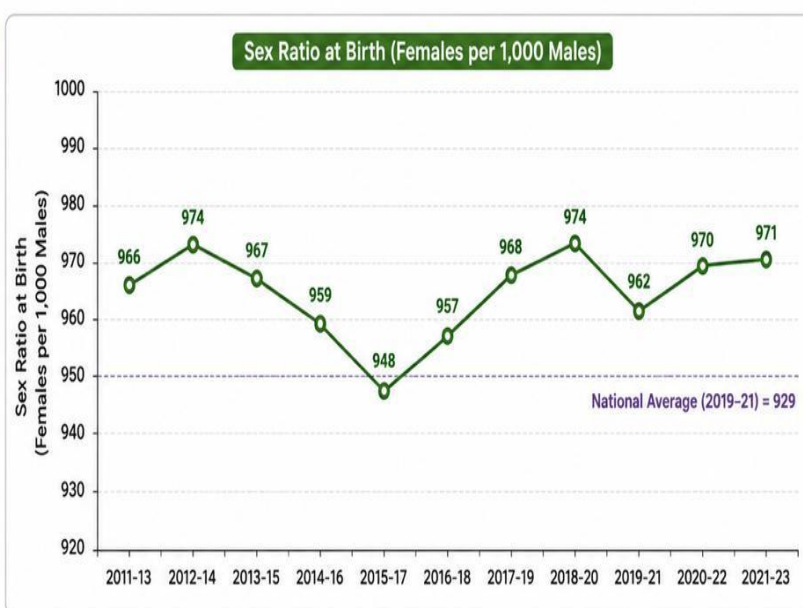
2.2 Sex Ratio at Birth

Trend in Sex Ratio at Birth – Kerala (2011-13 to 2021–23)

2.2 SEX RATIO AT BIRTH

Trend in Sex Ratio at Birth – Kerala (2011-13 to 2021-23)

Year	Kerala
2011-13	966
2012-14	974
2013-15	967
2014-16	959
2015-17	948
2016-18	957
2017-19	968
2018-20	974
2019-21	962
2020-22	970
2021-23	971



KEY OBSERVATIONS



Sex ratio at birth in Kerala has remained consistently high, well above the national average.



It declined from 966 in 2011-13 to the lowest of 948 in 2015-17.



A steady improvement was observed from 2016-18 onwards.



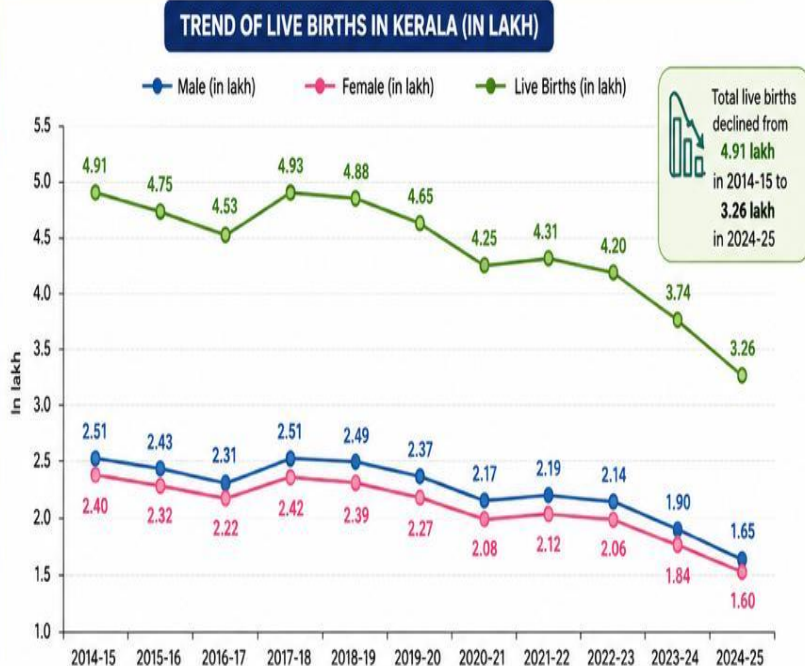
Kerala continues to maintain a favourable sex ratio at birth, reflecting gender equity and effective social development.

2.3 Birth Trends

2.3 BIRTH TRENDS IN KERALA

Kerala has witnessed a steady decline in live births over the last decade, reflecting demographic transition, improved education, better health services and changing socio-economic patterns.

TREND OF LIVE BIRTHS IN KERALA (IN LAKH)			
Period	Male (in lakh)	Female (in lakh)	Live Births (in lakh)
2014-15	2.51	2.40	4.91
2015-16	2.43	2.32	4.75
2016-17	2.31	2.22	4.53
2017-18	2.51	2.42	4.93
2018-19	2.49	2.39	4.88
2019-20	2.37	2.27	4.65
2020-21	2.17	2.08	4.25
2021-22	2.19	2.12	4.31
2022-23	2.14	2.06	4.20
2023-24	1.90	1.84	3.74
2024-25	1.65	1.60	3.26



KEY OBSERVATIONS



Total live births declined from 4.91 lakh in 2014-15 to 3.26 lakh in 2024-25.



A brief rise was observed during 2017-18 and 2018-19, after which the declining trend continued.



The decline became more pronounced after 2019-20, with a marked reduction during and after the COVID-19 period.



Male births consistently remained slightly higher with female births.



The narrowing gap between male and female births reflects relatively stable sex distribution at birth.

PUBLIC HEALTH IMPLICATIONS



Impacts future school-age population



Guides immunization planning



Influences maternal & child health service requirements



Affects workforce demographics



Highlights need for planning for an ageing population



The declining birth trend emphasizes the importance of maintaining high-quality maternal and child healthcare, while adapting policies to Kerala's evolving demographic profile.



Kerala has established a strong and decentralized health system that provides comprehensive services for maternal, newborn, and child health across all levels of care. The state's child health infrastructure ensures continuum of care from birth through childhood, supported by an extensive network of primary, secondary, and tertiary healthcare institutions.

The public health system includes district hospitals, general hospitals, taluk hospitals, community health centres, family health centres, and primary health centres, forming a three-tier service delivery structure. Kerala has thousands of public and private healthcare institutions with substantial bed capacity, ensuring wide access to health services for mothers and children.

Within this system, dedicated infrastructure has been developed for newborn care, early identification of developmental disorders, nutritional rehabilitation, and promotion of optimal infant feeding practices.

3.1 Newborn Care Infrastructure

(FRUs, SNCUs, NBSUs, HDUs)

Kerala has established a well-developed network of facility-based newborn care services across the state. These facilities operate in a tiered referral system to ensure that newborns receive appropriate care based on the severity of illness.

First Referral Units (FRUs) are designated secondary-level facilities providing comprehensive emergency obstetric and newborn care services, including caesarean sections, newborn resuscitation, and management of complications during delivery.

Special Newborn Care Units (SNCUs) provide intensive care for sick and premature newborns requiring specialized medical support. These units are equipped with advanced neonatal care equipment such as ventilators, radiant warmers, phototherapy units, and multiparameter monitoring systems. Kerala has 25 Special Newborn Care Units (SNCUs) functioning in major district and referral hospitals including medical colleges.

Newborn Stabilization Units (NBSUs) are located in sub-district and secondary care hospitals to provide immediate management and stabilization of newborns before referral to higher centres if required. Kerala currently has approximately 63 Newborn Stabilization Units (NBSUs) across subdistrict and district level hospitals.



In addition, High Dependency Units (HDUs) for paediatric care have been established in selected hospitals to manage children requiring close monitoring but not full intensive care, thereby reducing the burden on SNCUs and PICUs.

This tiered infrastructure significantly strengthens the state's ability to manage prematurity, birth asphyxia, neonatal sepsis, jaundice, and other neonatal complications, contributing to Kerala's very low neonatal mortality rate.

3.2 District Early Intervention Centres (DEIC)

District Early Intervention Centres (DEICs) are established under the Rashtriya Bal Swasthya Karyakram (RBSK) to provide services for early identification and management of developmental delays and disabilities among children. Kerala has 14 District Early Intervention Centres, one in each district, providing multidisciplinary services for children from birth to 18 years of age. With the state specific program Anuyatra, supported by the Social justice department, state has converted these centres to state of the art facilities providing novel therapies in disability management at 7 districts. State has also established 25 mobile intervention units for community level follow-up and care for children with disabilities.

The centres focus on the early detection and management of the four categories of conditions identified under RBSK:

- Birth defects
- Developmental delays including disabilities
- Deficiencies
- Childhood diseases



Each DEIC function with a multidisciplinary team including paediatricians, physiotherapists, psychologists, speech therapists, special educators and other trained professionals. These centres provide screening, diagnosis, therapy, counselling, and referral services for children identified through facility-based screening and community outreach.

3.3 Nutrition Rehabilitation Centres

Nutrition Rehabilitation Centres (NRCs) provide specialized care for children suffering from severe acute malnutrition (SAM) and other nutrition-related health problems. Although Kerala has relatively low prevalence of severe malnutrition compared with many other states, facility-based management systems have been established to ensure timely treatment when required.

NRCs provide:

- Medical management of severely malnourished children
- Therapeutic feeding and nutritional rehabilitation
- Growth monitoring and follow-up care
- Nutrition counselling for caregivers

These centres also emphasize capacity building of caregivers on infant and young child feeding practices, hygiene, and home-based nutritional care to prevent recurrence of malnutrition. Kerala has established its unique model of day-care NRC at FHC Noolpuzha which addresses the conventional challenge of non compliance hence effecting successful outcomes. With its dedicated programmes to address triple burden of malnutrition, state now targets establishment of nutrition management units at all districts.



3.4 Women and Children Hospitals

Kerala has developed dedicated Women and Children Hospitals (W&C Hospitals) in several districts to provide specialized maternal and paediatric healthcare services.

These hospitals function as major referral centres providing comprehensive services such as:

- High-risk pregnancy management
- Neonatal intensive care services
- Paediatric specialty and surgical services
- Developmental and rehabilitation services

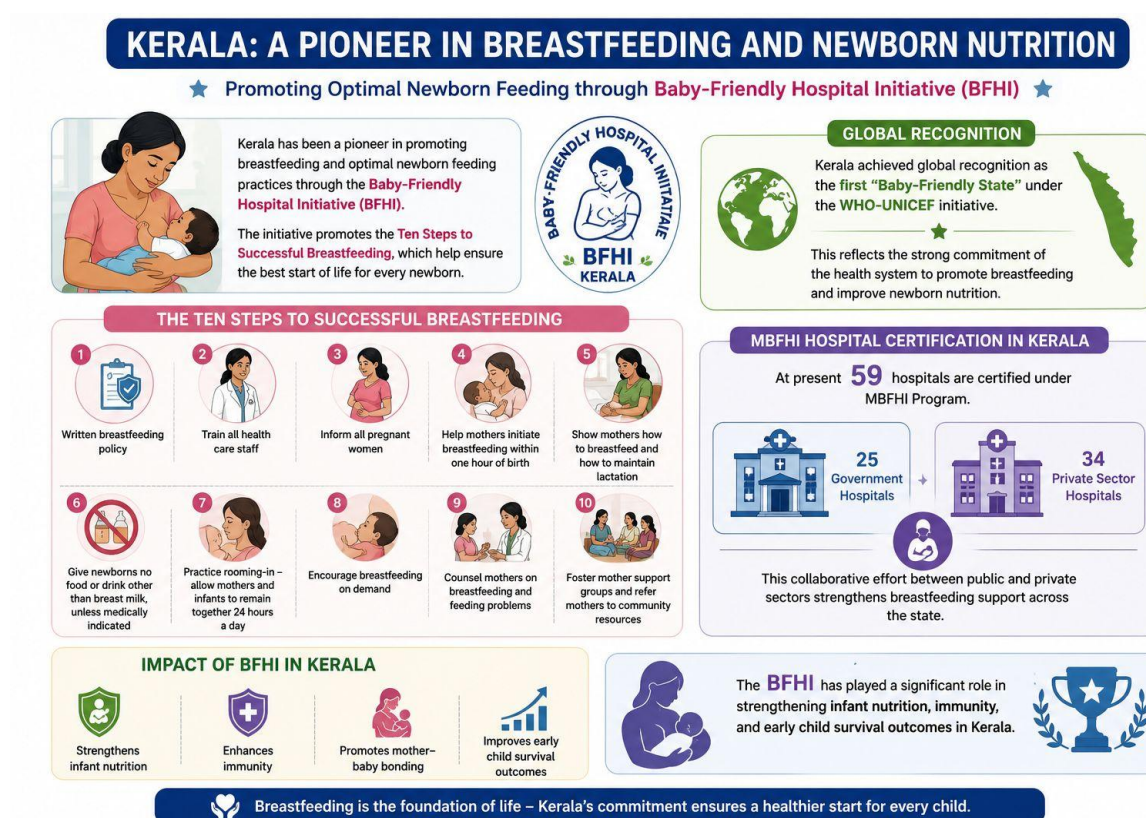
The Government of Kerala has also undertaken standardization of Women and Children Hospitals under the Aardram Mission, ensuring improved infrastructure, diagnostic services, and patient-friendly facilities. These hospitals strengthen the referral system and ensure specialized, child-friendly care environments for mothers and children.



3.5 Baby-Friendly Hospital Initiative

Kerala has been a pioneer in promoting breastfeeding and optimal newborn feeding practices through the Baby-Friendly Hospital Initiative (BFHI). The initiative promotes the Ten Steps to Successful Breastfeeding, which include:

- Early initiation of breastfeeding within one hour of birth
- Exclusive breastfeeding for the first six months
- Rooming-in and mother–baby bonding
- Counselling and support for breastfeeding mothers



Kerala achieved global recognition as the first “Baby-Friendly State” under the WHO-UNICEF initiative, reflecting the strong commitment of the health system to promote breastfeeding and improve newborn nutrition. The BFHI has played a significant role in strengthening infant nutrition, immunity, and early child survival outcomes in the state.

At present 59 hospitals are certified under MBFHI Program including 25 Government hospitals and 34 Private sector hospitals.

Chapter 4: Child Health Indicators

Child health indicators are critical measures that reflect the health status of children and the effectiveness of maternal and child health programs. These indicators provide insights into the quality of antenatal care, delivery services, newborn care, and early child nutrition practices. Monitoring these parameters helps guide evidence-based policy decisions and targeted interventions.

Kerala has consistently demonstrated superior performance in child health indicators compared to the national average. High literacy levels, strong primary healthcare infrastructure, high institutional delivery rates, and sustained public health interventions have contributed to improved outcomes for mothers and children in the state.

The following sections present key indicators related to newborn health, nutrition, and infant feeding practices.

4.1 Preterm Birth

Preterm birth refers to births occurring before 37 completed weeks of gestation. Prematurity is a major contributor to neonatal morbidity and mortality, as preterm babies are more vulnerable to respiratory distress, infections, feeding difficulties, and developmental complications.

In Kerala, the proportion of preterm births is estimated to be around 10–12% of total live births, which is broadly comparable to global trends. Early identification of high-risk pregnancies, improved antenatal monitoring, and timely referral to higher centres have helped reduce complications associated with prematurity.

The state has strengthened the management of preterm births through:

- High coverage of antenatal care services
- Screening and monitoring of high-risk pregnancies
- Availability of Special Newborn Care Units (SNCUs) and neonatal intensive care facilities
- Training in facility-based newborn care and neonatal resuscitation

These measures have significantly improved survival rates among preterm infants.

Table 4.1

Districts	All		Public		Private		% preterm NB		
	Live birth	Preterm	Livebirth	Preterm	Livebirth	Preterm	All	Public	Private
TVM	30224	4340	13846	2596	16378	1744	14	19	11
KLM	16434	823	6864	232	9570	591	5	3	6
PTA	10032	949	2158	55	7874	894	9	3	11
ALP	10502	884	4135	341	6367	543	8	8	9
KTM	15425	1621	6498	779	8927	842	11	12	9
IDK	7526	516	2513	86	5013	430	7	3	9
EKM	28024	3686	6248	479	21776	3207	13	8	15
TSR	27143	3205	7749	943	19394	2262	12	12	12
PKD	23697	1180	5586	374	18111	806	5	7	4
MLP	69449	3872	10926	126	58523	3746	6	1	6
KKD	37179	4976	11320	2160	25859	2816	13	19	11
WYD	9981	729	3413	109	6568	620	7	3	9
KNR	27015	2318	6996	500	20019	1818	9	7	9
KSD	13618	611	2872	98	10746	513	4	3	5
State	326249	29710	91124	8878	235125	20832	9	10	9

4.2 Low Birth Weight and Underweight Babies

Low Birth Weight (LBW) refers to babies born with a birth weight of less than 2.5 kilograms, irrespective of gestational age. LBW remains a key public health

indicator as it is associated with increased risk of neonatal mortality, growth retardation, and chronic diseases later in life.

In Kerala, the prevalence of low birth weight is estimated to be around 16–18% of total live births. Although this is relatively lower than many other states in India, addressing LBW remains a priority for improving neonatal outcomes.

Key strategies implemented in the state include:

- Strengthening antenatal care and maternal health services
- Nutritional supplementation for pregnant women
- Early detection and management of maternal anaemia and pregnancy complications
- Counselling on maternal nutrition and healthy pregnancy practices

The presence of well-equipped neonatal care facilities ensures timely management of low birth weight babies.

Table 4.2

Trend of Underweight Newborns(2014-15to2023-24)									
	LiveBirth			NBWeight<2.5Kg			Proportion of NBweight<2.5Kg		
Period	All	Public	Private	All	Public	Private	All	Public	Private
2014-15	490794	150775	340019	53136	21965	31171	11	15	9
2015-16	474930	142878	332052	55550	22793	32757	12	16	10
2016-17	452765	125352	327413	55648	18635	37013	12	15	11
2017-18	492964	168273	324691	54836	24193	30643	11	14	9
2018-19	487790	145586	342204	52549	21544	31005	11	15	9
2019-20	464530	147725	316805	51471	21674	29797	11	15	9
2020-21	425176	132690	292486	49454	20135	29319	12	15	10
2021-22	430670	135395	295275	52124	21228	30896	12	16	10
2022-23	419807	129446	290361	56521	21322	35199	13	16	12
2023-24	374078	110624	263454	51608	18958	32650	14	17	12
2024-25	326249	91124	235125	47326	16231	31095	15	18	13

Source:HMIS

4.3 Institutional Delivery (Public/Private) and Home Delivery

Institutional delivery is one of the most important determinants of safe childbirth and newborn survival. Deliveries conducted in health institutions ensure the presence of skilled birth attendants and access to emergency obstetric and newborn care services. Kerala has achieved near universal institutional delivery, with over 99% of births occurring in healthcare facilities.

Among institutional deliveries:

- Approximately 38–40% occur in public health facilities
- Around 60–62% occur in private hospitals

Table 4.3 Trend of Institutional deliveries in Kerala

Period	Institutional Delivery (in lakh)	Public (in lakh)	Private (in lakh)
2014-15	4.84	1.46	3.38
2015-16	4.70	1.40	3.30
2016-17	4.46	1.22	3.24
2017-18	4.52	1.39	3.14
2018-19	4.84	1.44	3.40
2019-20	4.60	1.46	3.14
2020-21	4.20	1.32	2.88
2021-22	4.26	1.34	2.92
2022-23	4.15	1.28	2.86
2023-24	3.69	1.10	2.60
2024-25	3.22	0.90	2.32

Home deliveries account for less than 1% of total births, reflecting strong health system access and community awareness regarding safe delivery practices.

The high institutional delivery rate has contributed significantly to Kerala's low neonatal and infant mortality rates.

4.4 Exclusive Breastfeeding

Exclusive breastfeeding for the first six months of life is one of the most effective interventions for improving child survival and nutrition. It protects infants from infections, supports healthy growth, and promotes cognitive development.

Kerala has implemented several initiatives to promote breastfeeding, including:

- Baby-Friendly Hospital Initiative (BFHI)
- Breastfeeding counselling by healthcare providers and ASHA workers
- Promotion of early initiation of breastfeeding within one hour of birth
- Community awareness programs on infant and young child feeding

Recent national surveys indicate that around 55–60% of infants in Kerala are exclusively breastfed for the first six months. Continued efforts are being made to strengthen counselling and community support to further improve exclusive breastfeeding practices.

Trend in Child Health Indicators in Kerala

Kerala has demonstrated sustained improvements in child health outcomes over the past several decades. Strong maternal health services, universal institutional delivery, and improved neonatal care infrastructure have contributed to declining neonatal and infant mortality rates. The state continues to focus on improving maternal nutrition, early newborn care, breastfeeding practices, and management of high-risk pregnancies, which are critical for sustaining improvements in child health indicators.

CHILD HEALTH INDICATORS IN KERALA

Child health indicators are critical measures that reflect the health status of children and the effectiveness of maternal and child health programs. Kerala has consistently demonstrated superior performance compared to the national average due to high literacy levels, strong primary healthcare infrastructure, high institutional delivery rates, and sustained public health interventions.

The following sections present key indicators related to newborn health, nutrition, and infant feeding practices.

KEY DRIVERS OF KERALA'S SUCCESS



High literacy levels



Strong primary healthcare infrastructure



High institutional delivery rates



Sustained public health interventions

4.1 PRETERM BIRTH



Preterm birth refers to births occurring before 37 completed weeks of gestation. Prematurity is a major contributor to neonatal morbidity and mortality.

In Kerala, the proportion of preterm births is estimated to be around 10–12% of total live births, comparable to global trends.

Strengthening Preterm Birth Management



High coverage of antenatal care services



Screening and monitoring of high-risk pregnancies



Availability of Special Newborn Care Units (SNCUs) and NIC facilities



Training in facility-based newborn care and neonatal resuscitation

These measures have significantly improved survival rates among preterm infants.

PRETERM BIRTHS IN KERALA BY SECTOR AND DISTRICT

Districts	All			Public			Private		
	Livebirth	Preterm	% preterm NB	Livebirth	Preterm	% preterm NB	Livebirth	Preterm	% preterm NB
TVM	30224	4340	14	13846	2596	19	16378	1744	11
KLM	16434	823	5	6864	232	3	9570	591	6
PTA	10032	949	9	2158	55	3	7874	894	11
ALP	10502	884	8	4135	341	8	6367	543	9
KTM	15425	1621	11	6498	779	12	8927	842	9
IDK	7526	516	7	2513	86	3	5013	430	9
EKM	28024	3686	13	6248	479	8	21776	3207	15
TSR	27143	3205	12	7749	943	12	19394	2262	12
PKD	23697	1180	5	5586	374	7	18111	806	4
MLP	69449	3872	6	10926	126	1	58523	3746	6
KKD	37179	4976	13	11320	2160	19	25859	2816	11
WYD	9981	729	7	3413	109	3	6568	620	9
KNR	27015	2318	9	6996	500	7	20019	1818	9
KSD	13618	611	4	2872	98	3	10746	513	5
State	326249	29710	9	91124	8878	10	235125	20832	9



Overall, about 9% of all live births are preterm in Kerala.

Preterm rate in public sector (10%) is slightly higher than in private sector (9%).

4.2 LOW BIRTH WEIGHT (LBW) AND UNDERWEIGHT BABIES



Low Birth Weight (LBW) refers to babies born with a birth weight of less than 2.5 kg, irrespective of gestational age. In Kerala, the prevalence of LBW is estimated to be around 16–18% of total live births.

KEY STRATEGIES



Strengthening antenatal care and maternal health services



Nutritional supplementation for pregnant women



Early detection and management of maternal anemia and pregnancy complications



Counselling on maternal nutrition and healthy pregnancy practices

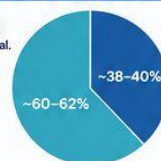
Well-equipped neonatal care facilities ensure timely management of low birth weight babies.

4.3 INSTITUTIONAL DELIVERY (PUBLIC/PRIVATE) AND HOME DELIVERY

Institutional delivery is one of the most important determinants of safe childbirth and newborn survival.



Kerala has achieved near universal institutional delivery, with over 99% of births occurring in healthcare facilities.



Home deliveries account for less than 1% of total births, reflecting strong health system access and community awareness.

TREND OF INSTITUTIONAL DELIVERIES IN KERALA

Period	Institutional Delivery (in lakh)	Public (in lakh)	Private (in lakh)
2014-15	4.84	1.46	3.38
2015-16	4.70	1.40	3.30
2016-17	4.46	1.22	3.24
2017-18	4.52	1.39	3.14
2018-19	4.84	1.44	3.40
2019-20	4.60	1.46	3.14
2020-21	4.20	1.32	2.88
2021-22	4.26	1.34	2.92
2022-23	4.15	1.28	2.86
2023-24	3.69	1.10	2.60
2024-25	3.22	0.90	2.32

TREND OF HOME DELIVERIES IN KERALA

Period	Home Delivery (numbers)
2014-15	836
2015-16	729
2016-17	597
2017-18	795
2018-19	720
2019-20	467
2020-21	576
2021-22	586
2022-23	584
2023-24	526
2024-25	428



The high institutional delivery rate has contributed significantly to Kerala's low neonatal and infant mortality rates.



4.4 EXCLUSIVE BREASTFEEDING



Exclusive breastfeeding for the first six months of life is one of the most effective interventions for improving child survival and nutrition.

INITIATIVES IN KERALA



Baby-Friendly Hospital Initiative (BFHI)



Breastfeeding counselling by healthcare providers and ASHA workers



Promotion of early initiation of breastfeeding within one hour of birth



Community awareness programs on infant and young child feeding

Recent national surveys indicate that around 55–60% of infants in Kerala are exclusively breastfed for the first six months.



TREND IN CHILD HEALTH INDICATORS IN KERALA

Kerala has demonstrated sustained improvements in child health outcomes over the past several decades. Strong maternal health services, universal institutional delivery, and improved neonatal care infrastructure have contributed to declining neonatal and infant mortality rates.



Maternal Health Services
High antenatal care coverage and skilled care



Institutional Delivery
>99% of births in healthcare facilities



Neonatal Care Infrastructure
SNCUs, NICs and trained newborn care teams



Breastfeeding Practices
55–60% exclusive breastfeeding for 6 months



Outcomes
Declining neonatal and infant mortality rates



Kerala continues to focus on improving maternal nutrition, early newborn care, breastfeeding practices, and management of high-risk pregnancies to sustain and enhance child health outcomes.

Chapter 5: Child Mortality

Child mortality indicators are among the most important measures of population health and health system performance. Neonatal mortality, infant mortality, and under-five mortality reflect the quality of maternal care, newborn care services, nutrition, immunization, and disease control programs.

Kerala has achieved remarkable progress in reducing child mortality over the past several decades. Sustained investments in maternal and child health services, universal institutional deliveries, strong primary healthcare systems, and improved female literacy and social development have contributed significantly to improved child survival.

The state now records some of the lowest child mortality indicators in India, comparable to many developed regions. Continuous monitoring and targeted interventions have further strengthened efforts to reduce preventable deaths among children.

5.1 Neonatal Mortality: Trends and Causes

Neonatal mortality refers to the death of a newborn within the first 28 days of life. It is a critical indicator of the quality of antenatal care, intrapartum care, and immediate newborn care. Kerala has achieved significant reductions in neonatal mortality over the years. The Neonatal Mortality Rate (NMR) in Kerala is currently around 4 per 1,000 live births, which is significantly lower than the national average.

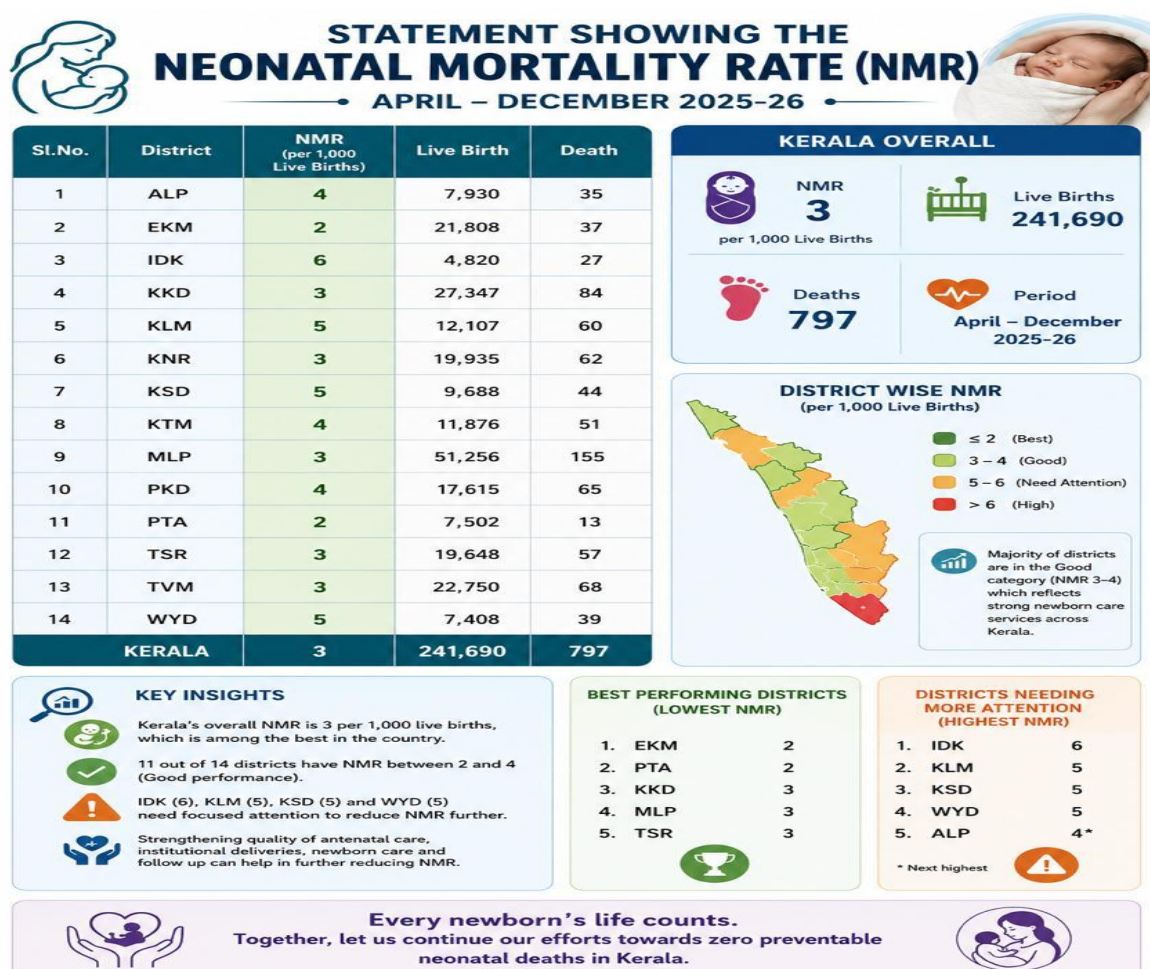
The major causes of neonatal deaths in Kerala include:

- Prematurity and complications of preterm birth
- Birth asphyxia
- Neonatal infections and sepsis
- Congenital anomalies
- Respiratory distress in newborns

The state has implemented several measures to address neonatal mortality, including:

- Strengthening facility-based newborn care services such as SNCUs and NBSUs
- Training healthcare providers in newborn resuscitation and essential newborn care
- Improving antenatal screening and management of high-risk pregnancies
- Expanding home-based newborn care through ASHA workers

These interventions have contributed significantly to improved survival among newborns.



5.2 Infant Mortality: Trends and Causes

Infant mortality refers to the death of a child before completing one year of age. It is one of the most widely used indicators for assessing the overall effectiveness of health systems. Kerala has achieved one of the lowest Infant Mortality Rates (IMR) in India. The IMR in Kerala is approximately 5 per 1,000 live births, which is far lower than the national average.

The leading causes of infant mortality in Kerala include:

- Complications of prematurity and low birth weight
- Congenital anomalies
- Birth asphyxia
- Infections such as pneumonia and sepsis
- Certain metabolic and genetic disorders

Several interventions have contributed to the reduction in infant mortality, including:

- High coverage of institutional deliveries
- Strong immunization programs
- Promotion of exclusive breastfeeding
- Improved management of neonatal illnesses
- Strengthened referral systems and specialized paediatric care

Kerala's robust public health infrastructure and community-based health services have played a crucial role in sustaining low infant mortality levels.



STATEMENT SHOWING THE INFANT MORTALITY RATE (IMR)

APRIL – DECEMBER 2025-26



Sl.No.	District	IMR (per 1,000 Live Births)	Live Birth (HMIS)	Death
1	ALP	7	7,930	52
2	EKM	3	21,808	59
3	IDK	9	4,820	44
4	KKD	5	27,347	126
5	KLM	7	12,107	89
6	KNR	4	19,935	89
7	KSD	8	9,688	77
8	KTM	5	11,876	60
9	MLP	5	51,256	272
10	PKD	6	17,615	98
11	PTA	3	7,502	20
12	TSR	4	19,648	87
13	TVM	5	22,750	104
14	WYD	8	7,408	61
KERALA		5	241,690	1,238

KERALA OVERALL

(APRIL – DECEMBER 2025-26)



IMR
5

per 1,000 Live Births



Live Births
241,690
(HMIS)



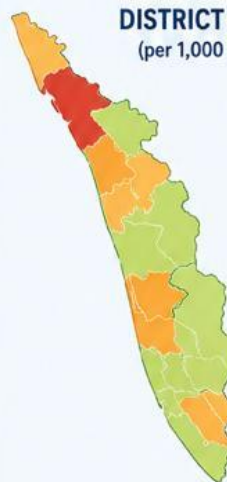
Deaths
1,238



Period
April – December
2025-26

DISTRICT WISE IMR

(per 1,000 Live Births)



- ≤ 3 (Best)
- 4 – 5 (Good)
- 6 – 7 (Moderate)
- ≥ 8 (High)



Most districts are in the Good (4–5) or Moderate (6–7) category. Focused efforts needed in high IMR districts.

KEY INSIGHTS



Kerala's overall IMR is 5 per 1,000 live births.



7 out of 14 districts have IMR between 4 and 5 (Good performance).



4 districts have IMR ≥ 8 (High) and need focused attention.



Strengthening maternal care, newborn care, immunization, nutrition and infection prevention can further reduce IMR.

BEST PERFORMING DISTRICTS (LOWEST IMR)

- 1 EKM 3
- 2 PTA 3
- 3 KNR 4
- 4 TSR 4
- 5 KKD 5



DISTRICTS NEEDING MORE ATTENTION (HIGHEST IMR)

- 1 IDK 9
- 2 KSD 8
- 3 WYD 8
- 4 ALP 7
- 5 KLM 7



Every baby's life is precious.
Together, let us continue our commitment to
reduce infant deaths and build a healthier Kerala.



5.3 Under-Five Mortality: Trends and Causes

Under-five mortality refers to the probability of a child dying before reaching five years of age, expressed per 1,000 live births. This indicator reflects the combined impact of neonatal, infant, and early childhood health interventions.

Kerala has achieved substantial progress in reducing under-five mortality. The Under-Five Mortality Rate (U5MR) in the state is estimated to be around 7–8 per 1,000 live births, which is significantly lower than the national average and well below the Sustainable Development Goal target of 25 per 1,000 live births.

The major causes of deaths among children under five include:

- Neonatal complications (prematurity, birth asphyxia)
- Congenital anomalies
- Severe infections such as pneumonia and sepsis
- Accidents and injuries
- Rare metabolic or genetic disorders

Public health interventions that have contributed to reducing under-five mortality include:

- Universal immunization coverage
- Early detection and treatment of childhood illnesses
- Strengthening paediatric care services
- Improved nutrition and breastfeeding practices
- Community-based health interventions

Sustaining these achievements requires continued focus on preventing neonatal complications and addressing emerging child health challenges.



STATEMENT SHOWING THE UNDER 5 MORTALITY RATE (CMR)

APRIL – DECEMBER 2025-26



Sl. No.	District	CMR (per 1,000 Live Births)	Live Birth	Death
1	ALP	7	7,930	58
2	EKM	3	21,808	72
3	IDK	13	4,820	62
4	KKD	5	27,347	143
5	KLM	9	12,107	107
6	KNR	6	19,935	115
7	KSD	10	9,688	93
8	KTM	6	11,876	72
9	MLP	7	51,256	341
10	PKD	7	17,615	124
11	PTA	4	7,502	27
12	TSR	5	19,648	101
13	TVM	6	22,750	127
14	WYD	9	7,408	65
KERALA		6	241,690	1,507

KERALA OVERALL

(APRIL – DECEMBER 2025-26)



CMR
6

per 1,000 Live Births



Live Births
241,690



Deaths
1,507

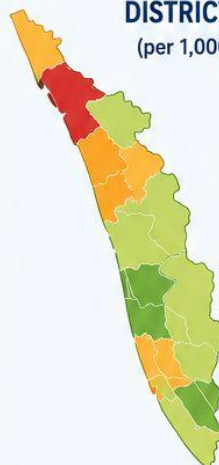


Period

April – December
2025-26

DISTRICT WISE CMR

(per 1,000 Live Births)



- ≤ 4 (Best)
- 5 – 6 (Good)
- 7 – 9 (Moderate)
- ≥ 10 (High)



Most districts are in the Good (5–6) or Moderate (7–9) category. Focused efforts needed in high CMR districts.

KEY INSIGHTS



Kerala's overall Under 5 Mortality Rate (CMR) is 6 per 1,000 live births.



8 out of 14 districts have CMR between 4 and 6 (Good performance).



3 districts have CMR ≥ 10 (High) and require focused attention.



Strengthening maternal & child health services, nutrition, immunization and infection prevention can further reduce under 5 mortality.

BEST PERFORMING DISTRICTS (LOWEST CMR)

- 1 EKM 3
- 2 PTA 4
- 3 KKD 5
- 4 TSR 5
- 5 KNR 6



DISTRICTS NEEDING MORE ATTENTION (HIGHEST CMR)

- 1 IDK 13
- 2 KSD 10
- 3 WYD 9
- 4 KLM 9
- 5 ALP 7



Healthy today, stronger tomorrow.
Let us work together to reduce under 5 deaths
and ensure a healthy start for every child in Kerala.



5.4 Child Death Review System

The Child Death Review (CDR) system is an important public health mechanism for understanding the causes and circumstances of child deaths and identifying preventable factors. Kerala has implemented structured maternal, infant, and child death review mechanisms to systematically analyse deaths and improve health system responses.

Key components of the Child Death Review system include:

- Facility-based death reviews conducted in hospitals
- Community-based verbal autopsy for deaths occurring outside health facilities
- Review of deaths at district and state levels
- Identification of avoidable factors and systemic gaps
- Development of corrective action plans

The review process helps strengthen accountability and supports evidence-based decision making to reduce preventable child deaths. Regular analysis of child mortality data also enables the health system to identify high-risk populations, geographic disparities, and emerging health threats, ensuring targeted interventions where they are most needed.

Conclusion

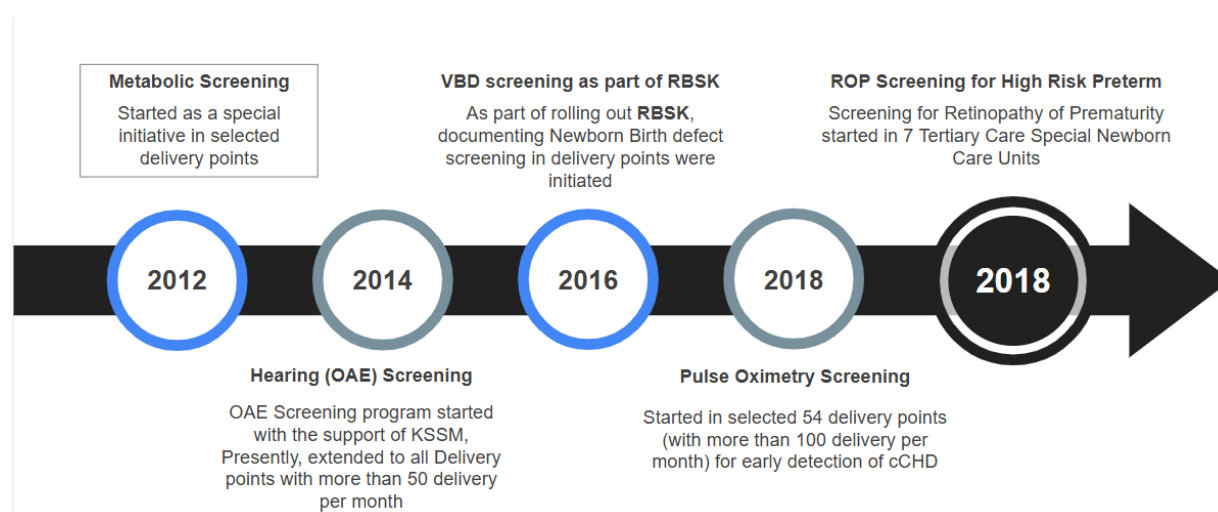
Kerala's achievements in reducing neonatal, infant, and under-five mortality reflect the strength of its public health system and sustained investments in maternal and child health programs. Continuous monitoring through systems such as the Child Death Review helps identify gaps and guide policy actions aimed at further reducing preventable child deaths. Strengthening neonatal care, addressing congenital and genetic conditions, and improving early childhood health services will remain key priorities for sustaining and advancing Kerala's progress in child survival.

Chapter 6: Newborn Screening and Early Intervention

Early identification and timely intervention for health conditions in newborns and children are critical for preventing disability and improving long-term developmental outcomes. Kerala has implemented a comprehensive system for screening, early diagnosis, and early intervention, integrating facility-based services with community-level screening programs.

These initiatives focus on detecting birth defects, developmental delays, nutritional deficiencies, and childhood diseases at the earliest possible stage and ensuring timely referral, treatment, and rehabilitation. The state has strengthened this approach through programs such as Rashtriya Bal Swasthya Karyakram (RBSK), Shalabham programme, District Early Intervention Centres (DEICs), and specialized clinics for conditions such as clubfoot.

Together, these interventions support the goal of improving child development, reducing disability, and enhancing quality of life for affected children and their families.



6.1 RBSK Screening

The Rashtriya Bal Swasthya Karyakram (RBSK) is a national initiative aimed at early identification and early intervention for children from birth to 18 years of age. The program focuses on screening children for four categories of conditions commonly referred to as the 4Ds:

- Birth defects
- Deficiencies
- Diseases
- Developmental delays including disabilities

Under RBSK, screening is conducted through multiple platforms:

- Facility-based screening of newborns at delivery points
- Community-based screening through Anganwadi centres for children under six years
- School-based screening for children aged 6–18 years

Dedicated mobile health teams, consisting of trained medical and paramedical staff, visit Anganwadi centres and schools to conduct health examinations. Children identified with health issues are referred to District Early Intervention Centres (DEICs) for further evaluation and management. Through systematic screening and referral, RBSK plays a crucial role in the early detection of congenital conditions, developmental disorders, and other health problems among children.

The screening data from Apr 25-Jan 26 is attached as annexure.

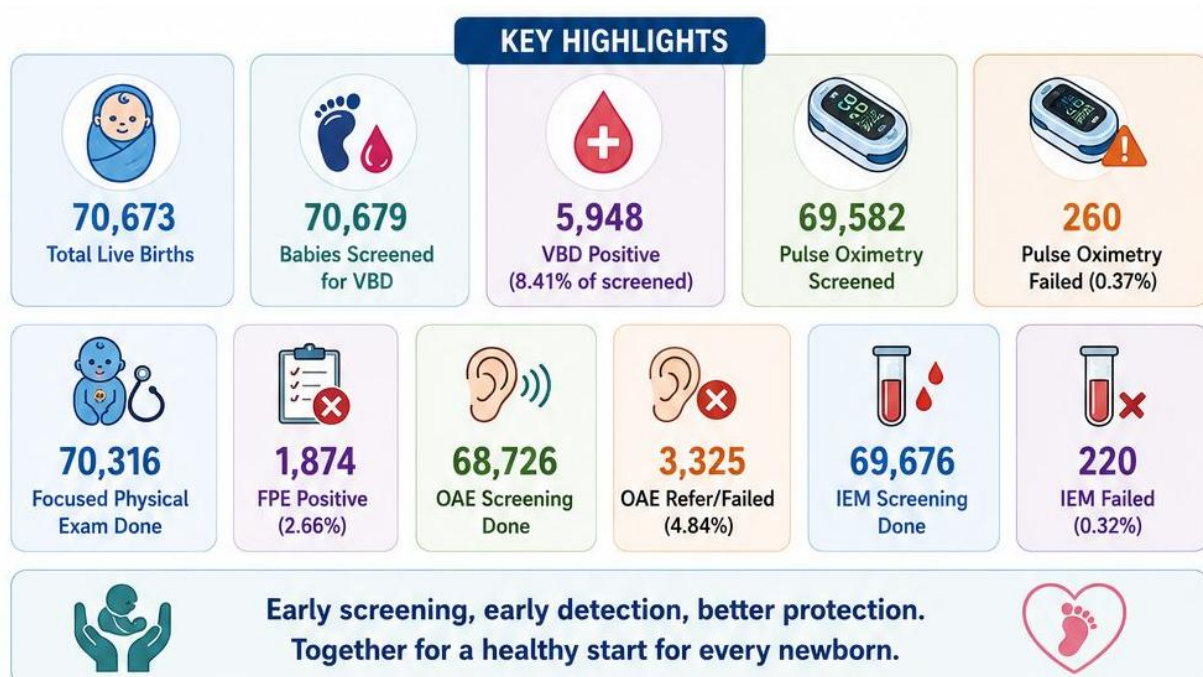
6.2 Shalabham Programme

The Shalabham programme is a specialized initiative implemented in Kerala for the early identification and intervention of developmental delays and disabilities among young children. The programme focuses particularly on early childhood developmental assessment, aiming to identify children with conditions such as:

- Developmental delays
- Autism spectrum disorders
- Learning disabilities
- Speech and language delays
- Behavioural and cognitive disorders

Through structured screening and follow-up mechanisms, children identified with developmental concerns are referred to appropriate services including therapy, counselling, and rehabilitation. The Shalabham programme emphasizes early stimulation, parental counselling, and multidisciplinary intervention, which are essential for improving developmental outcomes during the critical early years of life.

The screening data from Apr 25-Jan 26 is given below:-



6.3 DEIC Services and Follow-up

District Early Intervention Centres (DEICs) play a central role in the early intervention system for children identified through screening programs such as RBSK.

Kerala has established DEICs in all 14 districts, providing comprehensive evaluation and management services for children with developmental delays, disabilities, and other health conditions.

DEICs function with a multidisciplinary team that may include:

- Pediatricians
- Physiotherapists
- Speech therapists
- Psychologists
- Special educators
- Early intervention therapists

The services provided by DEICs include:

- Detailed diagnostic assessment
- Developmental evaluation
- Therapeutic interventions (speech therapy, physiotherapy, occupational therapy)
- Parental counselling and guidance
- Referral to specialized institutions when necessary
- Regular follow-up and monitoring of developmental progress

These centres ensure that children identified through screening programs receive timely intervention and long-term support, helping to minimize disability and improve functional outcomes.

Details of DEIC attached as annexure

6.4 Clubfoot Management Clinics

Clubfoot is a congenital condition in which a baby's foot is twisted inward and downward. If untreated, it can lead to lifelong disability and difficulty in walking. Early treatment, however, can correct the condition effectively. Kerala has established clubfoot management clinics in selected government hospitals to

provide specialized treatment for children born with this condition. Management of clubfoot in the state primarily follows the Ponseti method, which involves:

- Gentle manipulation and serial casting of the foot
- Minor corrective procedures when necessary
- Use of corrective braces to maintain foot alignment

These clinics provide early diagnosis, treatment, and follow-up services, ensuring that children with clubfoot receive appropriate care during infancy. Through systematic screening and referral mechanisms, babies diagnosed with clubfoot are promptly enrolled in treatment programs, significantly improving mobility and quality of life.

Conclusion

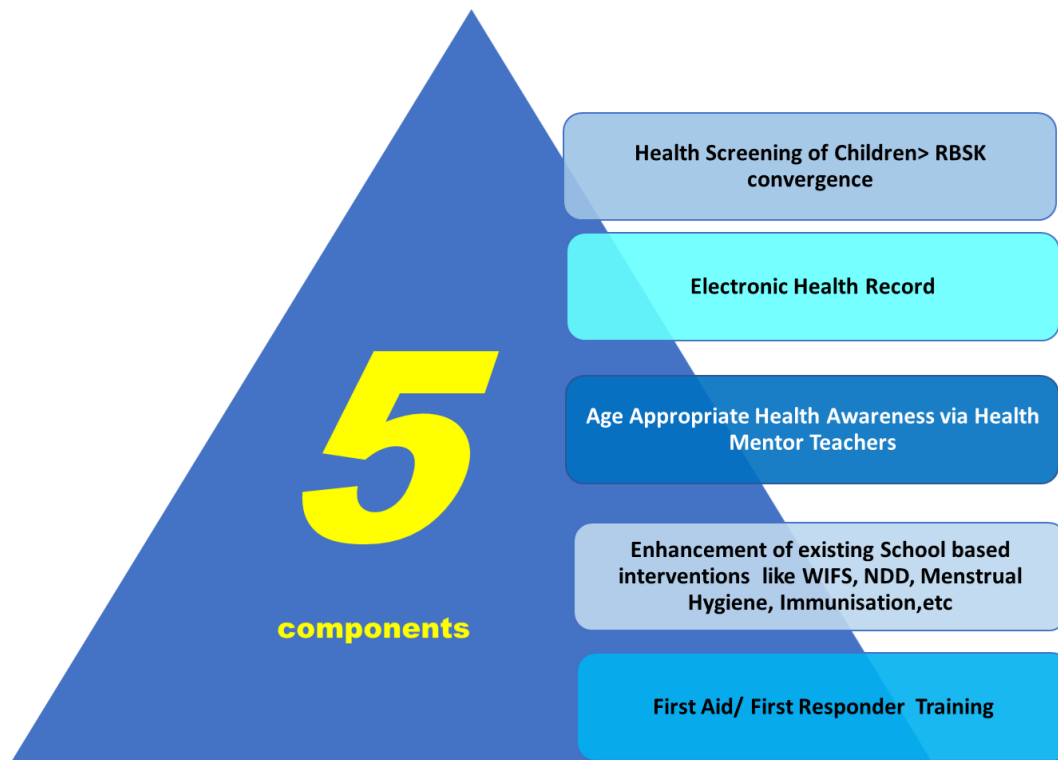
Kerala's approach to newborn screening and early intervention reflects a strong commitment to ensuring that every child has the opportunity to achieve optimal growth and development. Programs such as RBSK, Shalabham, DEIC services, and specialized clinics for congenital conditions play a critical role in detecting health problems early and providing timely treatment and rehabilitation. Strengthening these services and expanding community awareness will further enhance early detection and intervention, ultimately reducing disability and improving developmental outcomes among children in the state.

Chapter 7 – School Health and Adolescent Health

7.1. School Health Programme – AKSHARAM AROGYAM

Ayushman Bharat – School Health and Wellness Programme was mooted on the National scene from ideation onwards from 2019-20. Following the programmatic blocks during the period of covid, regulations of which lasted well up to 2023-24 period in the State, the programme was taken up for state specific modifications and re-prioritizations in the light of Kerala's much more advanced health status and differing demographics. An exhaustive guideline and programme components framework was drafted with the close and constant interaction of Education Department divisions like Directorate of General Education, SCERT Kerala and Samagra Shiksha Kerala(SSK). Working convergences with the AYUSH department, which includes its HR, activities and areas of strength, have been integrated into the programme

In Kerala, the School Health Programme, (SHP) is known as Aksharam Arogyam, the name signifying the first two letters of the alphabet that a child who is initiated into education learns. The name also spotlights the main two determinants of human development and progress, ie, Education and Health, and their inseparable symbiosis. The programme will ultimately cater to the entire school student population of the state, including private at the final stage, but starting with Govt. and aided schools. It aims to build up and empower a new generation of students with life skills, good health awareness, abreast of most up to date policies and goals of State Government like One Health, Anti-Microbial Resistance Stewardship, NO To DRUGS Campaigning, and happiness creation through physical exercise, doing good deeds, giving fellow students peer support and 'dancercise'. Optimum physical wellness in terms of ideal BMI, active life style ensuring daily quota of physical activity, resisting all kinds of substance abuse, and reducing vulnerability for Accidents and Violence are some other priorities



In alignment with the National AB-SHWP, Kerala's AksharamArogyam also has 5 main components,

1. Annual Health Screening
2. Individualised Health record for all students
3. Health Awareness
4. Enhancement of running school based Health interventions
5. Capacity building to create and enhance First Responder skills, for students teachers and school staff

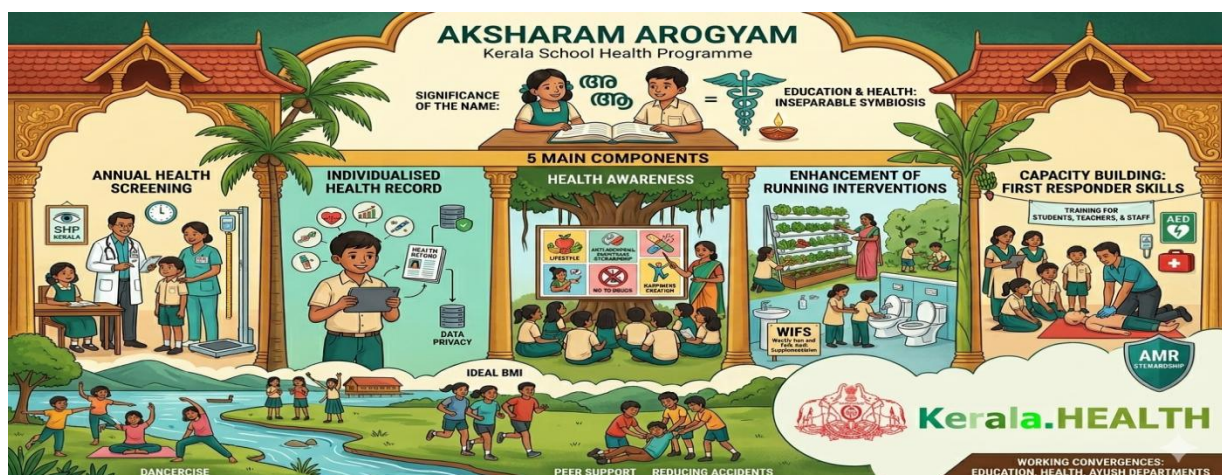


Health Screening of students under, Aksharam Arogyam programme

Health screening of all students is the major component of the Aksharam Arogyam -School Health Programme. The screening will be rolled out in phased manner in the academic year 25-26 in Govt and Aided schools, starting initially in LP section (classes 1st to 4th Std). The screening programme of an area shall be owned and directed by the area FHC.

All categories of health staff of the FHC, and its Janakeeya Arogya Kendrams (JAKs, previously known as sub centres) , have to perform the following specific roles in a smoothly coordinated manner, under the leadership and coordination by MO i/c , of the FHC –

1. Plan the screening including mapping of schools, student strength,
2. Schedule the screening and perform the screening in time bound manner
3. Fill and securely maintain the Health cards of the students screened
4. Consolidate the reports of all the schools of the area,
5. Report upwards to MO-Block CHC ,
6. Coordinate the referral mechanism with higher level health institutions (CHCs, THQs-THs, DH-GHs, and MCHs)
7. Coordinate scheduling of visit day along with the school authorities, and do essential information sharing and health actions with the school and PTA .



Health Awareness

Imparting of age appropriate health awareness to school students is a major component of the SHP Aksharam Arogyam. The National SHWP has 11 themes shortlisted for health awareness sessions as shown above. These have been condensed for transactional ease into 4 chapters in the State level Health awareness promotion training module developed jointly by experts from DHS, NHM, DME and SCERT.

The 11 Themes of Health promotion



Growing Up Healthy



Emotional Well-being and Mental Health



Inter-personal Relationship



Values and Responsible Citizenship



Gender Equality



Nutrition, Health and Sanitation



Prevention and Management of Substance Misuse



Promotion of Healthy Life Style



Reproductive Health and HIV Prevention



Safety and Security Against Violence and Injuries



Promotion of Safe Use of Internet, Gadgets and Media



Inter-Departmental Coordination

Effective adolescent health programming requires strong convergence among departments including Health including Medical Education, General Education Higher Education and Technical Education, Women and Child Development, Social Justice, Police (Traffic, Cyber and Jana Maitri personnel), and Local Self-

Statement of intent, implied consent and confidentiality.

The Departments of Education and Health jointly record data of student's health / medical information for the purposes of student welfare by screening for common health conditions, tracking their health, and provision of necessary health / medical interventions.

All students are intended to be screened as a Government Health and Welfare activity, and implied consent will be assumed for all enrolled students in school, unless specifically objected to by parent/guardian.

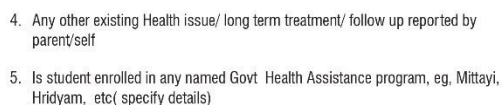
This information will be stored confidentially and used only in accordance with the provisions of the IT Act and/or any other related Government norms in force. It may only be shared with other Government agencies subject to data sharing agreements and data privacy requirements for legitimate purposes only.

Other Consent terms

- Only basic/gross health screening is intended.
- No invasive tests of any kind will be done as part of this screening.
- No treatment of any kind will be done at the screening venue. For any treatment deemed necessary by the MO, the parent will be advised to report to the FHC or other health institution of their choice.

Disclaimer :

The health status of the child as assessed during the onsite Health screening may be subject to natural changes according to time, or change due to treatment at a later time period.



Immunisation status- (Ref- Immunisation Card/MCP Card/ UWIN vaccination certificate (please tick))

1. 0-5 yrs ☐ Complete ☐ Partially immunised ☐ Unimmunised
2. 5-10 yrs ☐ Complete ☐ Partially immunised ☐ Unimmunised
3. 10-17 yrs ☐ Complete ☐ Partially immunised ☐ Unimmunised

SECTION C -- Yearly Health Examination/ Screening.

Health Record by School Health team from Dept of Health

1. Basic Health parameters
- 1.1. Height _____ cm 1.2. Weight _____ Kg
- 1.3. BMI $\frac{\text{Wt. in Kg}}{(\text{Ht in Metre})^2}$ _____ ☐ Normal ☐ Underweight ☐ Overweight
- 1.4. Symptoms/signs of anaemia [☐ tiredness ☐ pale tongue ☐ pale palms
☐ pale conjunctiva ☐ frequent evening headaches ☐ fainting attacks]
2. Eyes and Vision—
- 2.1. Acuity of vision R _____ L _____
- 2.2. Colour vision R _____ L _____
- 2.3. Any other ophthalmic condition R _____ L _____
3. Ears _____
4. Nose _____
5. Throat _____
6. Dental /Oral _____
7. Neck Goitre- ☐ YES ☐ NO



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STUDENT HEALTH RECORD
(Confidential)

SECTION A 1 School Details

1. Name of School _____
- UDISE code Kerala School Code

SECTION A 2 - Student Identification Details

- [illegible]

SECTION B - General health information [as reported by parent/ guardian]

1. Blood Group (if known) _____
2. Major drug/food allergies (if diagnosed) _____
3. Any disability/challenged status _____

8. Hearing _____
9. Speech _____
10. Skin, scalp, hair and nails _____
11. Musculo skeletal and Locomotor _____
12. Gross Systemic Examination
 - 12.1. Respiratory System: _____
 - 12.2. Cardio vascular system _____
 - 12.3. Abdomen: _____
13. Behavioural/emotional/learning Issues—(details if any as reported by Self/ Parent/Teacher)
 - 13.1. Learning difficulties / disorders / Dyslexia etc _____
 - 13.2. Psychological -Anger / Depression/Anxiety/Stress etc _____
 - 13.3. Social --Interpersonal relationships etc _____
14. Remarks/ Any additional information _____

SECTION D - Referral: ☐ YES / ☐ NO

1. Reason for referral _____
2. Referred to _____
3. Date on which treatment of referred child started _____

Recommendations—

- Any specific recommendations by consulted Medical Officer/ Specialist

Signature, Name and Designation of examining MO, with Institution date seal

Referral format



ആരോഗ്യ കുടുംബക്ഷേമ വകുപ്പ്
കേരളം സർക്കാർ

School Health Screening Programme: "Aksharam Arogyam"

Referral Form

Name of the School : _____

Date of Screening : _____ (DD/MM/YYYY)

Section 1: Student Details

- Student's Full Name: _____ Age: _____ years
- Gender: Male / Female / Other
- Class and Division _____ Roll Number: _____

Section 2: Screening Details

- Type of Screening Conducted: (Tick applicable)
- ☐ Vision ☐ Hearing ☐ Dental
- ☐ General Health (e.g., height, weight, BMI)
- ☐ Nutritional Assessment ☐ Other: _____

Section 3: Key Findings/Observations requiring referral : (Describe any abnormalities or concerns identified during the screening, e.g., 'Suspected Poor vision in left eye' 'suspected myopia' or 'Dental caries', or other appropriate noting.)

Urgency Level: (Tick one)

☐ Immediate (e.g., acute pain or injury) ☐ Urgent (within 1 week) ☐ Routine (within 1 month)

Section 4: Referral Details

- Referred To: (e.g., Nearest Government Hospital, Specialist Clinic, Ophthalmologist)

- Recommended Action for Follow-up: (e.g., "Eye examination and prescription glasses" or "Dental check-up and treatment")

Screening Medical Officer's Details:

- Name: _____ Designation: _____
- Institution: _____ Signature with Date : _____

Referral Noted by Class teacher for future follow up-

- Yes / No (please circle)
- Date: _____

7.2 : Adolescent Health Framework for Kerala and Adolescent Health Friendly Centers

Kerala's demographic and epidemiological transition places adolescents at the centre of the state's future health, social, and economic outcomes. While Kerala has achieved commendable progress in maternal and child health, the adolescent period represents a critical agenda of opportunities for development, capacity building, interventions and behaviour change. The social profile of the State's adolescents as observed by parents, the teacher community, law and enforcement personnel, counselling professionals and psychologists, student researchers, leaves much to be desired in several critical areas of health and wellness. Widely prevalent mental health issues like depression, unmanaged anger, frustration, poor self-esteem, and bad interpersonal communication skills lead to violent behaviour, suicides, and frank crime. Nutritional wellness issues are also common in this segment, often exacerbated by the demands of rapid growth, and 'trending' food habits, complicated with a sedentary indoors lifestyle lacking in physical activity/ exercise. Resultant Micronutrient and vitamin deficiencies compete for priority with mainline issues like obesity, and its future cohort of NCDs, accidents and violence prevention, and emerging non-communicable disease (NCD) vulnerabilities. RSH trends like HIV incidence in teenage appear to show slight upward shifts after a long period of sloping down. Preventive management of these issues has become such a felt need that Government has deemed it fit to mention in the opening statement of the modified /revised School Health and Wellness Programme, that behaviour modification in such critical areas is the top priority, and that it has to start early in the school years, with age appropriate increments of motivational information and communication to the State's entire school student community

Vision, Mission and Guiding Principles

The vision of the Adolescent Health Framework for Kerala is to ensure that every adolescent achieves optimal physical, mental, emotional, and social well-being, enabling a healthy, productive, and empowered transition to adulthood. Adolescence is a critical life stage marked by rapid growth, development, and

vulnerability, and investments made during these period yield long-term benefits across the life course.

The mission of the framework is to deliver comprehensive, equitable, gender-responsive, and adolescent-friendly health services through a coordinated, multi-sectorial approach involving health, education, social welfare, local self-government institutions, and community systems. The framework aims to strengthen prevention, early identification, guidance & counselling, care, and referral services tailored to adolescent needs.

The guiding principles of the framework include

- A life-course approach that recognises adolescence as a foundational stage for adult health
- Equity and inclusion with special focus on tribal belts, coastal areas, urban slums, migrant settlements, and adolescents with special needs, and socio-economic prioritizations like extreme poverty.
- Rights-based and gender-sensitive approach - ensuring confidentiality, informed choice, and dignity, particularly for girls and gender-diverse adolescents.
- Meaningful adolescent participation in planning and implementation - engaging through school health systems, peer educators, youth clubs, and digital platforms.
- Evidence-based decision-making with the use of NFHS, HMIS, school health data, mental health surveillance, and programme dashboards.
- Strong convergence and decentralisation with leading role for LSGIs, district planning, and local innovations aligned with state priorities.

These principles collectively ensure that adolescent health services are accessible, acceptable, confidential, and effective.



National Health Mission KERALA

ADOLESCENT HEALTH PROGRAMME

Healthy Adolescents... Healthy Kerala...



RKS K
ADOLESCENT HEALTH KERALA
HEALTH SERVICES DEPARTMENT

Caring Today... Empowering Tomorrow!

Adolescence is a time of growth, change and dreams. We are here to support you with the right information, services and care.

WIFS PROGRAMME

Weekly Iron and Folic Acid Supplementation

BUILDING HEALTHY BLOOD... BUILDING A STRONG FUTURE!

Iron and Folic Acid tablets once a week help prevent anaemia, improve concentration and enhance physical growth.

Ask your teacher or health worker for WIFS tablets. Take it weekly! Stay Healthy!

MENSTRUAL HYGIENE PROGRAMME

SAFE. CLEAN. CONFIDENT.

Menstruation is natural. Use safe and hygienic methods. Change napkins regularly. Stay clean, stay confident, stay unstoppable!

KNOW. PREPARE. SHINE!

COUNSELLING SERVICES

WE LISTEN... WE CARE...

Feeling stressed? Confused? Need someone to talk to? Counselling services are available for you. **Talk. Share. Feel Better.**

ADOLESCENT FRIENDLY HEALTH CENTRE (AFHC)

YOUR HEALTH. YOUR RIGHTS. YOUR SPACE.

Get confidential, friendly and quality services at Adolescent Friendly Health Centres in PHCs, CHCs and District Hospitals.

Friendly. Trusted. Youth-Friendly.

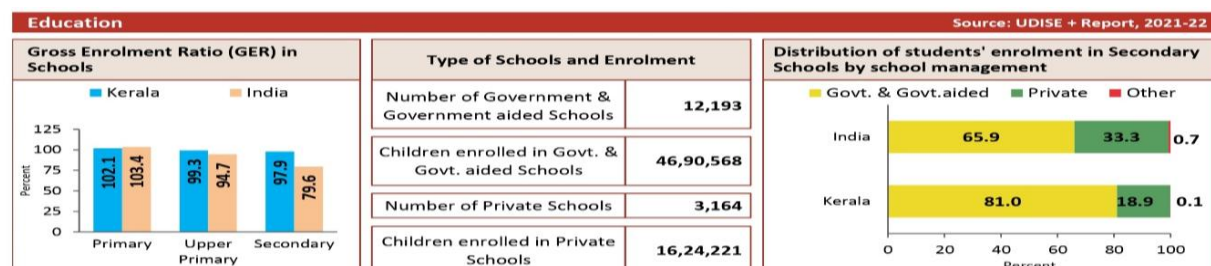
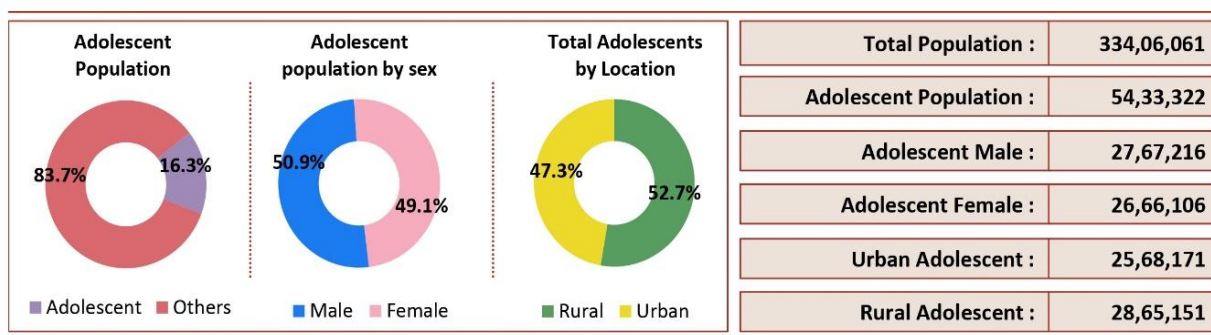
WHAT WE OFFER?

- WIFS Tablets (Iron & Folic Acid)
- Menstrual Hygiene Education & Supplies
- Counselling on Health, Emotions & Life Skills
- Information on Nutrition, Physical Activity, Substance Avoidance & more!

“Healthy Mind. Healthy Body. Bright Future!”

For more information, contact **DISHA 1056** or visit the nearest Adolescent Friendly Health Centre **NATIONAL HEALTH MISSION, KERALA**

Target Population and Vulnerable Groups



Within the adolescent population, some groups face heightened vulnerability due to social, economic, geographic, or biological factors. These include--

- Adolescent girls who are disproportionately impacted by anaemia, mental health stressors, and gender-based vulnerabilities
- Tribal adolescents facing access barriers, higher school dropouts and nutritional and addiction challenges
- Migrant adolescents with disrupted education and health access, poor service continuity and language barriers
- Adolescents with disabilities and neurodevelopmental disorders with limited access to counselling, rehabilitation, and inclusive services
- Adolescents living in urban slums and coastal regions having higher accident/injury risks, substance exposure, and mental health stressors
- Adolescents in conflict with the law
- Adolescents living with chronic health conditions such as Type 1 diabetes, HIV, epilepsy, asthma, and congenital disorders.

Addressing the specific needs of these groups is central to achieving equity in adolescent health outcomes.

Adolescent Health Indicators

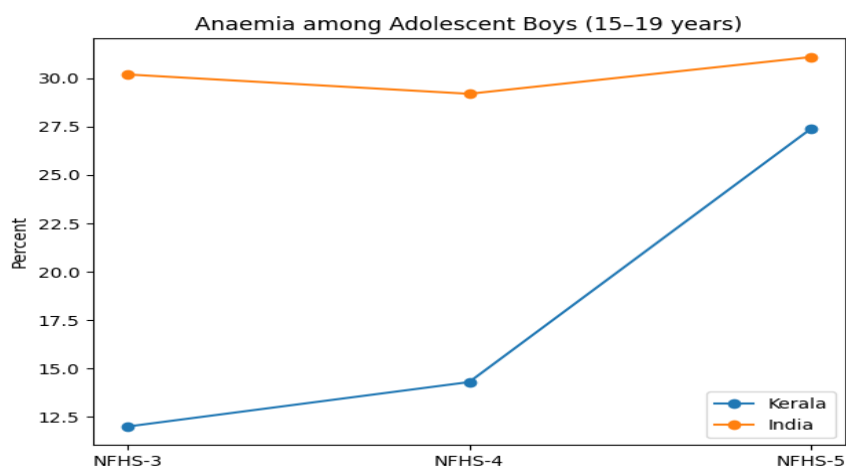
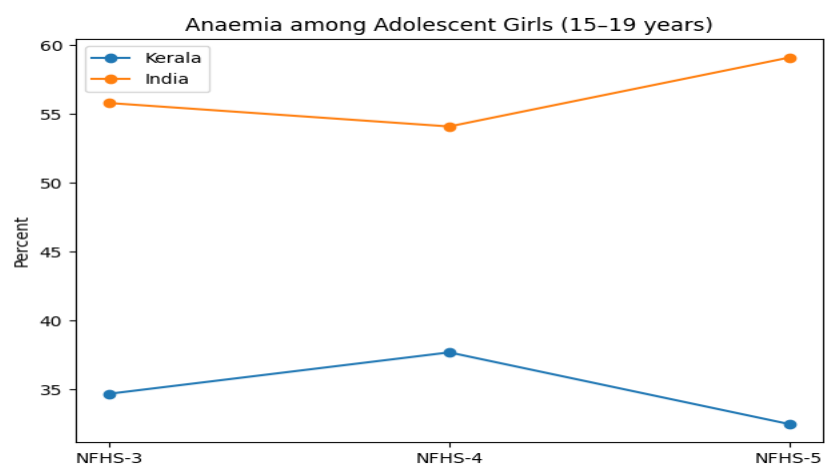
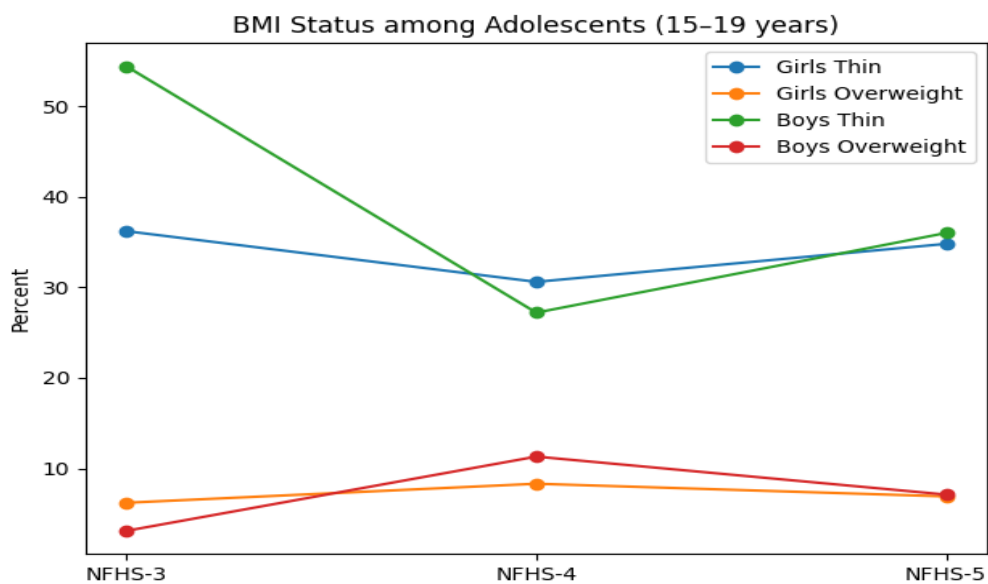
Adolescent health in Kerala reflects a mixed epidemiological profile characterised by the coexistence of traditional public health challenges and emerging lifestyle-related risks. Kerala's adolescent health profile reflects a **dual burden**—persistent nutritional deficiencies alongside rising lifestyle and mental health risks.

Key outcome indicators include

- Nutrition - BMI distribution indicates a trend of rising overweight and obesity, especially in urban adolescents linked to trending food habits coupled with lack of physical activity and exercise . Thinness among adolescents has declined but is still present in significant proportions

- Anaemia among adolescent girls remains a public health concern (NFHS-5 shows prevalence in the **30–35% range**) and indicates the need to aggressively push forward towards achieving near 100 % AMB-WIFS compliances, and also dietary awareness interventions via schools and community .
- Boys too are anemia prone in adolescence, which impacts their physical / muscle development and growth
- Immunization coverage among adolescents - Td coverage at 10 & 16 years is high but **district-level gaps** persist.
- Sexual & Reproductive Health - Low adolescent fertility rate overall, but pockets of vulnerability- eg- to HIV aquisition, remain.
- Mental health - Increasing reports of anxiety and poor self worth, unmanaged frustration and anger driven aggressiveness, depression, exam stress, self-harm, and suicide
- Substance use - Early initiation of alcohol and tobacco, particularly among boys, not only among boys, but rising among girls too. Narcotic drugs ingress into schools via seemingly innocuous pressures and distribution by peers results in increasing experimentation. The challenge the adolescents of the State, and their families face is the comparative lack of government sector de-addiction services, and facilities tuned to this age segment.
- Injuries and Violence - Road traffic injuries are a leading cause of adolescent morbidity and mortality. This too is driven by current adolescent behavioural trends like lack of concern for rules, responsibilities, inflated sense of self-righteousness, alcohol and drug driven aggression, plus reduced caution, lack of self-worth. Accidents related to water bodies like drowning are also very frequent among teenagers
- NCDs - Physical inactivity, early onset obesity, and unhealthy diets are the risk factors for non-communicable diseases.

Available data from sources such as NFHS, HMIS, School Health Programme reports, and mental health surveillance highlight persistent anaemia among adolescent girls, rising overweight and obesity in urban settings, increasing mental health concerns, and early initiation of substance use. These indicators provide a baseline for planning interventions, monitoring progress, and assessing impact at state and district levels.



Micronutrient deficiencies in Adolescents – CNNS 2016-18 & NFHS 5

Indicator 	India (National)	Kerala (State)
Anaemia (Total)	28.4%	~26% - 30%
Anaemia (Girls 15–19y)	59.1%	36.3% (Women 15-49)
Iron Deficiency	31.9%	15.7% - 21.0%*
Vitamin D Deficiency	~61%	~40% - 60%**
Zinc Deficiency	32.0%	Lower than Nat. Avg.
Vitamin B12 Deficiency	31%	~33%**

Nutritional Health

Nutritional health remains a key concern among adolescents in Kerala, despite the state's overall favourable human development indicators. Anaemia continues to affect a substantial proportion of adolescent girls, and also boys, adversely affecting physical growth, cognitive development, and future maternal health, with consequent intergenerational impact. Simultaneously, rapid urbanisation and lifestyle changes have led to increasing prevalence of overweight and obesity among adolescents, particularly in urban and peri-urban areas.

Deficiencies in micronutrients such as Vitamin A, Vitamin D, Vitamin B12, zinc are also observed among adolescents. Predominantly indoor lifestyle may be a hypothetical contributor to Vit.D insufficiency.

The strategic focus in this area includes strengthening the Weekly Iron and Folic Acid Supplementation programme under the AMB umbrella, promoting balanced diets and healthy eating behaviours, integrating nutrition counselling into adolescent-friendly health services, and encouraging regular physical activity through schools and community platforms. Monitoring indicators include coverage of iron supplementation (WIFS), haemoglobin levels, and BMI trends across districts.



Nutritional Health Campaign

Immunization

Immunization during adolescence is an essential preventive strategy to sustain immunity and protect against vaccine-preventable diseases. The framework emphasises coverage of Td vaccination at 10 and 16 years, completion of MR catch-up where applicable, and preparedness and phased rollout activities for the introduction of newer vaccines such as HPV in alignment with national and state policies.

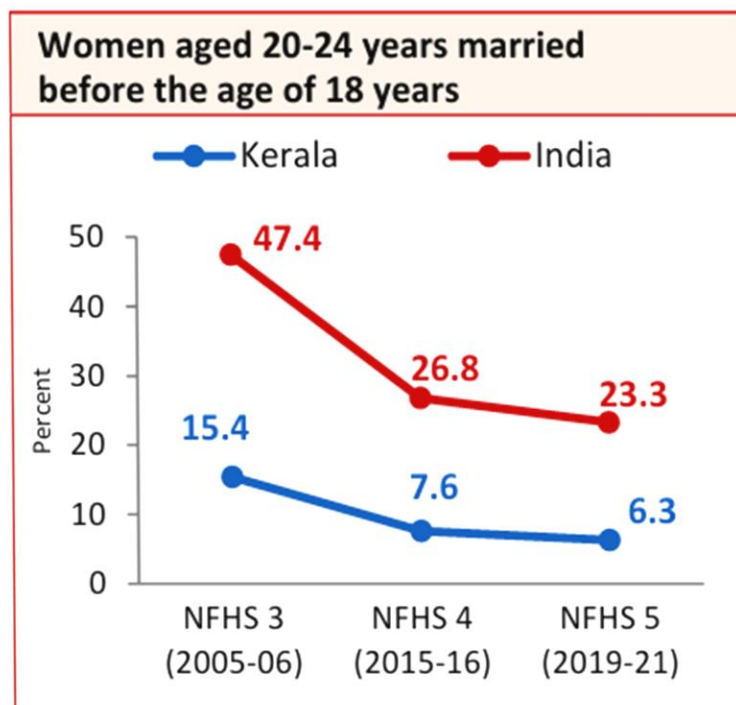
Delivery of vaccines is primarily through school-based sessions complemented by facility-based and outreach services for out-of-school adolescents. Key indicators include age-specific vaccination coverage, drop-out rates between doses, and district-wise immunization gaps, which help guide targeted corrective actions.

HPV vaccination has been launched in the State also as part of the National campaign to protect women from cervical cancer. One dose of vaccine is given to girls who are 14 years of age as a starting campaign.

Sexual and Reproductive Health

Reproductive and Sexual Health issues among adolescents remain under-addressed due to social stigma, limited awareness, and inadequate access to confidential services. Challenges include gaps in menstrual hygiene management, limited utilisation of counselling services, risk of early sexual initiation, teenage pregnancies among vulnerable groups, and exposure to sexual abuse and exploitation. Marriage before 18 is significantly lower in the State, but even this low prevalence indicates need for social addressing of the issue

The framework prioritises strengthening Adolescent Friendly Health Clinics to provide confidential counselling, education on puberty and menstruation, access to contraception information, and referral for specialised care. School-based education and community awareness programmes are integral components. Monitoring focuses on service utilisation rates, adolescent fertility indicators, and coverage of menstrual hygiene education.



Mental Health

Mental health has emerged as one of the most pressing adolescent health challenges in Kerala. Increasing academic pressure, family and social stressors, digital media and device overuse, and changing social dynamics have contributed to rising levels of anxiety, depression, and behavioural issues among adolescents. Suicide and self-harm among adolescents remain critical public health concerns. Unsuppressed and barely controlled anger leading to sudden severe violence disproportionate to triggering incidents is in the headlines on a virtually daily basis. Parenting competence is mostly unable to cope up with the challenges and pressures posed by adolescent children in the family.

Strategic interventions include school mental health promotion as a part of RKSK, early screening, peer support mechanisms, Adolescent counselling services through Adolescent Friendly Health Centres (AFHCs), and strong referral linkages with the District Mental Health Programme. Indicators include screening coverage, service utilisation, and trends in adolescent mental health outcomes.



Substance Use

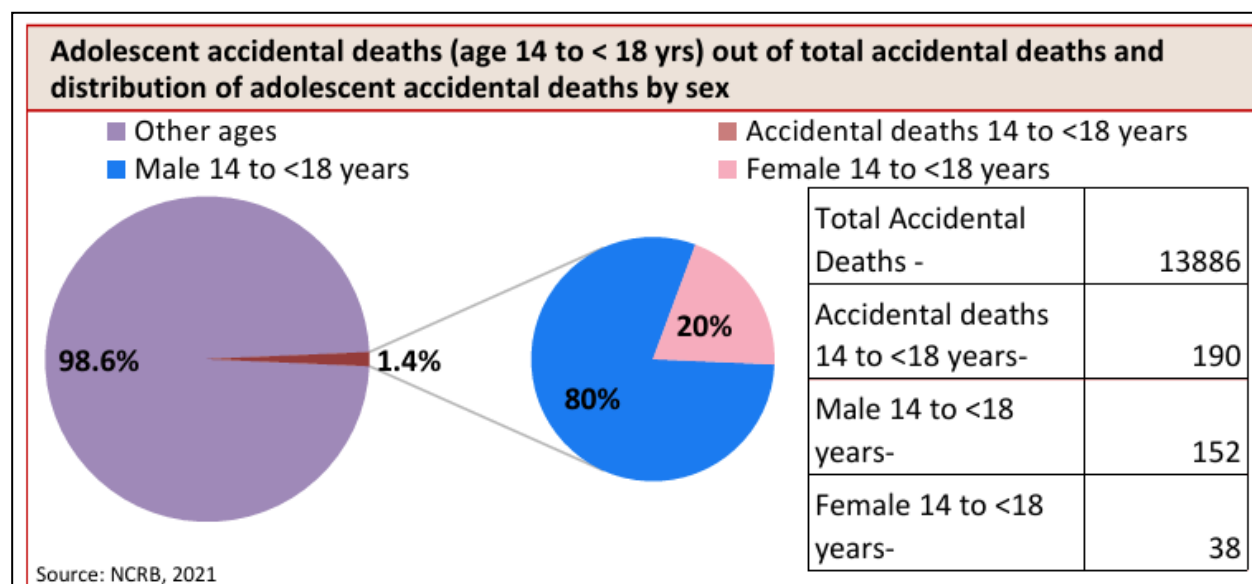
Early initiation and increasing experimentation with alcohol, tobacco, and other substances among adolescents pose serious risks to health and social well-being. Peer influence, easy availability, and exposure through media contribute to substance use behaviours.

The framework adopts a preventive and promotive approach through life-skills education, school-based awareness programmes, community campaigns, and linkage with de-addiction and counselling services. Monitoring indicators include prevalence of substance use among adolescents and coverage of prevention programmes in schools and communities.

Prevention of Accidents, Injuries and Violence

Injuries, particularly road traffic accidents, interpersonal violence, bullying, and gender-based violence, contribute significantly to adolescent morbidity and mortality. Adolescents are especially vulnerable due to risk-taking behaviour and limited awareness of safety measures.

Key strategies include road safety education, enforcement awareness, anti-bullying initiatives in schools, promotion of safe public spaces, and legal literacy on protection mechanisms. Indicators include injury-related morbidity and mortality data and coverage of safety education interventions.



Non-Communicable Diseases

Markers of Non-communicable disease risks in adolescent girls and boys (10-19 years): Heart disease, random blood glucose value and hypertension					
Condition (Unit)		Adolescent girls		Adolescent boys	
		NFHS 4	NFHS 5	NFHS 4	NFHS 5
Heart Disease (Number per 100,000 population)		219	96	690	0
Random Blood Glucose value (%)	High (141 – 160 mg/dl)	1.2	1.7	2.4	1.0
	Very high (> 160 mg/dl)	0.5	0.6	1.6	1.0
Hypertension (%)		1.2	2.2	2.0	3.3

(RKSK State factsheet, AH Divn MoHFW, GoI)

Kerala's advanced epidemiological transition has led to the early emergence of non-communicable disease risk factors during adolescence, significantly, of diabetes and hypertension. Sedentary lifestyles, unhealthy diets, and stress contribute to early onset obesity, and its wide ranging impacts .

The framework emphasises early screening for NCD risk factors, promotion of physical activity, healthy dietary practices, and integration with school and community health programmes. Monitoring focuses on screening coverage and prevalence of identified risk factors.

Adolescents and the Digital world

While society at large has shown a massive shift to adaptation to a digital lifestyle, adolescents are most vulnerable to overuse, and abuse of the electronic /social media , resulting in widespread incidents of deranged mental health, vulnerability to conflict with the law , socio economic exploitation and both homicides and suicides

7.3 Adolescent Health Delivery Platforms in Kerala

Facility-Based Services- Adolescent Friendly Health Centres



First AFHC, Trivandrum

Facility-based adolescent health services in the State are delivered through Adolescent Friendly Health Centres (AFHCs) located in CHCs, Taluk Headquarters hospitals and District hospitals . At the time of inception the centres were planned with 3 personnel- a Medical Officer, a Staff Nurse, and a dedicated Adolescent Health Counsellor – all trained /sensitised in handling Adolescent Health issues. The AH Counsellor was on NHM contract, while the other two were posted on rotation duty in the AFHC by the concerned institution. But later owing to basic duty priorities, the counsellor became the sole staff member. The counsellor is present at the AFHC on 4 designated days a week. Thus deliver centre based services on about 16 days per month.

AFHCs were originally available only in the main centre (ie, District Hospital/ General hospital of the 14 districts. The expansion of service in order to increase accessibility, by setting up AFHCs in CHC level hospitals , happened first in

Palakkad, and Wayanad districts , which were gradually saturated (ie, every CHC in the district having an AFHC) under provisions of successive PIPs and RoPs. This was followed by Malappuram and Idukki, and later in Alappuzha, Pathanamthitta and Kasargod districts. The 7 districts with wider services (Palakkad, Wayanad, Malappuram, Idukki, Kasargod, Alappuzha and Pathanamthitta were known as RSKS districts, while the other seven districts suffered from a much smaller footprint of AFH services . In further PIPs , proposals were submitted to MoHFW for basic expansion of 4 CHC based AFHCs in each of these , which was approved and in the latter part of expansion, of services Thiruvananthapuram, Kollam, Kottayam, Ernakulam, Thrissur, Kozhikkode and Kannur also were able to deliver Adolescent Health services in a wider geographical area. The AFHCs also formed the base of Peer Educator programme, by having the programme in the same blocks where the AFHC was located, thus enabling better outreach sensitisation and awareness of the services in these health blocks .



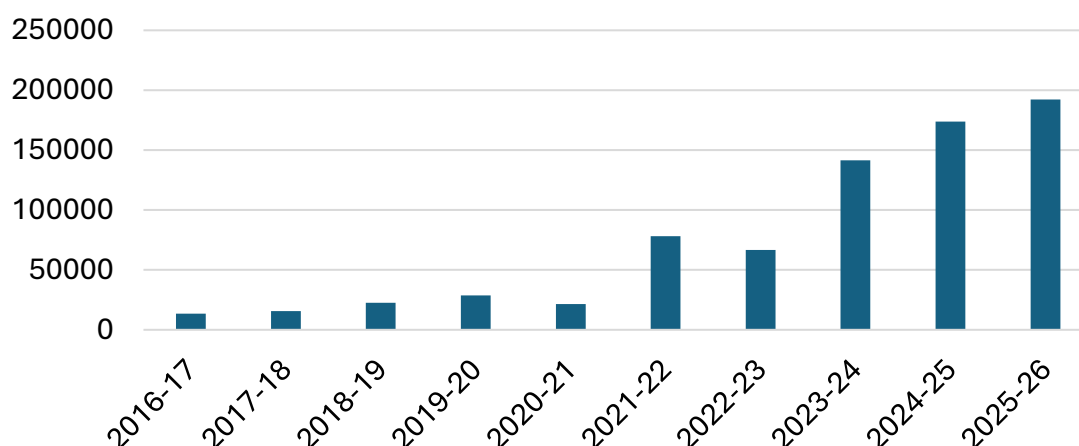
Adolescent Friendly Health Centres (AFHCs)

The USP- 'unique selling points' of the AFHC services are their special ambience of the centres, the pledge of confidentiality which is essential to establish trust and readiness to communicate between the adolescent client and the counsellor, the free nature of the service, fair time available, accessibility from most transportation hubs, the anonymity conferred by the centre being inside a hospital, and the special expertise of the counsellor . These centres provide guidance and counselling, outreach services, basic screening, and referral support. Strengthening functionality, ensuring trained personnel, and improving adolescent footfall are key priorities.

The main three constraints faced by many AFHCs are—1) the lack of space available in the existing buildings in the hospitals where they were tried to be set up as the service expanded , 2) the lack of dedicated counsellors in each AFHC, which is compounded by high attrition of trained counsellors, who left service contracts for more lucrative private sector employment in the country and abroad, and 3) the deeply entrenched stigma which is part of the states /country's culture, whereby going for counselling was associated with shame and secrecy . This has improved to some extent at present.

Key deliverable at AFHCs- currently the number of clients seen per AFHC counsellor per month is pegged at 150. The State has exceeded this (174) by a prolonged and sustained advocacy, coupled with strategic modifications in the work of the AH Counsellors . Accordingly, at present AH counsellors also document the direct basic and short counselling services they render to students approaching them, or referred to them by the teachers . These clients are entered and marked as 'OR' counselling in the service register so as to distinguish them, and they are included in the listing of clients provided counselling services under RKSK.

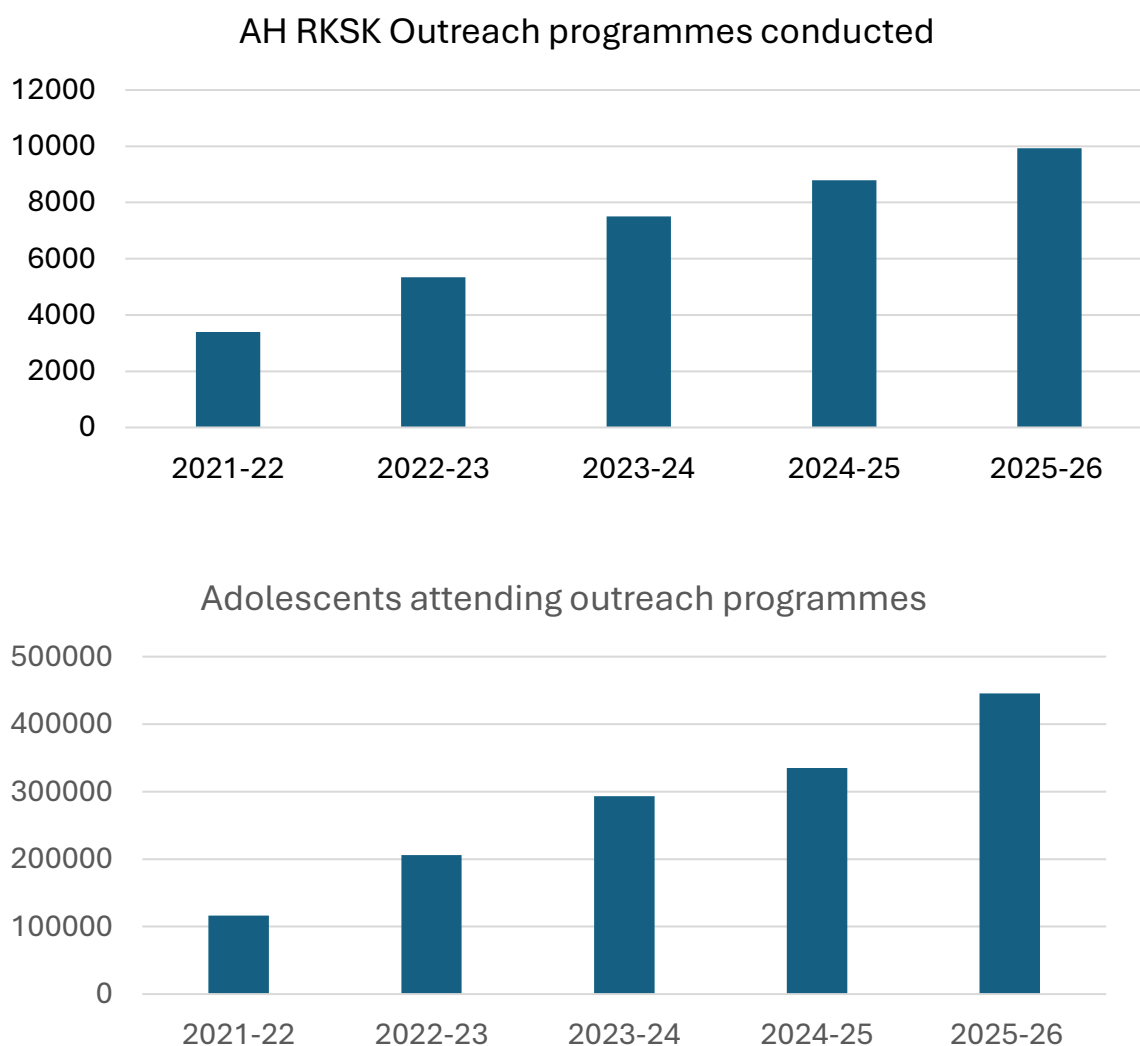
AH RKSK Counselling Services growth over 10 years



School-Based Counselling and KAP/ BCC Outreach Interventions

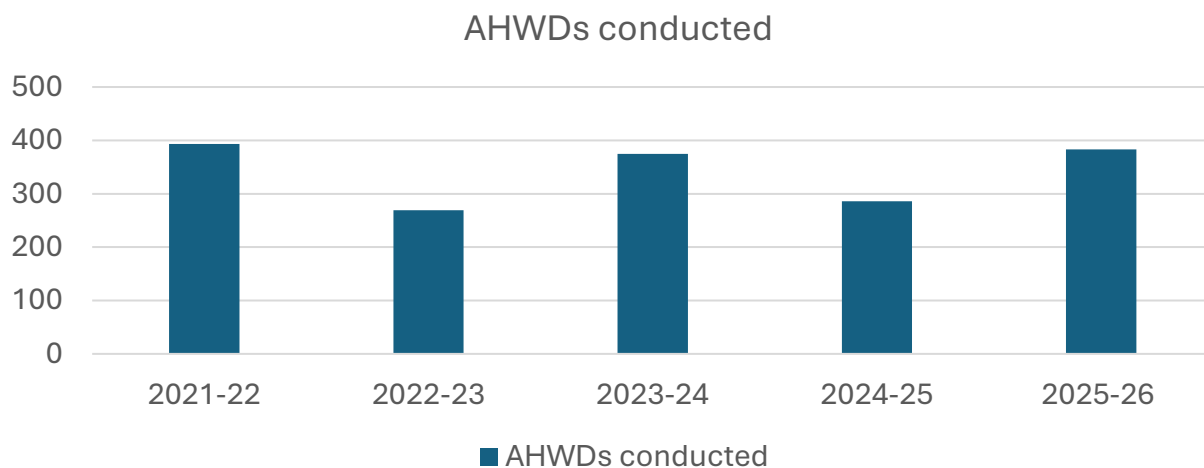
Schools serve as a critical platform for reaching the majority of adolescents. Interventions include health screening, mental health promotion, nutrition education, physical activity promotion, immunization sessions, building first responder skills, and life-skills education under the School Health and Wellness Programme. School-based delivery ensures early identification and prevention while fostering healthy behaviours.

Kerala's Adolescent Health programme framework includes 2 outreach session days every week by the AH Counsellor, at schools in the feeder areas of the States 109 Adolescent Friendly Health Centres. This provides access to a large number of adolescents, and exposure to Knowledge –Awareness-Practice building interaction with the AH counsellors, Question Box session, and effective BCC. The AH counsellor of each AFHC charts out a schedule of outreach visits based on social demand, need based prioritization, media scan for untoward events or situations in certain areas, and directives of the District Health unit via the AH coordinator.



Community-Based Interventions

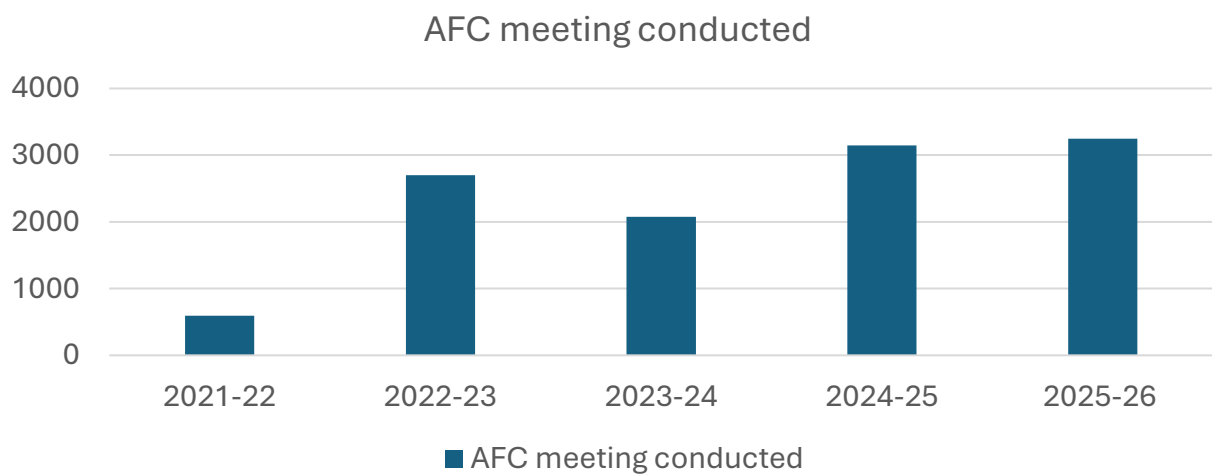
Community-based approaches focus on reaching out-of-school adolescents through ASHAs, youth clubs, peer educators, and local self-government institutions focussed from Janakeeya Arogya Kendrams(JAKs) and Family Health Centres (FHCs) . Adolescent Health and wellness day (AHWDs) event share intended to foster parental and teacher engagement and community ownership so as to create supportive environments for adolescent health.



Adolescent Friendly Club (AFC) meetings

Adolescent Friendly Club (AFC) meetings are smaller events which are organised at venues associated with JanakeeyaArogyaKendrams(JAKs) where smaller no of adolescents are gathered, more often girls groups, etc . They are engaged in a more interactive FGD, BCC exercise, roleplay, skits etc wherein

health knowledge is passed down from the facilitator who would be a Health Care worker, mostly field staff members with food communicating rapport



Both the above modalities suffered severe setbacks during the Covid era, but made good recovery later . Yet, during the covid era, many innovative methods were utilised to keep the adolescents in link, like online versions and adaptations of the above gatherings and events .

7.4 Peer Educator Programme

Adolescent Peer Education is a process whereby well trained and motivated adolescents carry out informal interactions with their peers (those similar to themselves in age, background or interest)., using their own observation and communication skills, and the situations and issues they observe. This is carried out over a period of time through either small group interactions or through one-to-one interaction or when someone seeks help to resolve an issue. It helps in developing health knowledge, attitudes, beliefs and skills among peers on a range of issues relevant to them and enables them to own up responsibility for their own health and protect their own health. This can take place in a variety of settings like schools, play times, a friend's house, a tea stall and/or any place where adolescents gather for recreation/leisure. An adolescent health PE has the potential to become a good friend to his/her peers.

The trained PE acts as a 'trusted friend' who helps other adolescents learn about issues pertaining to their health, which they otherwise may not be comfortable discussing with adults or service providers. They are sensitised to never breach trust, maintain confidentiality and not have a judgmental attitude. They also would support or protect those who are being targeted/ bullied as common in school environments.

Some of the other qualities which are enhanced in a PE during their the training programme are-

- Ability to keep abreast of new information and knowledge
- Ability to listen and communicate effectively
- Ability to build trust and comfort with peers
- Ability to deal with emotions and difficult situations
- Ability to express emotions
- Adaptive and flexible nature
- Ability to encourage and provide support
- Ability to lead by example
- Ability to look at things from various perspectives
- Sensitivity to gender issues

In Kerala, the PE programme structure is different from most other states, especially in the north, where PEs are selected from the community by ASHA workers, and after training mostly do assisted AH classes for their peers in the presence of the ASHA concerned. Here, the programme is exclusively school based. As part of convergence between the departments of Health and Education, willing and ideal candidates are nominated from schools, by the teachers, in discussion with the AH Counsellor, AH Coordinator and other officials. The new selection classes targeted are Class 8, 9 and 11, and a total strength of 200 PEs in a health Block is maintained, over the 5 classes 8,9,10,11, and 12. At end of 12th Std academic year, average of 40-55 of the trained PEs thus pass out and leave the system in each block, enriched by their training and utilised experience. Thus each year's new selection also is approximately 40-55 students. In the whole state, approximately 5800 new PEs are selected as above, and there is a dynamic number of 19500-21500 PEs in the schools.

Training of PEs is conducted by a team of Trainers composed of a lead AH trained MO, and a group of officials with good training and motivational skills. This trainers team includes the District Coordinator of AH, His, JHIs, JPHNs and PHNs, and extra departmental RPs from Cyber/Janamaitri Police, WCD, Legal officers, and other subject specific AH trained MOs. The training is a mix of entertainment, participatory activities, and information, and lasts a total of maximum 6 days in spells of 2 days each.

The trained PEs are sensitised to do 1. Buddy spotting (observing their peers and detecting any general deviations from any dimension of health, falling within the 7 themes of Adolescent Health), 2. Buddy help (in which they offer ideas, discuss the solutions and do general sensitisation and knowledge enhancement in person to person mode), and 3. Buddy referral, (where they share any helpful linkages as per need, based on their own acquired knowledge)

The health activism thus fostered through the Peer Educator Programme of Adolescent Health/ RKSK among the citizens of tomorrow is expected to be a life cycle asset, and contribute to better health through generations, in society and at the home front also



കുട്ടിപ്പോലീസിനൊപ്പം വിദ്യാലയങ്ങളിൽ ഇനി കുട്ടിഡോക്ടർമാരും



❖ ചെറുവത്തൂരിലെ നിലേശ്വരം കുടുംബശ്രീകേന്ദ്രത്തിൽ കുട്ടിഡോക്ടർമാർക്കുള്ള ആദ്യദിന പരിശീലനത്തിൽ പങ്കെടുത്ത വിദ്യാർത്ഥികൾ ഉദ്ഘാടക ഡിസ്കസ് ത്രോ താരം സോനാ മോഹനനെപ്പോ

ചെറുവത്തൂർ • കുട്ടിപ്പോലീസ്കാർക്കൊപ്പം വിദ്യാലയങ്ങളിൽ ഇനി വെളുത്ത കോട്ടണിഞ്ഞ കുട്ടിഡോക്ടർമാരുമുണ്ടാകും. ഇതിനായി വിദ്യാർത്ഥികൾക്ക് മൂന്ന് ദിവസത്തെ പരിശീലനം തുടങ്ങി. എട്ടാംതരത്തിലെ തിരഞ്ഞെടുക്കപ്പെട്ട വിദ്യാർത്ഥികൾക്കാണ് ആരോഗ്യകേരളം കൗമാര ആരോഗ്യ പദ്ധതിയിലൂടെ പരിശീലനം നൽകുന്നത്. രാഷ്ട്രീയകിഷോർ സ്വാസ്ഥ്യകാര്യക്രമം പീർ എഡ്യൂക്കേറ്റേഴ്സ് ബ്ലോക്ക്തല പരിശീലന പരിപാടി ചെറുവത്തൂർ കുടുംബശ്രീകേന്ദ്രം കോൺഫറൻസ് ഹാളിലാണ് നടക്കുന്നത്.

ഞാനും എന്റെ കുട്ടികാര്യം എന്ന പേരിട്ട പരിശീലനത്തിൽ വളർച്ച, ആരോഗ്യവും ആനന്ദവും, ആരോഗ്യകരമായ ശീലങ്ങൾക്ക് ആരോഗ്യമുള്ള മനസ്സ്, പ്രജനന ലൈംഗിക ആരോഗ്യം കൗമാരത്തിൽ, അതിക്രമങ്ങളോടുള്ള പ്രതിരോധം, എന്റെ

അവകാശങ്ങളും അർഹതകളും ആരോഗ്യവും പരിസരവും തുടങ്ങി എട്ട് വിഭാഗങ്ങളിൽ മൂന്ന് ദിവസങ്ങളിലായാണ് പരിശീലനം. അഭിഭാഷകർ, പോലീസ്, കില പരിശീലകർ, ആരോഗ്യരംഗത്തെ പ്രമുഖർ എന്നിവർ ക്ലാസെടുക്കും.

ആറ് പഞ്ചായത്തുകളിലെ വിവിധ വിദ്യാലയങ്ങളിലായി 30,000 വിദ്യാർത്ഥികൾ ആരോഗ്യ ബ്ലോക്കിന് കീഴിലുണ്ട്. അവരുടെ പൂർണ്ണതോതിലുള്ള ആരോഗ്യ പരിരക്ഷ ലക്ഷ്യമിട്ടാണ് കൗമാര ആരോഗ്യപദ്ധതി നടപ്പാക്കുന്നത്. വിവിധ സ്കൂളുകളിലായി 12 നോഡൽ അധ്യാപകർ ഇതിനകം പരിശീലനം പൂർത്തിയാക്കി. 12 വിദ്യാലയങ്ങളിലെ എട്ടാംതരത്തിൽ പഠിക്കുന്ന 70 വിദ്യാർത്ഥികളാണ് വെള്ളക്കോട്ട് ധരിച്ച് ഡോക്ടർമാരുടെ പരിശീലന ക്ലാസിലുള്ളത്. സംസ്ഥാന സ്കൂൾ കായികമേളയിൽ ഡിസ്കസ് ത്രോയിൽ റെക്കോഡോടെ ഒന്നാം

സ്ഥാനം നേടിയ കായികതാരം ടി. സോനാ മോഹൻ ഉദ്ഘാടനം ചെയ്തു. ബ്ലോക്ക് കുടുംബശ്രീകേന്ദ്രം മെഡിക്കൽ ഓഫീസർ ഡോ. ടി.എ. രാജ്മോഹൻ അധ്യക്ഷനായി. ഹെൽത്ത് ഇൻസ്പെക്ടർമാരായ പി.കെ. മധു, പി.വി. മഹേഷ് കുമാർ, ജൂനിയർ ഹെൽത്ത് ഇൻസ്പെക്ടർ പി.എം. തോമസ്, ഹെൽത്ത് നഴ്സ് പി. സുമ, പ്രോഗ്രാം കോഡിനേറ്റർ വി.വി. പ്രീത എന്നിവർ സംസാരിച്ചു.

നിലേശ്വരം ബ്ലോക്ക് പഞ്ചായത്ത് കൗമാര ആരോഗ്യപദ്ധതിയായ തളിരിൽ ഉറപ്പുപെടുത്തിയാണ് പീർ എഡ്യൂക്കേറ്റേഴ്സിന് യൂണിഫോം കോട്ട് നൽകിയത്. അർകെഎസ്കെ പദ്ധതി വഴി ബാഗും റഫറൽ ബുക്കുകളും കൂട്ടികൾക്ക് വിതരണം ചെയ്തു. ഫെബ്രുവരി രണ്ടാംവാരത്തിൽ ആദ്യഘട്ടമായി ബ്ലോക്കിന് കീഴിലുള്ള 12 ഹെൽത്ത്സെന്ററുകളിൽ കുട്ടിഡോക്ടർമാർ 'പ്രാക്ടീസ്' തുടങ്ങും.

05/02/2026 KASARAGOD Pg 02

Peer Educator Training – News paper cutting





KARMA
 KNOWLEDGE AGAINST RISKY MALADAPTIVE ADDICTIONS
കുടാം കരുതാം കവചമാകാം

പിതർ എഡ്യൂക്കേറ്റർമാർ നേതൃത്വം നൽകുന്ന
 ലഹരി വിരുദ്ധ സ്കൂൾ ബോധവൽക്കരണ ക്യാമ്പയിൻ





 ജില്ലാ മെഡിക്കൽ ഓഫീസ് (ആരോഗ്യം)
 ആരോഗ്യ കേരളം, പത്തനംതിട്ട

7.5 Menstrual Hygiene Programme

The Menstrual Hygiene Programme or Scheme (MHP/MHS) is an integral part of the existing Adolescent Health (AH) RKSK Programme.. AH RKSK programme components already include a range of interventions for adolescent girls and boys who are in school and out of school. This scheme for promotion of menstrual hygiene builds on and strengthens interventions for adolescent girls by creating a forum for discussion on adolescent health related issues such as early age at marriage, nutrition, gender issues, contraceptives, self-esteem and negotiation skills, making available information and products related to improved menstrual hygiene. In India, menstruation and menstrual practices are clouded by taboos and socio-cultural restrictions for women as well as adolescent girls. Limited access to products for sanitary hygiene, and lack of safe sanitary facilities could prove to be barriers to increased mobility and the likelihood of resorting to unhygienic practices to manage menstruation. Traditionally in India, it appears that there are some strategies which need to be relooked at : eg., use of old clothes as pads by recycling them, and use of ash or straw, which offers no protection, and endangering menstrual hygiene with long term implications for reproductive health. Anecdotal evidence suggests that the lack of access to menstrual hygiene (which includes sanitary napkins, toilets in schools, availability of water, privacy and safe disposal) could constrain school attendance and possibly contribute to local infections during this period. Therefore, creating awareness and increasing access to the requisite sanitary infrastructure related to menstrual hygiene is important.

Objectives of the Programme

The programme was originally focused in rural areas with the following objectives:

- To increase awareness among adolescent girls on menstrual hygiene, build self-esteem, and empower girls for greater socialisation
- To increase access to and use of high quality sanitary napkins by adolescent girls in rural areas
- To ensure safe disposal of sanitary napkins in an environment friendly manner

Target Group

This programme was originally targeted at adolescent girls in the age group of 10-19 years, residing in rural areas, to ensure that they have adequate knowledge and information about the use of sanitary napkins, that high quality safe products are made available to them, and that environmentally safe disposal mechanisms are readily accessible. Based on data from Census 2001, there were an estimated 225 million adolescents comprising nearly one-fifth (22%) of India's total population. The projected rural population of girls (10-19 years) was 8.55 crore, of which 2.42 crore belonged to the Below Poverty Line (BPL) category and 6.13 crore to the Above Poverty Line (APL) category. In the first phase, 150 districts were to be covered, i.e 25% geographic coverage.



MENSTRUAL HYGIENE PROGRAMME (MHP)

An Integral Part of the Adolescent Health (AH) - RKSK Programme



WHY IS IT IMPORTANT?

Menstruation is a natural process, yet in India it is often surrounded by taboos and socio-cultural restrictions. Limited access to sanitary products, toilets, water, privacy and safe disposal can affect a girl's health, mobility, confidence and school attendance.

BUILDS ON AND STRENGTHENS AH RKSK INTERVENTIONS

The Menstrual Hygiene Programme creates a platform to discuss and address important adolescent health issues:

 Early Age at Marriage
  Nutrition
  Gender Issues
  Contraceptives
  Self-esteem & Negotiation Skills

It empowers adolescent girls by providing information, support and access to menstrual hygiene products.



Clean Period. Bright Future.

I am Healthy. I am Confident. I can Achieve.

TRADITIONAL PRACTICES NEED TO CHANGE

Some commonly practiced methods can harm health and should be relooked at:

 Use of old clothes as pads - can cause infections
  Use of ash or straw - offers no protection and affects hygiene
  Poor menstrual hygiene can lead to reproductive health problems



Toilets, Water, Privacy and Safe Disposal are Essential!

OBJECTIVES OF THE PROGRAMME

To:

 Increase awareness among adolescent girls on menstrual hygiene, build self-esteem and empower girls for greater socialisation
  Increase access to and use of high quality sanitary napkins by adolescent girls in rural areas
  Ensure safe disposal of sanitary napkins in an environment friendly manner

TARGET GROUP

Adolescent girls in the age group of 10 - 19 years, residing in rural areas.

- India has about 225 million adolescents, nearly 1/5 (22%) of the total population.
- Rural girls (10-19 years): 8.55 crore
 - 2.42 crore belong to Below Poverty Line (BPL)
 - 6.13 crore belong to Above Poverty Line (APL)
- In the first phase, 150 districts (25% geographic coverage) were targeted.

EXPECTED OUTCOMES

 Informed and confident girls
  Regular use of safe and high quality sanitary napkins
  Improved school attendance and reduced risk of infections
  Environmentally safe disposal practices



MENSTRUATION IS NORMAL. GOOD HYGIENE IS EVERY GIRL'S RIGHT. LET'S BREAK THE SILENCE AND BUILD A HEALTHY FUTURE!



Chapter 8: Children with Special Needs

Children with special needs include those with physical, developmental, intellectual, sensory, or behavioural disabilities that require additional health, educational, and social support. Ensuring early identification and timely intervention is essential to improve functional outcomes, promote inclusion, and enhance the quality of life for these children and their families. Kerala has adopted a comprehensive and inclusive approach to addressing the needs of children with disabilities through early screening, multidisciplinary intervention, and intersectoral collaboration. Health services, education systems, and social welfare programs work together to ensure that children with special needs receive appropriate care, rehabilitation, and educational support.

Programs such as Rashtriya Bal Swasthya Karyakram (RBSK), District Early Intervention Centres (DEICs), and specialized rehabilitation services play a critical role in identifying and supporting children with developmental challenges.

8.1 Disability Identification and Referral Pathways

Early identification of disabilities is crucial for initiating timely intervention and preventing long-term functional limitations. Kerala has established systematic screening and referral pathways for detecting developmental delays and disabilities among children.

Identification occurs through multiple mechanisms, including:

- Newborn screening and facility-based examination at birth
- Community-level screening through Anganwadi centres
- School health screening programs
- RBSK mobile health teams conducting periodic health assessments

Children identified with suspected developmental delays, birth defects, sensory impairments, or other health conditions are referred through a structured referral system to appropriate healthcare facilities.

The referral pathway typically includes:

1. Primary screening at community or school level
2. Referral to District Early Intervention Centres (DEICs) for detailed assessment

3. Specialist evaluation at secondary or tertiary healthcare institutions when required
4. Therapy, rehabilitation, and follow-up care

This structured referral mechanism ensures that children receive timely diagnosis and appropriate multidisciplinary care.

8.2 Early Intervention Services

Early intervention plays a critical role in improving developmental outcomes for children with disabilities or developmental delays. Intervening during the early years of life helps maximize a child's developmental potential and reduces the impact of disabilities. In Kerala, early intervention services are primarily provided through District Early Intervention Centres (DEICs) and specialized rehabilitation services.

These services include:

- Developmental assessment and diagnosis
- Speech and language therapy
- Physiotherapy and occupational therapy
- Behavioural and psychological support
- Special education and developmental training
- Parental counselling and guidance

Early intervention programs also emphasize family-centered care, empowering parents and caregivers to actively participate in the child's development and rehabilitation. Through structured therapy programs and regular follow-up, these services aim to support the child's physical, cognitive, emotional, and social development.

8.3 Convergence with Education and Social Welfare

Addressing the needs of children with special needs requires strong collaboration between the health, education, and social welfare sectors. Kerala has promoted intersectoral convergence to ensure comprehensive support for these children. The education sector plays a key role through initiatives that promote inclusive education, ensuring that children with disabilities can access schooling with appropriate support systems such as:

- Special educators
- Resource rooms in schools
- Individualized education plans
- Assistive learning technologies

The social welfare and social justice departments provide additional support in the form of:

- Disability certification and benefits
- Financial assistance schemes
- Assistive devices and rehabilitation support
- Community-based rehabilitation services

Coordination between these sectors ensures that children with special needs receive continuity of care across health, education, and social support systems, enabling them to participate fully in society.

Conclusion

Kerala's approach to supporting children with special needs is based on early identification, timely intervention, and coordinated multi-sectoral support. By strengthening screening systems, expanding early intervention services, and promoting inclusive education and social protection, the state aims to ensure that every child with special needs is provided with opportunities to achieve their full developmental potential. Continued strengthening of these systems and improved coordination across sectors will further enhance the support available to children with disabilities and their families.



SUPPORTING CHILDREN WITH SPECIAL NEEDS

Early Identification, Timely Intervention, Inclusive Support

KERALA'S COMPREHENSIVE & INCLUSIVE APPROACH

Children with special needs include those with physical, developmental, intellectual, sensory, or behavioural disabilities that require additional health, educational, and social support. Ensuring early identification and timely intervention is essential to improve functional outcomes, promote inclusion, and enhance the quality of life for these children and their families. Kerala adopts a comprehensive and inclusive approach through early screening, multidisciplinary intervention, and intersectoral collaboration.

Programs such as Rashtriya Bal Swasthya Karyakram (RBSK), District Early Intervention Centres (DEICs), and specialized rehabilitation services play a critical role in identifying and supporting children with developmental challenges.



8.1 DISABILITY IDENTIFICATION AND REFERRAL PATHWAYS

Early identification of disabilities is crucial for initiating timely intervention and preventing long-term functional limitations. Kerala has established systematic screening and referral pathways for detecting developmental delays and disabilities among children.

IDENTIFICATION THROUGH MULTIPLE MECHANISMS

- Newborn screening and facility-based examination at birth
- Community-level screening through Anganwadi centres
- School health screening programs
- RBSK mobile health teams conducting periodic health assessments

REFERRAL PATHWAY

- 1** Primary screening at community or school level
- 2** Referral to District Early Intervention Centres (DEICs) for detailed assessment
- 3** Specialist evaluation at secondary or tertiary healthcare institutions when required
- 4** Therapy, rehabilitation, and follow-up care



OUTCOME



A structured referral mechanism ensures timely diagnosis and appropriate multidisciplinary care for better developmental outcomes.

8.2 EARLY INTERVENTION SERVICES

Early intervention during the early years of life helps maximize a child's developmental potential and reduces the impact of disabilities. Services are primarily provided through DEICs and specialized rehabilitation services.

SERVICES INCLUDE

- Developmental assessment and diagnosis
- Speech and language therapy
- Physiotherapy and occupational therapy
- Behavioural and psychological support
- Special education and developmental training
- Parental counselling and guidance



Early intervention programs emphasize family-centered care, empowering parents and caregivers to actively participate in the child's development and rehabilitation.

Goal: Support the child's physical, cognitive, emotional and social development.

8.3 CONVERGENCE WITH EDUCATION AND SOCIAL WELFARE

Strong collaboration between health, education, and social welfare sectors ensures comprehensive support for children with special needs.

EDUCATION SECTOR INITIATIVES

- Special educators
- Resource rooms in schools
- Individualized education plans
- Assistive learning technologies



SOCIAL WELFARE & SOCIAL JUSTICE SUPPORT

- Disability certification and benefits
- Financial assistance schemes
- Assistive devices and rehabilitation support
- Community-based rehabilitation services



CONVERGENCE BENEFITS

Coordination across sectors ensures continuity of care across health, education, and social support systems, enabling children with special needs to participate fully in society.



CONCLUSION

Kerala's approach is based on early identification, timely intervention, and coordinated multi-sectoral support. By strengthening screening systems, expanding early intervention services, and promoting inclusive education and social protection, the state aims to ensure that every child with special needs is provided with opportunities to achieve their full developmental potential.

Continued strengthening of these systems and improved coordination across sectors will further enhance the support available to children with disabilities and their families.



Every Child. Every Ability. Every Opportunity.

Together, let us build an inclusive and empowering Kerala for all children.

Chapter 9: Child health and Nutrition

Optimal nutrition during early childhood is essential for healthy growth, cognitive development, and long-term health outcomes. Malnutrition in its various forms—including undernutrition, micronutrient deficiencies, and overweight or obesity—can significantly affect the physical and developmental potential of children.

Kerala has implemented a range of interventions to address child nutrition through growth monitoring, nutritional supplementation, community-based interventions, and integrated health and nutrition programs. These initiatives are implemented through the coordinated efforts of the Department of Health and Family Welfare, Women and Child Development Department, National Health Mission, and Integrated Child Development Services (ICDS).

The state's approach focuses on early detection of growth faltering, management of undernutrition, prevention of micronutrient deficiencies, and promotion of healthy dietary practices.

9.1 Growth Monitoring

Growth monitoring is an essential strategy for assessing the nutritional status of children and identifying early signs of malnutrition. Regular monitoring of weight, height/length, and developmental milestones helps detect growth faltering at an early stage.

In Kerala, growth monitoring is conducted through:

- Anganwadi centres under the ICDS programme
- Health facility visits and immunization sessions
- School health programs
- Home visits by ASHA workers and field health staff

Growth charts and standardized monitoring tools are used to track children's growth patterns. Children identified with growth faltering or nutritional risk are referred for further assessment and appropriate interventions. Growth monitoring also provides an opportunity for nutrition counselling for parents and caregivers, promoting appropriate infant and young child feeding practices.

9.2 SAM/MAM Identification and Management

Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) represent critical forms of undernutrition that require timely identification and management.

Children with SAM are identified through anthropometric measurements, including weight-for-height, mid-upper arm circumference (MUAC), and clinical signs of severe wasting or oedema.

Management strategies include:

- Facility-based care through Nutrition Rehabilitation Centres (NRCs) for children with complicated SAM
- Community-based management and nutritional counselling for uncomplicated cases
- Medical evaluation and treatment of associated infections or complications
- Close monitoring and follow-up to ensure recovery and prevent relapse

Although Kerala has relatively lower prevalence of severe malnutrition compared with many other states, systems are in place to ensure early identification and appropriate management of affected children.

9.3 Childhood Obesity

While undernutrition remains a concern in certain populations, Kerala is also experiencing a growing challenge of childhood overweight and obesity, reflecting broader epidemiological and lifestyle transitions.

Factors contributing to childhood obesity include:

- Sedentary lifestyles and reduced physical activity
- Increased consumption of calorie-dense and processed foods
- Excessive screen time
- Changes in dietary habits

Childhood obesity is associated with increased risk of non-communicable diseases such as diabetes, hypertension, and cardiovascular disease later in life. The health system has initiated awareness programs focusing on:

- Promotion of balanced and nutritious diets

- Encouragement of regular physical activity
- Reduction of screen time among children
- School-based health promotion initiatives

Addressing childhood obesity requires coordinated action involving families, schools, and community institutions.

9.4 Supplementary Nutrition (ICDS)

The Integrated Child Development Services (ICDS) programme plays a vital role in addressing child nutrition and early childhood development in Kerala.

Through a network of Anganwadi centres, ICDS provides supplementary nutrition to:

- Children below six years of age
- Pregnant and lactating mothers

The supplementary nutrition program aims to:

- Bridge the nutritional gap in young children
- Prevent undernutrition and micronutrient deficiencies
- Promote healthy growth and development

In addition to nutrition supplementation, Anganwadi centres provide services such as growth monitoring, preschool education, health education, and referral services, thereby supporting holistic child development.

9.5 Vitamin A Supplementation

Vitamin A deficiency can lead to impaired immunity, increased susceptibility to infections, and visual problems including night blindness. Kerala implements Vitamin A supplementation programmes as part of national child health initiatives to prevent deficiency among young children.

Under this program:

- Children receive periodic doses of Vitamin A starting at 9 months of age
- Supplementation is provided during immunization sessions and special health campaigns

Vitamin A supplementation helps strengthen immunity and reduces the risk of severe illness among children.

9.6 Iron and Folic Acid (IFA) Supplementation

Iron deficiency anemia is a common nutritional problem among children and can affect physical growth, cognitive development, and overall health. To address this issue, Kerala implements Iron and Folic Acid (IFA) supplementation programmes targeting children, adolescents, and pregnant women.

Key interventions include:

- IFA syrup for young children
- Weekly Iron and Folic Acid Supplementation (WIFS) for school-age children and adolescents
- Screening and treatment of anaemia during health visits

In addition to supplementation, efforts are made to promote dietary diversification and consumption of iron-rich foods through nutrition education and community awareness programs.

Conclusion

Kerala's child nutrition initiatives reflect a comprehensive approach that addresses both undernutrition and emerging nutritional challenges. Through growth monitoring, nutritional supplementation, and community-based interventions, the state aims to ensure that every child achieves optimal growth and development. Strengthening nutrition-sensitive interventions, promoting healthy lifestyles, and improving awareness among families will be essential for sustaining progress in child health and nutrition.



CHILD HEALTH AND NUTRITION

Optimal nutrition in early childhood is essential for healthy growth, cognitive development and long-term health. Kerala implements integrated programs through Health, Women & Child Development Department, National Health Mission and ICDS to ensure every child grows healthy and strong.



OUR APPROACH FOCUSES ON



Early detection
of growth faltering



Management of
undernutrition



Prevention of
micronutrient deficiencies



Promotion of healthy
dietary practices



GROWTH MONITORING

Regular monitoring helps detect malnutrition early and ensures timely intervention.

Conducted through:

- Anganwadi centres (ICDS)
- Health facility visits & immunization sessions
- School health programs
- Home visits by ASHA & field health staff



Growth charts and standardized tools track children's growth. At-risk children are referred for assessment and interventions. Parents receive counselling on healthy feeding and care practices.



SAM/MAM IDENTIFICATION AND MANAGEMENT

Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM) need timely care.

- Identification using weight-for-height, MUAC and clinical signs
- Facility-based care through Nutrition Rehabilitation Centres (NRCs) for complicated SAM
- Community-based management and counselling for uncomplicated cases
- Medical evaluation and treatment of infections or complications
- Close monitoring and follow-up to ensure recovery and prevent relapse



Early identification and appropriate management ensure better recovery and improved outcomes.



CHILDHOOD OBESITY

A growing concern due to lifestyle and dietary changes.

Contributing factors:

- Sedentary lifestyle
- Calorie-dense and processed foods
- Excessive screen time
- Unhealthy dietary habits



Let's build healthy habits:

- Eat balanced and nutritious meals
- Be physically active every day
- Reduce screen time
- Promote healthy lifestyle in schools and communities



SUPPLEMENTARY NUTRITION (ICDS)

ICDS plays a vital role in child nutrition and early development.

Provides supplementary nutrition to:

- Children below 6 years
- Pregnant and lactating mothers

Aims to:

- Bridge the nutritional gap
- Prevent undernutrition and micronutrient deficiencies
- Promote healthy growth and development



Anganwadi centres also provide growth monitoring, preschool education, health education and referral services for holistic development.



VITAMIN A SUPPLEMENTATION

Vitamin A strengthens immunity and protects against infections and night blindness.

- Children receive Vitamin A supplementation starting at 9 months of age
- Given during immunization sessions and special health campaigns
- Helps reduce severe illness and supports healthy growth



IRON & FOLIC ACID (IFA) SUPPLEMENTATION

Prevents iron deficiency anemia and supports physical and cognitive development.

Key interventions:

- IFA syrup for young children
- Weekly Iron and Folic Acid Supplementation (WIFS) for school-age children and adolescents
- Screening and treatment of anemia during health visits



Nutrition education and promotion of iron-rich foods help build a strong and healthy future for children.

CONCLUSION



Kerala's child nutrition initiatives address both undernutrition and emerging challenges like childhood obesity. Through growth monitoring, supplementation and community interventions, the state ensures every child achieves optimal growth and development. Strengthening nutrition-sensitive actions, promoting healthy lifestyles and enhancing awareness among families will sustain progress in child health and nutrition.



Good nutrition today, healthy tomorrow!
Together let us build a nourished, active and empowered generation.



Chapter 10: Childhood Immunization

10.1 Trends in Immunization Coverage

10. Childhood immunization — Kerala

RCH Portal · 2021-22 to 2024-25 · MR Elimination Campaign 2025

State full immunization (2024-25) 95% Sustained since 2021-22	Highest coverage district 99% TVM, KLM, PTA, ALP, KTM	Lowest coverage district 86% Malappuram (declining trend)	MR1 campaign coverage 35% Against target of 62,213 children
MR2 campaign coverage 25% Against target of 92,622 children	IMI 5.0 R2 children vaccinated 25,721 0-2 yrs - Sep 2023		

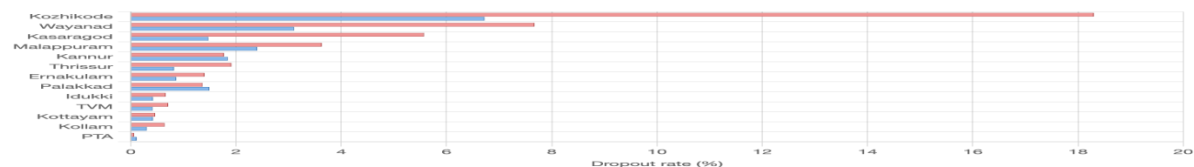
10.1 FULL IMMUNIZATION COVERAGE TREND (%) — RCH PORTAL

District	2021-22	2022-23	2023-24	2024-25	Trend
Thiruvananthapuram	99	98	99	99	Stable
Kollam	99	99	99	99	Stable
Pathanamthitta	99	99	99	99	Stable
Alappuzha	99	99	99	99	Stable
Kottayam	98	99	99	99	Stable
Idukki	99	98	99	98	Stable
Ernakulam	98	98	99	98	Stable
Thrissur	98	98	98	98	Stable
Palakkad	95	96	97	96	Watch
Malappuram	88	88	87	86	Declining
Kozhikode	96	93	94	93	Watch
Wayanad	97	97	97	96	Watch
Kannur	95	95	95	94	Watch
Kasaragod	96	96	96	96	Stable
Kerala	95	95	95	95	Plateaued

10.2 DROPOUT ANALYSIS BY ANTIGEN SERIES (2024-25)

Dropout rate = % of children who received the first dose but not the subsequent dose. Values >1% signal meaningful programme gaps. WHO threshold for concern is typically >10% for BCG-PENTA1.

District	BCG-Penta1	Penta1-Penta2	Penta1-MR1	MR1-MR2
Thiruvananthapuram	0.41	0.19	0.31	0.71
Kollam	0.30	0.18	0.31	0.64
Pathanamthitta	0.11	0.14	0.18	0.06
Alappuzha	0.33	0.21	0.35	0.33
Kottayam	0.42	0.24	0.26	0.46
Idukki	0.42	0.23	0.50	0.66
Ernakulam	0.86	0.34	0.74	1.40
Thrissur	0.82	0.56	0.97	1.91
Palakkad	1.49	1.13	1.25	1.36
Malappuram	2.40	1.80	2.37	3.63
Kozhikode	6.72	4.85	4.89	18.30
Wayanad	3.10	1.98	2.75	7.67
Kannur	1.84	0.96	1.09	1.77
Kasaragod	1.47	0.95	1.40	5.57
Kerala	2.43	1.64	1.91	5.62



10.4 MR ELIMINATION CAMPAIGN 2025 — COVERAGE SUMMARY

Campaign period: May 19 – June 4, 2025 · 9,522 of 9,543 sessions held · 893 planning units

District	MR1 target	MR1 achieved	MR1 %	MR2 target	MR2 achieved	MR2 %
Thiruvananthapuram	2,019	1,794	89	2,751	2,296	83
Kollam	181	178	98	167	158	95
Pathanamthitta	7	7	100	12	12	100
Alappuzha	84	70	83	95	80	84
Kottayam	198	70	35	254	72	28
Idukki	275	227	83	294	253	86
Ernakulam	372	115	31	456	78	17
Thrissur	1,730	659	38	2,068	803	39
Palakkad	4,948	4,887	99	6,289	4,000	64
Malappuram	36,437	8,288	23	58,363	10,091	17
Kozhikode	8,873	2,413	27	11,688	2,591	22
Wayanad	464	596	128	481	362	75
Kannur	4,507	1,268	28	6,725	1,432	21
Kasaragod	2,118	1,212	57	2,979	1,176	39
Kerala	62,213	21,784	35	92,622	23,404	25

10.4 IMI 5.0 — CHILDREN VACCINATED (ROUND II + III COMBINED)

District	R2: 0-2 yrs	R2: 2-5 yrs	R3: 0-2 yrs	R3: 2-5 yrs
Malappuram	13,182	12,729	11,759	11,425
Thiruvananthapuram	1,571	1,887	1,477	1,626
Kozhikode	1,510	1,661	1,517	1,670
Palakkad	1,519	1,610	2,187	2,326
Kannur	3,007	2,931	2,465	2,343
Kasaragod	1,204	1,109	886	852
Kerala (state total)	25,721	25,983	24,000	23,911

10.4 PULSE POLIO — ACHIEVEMENT SUMMARY

District	Target	Vaccinated	Migrants	Achievement %
Palakkad	201,604	214,305	68	106.3
Ernakulam	196,565	198,528	21	101.0
Kottayam	96,698	97,233	5	100.6
Thiruvananthapuram	204,183	204,453	23	100.1
Alappuzha	118,608	117,408	9	99.0
Malappuram	445,201	426,522	33	95.8
Idukki	69,092	66,998	2	97.0
Kerala total	2,324,949	2,300,865	514	99.0

Key concerns: Malappuram full immunization coverage has declined to 86% (2024-25) with the highest absolute dropout numbers across all antigens. Kozhikode shows an alarming MR1-MR2 dropout of 18.3%. The MR Elimination Campaign 2025 achieved only 35% (MR1) and 25% (MR2) state-wide, with Malappuram, Kozhikode, and Kannur contributing the largest unvaccinated pools. These same districts show the highest refusal/migrant-related access challenges.

10.2 Activities to Improve Immunization Coverage

Measles and Rubella remain important vaccine-preventable diseases with significant public health implications, particularly among children. In line with the Government of India's goal to eliminate Measles and Rubella, Kerala continues to strengthen its immunization programme, surveillance systems, and outbreak response mechanisms.

The state has adopted a multi-pronged strategy focusing on immunization coverage, sensitive fever–rash surveillance, and rapid outbreak investigation and response. Continuous monitoring of program indicators and targeted interventions in high-risk areas are undertaken to sustain progress towards elimination.

This MR Elimination Plan of Action outlines the current status, surveillance findings, outbreak investigations, and key strategies implemented in Kerala to support the national goal of Measles and Rubella elimination.

Immunisation:

Kerala has consistently maintained high full immunization coverage across districts, with most districts reporting coverage above 95% during the period 2021–22 to 2023–24, as per data from the RCH Portal.

Strategies to improve immunization (Jan-Mar 2026)

The following strategies are being implemented to strengthen MR immunisation coverage:

- (I) Head count Survey & Micro plan update
- (II) Mapping of High-risk areas including migrants
- (III) Focused activities in:
 - (1) Measles Rubella Positive areas

- (2) Migrant/High Risk Areas
- (3) High left out /drop out areas
- (4) Refusal/Resistant areas

(IV) Strengthened review mechanisms

Regular monitoring and review meetings are conducted at:

- (1) State
- (2) District
- (3) Block
- (4) Health Institution level

Key Strengthening Activities Undertaken

- (1) Capacity Building - Training of DIOs /MOs on fever Rash surveillance
- (2) Surveillance strengthening - Improving timely case reporting and Strengthening sample collection and transportation
- (3) Focused activities in areas where there is:
 - (1) Poor NMNR rate
 - (2) Poor Sample Collection
 - (3) Outbreak
 - (4) High Incidence of Measles/Rubella

10.3 MR Elimination Campaign 2025 - Kerala

(Campaign Period: May 19–27, Extended to June 4, 2025)

The MR Elimination Campaign 2025 was conducted across Kerala from May 19 to 27, and subsequently extended up to June 4 to improve coverage. A total of 893 planning units conducted the campaign activities, with 9543 immunization sessions planned and 9522 sessions held. Despite this strong operational effort, vaccine coverage remained suboptimal in many districts. Against a target of 62,213 children, the overall MR1 coverage reached only 35%, while MR2 coverage was even lower at 25% against a target of 92,622 children.

Coverage plateau at the state level — full immunization has stayed exactly at 95% for four consecutive years. This suggests the remaining 5% represents a structurally hard-to-reach population (migrants, refusals, geographically dispersed) rather than a systems gap.

Malappuram — compounding concern — it is the only district showing a year-on-year declining trend (88% → 86%), the highest absolute volume of missed children in IMI rounds, and MR1–MR2 dropout of 3.63%. Given its large birth cohort, even a small percentage gap translates to a very large absolute number of unprotected children.

Kozhikode dropout outlier — the MR1–MR2 dropout of 18.3 is strikingly high and warrants a separate explanatory paragraph. This is seven times the state average and likely reflects a combination of refusal clusters, migrant populations, and follow-up tracking failures rather than first-dose access problems per se.

MR Elimination Campaign 2025 — a critical gap — overall MR1 at 35% and MR2 at 25% represents a substantial shortfall against the elimination objective. Districts like Wayanad (128% MR1) suggest some over-reporting or cross-district migration effects, while Malappuram alone accounts for the majority of the unvaccinated target pool for MR2 (>48,000 children missed).

Pulse polio — the exception — near or above 100% coverage in most districts demonstrates that surge-mode delivery with house-to-house follow-up is achievable, reinforcing the argument that the MR campaign's shortfall reflects strategy design (sessions-only approach) rather than population unwillingness.

Chapter 11:

Communicable and Non-Communicable Diseases

Communicable Disease trend

Kerala presents one of the most complex epidemiological profiles in India — a state that has simultaneously achieved many of the health benchmarks of a middle-income country while confronting the persistent and emerging disease burdens of a rapidly transitioning society. The state is experiencing what epidemiologists describe as a dual burden of disease: the coexistence of communicable diseases that continue to cause significant morbidity and mortality alongside rapidly rising non-communicable diseases driven by demographic, dietary, and lifestyle transitions.

For children in Kerala, this dual burden manifests in distinctive ways. Neonatal and infant survival, though among the best in India, is increasingly challenged by the consequences of maternal NCD morbidity — gestational diabetes, hypertensive disorders of pregnancy, and obesity — that drive preterm birth, low birth weight, and neonatal complications. Simultaneously, children face ongoing risks from vector-borne, zoonotic, and enteric infections, as well as emerging threats from rare but high-mortality pathogens. Adolescent health is under pressure from a nutrition and lifestyle transition that is generating early-onset NCD risk in school-age populations.

This chapter provides a comprehensive account of communicable and non-communicable diseases in Kerala from a child health perspective, drawing on data from the Integrated Disease Surveillance Programme (IDSP) Annual Report 2024, NFHS-5, ICMR national cancer registries, and allied sources. It concludes with evidence-based recommendations for strengthening Kerala's child health systems in the face of this evolving disease landscape.

Disease Burden — Overview, 2024

Kerala's 2024 IDSP annual data reveal a state carrying a heavy and diverse communicable disease burden. Over 28.7 lakh patients presented to outpatient facilities with undifferentiated fever — the single largest diagnostic category — reflecting the broad background of febrile illness driven by monsoon ecology, urbanisation, and a dense human-animal interface. Among notifiable diseases, dengue was the highest-volume condition with 20,674 confirmed and 53,536 probable cases, while leptospirosis carried the highest case-fatality rate among common infections at 7.07% in confirmed cases. Acute encephalitis syndrome recorded a case-fatality rate of 33%, the highest of any disease group outside invariably fatal conditions such as rabies and Nipah virus disease.

Three districts — Malappuram, Ernakulam, and Thiruvananthapuram — contributed disproportionately to the state's communicable disease burden across multiple disease categories in 2024. Malappuram recorded the highest hepatitis A caseload, the highest acute diarrhoeal disease burden, the highest acute encephalitis syndrome mortality, both Nipah cases, and the largest pool of dengue probable cases. Ernakulam led in confirmed dengue. Thiruvananthapuram had the highest leptospirosis caseload. This geographic concentration is informative for resource allocation and targeted surveillance.

CD Outbreaks and PH response

Major Communicable Diseases — Clinical and Epidemiological Profile

Dengue Fever

Dengue fever remains the most widespread vector-borne disease in Kerala. In 2024, the state reported 20,674 confirmed and 53,536 probable cases with 128 confirmed-case deaths (CFR 0.62%). Ernakulam district led with 4,823 confirmed cases, followed by Thiruvananthapuram (2,668) and Kollam (2,639). The urban-peri-urban geography of dengue in Kerala is well documented: high population density, proliferation of construction sites, and inadequate solid waste management create ideal *Aedes aegypti* breeding conditions in district headquarters and coastal towns.

For child health, dengue severity in children differs from adults: dengue haemorrhagic fever and dengue shock syndrome are more common in children with secondary infections, and children under five years with severe dengue can deteriorate rapidly. Paediatric dengue deaths — though not separately disaggregated in the IDSP annual data — warrant reporting through the Child Death Review mechanism. Clinicians in high-burden districts should maintain dengue as a leading differential in children presenting with fever, thrombocytopaenia, and plasma leakage signs during the monsoon and post-monsoon months.

Leptospirosis

Leptospirosis is Kerala's single highest case-fatality communicable disease among common infections. In 2024, 3,552 confirmed cases and 2,428 probable cases were reported, with 251 deaths among confirmed cases (CFR **7.07%**) and 143 deaths among probable cases. Thiruvananthapuram district recorded the highest confirmed caseload (733 cases, 33 deaths) followed by Thrissur (413

cases, 41 deaths). Thrissur's higher death count despite a lower caseload than Thiruvananthapuram suggests either later presentation to care or gaps in clinical management at peripheral facilities.

In children, leptospirosis presents as undifferentiated fever and is frequently missed or treated as viral fever at peripheral health centres. Exposure risks in children include wading through floodwaters, contact with water bodies during play, and proximity to livestock. Pre-monsoon doxycycline prophylaxis — currently implemented in occupationally exposed adults — should be evaluated for extension to older children in highly endemic blocks. Early initiation of IV penicillin or doxycycline upon clinical suspicion, before laboratory confirmation, is the cornerstone of reducing leptospirosis mortality. Expanding the network of rapid diagnostic testing (MAT and lateral flow assays) to community health centres in endemic districts is a priority.

Hepatitis A

Kerala reported 7,967 confirmed and 20,445 probable hepatitis A cases in 2024, with 89 confirmed-case deaths. The epidemic was sharply concentrated in Malappuram district, which accounted for 3,048 confirmed cases (38% of the state total) and 11,465 probable cases (56% of the state probable total). Kozhikode was the second most affected district with 2,185 confirmed cases. Hepatitis A is predominantly a disease of children and young adults, transmitted via the faecal-oral route through contaminated water and food.

The Malappuram hepatitis A cluster represents one of the largest single-district hepatitis A outbreaks documented in Kerala's recent epidemiological history. Root cause analysis consistently identifies unsafe drinking water supply — including contamination of public water sources by inadequate sanitation — as the primary driver. The high incidence in school-age children in northern Kerala makes hepatitis A both a significant morbidity burden and a marker of WASH system failure. Hepatitis A vaccination is not currently part of the Universal Immunisation Programme but is recommended by the IAP for all children in endemic areas.

Acute Encephalitis Syndrome

Acute encephalitis syndrome (AES) recorded the highest case-fatality rate of any common disease group in Kerala in 2024, with 33 deaths among 100 cases (CFR **33.0%**). Palakkad (39 cases, 6 deaths) and Malappuram (35 cases, 15 deaths) were the most affected districts. AES is a clinical syndrome — not a single disease — encompassing multiple aetiologies including viral encephalitis

(Japanese encephalitis, Nipah, West Nile, Herpes simplex), scrub typhus encephalitis, and bacterial meningitis.

In the context of Malappuram's 2024 Nipah event, the AES cluster in that district required careful differential diagnosis and simultaneous investigation for multiple pathogens. The high Malappuram AES mortality (15 of 35 cases) likely reflects both the genuine severity of encephalitic illness and possible diagnostic and referral delays. For child health, AES is particularly dangerous: children presenting with acute febrile illness followed by altered sensorium, seizures, or focal neurological signs require immediate hospitalisation and empirical management pending confirmatory diagnosis. Strengthening ICU capacity and trained paediatric neurology support at district hospitals in Palakkad and Malappuram is an urgent priority.

Nipah Virus Disease

Kerala recorded its fourth Nipah event since 2018 in 2024, with two confirmed cases and two deaths, both in Malappuram district. Nipah virus disease has a case-fatality rate of 40–75% globally; Kerala's 2024 event demonstrated 100% mortality. The virus is transmitted from Pteropus fruit bats (Pteropodidae) to humans, with subsequent human-to-human transmission documented in hospital settings.

Nipah represents the highest-consequence pathogen in Kerala's current communicable disease landscape. Its recurrence in Malappuram — a district with demonstrated surveillance gaps, low immunisation coverage, and the highest AES burden — amplifies concern. For child health professionals, Nipah should be considered in the differential diagnosis of any child in Malappuram or neighbouring areas presenting with AES, particularly with a history of exposure to bats, date palm sap, or contact with a confirmed or probable Nipah case. Kerala's Nipah response protocol — including contact tracing, cohort isolation, and healthcare worker protection — has been progressively refined with each event and represents a model for high-consequence infection management.

Rabies

Rabies claimed **22 lives** in Kerala in 2024, all confirmed cases and all fatal (CFR 100%). Every rabies death is by definition a preventable death: post-exposure prophylaxis (PEP) with rabies vaccine and immunoglobulin is universally effective when administered promptly following an animal bite. The persistence of 22 rabies deaths signals critical gaps in the bite management chain — awareness of PEP availability, access to PEP at peripheral health facilities, and completion of the PEP schedule.

Children are disproportionately affected by animal bites: they are more likely to be bitten on the head and face (increasing virus load and shortening incubation), less able to report bites to caregivers, and less likely to complete multidose PEP schedules. School-based dog bite prevention education, universal free PEP at all government health facilities, and mass dog vaccination to achieve herd immunity in the canine reservoir are the three evidence-based pillars of a rabies elimination strategy. The government of India's National Action Plan for Rabies Elimination (NAPRE) targets zero human deaths from rabies by 2030.

West Nile Fever

West Nile fever, caused by West Nile virus transmitted by Culex mosquitoes, has emerged as an established endemic infection in coastal and northern Kerala. Thirty-eight confirmed cases with 7 deaths (CFR 18.4%) were reported in 2024, concentrated in Kozhikode (21 cases, 3 deaths) and Malappuram (14 cases, 2 deaths). While symptomatic disease occurs in a minority of infected individuals, West Nile neuroinvasive disease — encephalitis and meningitis — carries a high mortality risk. There is no specific antiviral treatment or licensed human vaccine. Vector control (Culex mosquito reduction) and public awareness are the primary prevention measures.

Acute Diarrhoeal Disease and Enteric Infections

Acute diarrhoeal disease (ADD) remains one of the highest-volume conditions in Kerala, with 5,17,618 cases reported to IDSP in 2024. Though mortality was low (12 deaths), ADD is a leading cause of childhood morbidity, particularly in children under five years. Malappuram district alone reported 87,370 ADD cases. The Hepatitis A epidemic in Malappuram and Kozhikode confirms the broader context of enteric disease risk associated with contaminated water supplies in northern Kerala. Oral rehydration therapy, zinc supplementation, and hand hygiene remain the cornerstone of management, while WASH infrastructure improvement is the long-term structural solution.

Vaccine-preventable disease surveillance

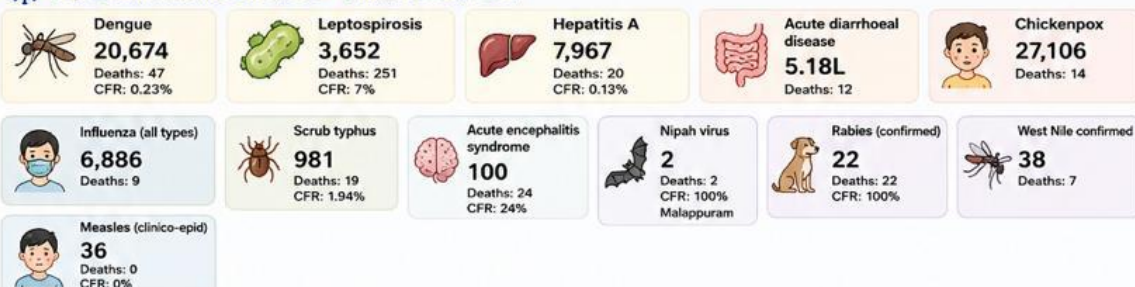
Kerala's Universal Immunisation Programme maintains among the highest full immunisation coverage rates in India (state average 95% in 2024-25, with 8 of 14 districts at $\geq 98\%$). Despite this achievement, vaccine-preventable diseases continue to contribute to morbidity and mortality through incomplete coverage in specific geographies and population groups.

COMMUNICABLE AND NON-COMMUNICABLE DISEASES – KERALA

Source: IDSP Annual Data 2024 (Apr 2024 – Jun 2025), NHPs & ICMR NCDIR - WHO STEPS Kerala

COMMUNICABLE DISEASES

Key Communicable Diseases – Kerala 2024 (IDSP)

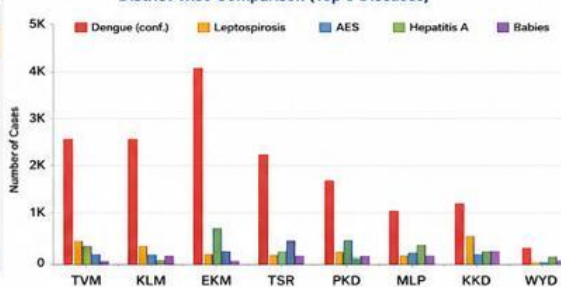


District-wise CEB Burden – Key Diseases 2024

District	Dengue (conf.)	Lepto-spirosis	AES	Hepatitis A	Rabies	West Nile
Thiruvananthapuram	2,660	10	723	22	140	2
Kollam	2,609	10	240	16	130	2
Ernakulam	4,022	22	111	21	766	2
Thirissur	2,162	17	413	41	237	0
Palakkad	1,620	10	226	20	238	1
Malappuram	1,014	1	212	24	3,018	17
Kozhikode	1,236	11	224	22	2,186	25
Wayanad	227	0	125	16	41	16
Kannur	626	6	183	18	216	2
Kasaragod	914	18	148	51	340	8
Kerala	20,674	125	2,605	251	7,312	73

Note: Lepto., AES= Acute encephalitis syndrome, Kannur and Kasaragod data estimated from remaining IDSP total after other districts accounted.

District-wise Comparison (Top 5 Diseases)



VACCINE PREVENTABLE DISEASE SURVEILLANCE



AFS ELIMINATION – FEVER-RASH SURVEILLANCE

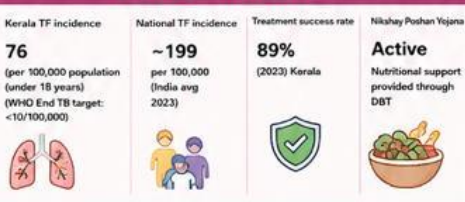


PERTUSSIS & DIPHTHERIA

Disease	2024 Cases (Kerala)	Status
Diphtheria	1	Elimination
Pertussis (Whooping cough)	Not separately notified*	Monitored under IDSP

*Pertussis data available only with individual case notification and notifiable in IDSP 2016 annual data.

CHILDHOOD TUBERCULOSIS



CHILDHOOD LEPROSY



NON-COMMUNICABLE DISEASES



CHILDHOOD MALIGNANCIES



DIALYSIS (CKD – CHILDHOOD CONTEXT)



KEY TAKEAWAY

- Strong communicable disease surveillance system
- Polio & Measles–Rubella elimination maintained
- Active monitoring of vaccine preventable diseases
- Rising burden of NCDs – need for lifestyle interventions
- Early detection & comprehensive care are key for diseases and cancers in children



Stronger surveillance. Timely action. Better health for every child in Kerala.



Vaccine-preventable disease surveillance — Kerala 2024

Disease	2024 cases	Deaths	CFR	Remarks
Chickenpox	27,106	16	0.06%	No vaccine in UIP; highest in Malappuram
Diphtheria	2	0	0%	Near-eliminated; both cases in TVM
Measles (suspected)	Fever-rash surveillance	—	—	MR campaign 2025: MR1 35%, MR2 25% achieved
Hepatitis B	1,221	5	0.41%	Birth-dose coverage critical; AEFI monitored
Japanese Encephalitis	10	4	40%	High CFR; children in rice-growing areas at risk
Pertussis	Not separately notified	—	—	Captured under ARI; IHIP case-based reporting needed
Neonatal tetanus	0	0	—	Eliminated
Wild poliovirus	0	0	—	Polio-free since 2011; AFP surveillance active

AFP surveillance

India has been certified polio-free by the WHO since 2014, with the last wild poliovirus (WPV1) case documented in January 2011. Kerala contributed to this achievement through sustained high OPV coverage and active AFP surveillance. The state's AFP surveillance network continues to meet WHO performance benchmarks: a non-polio AFP (NPAFP) rate of ≥ 2 per 1,00,000 children under 15 years, and adequate stool specimen collection from $\geq 80\%$ of AFP cases. All stool specimens are transported to the WHO-accredited network laboratory (CMC Vellore for southern states) for virological analysis. Environmental surveillance of sewage samples supplements clinical surveillance as recommended under the Global Polio Eradication Initiative. No wild or vaccine-derived poliovirus was detected in Kerala during 2024.

MR elimination & Fever Rash surveillance

Kerala is implementing the national MR elimination strategy targeting zero indigenous measles transmission. The MR Elimination Campaign 2025 (May 19 – June 4) achieved only 35% MR1 coverage and 25% MR2 coverage state-wide against the microplan targets. Malappuram, Kozhikode, and Kannur contributed the largest absolute numbers of unvaccinated children, reflecting the intersection of high MR1-MR2 dropout (Kozhikode: 18.3%; Malappuram: 3.6%) and large birth cohort sizes. These districts represent the highest risk of measles and rubella outbreaks in the state and require focused catch-up immunisation, refusal management, and migrant outreach.

Pertussis and Diphtheria surveillance

Diphtheria is near-eliminated in Kerala, with only 2 cases in 2024 (both in Thiruvananthapuram, no deaths), reflecting sustained high DPT coverage across most districts. Pertussis is not separately notified in the IDSP annual dataset and is captured within ARI surveillance. Sporadic pertussis continues to be detected clinically, particularly in infants awaiting primary immunisation completion. The waning immunity phenomenon in adolescents and adults sustains a pertussis reservoir capable of transmitting to vulnerable unvaccinated infants — an argument for adolescent Tdap booster doses in high-risk household contacts of neonates.

Childhood TB

Kerala maintains one of India's lowest tuberculosis incidence rates, estimated at 76 per 1,00,000 population (WHO Global TB Report 2024), against the national average of approximately 199 per 1,00,000. The state's advantages in literacy, health-seeking behaviour, and nutrition have underpinned this favourable position. The national treatment success rate reached 89% in 2023; Kerala consistently performs above this benchmark.

Childhood TB (0–14 years) accounts for an estimated 6–8% of total TB notifications in Kerala, consistent with the national range. Key issues in paediatric TB include:

- **Diagnostic challenge:** Children frequently have paucibacillary disease with non-specific presentations (prolonged fever, weight loss, chronic cough, lymphadenopathy). Microbiological confirmation is less often achievable than in adults, and clinical and radiological criteria — supported by Mantoux test and IFN-gamma release assay (IGRA) — are essential for diagnosis.

- **TB Preventive Treatment (TPT):** Under NTEP guidelines, all children under 5 years and immunocompromised children of all ages who are household contacts of infectious TB cases should receive isoniazid preventive therapy (IPT) for 6 months, or 3HP (rifapentine plus isoniazid) weekly for 3 months. TPT scale-up in Kerala's district TB offices is progressing but coverage among eligible paediatric contacts requires monitoring.
- **Drug-resistant TB:** Children in households with drug-resistant index cases face the same resistant pathogen exposure. Paediatric formulations of bedaquiline and delamanid are now available under the NTEP for children with rifampicin-resistant TB.
- **Tribal and migrant children:** Children in Attapady, Wayanad tribal settlements, and migrant worker communities in Malappuram and Ernakulam represent underserved populations with higher TB exposure risk and lower programme reach. Targeted active case finding through ASHA workers and mobile medical units is required.
- **NikshayPoshanYojana:** The nutritional support under this scheme was doubled to ₹1,000 per month in November 2024, recognising that undernutrition is both a risk factor and a consequence of TB in children.

Childhood Leprosy

India achieved national leprosy elimination (prevalence <1 per 10,000 population) in 2005; Kerala has maintained elimination status for over two decades. Multi-drug therapy (MDT) is provided free of cost at all primary health centres under the National Leprosy Eradication Programme (NLEP). The proportion of new leprosy cases in children under 15 years — estimated at approximately 8% nationally — is a sentinel indicator of active community transmission, signalling that adult index cases remain undetected in the community.

In Kerala, the child proportion remains low, consistent with elimination status. Key surveillance activities include the Leprosy Case Detection Campaign (LCDC), ASHA-Based Surveillance for Leprosy Suspects (ABSULS), Sparsh Leprosy Awareness Campaign (January 30), and contact examination of household contacts of new cases. Grade II disability at diagnosis — the most sensitive indicator of diagnostic delay — has declined dramatically from 20% in 1981 to below 1.5% nationally, but requires continued vigilance in tribal and hard-to-reach communities.

Non-Communicable Diseases - The Epidemiological Transition in Kerala

Kerala is at an advanced stage of epidemiological transition: NCDs account for an estimated 60% of all deaths, substantially above the national average. The state's demographic profile — low total fertility rate (1.8), ageing population, high life expectancy (75 years), and near-universal literacy — has accelerated NCD risk accumulation faster than in most Indian states. A WHO-STEPs survey of Kerala adults found that over 85% of adults carry at least one of seven studied NCD risk factors, and only 13–18% are free of all risks. This background is the critical determinant of maternal health in Kerala and, by extension, of neonatal and infant outcomes.

Key NCD indicators and their significance for child health — Kerala

NCD indicator	Kerala estimate	India average	Significance for child health
Diabetes prevalence (adults)	19.2%	~11.4%	Gestational DM → neonatal hypoglycaemia, LGA, preterm birth
Hypertension prevalence (adults)	30.4%	~28.5%	Hypertensive disorders in pregnancy → FGR, preterm birth
Hypertension control rate	12.4%	~15%	Low control → high maternal risk during pregnancy
Diabetes control rate	15.3%	~18%	Uncontrolled GDM → adverse neonatal outcomes
Abdominal obesity (adults)	60%	~40%	Maternal obesity → caesarean, LGA, metabolic syndrome in offspring
Adults with ≥1 NCD risk factor	>85%	~70%	Multigenerational risk transmission to children
Overweight/obesity – children 5–19 yrs	Emerging; NFHS-5 trend rising	~14–15%	Predictor of early-onset T2DM, HTN, PCOD in adolescents
Physical inactivity (adults)	~50% insufficient activity	~44%	Modifiable; school-based interventions target this cohort
Daily salt intake	6.7 g/day	~8 g/day	Exceeds WHO 5 g limit; dietary habits formed in childhood

Diabetes

The WHO-STEPS survey estimates diabetes prevalence in Kerala adults at 19.2% — the second highest among Indian states — against a national estimate of approximately 11.4%. Despite this high burden, the diabetes control rate (proportion of diagnosed diabetics with blood glucose within target range) stands at only 15.3%, representing a massive secondary prevention gap. The consequences for child health operate through two pathways:

- **Gestational diabetes mellitus (GDM):** Given the high background adult diabetes prevalence, GDM rates in Kerala are among the highest in India. GDM is associated with macrosomia, birth trauma, neonatal hypoglycaemia, respiratory distress, and an increased risk of childhood obesity and type 2 diabetes in the offspring. Universal oral glucose tolerance test screening at 24–28 weeks gestation, and intensive GDM management, are essential components of antenatal care in Kerala.
- **Childhood and adolescent type 2 diabetes:** Type 2 diabetes in children — once considered rare — is increasingly documented in Kerala's adolescent population. Rising rates of overweight and obesity, sedentary screen time, and dietary transition (high glycaemic index foods, reduced physical activity) are driving insulin resistance in school-age children. Early recognition and lifestyle intervention are critical given the long duration of disease exposure if onset occurs in adolescence.

The Aardram Mission's NCD management programme through Health and Wellness Centres targets the 30+ age group for screening and management, but adolescent metabolic risk needs to be integrated into the school health programme (RBSK/Student Health Screening Programme).

Hypertension

Hypertension prevalence in Kerala adults is 30.4% (raised BP $\geq 140/90$ mmHg), with no significant rural-urban difference — a pattern unusual for India, where urban prevalence typically exceeds rural. Men have higher prevalence (34.6%) than women (28.0%). The hypertension control rate stands at only 12.4%, reflecting poor medication adherence, fragmented follow-up, and limited patient empowerment within the existing health system.

For child health, the primary significance of hypertension is its role in adverse pregnancy outcomes. Hypertensive disorders of pregnancy — including gestational hypertension, preeclampsia, eclampsia, and HELLP syndrome — are among the leading drivers of preterm birth, fetal growth restriction (FGR), and emergency caesarean section in Kerala. CDR analyses across multiple Kerala districts consistently identify prematurity as the dominant cause of neonatal death; the upstream determinant of much of this prematurity is hypertensive

disease in mothers with poorly controlled chronic hypertension or de novo pregnancy-induced hypertension.

Secondary hypertension in children — though rare — is associated with CKD, aortic coarctation, and endocrine disorders. Routine BP measurement in all paediatric outpatient encounters from age 3 years is recommended by IAP guidelines and should be universally implemented across Kerala's government health facilities.

Obesity and Lifestyle Risk Factors

Abdominal obesity affects 60% of Kerala adults (women 73%, men 39%), with daily dietary salt intake of 6.7 g/day exceeding the WHO recommended maximum of 5 g. Physical inactivity is prevalent in approximately 50% of adults. These risk factors are increasingly being documented in children and adolescents:

- The NFHS-5 (2019-21) found rising rates of overweight and obesity in the 5-19 year age group nationally; Kerala shows a similar trend. NFHS-5 data indicate that approximately 4% of children under 5 in Kerala are overweight — a smaller but growing group.
- School nutrition environment: The proliferation of high-calorie, low-nutrient food in school canteens and surrounding vendors, combined with reduced physical education time, is creating a permissive environment for childhood obesity.
- Screen time and sedentary behaviour: Increased screen use, accelerated during the COVID-19 pandemic with transition to online learning, has displaced physical activity in school-age children and is associated with poor sleep, mental health concerns, and metabolic risk.

Family-based lifestyle interventions — targeting dietary change, physical activity, and reduced screen time — beginning in early childhood are the most cost-effective strategy for NCD prevention in the next generation. The RBSK (RashtriyaBalSwasthyaKaryakram) school health programme provides a platform for integrating NCD risk screening and counselling at scale.

Childhood Malignancies

Childhood cancers are relatively rare but are increasingly recognised as an important cause of child mortality and long-term morbidity in Kerala. The ICMR National Cancer Registry Programme (NCRP) maintains three Population-Based Cancer Registries (PBCRs) in Kerala: Thiruvananthapuram, Kollam, and the

Malabar Cancer Centre registry covering the northern districts. Data from the Thiruvananthapuram PBCR documented the highest age-adjusted incidence rate for leukemia among male children in India during the 2012-2016 surveillance period, at over 56 cases per million children.

Pattern of childhood malignancies in Kerala — clinical profile and registry data

Malignancy	Estimated paediatric rank	Incidence (TVM PBCR)	Key clinical features
Leukemia (ALL/AML)	1st	>56/million (highest in India)	Fever, pallor, bleeding, bone pain; ALL – 80% survival with treatment
Brain and CNS tumours	2nd	Not separately published	Late presentation; limited peripheral neuro-oncology
Lymphoma (Hodgkin and NHL)	3rd	PBCR pooled data	Cervical lymphadenopathy; Hodgkin has favourable prognosis
Wilms tumour (nephroblastoma)	4th	PBCR pooled data	Abdominal mass in < 5 yr; good prognosis with early surgery
Retinoblastoma	5th	PBCR pooled data	Leukocoria; early detection prevents enucleation
Neuroblastoma	6th	Rare	Adrenal or paravertebral origin; poor prognosis if advanced

Paediatric oncology services in Kerala are concentrated at government medical college hospitals in Thiruvananthapuram and Kozhikode and at private tertiary centres in Ernakulam. Access barriers remain significant for children from peripheral districts, tribal communities, and migrant families. Studies across low- and middle-income settings consistently document that delayed presentation — by weeks to months after symptom onset — is the primary modifiable factor reducing childhood cancer survival.

From a CDR and programme perspective, childhood cancer deaths may be under-captured if the child dies at a tertiary or private facility where CDR notification mechanisms are less consistently applied. Strengthening mandatory

reporting of paediatric cancer deaths through IHIP and linking PBCR incidence data with CDR mortality records would significantly improve understanding of cancer-attributable child deaths in Kerala.

Warning signs that all primary care providers and ASHA workers should be trained to recognise include:

- Unexplained pallor, prolonged fever, or bruising/bleeding in a child → Leukemia
- White pupillary reflex (leukocoria) in infants and toddlers → Retinoblastoma
- Abdominal mass in a child under 5 years → Wilms tumour or neuroblastoma
- Painless cervical lymph node enlargement persisting beyond 4 weeks → Lymphoma
- Headache with morning vomiting, visual change, or personality change → CNS tumour

Childhood Chronic Kidney Disease and Dialysis

Chronic kidney disease (CKD) requiring dialysis is uncommon in children but carries high mortality risk and substantial family economic burden. Unlike adult CKD — where diabetes and hypertension are the dominant causes — paediatric CKD in Kerala is predominantly caused by congenital anomalies of the kidney and urinary tract (CAKUT), focal segmental glomerulosclerosis (FSGS), haemolytic uraemic syndrome (HUS), and immune-mediated nephropathies such as lupus nephritis.

All 14 Kerala districts have access to government dialysis facilities under the Pradhan Mantri Dialysis Programme (PMPD), providing free haemodialysis at district hospitals. Paediatric nephrology services with capability for paediatric dialysis are available at Medical College Hospitals in Thiruvananthapuram, Kozhikode, and Thrissur.

A specific equity concern arises from documented higher CKD prevalence in tribal adults in Attapady (Palakkad) and Wayanad, studied in published community surveys. Environmental exposures — chronic pesticide use, nephrotoxic traditional remedies, dehydration — that drive adult CKD in these communities may have long-term renal implications for children growing up in these settings. Targeted paediatric renal function screening in tribal children, integrated with the RBSK programme, is warranted.

Childhood Disability

The detection of developmental disabilities in Kerala has increased significantly with the scale-up of the Rashtriya Bal Swasthya Karyakram (RBSK) and the District Early Intervention Centres (DEICs). Disabilities of clinical relevance in the child health context include neurodevelopmental disorders (autism spectrum disorder, intellectual disability, cerebral palsy), sensory impairments (hearing and visual), speech and language disorders, and congenital anomalies detected at birth or through newborn screening.

The linkage between communicable disease morbidity and disability is direct and important: neonatal meningitis, encephalitis (including from AES and JE), severe hyperbilirubinemia, and perinatal hypoxia are leading causes of acquired neurodisability in children in Kerala. Similarly, rubella infection in early pregnancy remains a cause of congenital rubella syndrome — including sensorineural hearing loss, cataracts, and intellectual disability — in settings with suboptimal MR immunisation coverage. Strengthening MR elimination is therefore simultaneously a disability prevention strategy.

Key Challenges

Communicable Disease Challenges

- High case fatality in leptospirosis (CFR 7.07%) and AES (CFR 33%) despite established treatment protocols, indicating gaps in early diagnosis, timely referral, and critical care capacity at peripheral levels.
- Persistent rabies deaths: All 22 rabies deaths in 2024 were preventable with timely PEP. Awareness gaps among caregivers and access barriers to PEP at the point of care remain unresolved.
- Recurrent Nipah events in Malappuram (fourth occurrence since 2018), suggesting sustained reservoir-to-human transmission risk that has not been interrupted despite progressive response improvements.
- Seasonal and climate-linked outbreak amplification: Leptospirosis, dengue, and hepatitis A all peak with monsoon and post-monsoon flooding, a pattern that is expected to intensify with climate change.
- Gaps in early diagnosis and referral: Delayed recognition of AES, leptospirosis, and childhood cancer at peripheral health facilities increases disease severity and mortality.
- Private sector underreporting: A significant volume of communicable disease events are managed in private hospitals, which remain inconsistently integrated into IDSP reporting, creating systematic underestimation of the true disease burden.

Non-Communicable Disease Challenges

- Critically low treatment adherence and control rates: Only 12.4% of hypertensives and 15.3% of diabetics achieve control targets, representing a massive secondary prevention failure.
- Fragmented NCD care: NCD screening, management, and follow-up across the primary, secondary, and tertiary tiers remain poorly integrated, resulting in patients lost to follow-up between care levels.
- Lifestyle risk factor burden: Dietary transition toward processed foods, physical inactivity, rising obesity, and high salt intake are structural drivers of Kerala's NCD burden that cannot be addressed through healthcare services alone.
- NCD-communicable disease interactions: Diabetic and immunosuppressed patients have higher susceptibility to leptospirosis, dengue severe disease, and TB — interactions that are poorly captured in programme-specific data systems.
- Childhood NCD risk: Rising adolescent overweight, screen time, physical inactivity, and dietary changes are creating the next wave of early-onset NCDs, but school and community health platforms for prevention remain underdeveloped.

Health System Gaps

- Limited integration between communicable disease and NCD programmes at all levels of the health system.
- Uneven district-level preparedness for high-consequence outbreaks: Districts such as Palakkad and Malappuram, with the highest CD burden, also face the most capacity challenges.
- Insufficient continuum of care for chronic diseases: Care for children with CKD, cancer, TB, and disability frequently breaks down at transitions between care levels or during family migration.
- Data gaps: Paediatric disaggregation of routine IDSP and NCD programme data is limited, making child-specific burden estimation difficult.

Policy Priorities and Recommended Strategic Interventions

Based on the 2024 IDSP data, supplementary surveillance sources, and the epidemiological analysis above, the following strategic priorities and interventions are recommended for strengthening the communicable and NCD response in Kerala from a child health perspective:

Policy priorities — communicable and non-communicable diseases, Kerala

Priority	Focus area	Key actions
Priority 1	Integrated disease surveillance	Real-time district dashboards; AI-based outbreak prediction; mandatory private sector IDSP reporting
Priority 2	Reducing mortality from high-risk infections	Statewide Leptospirosis Action Plan; early doxycycline prophylaxis; rabies elimination via mass dog vaccination + universal PEP
Priority 3	NCD control acceleration	Shift from screening to long-term management; digital patient tracking; community-based follow-up; family-based lifestyle interventions
Priority 4	District-level risk stratification	Categorise districts into high/moderate/low risk; allocate resources by burden, not uniform distribution
Priority 5	Child health strengthening	Expand paediatric oncology and nephrology; strengthen RBSK and DEIC; early developmental screening; rare disease registry

Expected Outcomes

If implemented at scale, the recommended strategic interventions are projected to achieve the following outcomes within 5 years:

- 30–40% reduction in leptospirosis and AES case-fatality rates, through early diagnosis protocols and improved ICU capacity at peripheral facilities.
- Zero rabies deaths, through sustained mass dog vaccination and universal PEP access.
- Achievement of MR elimination (national 2026 target), through targeted catch-up immunisation in high-dropout districts.
- Improvement in NCD control rates to >40% for both hypertension and diabetes, through digital tracking and community-based follow-up.
- Reduction in outbreak frequency and magnitude through predictive surveillance and pre-positioned rapid response capacity.
- Improvement in Healthy Life Expectancy (HALE) and reduction in childhood disability attributable to preventable infections and poorly managed maternal NCDs.

Already state has initiated programs like school health program (AksharamArogyam), Arogyamanandam vite 4 wellness, KIKO (Kerala Initiative for kids overall wellness) and Prathiksha for renal disorders. All these programs through strategic interventions will definitely be able to bring down the existing burden and through long term behavioural change interventions address the rising challenges in these areas.

Haemophilia and Ashadhara Programme

Haemophilia is a hereditary bleeding disorder caused by deficiency of clotting factors, most commonly Factor VIII (Haemophilia A) or Factor IX (Haemophilia B). Children affected by haemophilia are at risk of spontaneous bleeding episodes, particularly into joints and muscles, which can lead to long-term disability if not managed appropriately.

Overview

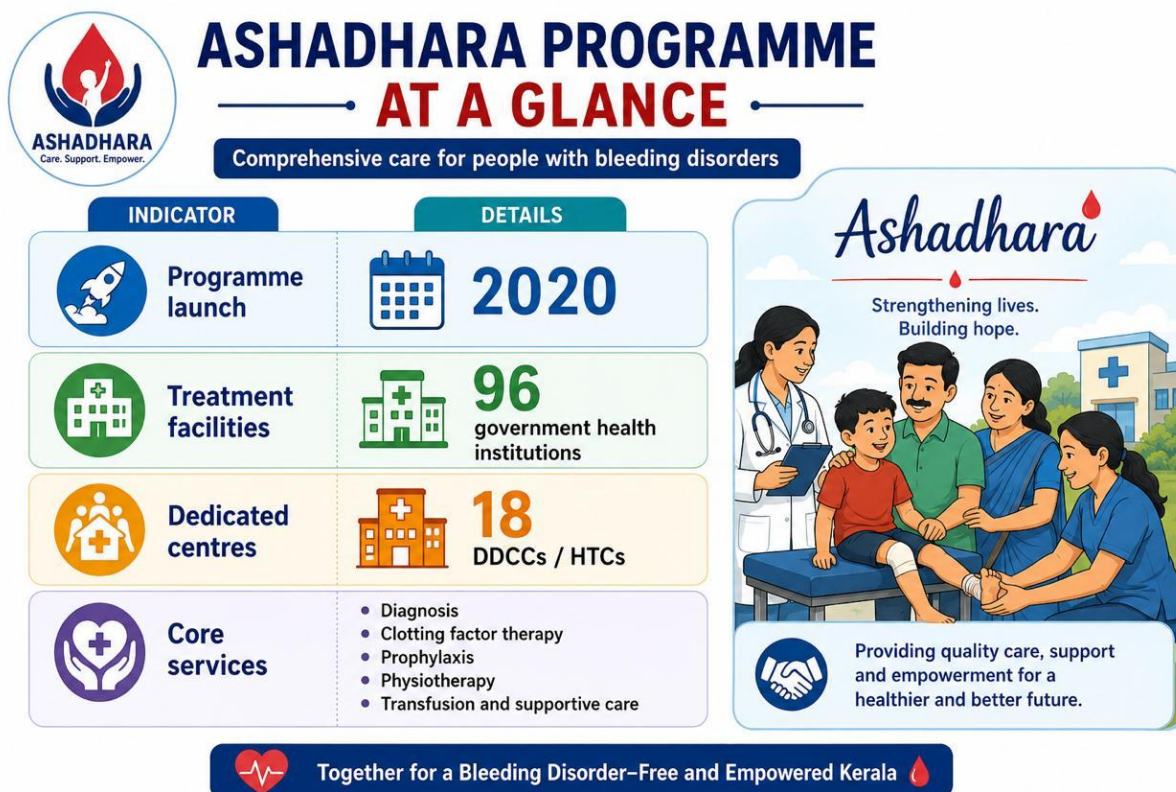
The Ashadhara Programme, launched in 2020 under the National Health Mission, is a state-wide initiative of the Government of Kerala for the treatment and long-term management of haemophilia and other congenital blood disorders. The programme covers haemophilia A and B, thalassaemia, sickle cell anaemia and rare bleeding disorders such as von Willebrand disease and Glanzmann's thrombasthenia.

Prior to the introduction of Ashadhara, haemophilia treatment in Kerala was supported through the Karunya Benevolent Fund. The programme established a structured, publicly funded system ensuring free treatment through government health institutions based on state-approved clinical protocols.

Programme Structure

To facilitate decentralised care, District Day Care Centres (DDCCs) and Haemophilia Treatment Centres (HTCs) have been established across the state. These centres function under designated nodal officers and are supported by trained nurses and physiotherapists. A web-based portal supports patient registration, monitoring and follow-up.

Ashadhara Programme at a Glance



Treatment Approach

Treatment under the programme follows state-approved clinical guidelines aligned with international standards.

Children below 18 years receive prophylaxis therapy aimed at preventing bleeding episodes and protecting joint health. Adult patients are generally managed through on-demand therapy during bleeding episodes. However, selected adult patients, including inhibitor-positive individuals and those with recurrent or life-threatening severe bleeding, are also provided prophylaxis therapy based on clinical assessment.

Therapeutic options available through the programme include:

- Recombinant Factor VIII

- Factor IX concentrates
- Bypassing agents (FEIBA/APCC)
- Recombinant Factor VII
- Non-factor therapy such as Emicizumab

Haemophilia clinics are conducted at designated centres for clinical evaluation, treatment optimisation and counselling. Physiotherapy services support rehabilitation and help prevent joint complications associated with recurrent bleeding episodes.

Programme Coverage and Patient Support

The Ashadhara programme provides treatment and supportive care for individuals with haemophilia and other congenital blood disorders across the state.

Patient Coverage and Treatment Support under the Ashadhara Programme

Condition / Service Category	Beneficiaries
Haemophilia A	1,643
Haemophilia B	330
F VII Def.	49
vWF Def.	92
Other Factor Def.	74
Patients receiving Emicizumab therapy	>500
Sickle Cell Anemia	1412
Thalassaemia	304

Coverage of patients receiving treatment and supportive care under the Ashadhara programme.

Comprehensive Care Services

The programme adopts a multidisciplinary care model integrating clinical management with rehabilitation and patient support.

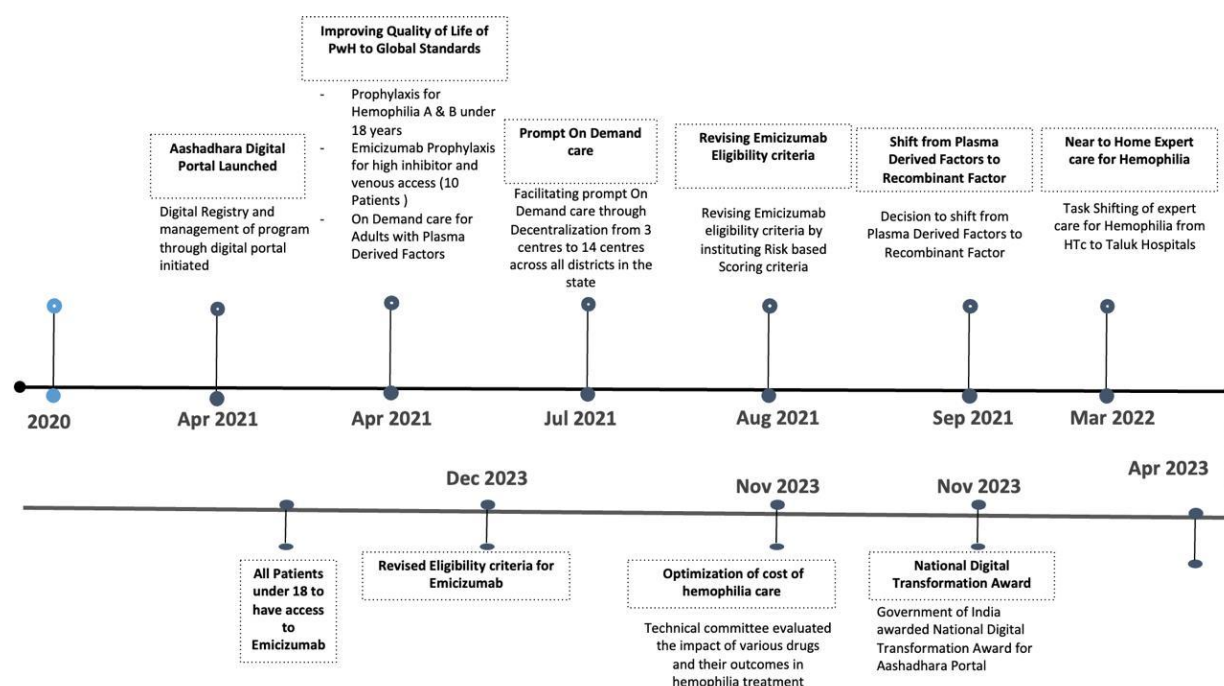
Key services include:

- Regular haemophilia clinics at DDCCs and HTCs
- Clinical monitoring and treatment optimisation
- Physiotherapy and rehabilitation services
- Lifestyle counselling and patient education
- Linkage with community-based palliative care services for bedridden patients

In addition to haemophilia care, the programme supports patients with thalassaemia and other congenital blood disorders through specialised treatment and transfusion services.

Programme Milestones

Key Developments in Haemophilia Care in Kerala



Kerala became the first state in India to provide free Emicizumab prophylaxis to all children with haemophilia A below 18 years of age through the public health system. This initiative has significantly reduced hospital visits and improved the quality of life of patients.

Inclusive Care Initiatives

The programme has introduced measures to improve recognition and management of bleeding disorders among women.

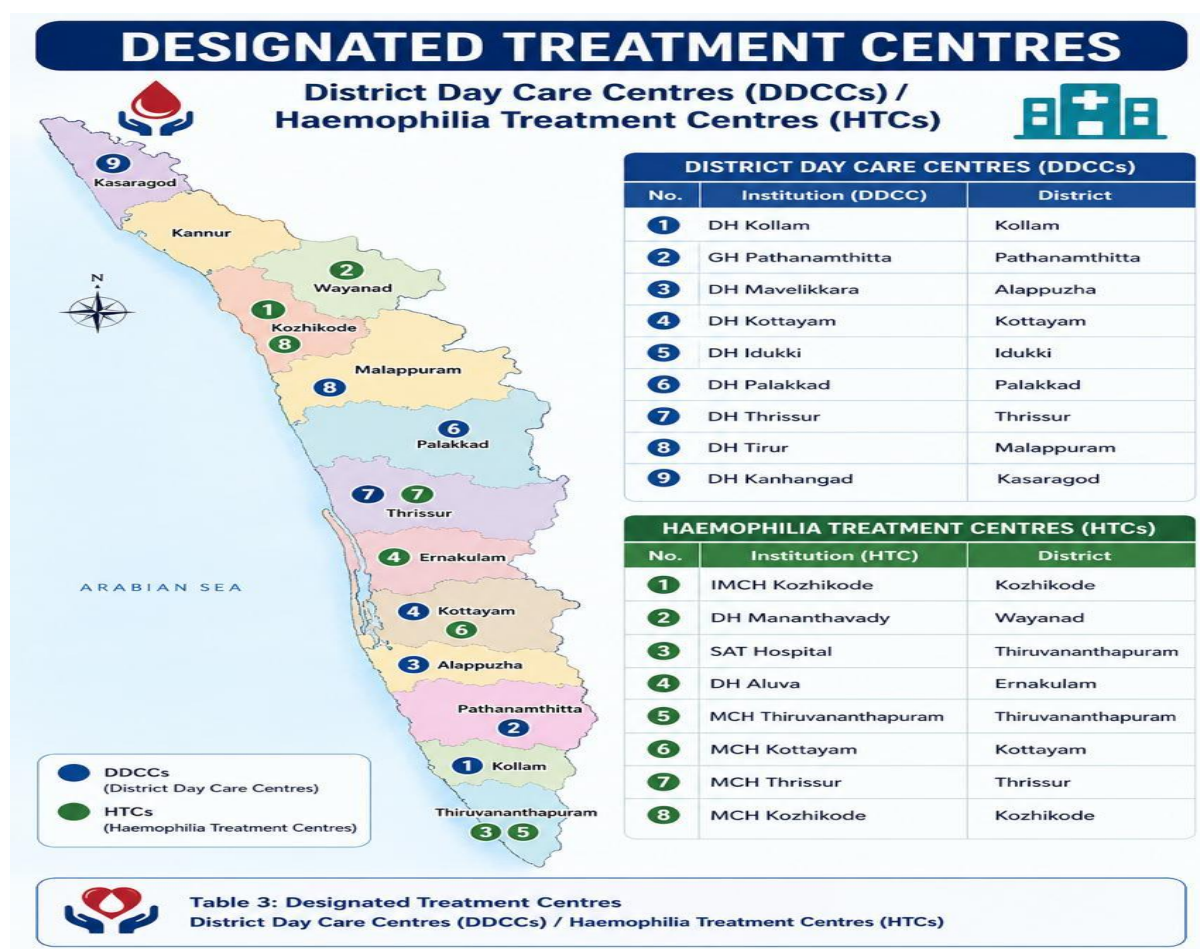
Key initiatives include:

- Development of clinical guidelines for bleeding disorders in women
- Provision of Emicizumab prophylaxis to a female child with haemophilia A
- Initiation of Emicizumab therapy for an adult woman with haemophilia A in 2025

These initiatives contribute to strengthening equitable access to specialised haemophilia care.

Designated Treatment Centres

District Day Care Centres (DDCCs)/ Haemophilia Treatment Centres (HTCs)



KARE – Rare Disease Programme

The Kerala Rare Diseases Programme (KARE) is a pioneering initiative of the Government of Kerala aimed at supporting children affected by rare genetic and metabolic disorders. Rare diseases often require specialized diagnosis and long-term treatment, which can impose a significant financial burden on families. Through the KARE programme, the state provides financial support, access to advanced diagnostic services, and long-term treatment assistance for selected rare diseases.

Evolution of Rare Disease Support in Kerala

Year	Initiative	Description
2011	Initial Support Schemes	Support provided through schemes such as KSSM and Thalolam for children with severe illnesses.
2013	Arogyakiranam Programme	Introduced as an umbrella programme to cover diseases not included under the national RBSK programme for children below 18 years.
2019	Technical Committee Formation	A committee of medical experts and government officials was constituted to evaluate high-cost treatment requests.
2021	High Court Directive	The High Court directed the utilization of unspent funds for rare disease management.
2022	Policy Development	The state initiated the development of a structured rare disease programme under the Principal Secretary of Health.
2024	Launch of KARE Programme	Official launch of Kerala United Against Rare Diseases (KARE) programme by the Honorable Health Minister.



KERALA UNITED AGAINST RARE DISEASES (KARE) – BUILDING HOPE THROUGH COMPREHENSIVE RARE DISEASE CARE



KERALA'S RARE DISEASE JOURNEY – KEY MILESTONES

A journey of compassion, collaboration and commitment for SMA children and beyond

1

ESTABLISHMENT OF SMA REGISTRY



Through newspaper advertisements, **229** SMA applicants were identified.

The first systemic mapping of SMA patients in Kerala.

A foundation we built together.

2

FIRST SPECIALIZED SMA CLINIC



Kerala's first multidisciplinary SMA clinic bringing together experts for comprehensive care.



3

EXPANSION OF CLINICAL SERVICES



Decentralizing SMA care across Kerala to enhance access and equity.

4

INTRODUCTION OF DISEASE-MODIFYING THERAPY



Introduction of **Risdiplam (Evrysdi®)** – a game-changing step in SMA treatment that brings new hope and better futures for our children.

Compassionate Care.
Stronger Systems.
Brighter Futures.
Together.

5

CAPACITY BUILDING FOR RARE DISEASE CARE

Specialized training programs for health professionals to strengthen skills and expertise.



In close collaboration with **CDC** to empower our health workforce.

6

FORMATION OF MULTIDISCIPLINARY CARE TEAMS



Bringing together a network of specialists and support services to deliver holistic, child-centered care across Kerala.

One team. One goal. Every child.

7

SCOLIOSIS SURGERY MILESTONE



Successful completion of the first SMA scoliosis surgery at **GMC Kozhikode**.

A landmark achievement that has significantly improved outcomes and quality of life for SMA children.

8

LAUNCH OF KARE PROGRAMME



Launched in **February 2024**
A community-centered initiative focused on family support, awareness, and empowerment.



9

DEVELOPMENT OF KARE WEB PORTAL



Digital empowerment through the **KARE** Web Portal to streamline program access, data management, and monitoring.

Better information. Better coordination. Better care for every child.



Built on compassion. Driven by collaboration.
Guided by data. Powered by people.
Together, we build a healthier, inclusive future for every child in Kerala.



Key components of the programme include:

- Genetic testing and diagnostic support for suspected rare diseases
- Financial assistance for high-cost therapies and medications
- Development of referral networks linking district hospitals with tertiary care centres
- Multidisciplinary management and long-term follow-up of affected children

The programme has supported treatment for conditions such as Spinal Muscular Atrophy (SMA) . By facilitating access to advanced therapies and specialized care, the KARE initiative aims to improve survival and quality of life for affected children. Kerala's rare disease initiatives demonstrate the state's commitment to equitable healthcare access, even for complex and high-cost medical conditions.

Kerala's Rare Disease Journey – Key Milestones

Establishment of SMA Registry	A dedicated registry for Spinal Muscular Atrophy (SMA) was developed through newspaper advertisements, which helped identify 229 applicants for inclusion in the programme. This marked the first systematic effort in the state to map SMA patients.
Establishment of the First SMA Clinic	Kerala established its first specialized SMA clinic at SAT Hospital, functioning monthly with a multidisciplinary team including neurologists, orthopaedists, and respiratory specialists to ensure comprehensive patient evaluation and follow-up care.
Expansion of Clinical Services	To improve accessibility, clinical services for SMA patients were expanded to Government Medical Colleges in Kozhikode and Kottayam, enabling decentralized evaluation and follow-up of patients across the state.
Introduction of Disease-Modifying Therapy	The state-initiated treatment with Risdiplam (Evrysdi®), the first oral disease-modifying therapy for SMA. Currently, 117 children are receiving Risdiplam under the programme, based on defined eligibility criteria.
Capacity Building for Rare Disease Care	A specialized training curriculum was developed in collaboration with CDC to train doctors, physiotherapists, and Physical Care

	Medicine and Rehabilitation (PMR) teams in the management of rare diseases.
Formation of Multidisciplinary Care Teams	Multidisciplinary teams involving neurology, orthopedics, respiratory care, surgery, and rehabilitation specialists were formalized across state medical colleges to provide holistic and coordinated care for SMA patients.
Scoliosis Surgery for SMA Patients	In May 2023, the first scoliosis surgery for an SMA patient was successfully performed at Government Medical College, Kozhikode. To date, three such surgeries have been completed, marking an important advancement in comprehensive SMA care in the state.
Launch of KARE and Parent Awareness Initiatives	Regional awareness sessions were organized for parents and caregivers focusing on home-based management and supportive care. Subsequently, the KARE (Kerala United Against Rare Diseases) programme was officially launched by the Honorable Health Minister on 16 February 2024.
Development of KARE Web Portal	A dedicated KARE web portal is currently under development to streamline programme access, monitoring, and coordination.

Sickle Cell Anaemia Elimination Mission

Sickle Cell Disease (SCD) is a hereditary blood disorder characterized by abnormal haemoglobin that causes red blood cells to assume a sickle shape. This leads to chronic anemia, pain crises, infections, and organ complications. The Government of India has launched the Sickle Cell Anaemia Elimination Mission with the goal of eliminating the disease as a public health problem by 2047. Kerala has aligned with this national mission and implemented screening and management strategies for affected populations.

Key components of the mission include:

- Screening and early identification of individuals with sickle cell trait and disease
- Genetic counselling for affected families
- Early diagnosis among newborns and children in high-risk populations
- Provision of appropriate clinical management and follow-up care
- Awareness programs on prevention and early treatment

Although the prevalence of sickle cell disease in Kerala is relatively limited compared with some other states, targeted screening and management programs help ensure early detection and appropriate care for affected children, particularly in vulnerable populations.

Sickle Cell Anaemia Elimination Mission – Key Features

SICKLE CELL ANAEMIA ELIMINATION MISSION
Towards a Sickle Cell Free Future

INDICATOR	DETAILS
National launch	1 July 2023
Kerala launch	December 2023
Target population	Individuals aged 0–40 years
Priority groups	• Tribal communities (school children, hostel residents, antenatal women, Newborns)
Diagnostic approach	Two-step screening and confirmatory testing

Focused on Tribal Communities
Reaching the most vulnerable first

Early Detection
Two-step screening for accurate diagnosis

Timely Care Better Outcomes
Early diagnosis leads to effective management

Healthy Communities Stronger Kerala
Working together for a Sickle Cell Free Future

Early Screening. Timely Care. Better Lives.
Together, let's build a Sickle Cell Free Kerala.

Every Test. Every Life.
Towards a Sickle Cell Free Future.

Implementation Strategy

Kerala adopted a phased implementation approach focusing initially on tribal-dominant regions.

Phase-wise Programme Implementation

Phase	Areas Covered
Phase I	Wayanad Nilambur (Malappuram) and Attappadi (Palakkad)
Phase II	Kasaragod, Kannur and Idukki

Table: Phase-wise implementation of the Sickie Cell Anaemia Elimination Mission in Kerala.

Screening and Diagnosis

Screening is conducted among individuals aged **0–40 years**, with emphasis on tribal populations. The programme follows a two-step diagnostic protocol:

1. Initial screening using point-of-care test kits
2. Confirmatory testing using HPLC or haemoglobin electrophoresis

Screening services are delivered through AAM centres, mobile health teams, school programmes and community outreach camps. Neonatal screening has also been initiated in Wayanad district.

Awareness and Community Engagement

A state-wide awareness campaign titled “Ariyam, Akattam, ArivalKoshaRogam” was organised in connection with World Sickie Cell Awareness Day 2025. As part of World Sickie Cell Awareness Day 2025, observed on 19 June, a special state-wide awareness campaign ‘Ariyam, Akattam, ArivalKoshaRogam’ was launched across Kerala. The campaign was conducted in Malayalam and tribal languages to ensure effective communication among tribal populations.

Special programmes were organised at Model Residential Schools (MRS) across the state, with screening planned for all MRS schools, pre-matric hostels, and antenatal women from tribal communities. The campaign commenced with screening of children at the MRSSchool, Thiruvananthapuram, along with a special medical camp and awareness session. The valedictory function of the two-week programme was held at Kasaragod ‘Unnati’ on June 30, which included screening of antenatal tribal women and a special awareness programme, marking the successful culmination of this focused state-wide initiative.

Case Management and Continuum of Care

Identified SCD patients are linked to appropriate treatment facilities and enrolled into long-term care pathways. Sickie Cell Disease ID cards are issued to facilitate continuity of care, service tracking, and entitlement access across health facilities. Regular follow-up and monitoring ensure adherence to treatment and supportive care as per clinical guidelines.

Screening Coverage

Programme progress is monitored through district-level reporting systems, with periodic review of screening coverage, case detection, ID card distribution, and treatment enrolment. The revised state target of screening 4.52 lakh individuals by March 2026, along with an additional Tribal Department target of 7,000 individuals, reflects Kerala's commitment to comprehensive population coverage.

District-wise Screening Progress

District	Target Population	People Screened	Disease Cases	Trait Cases
Wayanad	200,000	176,829	1,264	5,045
Malappuram	15,000	4,404	106	518
Palakkad	45,000	14,977	175	2,714

Table :District-wise screening and case detection under the Sickie Cell Anaemia Elimination Mission in Kerala

Chapter 12: SDG Status Related to Child Health

The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 provide a global framework for improving health and well-being by the year 2030. Several SDG targets are directly related to maternal, newborn, and child health, particularly under SDG 3: Ensure healthy lives and promote well-being for all at all ages.

Kerala has consistently demonstrated strong performance in health indicators and has made substantial progress toward achieving SDG targets related to child survival, nutrition, and healthcare access. The state's achievements are the result of sustained investments in primary healthcare, maternal and newborn services, immunization programs, nutrition interventions, and community-based public health initiatives. Continuous monitoring of health indicators, strengthening of health infrastructure, and integration of public health programs have enabled Kerala to maintain progress toward achieving global health targets.

SDG Goals and Achievement

The Sustainable Development Goals relevant to child health primarily include SDG Target 3.2, which aims to end preventable deaths of newborns and children under five years of age by 2030.

The global SDG targets include:

- Reducing Neonatal Mortality Rate (NMR) to at least as low as 12 per 1,000 live births
- Reducing Under-Five Mortality Rate (U5MR) to at least as low as 25 per 1,000 live births

Kerala has already achieved these targets well ahead of the SDG timeline. In addition to mortality indicators, Kerala has also demonstrated strong performance in other SDG-related areas including:

- High institutional delivery rates
- Strong immunization coverage
- Improved maternal healthcare services
- Effective nutrition and child development programs

These outcomes position Kerala as a leading state in India in terms of progress toward the SDG health targets.

Key Activities Toward SDG Achievement

Kerala's progress toward SDG targets related to child health has been supported by several key initiatives and strategies.

Strengthening Maternal and Newborn Care

Improving maternal health and ensuring safe deliveries are critical for reducing neonatal and infant mortality. Kerala has strengthened antenatal care services, ensured universal institutional deliveries, and expanded facility-based newborn care services including SNCUs and NBSUs.

Universal Immunization

The state maintains high coverage under the Universal Immunization Programme, protecting children against major vaccine-preventable diseases and significantly reducing child morbidity and mortality.

Early Detection and Intervention

Programs such as Rashtriya Bal Swasthya Karyakram (RBSK) and District Early Intervention Centres (DEICs) support early identification and management of birth defects, developmental delays, and childhood illnesses.

Nutrition and Child Development Programs

Nutrition programs implemented through ICDS, growth monitoring initiatives, and micronutrient supplementation help prevent undernutrition and micronutrient deficiencies among children.

Community-Based Health Services

Community health workers including ASHA workers and field health staff play a critical role in providing home-based newborn care, health education, and early identification of health problems among children.

Health System Strengthening

Kerala continues to invest in health infrastructure, workforce training, health information systems, and referral networks, ensuring that children receive timely and quality healthcare services.

Conclusion: - Kerala has made remarkable progress in achieving the Sustainable Development Goals related to child health, particularly in reducing neonatal, infant, and under-five mortality. The state's achievements reflect the combined impact of strong public health systems, community participation, and sustained policy commitment to maternal and child health. Continued efforts to strengthen early childhood development programs, address emerging health challenges, and ensure equitable access to health services will be essential for sustaining progress and advancing child health outcomes in the years ahead.



SDG STATUS RELATED TO CHILD HEALTH – KERALA

Good Health Today, Brighter Future Tomorrow

The Sustainable Development Goals (SDGs) adopted by the United Nations in 2015 provide a global framework for improving health and well-being by the year 2030. Several SDG targets are directly related to maternal, newborn, and child health, particularly under SDG 3: Ensure healthy lives and promote well-being for all at all ages.

Kerala has consistently demonstrated strong performance in health indicators and has made substantial progress toward achieving SDG targets related to child survival, nutrition, and healthcare access.



3 GOOD HEALTH AND WELL-BEING



12.1 SDG GOALS AND ACHIEVEMENT

SDG Target 3.2: End preventable deaths of newborns and children under five years of age by 2030.

GLOBAL SDG TARGETS



Reduce Neonatal Mortality Rate (NMR) to at least as low as

12

per 1,000 live births



Reduce Under-Five Mortality Rate (U5MR) to at least as low as

25

per 1,000 live births

KERALA'S ACHIEVEMENT

Kerala has already achieved these targets well ahead of the SDG timeline.



Neonatal Mortality Rate (NMR)

3

per 1,000 live births



Under-Five Mortality Rate (U5MR)

6

per 1,000 live births



Kerala is among the leading states in India in achieving SDG health targets.

OTHER SDG-RELATED ACHIEVEMENTS



High institutional delivery rates



Strong immunization coverage



Improved maternal healthcare services



Effective nutrition and child development programs

12.2 KEY ACTIVITIES TOWARD SDG ACHIEVEMENT



STRENGTHENING MATERNAL AND NEWBORN CARE

Improving maternal health and ensuring safe deliveries are critical for reducing neonatal and infant mortality. Kerala has strengthened antenatal care services, ensured universal institutional deliveries, and expanded facility-based newborn care services including SNCUs and NBSUs.



UNIVERSAL IMMUNIZATION

The state maintains high coverage under the Universal Immunization Programme, protecting children against major vaccine-preventable diseases and significantly reducing child morbidity and mortality.



EARLY DETECTION AND INTERVENTION

Programs such as Rashtriya Bal Swasthya Karyakram (RBSK) and District Early Intervention Centres (DEICs) support early identification and management of birth defects, developmental delays, and childhood illnesses.



NUTRITION AND CHILD DEVELOPMENT PROGRAMS

Nutrition programs implemented through ICDS, growth monitoring initiatives, and micronutrient supplementation help prevent undernutrition and micronutrient deficiencies among children.



COMMUNITY-BASED HEALTH SERVICES

Community health workers including ASHA workers and field health staff play a critical role in providing home-based newborn care, health education, and early identification of health problems among children.



HEALTH SYSTEM STRENGTHENING

Kerala continues to invest in health infrastructure, workforce training, health information systems, and referral networks, ensuring that children receive timely and quality healthcare services.



CONCLUSION



Kerala has made remarkable progress in achieving the Sustainable Development Goals related to child health, particularly in reducing neonatal, infant, and under-five mortality. The state's achievements reflect the combined impact of strong public health systems, community participation, and sustained policy commitment to maternal and child health.

Continued efforts to strengthen early childhood development programs, address emerging health challenges, and ensure equitable access to health services will be essential for sustaining progress and advancing child health outcomes in the years ahead.



Together for a healthier Kerala. Together we achieve the SDG goals.



Chapter 13:

Child Health – Strength, Concerns and Way Forward

Child health outcomes reflect the overall performance of the health system and the broader social development of a society. Kerala has achieved remarkable progress in improving the survival, growth, and development of children through sustained investments in primary healthcare, maternal and newborn services, nutrition programs, and community-based public health initiatives. These achievements have positioned the state as a national leader in child health indicators. At the same time, the evolving epidemiological profile, changing lifestyles, emerging diseases, and increasing recognition of developmental and genetic conditions present new challenges. Addressing these issues requires a forward-looking strategy that strengthens existing systems while adapting to emerging health needs.

This chapter highlights the key strengths of Kerala's child health system, emerging concerns, and strategic priorities for the future.

Strengths in Child Health

Strong Public Health Infrastructure

Kerala has a well-developed and decentralized healthcare system that provides comprehensive services across primary, secondary, and tertiary levels of care. The extensive network of Family Health Centres, Community Health Centres, Taluk Hospitals, District Hospitals, and Medical Colleges ensures wide access to maternal and child health services. The state has also established a strong network of facility-based newborn care services, including Special Newborn Care Units (SNCUs), Newborn Stabilization Units (NBSUs), and High Dependency Units, enabling effective management of neonatal complications.

Excellent Child Survival Indicators

Kerala has achieved some of the lowest neonatal, infant, and under-five mortality rates in India, with figures comparable to those seen in many developed regions. These achievements reflect high coverage of antenatal care, universal institutional deliveries, skilled birth attendance, and strong newborn care systems.

High Institutional Delivery and Skilled Birth Attendance

Nearly all deliveries in Kerala occur in health institutions, ensuring access to skilled birth attendants and emergency obstetric care. This has played a critical role in reducing maternal and neonatal mortality.

Strong Preventive and Promotive Health Programs

The state has maintained high coverage in key preventive interventions, including:

- Universal immunization
- Promotion of exclusive breastfeeding
- Growth monitoring and nutrition programs
- Micronutrient supplementation

Community-level programs and health education initiatives have contributed significantly to improved child health outcomes.

Early Screening and Intervention Systems

Kerala has established systems for early identification of developmental delays and congenital conditions through programs such as Rashtriya Bal Swasthya Karyakram (RBSK) and District Early Intervention Centres (DEICs). These initiatives support early diagnosis and timely intervention, improving long-term developmental outcomes.

Innovative State-Level Programs

Kerala has also implemented innovative initiatives such as:

- Comprehensive newborn screening programs
- The Hridyam programme for congenital heart disease management
- The KARE initiative for rare diseases

These programs demonstrate the state's commitment to addressing complex health conditions affecting children.

Emerging Concerns in Child Health

Despite its strong performance, Kerala faces several emerging challenges that require focused attention.

Rising Childhood Obesity and Lifestyle Diseases

Changes in dietary patterns, increased consumption of processed foods, reduced physical activity, and excessive screen time have contributed to a rise in childhood overweight and obesity. This trend increases the risk of early onset of non-communicable diseases such as diabetes and hypertension.

Increasing Developmental and Behavioural Disorders

Improved screening has led to increased identification of developmental delays, autism spectrum disorders, learning disabilities, and behavioural disorders among children. These conditions require long-term multidisciplinary care and support systems.

Burden of Congenital and Genetic Disorders

Advances in diagnostic technologies have led to greater recognition of congenital anomalies, metabolic disorders, and rare genetic diseases. Many of these conditions require specialized treatment and long-term care, posing challenges for health systems and families.

Mental Health Concerns Among Children and Adolescents

Mental health issues among children and adolescents, including anxiety, depression, behavioural problems, and stress related to academic pressures and social changes, are emerging as important public health concerns.

Persistent Nutritional Challenges

Although severe malnutrition is relatively low in Kerala, challenges remain in addressing:

- Low birth weight
- Micronutrient deficiencies
- Inadequate infant and young child feeding practices
- The dual burden of undernutrition and obesity

Environmental and Emerging Health Threats

Climate change, environmental pollution, and emerging infectious diseases can disproportionately affect children due to their increased vulnerability.

Way Forward

To sustain and further improve child health outcomes, Kerala must adopt a comprehensive and forward-looking strategy that builds on existing strengths while addressing emerging challenges.

Strengthening Maternal and Newborn Care

Continued investment in antenatal care, high-risk pregnancy management, and neonatal care services will be essential for sustaining low neonatal mortality rates. Expanding newborn screening and improving early detection of congenital conditions should remain priorities.

Expanding Early Childhood Development Programs

Strengthening early childhood development initiatives, including developmental screening, early intervention services, and parental education programs, will support optimal cognitive and social development.

Addressing Childhood Obesity and Lifestyle Risks

Promoting healthy lifestyles through school-based and community-based programs is essential to prevent childhood obesity. Initiatives should focus on:

- Encouraging physical activity
- Promoting healthy dietary habits
- Reducing excessive screen time
- Strengthening school health programs

Strengthening Mental Health Services for Children

Developing child-friendly mental health services and integrating mental health support into school and community programs will be important for addressing psychological and behavioural issues among children.

Enhancing Nutrition Interventions

Nutrition programs should continue to focus on improving maternal nutrition, promoting optimal infant and young child feeding practices, and preventing micronutrient deficiencies.

Strengthening Surveillance and Data Systems

Improved health information systems and routine monitoring of child health indicators will help identify emerging health issues and guide evidence-based policy decisions.

Promoting Intersectoral Collaboration

Improving child health outcomes requires coordinated efforts across multiple sectors including health, education, nutrition, social welfare, and local self-governments. Strengthening these partnerships will ensure comprehensive support for children and their families.

Conclusion

Kerala's achievements in child health reflect decades of sustained public health investments and strong social development. However, the evolving health landscape demands continuous innovation, system strengthening, and policy adaptation. By focusing on preventive care, early intervention, nutrition, mental health, and equitable access to healthcare, Kerala can continue to lead the country in child health outcomes and ensure that every child has the opportunity to grow, develop, and achieve their full potential.

Annexures

Annexure1: List of MBFHI certified hospitals in Kerala

MBFHI Accredited Institutions			
Sl.No	Institution	District	Sector
1	SreeGokulam Medical College	Trivandrum	Private
2	KIMS Health	Trivandrum	Private
3	SUT Pattom	Trivandrum	Private
4	W&C Hospital Thycaud	Trivandrum	Government
5	SAT Hospital Government Medical College	Trivandrum	Government
6	Muthoot Healthcare Pvt LTD Kozhanchery	Pathanamthitta	Private
7	General Hospital Pathanamthitta	Pathanamthitta	Government
8	Bharath Hospital	Kottayam	Private
9	Mitera Hospital	Kottayam	Private
10	Caritas Hospital & Institute of Health Sciences	Kottayam	Private
11	Holy Ghost Mission Hospital,Muttuchira	Kottayam	Private
12	Ernakulam Medical Centre	Ernakulam	Private
13	Lisie Hospital	Ernakulam	Private
14	Medical Trust Hospital	Ernakulam	Private
15	Aster Medcity	Ernakulam	Private
16	General Hospital Ernakulam	Ernakulam	Government
17	Medical Trust Hospital Ernakulam	Ernakulam	Private
18	Daya General Hospital Limited	Thrissur	Private
19	W&C Hospital Ponnani	Malappuram	Government

20	Moulana Hospital	Malappuram	Private
21	District Hospital Nilambur	Malappuram	Government
22	Taluk Head Quarters Hospital Malappuram	Malappuram	Government
23	W&C Hospital Kozhikode	Kozhikode	Government
24	St.Josephs Mission Hospital,Manathavady	Wayanad	Private
25	District Hospital Mananthavady	Wayanad	Government
26	Government Medical College Manjery	Malappuram	Government
27	Sanjivani Multi Speciality Hospital, Kollakadavu, Chengannur	Alappuzha	Private
28	Gowreesha Hospital, Trivandrum	Trivandrum	Private
29	THQH Punalur, Kollam	Kollam	Government
30	Institute of Maternal and Child Health GMCH, Kozhikode	Kozhikode	Government
31	Government Medical College, Kottayam	Kottayam	Government
32	St Joseph's Mission Hospital, Anchal , Kollam	Kollam	Private
33	Polakulath Narayanan RenaiMedicity, Ernakulam	Ernakulam	Private
34	EKNM Govt Woman and Children Hospital Mangattuparamba, Kannur	Kannur	Government
35	DR SMCSI Medical College and Hospital Karakonam, Trivandrum	Trivandrum	Private
36	Pushpagiri Medical College Hospital , Thiruvalla	Pathanamthitta	Private
37	Christian Mission Hospital, Pandalam	Pathanamthitta	Private
38	KIMS Alshifa Healthcare Pvt Ltd, Perinthalmanna	Malappuram	Private
39	Aster Malabar Institute of Medical Sciences, Kannur	Kannur	Private

40	Ananthapuri Hospitals And Research Institute, Trivandrum	Trivandrum	Private
41	Government Medical College Ernakulam	Ernakulam	Government
42	St Thomas Hospital, Chethipuzha, Changanassery	Kottayam	Private
43	Government Medical College Thrissur	Thrissur	Government
44	THQH Tirurangadi, Malappuram	Malappuram	Government
45	Believers Church Medical College Hospital, Thiruvalla	Pathanamthitta	Private
46	General Hospital Adoor	Pathanamthitta	Government
47	District Hospital Kozhanchery	Pathanamthitta	Government
48	MGM Muthoot Medical Centre Pvt Ltd	Pathanamthitta	Private
49	District Hospital Mavelikara	Alappuzha	Government
50	Women and Children Hospital	Alappuzha	Government
51	Ernakulam Medical Centre Hospital (Pvt Ltd)	Ernakulam	Private (Re)
52	THQH Chalakkudy	Thrissur	Government
53	General Hospital, Irinjalakuda	Thrissur	Government
54	Daya General Hospital and Specialty Surgical Centre	Thrissur	Private (Re)
55	General Hospital, Kozhikode	Kozhikode	Government
56	MIMS Kottakkal	Malappuram	Private
57	General Hospital, Kasargod	Kasargod	Government
58	PK Das Institute of Medical Sciences, Vaniyankulam, Ottapalam, Palakkad	Palakkad	Private
59	ARMC, AEGiS Hospital Perinthalmanna, Malappuram	Malappuram	Private

2.Trend in Full Immunization Coverage (RCH Portal), Kerala

Districts	2021-22	2022-23	2023-24	2024-25
TVM	99	98	99	99
KLM	99	99	99	99
PTA	99	99	99	99
ALP	99	99	99	99
KTM	98	99	99	99
IDK	99	98	99	98
EKM	98	98	99	98
TSR	98	98	98	98
PKD	95	96	97	96
MLP	88	88	87	86
KKD	96	93	94	93
WYD	97	97	97	96
KNR	95	95	95	94
KSD	96	96	96	96
STATE	95	95	95	95

Dropout Analysis Across Antigen Series

Dropout Analysis Across Antigen Series(2024-25)

District	BCG-PENTA 1	PENTA1- PENTA3	PENTA1- MR1	MR1- MR2
Thiruvananthapuram	0.41	0.19	0.31	0.71

Kollam	0.30	0.18	0.31	0.64
Pathanamthitta	0.11	0.14	0.18	0.06
Alappuzha	0.33	0.21	0.35	0.33
Kottayam	0.42	0.24	0.26	0.46
Idukki	0.42	0.23	0.50	0.66
Ernakulam	0.86	0.34	0.74	1.40
Thrissur	0.82	0.56	0.97	1.91
Palakkad	1.49	1.13	1.25	1.36
Malappuram	2.40	1.80	2.37	3.63
Kozhikode	6.72	4.85	4.89	18.30
Wayanad	3.10	1.98	2.75	7.67
Kannur	1.84	0.96	1.09	1.77
Kasaragod	1.47	0.95	1.40	5.57
KERALA	2.43	1.64	1.91	5.62

Special Immunization Campaigns (Pulse Polio, Intensified Mission Indradhanush, MR campaign)

Intensified Mission Indradhanush - 5.0 Round II report (11-09-2023 to 16-09-2023)

District	IMI Round II Start Date	IMI Round II End Date	No. of target children for the Round: II		Target for MR Vaccine		No. of children vaccinated		0-5 Already Vaccinated After the Head count Survey	No. of target Pregnant women for the Round : II	No. of PW vaccinated
			up to 0-2 Years	2 to 5 yrs	MR-1	MR-2	up to 0-2 Years	2 to 5 yrs			
ALP	11/09/2023	16/09/2023	1980	784	663	646	2589	657	146	374	502
EKM	11/09/2023	16/09/2023	2512	948	750	803	3182	853	256	737	724
IDK	11/09/2023	16/09/2023	1218	282	254	239	1734	403	23	210	215

KNR	11/09/2023	16/09/2023	4374	4121	3007	2931	4005	1398	465	637	687
KSD	11/09/2023	16/09/2023	2909	1615	1204	1109	3110	1029	427	735	828
KLM	11/09/2023	16/09/2023	1966	14	392	328	2564	24	409	174	252
KTM	11/09/2023	16/09/2023	1831	917	339	509	2405	777	321	576	773
KKD	11/09/2023	16/09/2023	5610	3009	1510	1661	5103	1372	1105	1522	1698
MLP	11/09/2023	16/09/2023	13714	22491	13182	12729	15251	5554	777	628	1397
PKD	11/09/2023	16/09/2023	6431	2299	1519	1610	6889	2611	295	1713	1646
PTA	11/09/2023	16/09/2023	895	431	211	303	1390	539	130	241	285
TVM	11/09/2023	16/09/2023	6477	2887	1571	1887	5007	2046	2791	2082	1961
TSR	11/09/2023	16/09/2023	1480	1036	587	640	3897	1100	938	807	1045
WYD	11/09/2023	16/09/2023	1234	773	532	588	1432	377	187	485	555
State	11/09/2023	16/09/2023	52631	41607	25721	25983	58558	18740	8270	10921	12568

Intensified Mission Indradhanush - 5.0 Round III report (09-10-2023 to 16-10-2023)

District	IMI Round III Start Date	IMI Round III End Date	No. of target children for the Round: III		Target for MR Vaccine		No. of children vaccinated		0-5 Already Vaccinated After the Head count Survey	No. of target Pregnant women	No. of PW vaccinated
			up to 0-2 Years	2 to 5 yrs	MR-1	MR-2	up to 0-2 Years	2 to 5 yrs			
ALP	09/10/2023	14/10/2023	2470	760	584	562	2455	569	411	514	520
EKM	09/10/2023	14/10/2023	2696	977	809	837	2912	958	240	686	758
IDK	09/10/2023	14/10/2023	1073	161	271	258	1054	166	38	224	225
KNR	09/10/2023	14/10/2023	3389	3242	2465	2343	3585	1084	218	450	534
KSD	09/10/2023	14/10/2023	2735	1505	886	852	2724	901	500	626	610
KLM	09/10/2023	14/10/2023	2356	38	328	441	2353	33	598	296	388

KTM	09/10/2023	14/10/2023	2004	748	438	456	2142	628	74	557	601
KKD	09/10/2023	14/10/2023	5644	2190	1517	1670	6243	1268	1058	1319	1597
MLP	09/10/2023	16/10/2023	12807	22092	11759	11425	13413	3972	292	603	1397
PKD	09/10/2023	14/10/2023	7635	2412	2187	2326	7082	2412	341	1181	1509
PTA	09/10/2023	14/10/2023	803	345	215	244	1103	356	168	207	245
TVM	09/10/2023	14/10/2023	5202	2410	1477	1626	4524	1987	2279	1706	1731
TSR	09/10/2023	16/10/2023	929	762	602	414	3396	965	524	421	783
WYD	09/10/2023	16/10/2023	1067	674	462	457	1183	296	124	414	429
State			50810	38316	24000	23911	54169	15595	6865	9204	11327

Intensified Pulse Polio Immunization Programme

	Target	Booth coverage					No. of child ren vacci nate d outsi de of hous es by Supe rviso r	No. of child ren vacci nate d at transi t point s/ mela sites/ bazaa rs	No of migr ant child ren imm unise d	Total children vaccine d	Total OPV vials used	Achieve ment
		Total children vaccine d in booth	No. of childr en vaccin ated in houses by teams	No. of childr en vaccin ated outsid e of houses by teams	No. of child ren vacci nate d in 'X' hous es	No. of childre n vaccin ated in P- houses by Superv isor						
TVM	204183	182222	14785	616	734	1	23	4311	1761	204453	11608	100.13
KLM	163274	141950	14966	303	316	8	8	3564	815	161930	9280	99.18
PTA	64765	56982	4202	35	127	0	6	1689	582	63623	3563	98.24
ALP	118608	103828	7111	159	298	4	9	4979	1020	117408	6752	98.99
KTM	96698	89457	3794	18	181	0	5	2849	929	97233	5680	100.55
IDK	69092	57130	4323	45	161	1	2	2652	2684	66998	3924	96.97
EKM	196565	180145	7759	204	561	10	21	2615	7213	198528	10780	101.00
TSR	201851	169383	18460	142	528	12	23	5102	2210	195860	11132	97.03
PKD	201604	187111	18455	147	400	1	68	6112	2011	214305	11692	106.30

Intensified Pulse Polio Immunization Programme

MLP	445201	306570	107685	284	2121	4	33	7206	2619	426522	24119	95.80
KKD	219320	187714	21074	145	707	2	82	5565	1539	216828	12228	98.86
WND	59038	48014	7790	95	154	3	32	2032	539	58659	3413	99.36
KNR	174030	141543	19310	1045	1360	7	200	3694	1740	168899	9534	97.05
KSD	110720	89102	16914	68	398	0	2	2100	1035	109619	6086	99.01
TOTAL	2324949	1941151	266628	3306	8046	53	514	54470	26697	2300865	129791	98.96

MR Elimination Campaign – Target vs Coverage by Age Cohort and District - MR1

Districts	Targets (Microplan)			MR1 Coverage							
	MR-1 (9-11 months)	MR-1 (>12 months)	Total target (MR1)	9-11 months			>12 months			Total MR1	MR1 %
				During the campai gn	Already Vaccin ated	Total	Durin g the camp aign	Already Vaccin ated	Total		
TVM	1848	171	2019	871	782	1653	125	16	141	1794	89
KLM	136	45	181	85	50	135	28	15	43	178	98
PTA	5	2	7	4	1	5	1	1	2	7	100
ALP	68	16	84	45	9	54	14	2	16	70	83
KTM	87	111	198	21	21	42	14	14	28	70	35
IDK	235	40	275	197	30	227	0	0	0	227	83
EKM	204	168	372	90	11	101	14	0	14	115	31
TSR	1037	693	1730	417	177	594	55	10	65	659	38

PKD	2943	2005	4948	1098	1800	2898	269	1720	1989	4887	99
MLP	12879	23558	36437	4028	1609	5637	1808	843	2651	8288	23
KKD	4722	4151	8873	1039	748	1787	391	235	626	2413	27
WYD	220	244	464	209	153	362	134	100	234	596	128
KNR	2344	2163	4507	624	149	773	317	178	495	1268	28
KSD	1416	702	2118	492	363	855	233	124	357	1212	57
KERALA	28144	34069	62213	9220	5903	15123	3403	3258	6661	21784	35

MR Elimination Campaign – Target vs Coverage by Age Cohort and District - MR2													
Distr icts	MR2 Target (Microplan)			MR 2 Coverage							MR2 %		
	16- 24 mon ths	>24 mon ths	A ll	16-24 months			>24 months			Tot al MR 2	1 6 - 2 4	>24 mo nth s	A l l
				During the camp aign	Already Vaccin ated	Tot al	During the camp aign	Already Vaccin ated	Tot al				
TVM	2585	166	2751	1121	1037	2158	130	8	138	2296	83	83	83
KLM	130	37	167	97	27	124	28	6	34	158	95	92	95

PTA	10	2	12	8	2	10	2	0	2	12	100	100	100
ALP	68	27	95	65	3	68	7	5	12	80	100	44	84
KTM	120	134	254	28	28	56	8	8	16	72	47	12	28
IDK	248	46	294	249	0	249	4	0	4	253	100	9	86
EKM	262	194	456	51	8	59	19	0	19	78	23	10	17
TSR	1288	780	2068	560	137	697	90	16	106	803	54	14	39
PKD	3949	2340	6289	1270	2041	3311	399	290	689	4000	84	29	64
MLP	23722	34641	58363	5244	1810	7054	1882	1155	3037	10091	30	9	17
KKD	5557	6131	11688	1283	818	2101	269	221	490	2591	38	8	22
WYD	197	284	481	197	0	197	41	124	165	362	100	58	75
KNR	3282	3443	6725	841	139	980	310	142	452	1432	30	13	21
KSD	1815	1164	2979	723	250	973	149	54	203	1176	54	17	39
All	43233	49389	92622	11737	6300	18037	3338	2029	5367	23404	42	11	25

Table 6: Number of Children Achieved Full Immunization and Complete Immunization During the MR Elimination Campaign

Districts	Fully Immunized 9-11 months	Fully Immunized 12-23 months	Complete immunization achieved
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TVM	874	394	1393
KLM	97	56	115
PTA	4	1	10
ALP	71	14	77
KTM	21	7	36
IDK	191	0	279
EKM	88	32	68
TSR	511	111	618
PKD	1032	248	2055
MLP	4047	2102	2456
KKD	1034	440	1222
WYD	209	134	177
KNR	654	335	946
KSD	508	305	908
State	9341	4179	10360

Annexure chapter 6.1

DISTRICTS	TARGET OF 0-6 YRS	0-6 yrs TOTAL SCREENED	% SCREENED	TARGET OF 6-18 YRS	6-18 TOTAL SCREENED	% SCREENED
Thiruvananthapuram	181036	239946	133	266278	217048	82
Kollam	124341	186708	150	243655	200839	82
Pathanamthitta	45155	87829	195	79175	105711	134
Alappuzha	74960	140041	187	170253	201154	118
Kottayam	73089	125554	172	192839	149257	77
Idukki	55122	82858	150	96052	106625	111
Ernakulam	162637	247650	152	233396	151699	65
Thrissur	165310	217488	132	324066	222771	69
Palakkad	187986	319246	170	325664	424733	130
Malappuram	448906	517249	115	785204	490206	62
Kozhikode	209318	269899	129	327587	182951	56
Wayanad	66439	84678	127	121837	59627	49
Kannur	161550	212633	132	280699	203060	72
Kasargode	93692	112925	121	165948	120982	73
TOTAL	2049541	2844704	139	3612635	2836663	78

DISTRICTS	DEIC Location	Own/KSSM Building	Total Number of children visited DEIC	Number of New cases came to DEIC	Number of children came for Followup therapy (with out duplication)	Average daily client load of the DEIC
Thiruvananthapuram	W & C Thycaud	OWN	5015	1799	3216	23
Kollam	Govt. Victoria Hospital	KSSM	6487	1741	4746	26
Pathanamthitta	THQH THIRUVALLA	OWN	2842	914	1928	21
Alappuzha	NEAR RMO QUATERS, W&C HOSPITAL	KSSM	6045	1554	4491	29
Kottayam	GH KOTTAYAM	OWN	2957	1430	1527	17
Idukki	DH Idukki	MCH	2654	1087	1567	18
Ernakulam	GH ERNAKULAM	OWN	5867	1874	3993	26
Thrissur	DH WADAKKANCHERY	KSSM	6526	1777	4749	35
Palakkad	Govt. W & C Hospital Palakkad	OWN	4318	1164	3154	19
Malappuram	THQH THIRURANGADI	KSSM	5870	1572	4298	30
Kozhikode	GENERAL HOSPITAL, KOZHIKODE	OWN	6076	2139	3937	26
Wayanad	GH Kalpetta	KSSM	5078	1117	3961	22
Kannur	EKNM Govt. W&C Hospital, Mangattuparamba	KSSM	5916	1145	4771	28
Kasargod	DH KANHANGAD	OWN	5106	877	4229	25

Annexure chapter 7.3

Adolescent Health District wise performance						
Sl No	Description	2021-22	2022-23	2023-24	2024-25	2025-26
1	Total Counselling Services	78031	66698	141589	173767	192270
2	No. of Outreach programmes conducted	3397	5347	7508	8791	9929
3	No. of Adolescents attended in outreach programmes	116148	205885	293185	334901	445264
4	No. of AHWDs conducted	393	269	375	286	383
5	No. of AFC meeting conducted	593	2699	2075	3145	3249
6	No. of Peer Educators selected in the year	11500	5800	5800	5800	5251
7	No. of Peer Educators trained	1250	4533	3441	4428	4487

Adolescent Health District wise performance 2025-26



Sl No	District	Total Counselling	No. of Outreach pgm conducted	No. of Adolescents attended in outreach pgm.	No. of AHWDs conducted	No. of AFCs meeting conducted	No. of Peer Educators selected	No. of Peer Educators Trained
1	TVM	7737	404	25482	15	30	200	200
2	KLM	8364	401	17503	31	138	200	200
3	PTA	18148	831	38725	23	192	400	398
4	ALP	6947	376	30835	17	152	400	400
5	KTM	7019	352	19244	17	185	200	200
6	IDK	13765	822	29892	15	114	400	280
7	EKM	9289	470	16671	11	113	160	160
8	TSR	9445	519	17978	14	230	200	200
9	PKD	27816	1475	59228	109	646	600	0
10	MLPM	28716	1277	44294	47	682	1000	991
11	KKD	11148	677	26609	21	264	200	200
12	WYD	16636	622	39703	27	161	600	600
13	KNR	8243	728	30190	18	139	160	129
14	KSD	18997	975	48910	18	203	531	529
KERALA		192270	9929	445264	383	3249	5251	4487