കേരള സർക്കാർ

NON COMMUNICABLE DISEASE PREVENTION AND CONTROL
HEALTH & FAMILY WELFARE DEPARTMENT
GOVT. OF KERALA

Website: https://dhs.kerala.gov.in, https://arogyakeralam.gov.in
Email:dhskerala@gmail.com, statencddivision@gmail.com

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Background

Kerala is renowned globally for the achievements it has acclaimed in the Health management sector in the past few decades. Through the concerted efforts the Health indices like maternal mortality rate, infant mortality rate, and total fertility rate were kept low and have placed the state in the highest order in the countries' health chart. But, Owing to peculiar lifestyle change which has swept across the state cutting the regional and economic strata, the health challenges took a new shape in the form of communicable and non communicable diseases. Rampant modernization and urbanization, high consumerism, and influence of NRI fund flow virtually resulted in emergence of risk factors leading to non-communicable diseases. As a result, the State has now become the abode of diseases like diabetes, hypertension, cardiovascular diseases, cancers and stroke which has slowly and steadily affected the health of a vast majority of the population posing a challenge in the health sector and also the economic burden it imposes to the society.

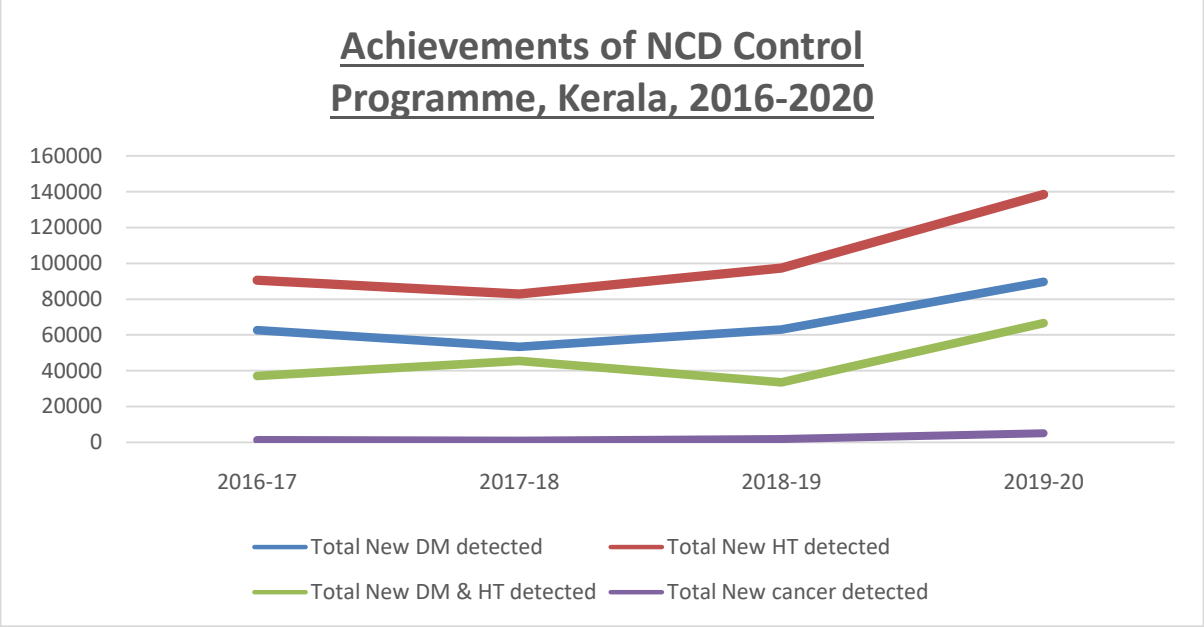
The steady increase in OOP as shown in the economic review depicts the fact that the people are spending more for their health needs than in any other state in India. High literacy, easy availability and accessibility of medical services, increasing elderly population, and special health seeking behavior of the population are the main reasons for this high OOP.

Kerala Health Services Department has introduced a novel program called '**Amrutham Aarogyam'** which has infiltrated down to the masses and has helped in identification of more than Ten lakhs diabetes and hypertension patients. The program also provides treatment according to the protocol and also issues medicines free of cost.

In addition to the routine NCD screening, subsidiary screening and management for other conditions like COPD(SWAAS), Diabetic Retinopathy (Nayanamritham), Diabetic foot(Padasprasham), Stroke Management(SIRAS), Adolescent NCD programme(VIBGYOR), Decentralized Cancer Management(ABHAYM) etc are also executed under the umbrella of Amrutham Arogyam.

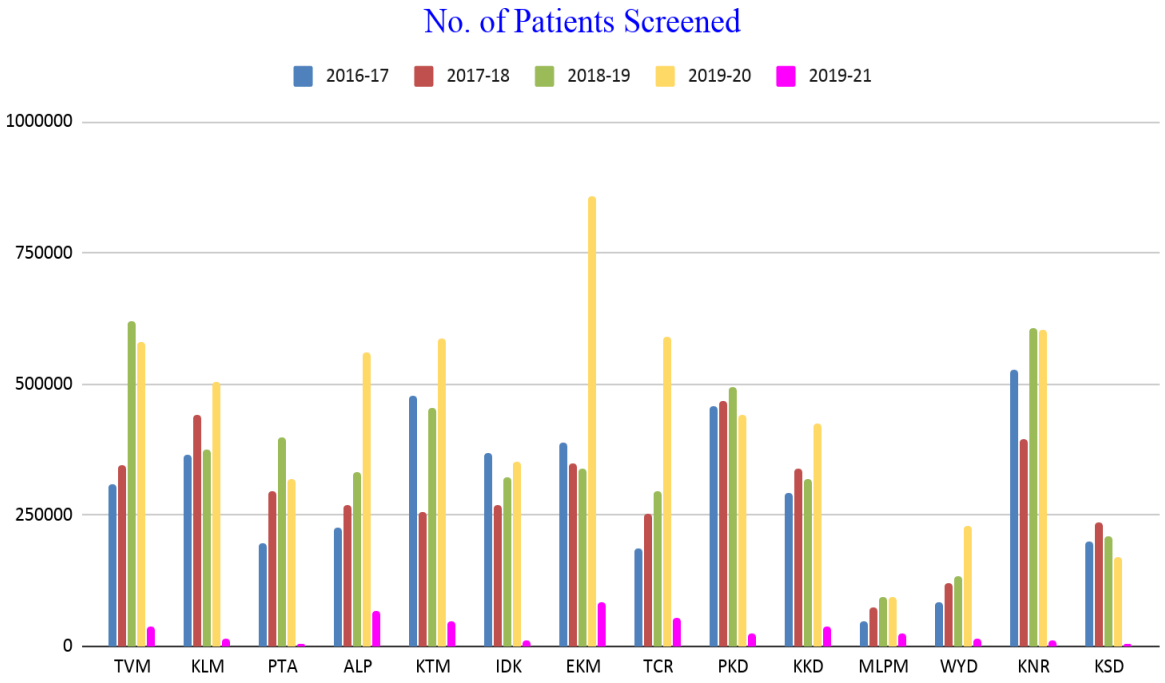
Coverage

Amrutham Arogyam programme covers the entire state spreading across all districts and the services rendered through all district/General hospitals, Sub district level hospitals, Community Health Centers, Primary Health Centers and even the 5400 Sub centers which cater to a population of five thousand. Kerala is the only state where the entire health system is equipped with NCD screening program



Indicators	2016-17	2017-18	2018-19	2019-20	2020-21
Total New DM detected	62634	53379	63130	89727	30069
Total New HT detected	90682	82921	97456	138507	42102
Total New DM & HT detected	37121	45602	33576	66689	17566
Total New cancer detected	1424	971	1862	5159	2512

Non Communicable disease- District wise status of previous years Screening



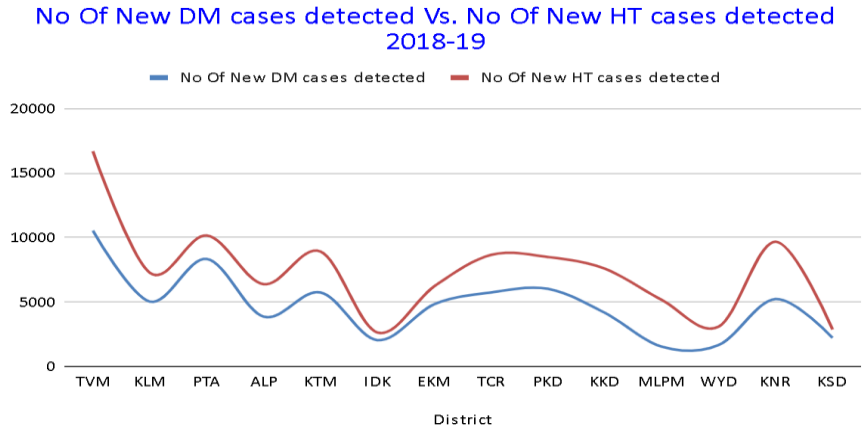
- Screening status of Malappuram district is consistently low in spite of the heavy population. This is due to the poor data management system as the services given to the public are devoid of any complaint.
- The screening figures of Ernakulam district in 2019-20 are disproportionately high. Data checking to be done to rule out duplications.
- The screening data of Thiruvananthapuram, Thrissur, Kannur and Wayanad had improved in the last two years due to implementation of IHCI programme.
- The screening data of all districts have dipped in 2020-21 due to Covid- 19 pandemic and the resultant lock down.
- The data has to be entered in the Ehealth NCD module for error free real time documentation. This has to be ensured at all NCD clinics
- Data validation to be done at all levels of health care from where reports are generated
- Additional screening logistics to be calculated and ensured at all levels to manage the additional burden of patients who have returned from outside Kerala

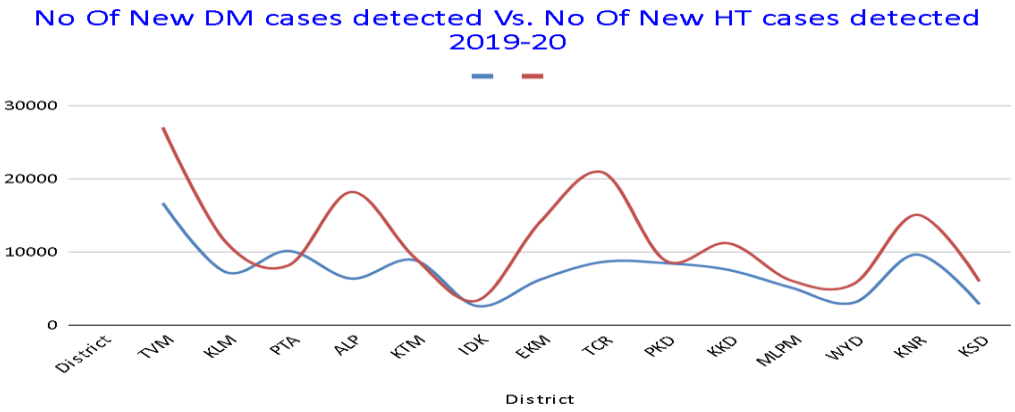
NCD screening-Achievement 2020-21

District	No. of Patients Screened	No Of New DM cases detected	No Of New HT cases detected
Trivandrum	194847	3126	4466
Kollam	116136	2066	1377
Pathanamthitta	97586	4425	4564
Alappuzha	333271	4139	6778
Kottayam	233410	2186	2922
Idukki	78364	561	733
Ernakulam	387941	4163	4438
Tthrissur	134880	1610	1978
Palakkad	134535	1401	2134
Kozhikode	197993	2554	4540
Malappuram	161083	4889	8526
Wayanad	118807	553	1629
Kannur	82258	1245	2599
Kasaragode	59757	1290	2196

NEW CASE DETECTION

Through the screening program new cases of Diabetes, Hypertension and patients having both were identified. The patients on follow up are registered separately.





- Detection of Hypertension is high in Trivandrum, Kannur, Thrissur and Wayand due to implementation of IHCI programme
- The prevalence of Diabetes and Hypertension in the state correlates with the screening data obtained from districts

India Hypertension Control Initiative (IHCI)

The India Hypertension Control Initiative (IHCI) is a collaborative project of Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare (MoHFW), Government of Kerala, World Health Organization (WHO), and Resolve to Save Lives initiative of Vital Strategies.

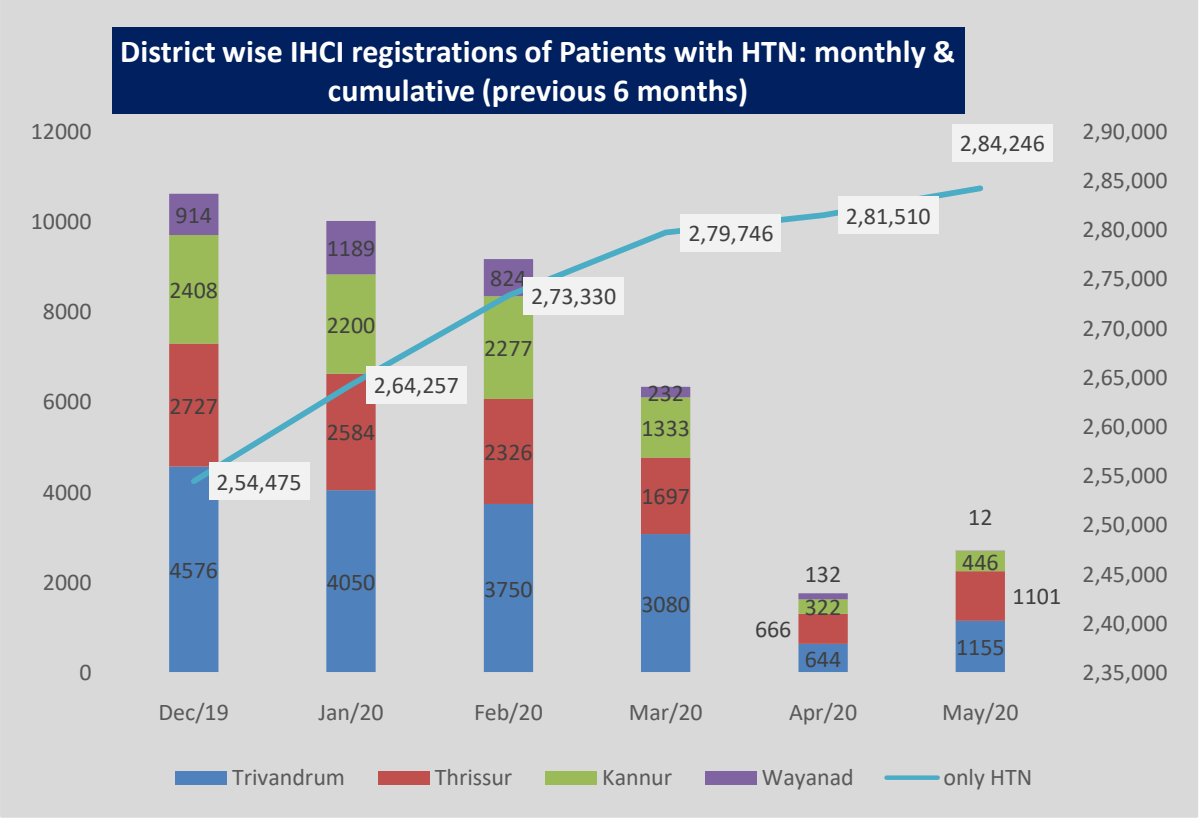
Kerala State also incorporated Diabetes control and monitoring along with IHCI. The Initiative is implemented in four districts of Kerala-Thiruvananthapuram, Thrissur, Kannur and Wayanad

Services under the Initiative:

- All patients 18 years and above visiting any PHC or CHC is subjected to BP measurement
- Patients whose BP values are more than or equal to 140/90 are referred to Medical officer for treatment initiation, in which lifestyle modification is the first modality of treatment followed by pharmacological management as per the decided treatment protocol.
- Patients initiated on treatment are registered under the program with a Treatment card maintained for every patient at the facility level and a patient pass book at the patient level.

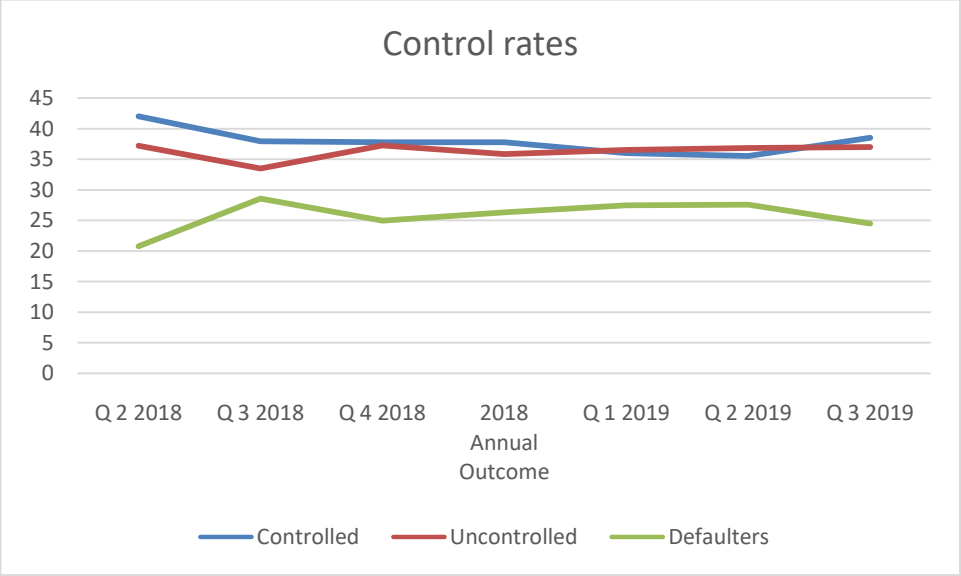
- Details of Patients registered with treatment card are documented in a Hypertension facility register to facilitate cohort monitoring after 6 months of treatment initiation.
- Cohort monitoring of patients registered under the Initiative after 2 quarters of registration and treatment initiation.
- Identification of defaulters and ensuring tracking of defaulters through field workers.

IHCI Registrations (patients with Hypertension)			
Name of district	Estimated number with hypertension (>30yrs)	Total number of registrations till date	Proportion (%) ofhypertensives registered
Trivandrum	5,64,854	99,460	17.6
Thrissur	4,71,168	91,600	19.4
Kannur	6,43,044	69,395	10.8
Wayanad	1,31,584	23,791	18.1
Total	**18,10,650**	**2,84,246**	**15.7**

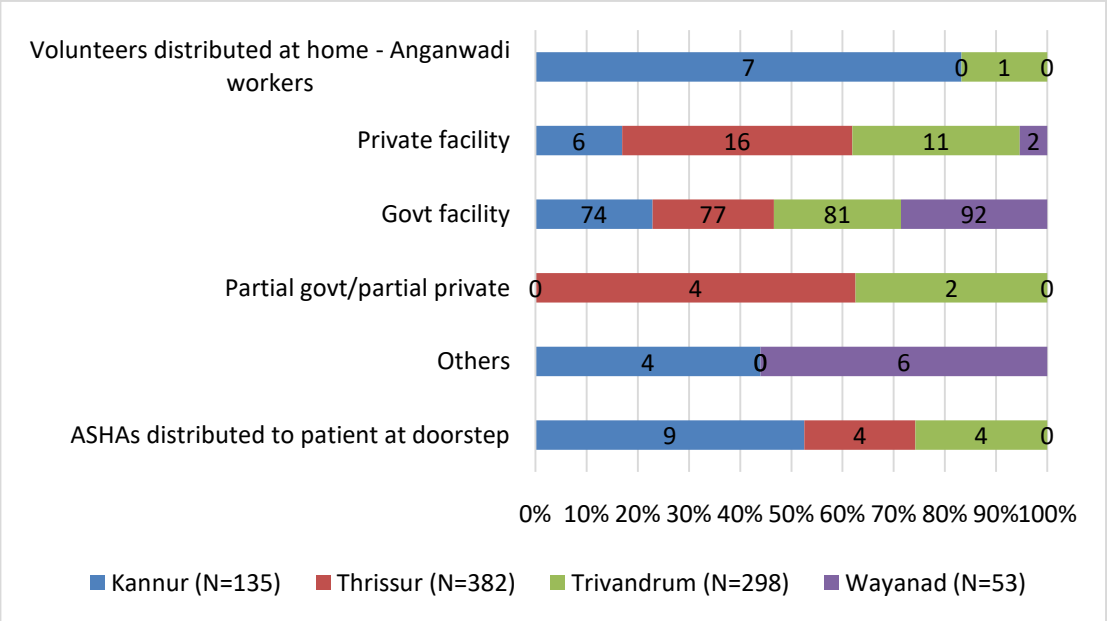


Achievement

Control rates among Hypertension patients on treatment has increased from 13% to 38.1% and for the first time defaulters were tracked and was able to decrease the defaulter rate to 27.6% from 55%.



Analysis was done at IHCI district to verify the availability of NCD drugs during Lock down period. This was done by telephonic interview with the registered patients by the treatment supervisors



NCD Drug position at Districts

A daily analysis of drug position at districts warehouse and institution is done. There is no shortage of essential drugs as of 30.06.2020. Only insulin is deficient in some institutions.

	DRUGS STOCK POSITION 03 07 2020							
SL	Name Of Drug	TVM	KLM	PTA	ALP	KTM	IDK	EKM
1	AMLODIPINE 5 MG TAB	3806928	3223870	3087630	2379160	3372114	1935800	3383802
2	ATORVASTATIN 10 MG TAB	3826295	3063365	1680445	1575400	1938758	942900	2169303
3	TELMESARTAN 40 MG TAB	1169510	1593297	1006450	733070	732845	794850	1045061
4	LOSARTAN 25 MG TAB	1679470	1238925	1118505	649050	857150	605600	1650000
5	LOSARTAN 50 MG TAB	1381680	1567940	1438614	751000	692118	774300	1588934
6	CLOPIDOGREL 75 MG TAB	1659597	1383700	1128005	770320	699258	621979	774253
7	METOPROLOL 50 MG TAB	109800	314650	98980	581075	542994	13025	156900
8	ASPIRIN 75 MG	492899	577772	237720	1550074	234578	345626	421887
9	ASPIRIN 150 MG	1193397	727607	430110	368815	375380	422550	337042
10	HUMAN INSULIN 30/70 INJ	17642	12832	21514	20696	17040	2685	22380
11	METFORMIN 500 MG TAB	5721265	3593883	3242250	1870450	3553149	1789800	4305530
12	GLIMEPRIDE 1 MG TAB	4075115	3379543	3037980	1733022	2293215	1219680	2871483
13	GLIMEPRIDE 2 MG TAB	4422170	252500	2812170	1829910	2686572	942650	2112426

	DRUGS STOCK POSITION 03 07 2020								
SL	Name Of Drug	TSR	PKD	MLP	KKD	WYD	KNR	KSD	TOTAL
1	AMLODIPINE 5 MG TAB	1802420	1861920	2005210	293600	3053330	2334410	4618275	**33934599**
2	ATORVASTATIN 10 MG TAB	2439120	848720	1322870	2129390	1391750	1172408	1666900	**23104259**
3	TELMESARTAN 40 MG TAB	1470450	486700	473230	1359456	973350	1541468	1613490	**13399930**
4	LOSARTAN 25 MG TAB	588550	763150	847400	1309250	495900	396275	953625	**13152850**
5	LOSARTAN 50 MG TAB	667600	521100	1431410	711080	606700	352590	1519250	**12436376**
6	CLOPIDOGREL 75 MG TAB	664346	505150	1339200	612610	368230	659743	404740	**11591131**
7	METOPROLOL 50 MG TAB	515000	88050	18450	160250	56170	230865	490770	**3376979**
8	ASPIRIN 75 MG	94500	115100	150758	550992	43450	325480	162810	**5303646**
9	ASPIRIN 150 MG	155200	147335	319000	402350	104570	188692	150720	**5322768**
10	HUMAN INSULIN 30/70 INJ	26432	5389	18293	22588	5920	30852	23589	**247852**
11	METFORMIN 500 MG TAB	1715210	3445510	3425270	4146180	3459130	4224692	5842050	**50334369**
12	GLIMEPRIDE 1 MG TAB	1777850	1213810	1921830	1552820	1926650	2093550	2626726	**31723274**
13	GLIMEPRIDE 2 MG TAB	2316430	1349550	2346750	1852750	1367750	2588606	1764200	**28644434**

- All districts to ensure that the BPL and vulnerable population are provided drugs for at least one month in advance.
- All districts to keep w close watch on the drug position and ensure speedy replenishing of low stock drugs

NAYANAMRITHAM- Diabetic Retinopathy Screening

Diabetic Retinopathy is a common complication of longstanding Diabetes Mellitus which can end up in total loss of vision. The progress of Diabetic Retinopathy is in different stages and complete effective treatment is available if the condition is detected in the early stages. With the technical support provided by E-health, Health Services department had implemented a care pathway in the public health system involving the primary centres, secondary centres and tertiary care centres in Thiruvananthapuram district of Kerala.

The DR screening was done using a hand held Non mydriatic Camera which can take fundus photograph for the diagnosis of diabetic retinopathy and it stages. Training was imparted to staff Nurses, who would take fundus photograph of Diabetic & hypertensive patients visiting the NCD clinics. The captured image will be transmitted to a state retinopathy centre located in the Regional Institute of Ophthalmology and manned by trained Optometrists who would evaluate the picture and send back the diagnosis and advice on management. Asha workers and other field workers play an active role in identifying the diabetic patients in the community and encouraging them to take part in the screening programme.

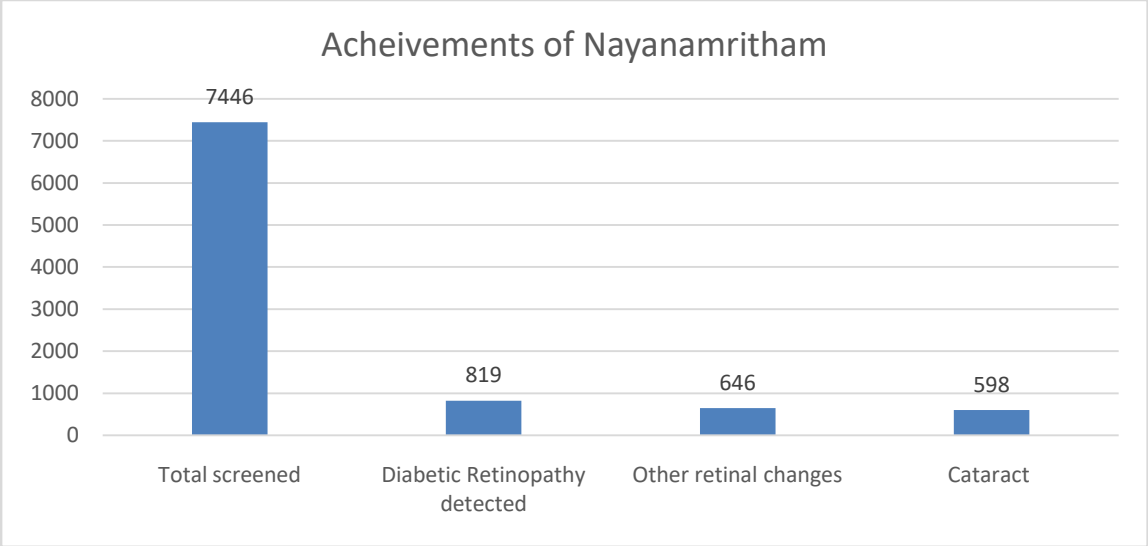
Scale- up of the programme to other districts:

In the process of expanding the screening programme throughout the state, 52 Non mydriatic cameras were procured through NHM in 18-19 and approval was received for procuring 100 more cameras in ROP 19-20.

Achievements

- ***Diabetic Retinopathy clinics are functional at 14 District Hospitals and 16 Family Health Centres are currently functioning as DR screening sites using Non Mydriatic cameras***
- ***Total patients screened (July 2018 to February 2020)- 7446and of those patients, 2063 patients were referred for further treatment and evaluation***
- ***819 cases were detected with Diabetic Retinopathy and 646 cases diagnosed with other retinal changes. Cataract cases can also be identified through the screening***.

- ***As part of the programme, laser machines were provided to 3 General Hospital/Taluk Hospitals to ensure the treatment of the retinopathy cases.***
- ***90 laser treatments had been performed at the hospitals for those in need.***



- **DR screening during COVID 19 Pandemic**

- Nayanamritham program is kept on hold due to the COVID19 pandemic as there is risk of disease transmission
- The Iphone attached to camera has to be charged every 15 days
- The lens has to be kept covered and wiped clean
- All protective gears must be utilized for taking fundus photography

CAPD Clinics (Continuous Ambulatory Peritoneal Dialysis)

Haemodialysis centres are mushrooming in the state of Kerala due to the increase in patients with renal complications, which have affected quality of life adversely along with the economic burden it has inflicted. To alleviate this situation the state health department has initiated a programme to promote CAPD which is cost effective and convenient to the people as they can continue dialysis without affecting their daily life chores. CAPD centres were set up at 3 district hospitals and are planning to expand the programme in all districts based on the evaluation of existing centres.

Cancer Management

Kerala has the highest incidence and prevalence of Cancers and the State average is much above the National average. The cancer treatment facilities in Government sector is insufficient to cater the burden of increasing cancer rates as statistics quote that nearly 55000 people are registered as new cancer cases every year. This had affected the cancer patients residing in districts where cancer treatment facilities were unavailable in Government Sector. To alleviate the miseries of cancer patients residing in these districts and also to decrease the over burdening of Regional Cancer Centres, an innovative model of decentralized cancer care services was initiated in the state. The Assistant Surgeons were trained in Comprehensive Cancer Management and posted at District level Hospitals were cancer treatment facilities including day care chemotherapy were set up using State Plan fund and NHM fund. At present 24 hospitals across Kerala have the District Cancer care facility and over 72000 chemotherapies have already been done through these centres, in addition to over 3000 new detection of cases. More over Palliative Chemotherapy wards were set up in all District Hospitals for treating the terminally the cancer patients

District	Name of Hospital	
Thiruvananthapuram	1	DH Nedumangadu
	2	GH Thiruvananthapuram
Kollam	3	District Hospital
	4	THQH, Punalur
Pathanamthitta	5	GH, Pathanamthitta
	6	DH Kozhenchery
Alappuzha	7	GH Alappuzha
	8	DH Mavelikkara
Kottayam	9	GH Pala
	10	DH Kottayam

Idukki	11	DH Thodupuzha
Ernakulam	12	GH Ernakulam
	13	DH North Paravur
Thrissur	14	THQH Vadakkancheri
	15	GH Thrissur
Palakkad	16	DH Palakkad
	17	THQH Ottappalam
Malappuram	18	DH Tirur
	19	DH Perinthalmanna
	20	DH Nilambur
Kozhikode	21	Beach Hospital
Wayanad	22	Tribal Hospital, Nalloornadu
Kannur	23	DH Kannur
	24	GH Thalassery
Kasaragode	25	GH Kanhangad

Cancer management during lockdown period

During the covid 19 pandemic in association with RCC Thiruvananthapuram, the patients on treatment at RCC were provided comprehensive cancer management including chemotherapy at the district cancer care centres under DHS. The medicines were mobilized utilizing the service of fire force and the patients could have their chemotherapy under the instruction of RCC at their nearest hospitals. Over 1000 patients received the services and over 2000 chemotherapies were given during this period.

The Kerala COPD Prevention and Control Program- *"SWAAS"*

(STEP WISE APPROACH to AIRWAY DISEASES)

COPD is one of the leading causes of mortality and morbidity worldwide. As per the Global Burden of Diseases estimates for India, COPD is the second leading cause of mortality in India. Kerala has taken the bold step of formulating COPD prevention and control program in the country for the first time and the official declaration of the program was done by the honorable minister for health and family welfare on February 7th 2017.

Services

The programme aims at diagnosing COPD at FHC level by doing pulmonary function test (PFT) using Spirometers supplied to all Family Health Centres. The staff nurses and Medical Officers were trained in doing Spirometer based diagnosis and treatment was initiated only after making proper diagnosis. Expensive medicines like Aerosols, supporting equipment like Oxygen Concentrator, Pulse Oxymeter and metered dose devices were procured and supplied to all FHCs. The district and Sub district level SWAAS clinics provided Spirometry and specialized management services like non invasive ventilators and other equipment as per the SWAAS guidelines.

Achievements

- ***SWAAS Clinics are functional in 49 District Hospitals and GH , THQH***
- ***SWAAS Clinics are functional in 270 FHCs***

Number of patients undergone symptomatic screening (Attended SWAAS clinic)	***148870***
Number of patients screened with Spirometry	***29527***
Number of COPD diagnosed	***19943***
Number of Asthma diagnosed	***13055***
Number of patients received smoking cessation services	***13752***
Number of patients who Quit smoking	***2503***
Number of patients received pulmonary rehabilitation services	***12298***
Number of alternate diagnosis made (TB/Cancer ,ILD , Bronchiectasis, Cardiac Diseases etc)	***740***

Advice for COPD patients

- Stay preferably in well ventilated rooms
- Stopping smoking and avoid triggers for exacerbation
- Continue medications as prescribed
- Keep active and exercise as much as one can
- Follow Healthy diet
- practice Social distancing, self-isolation and hand hygiene
- Avoid unnecessary trave

Stroke Management (SIRAS- Stroke Identification Rehabilitation Awareness and Stabilisation Programme)

Stroke is a complication of Hypertension, which is occurring due to an occlusion of blood vessels due to clot or due to a hemorrhage of cerebral vessels. Stroke Management is time bound and the recovery depends on time frame within the patient reaches the treatment centres which is usually 4 hours. Stroke Management is complicated as the management requires specialized skill, infrastructure and expensive medicines for stroke thrombolysis . Health department started stroke management programme **SIRAS** by training the Physicians in stroke management at SCTIMST and setting up stroke ICUs in the district hospitals which have CT scan and Tele Radiology services. **Tissue Plasminogen Activator (TPA)** – the medicine which cost over Rs.50000/- was procured using NCD funds.

Sl No	District	Institution
1	Thiruvananthapuram	GH Trivandrum
2	Kollam	DH Kollam
3	Pathanamthitta	GH Pathanamthitta
4	Alappuzha	GH Alappuzha
5	Kottayam	GH Kottayam
6	Ernakulam	GH Ernakulam
7	Thrissur	GH Thrissur
8	Palakkad	DH Palakkad
9.	Malappuram	DH Perinthalmanna

Achievement

- ***Stroke clinics are functional in 9 District Hospitals***
- ***126 Thrombolysis were done in these stroke clinics***

Stroke Management Unit

IEC

ആർദ്രം ക്യാമ്പയിന് 'കിക്കോഫ്'

ആരോഗ്യത്തിനായി ഒരു കിക്ക്...

പ്രസിഡന്റും ഡയറക്ടർ ബോർഡ് അംഗങ്ങളും മാത്തി

Healthy food campaign – kozhikkod