





# Department of Health Research MINISTRY OF HEALTH & FAMILY WELFARE



DEPARTMENT OF HEALTH RESEARCH Ministry of Health & Family Welfare Government of India New Delhi http://www.dhr.gov.in © Department of Health Research

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# CHAPTER Introduction

1.1 Department of Health Research (DHR) was created as a separate Department within the Ministry of Health & Family Welfare by an amendment to the Government of India (Allocation of Business) Rules, 1961 on 17.09.2007. The Department became functional from November 2008 with the appointment of first Secretary of the Department.

1.2 The aim of the DHR is to bring Modern Health Technologies to the people through research and innovations related to diagnosis, treatment methods and vaccines for preventions; to translate them into products and processes and, in synergy with concerned organizations, introduce these innovations into public health system.

- 1.3 The mandate of DHR is:
- Promotion and co-ordination of basic, applied and clinical research including clinical trials and operational research in areas related to medical, health, biomedical and medical profession and education through development of infrastructure, manpower and skills in cutting edge areas and management of related information thereto.
- Promote and provide guidance on research governance issues, including ethical issues in medical and health research.
- Inter-sectoral coordination and promotion of public - private – partnership in medical, biomedical and health research related areas.
- Advanced training in research areas concerning medicine and health, including grant of fellowships for such training in India

and abroad.

- 5) International co-operation in medical and health research, including work related to international conferences in related areas in India and abroad.
- 6) Technical support for dealing with epidemics and natural calamities.
- 7) Investigation of outbreaks due to new and exotic agents and development of tools for prevention.
- 8) Matters relating to scientific societies and associations, charitable and religious endowments in medicine and health research areas.
- 9) Coordination between organizations and institutes under the Central and State Government in areas related to the subjects entrusted to the Department and for the promotion of special studies in medicine and health.
- 10) Administering and monitoring of Indian Council of Medical Research (ICMR).

1.4 With a view to fulfil its mandate, the DHR rolled out the following Schemes in 2013-14:

- 1. Establishment of Network of Research Laboratories for Managing Epidemics and Natural Calamities (VRDL).
- 2. Establishment of Multi-disciplinary Research Units (MRUs) in Govt. Medical Colleges/ Research Institutions.
- 3. Establishment of Model Rural Health Research Units (MRHRUs) in States.

- 4. Human Resource Development (HRD) for Health Research.
- 5. Grants in Aid scheme (GIA) for inter-sectoral convergence & promotion and guidance on research governance issues.

1.5 During the year under review, the Department has made significant progress in implementation of aforesaid schemes. 115 Viral Research & Diagnostic Laboratories (VRDLs), 80 Multi-Disciplinary Research Units (MRUs) and 25 MRHRUs were sanctioned up to 2020-21 (up to December 2020).

1.6 Besides this, a total number of 200 fellowships were supported under HRD Scheme during the year 2019-20 including 95 new fellowships of 2019-20. During the year 2020-21 (up to Dec 2020), a total number of ongoing 49 fellowships including fellowships of 2019-20 have been supported. In addition, a total number of 366 proposals have been received in response to online call for proposals for the year 2020-21.

1.7 A total number of 274 research projects were approved and funded under the GIA Scheme upto 2019-20 including 31 new research projects of 2019-20. During the year 2020-21 (up to Dec 2020), a total number of 62 research projects including those pertaining to 2019-20 have been funded. In addition, a total number of 1,027 proposals have been received in response to online call for proposals for the year 2020-21 and are under consideration.

1.8 About 62 VRDLs, 47 MRUs and 11 MRHRUs have already initiated research activities. These schemes are largely helping in building up a strong and effective eco-system for carrying out health research in the country and for introduction of new technologies, new methods of treatment and products/processes into the public health system.

## 1.9 SURROGACY REGULATION BILL, 2020

The Surrogacy (Regulation) Bill, 2019 was introduced by the Hon'ble Minister of Health & Family Welfare, Dr. Harsh Vardhan in Lok Sabha on

July 15, 2019. The Lok Sabha approved the bill on the 5th of August 2019. The Bill defines Surrogacy as a practice where a woman gives birth to a child for an intending couple with the intention to hand over the child after the birth to the intending couple.

The Surrogacy (Regulation) Bill, 2019 proposes to regulate surrogacy in India by establishing National Surrogacy Board at the Central level and the State Surrogacy Boards and Appropriate Authorities in the States and Union Territories. The major objectives of the Bill are to regulate surrogacy services in the country, to provide altruistic ethical surrogacy to the needy Indian couples, to prohibit commercial surrogacy including sale and purchase of human embryo and gametes, to prevent commercialization of surrogacy, to prohibit potential exploitation of surrogate mothers and protect the rights of children born through surrogacy.

The Bill was placed in Rajya Sabha on the 6th of November 2019 for consideration and on 21st of November 2019 referred to the Select Committee. The Select Committee report was tabled in the Rajya Sabha on the 5th of February 2020.The Cabinet Note pursuing the Surrogacy (Regulation) Bill 2020 as reported by the Select Committee has been approved by the Cabinet in its meeting held on the 26th of February 2020 and a notice for consideration of the Surrogacy (Regulation) Bill, 2020 in Rajya Sabha was issued by HFM during the monsoon session and the Bill is pending in Rajya Sabha.

## 1.10 Assisted Reproductive Technology Regulation Bill ,2020

The draft Assisted Reproductive Technology Regulation Bill 2017 has been framed to establish the National Board, the State Boards and the National Registry for the Regulation and Supervision of assisted reproductive technology clinics and the assisted reproductive technology banks, for prevention of misuse and for safe and ethical practice of assisted reproductive technology services in the Country. The Cabinet Note for Introduction of the Assisted Reproductive Technology Regulation Bill, 2020 has been approved by the Cabinet in its meeting held on the 19th of February 2020 and introduced in the Lok Sabha on the 14th of September 2020. The Lok Sabha Chairman on 3rd October 2020 referred "The Assisted Reproductive Technology Regulation Bill, 2020 as introduced and pending in Lok Sabha, to the Department-related Parliamentary Standing Committee on Health and Family Welfare for examination and report thereon within 3 months.

# **1.11 Health Technology Assessment in India** (HTAIn):

Health Technology Assessment in India (HTAIn) is an institutional structure, established in 2017, under the Department of Health Research (DHR), Ministry of Health & Family Welfare (MoHFW) entrusted with the responsibility to analyze evidences related to cost-effectiveness, clinical- effectiveness and equity issues regarding the deployment of health technologies viz. medicines, devices and health programmes by means of HTA in India, in turn helping in evidence-informed decision making for an efficient use of existing health resources and provide people affordable, accessible and quality healthcare. The main objectives of HTAIn is maximizing health, reducing Out of Pocket Expenditure (OOP) and minimizing inequality in healthcare services. It will help in developing systems and mechanisms to assess new and existing health technologies based on available data on resource use, cost, clinical effectiveness and safety. It will also ensure healthcare accessibility and usefulness to inform health policy. Dissemination of research findings and resulting policy decisions will educate and empower the public to make better informed decisions for health. Hence, HTAIn could be a useful tool in taking India towards Universal Health Coverage. The Health Technology Assessment Board Bill 2019 has been proposed to institutionalize the structure and function of the HTAIn body.

#### 1.12 Outbreak of COVID Pandemic:

An outbreak of the novel corona virus disease

(COVID-19) started spreading rapidly across the world in December 2019, prompting the World Health Organization (WHO) to declare the outbreak as a global pandemic on March 11, 2020. The Government of India mounted a swift response to COVID-19 starting mid-January which continues to be calibrated to the fast-evolving situation. A concerted and well-coordinated Government approach has been adopted to ensure a comprehensive and robust response to COVID-19.

# 1.13 Preparation of Standard Treatment Workflow (STW):

Simple, self-explanatory treatment algorithms for 53 common & serious medical & surgical conditions have been made. These workflows comprise of symptoms, signs, diagnostics, treatment etc. for concerned diseases. A dissemination strategy is being planned for putting these up in all Medical Colleges, District Hospitals, Primary HealthCare centres across the country. A high-level stakeholder meeting was organized in January 2020 which was attended by NITI Aayog, DoHFW, WHO, Unicef and a few identified States.

The treatment algorithms pertain to 22 medical and surgical specialities. Work is in progress to cover a total of 122 disease conditions. The initial publication of 53 workflows has been hosted in ICMR website for wider dissemination.

# 1.14 NLEM (National List of Essential Medicines):

The Secretariat of the Standing National Committee on Medicines and other Health Care Products (SNCM) is housed by the DHR. The Core Committee, through a series of meetings and consultations with experts from across the country deliberates and revises the National List of Essential Medicines (NLEM) from time to time. DHR provides administrative and IT support to the SNCM. Medicines in NLEM are categorised according to the therapeutic class and listed with doses forms and references to the levels of healthcare, namely, Primary (P), Secondary (S) and Tertiary (T).

#### 1.15 India TB Research Consortium

India TB Research Consortium (ITRC) is a flagship programme of Department of Health Research (DHR), Govt of India which was sanctioned by DHR in December 2017 to tackle TB in a mission mode. The vision of ITRC was to accelerate development of new tools in areas of diagnostics, treatment, vaccines and implementation research by harnessing interdisciplinary expertise and building, consolidating and strengthening scientific capabilities by fostering in- country collaborations and global partnerships.

The first phase of ITRC was initiated in December 2017 and was successfully completed on 31st March 2020. A total of 38 projects were sanctioned and initiated in different thematic areas of research during the first phase of which 6 have been completed and others are ongoing.

The significant activities of the Phase I are:

- 1. Initiation of 'TB Vaccine trial' in July 2019 which is a Phase III regulatory trial for evaluating the safety and efficacy of two TB vaccines (VPM1002 and MIP as against Placebo) of which MIP is an indigenous vaccine. The trial has enrolled more than 11200 participants till date out of the target enrolment of 12000 participants. This trial is being conducted in 6 states and at 7 main sites.
- 2. "TrueNat", an indigenously developed, userfriendly, cost-effective & sensitive diagnostic tool for TB diagnosis was taken up by ITRC for feasibility studies in India and also for Global study coordinated by FIND. The TrueNat has been adopted by National TB Elimination Programme (NTEP) for use under National programme and WHO has also recommended its use for TB and MDR-TB after the Global study results were presented to WHO.

## **National TB Prevalence Survey**

The ongoing project National TB Prevalence (NTBP) survey, funded by Central TB Division, Mo-HFW and supported by WHO, UNAIDS being conducted by DHR/ICMR was inaugurated by Dr Harsha Vardhan ,Hon'ble Minister for Health and Family welfare on 25th September 2020.

This project envisages to screen 5 Lakh general population from 625 pre identified clusters all over India excluding Andaman and Nicobar & Lakshadweep for Pulmonary Tuberculosis, using mobile medical units with inbuilt CBNAAT and Chest X ray units .Confirmation of TB in suspected individuals is being done by Sputum AFB and Sputum culture /sensitivity at state Intermediate Reference Laboratories . The survey also intends to estimate prevalence of Latent TB infection in India using Quantiferon Gold testing (IGRA) of 41600 general populations at 52 pre-identified clusters, Hypertension and Diabetes Mellitus. Twenty three special teams were trained on protocol and various procedures of survey to execute this survey.

Status- Total 172 clusters (155 completed and 17 ongoing) are surveyed till 11th December 2020. Out of 172 clusters 20 clusters were paper based survey

In clusters conducted on soft-ware total population enumerated are 173714. Total no of eligible participants are 121157. Total participants Interviewed are110665. Total participants diagnosed with pulmonary TB 408.

In 20 clusters where survey was conducted on paper total population enumerated are 24954. Total no of eligible participants are 20723. Total participants interviewed are 14773. Total participants diagnosed with pulmonary TB78.

## 1.16 NATIONAL ETHICS COMMITTEE REGISTRY FOR BIOMEDICAL AND HEALTH RESEARCH (NECRBHR)

The Ministry of Health and Family Welfare, Government of India, had notified the 'New Drugs and Clinical Trials Rules, 2019', which came into force from the 19th March, 2019. As stipulated in Chapter IV of these Rules, which came into force after 180 days, Ethics Committees (ECs), reviewing biomedical and health research, involving human participants, shall register with the authority designated by the Central Government in the Ministry of Health and Family Welfare, Department of Health Research (DHR). Accordingly, National Ethics Committee Registry for Biomedical and Health Research (NECRBHR) had been set up in DHR in September, 2019. For this purpose, a software, namely, 'Naitik portal' (https://naitik.gov.in/), has also been developed and launched for online submission, receipt and processing of applications for EC registration. This is expected to bring out the much-needed transparency, accountability and organizational structure in the area of biomedical and health research, involving human participants.

2. Outreach measures for disseminating the requirements and necessity for registration of ECs were extended through issue of notifications to various stakeholders and nodal agencies under the Government for wide publicity of the arrangement

put in place for registration of ECs and conferences and training programmes in association with the Indian Council of Medical Research.

3. After this registry started functioning, requests for registration of ECs were received, and are being received, from various organizations through the said portal. More than 1019 login requests and 630 EC registration applications have been received till December 2020. Against it, 401 ECs have been issued Provisional Certificate during the corresponding period, which includes more than 104 Government institutions, 26 Universities and around 153 medical colleges (Private/Govt). Information of all these ECs are in public domain on the Naitik portal.



Hon'ble Home Minister Shri Amit Shah inaugurating the mobile COVID-19 RT-PCR Lab jointly developed by ICMR & SpiceHealth that will revolutionize Covid-19 testing in India



Dr. Harsh Vardhan, Hon'ble Union Minister for Health & Family Welfare has released a book on "100 years History of ICMR-NIN"



Secretary, DHR addressing the audience on the occasion of National Constitution Day at ICMR HQ

# **2** Administration and Finance

2.1 The Department of Health Research has formulated five Central Sector Schemes for implementation across the country. Over the years, additional responsibilities have been entrusted to the Department which include HTAIn, National List of essential Medicines (NLEM), Preparation of Standard Treatment Workflow (STW), India T.B. Research Consortium, Ethics Committee, response to the outbreak of Covid-19 pandemic. Further, the Indian Council of Medical Research (ICMR) is administered by DHR. Presently, DHR has a total of 42 sanctioned posts in different grades with incumbency position as under:

S. No.	Name of the post	Total sanctioned strength	Incumbency position	Vacancy position
1.	Joint Secretary	2	2	0
2.	Director/Deputy Secretary	4	4	0
3.	Scientist 'E'	2	0	2
4.	Under Secretary	4	3	1
5.	Scientist 'D'	2	0	2
6.	Section Officer	6	2	4
7.	Assistant Section Officer	11	5	6
8.	Sr. Principal Private Secretary	0	2*	0
9.	Scientist 'C'	2	0	2
10.	Principal Private Secretary	0	3*	0
11.	Private Secretary	2	2	0
12.	Personal Assistant	2	0	2
13.	Stenographer Grade 'D'	2	0	2
14.	Lower Division Clerk / Junior Secretariat Assistant	1	0	1
15.	Junior Hindi Translator	1	0	1
16.	Typist (Hindi)	1	0	1
17.	Multi Tasking Staff	0	1*	0
	Total	42	24 (6*)	24

#### Table (1)

\* 06 incumbents are over and above the sanctioned posts.

- 2.2 The process of filling up of the vacant posts is under consideration in consultation with the concerned Departments/ Cadre Controlling Authorities. Recruitment Rules for the posts of Scientists are under consideration in consultation with the UPSC. Thereafter, these posts will also be filled up.
- 2.3 **Grievance Redressal Mechanism:** The Department has Grievance Redressal Mechanism with the Deputy Secretary as nodal officer.
- 2.4 Complaints Committee for Prevention of Sexual Harassment of Women at Work Places: Department has setup a Complaint Redressal Mechanism to look into the matters/cases of sexual harassment of female employees of the Department.
- 2.5 **E-Governance Initiatives:** In order to promote and strengthen ICT enabled e-Governance in the country, Department of Health Research has taken several initiatives to digitize certain activities, in the following manner:
  - a) The Department has been using the e-Office software, designed and developed by the National Informatics Centre, for online processing of receipts and files. As per Government of India directive, e-filing system is to be implemented in Ministries/ Departments for a more effective and transparent inter and intra-government processes.
  - b) The staff of DHR mark their attendance digitally through AADHAR based Biometric Attendance System. It enables monitoring of attendance and generation of reports through the website attendance.gov.in designed and hosted by NIC. However, presently

this is a suspended as per GOI instructions to contain spread of Covid 19 pandemic.

- c. Official e-mail IDs of all staff members have been created under the Government of India e-mail services and is used for all official communication.
- d. All computer systems have Local Area Network (LAN) connectivity through NIC and leased line circuits to facilitate speedy implementation of e-Governance Policy of Government.
- Government e-Marketplace (GeM) is a e. paperless, cashless and system driven emarket place that enables procurement of common use goods and services with minimal human interface. As per the latest General Financial Rules of Government of India, the Department of Health Research uses GeM for procurement of common use goods and services in a transparent, efficient and cost-effective manner. During 2020-21 (till date), the procurement through GeM was above 95% of the overall procurement of Goods and Services by the Department.
- f. In the present Covid-19 pandemic situation, meetings and conferences are arranged on virtual basis by following Standard Operating Procedures (SOPs) of M/o Home Affairs and M/o Health & Family Welfare.
- g. For initiating online application and maintaining of DHR Schemes, an e-Project Performance Management System (e-PPMS) portal has been developed which is very useful for smooth functioning and monitoring of all schemes of DHR.

#### FINANCE:

Allocations and Expenditure from 2015-16 to 2019-20 (14th Finance Commission period) and for 2019-20, 2020-21 and 2021-22 are as follows:

			(Rs. in Crores)
Year	BE	RE	Actual Expenditure
2015-16	1018.17	1012.51	992.77
2016-17	1144.80	1344.80	1323.60
2017-18	1500.00	1743.39	1731.68
2018-19	1800.00	1742.73	1727.87
2019-20	1900.00	1950.00	1934.03
Total (14th Finance Commission period)	7362.97	7793.43	7709.95
2020-21 (expenditure upto 31st December, 2020)	2100.00	4062.30	2716.45*
2020-21 (estimated expenditure for January–March 2021)	-	-	1345.85
2021-22	2663.00		

\*Including expenditure against COVID-19 Package

A statement indicating the scheme-wise BE/RE/actual expenditure for 2019-20 and BE/RE for 2020-21 with actual expenditure upto 31st December, 2020 and BE 2021-22 in respect of Demand No.43-Department of Health Research is given at Annexure.

## Audit Observations:

There was no C&AG Audit Para pertaining to the Department of Health Research (DHR) during the year.

# The position of PAC/C&AG Audit Paras pertaining to the Indian Council of Medical Research is as follows:

I	Status of PAC Reports							
S.No.	PAC Report No.	Para No.	Brief Subject of the Para	Status of submission of ATN				
1.	2nd Report of The Public Accounts Committee (Seventeenth Lok Sabha) on the Action Taken Note on 95th Report of the PAC on Health & Family Welfare (Ministry Of Health & Family Welfare) dated 06.12.2019	Para 17-18	Indian Council of Medical Research (ICMR)-Overpayment of Transport Allowance to Scientists "G"	ATN has been furnished on 20th October, 2020				
II.	No C&AG Audit Para was pending during the year 2020-21							



Vigilance Awareness week (27.10.2020 to 02.11.2020) - Integrity Pledge by DHR officials

# Schemes of Department of Health Research (DHR)

# 3 CHAPTER ESTABLISHMENT OF NETWORK OF RESEARCH LABORATORIES FOR MANAGING EPIDEMICS AND NATURAL CALAMITIES

During the past few years, India has witnessed several outbreaks of emerging/ re-emerging viral infections. Annual epidemics of Dengue, Chikungunya, Influenza, Rotavirus, Measles Rubella, Japanese encephalitis etc. are reported from all parts of the country. Besides, in the past two decades, India has witnessed acute outbreaks or threats of infiltration of new or exotic viruses such as Nipah virus (2001; 2007; 2018 & 2019); SARS-CoV (2003); Avian Influenza H5N1 (2006); ECSA strain of chikungunya (2006); pandemic influenza (2009); Zika virus (2016). Ebola, Yellow fever and MERS-CoV (Middle East Respiratory Syndrome-coronavirus) are the other potential viral agents which pose a serious threat to the country.

2. Realizing the high risk faced by the country due to emerging/re-emerging viral infections and limited capacity for timely detection of such viruses, the Department of Health Research (DHR)/ Indian Council of Medical Research (ICMR) took a far-sighted decision of enhancing the country's capacity for early identification and diagnosis of all viral infections of public health importance. This initiative of DHR/ICMR has been rolled out on approval of the VRDL Scheme by the Union Cabinet.

3. Viral Research & Diagnostic Laboratories (VRDLs) played a significant role in surveillance, diagnosis and detection of outbreaks. The Scheme is in the mid phase for setting up of new VRDLs and creating high quality systems for existing network which has significant role in identification of emerging/ re-emerging viral pathogens at an early stage and preventing spreading of epidemics. The network of VRDLs is now working in synchronized way by

augmenting the quality parameters for consistent, reliable and high-quality diagnosis; initiated eventbased surveillance for fast detection of outbreaks; strengthened coordination of VRDLs with the State Public Health System, Integrated Disease Surveillance Program (IDSP) and National Vector Borne Disease Control Program (NVBDCP); initiated structured research projects which would translate into information for drafting/refining public health policies. Some of the key contributions of VRDLs in maintaining disease security is as below:

- Sentinel surveillance for Zika viruses (ZIKV) has been established through 35 VRDLs.
- Six VRDLs have been trained at NIV, Pune and are equipped with diagnostic capacity for Yellow Fever.
- A significant achievement has been that 30 VRDLs are contributing to Influenza surveillance (both type and subtype of influenza) in the country and data, through NIV, is being fed into WHO Flunet database.
- Integration of six VRDLs into WHO MR Labnet and Six VRDLs have been involved in WHO-MR Labnet to conduct case based surveillance for Measles and Rubella, in line with India's target of measles elimination and Rubella control by 2023. Inclusion of VRDLs are in the pipeline and nine more VRDLs are in pipeline, who have completed the phase II and entering in phase III.
- Thirty VRDLs are involved in diagnosis of non-viral etiologies – Scrub Typhus and

Leptospirosis, of acute febrile illness. This has broadened the scope of VRDLs beyond viral diseases but still taking care of diseases that are important from public health point of view.

- Scientists from nine VRDLs have been given hands-on training by ICMR-NIV, Pune on handling emerging/re-emerging viral infections such as Influenza, Nipah, Ebola etc. This would serve as a stepping stone towards creating capacity for a countrywide biosecurity platform.
- A sizeable number of VRDLs have been able to establish robust linkages with State IDSP, NVBDCP and State public health departments, thus increasing outreach of public health programs.
- During the year 2020, VRDLs were actively  $\geq$ involved in COVID-19 testing, this impacted the routine diagnosis of other viral agents of public health importance. Due to which no. of tests conducted by the VRDLs were very less as compared to previous years. A total of 105 VRDLs are currently diagnosing 15-35 viral etiology. Testing data are being fed into the Data Mining Centre at National Institute of Epidemiology (NIE). Total test reported to the NIE portal during the year 2020 was 152575. A total of 6 outbreaks were actively investigated by the VRDL network during January-October 2020. The major etiological agents of the investigated outbreak are (Dengue, Measles, Varicella Zoster virus, Hepatitis E and Influenza H1N1.
- Organizing training for Data Entry at NIE Chennai and Technical Training on Viral Diagnosis at NIV Pune could not happen due to COVID-19 pandemic. However, several virtual training sessions have been conducted for VRDL staff. Technicians plus Scientists have

been trained on techniques and assays for diagnosing various virus etiologies (including SARS-CoV-2, Zika Virus, and Yellow Fever diagnostics) and biosafety and biosecurity parameters.

- Turnaround time reduced from 7 days to 24-48 hours.
- Research activities: Following multicentric studies / activities are undergoing:
  - Influenza: Assessment of Neuraminidase Inhibitor Susceptibility in influenza A(H1N1) pdm09 viruses.
  - **Dengue:** Monitoring of Dengue and Chikungunya viruses circulating in India for changes in the serotypes, genotype and lineages utilizing Viral Research & Diagnostic Laboratories Network
- Standard Operating procedures: A generic SOP for molecular testing of Influenza suspected samples has been written and vetted by experts. This will be disseminated to all the VRDLs so that labs develop their own SOP to have some uniformity of the test procedure. Similar exercise for Flavivirus detection is underway.
- Advocacy workshop: A Regional Advocacy Workshop was jointly organized by Department of Health Research (DHR), Ministry of Health & Family Welfare, Government of India, New Delhi and ICMR-Rajendra Medical Research Institute for Medical Sciences, Patna on 17th January 2020 at RMRIMS campus. In this workshop six Viral Research and Diagnosis Laboratories (VRDLs) from Bihar and Jharkhand State have participated. Besides, representatives from WHO, NCDC-IDSP, NVBDCP and State health authorities have participated.

## **Physical Target**

# 12<sup>th</sup> Plan Period (2012-2017)

Year		Target		Act	ual Achievem	ent
	Regional VRDL	State VRDL	Medical College VRDL	Regional VRDL	State VRDL	Medical College VRDL
2013-2014	2	5	10	2	4	6
2014-2015	3	10	40	3	3	13
2015-2016	5	15	40	0	4	10
2016-2017	0	0	30	0	4	16
Total	10	30	120	5	15	45

# 14<sup>th</sup> Finance Commission Period (2017-18 to 2020-2021)

Year		Target		Act	ual Achievem	ent
	Regional VRDL	State VRDL	Medical College VRDL	Regional VRDL	State VRDL	Medical College VRDL
2017-2018	5	10	15	2	1	11
2018-2019	0	0	30	2	4	10
2019-2020	0	0	0	1	2	9
2020-21	0	0	0	0	0	8
Total	5	10	45	5	7	38

## The financial achievements from inception of the Scheme are given in the table below:

			(Rs. in Crores)
Year	BE	RE	Actual Exp.
2013-14	45.00	34.00	34.00
2014-15	35.00	30.00	30.00
2015-16	46.00	45.25	45.25
2016-17	39.25	44.25	44.25
2017-18	56.00	66.00	66.00
2018-19	70.00	55.00	52.14
2019-20	80.00	73	69.37
2020-21	83	83	52.40
(expenditure from 01.04.2020 to			
31.12.2020)			
2020-21	83	83	30.60
(estimated expenditure for			
January-March 2021)			

The List of Institute for establishment of 10 Regional Labs is given at **Annexure-I**.

The State-wise list of VRDLs is given at **Annexure-II**.

## Components of the Scheme and Funding Norms:

**1. Regional Labs\*:** The non-recurring cost of a Regional Level Lab would be Rs.14.95 crore for development of infrastructure, which include civil works (Rs.4.20 crore), furnishing and furniture (Rs.50 lakh) and equipment (Rs.10.25 crore). The recurring cost of Regional Lab per annum is Rs 1.25 crore, towards staffing (Rs.90 lakh), consumables, contingencies and training (Rs.35 lakh).

**2. State Level Labs#:** The non-recurring cost of a State Level Lab would be Rs.3.975 crore for development of infrastructure which include civil works mainly for renovation/modification of the building (Rs.50.00 lakh) and for equipment (Rs.3.475 crore). The recurring cost of a State Level Lab per annum is Rs.63.00 lakh which will be extended for a period of five years for engaging trained technical manpower on contractual basis (Rs. 38.00 lakh per annum) and for consumables, contingencies and training (Rs.25.00 lakh).

**3. Medical College Labs #:** The non-recurring cost of a Medical College Level Lab would be Rs.1.439 crore comprising of Rs.93.90 lakh for equipment and Rs.50.00 Lakh for civil works /renovation of building. The recurring cost of a Medical College Level Lab per annum is Rs.39.00 lakh, towards staffing (Rs.24 lakh) and consumables, contingencies and training (Rs.15 lakh).

# \*All the Regional Labs will be managed and fully funded by the Department of Health Research.

#However, the cost towards establishment of State Level Labs and Medical College Labs, will be shared between the Central Government and the concerned State Government in the ratio of 75:25. For north- eastern states, hilly states, including Sikkim and J&K, the ratio would be 90:10. The cost of land/building to be provided by the State Governments will be reckoned towards its contribution.

## **Role of VRDL Network in COVID-19**

A decade ago, when India witnessed one of the worst flu pandemic, swine flu in 2009, the public health system was paralyzed due to severe dearth of infrastructure for molecular diagnosis of viral infections and the public health professionals helplessly watched the pandemic quickly escalating to all parts of the country. Though the country was equipped to carry out serology-based ELISA or rapid blood tests, but the virus was challenging and could not be detected in blood. Similar challenge is posed by several other respiratory viruses, MERS-CoV, SARS-CoV and SARS-CoV-2 causing COVID19 which pose a threat to us time and again.

Molecular virological test was the only option for detection of H1N1 which was there in only two Institutions: ICMR-National Institute of Virology at Pune and National Centre for Disease Control in Delhi in a vast country like India. The event was an eye-opener for the public health system of the country wherein glaring gaps in capacity were brought out. This in turn paved the way for strengthening the molecular diagnostic facilities for viruses in India through the Virus Research & Diagnostic Laboratory (VRDL) Network of DHR. Contrary to 2009, in January 2020, when the threat of COVID19 epidemic knocked our doors, the country could immediately scale up its preparedness by standardizing diagnostic assays at ICMR- National Institute of Virology in Pune and immediately commissioning diagnostic facility in 13 DHR-VRDLs based on their location in cities with International airports.

- The first case of COVID-19 in India was detected by the one of State level VRDL laboratory NIV Field unit, Alapuzhha (Kerala) and confirmed by ICMR-National Institute of Virology, Pune.
- In order to quickly enable resources for testing of suspected cases of SARS-CoV-2, network of 115 Virus Research and Diagnostic Laboratories (VRDLs) has been mobilized for the preparedness against the COVID-19 outbreak.

- The NIV Pune being the apex laboratory for viral research served the role of resource center for the VRDL network for technical guidance in testing, and had conducted optimization study on various testing assays targeting different genomic regions of SARS-CoV-2.
- As on date, all 115 VRDLs are functional and are involved in COVID-19 testing. Results are being reported to ICMR Data Portal.
- More than 20 million samples have been tested till the month of October 2020.

**QA/QC Activity for COVID-19 Labs:** India has expanded COVID-19 testing laboratories with different testing platforms in a phased manner. In order to control the errors in performance of testing and to have a reliable test result, a system of Inter Laboratory Quality Control (ILQC) have been enabled with the help of VRDL Network. The labs participate in this activity on quarterly basis. ILQC of the labs is implemented through a three-tier structure.

- National QC Lab
- State QC Lab
- Testing laboratories



All COVID-19 testing labs using conventional open system RT PCR have been mapped to 34 State QC labs in the country. All 34 QC labs have been mapped to ICMR-National Institute of Virology, Pune for QC activity.

ICMR-NIV, Pune participates in a Global QC activity of WHO.

#### **Scientific Achievement:**

- Total number of tests done since April 2014 to
  Oct 2020: 2492303
- Total no. of positive test reported since April
  2014 Oct 2020: 372068
- No. of tests done in the year 2020 (1st Jan2020 to 31 Oct 2020): 230778
- No. of positive test reported in the year 2020
  (1st Jan2020 to 31 Oct 2020): 21178
- Total Number of outbreak investigated since
  April 2014: 1247
- No. of outbreak investigated in the year 2020

(1st Jan2020 to 31 Oct 2020): 40

- No. of training conducted for NIE portal total person trained since April 2014: 10
- Total No. of Person trained since April 2014: 227
- No. of training conducted in the year 2020 (1st Jan2020 to 31 Oct 2020): 1
- Total No. of Person trained in the year 2020 (1st Jan 2020 to 31 Oct 2020): 33
- No. of VRDLs have started reporting to Data Mining Centre at National Institute of Epidemiology (NIE):97

## **ACTIVITIES UNDERTAKEN DURING 2020.**

## **Regional Advocacy Workshops for DHR-ICMR VRDL Network:**

A Regional Advocacy Workshop was jointly organized by Department of Health Research (DHR), Ministry of Health & Family Welfare, Government of India, New Delhi and ICMR-Rajendra Medical Research Institute for Medical Sciences, Patna on 17th January 2020 at RMRIMS campus. In this workshop six Viral Research and Diagnosis Laboratories (VRDLs) from Bihar and Jharkhand State have participated. Besides, representatives from WHO, NCDC-IDSP, NVBDCP and State health authorities have participated.

# 4th Workshop conducted at Rajendra Memorial Research Institute of Medical Sciences, Patna on 17.01.2020 for network of 6 VRDLs.



## **Annexure I**

#### List of Regional Labs:-

- 1. The Postgraduate Institute of Medical Education and Research, Chandigarh
- 2. ICMR-Regional Medical Research Centre, Dibrugarh, Assam
- 3. ICMR-National Institute of Cholera and Enteric Diseases, Kolkata, W.B.
- 4. All India Institute of Medical Sciences, New Delhi
- 5. Government Medical College, Kozhikode, Kerala
- 6. All India Institute of Medical Sciences, Bhopal, M.P.
- 7. ICMR-Regional Medical Research Centre, Bhubaneswar, Odisha
- 8. Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry
- 9. All India Institute of Medical Sciences, Jodhpur, Rajasthan
- 10. All India Institute of Medical Sciences (AIIMS), Patna, Bihar

# Annexure II

State	Level of VRDL	S.No	Name of VRDL	Funded in
Andaman & Nicobar	State Level	1	Regional Medical Research Centre (RMRC), Portblair	2018-2019
Island	Medical College Level	2	Andaman and Nicobar Islands Institute of Medical Sciences, Port Blair	2020-2021
Andhra	State Level	3	Guntur Medical College, Guntur	2018-2019
Pradesh	State Level	4	Sri Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh	2014-2015
	Medical College Level	5	Andhra Medical College, Visakhapatnam	2019-2020
	Medical College Level	6	Government Medical College (GMC), Anantpur	2015-2016
	Medical College Level	7	Rajiv Gandhi Institute of Medical Science (RIMS), Kadappa	2015-2016
	Medical College Level	8	Rangaraya Medical College, Kakinada, Andhra Pradesh	2017-2018
	Medical College Level	9	Siddhartha Medical College, Gunadala, Vijayawada, Andhra Pradesh	2014-2015
Assam	Regional Level	10	Regional Medical Research Centre, Dibrugarh	2013-2014
	State Level	11	Gauhati Medical College, Gauhati, Assam	2014-2015
	Medical College Level	12	Fakhruddin Ali Ahmed Medical College, Barpeta, Assam	2017-2018
	Medical College Level	13	Jorhat Medical college, Jorhat	2015-2016
	Medical College Level	14	Silchar Medical College, Silchar, Assam	2017-2018
	Medical College Level	15	Tezpur Medical College, Tezpur	2015-2016
Bihar	Regional Level	16	All India Institute of Medical Sciences (AIIMS), Patna	2019-2020
	Medical College Level	17	Darbhanga Medical College, Darbhanga	2017-2018
	Medical College Level	18	Patna Medical College, Patna	2013-2014
	Medical College Level	19	Rajendra Memorial Research Institute of Medical Sciences (RMRIMS), Patna	2019-2020
	Medical College Level	20	S.K. Medical College, Muzaffarpur	2017-2018
Chandigarh	Regional Level	21	Post Graduate Institute of Medical Education & Research, Chandigarh	2013-2014
	Medical College Level	22	Government Medical College & Hospital, Chandigarh	2017-2018

State	Level of VRDL	S.No	Name of VRDL	Funded in
Chhattisgarh	State Level	23	All India Institute of Medical Sciences (AIIMS), Raipur	2017-2018
	Medical College Level	24	Late Baliram Kashyap (LSBK) Memorial Govt. Medical College, Jagdalpur, Chattisgarh	2014-2015
Delhi	Regional Level	25	All India Institute of Medical Sciences (AIIMS), Delhi	2018-2019
	Medical College Level	26	Lady hardinge Medical College, Delhi	2018-2019
Goa	Medical College Level	27	Goa Medical College, Goa	2020-2021
Gujarat	State Level	28	B.J. Medical College, Ahmedabad	2013-2014
	Medical College Level	29	Government Medical College, Surat	2018-2019
	Medical College Level	30	Government Medical College, Vadodara	2018-2019
	Medical College Level	31	Government Medical College, Bhavnagar, Gujarat	2019-2020
	Medical College Level	32	M.P. Shah Govt. Medical College, Jamnagar	2013-2014
	Medical College Level	33	Pandit Dindayal Upadhyay Government Medical College, Rajkot, Gujarat	2019-2020
Harayana	Medical College Level	34	Bhagat Phool Singh (BPS) Medical college for Women, Sonipat	2015-2016
	Medical College Level	35	Pt. BD Sharma Post Graduate Institute of Medical Education & Research, Rohtak	2013-2014
Himachal	State Level	36	Indira Gandhi Medical College, Shimla	2013-2014
Pradesh	Medical College Level	37	Dr Radha Krishnana Government Medical College,Hamirpur	2020-2021
	Medical College Level	38	Dr. Rajendra Prasad Government Medical College, Tanda, Himachal Pradesh	2014-2015
	Medical College Level	39	Lal BahdurShastri Medical College, Mandi	2020-2021
Jammu & Kashmir	State Level	40	Sher-e-Kashmir Institute of Medical Sciences, Srinagar	2013-2014
	Medical College Level	41	Govt Medical College, Srinagar, Jammu & Kashmir	2016-2017
	Medical College Level	42	Govt. Medical College, Jammu	2013-2014
Jharkhand	Medical College Level	43	MGM Medical College, Jamshedpur	2016-2017
	Medical College Level	44	Rajendra Institute of Medical Sciences (RIMS), Ranchi	2016-2017

State	Level of VRDL	S.No	Name of VRDL	Funded in
Karnataka	State Level	45	Bangalore Medical College & Research Institute, Bangalore <b>,</b> Karnataka	2014-2015
	Medical College Level	46	Government Medical College, Mysore, Karnataka	2014-2015
	Medical College Level	47	Gulbarga Institute of Medical Sciences, Gulbarga, Karnataka	2016-2017
	Medical College Level	48	Hassan Institute Of Medical Sciences (HIMS), Hassan	2015-2016
	Medical College Level	49	Karnataka Institute of Medical Science Hubballi	2020-2021
	Medical College Level	50	Shimoga Institute of Medical Sciences, Shimoga, Karnataka	2016-2017
	Medical College Level	51	Vijayanagar Institute of Medical Sciences (VIMS), Bellary	2016-2017
Kerala	Regional Level	52	Government Medical College (GMC), kozhikode	2018-2019
	State Level	53	National Institute of Virology (NIV) Field Unit, Kerala	2018-2019
	Medical College Level	54	Government Medical College, Thrissur	2016-2017
	Medical College Level	55	Government Medical College, Trivandrum, Kerala	2014-2015
Madhya Pradesh	Regional Level	56	All India Institute of Medical Sciences, Bhopal, Madhya Pradesh	2014-2015
	State Level	57	National Institute of Research In Tribal Health (NIRTH), Jabalpur	2018-2019
	Medical College Level	58	Bundelkhand Medical College, Sagar, Madhya Pradesh	2018-2019
	Medical College Level	59	Gajra Raja Medical College, Gwalior, Madhya Pradesh	2016-2017
	Medical College Level	60	MGM Medical College, Indore, Madhya Pradesh	2016-2017
	Medical College Level	61	Shyam Shah Medical College, Rewa, Madhya Pradesh	2017-2018

State	Level of VRDL	S.No	Name of VRDL	Funded in
Maharashtra	State Level	62	Govt Medical College (GMC), Nagpur	2019-2020
	Medical College Level	63	Dr. Vaishampayan Memorial (VM) Government Medical College, Solapur, Maharashtra	2019-2020
	Medical College Level	64	G.S Seth Medical college and KEM Hospital	2018-2019
	Medical College Level	65	Government Medical College (GMC), Aurangabad	2019-2020
	Medical College Level	66	Government Medical College, Akola	2019-2020
	Medical College Level	67	Government Medical College, Miraj, Sangli	2017-2018
	Medical College Level	68	Indira Gandhi Medical College, Nagpur, Maharashtra	2014-2015
	Medical College Level	69	Kasturba Hospital for Infectious Disease, Mumbai, Maharashtra	2018-2019
	Medical College Level	70	Shri Bhausaheb Hire Government Medical College & Hospital, Dhule	2019-2020
Manipur	State Level	71	Regional Institute of Medical Sciences (RIMS), Imphal	2016-2017
	Medical College Level	72	Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal, Manipur	2014-2015
Meghalaya	State Level	73	North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences (NEIGRIHMS), Shillong	2013-2014
Mizoram	Medical College Level	74	Zoram Medical College, Mizoram	2020-2021
Odisha	Regional Level	75	Regional Medical Research Center (RMRC), Bhubaneswar	2017-2018
	State Level	76	Srirama Chandra Bhanja (SCB) Medical College, Cuttack	2015-2016
Puducherry	Regional Level	77	Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry	2014-2015
	Medical College Level	78	Indira Gandhi Medical College & Research Institute, Puducherry	2016-2017
Punjab	Medical College Level	79	Govt. Medical College, Amritsar	2013-2014
	Medical College Level	80	Govt. Medical College, Patiala, Punjab	2014-2015
	Medical College Level	81	Guru Gobind Singh Medical College, Faridkot	2020-2021

State	Level of VRDL	S.No	Name of VRDL	Funded in
Rajasthan	Regional Level	82	All India Institute of Medical Sciences (AIIMS), Jodhpur, Rajasthan	2017-2018
	State Level	83	Sawai Man Singh (SMS) Medical College, Jaipur	2015-2016
	Medical College Level	84	Jhalawar medical college, Jhalawar	2016-2017
	Medical College Level	85	RavindraNath Tagore (RNT) Medical College, Udaipur	2016-2017
	Medical College Level	86	S N Medical College, Jodhpur Rajasthan	2014-2015
	Medical College Level	87	Sardar Patel Medical College (SPMC) Bikaner	2016-2017
Tamil Nadu	State Level	88	Coimbatore Medical College, Coimbatore	2016-2017
	State Level	89	The King Institute of Preventive Medicine and Research (KIPM&R), Chennai	2016-2017
	Medical College Level	90	Government Medical College, Theni, Tamil Nadu	2014-2015
	Medical College Level	91	Government Medical College, Thiruvarur, Tamil Nadu	2018-2019
	Medical College Level	92	Government Medical College, Villupuram, Tamil Nadu	2018-2019
	Medical College Level	93	Government Mohan Kumaramangalam Medical College, Salem	2016-2017
	Medical College Level	94	Madras Medical College, Chennai	2016-2017
	Medical College Level	95	Madurai Medical College, Madurai, Tamil Nadu	2014-2015
	Medical College Level	96	Tirunelveli Medical College, Tirunelveli	2016-2017
Telangana	State Level	97	Gandhi Medical College, Telangana	2015-2016
	Medical College Level	98	Kakatiya Medical College, Warangal, Telangana	2017-2018
	Medical College Level	99	Osmania Medical College, Hyderabad	2013-2014
Tripura	Medical College Level	100	Government Medical College, Agartala	2014-2015
Uttar Pradesh	State Level	101	Banaras Hindu University (BHU), Varanasi	2016-2017
	State Level	102	King George's Medical University (KGMU), Lucknow	2015-2016
	Medical College Level	103	Jawaharlal Nehru Medical College (JNMC), Aligarh	2015-2016
	Medical College Level	104	Uttar Pradesh Rural Institute of Medical Sciences & Research, Saifai, Etawah, UP	2015-2016

State	Level of VRDL	S.No	Name of VRDL	Funded in
Uttarakhand	State Level	105	All India Institute of Medical Sciences (AIIMS) Rishikesh	2019-2020
	Medical College Level	106	Doon Medical College, Dehradoon	2019-2020
	Medical College Level	107	Govt. Medical College, Haldwani, Uttarakhand	2015-2016
West Bengal	Regional Level	108	ICMR Virus Unit, National Institute of Cholera & Enteric Diseases, Kolkata	2014-2015
	Medical College Level	109	Burdwan Medical College, Burdwan	2020-2021
	Medical College Level	110	Institute of Post Graduate Medical Education & Research (IPGMER), Kolkata	2015-2016
	Medical College Level	111	Malda Medical College, Malda	2018-2019
	Medical College Level	112	Midnapore Medical College, Midnapore, West Bengal	2016-2017
	Medical College Level	113	Murshidabad Medical college , Murshidabad	2016-2017
	Medical College Level	114	North Bengal Medical College, Darjeeling	2016-2017
	Medical College Level	115	RG Kar Medical College, Kolkata	2018-2019



# Geographical spread of Viral Research & Diagnostic Network across India

# 4 CHAPTER

# ESTABLISHMENT OF MULTI-DISCIPLINARY RESEARCH UNITS (MRUs) IN STATE GOVERNMENT MEDICAL COLLEGES/RESEARCH INSTITUTIONS

4.1 Health Research is predominantly carried out in the Medical Colleges/Institutions providing education in allied subjects. Medical Colleges are the backbone of both teaching and providing specialized services to patients in India. They are also expected to set the trends in the thinking process and innovations to improve the understanding of the diseases and their management. However, over the years it has been noticed that the majority of Medical Colleges have confined themselves to routine patient care and teaching based on conventional methods. Presently quality medical research is largely confined to a handful of institutions and medical colleges in the country, that too in few States only. The standard of papers published / research projects undertaken by the students of Post-graduate courses/PhD in most of the Medical Colleges are not inspiring. The Department observed that it may be attributed both to lack of appropriate facilities for conducting research and a lack of motivation and knowledge on the part of faculty and students in Medical Colleges for conducting research.

4.2 Due to lack of infrastructural facilities, the

Medical Colleges have not been pursuing newer methods of investigation for understanding the pathological diagnosis, treatment and management practices. Even for State Governments, Health Research has not been perceived as a priority area. This has also affected the quality of clinical services being provided.

4.3 Therefore to promote and encourage quality medical research in the country and provide assistance to medical colleges to set up appropriate research facilities, the Department of Health Research rolled out the MRU scheme in the year 2013-14 during 12th five year plan and was extended for the 14th Finance Commission Period i.e. 2017-18 to 2019-20 with total estimated cost of the project of Rs. 394.86 Crores. The Government has further extended the scheme for 2020-21.

4.4 The scheme aims to provide infrastructural support, in terms of civil works, equipment and recurring expenditure, to carry out research focused on non-communicable diseases, to various State Govt. Medical Colleges across the country in phased manner.

Year	<b>Physical Targets</b>	Estimate	ed Cost	Total (Rs. In Crores)
		Non Recurring	Recurring	
2017-18	12	179.00	27.77	206.77
2018-19	10	112.50	33.42	145.92
2019-20	10	12.50	29.67	42.17
Total	32	304.00	90.86	394.86

## **Target during 14th Finance Commission**

For the Year 2020-21, a target of establishing 10 MRUs has been fixed with budgetary outlay of Rs. 60.00 Crores.

**4.5** The scheme entailed setting up of 90 MRUs in the Government Medical Colleges/ Research Institutions till the 14<sup>th</sup> Finance Commission Period. However, 80 MRUs have been approved till December, 2020 and admissible grant to 79 MRUs has been released.

## **Financial Achievements:**

(Rs in Crore)

Year	Budget Estimates (BE)	Revised Estimates (RE)	Actual Expenditure
2013-2014	45.00	37.10	36.25
2014-2015	80.00	31.00	31.00
2015-2016	45.50	28.00	25.20
2016-2017	24.25	24.25	24.25
2017-2018	36.00	45.00	45.00
2018-2019	50.00	37.00	36.00
2019-2020	58.00	55.00	55.00
2020-2021 (expenditure upto 31.12.2020)	60.00	58.00	39.43
2020-2021 (estimated expenditure for January-March 2021)	-	-	18.57

## **Physical Achievement**

Year	*Target as per SFC	Approved against target
2013-14	35	36
2014-15	45	25
2015-16	-	9
2016-17	-	-
2017-18	12	4
2018-19	10	5
2019-20	10	1
2020-21	10	**06

\*Target includes spill overs from previous years

\*\* 06 Proposals in pipeline
### FUNDING NORMS AS APPROVED BY THE SFC FOR EXTENDED PERIOD OF THE SCHEME:

4.6 Rs. 5.25 crore per MRU toward Equipment & Civil works. In addition, recurring expenditure of Rs. 47.44 lakhs per annum toward staffing on contractual basis and consumables, etc.

### **Contribution from the State Governments:**

- o To provide requisite space (minimum 300 Sq. mtr.), free of cost, at the concerned Medical College.
- o Signing of MoA with the Department of Health Research for taking over the liability of running the MRUs after five years.

### **Status of Implementation**

- i. Against the total target of covering 90 medical colleges, 80 MRUs have been approved and funds to 79 MRUs have been released till December, 2020. However, one college namely BJ Medical College, Pune, Maharashtra could not be released funds as the matter is under discussion with the State Government.
- 4.7 List of Medical Colleges/Institutions sanctioned & funded for establishment of Multi-Disciplinary Research Units (MRUs) upto December, 2020 is as follows:

S.No	State	Name of the approved medical college	
1	Andhra Pradesh(4)	Siddhartha Medical College, Vijaywada	
2		Rangaraya Medical College, Kakinda, Andhra Pradesh	
3		Andhra Medical College, Visakhapatnam Andhra Pradesh	
4		SV Medical College, Tirupati	
5	Assam (3)	Silcher Medical College and Hospital, Silcher	
6		Zorhat medical College, Zorhat, Assam	
7		Fakhruddin Ali Ahmed Medical College, Barpeta, Assam	
8	Bihar (1)	Indira Gandhi Institute of Medical Sciences, Patna	
9	Chandigarh (1)	Government Medical College, Chandigarh	
10	Chhattisgarh(1)	Pt. JNM Medical College, Raipur, Chhattisgarh	
11	Delhi (NCT) (3)	University College of Medical Sciences, Delhi	
12		Vallabh Bhai Patel Chest Institute, Delhi	
13		Maulana Azad Medical College, Delhi	
14	Goa (1)	Goa Medical College,Bambolin	
15	Gujarat (2)	M.P.Shah Medical College, Jamnagar	
16		SMIMER, Surat, Gujarat	
17	Haryana(1)	Pt. BD Sharma Medical College, Rohtak	
18	Himachal Pradesh(2)	Indira Gandhi Medical College, Shimla	
19		Dr. R.P. Govt. Medical College, Kangra at Tanda, HP	

### List of 80 approved MRUs across the Country

S.No	State	Name of the approved medical college	
20	J & K (3)	Govt. Medical College, Jammu	
21		Govt. Medical College, Srinagar	
22		Sher-i-Kashmir Medical College, Srinagar	
23	Jharkhand(2)	MGM Medical College, Jharkhand	
24		Rajendra Institute of Medical Sciences, Ranchi	
25	Karnataka(6)	Dharwad Institute of Medical Sciences, Dharwad, Karnataka	
26		Mandya Medical College, Karnataka	
27		Karnataka Institute of Medical Sciences, Hubli	
28		Shimoga Instt. of Medical Sciences, Shimoga	
29		Mysore Medical College, Mysore	
30		Hassan Institute of Medical Sciences, Hassan	
31	Kerala (3)	Govt. Medical College, Thiruvanthapuram	
32		Calicut Medical College,Calicut	
33		Govt. medical College, Kottayam, Kerala	
34	Madhya Pradesh (5)	S.S. Medical College, Rewa	
35		Netaji Subhash Chandra Bose Medical College, Jabalpur	
36		M.G.M. Medical College, Indore	
37		Gandhi Medical College, Bhopal	
38		GR Medical College, Gwalior	
39	Maharashtra (4)	Seth G.S Medical College & KEM Hospital Mumbai	
40		Dr. Vaishampayan Memorial Government Medical College, Sholapur	
41		Armed Forces Medical College, Pune	
42		B.J. Medical College, Pune	
43	Manipur (1)	Regional Institute of Medical Sciences, Imphal	
44	Orissa (3)	S.C.B. Medical College, Cuttack	
45		VSS Medical College, Burla	
46		M.K.C.G. Medical College, Berhampur,	
47	Punjab(3)	Govt. medical College, Amritsar	
48		Govt. Medical College, Patiala	
49		Guru Gobind Singh Medical College,Faridkot	
50	Rajasthan (7)	Dr. S.N. Medical College, Jodhpur	
51		Sardar Patel Medical College, Bikaner.	

S.No	State	Name of the approved medical college
52		J.L.N. Medical College & Associated Group of Hospitals, Ajmer
53		SMS Medical College, Jaipur
54		R.N.T Medical College, Udaipur
55		Rajasthan University of Health Sciences, Jaipur
56		Government Medical College, Kota
57	Tamil Nadu(9)	Madras Medical College,Chennai
58		Tirunelveli Medical College, Tirunelveli
59		Coimbatore Medical College, Coimbatore
60		Dr. ALM Post Graduate Institute of Basic Medical Sciences, Taramani
61		Medical College, Tanjavur
62		Govt. Mohan Kumarmangalam Medical College, Salem
63		Govt. Theni Medical College, Theni
64		Chengalpattu Medical College, Chengalpattu
65		Madurai Medical College,Madurai
66	Telangana(3)	Osmania Medical College , Hyderabad
67		Gandhi Medical College, Secunderabad
68		Nizam Institute of Medical Sciences, Hyderabad
69	Tripura (1)	Agartala Govt. Medical College, Agartala
70	Uttar Pradesh (4)	G.S.V.M Medical College, Kanpur
71		King George Medical University, Lucknow
72		Institute of Medical Sciences, Banaras Hindu University, Banaras
73		Rural Institute of Medical Sciences & Research, Safai, Etawah
74	Uttarakhand(3)	Govt. Medical College, Haldwani (Nainital)
75		Veer Chandra Singh Garhwali Govt Medical Science & Research Institute, Srinagar
76		AIIMS, Rishikesh
77	West Bengal(4)	R.G. Kar Medical College, Kolkata
78		Medical College & Hospital , Kolkata
79		Institute of Post Graduate Medical Education & Research , Kolkata
80		Nil RatanSirkar Medical College, Kolkata

Map showing country-wide establishment of Multi-Disciplinary Research Units in Govt. Medical Colleges.



### 4.8 Initiation of Research Activities by the MRUs:

i. As of now, a total of 686 Research Studies by 47 MRUs after approval by the Local Research Advisory Committee (LRAC) of the respective Medical Colleges are underway on different aspects of Non-Communicable Diseases (NCDs)such as cardiovascular disease, hypertension, maternal child health, diabetes, mental disorders etc. Details of Research Studies and the concerned Medical Colleges are as under:

S.No	Name of Medical Colleges	Research Projects Undertaken
1.	Andhra Medical College, Visakhapatnam Andhra Pradesh	6
2.	SV Medical College, Tirupati	43
3.	Osmania Medical College , Hyderabad	40
4.	Gandhi Medical College, Secunderabad	19
5.	Silcher Medical College and Hospital, Silcher	9
6.	Fakhruddin Ali Ahmed Medical College, Barpeta, Assam	16
7.	Pt. JNM Medical College, Raipur, Chattisgarh	21
8.	MGM Medical College, Jharkhand	14
9.	Indira Gandhi Medical College, Shimla	9
10.	Dr. R.P. Govt. Medical College, Kangra at Tanda, HP	14
11.	Sardar Patel Medical College, Bikaner.	13
12.	SMS Medical College, Jaipur	16
13.	Rajasthan University of Health Sciences, Jaipur	12
14.	Madras Medical College,Chennai	19
15.	Tirunelveli Medical College, Tirunelveli	29
16.	Coimbatore Medical College, Coimbatore	21
17.	Dr.ALM Post Graduate Institute of Basic Medical Sciences, Taramani	21
18.	Medical College, Tanjavur, Tamil Nadu	22
19.	Govt. Mohan Kumarmangalam Medical College, Salem, Tamil Nadu	13
20.	Govt. Theni Medical College, Theni, Tamil Nadu	19
21.	Chengalpattu Medical College, Chengalpattu	18
22.	Madurai Medical College,Madurai	20
23.	Agartala Govt. Medical College, Agartala	10
24.	Govt. Medical College, Haldwani (Nainital)	6
25.	R.G. Kar Medical College, Kolkata	4
26.	Institute of Post Graduate MedicalEducation & Research , Kolkata	15

S.No	Name of Medical Colleges	Research Projects Undertaken
27.	University College of Medical Sciences, Delhi	20
28.	Vallabh Bhai Patel Chest Institute, Delhi	11
29.	S.S. Medical College, Rewa	6
30.	S.C.B. Medical College, Cuttack	2
31.	VSS Medical College, Burla	8
32.	M.K.C.G. Medical College, Berhampur,	12
33.	Seth G.S Medical College & KEM Hospital Mumbai	18
34.	G.S.V.M Medical College, Kanpur	3
35.	King George Medical University, Lucknow	8
36.	Karnataka Institute of Medical Sciences, Hubli	10
37.	Shimoga Instt. of Medical Sciences, Shimoga	47
38.	Mysore Medical College, Mysore, Karnataka	21
39.	Govt. Medical College, Jammu	5
40.	Govt. Medical College, Srinagar	3
41.	M.P. Shah Medical College, Jamnagar	8
42.	SMIMER, Surat, Gujarat	12
43.	Medical College, Thiruvanthapuram	13
44.	Calicut Medical College, Calicut	17
45.	Govt. Medical College, Amritsar	3
46.	Guru Gobind Singh Medical College, Punjab	4
47.	Regional Institute of Medical Sciences, Imphal	6
		686

ii. Since each Medical College has constituted its own local Research Advisory Committee (RAC), which decides research projects under MRU, the role of DHR & ICMR is limited to providing handholding to the medical colleges on designing research proposals, monitoring of progress of the research activities and achievement or outcomes. For this purpose, a National Level Research Advisory Committee (NAC) consisting of three expert members has been constituted for making suggestion and providing guidance from time to time. A suggestive structure/composition of the Local RAC has also been conveyed to the medical colleges for effective & qualitative examination and approval of research proposals.

### **Molecular Genetics Lab**



Multi-Disciplinary Research unit (MDRU), Gandhi Medical College, Secunderabad, Telangana

### COVID



MRU SMIMER, Surat Gujarat (COVID-19 testing)



MRU, PGIMS Rohtak (Workshop on Research Methodology)

### 5 CHAPTER

### ESTABLISHMENT OF MODEL RURAL HEALTH RESEARCH UNITS (MRHRUS) IN THE STATES

5.1 Public health system in India has a wide network of primary centres at the periphery, plus referral, secondary and tertiary level hospitals at district, state and other levels. Over the last more than 60 years, preventive, diagnostic and therapeutic services have been provided through this network managed by States. It has been observed that a big gap exists between PHC/ CHC and tertiary care hospitals with state-of-artfacilities created by centre and also by some of the state governments. The professional and policy makers have a general view that modern methods of diagnosis and management cannot be practiced a peripheral level.

5.2 Further, wide variations exist in the pattern of diseases prevalent in different geographical areas, the local conditions which require development of state/area specific disease; specific strategy to provide better health care facilities ensuring that the modern technology is available to the general public. Transfer of research findings/technologies at the rural level has been found to be major lacuna for providing quality medical services to the rural population.

5.3 To bridge the gap, Department of Health Research has rolled out a Scheme for 'Establishment Model Rural Health Research Units (MRHRUs) in the States' under the initiative of Infrastructure Development for Health Research in the country. The scheme is based on the experience of establishing such a unit at Ghatampur under the National Jalma Institute of Leprosy and other Mycobacterial Diseases (ICMR), Agra, where the methods of diagnosis and treatment as well as epidemiology are shown to be workable deep at the grass root rural settings. These units have been envisaged to function as an interface between the developers of new technologies (Researchers in the medical and other institution; State or Centre), health systems

operator (Centre/State Health services) and the beneficiaries (community).

5.4 The Model Rural Health Research Units set up under the Scheme undertake the following functions:

- i. Develop state / area specific models depending upon the disease profile, morbidity patterns and local conditions for transfer of the technology for providing better health care services to the rural masses.
- ii. Training the health professional of State Health System for the use of modern field adaptable methods and the model developed.
- iii. Undertake various research projects in closed coordination with the State Government institutions and others that are relevant and beneficial to the rural population.
- iv. The Units will develop State specific models depending on the disease profile, topography and the local conditions as per the priorities & location identified by the State Govt. in close coordination with State Health Authorities.

5.5 The MRHRU will be an interface between patient, health providers and health researcher to provide latest / sophisticated technology for diagnosis and management of disease in rural areas. The activity will be entirely supported by DHR for its sustenance. In total, 25 MRHRUs are to be established during the 14th Finance Commission period. Each MRHRU has to be linked to the nearest ICMR institute to mentor and guide the research activities of MRHRU relevant to local needs. The research activities carried out at each MRHRU are monitored/guided by a Committee, consisting of eminent Scientists of National repute with representation from State Govt. Medical Colleges,

State Health Services and other concerned State Health Officials, constituted with the approval of Secretary, DHR. Total estimated cost of the project for 14th Finance Commission Period is 105 Crore. The scheme has been extended for 2020-21 also.

### FUNDING NORMS AS APPROVED BY THE SFC FOR EXTENDED PERIOD OF THE SCHEME:

5.6 Rs. 3.075 crore per MRHRU towards Equipment & Civil works. Besides, recurring expenditure of Rs. 84.44 lakhs per annum towards staffing on contractual basis and consumables/ contingency/training etc.

#### Action Expected from the State Governments:

5.7 To provide requisite land sufficient to construct covered space of about 620 sq. meters

in close proximity to the PHC/CHC, free of cost, to tackle mainly the rural population of that area.

5.8 Signing of MoA with the Department of Health Research for implementation of the program. The MRHRUs will be developed and maintained as departmental units of Government of India, Department of Health Research, Ministry of Health & Family Welfare.

#### **Status of Implementation**

5.9 Till December 2020, 25 MRHRUs have been approved and funds released .

5.10 Against the Provision of Rs. 16.00 crores in 2020-2021, grant of Rs. 6.05 crores has been released till December, 2020.

### Physical Target and Financial Achievement for the 14th Finance Commission Period.

#### **5.11.** Physical Achievements:

Year	Physical	
	Target*	Achievement
2013-2014	7	8
2014-2015	8	4
2015-2016	-	-
2016-2017	-	2
2017-2018	5	-
2018-2019	4	4
2019-2020	4	7
2020-2021	5	-

\* Targets include spill overs from previous years

16.00

(Rs in Crore)

6.05

9.95

5.12. Financial Achieveme	12. Financial Achievements			
			(Rs in Crore	
Year	Budget Estimates (BE)	Revised Estimates (RE)	Actual Expenditure	
2013-14	10.00	12.50	12.40	
2014-15	20.00	13.00	13.00	
2015-16	10.00	6.50	6.50	
2016-17	6.00	6.00	6.00	
2017-18	9.00	11.00	8.12	
2018-19	13.00	10.00	10.00	
2019-20	15.00	19.00	17.50	

20.00

### List of 25 MRHRUs in various States:

2020-21

(expenditure upto 31.12.2020) 2020-21

(estimated expenditure for January-March 2021)

S.No	State	Location of MRHRU	Linked Medical College	ICMR Mentor Institute
1	Assam	PHC Chabua	Assam Medical College, Dibrugargh	RMRC, Dibrugargh
2	Himachal Pradesh	CHC, Haroli, Una	Dr. RPGMC, Tanda, Kangra	NJIL&OMD, Agra
3	Tamil Nadu	State Rural Health Centre at Tirunelveli	Tirunelveli Medical College, Tirunelveli	NIE, Chennai
4	Tripura	Kherengbar Hospital, Khumulwng	Agartala Medical College, Agartala	RMRC, Dibrugargh
5	Rajasthan	Bhanpur Kalan, Govt. Health Clinic, Jaipur	SMS Medical College, Jaipur	DMRC, Jodhpur
6	Maharashtra	Sub District Hospital, Dahanu, Thane	Grants Medical College and JJ Group of Hospital, Mumbai	NIRRH, Mumbai
7	Punjab	CHC Bhunga, Hoshiarpur	Govt. Medical College, Amritsar	NIOP, New Delhi
8	Karnataka	PHC, Sirwar, ManviTaluk, Raichur	Raichur Instt. of Medical Sciences, Raichur	RMRC, Belgaum
9	Andhra Pradesh	Old RHTC Premises, Chandragiri	S.V. Medical College, Tirupati	NIN, Hyderabad
10	Odisha	Block, CHC, Tigiria	SCB Medical Collge, Cuttak	RMRC, Bhubaneshwar
11	Madhya Pradesh	PHC Badoni, Datia	GR Medical College, Gwalior	RMRCT, Jabalpur

S.No	State	Location of MRHRU	Linked Medical College	ICMR Mentor Institute
12	Chhattisgarh	CHC Jheet, Patan Block, Durg District	J.N.M. Medical College, Raipur	NIRTH, Jabalpur
13	West Bengal	North Bengal Medical College (NBMC), Darjeeling (A rural hospital and designated Rural Health Training Centre)	North Bengal Medical College, Darjeeling	National Institute of Cholera and Enteric Diseases (NICED), Kolkata
14	Jharkhand	Angara CHC, Ranchi	Rajendra Institute of Medical Sciences (RIMS), Ranchi	NIMR, New Delhi AND NIMR field unit Itki, Ranchi
15	Gujarat	RHTC Surat	GMC, Surat	NIOH, Ahemedabad
16	Kerala	CHC, Chettikade, Alappuzha	Govt. Medical College, Alappuzha	National Centre for Disease Informatics and Research (NCDIR), Bangalore
17	Jammu & Kashmir	PHC Khag, Budgam	Govt. medical College, Srinagar	National Institute of Pathology (NIOP), Delhi
18	Nagaland	PHC Niuland, Dimapur	There is no medical College, so CHC Niuland will be the linked to MRHRU	Regional Medical Research Centre, Dibrugarh, Assam
19	Arunachal Pradesh	CHC Sagalee, Papumpare	TomoRiba Institute of Health & Medical Sciences (TRIHMS), Neharlagun	Regional Medical Research Centre, Dibrugarh, Assam
20	Meghalaya	Sohra CHC East KhasiHills	District Surveillance (IDSP), East Khasi Hills	Regional Medical Research Centre, Dibrugarh, Assam
21	Puducherry	CHC Kanchepuram	Pondicherry Institute of Medical Sciences Rural Health Training Centre Chunampet Kanchipuram	VCRC, Puducherry
22	Haryana	CHC, Khatpura	Kalapana Chawla Govt. Medical College, Karnal, Haryana	NICPR, Noida
23	Andaman & Nicobar Islands	Chouldari, South Andaman District	ANIMS, Port Blair	Regional Medical Research Center, Port Blair
24	Bihar	PHC, Kudhani Muzzafarpur	Sree Krishna College and Hospital, Muzzafarpur	Rajendra Memorial Research Institute of Medical Sciences(ICMR), Patna
25	Telangana	PHC Janampet, Mahaboobnagar	Govt. Medical College, Mahabubnagar	National Institute of Nutrition, Hyderabad

INDIA MAP A **AFGHANISTAN** Ladakh . Jammu & Kashmir hal Pradesh -CHINA (TIBET) Chandigarh Punjab PAKISTAN Uttarakhand Haryana NEPAL Salum Uttar Pradesh BHUTAN · Bitur Und Mar BANGLADESH MYANMAR Madhya Fradesh (Daman And Di Oriss Dadra Nagar Have OF Maharashtra BENGAL Telangana ARABIAN SEA 18 Andrea Yanam (Puducherry) Pradesh Ο MRHRU Approved Kamataka Puducherry Karaikal (Puducherry) SRI LANKA DIAN OCEAN N

Map showing distribution of Model-Rural Health Research Units in the States is as follows.

### Initiation of research activities by the MRHRUs:

5.13 Guidelines have been formulated for composition of Research Advisory Committee (RAC), Terms of Reference and Procedure for Land Transfer by State to Department of Health Research. All MRHRUs have constituted the RAC and submitted the research proposals after approval through respective RAC.

5.14 All the research projects submitted by these MRHRUS have been reviewed by Research Advisory Committee of respective MRHRU as below:

Table			
S.No.	Name of MRHRUs	No. of Projects	
1.	Sub District Hospital, Dahanu, Thane, Maharashtra	19	
2.	State Rural Health Centre at Tirunelveli, Tamil Nadu	36	
3.	Old RHTC Premises, Chandragiri, Andhra Pradesh	26	
4.	CHC Bhunga, Hoshiarpur, Punjab	20	
5.	Kherengbar Hospital, Khumulwng, Tripura	11	
6.	PHC Chabua, Assam	14	
7.	Bhanpur Kalan, Govt. Health Clinic, Jaipur, Rajasthan	4	

	Total	204
11.	CHC, Haroli, Una, Himachal Pradesh	17
10.	Block, CHC, Tigiria, Orissa	21
9.	PHC Badoni, Datia, Madhya Pradesh	2
8.	PHC, Sirwar, Manvi Taluk, Raichur, Karnataka	34

- 5.15. Besides the above mentioned research projects undertaken by individual MRHRUs, Few Multi-centric projects have also been initiated.
- i. "Improving health and nutritional status of vulnerable segment of population by implementing multi-component health and nutrition education intervention as sustainable model of intervention" has been initiated at Rajasthan, Tamil Nadu, Punjab, Maharashtra and Karnataka MRHRUs.
- ii. The study has also been initiated in some MRHRUs titled "Snake Venom as Potential Inflammation Inhibitor and Antivenome Activity of plant extract", considering this as a widespread problem in most of the rural areas in the country.



### New building of Model Rural Health Research Unit, Dahanu, Palghar, Maharashtra

### Bio-Safety Level-II facility for COVID-19 diagnosis (Microbiology laboratory)







Quant Studio & Bio Rad RT-PCR machines



Sample aliquoting



King fisher Flex automated Viral RNA Extraction machine

### 6 CHAPTER

### GRANT-IN-AID SCHEME FOR INTER-SECTORAL CONVERGENCE & COORDINATION FOR PROMOTION AND GUIDANCE ON HEALTH RESEARCH

6.1 The Scheme launched during 2013-14 aims at providing support in the form of Grant-in-Aid for carrying out research studies to identify the existing knowledge gap and translate the existing health leads to into deliverable products. There will be special focus on encouraging innovation, their translation, and implementation by collaboration and cooperation with other agencies by laying special stress on implementation research so that there is a better utilization of available knowledge. 6.2 The Scheme was originally approved by Cabinet Committee on Economic Affairs (CCEA) on 6th February, 2014 at a total cost of Rs.1242 crore for the 12 th Plan period. Continuation of the scheme beyond 12th Plan period, from 2017-18 to 2019-20 (14th Finance Commission period) has been approved in the meeting of the Standing Finance Committee (SFC) held on 18th September, 2017 at a total estimated cost of Rs.297.08 crore, and further extended upto March 2021 as follows:

Year	Physical Targets No. of projects	<b>Grand Total</b> (including committed liabilities + administrative expenses)	
2017-18	41	101.86	
2018-19	41	99.36	
2019-20	41	95.86	
2020-21*	SFC Period extended	nded upto 31.03.2021	
Total	123	297.08	

\* The process of screening and shortlisting of 1,027 proposals received during call for proposals for the current financial year 2020-21, has been initiated. At this stage, it is not possible to mention the number of projects sanctioned upto December 2020 and estimates for January - March 2021 separately.

## 6.3: The Scheme has the following components for funding:

### (i) Research studies with emphasis on public health:

The objective of this component is to support research studies on diseases burden, risk factors, diagnosis & treatment, etc. of major diseases. The studies are limited to Non-Communicable Diseases. A total number of 63 studies, with the maximum duration of 3 years and cost range between Rs.50 lakhs-Rs.3 crores each, were targeted to be funded under this category at a total estimated cost of Rs.135.00 crores during 14th Finance Commission period (i.e.) 2017-2018 to 2019-2020 and extended upto 31st March 2021.

### (ii) Translational Research Projects:

The objective of this component is to translate the already identified leads into products and

#### (Rs. in Crore)

processes in the area of human healthcare, through coordination among the agencies involved in basic, clinical and operational research for use in the public health system. It is proposed to take up 75 leads already available with ICMR, 25 leads from Extramural projects funded by ICMR and 15 leads from other Science & Technology Departments/ Organizations. A total Number of 30 projects with a duration of 1-3 years and cost range of Rs. 50 lakhs-10 crores were targeted to be funded under this category at a total estimated cost of Rs.90.00 crores during 14th Finance Commission and extended upto 31st March 2021.

### (iii) Inter-sectoral Co-ordination including Funding of Joint Projects

The objective of this component is to promote joint/ collaborative research projects with other agencies involved in bio-medical-health research in the country for optimum use of resources and transfer of knowledge. A total number of 15 projects with a cost range of Rs.50 lakhs-10 crores and duration of 1-3 years per project were targeted to be funded under this category at a total estimated cost of Rs.45.00 crores during 14th Finance Commission period (i.e.) 2017-2018 to 2019-2020 and extended upto 31st March 2021.

# (iv) Cost effectiveness analysis of health technologies through a health technology assessment system

The aim of the studies would be to come up with appropriate recommendations and guidelines on cost effective but viable technology/process/ diagnostics for managing various disease, to facilitate public choice and controlling health care costs, while maximizing health outcomes. A total number of 15 projects with a cost range of Rs.50 lakhs-Rs.2 crores and duration of 1-3 years were targeted to be funded under this category at a total estimated cost of Rs.15.00 crores during 14th Finance Commission period (i.e.) 2017-2018 to 2019-2020 and extended upto 31st March 2021.

### 6.4 STATUS OF IMPLEMENTATION

#### **Financial Achievement:**

Year	Budget Estimate (B.E)	Revised Estimate (R.E)	Actual Expenditure
2015-16	30.50	16.00	13.99
2016-17	14.25	16.99	15.99
2017-18	20.00	30.00	28.14
2018-19	35.00	5.00	4.50
2019-20	24.00	16.00	16.00
2020-21 (Expenditure upto Dec 2020)	27.00	23.00	7.54
2020-21 (estimated expenditure for January-March 2021)	-	-	15.46 (approx.)

(Rs. in Crore)

### **Physical Achievement:**

Components of the Scheme	No. of Projects Sanctioned						
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	
Research Studies with Emphasis on Public Health	22	8	40	2	26	-	
Translation Research	11	-	4	-	1	-	
Inter-Sectoral Coordination	3	-	3	-	3	-	
Cost-effectiveness analysis	5	3	2	-	1	-	
Total	41	11	49	2	31	-	

\* The process of screening and shortlisting of 1,027 proposals received during call for proposals for the current financial year 2020-21, has been initiated. At this stage, it is not possible to mention the number of projects sanctioned upto December 2020 and estimates for January - March 2021 separately.

### 6.5 Funds released to private/voluntary organizations during 2020-21:

The following Principal Investigators of private/voluntary organizations received recurring grant-in-aid from Rs 10 lakhs to Rs 25 lakh and non-recurring grant- in- aid from Rs 10 lakhs to Rs 50 lakhs for carrying out research studies to identify the existing knowledge gap and to translate the existing health leads into deliverable products during 2020-21 (upto Dec 2020).

(Amount	of Rs.)
---------	---------

Grant- i projects	Grant- in-aid released to non-government organizations/ private organization for health research projects during the financial year 2020-21.						
S. No.	Name of the PI and Address	Name of Project	Amount of GIA				
			Recurring				
1	Dr. Suhas Otiv, Consultant, Department of Gynaecology and Obstetrics, K.E.M. Hospital Pune - 411011	Supplementation of vitamin B12 to improve B12-folate ratio in pregnancy and its effect on birth outcome	1108800				
2	Dr. Vrisha Madhuri, Professor & Head, Department of Paediatric Orthopaedics, Christian Medical College, Vellore, Tamilnadu - 632004	Transplantation of Autologous iliac crest physeal chondrocytes cultured in monolayer to treat physeal bars in children	1286215				

Note: Both the NGOs are registered on the Niti Aayog's DARPAN Portal.

6.6 Grant-in-aid Scheme for Inter-Sectoral Convergence & Coordination for Promotion and Guidance on Health Research in North Eastern states:

### (Rs. in Lakhs)

2017-18	2018-19	2019-20	2020-21 (Expenditure upto 31.12.2020)	2020-21 (estimated expenditure for January-March 2021)
32.91	12.93	0	0	9.99

### **7** CHAPTER

### HUMAN RESOURCE DEVELOPMENT FOR HEALTH RESEARCH

## 7.1 Introduction (about the scheme and its objectives)

The Human Resource Development Scheme of Department of Health Research is intended to create a pool of talented health research personnel in the country by upgrading skills of faculty of Medical Colleges/Institutes, mid - career Scientists, medical students, etc., by specialized training in priority areas of health research in leading national and international institutions, encourage and support the trainees to develop and take up research projects for addressing critical national and local health problems and financial assistance to Institutions for up- gradation of infrastructure to enable such Institutions to provide training with state of the art technologies.

### 7.2 The scheme was approved during 12th Five Year Plan period and support under the program is imparted in following categories:

### I. Short Term Fellowship for training in Foreign Institutes/Indian Institutes:

Short Term Fellowship supports for training in Foreign/Indian Institutes in identified areas (1-3 months) to persons employed as regular faculty those who are not above the age of 55 years. A stipend of \$3000 per month for foreign institute and Rs 40,000 per month for Indian institute is being given to the fellows. During the year 2019-20 the programme was transferred to the ICMR for implementation. Applications for training in Indian Institutions have not been invited during 2020-21due to Covid-19 Pandemic across the world.

### II. Long Term Fellowships in India/abroad:

Long Term Fellowship supports for training abroad/ Indian Institutions in identified priority areas (6 to 12 months) is meant for the persons employed as regular faculty and those who are not above the age of 45 years. A stipend of \$3000 per month for foreign institute and Rs 40,000 per month for Indian institute is being given to the fellows. This component has also been transferred to the ICMR for implementation. However, during 2020-21, fellowships for training in Institutes abroad have been kept on hold due to Covid-19 Pandemic across the world.

## III. Start-up grant for fellows undergone long term/short term training supported by DHR:

The Start-up grant, with an average cost of Rs. 30 lakhs per research project, for three years, will be supported. In the year 2020-21 (till Dec 2020), 13 start-up projects have been continued to be supported under HRD scheme.

## IV. Fellowship Programme for Young Scientists:

This fellowships aims to fulfil the objectives of creation of inclination / attitude of research among the young bright students from the medical colleges / universities. In the year 2020-21 (till Dec 2020), 17 ongoing fellowships have been supported under this programme.

### V. Fellowship Programme for Women Scientists:

This fellowship aims to encourage women candidates to undertake biomedical research who have break in their career. In the year 2020-21 (till Dec 2020), 15 ongoing fellowships have been supported under this programme.

### VI. Support to Institute for imparting training:

This program aims to provide support to selected domestic Institutions for providing training. A grant upto Rs.50 lakhs for equipments, up-gradation, etc. and a grant of Rs. 10 lakhs per year upto a period of 5 years for recurring expenses and for conducting training programme. In the year 2020-21 (till Dec 2020), 2 institutes have been supported under this programme for imparting training in biomedical research.

# VII. Strengthening of research through the establishment of online courses and web portal on health research for students, faculty and other researchers:

This programme will help prospective Institutions and individuals to access resources both financial and technical on research and promote research across the country. This facility will include the following facilities:

- Online courses along with contact
   Programmes in relevant institutions
- On line resource material for researchers
- On line mentoring for researchers
- Inter active forums and e-groups for researchers
- other stakeholders

In the year 2020-21 (till Dec 2020), 1 institute/ individual has been supported for online course and programme.

VIII. Research grant and fellowship to encourage Health Research Personnel [Non-resident Indian (NRI), Persons of Indian Origin (PIO), Overseas Citizen of India (OCI)] serving abroad, to come back to India for undertaking research in identified areas:

This Scheme has been designed to provide contractual research positions to the Indian scientists settled abroad who are willing to come back to India on a fulltime basis or for short duration to pursue medical/ health research in India and take up health research projects in collaboration with Indian scientists, particularly in areas of national priority. In the year 2020-21 (till Dec 2020), no fellowship has been supported under this program so far.

### 7.3. Major initiatives of the Scheme in 2020-21

- During the year 2020-21 (till Dec 2020), 49 ongoing fellowships have been supported.
- During the year 2020-21, the advertisements for call for online proposals under 6 categories of HRD Scheme have been published in the leading newspapers of English, Hindi and all the regional languages across the country\*. The categories are:
  - 1. Long Term/Short Term Fellowship for training in Indian Institutes
  - 2. Fellowship Programme for Young Scientists
  - 3. Fellowship Programme for Women Scientists
  - 4. Support to Institute for imparting training in identified areas
  - 5. Strengthening of research through the establishment of online courses and webportal on health research for students, faculty and other researchers
  - 6. Research grant and fellowship to encourage Health Research Personnel [Non-resident Indian (NRI), Persons of Indian Origin (PIO), Overseas Citizen of India (OCI)] serving abroad, to come back to India for undertaking research in identified areas

\* A total number of 366 proposals have been received during call for online proposals for the year 2020-21. The process of screening and shortlisting of these 366 proposals has been initiated.

## III. Financial achievement of the Scheme in 2020-21

In the year 2020-21, the Budget Estimate (BE) of the scheme is Rs. 34.00 Crores, Revised Estimate (RE) is Rs. 18.00 Crores and the Actual Expenditure (AE) of the scheme is Rs. 6.04 Crores till December 2020.

### 7.4. Status of Implementation of the Scheme

Since the inception of the Scheme under 12th Five Year Plan, the achieved physical and financial targets of the scheme are shown as below:

#### 2015-16 2016-17 2017-18 2018-19 2019-20 2020-21 2020-21 (expenditure (estimated expenditure upto Dec 2020) for January-March 2021) 8.00 13.00 30.00 30.00 33.00 34.00 BE 34.00 RE 10.00 16.00 26.00 15.00 27.00 18.00 18.00 9.46 15.39 24.28 13.29 6.04 AE 27.48 11.96 (approx.)

### Year-wise Financial Achievement of HRD Scheme

(Rs. in Crores)

### Year-wise Physical Achievement of HRD Scheme

	2015-16	2016-17	2017-18	2018-19	2019-20	<b>2020-21</b> (upto 31.12.2020)	<b>2020-21</b> (from January- March 2021)
Number of fellowships supported	70	104	191	92	200	49	*

\* Subject to shortlisting of new proposals.

### 7.5 Progress of scheme component wise in the financial year 2019-20 and 2020-21 (till Dec 2020)

S.No.	Components	No. of fellowships supported during 2019-20	No. of fellowships supported during 2020-21 (upto Dec 2020)	No. of fellowships supported during 2020-21 (Estimates for January- March 2021)
1.	Long Term/Short Term Fellowship for training in Indian Institutes	4	-	*
2.	Long Term/Short Term Fellowship for training in Foreign Institutes	50	-	*
3.	Start-up grant for fellows undergone long term/short term training supported by DHR	14	13	*
4.	Fellowship Programme for Young Scientists	83	17	×
5.	Fellowship Programme for Women Scientists	35	15	×
6.	Support to Institute for imparting training	13	2	*
7.	Strengthening of research through the establishment of online courses and web-portal on health research for students, faculty and other researchers	-	1	*

8.	Research grant and fellowship to encourage Health Research Personnel	1	1	*
	(Non-resident Indian (NRI), Persons of India Origin (PIO), Overseas Citizen of			
	India (OCI)] serving abroad, to come back to India for undertaking research			
	in identified areas			
Total		200	49	

\* Subject to shortlisting of new proposals.

### 7.6 Significant Achievements of Scheme in 2020-21

- In the financial year 2020-21, 13 research projects have been completed.
- 30 Research Publications have been published in indexed journals from the projects funded under the scheme.
- Prevailing strains of *Orientia* species of Scrub typhus were identified in Assam and its genetic relationship studies with that of other established strains worldwide.
- Histopathological evaluation study of renal allograft biopsies was done for the diagnosis of humoral rejection in kidney transplant.
- A natural inhibitor liquiritin was identified which may be served as a potential intervention strategy for preventing pre-term birth caused by low progesterone level.
- Under support to institute category, two institutes have been supported in the following biomedical areas:

S. No.	Institute	Title/Area
1.	Indian Institute of Public Health, Gurgaon, Haryana	<ul> <li>a. Evidence synthesis and Health technology assessment – blended learning</li> <li>b. Operations Research in Public Health</li> </ul>
2.	ICMR-National Institute of Research in Reproductive Health, Mumbai	Support to Indian Institutes for imparting training

### 8 CHAPTER

### Health Technology Assessment in India (HTAIn) Year 2020-21

### Introduction

The Government of India is committed to extend healthcare services to its 1.37 billion population as part of India's Universal Health Coverage (UHC) agenda. The main purpose of the HTAIn is to engage in explicit and evidence-based priority setting of health resources towards providing universal health coverage for all individuals. HTA will help to bridge the evidence to policy gap and ensure alignment of academic and policy interests through HTA towards the common goal of improving decision-making for health resource allocation to improve the health of the Indian population.

### Health Technology Assessment in India (HTAIn)

HTAIn is an institutional body established in 2017, under the Department of Health Research (DHR), Ministry of Health & Family Welfare (MoHFW). HTAIn is entrusted with the responsibility to analyze evidences related to cost-effectiveness, clinicaleffectiveness and equity issues regarding the deployment of health technologies viz. medicines, devices and health programmes by means of HTA in India, and in turn help in efficient use of the limited health budget and provide people access to quality healthcare at minimum cost.



Fig. 1: Components of HTA

### **Objectives and Significance of HTAIn:**

- Maximising health, reducing out of pocket expenditure (OOP) and reducing inequity.
- To support the process of decision-making in health care at the Central and State policy level by providing reliable information based on scientific evidence.
- Develop systems and mechanisms to assess new and existing health technologies by a transparent and inclusive process.
- To appraise health interventions and technologies based on available data on resource use, cost, clinical effectiveness, and safety.
- To collect and analyse evidence in a systematic and reproducible way and ensure its accessibility and usefulness to inform health policy.
- Disseminate research findings and resulting policy decisions to educate and empower the public to make better informed decisions for health.



Fig. 2: Significance of HTA

#### **Structure of HTAIn**

HTAIn consists of a Board, Technical Appraisal Committee (TAC), Project Appraisal Committee, Regional Resource Centres, Technical Partners (TP) and HTAIn Secretariat, DHR (fig. 3.)



Fig 3: HTAIn Structure

**Board:** A HTAIn Board was set up in 2017, to take final policy decisions on the recommendations of HTA studies based upon the feasibility, sustainability and challenges of implementation. Board is the highest decision-making body of HTAIn consisting of Policy-Makers, Bureaucrats and Experts from different Government Bodies (Central as well as States) etc. The role of the Board is to appraise the recommendations of the TAC for final acceptance of the study – mainly the Outcomes and Recommendations. The Board may also look into the gaps in evidence and instruct for further research. i.e. Board can identify the area that require further research.

**HTAIn Secretariat:** HTAIn Secretariat is a DHR- inhouse body that coordinates between the User Department, TAC, Technical Partners and Resource Centres. Secretariat consist of Scientists, Economists, Health Policy Analyst, Financial Consultants, Programme Manager, Data Entry Operators and Multi-Tasking Staffs etc. It provides necessary assistance to the TP/ Resource Centres wherever required. Secretariat may also undertake topic(s) to study in certain situations. Besides that, secretariat conducts all the TAC and Stakeholders consultation meetings in DHR and ensures transparency at all stages of the study by consultation and regular updates from the Technical Partners and Resource Centres.

**Technical Appraisal Committee:** Technical Appraisal Committee (TAC) is a multidisciplinary body with experts drawn from different areas viz economists, clinicians, researchers, social scientists, health policy experts etc. There may be co-opted

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members in the TAC depending upon the study under consideration by HTAIn. The Committee is invariably headed by an eminent person. It ensures the appraisal of the study at different stages viz. support in analyzing feasibility of topic for HTA, allocation, proposal development, outcome report and recommendations. TAC does the quality assurance and provides overall stewardship to the HTAIn. Till 31st December 2020, Twenty-Two (22) TAC meetings have taken place in DHR regarding the appraisal of the HTA proposals submitted by the TP and discussing potential challenges HTAIn may face in the Indian scenario such as perspective, equity issues, availability of evidences, etc.

### **Regional Resource Centres or Resource Centres:**

Some of the technical partners are upgraded to the Resource Centres to become an extended arm of the HTAIn Secretariat. DHR provides requisite manpower support to these Centres in order to bridge the gap between Central and the State Governments, assist capacity building, support a bunch of States located in the vicinity and undertake the studies allocated to them by the Secretariat. The mentor of the Centres liaise with the officials of the State Governments and sensitize them about a need for Health Technology Assessment (HTA) for any health intervention. Presently, the following Regional Resource Hubs are in place:

- 1. Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh.
- 2. Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST),

Trivandrum

- 3. National Institute for Researchin Reproductive Health (NIRRH), Mumbai
- 4. National Institute for Research in Tuberculosis (NIRT), Chennai
- 5. Regional Medical Research Center (RMRC), Bhubaneswar
- 6. Indian Institute of Public Health (IIPH), Shillong
- 7. Indian Institute of Public Health (IIPH), Gandhinagar
- 8. Kalam Institute of Technology (KIT), Hyderabad
- 9. National Institute of Epidemiology, Chennai
- 10. Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry.
- 11. All India Institute of Medical Sciences, Rishikesh
- 12. State Cancer Institute and King George Medical University, Lucknow
- 13. National Centre for Disease Informatics and Research, Karnataka
- 14. Indian Institute of Public Health, Hyderabad
- 15. National Institute of Virology, Pune
- 16. All India Institute of Medical Sciences, Jodhpur

The Resource Hubs and Technical Partner so far have been depicted in the following map:



Figure 4: HTAIn Regional Resource Hubs and Technical Partners

#### **PROCESS OF HTAIn**

**Technical Partners:** Technical Partners are Institutes of the Central/ State Government which have been identified by HTAIn secretariat, with regards to their capacities, expertise and previous experience in the area of HTA/ Multi-centric/ Operational research. Technical Partners are the research conducting body for HTAIn with their existing capacity/ manpower. The outcome reports of the studies conducted by technical partners are submitted to the HTAIn Secretariat for approval from the TAC and Board.

**Stakeholders:** Stakeholders are individuals, organizations or communities that have a direct interest in the process and/or outcomes of the study under consideration by the HTAIn. Stakeholders may include the user department e.g. Central/ State Govt., NHM, RSBY or NPPA,

public health authorities, policy makers, medical insurers, regulatory agencies, industrial associations (e.g. manufacturers, suppliers, wholesalers, distributors and retailers), academicians or methodological experts, researchers, social groups, NGOs, patient group and so on.

Stakeholders are distinct from the common public as they have direct interest in a certain HTA topic; therefore, their participation in a specific HTA is both rational and likely to contribute to the quality and legitimacy of the process and outcomes. The stakeholders are informed when the topics are selected for study and a consultation meeting is organized where TP present their proposal to the stakeholders for their feedback and the same stakeholders are again consulted for a second meeting when outcomes are to be discussed. Conflicts of interests, if any, are addressed making the process transparent and all inclusive.

#### **Key Phases of HTAIn Process**



Fig 5. Overview of HTA Process (At Macro Level)

#### **PROCESS OF HTAIn**

- The User Department sends their topic(s) to the Secretariat according to their priority area with a clear policy question to conduct an assessment in order to address those questions.
- After prioritization Secretariat present the topic(s) to the TAC and a suitable Technical Partner/ Resource Centres is identified to allocate those topic(s) to conduct the study.
- The respective TP/ Resource Centres then come up with a study proposal that contains the policy question(s), research question(s), objective(s), methodology, timeline, manpower required and the estimated budget.
  - The proposal is submitted to the TAC and the TP/Resource hubs are called to present the same before the TAC in the TAC meeting held at DHR.

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- After the appraisal and approval of the proposal by the TAC TP/ Resource Centres are allowed to conduct the HTA study and after completion of the study come up with the outcome report and recommendations to the TAC once again for appraisal of the outcome and approval of the recommendations.
- Once the outcome report is approved by the TAC it is submitted to the Board for final approval. TP/Resource hubs may also be called to present the outcome before the board.
- The recommendations made by MTAB are used to inform health services provided by the Government like the National Health Programs, the National Health Protection Scheme (formerly RSBY), the National List of Essential Medicines (NLEM), State-specific Health Insurance Packages, etc.

#### **Progress of HTAIn:**

The following is the progress of HTA studies that have been deliberated upon and approved by TAC and HTAIn Board in the past:

A. HTA studies completed and approved by the Board:

HTA	Studies
1)	Health Technology Assessment of intraocular lenses for treatment of age-related cataracts in India
2)	Cost-Effectiveness of Therapeutic Use of Safety-Engineered Syringes in Healthcare Facilities in India
3)	Health Technology Assessment of Strategies for Cervical Cancer Screening in India – PGIMER, Chandigarh.
4)	Validation of Diagnostic efficacy of digital hemoglobinometer (TrueHb), HemoCue and non-invasive devices for screening patients for anemia in the field settings
5)	Health Technology Assessment of Uterine Balloon Tamponade for Management of Postpartum Haemorrhage in India; NIRRH Mumbai.

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6)	Cost effectiveness analysis Hypothermia detection devices (BEPMU, Thrmospot and fever Watch) for pre-mature and low birth weight neonates in India; IIPH Shillong	C. F Appi unde	TA proposals approved by the Technical raisal Committee and studies that are erway:	
7)	Health Technology Assessment of Long Acting Reversible Contraceptives in India – NIRRH, Mumbai.	1)	Economic Evaluation of Coronary Artery Bypass Graft surgery and Percutaneous Coronary Intervention in comparison to Optimal Medical	
8)	Health Technology Assessment of Portable automated ABR Neonatal Hearing Screening		Therapy for the management of patients with Multi-Vessel Disease. (Proposal)	
9)	Rapid Health Technology Assessment for incorporating TrueNat as a diagnostic tool for tuberculosic under RNTCP in India: HTAIn	2)	A comprehensive HTA of Project Lifeline – A portable ECG facility at PHCs of Ahmedabad district of Gujarat, IIPH Gandhinagar. (Proposal)	
	Secretariat.	3)	Cost-effectiveness of administering parenteral	
10)	Evaluation of Pulse Oximeter as the Tool to Prevent Childhood Pneumonia related Mortality and Morbidity; SCTIMST, Trivandrum		Carboxyl Maltose for first line management of iron deficiency anaemia among pregnant	
11)	Health Technology Assessment of Automated Resuscitation Device for Neonatal Resuscitation		Sabarkantha, Gujarat. (Proposal)	
	at point of delivery in Indian healthcare system; KIHT, Vizag	4)	Economic Evaluation of the use of implantation of pacemakers in patients with Complete Heart	
12)	Health Technology Assessment of various		Block. (Proposal)	
	H1N1pdm09 virus in all age patients in India; NIV, Pune	5)	HTA of intravenous trenaxamic acid use in management of post-partum haemorrhage in India (Proposal)	
13)	Health Technology Assessment on population based screening for Type 2 Diabetes and Hypertension in India; PGIMER, Chandigarh	6)	Cost effectiveness of linking HIV to family Planning services to prevent unintended	
B. HI	A Outcome Reports approved by the Technical		pregnancies in people living with HIV women. (Proposal)	
		7)	Estimation of recurrent cost to deliver JSSK	
1)	Health Technology Assessment for screening of Hepatitis B and C at Primary Health centers in Tamil Nadu NIBT Chepnai		allocation. (Proposal)	
2)		8)	EuroQol-EQVT study to develop Indian Value	

- 2) HTA of Low cost portable ventilator, KIHT, Vishakhapatnam. (Outcome)
- 3) Health Technology Assessment of Breast Cancer Screening Techniques in India, NHSRC, New Delhi. (Outcome)
- 4) Economic Evaluation of Percutaneous Coronary Intervention in comparison to Coronary Artery Bypass Graft surgery in Left main with or without Triple Vessel Disease. (Outcome)
- 5) Economic Evaluation of Percutaneous Coronary Intervention in comparison to Optimal Medical Therapy for the management of patients with Single-Vessel Disease without left main coronary artery involvement. (Outcome)
- 9) Costing of Healthcare services in India by PGIMER, Chandigarh.

PGIMER,

sets for EQ5D Quality of Life scores.

- 10) Price Regulation & Value-Based Pricing for Anti-Cancer Drugs: Implications for Patients, Industry, Insurer and Regulator PGIMER, Chandigarh.
- 11) Health Technology Assessment for implementation of blood counters for diagnosis of dengue at primary health care settings in Tamil Nadu state NIRT, Chennai

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**Multi-centric Studies:** There are following multi-centric going on in different states across India:

### I. EuroQoL-5-Dimension(EQ5D) study in India:

**A.** To facilitate the calculation of quality-adjusted life years (QALYs) that are used to inform economic evaluations of health care interventions a multi-centric study is going on in the following institutes located in the different representative zones of India:

- i. PGIMER, Chandigarh.
- ii. JIPMER, Puducherry.
- iii. AllMS, Bhubaneswar, Odisha.
- iv. NEIGRIHMS, Shillong, Meghalaya
- v. IIPH, Gandhinagar
- vi. AMS, Lucknow, Uttar Pradesh.



**B.** A training was organized by EuroQol Foundation on 14-15th February, 2019 in Amsterdam to introduce the local study team to the protocol for the valuation study, demonstrate the software, discuss best practice for implementation of the protocol, and develop efficient ways for collaboration. The training was attended by all the PIs and Co-PIs of the study.

**II. Costing of Healthcare Services in India:** To assess the cost information from different parts of the country, the study utilizes the Multidisciplinary Research Units (MRUs) of DHR functional in government medical colleges in different states of India. These MRUs along with the HTAIn Secretariat in DHR and the HTAIn resource centre hosted in School of Public Health, PGIMER, Chandigarh is identified and shortlisted as potential centres to gather this cost information.

- A. This study is conducted in 15 states/UT across the country in following institutes:
  - i. PGIMER Chandigarh, Punjab
  - ii. Madras Medical College Chennai, TamilNadu
  - iii. KGMU, Lucknow, Uttar Pradesh
  - iv. SMIMER, Gujarat
  - v. SMS Medical College, Jaipur, Rajasthan
  - vi. VIMSAR Burla, Odisha
  - vii. Seth GSMC and KEM Hospital, Mumbai, Maharashtra.
  - viii. IPGMER, Kolkata, West Bengal
  - ix. IGIMS, Patna, Bihar
  - x. SV Medical College, Tirupati, Andhra Pradesh
  - xi. PGIMER & Ram Manohar Lohia Hospital New Delhi
  - xii. Government Medical College, Jammu, Jammu & Kashmir
  - xiii. NEIGRIHMS, Shillong, Meghalaya
  - xiv. SS Medical College, Rewa
  - xv. Madhya Pradesh and PGIMS, Rohtak, Haryana (second phase).

**B.** This multistate costing study aims to collect cost information from 15 public tertiary medical colleges, 30 district hospitals and 40 private hospitals from across the above mentioned States. The First and Second National workshops for training of the trainers on 'Costing of Health Care services' were organized in PGIMER & DHR, MoHFW respectively. wherein the investigators were trained with the costing methodology, familiarized with the data collection tools & methods. It was also accompanied with field visits and data collection

from healthcare centers. The second workshop was intended to train the trainers with cost data analysis which was followed by refresher meetings with the Investigators and data collection teams.

**C.** The study was taken up in 2018 and since then 855 packages have been completed. For first phase of study, data collection and analysis for District and Private Hospitals in all states is ongoing. Now, the costing study has moved to its second phase. After the completion of phase II, 1393 PM-JAY packages will be covered by the study.



### III. Establishing DHR-ICMR Advanced Molecular Oncology Diagnostic Services (DIAMOnDS):

**A.** This Initiative aims to set up zonal oncopathlogy labs to provide basic as well as high-end advance diagnostic services to cancer patients and research facilities for basic, translational and clinical research. These laboratories will be established in

Government Medical Colleges that will ensure the optimum utilization of facilities available there, in terms of equipment and manpower and will also provide the much required diagnostic services to the cancer patients in those areas. A two-phase pilot development model will be followed. Detailed Phase-wise Activities is provided in the DIAMONDS Documents.

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В. '	The following institute a	re now in place under	<b>DIAMoNDS project:</b>
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S No.	Zone	Established Centre (DIAMONDS Regional Hub)	To be Established Centre (DIAMONDS Centre)
1	North	AllMS (New Delhi)	State Cancer Institute- Lucknow
2	South	CMC (Vellore)	JIPMER- Pondicherry
3	North East	TMC (Kolkata)	Cachar Cancer Hospital and Research Centre (CCHRC)- Silchar RIMS, Imphal
4	West	Tata Memorial Hospital (TMH) (Mumbai)	AIIMS-Jodhpur, Rajasthan



Figure 7: Institutes selected under DIAMOnDS study

**IV. Price Regulation & Value-Based Pricing for Anti-Cancer Drugs:** Implications for Patients, Industry, Insurer and Regulator: The study aims to assess the impact of price regulation of anti- cancer drugs on cancer patients, industry, insurers and regulators. **A.** This national level study will be conducted in collaboration with National Cancer Grid and data will be collected from cancer care centres associated with National Cancer Grid. The National Cancer Grid is a network of major cancer centers, research institutes, patient groups and charitable

institutions across India with the mandate of establishing uniform standards of patient care for prevention, diagnosis, and treatment of cancer, providing specialized training and education in oncology and facilitating collaborative basic, translational and clinical research in cancer.

**B.** Selected states for data collection proposed are Delhi, Tamil Nadu and Maharashtra, Haryana Punjab and Assam. The proposed sites of data collection are:

- i. Tata Memorial Hospital Mumbai
- ii. Christian Medical College Vellore
- iii. Adyar Cancer Institute Chennai, PGIMER Chandigarh
- iv. Government Medical College and Hospital Chndigarh
- v. AIIMS New Delhi
- vi. Dr. BB Borooah Cancer Institute Guwahati.

### V. Costing of Janani Shishu Suraksha Karyakram (JSSK):

A. Government of India launched Janani Shishu Suraksha Karyakram (JSSK) on 1st June, 2011 to eliminate Out Of Pocket expenditure for pregnant women and sick new- borns and infants on drugs, diet, diagnostics, user charges, referral transport, etc. The scheme entitles all pregnant women delivering in public health institutions to absolutely free and no expense delivery including Caesarean section. This initiative also provides for free transport from home to institution, between facilities in case of a referral and drop back home. Similar entitlements have been put in place for all sick newborns & infants accessing public health facilities. Recently, a new study proposal was approved by TAC for conducting costing of Janani Shishu Suraksha Karyakram (JSSK).

**B.** This is an in-house study involving analysis of secondary literature and clinical opinion from experts of AIIMS and PGIMER, Chandigarh.

**C.** The data collection is underway and it was planned to submit the report in the next couple of months but due to COVID-19 crisis the consultation part is becoming a challenge.

VI. Developing the Process Manual, Reference **Case and Guidelines for Budget Impact Analysis** for India and Checklists for reviewing the Proposals and Outcome Reports: The Process Manual for the HTAIn was developed in 2017 and there were gradual modifications with time. The manual outline the steps for conducting the health technology assessment in India and for guiding the technical partners and organizations conducting HTA analysis. There were gradual modifications in the checklists and the recent revised Process Manual is ready for TAC's perusal. The Reference Case for India is being developed to provides a guide as to how HTA analysis should be conducted and reported as part of the HTAIn program of work. This ensures that the way in which all analyses carried out are done in the same way, according to the same fundamental methods and principles. Reference case will enable HTAIn or other institutions and individuals wanting to use economic evaluation to inform their decisions to do so in full knowledge of its limitations and relevance to the decision problem at hand. Further, adherence to reference case would increase the quality, interpretability and transferability of future economic evaluations. Currently the Reference case for India in underway and soon it will be presented in the TAC. The Budget Impact Analysis (BIA) is a relatively recent method for economic evaluation of health-care interventions and technologies. BIA can be defined as a tool to assess the financial consequences, either additional or displacement from existing allocation, of the introduction of a new health-care interventions or technology in a specific setting in the short-to-medium term. By the generation of this document, a BIA guideline for its conduct specific to Indian context is being developed, allowing for the flexibility to estimate the financial impact for different budget-holders and at different organizational level within Indian health-care system. Currently the proposal has been approved in principle by the TAC and the revised proposal is circulated for approval. A Quality Assessment Checklists has been developed to check the quality of the Outcome Reports of HTA studies and approved by the TAC. Another checklist for proposals is recommended by the TAC.

### **Capacity Building**

HTAIn DHR, has also conducted the following trainings and workshops with its resource centres and technical partners for HTA capacity building in India:

Workshop/Training	Organized by	Date
Mahidol University- 2 ICMR staff	Department of Health Research	11 August 2017
Introduction To Economic Analysis For Health Technology Assessment	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum	8-13 May, 2017
Workshop On Systematic Review And Meta- Analysis	Department of Health Research, in collaboration with NIMS, ICMR	29-30 May, 2017
Proposal Development Workshop for HTAIn technical partners	HTAIn Secretariat, Department of Health Research	22 Dec, 2017
2 <sup>nd</sup> National Conference on Health Technology Assessment	School of Public Health, PGIMER, Chandigarh	24 -25 Feb 2018
Introduction to Economic Evaluation in Health Technology Assessment (HTA)	Department of Health Research	28 Oct – 3 Nov 2018
2nd National Workshop on 'Costing of Health Services'	Department of Health Research	19 Nov - 20 Nov 18
7 <sup>th</sup> International Fellowship on Health Technology Assessment	School of Public Health, PGIMER, Chandigarh	19- 23 Feb 2018
Introduction to Economic Evaluation in Health Technology Assessment (HTA) Advanced Training	Department of Health Research	20 – 24 May 2019
Orientation workshop with National Health Mission, Tamilnadu	Department of Health Research NIRT, Chennai	29 June 2019
Introduction to Economic Evaluation in Health Technology Assessment (HTA)	Department of Health Research	16 – 20 Sep 2019
3rd National Workshop on 'Costing of Health Services' for new centres	By HTAIn Resource hub, PGIMER Chandigarh	10 - 13 Dec 2019
Advance Health Technology Assessment Training (Virtual Platform)	DHR and iDSI and Imperial College	07-09 September 2020
HTA Sensitization Webinar for State Government Health Officials(Virtual Platform)	DHR and iDSI	5th November 2020

**HTAB Bill (2019):** A HEALTH TECHNOLOGY ASSESSMENT BOARD BILL, (2019) has been proposed to institutionalize the structure and function of the HTAIn body. The Bill is to provide for the constitution of a Board for providing evidences related to cost-effectiveness, clinicaleffectiveness and safety of medicines, devices, vaccines and health programmes undertaking Health Technology Assessment (HTA) studies for decision making. It will evaluate affordability, appropriateness and cost effectiveness of the available and new health technologies in India. It will work on the objectives of maximizing health, reducing 'Out Of Pocket' expenditure and reducing inequality so that maximum people can have access to quality healthcare at minimum cost in the country. As per pre-legislative consultative policy, HEALTH TECHNOLOGY ASSESSMENT BOARD BILL, (2019) has been uploaded on the website of the Department i.e. htain.icmr.org.in inviting comments from Stakeholders. As part of Inter-Ministerial/State/ Union Territories consultation the draft HEALTH TECHNOLOGY ASSESSMENT BOARD BILL, (2019) is sent to the respective Inter-Ministerial/State/Union Territories and comments and suggestions on the HTAB Bill, 2019 are being received. A draft Cabinet Note is ready to be submitted to the Cabinet for approval.

#### Budgetary Allocations for implementation of HTA are as follows:

(Rs. in Crores) Year RE BE **Actual Expenditure** 2017-2018 5.00 6.00 5.81 2018-2019 6.00 7.01 5.83 2019-2020 25.00 23.00 22.75 2020-21 25.00 15.00 5.49 (expenditure upto till 31st Dec 2020) 2020-21 9.51 (estimated expenditure for January-March 2021)
# 9 Outbreak of COVID-19 Outbreak of COVID pandemic

Department of Health Research through Indian Council of medical Research (ICMR), an autonomous organization under its administrative control, has been on the forefront to address public health challenges and finding suitable solutions through research for the nation.

COVID-19 pandemic is amongst the largest public health crisis faced by the World that is having unprecedented negative consequences on health, economy and our social lives. The WHO declared the disease a pandemic on March 11, 2020. Since January 2020, India has responded proactively to this pandemic by multitude of measures by following the principle of 'Test, Track and Treat' and has undertaken several measures to finally contain and manage the spread of the disease including international and domestic travel restrictions, rational screening and mandatory quarantine.

One of the key strategies for containing the disease is to undertake widespread testing for COVID-19 followed by isolation and treatment of confirmed cases and containment measures for clusters of confirmed cases. The WHO recommends the real-time reverse transcription-polymerase chain reaction (RT -PCR) diagnostic panel for the detection of 2019 novel corona virus with 140 tests per million per day, a strategy that India has also adopted. Today more than 2100 laboratories spread across the length and breadth of the nation are carrying out the testing in the fight against the spread of the COVID-19



India as on 1st December has reported 94,62,809 confirmed cases with 1,37,621 deaths.

# **Testing for Sars Cov-2**

Covid-19 pandemic is a National Health Emergency of unprecedented nature and of historic scale, which has rendered human life at risk. In the early stages of Pandemic, National Institute of Virology, Pune was the only testing centre for Sars Cov-2.

A strategy was adopted to enhance the testing centres and sample collection centres. The existing Viral Research and Diagnostics established labs were trained to undertake RT PCR COVID testing.

Secondly Strategy was adopted to address the constraints for procuring COVID 19 diagnostic material. Empowered group-3 set up by the Government of India, cutting across ministries, was tasked with the objective of increasing procurement and ensuring regular supplies. Indian missions and embassies abroad helped identify global suppliers in a highly competitive seller's market.

Thirdly Strategy was to partner with domestic industry to work towards self sufficiency in testing. Because of the nationwide lockdown, industries faced severe operational challenges related to movement of human resources and procurement of material and machinery. A task force at DHR was set up principally to ease out these challenges and handhold the industry to accelerate production of VTM, RNA extraction kits and RT PCR kits.

The scale up of testing laboratories started with a network of 106 DHR funded Viral Research and Diagnostic Laboratories, (VRDLs), which already had the capacity to conduct testing for viruses similar to SARS-CoV-2. Subsequently, the testing was initiated in partnership with laboratories in DST, DBT, ICAR, CSIR, DRDO, MHRD, medical colleges and private laboratories. Private laboratories that had approval from the National Accreditation Board for Testing and Calibration Laboratories (NABL) were accepted. With its testing capabilities now matching the most advanced countries in the world, Indian institutions have risen to the occasion in an emergency situation.

ICMR established 24 Mentor Institutes for approving testing centres and assuring quality

control for testing. States provided infrastructure and manpower for enhancing testing centres.

In India, 14,13,49,298 tests have been conducted in the last 10 months. The maximum tests conducted per day was 14.94 Lakhs on 24th September 2020. The national average tests per million per day has increased to 414.



# **Testing Centres:**

ICMR has 2170 approved centres for COVID 19 testing with 1176 government and 994 private labs.

	Total No .of Labs	
Govt	Private	Cartridge/
RT-PCR	RT-PCR	CB NAT/
		True Naat
523	653	989

# Validation of Kits

1. ICMR has 24 centres which have been undertaking the process of validation. The institutes are as follows

	Number of Institutes	
1	ICMR INSTITUTES	09
2	DBT INSTITUTES	05
3	CSIR INSTITUTES	03
4	OTHERS	07

# Types of testing kits

COVID-19 testing involves analyzing samples to assess the current (virus) or past (antibodies) presence of SARSCoV-2 virus. Tests for viral presence include Real Time Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) and Antigen tests. Real Time RT-PCR is considered gold standard for diagnosis of Covid-19 and India is currently using both open and closed systems of RT-PCR platforms (Open system RT-PCR machines and TrueNAT and CBNAAT also popularly known as GeneXpert). India recently introduced Antigen testing to rampup testing in containment zones for point of care diagnosis.

# The total Number of kits validated till 1st of December is 1099 with 394 indigenous kits

	Evaluated so far	Recommended	Indigenous Products out of those Recommended	Under Process as on 01.12.2020
RT-PCR Kits	309	143	77	0
RNA Extraction Kits	251	156	98	1
VTM	222	188	176	0
Antibody Kits	178	23	17	4
ELISA/CLIA	81	24	16	8
Rapid Antigen Kit (NP/OP)	55	15	10	12
Saliva based Rapid Antigen Kit	3	0	-	1
TOTAL	1099	549	394	26

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### **Logistics for Distribution**

In order to ensure that the supplies reached every laboratory in a timely manner amid the nationwide lockdown, the services of the Ministry of Civil Aviation and their airline partners in government and private sector under 'Mission Lifeline Udan' were availed. They carried consignments of COVID 19 diagnostic material across the country. In the last 2 months, despite the lockdown, approximately 40 tonnes of testing material was transported in more than 150 flight operations, reaching out to the remotest corners of the nation. Doorstep deliveries were coordinated with several courier companies and state governments. As the lab network expanded, a need was felt to rope in India Post, which has country wide operations, to streamline the flow of supplies to the last mile. To cut down transit times, logistic complications and risks of stock outs, decentralized storage of these supplies has been done by building a network of 16 storage depots in a phased manner across the country.

### **Procurement Process**

The procurement of various essential testing materials such as VTMs, RNA Extraction Kits, RT PCR Kits, Rapid Antibody Test Kits and diagnostic machines were carried out at ICMR Hqrs in three distinct stages considering changing market scenario, global lockdown, instructions from the Gol from time to time and guidance provided by the Empowered Group 3 constituted for the purpose of procurement of materials related to Covid-19 emergency scenario.

The Ministry of Textiles and the coronavirus taskforce of DHR engaged industry partners and scientific agencies to develop prototypes of swabs. After ICMR validated them, commercialscale mass production and distribution among VTM manufactures were permitted. To augment production capacities, support was provided to run plants at full capabilities during the lockdown by helping travel of manpower, expansion of existing plants and reopening of ancillary industries such as mould making and labelling factories.

### **COVID-19 Management Team for Testing**

India's expertise in virology has resulted in speedy development of required diagnostics (RT-PCR and COVID Kawach ELISA) and ensuring adequate supply of testing reagents through handholding domestic players thus realizing our mission of Atma-nirbhar Bharat. Also, ICMR isolated the COVID-19 virus, which made India the fifth nation in the world to do so and paved the way for vaccine development in record time. The fully indigenous vaccine candidate, COVAXIN, has now entered the third phase of human trials. Also, it has partnered with Serum institute for the clinical trials of COVISHIELD and NOVOVAX.

# 10 IMPLEMENTATION OF SCHEMES IN NORTH EASTERN REGION

# I. Establishment of VRDLs in Government Medical College:

(Rs. In lakhs)

SI.	Name of	Name of VRDL		Funds Release	d
NO.	State		2013-14 to 2019-20	<b>2020-21</b> (As on 11 Dec 2020)	2020-21 (estimates for January-March 2021)
1.	Assam	RMRC Dibrugarh	891.40	57.50	25
		Guwahati Medical College, Guwahati	535.82	63.00	NIL
		Tezpur Medical College, Tezpur	226.85	39.00	NIL
		Jorhat Medical college, Jorhat	236.90	06.00	18
		Fakhruddin Ali Ahmed Medical College, Barpeta, Assam	194.53	21.00	18
		Silchar Medical College, Silchar	200.64	21.00	18
2.	Manipur	Regional Institute of Medical Sciences (RIMS), Imphal	314.57	208.25	25
		Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal	269.13	06.00	NIL
3.	Meghalaya	North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences (NEIGRIHMS), Shillong	387.43	09.50	43
4.	Mizoram	Zoram Medical College, Mizoram	-	182.90	NIL
5.	Tripura	Government Medical College, Agartala	271.92	06.00	33

# II. Establishment of MRUs in State Government Medical Colleges:

(Rs in Crore)

S.	Name of	Name of the Medical College		Funds released	I
	state		2013-14 to 2019-20	2020-21 (upto December, 2020)	2020-21 (Jan-21 to March-21)
1	Assam	Silchar Medical College and Hospital, Silchar	3.7990	0.2000	1.09
		Fakhruddin Ali Ahmed Medical College, Barpeta	4.3107	0.2890	0.50
		Jorhat Medical College, Jorhat	3.0873		1.20
2	Manipur	Regional Institute of Medical Sciences, Imphal	3.3552	1.84	0.50
3	Tripura	Agartala Government Medical College,Agartala	6.2044	0.27	0.12

# III. Establishment of MRHRUs in North Eastern States:

(Rs. in Crore)

S.	State	Location of	ICMR mentor	Funds r	eleased	
NO		мкнко	Institute/centre	2013-14 to 2019-20	2020-21 (upto December, 2020)	2020-21 (Jan-21 to March-21)
1	Assam	PHC Chabua	RMRC, Dibrugarh	4.4779	0.4469	0.35
2	Tripura	Kherengbar Hospital Khumulwung	RMRC, Dibrugarh	4.2623	0.6455	0.15
3	Nagaland	PHC, Niuland, Dist: Dimapur	RMRC, Dibrugarh	1.50		0.80
4	Meghalaya	CHC Sohra	RMRC, Dibrugarh	1.4999 [0.5901 from General Head and 0.9098 from (NER)]		
5	Arunachal Pradesh	CHC Sagalee	RMRC, Dibrugarh	1.50 – General Head		0.60

# IV. Implementation of HRD Scheme in North Eastern States:

(Rs. in lakhs)

S.	State	Name of the Institute		Funds	released	
No.			2013-14 to 2018-19	2019-20	2020-21 (Upto Dec 2020)	2020-21 (estimates for January-March 2021)
1	Manipur	Jawaharlal Nehru Institute of Medical Sciences, Porompat, Imphat East, Manipur, Pin: 795005	14.66	19.76	Nil	Nil
2	Assam	Department of Biotechnology Tocklai Tea Research Institute Tea Research Association	14.66	Nil	Nil	Nil
3	Nagaland	Yingli College Longleng, - 798625	3.10	Nil	Nil	Nil
4	Tripura	C/O: Mr. Mrinal Kanti Paul 43, B. K., Near Womens College Agartala, West Tripura	1.80	Nil	Nil	Nil
5	Nagaland	Senior Nagaland State Department of Health and Family Welfare	1.80	Nil	Nil	Nil
6	Nagaland	Health & Family Welfare, Govt. of Nagaland	1.80	Nil	Nil	Nil
7	Assam	Regional Medical Research Centre- NE Region, Indian Council of Medical Research	15.70	Nil	Nil	Nil
8	Assam	Regional Medical Research Centre, Northeast Region, ICMR, Dist- Dibrugarh, Assam	15.04	Nil	Nil	Nil
9	Assam	RMRC, Dibrugarh, ICMR, N.E. Region, Dibrugarh	2.00	Nil	Nil	Nil
10	Assam	Principal, Governing Body, Moinul Hoque Choudhury Memorial Science College, Algapur	3.10	Nil	Nil	Nil
11	Manipur	Community Medicine, Imphal West, Manipur	5.96	Nil	Nil	Nil
12	Nagaland	Department of Health & Family Welfare, Govt. of Nagaland-797001	1.80	Nil	Nil	Nil
13	Assam	Regional Medical Research Center, N.E. Region (ICMR), Dibrugarh, Assam	45.12	Nil	16.95	Nil
14	Assam	C/o Dr. H.K. Sharma, Department of Pharmaceutical Sciences Dibrugarh University, Dibrugarh-786004, Assam	28.87	Nil	Nil	7.23
15	Assam	C/O Dr. Siraj Ahmed Khan (Scientist E), ICMR-RMRC, Dibrugarh, Post Box No-105 Pin-786001	29.72	Nil	12.11	Nil

S.	State	Name of the Institute		Funds	released	
No.			2013-14 to 2018-19	2019-20	2020-21 (Upto Dec 2020)	2020-21 (estimates for January-March 2021)
16	Tripura	Department of Microbiology Agartala Government Medical College and GBP Hospital Post Office: Kunjavan	61.21	Nil	Nil	Nil
17	Gauhati	Dept. of Bioengineering and Technology GUIST, Gauhati University	68.81	Nil	Nil	Nil
18	Assam	Dept. Of Biotechnology, Tocklai Tea Research Institute Tea Research Association Jorhat	28.07	Nil	Nil	Nil
19	Assam	Deptt. of Community Medicine, Jorhat Medical College, Jorhat - 785001	30.18	Nil	Nil	9.71
20	Manipur	Community Medicine Department, Jawaharlal Nehru Institute of Medical Sciences, Porompat, Imphal, MANIPUR – 795005	3.00	Nil	Nil	Nil
21	Manipur	Department of Forensic Medicine, Regional Institute of Medical Sciences, Imphal – 795004	2.00	Nil	Nil	Nil
22	Manipur	Community Medicine Department Regional Institute of Medical Sciences, Imphal – 795004	3.00	Nil	Nil	Nil
23	Assam	Dept. of Bioengineering and Technology GUIST, Gauhati University	Nil	5.31	Nil	Nil
24	Assam	Department of Biotechnology Tocklai Tea Research Institute Tea Research Association Jorhat	Nil	8.72	Nil	Nil
25	Assam	Tezpur University, Tezpur, Napaam, Sonitpur, Assam - 784028	Nil	11.81	Nil	Nil
26	Assam	Gauhati Medical College and Hospital, Bhangagarh, Guwahati, Assam, Guwahati	Nil	11.06	Nil	Nil

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S.	State	Name of the Institute		Funds i	released	
No.			2013-14 to 2018-19	2019-20	2020-21 (Upto Dec 2020)	2020-21 (estimates for January-March 2021)
27.	Meghalaya	Department of Pharmaceutical Sciences, Mairang Mission, West Khasi Hills, District, Mairang, Meghalya-793120	Nil	Nil	Nil	7.40
28.	Assam	Gauhati University, Gopinath Bordoloi Nagar, Jalukbari, Guwahati, Kamrup, Assam - 781014	Nil	Nil	Nil	8.14
		Total	381.41	56.66	29.06	32.48

# V. Grant-in-aid Scheme for Inter-sectoral Convergence and Coordination for Promotionn and Guidance on Health Research in North Eastern States:

(Rs. in lakhs)

S. No.	State	Name of the Institute	Funds releas	ed		
			2013-14 to 2018-19	2019-20	2020-21 (Upto Dec 2020)	2020-21 (estimates for January-March 2021)
1	Meghalaya	Martin Luthar Christian University, Shillong	52.73	-	-	-
2	Assam	Sri Sankara Nethralaya Postgraduate Institute of Sri Kanchi Sankara Health and Educational Foundation, Guwahati, Assam	57.15	-	-	-
		Dr. Bhubaneswar Borooah Cancer Institute, Guwahati		Nil	Nil	Nil
		ICMR-Regional Medical Research Institute, Dibrugarh		Nil	Nil	9.99
	Total		109.88	-	-	9.99

Annual Report 2020-21

# INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR)

Indian Council of Medical Research (ICMR), New Delhi, is the apex body in India for the formulation, coordination and promotion of biomedical research and is one of the oldest medical research bodies in the world. The ICMR is funded by the Government of India through the Department of Health Research, Ministry of Health & Family Welfare.

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CHAPTER

The Governing Council of the ICMR is presided over by the Union Health Minister. It is assisted in scientific and technical matters by a Scientific Advisory Board comprising eminent experts in different biomedical disciplines. The Board, in its turn, is assisted by a series of Scientific Advisory Groups, Scientific Advisory Committees, Expert Groups, Task Forces, Steering Committees etc. which evaluate and monitor different research activities of the Council.

The Council's research priorities coincide with the National health priorities such as control and management of communicable diseases, fertility control, maternal and child health, control of nutritional disorders, developing alternative strategies for health care delivery, containment within safety limits of environmental and occupational health problems; research on major non-communicable diseases like cancer, cardiovascular diseases, blindness, diabetes and other metabolic and haematological disorders; mental health and drug research (including traditional remedies). All these efforts are undertaken with a view to reduce the total burden of disease and to promote health and well-being of the population.

ICMR has also demonstrated its commitment to the future of medical research through its professional development training and capacity building. This includes training programs, workshops, and shortterm research studentships for those preparing for a career in medicine and medical research. It also includes research fellowships and short-term visiting fellowships for up and coming researchers to expand their skills and knowledge early in their career. ICMR also offers Emeritus Scientist positions to enable retired medical scientists and teachers to continue to carry out research on specific topics.

The impact of ICMR spans across the globe with research collaborations spanning every continent. Through ICMR's Memoranda of Understandings (MoUs),ICMRhaspartnered with leading universities from around the world to concentrate efforts on leading health issues such as cancer, diabetes, infectious diseases, and vaccine development. These collaborations facilitate the exchange of scientific information, training, joint projects, and co-authorship of meetings, workshops, seminars, and symposia presentations.

# **Intramural Research**

Intramural research is carried out through a countrywide network 26 institutes/centres with multiple field stations, 14 work in the area of communicable diseases; 6 in Non-Communicable Diseases, 1in diseases related to Reproductive and Child Health (RCH); 1 in nutrition and nutritional deficiencies, 3 in disease related to Basic Medical Sciences including heamoglobinopathies and traditional medicine, 1 in the area of animal breeding and research.

# **Extramural Research**

Extramural research is promoted by ICMR through-Setting up Centres for Advanced Research in different research areas around existing expertise and infrastructure in selected departments of Medical Colleges, Universities and other non-ICMR Research Institutes. Task force studies are also carried out which emphasize a time-bound, goaloriented approach with clearly defined targets, specific time frames, standardized and uniform methodologies, and often a multi-centric structure.

Open-ended research on the basis of applications for grants-in-aid received from scientists in non-ICMR Research Institutes, Medical colleges, Universities etc. located in different parts of the country.

# Achievements during the year:

- **COVID-19 Pandemic:** ICMR has been at the forefront in the fight against Covid-19. The major achievements in this area are listed below:
- SARS-CoV2 virus isolation: India is 5<sup>th</sup> in the world to isolate SARS-CoV2 virus. It aided in COVID-19 testing development (ELISA) and is the starting point of fully indigenous vaccine development. Also, ICMR is 1<sup>st</sup> in the country to sequence the complete genome.
  - **24X7 operational pan-India Lab network:** In a very short span of time, ICMR led the building of testing grid consisting of 2045 laboratories spread across the nation from islands of Andaman & Nicobar, the tough terrain of North Eastern region to difficult and hard to reach areas like Leh, Ladakh at 18000 ft. Today, we have testing capacity of ₹14 lakh tests/day. Exponential increase in testing has led to early identification, prompt isolation & effective treatment of Covid-19 cases along with effective contact tracing. These have eventually resulted in a sustained low fatality rate.
- **First Make-in India Covid Kawach ELISA kit:** ICMR developed a rapid, highly sensitive human IgG ELISA kit for COVID-19. It helped in conducting the National Sero-Surveillance for guiding the future policies of COVID-19 control.
  - **National Sero- Survey of COVID-19:** ICMR conducted two national level sero Surosurveys of COVID-19 to understand the proportion of population exposed to SARS-CoV-2 infection including asymptomatic

individuals. The first sero survey demonstrated 0.79% prevalence and the second ser-survey demonstrated 6.6% prevalence of SARS CoV-2 antibodies in the population.

- Promoting Make-in-India Efforts: ICMR is validating COVID-19 diagnostics through fast track mechanism. Till now, 135 (out of 285) RT-PCR kits, 25 ELISA/CLIA kits, 27 (out of 173) rapid antibody test kits have been found to be satisfactory. Also, ICMR is handholding domestic players to expedite production of diagnostic supplies through all possible support. The Capacity has been developed for production of 10 million RT PCR test and 5 million RNA extraction kits. Capacity of VTM (Virus Transport Material) production is up-scaled from 5L VTM tubes/yr to 5L VTM tubes/day. Synthetic swabs, used for sample collection, were not manufactured in India earlier and now the current in-country production capacity is ₹1 Lakhs swabs/day. Efforts are on to ramp up the production capacities of all supplies.
- **Vaccine Development:** ICMR has partnered with Bharat Biotech India Limited for indigenous vaccine development. The vaccine candidate has successfully completed phase I and II clinical trials and approval for phase III has been granted. Also, ICMR has partnered with Serum Institute of India (SII) and Oxford University to fast-track clinical trials of the live attenuated recombinant vaccine. The vaccine is under phase III trial.
- **Exploring the treatment options:** ICMR is participating in WHO Global solidarity trial. The trial tested four repurposed drugs: Remdesivir, Interferonβ1a, Lopinavir/ Ritonavir and Hydroxychloroquine. Interim analysis showed that no benefits of Remdesivir in any groups of COVID-19 (asymptomatic / mild / moderate /severe /critical) patients. ICMR also demonstrated that plasma therapy under current conditions is not effective in treatment of COVID-19.

# Department of Health Research

International Symposium on novel ideas in Science, Ethics of Vaccine: ICMR virtually organized an International symposium on novel ideas in science and ethics of vaccines against COVID-19 pandemic. Vaccine experts from across the globe participated in this symposium where discussions were held regarding the ethics of human vaccine challenge, scaling up of vaccine production and India's role in it, and prioritization of recipients of vaccine once available. Also, a vaccine web portal has been launched consisting of all the information regarding the Indian efforts towards vaccine development against various diseases including the most . recent COVID-19.

National Clinical Trial Registry for COVID-19: This registry collects systematic data on clinical signs & symptoms, laboratory investigations, management protocols, clinical course of COVID-19 disease, disease spectrum and outcomes of patients. The data will serve as an invaluable tool for formulating appropriate patient management strategies, predicting disease severity, patient outcomes etc.

# **Non-Communicable Diseases & Nutrition**

**Mobile Stroke Care Unit in North East:** ICMR has initiated to provide stroke treatment through state of the art Mobile Stroke Unit in Tezpur and Dibrugarh area of Assam. This would lead to saving lives of stroke patients through intervention of clot buster medicine after CT / specialist decision through digital platform.

**Released The National Cancer Registry Programme Report 2020:** The report estimates that in 2020 cancer cases in the country will be at 13.9 lakhs and likely to increase to 15.7 lakhs by 2025, based on current trends.

Released Nutrient Requirements for Indians & What India Eats: The Nutrient

Requirements for Indians, the revised Recommended Dietary Allowances (RDAs), for the first time includes the Estimated Average Requirements (EAR) and also the Tolerable Upper Limits (TUL) of nutrients alongside RDAs.

"What India Eats" reports the dietary patterns across the country for the first time the data has been analysed and projected based on food groups. This report gives details of 'Regional Dietary Pattern of Indian Population' and energy and protein sources from different food groups in graphical form.

Mapping of nutrition and health status – A national level participatory real-time data generation programme has been launched.

# **International Health Research Collaborations**

Newton Bhabha Researcher Link workshops: ICMR has partnered with British Council, UK for the Researcher Link Workshops under the Newton Bhabha Fund programme. Grants are designed to provide financial support to bring together UK/Indian cohorts of early career researchers to take part in workshops to meet the overarching objectives. For the year 2020-21, the second joint call of the programme has been advertised in the areas of Cardiovascular pharmacotherapy in Covid-19 infections, Bio-banking, Public health preparedness and response to emerging diseases outbreak/ pandemic, Capacity building of maternity care providers to improve perinatal outcome.

India Africa Health Sciences Platform (IAHSP): To strengthen South-South collaboration in advancing health sciences research and to enhance local capacity and ownership, ICMR in collaboration with AU-STRC announced the 'Call for Applications for African Health Practitioners/Researchers under ICMR/AU-STRC Capacity Building Scheme (Training Courses in India 2019) under India Africa Health Sciences Platform (IAHSP). Call was Annual Report 2020-21

for 7 training courses at 3 ICMR Institutes-NICPR,Noida; NIN,Hyderabad; NIE, Chennai. A total of 95 African Health Practitioners/ Researchers from 26 African countries were trained during 2019. The second call for 8 courses announced in February 2020 is under process. Also Call for proposals 2020 for joint research projects in the area of HIV/AIDS; Cancer; Tuberculosis; COVID-19 under ICMR-AUSTRC Research Grant Scheme is being finalized in consultation with AU-STRC.

# **New Infrastructure**

- o NIIH-Centre for Research, Management and Control of Haemolglobinopathies, Chandrapur: This centre will cater to the needs of entire Vidarbha region especially in the area of sickle cell anaemia. There are around 4,00,000 Sickle cell disease patients in this region along with approximately 40,00,000 sickle cell carriers.
- o *Centre for One Health, Nagpur:* The centre will address the issue of zoonosis and Anti-microbial resistance through inter-sectoral collaboration. MoU has been signed with MAFSU (Maharashtra Animal and Fishery Sciences University) and land has been transferred.

## **Other Achievements**

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- Unveiled the History Timeline of ICMR showcasing the 108 years of journey in service of nation. The timeline was unveiled physically at ICMR Headquarters and online on a dedicated web page.
- Launched an online course on Prescribing Skills for Indian Medical Graduates (pursuing or completed internship). The course is meant for improving prescription practices among Indian Medical Graduates
- Released First comprehensive estimates of district-level trends of child mortality and child growth failure in India under India State-Level Disease Burden Initiative.
- Under Human Resource Development (HRD), currently there are 525 Junior Research Fellowship(JRF), 76 Post-doctoral Research Fellowship (PDF), 10 Nurturing Clinical Scientists Fellowship (NCS), 55 MD/Ph.D. Fellowships, 400 ICMR-MD/MDS/MCh/MS Thesis financial support is ongoing.

Under extramural research programme, ICMR has approved 815 adhoc fellowships and 773 adhoc projects and are currently funding 1166 fellowships and 1040 adhoc projects in various areas of health research during the year. Annexure

# BE/RE/actual expenditure 2019-20 and BE/RE 2020-21 with actual expenditure upto December, 2020 and BE 2021-22 in respect of Demand No.43-Department of Health Research

(Rs. in crores )

s.	Scheme/	Budget Head		2019-20			2020-21		BE
° Z	Programme		BE	RE	Actual Expr.	BE	RE	Actual Expr. upto 31.12.2020	2021-22
-	2	£	4	5	Q	7	8	6	10
-	Secretariat-Social Services	Secretariat-Social Services	38.00	38.00	32.35	42.00	38.30	20.15	45.00
2.	Human Resource	Advanced Training in research in medicine and health	33.00	30.00	27.48	34.00	18.00	6.15	27.00
	Development for Health Research	International cooperation in medical and health research	1.00	6.00	5.58	6.00	5.03	4.73	6.00
ς.	Grant-in-aid Scheme for inter-sectoral convergence	Inter-sectoral coordination in medical, biomedical and health research	28.00	18.00	16.00	27.00	19.00	7.54	27.00
	& promotion and guidance on research governance issues	Promotion & guidance on research governance issues.	25.00	23.00	22.75	25.00	15.00	5.76	23.00
4.	Managing epidemics and national calamities	Matters relating to epidemics, natural calamities and development of tools to prevent outbreaks	80.00	73.00	69.37	83.00	83.00	52.40	82.00
		Development of Tools to prevent Outbreaks of Epidemics	7.35	6.00	6.00	7.29	12.26	6.78	15.00
5.	Development of infrastructure for promotion of health research	Promotion, coordination and development of basic, applied and clinical research-Establishment of Multi- Disciplinary Research Units (MRUs) in Govt. Medical Colleges.	58.00	55.00	55.00	60.00	58.00	39.43	60.00
		Establishment of Model Rural Health Research Units.	15.00	19.00	17.50	20.00	16.00	6.05	20.00
6.	Indian Council of Medical Re	search (ICMR), New Delhi	1474.65	1552.22	1479.17	1795.71	3797.71	2567.46	2358.00
Ξ	ICMR-Grant in Aid		1474.65	1552.22	1479.17	1795.71	1697.71	1322.46	1830.00
(ii)	ICMR-Covid-19 Emergency Re	esponse	I	1	1	I	2100.00	1245.00	1
(iii)	ICMR-PM-ABSY		I	I	1	I	-	I	528.00
٦.	Bhopal Memorial Hospital &	Research Centre (BMHRC), Bhopal	140.00	129.78	129.78	0.00	I	I	ı
		Total	1900.00	1950.00	1860.98	2100.00	4062.30	2716.45	2663.00

Note: Figures include provision of Rs 104.00 crores in BE 2020-21 and Rs. 83 crores in RE 2020-21 and Rs. 104 crores in BE 2021-22 under NE component. \* BMHRC has been merged with ICMR.

# Department of Health Research



# DEPARTMENT OF HEALTH RESEARCH Ministry of Health & Family Welfare Government of India New Delhi