



ANNUAL REPORT 2017-18



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

Annual Report 2017-18



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Introduction

1

CHAPTER

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 17th Sept, 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 prevention; to translate them into products and processes and, in synergy with concerned organizations, introduce these innovations into public health system.

1.3 The following 10 functions (nine new functions, plus the function of administering the ICMR) have been allocated to the Department of Health Research:

- 1) 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.
- 2) Promote and provide guidance on research governance issues, including ethical issues in medical and health research.
- 3) Inter-sectoral coordination and promotion

of public - private - partnership in medical, biomedical and health research related areas.

- 4) 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 Governments 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 had formulated following schemes and these schemes have since been approved and were rolled out 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. 68 Viral Research & Diagnostic Laboratories (VRDLs) and 58 Multi-Disciplinary Research Units (MRUs) were sanctioned upto 2016-17. Another 10 VRDLs and 8 MRUs have been sanctioned during 2017-18 (upto December, 2017) bringing the cumulative figure to 78 VRDLs and 66 MRUs upto December, 2017.

1.6 Besides this, 133 fellowships for training in India and abroad alongwith 37 start-up projects by the trainees and support to 23 Institutes for providing training to the fellows were funded under the Scheme of Human Resource Development for Health Research upto 2016-17. Further, 30 fellowships for training in India and abroad and support to 6 Institutes and 4 Start-up projects have been supported during 2017-18, upto 31st December, 2017. Cumulative achievement upto December, 2017 is funding of 163 fellowships, and support to 29 Institutions and 41 Start-up research projects by the trainees.

1.7 A total number of 192 new research projects were approved & funded under the GIA Scheme

upto 2016-17. During the year 2017-18(upto 31st December, 2017), 38 more new research projects were approved & funded bringing the cumulative figure to 230 research projects upto December, 2017.

1.7 About 40 VRDLs, 28 MRUs and 8 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.

1.8 The Surrogacy (Regulation) Bill, 2016 was approved by the Cabinet in its meeting held on 24th August, 2016 and was introduced in the Lok Sabha on 21.11.2016. The Bill seeks to put in place effective mechanism for regulation of surrogacy, prohibit commercial surrogacy and allow ethical surrogacy to the needy infertile couples. The Bill was referred to the Standing Committee of Parliament on 12th January 2017 and its report has since been presented to the Rajya Sabha and laid on the Table of the Lok Sabha on the 10th of August 2017. Further action to revise the Bill is in progress based on the recommendations of the Standing Committee.

HEALTH TECHNOLOGY ASSESSMENT (HTA) IN INDIA:

1.9.1 To facilitate the process of transparent and evidence informed decision making in the field of health, it has decided to set up Health Technology Assessment in India (HTAI) to evaluate appropriateness and cost effectiveness of the available and new health technologies in India, so that maximum people can have access to quality healthcare at minimum cost in the country.

1.9.2 Establishment of HTAI is a remarkable step towards achievement of Universal Health Care, one of the targets under Sustainable Development Goals (SDGs), as it aims to encourage the process of development of standardized cost effective

interventions that will reduce the cost and variations in patient care, expenditure on medical equipment directly affecting the cost of patient care, reduction in out of pocket expenditure of patients and streamline the medical reimbursement procedures.

1.9.3 Health Technology Assessment have been initiated for topics on Intra ocular Lenses for Cataract Surgery, Screening for Breast Cancer, Screening for Cervical Cancer, Non Invasive Hemoglobinometers, Safety Engineered Syringes, Implants that can be part of Family planning Programme, Screening for

Diabetes, Bempu Neonatal Hypothermia device, SOHUM Neonatal Hearing Device, Real time PCR for H1N1, Screening for Hypertension and Intrauterine balloon tamponades for post partum Hemorrhage.

1.9.4 It has also been decided to constitute the Medical Technology Assessment Board (MTAB) which will operate as a sanding recommendatory body to the Government. It will consider and approve the recommendations form the Technical Appraisal Committee on all HTA studies.

Administration and Finance

2

CHAPTER

2.1 At the time of its creation, DHR had only 22 sanctioned posts in different grades which was highly inadequate especially for a Department dealing with very wide and multifaceted areas of Health Research. To fulfil its mandate, DHR formulated five Central Sector Schemes for implementation across the country. In addition to the above schemes, DHR has established Health Technology Assessment structure under the Research Governance mandate of the Department to generate evidences related to cost-effectiveness, clinical effectiveness and safety of medicines/ devices/vaccines and health programmes by means of Health Technology Assessment (HTA) studies. Further, the management of Bhopal Memorial Hospital & Research Centre (BMHRC) has also been handed over to the DHR without provision of additional manpower. So while the assignment of the Department has increased over the years, there has been no additionality in the staff strength. Therefore, to meet the ever increasing manpower requirements of the Department, 21 number of additional posts in different grades have been approved by the Department of Expenditure. Accordingly, the existing sanctioned strength is as under:

Table (1)

S. No.	Name of the post	Existing Strength	No. of additional posts sanctioned by the DoE	Total sanctioned strength	Incumbency position
1.	Joint Secretary	2	0	2	2
2.	Director/Deputy Secretary	2	2	4	2
3.	Scientist 'E'	1	2	3	0
4.	Under Secretary	2	2	4	2
5.	Scientist 'C'	2	2	4	0
6.	Section Officer	3	3	6	2
7.	Assistant Section Officer	5	6	11	4
8.	Sr. Principal Private Secretary	0	0	0	0
9.	Scientist 'D'	0	2	2	0
10.	Personal Assistant (Stenographer Grade 'C')	0	2	2	0
11.	Principal Private Secretary	0	0	0	3
12.	Private Secretary	2	0	2	2
13.	Stenographer Grade 'D'	2	0	2	0
14.	Upper Division Clerk/Senior Secretariat Assistant	0	0	0	1
14.	Lower Division Clerk/Junior Secretariat Assistant	1	0	1	0
	Total	22	21	43	18

- 2.2 The position of filling up of posts is as follows:
- 1) **Scientists:** The proposal for finalization of Recruitment Rules (RRs) for 02 posts of Scientist 'C' and 01 post of Scientist 'E' is under consideration in consultation with the Union Public Service Commission (UPSC) / Department of Expenditure (DoE). Recently, DoE has approved 02 (two) additional posts each of Scientist 'C', 'D', and 'E' for the Department of Health Research. Action to formulate the Recruitments Rules and to fill up these posts is underway.
 - 2) **Secretariat Posts:** Ministry of Health & Family Welfare (MoHFW) is the cadre controlling authority for the Department of Health Research. Accordingly, the issue of filling up of the existing vacancies and also the additional posts in the administrative grade approved by the Department of Expenditure has been taken up with the MoHFW.
 - 3) **Grievance Redressal Mechanism:** The Department has Grievance Redressal Mechanism with the Deputy Secretary as Nodal Officer. No grievance has been received from any official of the Department till December, 2017.
 - 4) **Constitution of Complaints Committee for Prevention of Sexual Harassment of women in work places:** Department has set up a Complaint Redressal Mechanism to look into the matters/cases of sexual harassment of female employees of the Department. No complaint has been received till December, 2017.
- b. Development of a web based e-PPS (Electronic Project Proposal Management System) by CDAC for online receipt, evaluation and approval of proposals under all the five schemes of Department of Health Research (DHR), namely, Establishment of Nation-wide Network of Laboratories for Managing Epidemics and Natural Calamities; Establishment of Multi Disciplinary Research Units (MRUs) in Govt. Medical Colleges; Establishment of Model Rural Health Research Units (MRHRUs) in the States; Human Resource Development (HRD) for Health Research and Grants in Aid scheme for Inter-sectoral Convergence and Coordination for Health Research.
- c. Implementation of the AADHAR based Biometric Attendance System (BAS) wherein all employees are marking their attendance on digital devices.
- d. With a view to have paperless office, the Department has started using the e-office software of NIC for online processing of receipts and files.
- e. Department is also making use of Zoom Technology for audio-video conferencing with the nodal officers and other concerned officials of Government Medical Colleges/ Institutions to discuss and sort out issues related to implementation of the schemes for Establishment of Viral Research & Diagnostic Laboratories, Multi-Disciplinary Research Units (MRUs), Model Rural Health Research Units (MRHRUs) and Health Technology Assessment, etc.

2.3 **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. Establishment of Local Area Network (LAN) connectivity through NIC and leased line circuits to facilitate speedy implementation of e-Governance Policy of Government.

FINANCE:

(i) 12th Plan Allocation and Expenditure:

2.4 Approved 12th Plan Outlay was Rs. 10029 crore (Rs.5259 crore for DHR + Rs.4770 crore for ICMR). Actual allocation from 2012-13 to 2016-17 was Rs. 4100 crore only (Rs. 435 crore for DHR + Rs. 2583 crore for ICMR). This was reduced to Rs.3344.60 crore at RE stage, as follows:

Table (2)*(Rs. in crores)*

S. No.	Schemes	12th Plan Outlay (2012-17)	Budgetary Allocation i.e. RE for 2012-13 to 2016-17
1.	Human Resource Development for Health Research	812.00	36.02
2.	Establishment of Multi-Disciplinary Research Units (MRUs) in State Govt. Medical Colleges	1118.00	124.25
3.	Establishment of Model Rural Health Research Units (MRHRUs) in States	246.00	39.60
4.	Establishment of a Network of laboratories for Managing Epidemics and Natural Calamities	1084.00	159.36
5.	Grant-in-Aid scheme	1953.00	69.65
6.	ICMR	4770.00	2869.74
7.	Bhopal Memorial Hospital & Research Centre (BMHRC)		40.00
8.	Governance and departmental expenses	46.00	5.98
	Total	10029.00	3344.60

2.4 Total Expenditure incurred upto 2016-17 is about Rs. 3190 crore under Plan.

Non Plan Allocation and Expenditure:

2.5 Position of Non Plan Allocation and Expenditure for the period 2012-13 to 2016-17 is as follows:

Table (3) -Non Plan*(Rs. in crores)*

Year	BE	RE	Actual Expenditure
2012-13	248.00	261.00	260.13
2013-14	282.00	305.56	304.46
2014-15	291.67	322.00	320.13
2015-16	305.00	345.00	344.26
2016-17	394.80	394.80	392.80
Grand Total	1521.47	1628.36	1621.78

(ii) Allocation and Expenditure for 2017-18 and 2018-19:

2.6 BE/RE and actual expenditure during 2017-18 upto December, 2017 and BE allocation for 2018-19 is as follows:

Particulars	BE 2017-18	RE 2017-18	Actual (upto December, 2017)	BE 2018-19
Secretariat Expenditure-DHR	12.00	15.40	7.90	34.00
DHR	150.00	190.00	109.09	210.00
ICMR	1150.00	1413.60	800.00	1416.00
BMHRC	188.00	124.39	80.94	140.00
Total	1500	1743.39	997.93	1800.00

2.7 A statement indicating the scheme-wise BE/RE for 2017-18 with actual expenditure upto December, 2017 and BE for 2018-19 is given at Annexure.

Monitoring & Evaluation of the Schemes

2.8 A strong and effective mechanism for implementation, monitoring and evaluation of the physical, financial and research programmes of the schemes is already provided in the structure of the schemes. Project Management and Implementation Units (PMIUs) have been established in the DHR and ICMR with requisite administrative and scientific support staff for regular monitoring of the progress of implementation of the schemes with reference to the outcomes and deliverables expected to be achieved under each scheme.

2.9 Teams have been constituted for undertaking field visits for onsite review of the progress of implementation of the schemes-establishment of Multi-Disciplinary Research Units (MRUs) in the Govt. Medical Colleges; Model Rural Research Units in the States and Virology Diagnostic & Research Labs. The teams also provide guidance and suggestions to the concerned medical

colleges/institutions for addressing the problems and bottlenecks faced by them in executing the schemes.

2.10 Review Meetings are held by Secretary/Joint Secretary, DHR from to time with the stakeholders, namely, the representatives of the State Health Departments, Principals/ Nodal Officers of the medical colleges, subject area experts, etc for detailed review of the progress of implementation of the schemes.

2.11 A web-based software for online physical and financial monitoring in respect of all the 5 schemes has been developed and made operational.

2.12 Besides, Third Party Evaluation of the Schemes have been got conducted from the National Productivity Council (NPC).

Audit Observations:

2.13 There was no C&AG Audit Para pertaining to the Department of Health Research (DHR) during the year. However, necessary follow up action was taken for submission of Action Taken Notes on C&AG Audit Paras pertaining to ICMR.

Schemes of Department of Health Research (DHR)

ESTABLISHMENT OF NETWORK OF RESEARCH LABORATORIES FOR MANAGING EPIDEMICS AND NATIONAL CALAMITIES

3

CHAPTER

3.1 Diagnosis of viral diseases is a major problem in most parts of country and outbreaks of new viral agents is a common phenomenon. The inadequacy of specialized laboratories in the country especially at secondary and tertiary level has been noticed in the past as well as during the HINI crises that gripped the nation in 2009-10. With only National Centre for Disease Control (NCDC) and National Institute of Virology (NIV), acting as the apex laboratories for surveillance and research respectively, it was considered necessary to establish a network of laboratories for viral diagnosis and active research programme to generate evidence for interventions for various viral infections which are endemic to the country. These labs will supplement the activities of the Integrated Disease Surveillance Project (IDSP) coordinated by NCDC, Delhi with special focus on viruses and are also expected to deal with all common viruses such as the following:

- 1) Viruses transmitted by respiratory route: Measles, Rubella, Mumps, Influenza viruses (A, B and C), Parainfluenza virus, Adenoviruses, Respiratory Syncytial Virus, Rhinoviruses, Polio, Coronaviruses.
- 2) Viruses transmitted by intestinal route: Hepatitis A, E, Rotavirus, Astroviruses, Calciviruses, Norwalk viruses, Enteroviruses.
- 3) Vector Borne Disease Viruses: Dengue, Chikungunya, Japanese encephalitis, West Nile, Kyasanur Forest Disease, Chandipura.

- 4) Zoonotic viruses: Rabies, Nipah virus, Hanta Virus
- 5) Viruses transmitted by body fluids: HIV, Hepatitis B and C.

3.2 Priority is being given to develop infrastructure and expertise for diagnosis of viruses with a potential to cause outbreaks and/or which are responsible for significant disease burden like Measles, Influenza viruses (A, B and C), Respiratory Syncytial Virus, Polio, Hepatitis A, E, Rotavirus, Enteroviruses, Dengue, Chikungunya, JE etc. These laboratories are expected to develop expertise for diagnosis of specific viruses circulating in their geographic area.

3.3 To cope with the emergent situation and urgent need for Virology Diagnostic facilities in the wake of outbreaks & endemic viral infections, ICMR had started a Virology Diagnostic Laboratory (VDL) Network Programme in 2009-10 in the adhoc extramural mode, with the provision of funding by the ICMR with regard to infrastructure development and running of the VDL for a period of five years.

Ongoing Laboratories Under the ICMR System

Two Grade -I laboratories and three Grade- II Laboratories under ICMR system as per details given in Table (6) below:

Table (6)

S.No.	Name of the Centre	Grade of the Lab	Date of Inception of Lab
1.	Regional Medical Research Centre (RMRC), Port Blair	I	March 2010
2.	Kasturba Medical College, Manipal, Karnataka	I	March 2010
3.	Rajendra Memorial Research Institute of Medical Sciences, Patna	II	Dec.2011
4.	Regional Medical Research Centre for Tribals, Jabalpur, (MP)	II	Dec.2011
5.	Andhra Medical College, Visakhapatnam, (AP)	II	Dec.2011

Establishment of a network of Viral Research & Diagnostic Laboratory (VRDLs) under the DHR Scheme

3.4 While ICMR initiated the programme in a research project mode and its centers have contributed immensely, Department of Health Research developed a new scheme to cover the entire country. The scheme rolled out in 2013-14 envisages establishment of 160 three tier laboratories - 10 Regional Labs, 30 State level Labs and 120 Medical College Level Labs, for timely diagnosis and management of viral epidemics and

new viral infections during the 12th Plan period, at an estimated cost of Rs. 646.83 crores. The geographic spread of the labs will be taken care of while establishing the labs, to cover the entire country and the States not having any medical college will be linked to the labs in the nearby States/area.

3.5 The scheme has been continued beyond 12th Plan, for the period 2017-18 to 2019-20, with the approval of SFC in its meeting held on 18.9.2017, as follows:

Rs. in Crores

S. No.	New Viral Research & Diagnostic Laboratories (VRDLs) to be established during 2017-18 to 2019-20		Non-Recurring	Recurring	Total
1	Regional Level Labs	05	112.50	31.37	143.87
2	State Level Labs	10	069.57	41.08	110.65
3	Medical College Level Labs	45	129.51	94.64	224.15
4	Cost of Project administration.		000.00	9.78	9.78
	Total	60	311.58	176.87	488.45

With the funding of 65 VRDLs upto 2016-17 and proposal for establishment of another 60 VRDLs during 2017-18 to 2019-20, it is planned to establish a total number of 125 VRDLs upto 2019-20.

Objectives

➤ Create infrastructures for timely identification of viruses and other agents causing significant

morbidity at public health level and specific agents causing epidemics and/ or potential agents for bioterrorism.

➤ Develop capacity for identification of novel and unknown viruses and other organisms & emerging/re-emerging viral strains and develop diagnostic kits.

- Provide training to health professionals.
- Undertake research for identification of emerging and newer genetically active/modified agents.

Funding Norms as Approved by the SFC for extended period of the Scheme:

Regional Labs: The Non-recurring cost of a Regional Level Lab is about Rs. 15.00 crores for the development of infrastructure, which include civil works (Rs.4.20 crore), furnishing & furniture (Rs.50 Lakhs) 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 lakhs).

State Level Labs: About Rs.3.93 crore, comprising upto Rs.50 lakhs under civil works mainly for renovation/modification of the buildings and Rs.3.43 crores for equipments. In addition, recurring expenditure of about Rs.63 lakh per Lab for engaging trained technical man power on contractual basis and expenses on training, consumables and contingencies.

Medical College Level Labs: About Rs. 1.83 crores, including Rs. 1.44 crores for equipment and civil works /renovation of building and recurring expenditure of Rs.39.00 lakhs per annum, comprising expenses on staffing, consumables & contingencies and training.

Requirements from the States

- Allocating a building in the existing premises of a medical college / institution for the establishment of the Viral Research & Diagnostic Lab (VRDL) or to provide space of mutually agreed dimensions (approx. 250-300 sq. meters for State Level Lab and approx.200-300 sq. meters for Medical College Level Lab), free of cost.
- To sign MoA with the DHR.
- Deputing a mutually agreed number of its personnel to work in the VRDL.

- Deputing personnel (including those belonging to the State Health Service) to undergo training/ attend workshops at the VRDL.
- Sharing of expenditure on the establishment of labs at the State level and in the Medical Colleges between the Central Government and State Governments in the ratio of 75:25 (90:10 in respect of North-Eastern, Hilly States, including Sikkim and J&K). The cost of land/ building to be provided by the State Government will be reckoned towards its contribution.

Status of Implementation

- 85 Viral Research & Diagnostic Laboratories (VRDLs) have been approved and 78 VRDLs have been funded so far covering 24 States and 2 UTs for creating requisite infrastructure in the Medical Colleges and other research institutions for timely diagnosis of existing and emerging viruses. Most of the functional VRDLs are now well established with basic diagnostic techniques for viruses and are generating data from their respective centres. 40 VRDLs have already initiated research activities. DHR envisages involving all VRDLs in well-planned epidemiological studies related to viruses of national relevance to bring out data representative of the entire nation. Uniform Protocols/SOP's/Trainings/Quality Assurance/Quality Control methods will be followed by all the Laboratories.
- VRDLs are serving as an important platform for diagnosis and surveillance of existing as well as emerging viral infections. Turnaround time for testing of samples has been reduced from 7 days to 24 - 48 hrs depending on the test conducted.
- During threat of Yellow fever infiltration following 2016 Angola YF outbreak, 6 VRDLs were immediately trained at NIV, Pune and equipped with diagnostic capacity for Yellow Fever.

- Interim Guidelines for diagnosis of Zika/ CMV and Rubella have been circulated among VRDLs across the country.
- Plan being developed with WHO-India to empower VRDLs to conduct case based surveillance for Measles & Rubella, in line with India's target of measles elimination and Rubella control by 2020. Individual VRDLs also initiating Research Projects by applying through different funding agencies including DHR – GIA & HRD Schemes.
- NIV Pune has been involved in HTA - RT PCR for Influenza
- About 300 Technicians plus Scientists trained on various viruses including Zika Virus and Yellow Fever diagnostics.
- Outbreak investigations: Dengue/Hepatitis/ RSV/ Zika/ Chikungunya/ Measles/ JE, etc
- List of VRDLs sanctioned till December, 2017 is given below:

DHR VRDLs FUNDED TILL DATE

Regional VRDLs:

1. Post Graduate Institute of Medical Education & Research, Chandigarh funded in 2013-14
2. Regional Medical Research Centre, Dibrugarh funded in 2013-14
3. All India Institute of Medical Sciences, Bhopal, Madhya Pradesh funded in 2014-15
4. ICMR Virus Unit, National Institute of Cholera & Enteric Diseases, Kolkata, WB funded in 2014-15
5. JIPMER, Puducherry funded in 2014-15 & 2015-16
6. RMRC, Bhubaneswar, funded in 2017-2018

State Level VRDLs:

1. B.J. Medical College, Ahmedabad funded in 2013-14

2. Indira Gandhi Medical College, Shimla funded in 2013-14
3. Sher-e-Kashmir Institutes of Medical Sciences, Srinagar funded in 2013-14
4. NEIGRIHMS, Shillong funded in 2013-14
5. Bangalore Medical College & Research Institute, Bangalore, Karnataka funded in 2014-15
6. Gauhati Medical College, Gauhati, Assam funded in 2014-15
7. SMS Medical College, Jaipur funded in 2015-16
8. KGMU, Lucknow funded in 2015-16
9. Government Medical College, Kozhikode funded in 2015-16
10. SCB Medical College, Cuttack funded in 2015-16
11. Gandhi Medical College, Telangana funded in 2015-16
12. RIMS, Imphal funded in 2016-17
13. KIPM&R, Chennai funded in 2016-17
14. Coimbatore Medical College, Coimbatore funded in 2016-17
15. BHU, Varanasi funded in 2016-17
16. AIIMS, Raipur funded in 2017-2018

Medical College Level VRDLs:

1. Osmania Medical College, Hyderabad funded in 2013-14
2. Govt. Medical College, Jammu funded in 2013-14
3. Patna Medical College, Patna funded in 2013-14
4. Govt. Medical College, Amritsar funded in 2013-14

5. Pt. BD Sharma Post Graduate Institute of Medical Education & Research, Rohtak funded in 2013-14
6. M.P. Shah Govt. Medical College, Jamnagar funded in 2013-14
7. Government Medical College, Theni, Tamil Nadu funded in 2014-15
8. LSBK Memorial Govt. Medical College, Jagdalpur, Chattisgarh funded in 2014-15
9. Government Medical College, Mysore, Karnataka funded in 2014-15
10. Madurai Medical College, Madurai, Tamil Nadu funded in 2014-15
11. SriVenkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh funded in 2014-15
12. Dr. Rajendra Prasad Government Medical College, Tanda, Himachal Pradesh funded in 2014-15
13. Siddhartha Medical College, Gunadala, Vijayawada, Andhra Pradesh funded in 2014-15
14. Govt. Medical College, Patiala, Punjab funded in 2014-15
15. Indira Gandhi Medical College, Nagpur, Maharashtra funded in 2014-15
16. Government Medical College, Trivandrum, Kerala funded in 2014-15
17. S N Medical College, Jodhpur Rajasthan funded in 2014-15
18. Government Medical College, Agartala funded in 2014-15 & 2015-16
19. JNIMS, Imphal, Manipur funded in 2014-15
20. Uttar Pradesh Rural Institute of Medical Sciences & Research, Saifai, Etawah, UP funded in 2015-16
21. Govt. Medical College, Haldwani, Uttarakhand funded in 2015-16
22. JNMC, Aligarh funded in 2015-16
23. IPGMER, Kolkata funded in 2015-16
24. BPS Medical college for Women, Sonipat funded in 2015-16
25. RIMS, Kadappa funded in 2015-16
26. GMC, Anantpur funded in 2015-16
27. HIMS, Hassan funded in 2015-16
28. Jorhat Medical college, Jorhat funded in 2015-16
29. Tezpur Medical College, Tezpur funded in 2015-16
30. Murshidabad Medical college, Murshidabad funded in 2016-17
31. Jhalawar medical college, Jhalawar funded in 2016-17
32. Midnapore Medical College, Midnapore, West Bengal funded in 2016-17
33. Government Mohan Kumaramangalam Medical College, Salem funded in 2016-17
34. Indira Gandhi Medical College & Research Institute, Puducherry funded in 2016-17
35. Gulbarga Institute of Medical Sciences, Gulbarga, Karnataka, funded in 2016-17
36. Madras Medical College, Chennai, funded in 2016-17
37. Shimoga Institute of Medical Sciences, Shimoga, Karnataka, funded in 2016-17
38. VIMS, Bellary, funded in 2016-17
39. MGM Medical College, Jamshedpur, funded in 2016-17
40. RIMS, Ranchi, funded in 2016-17
41. GMC Thrissur, funded in 2016-17
42. RNT Medical College, Udaipur, funded in 2016-17

43. SPMC, Bikaner, funded in 2016-17
44. Tirunelveli Medical College, Tirunelveli, funded in 2016-17
45. North Bengal Medical College, Darjeeling, funded in 2016-17
46. MGM Medical College, Indore, Madhya Pradesh, funded in 2016-17
47. Gajra Raja Medical College, Gwalior, Madhya Pradesh, funded in 2016-17
48. Govt Medical College, Sri Nagar, Jammu & Kashmir, funded in 2016-17
49. Rangaraya Medical College, Kakinada, Andhra Pradesh, funded in 2017-2018
50. Kakatiya Medical College, Warangal, Telangana, funded in 2017-2018
51. Silchar Medical College, Silchar, Assam, funded in 2017-2018
52. Fakhruddin Ali Ahmed Medical College, Barpeta, Assam, funded in 2017-2018
53. S.K. Medical College, Muzaffarpur, Bihar, funded in 2017-2018
54. Darbhanga Medical College, Darbhanga, Bihar, funded in 2017-2018
55. Government Medical College, Miraj, Sangli, Maharashtra funded in 2017-2018
56. Government Medical College & Hospital, Chandigarh, funded in 2017-2018

LIST OF VRDLs APPROVED BY DHR BUT NOT YET FUNDED DUE TO NON-COMPLETION OF REQUISITE CODAL FORMALITIES

2013 – 2014

S No.	Name of the VRDLs	Level of VRDL
1.	S.N. Medical College, Agra	MCL
2.	G. S. V. M Medical College, Kanpur	MCL

2014 – 2015

S No.	Name of the VRDLs	Level of VRDL
1.	RG Kar Medical College and Hospital, Kolkata	MCL

2015 – 2016

S No.	Name of the VRDLs	Level of VRDL
1.	Government Medical College, Kota, Rajasthan	MCL
2.	Burdwan Medical College, Burdwan, WB	MCL
3.	Malda Medical College & Hospital, Malda, WB	MCL

2017 – 2018

S No.	Name of the VRDLs	Level of VRDL
1.	AIIMS, Jodhpur, Rajasthan	RL

*RL (Regional Level) & MCL (Medical College Level Lab)

Viral Research & Diagnostic Laboratories Research (VRDLs) functional as on 31st December, 2017.

[4 Regional; 8 State Level and 28 Medical College Level]

Regional Level VRDLs

1. RMRC, Dibrugarh, Assam
2. AIIMS, Bhopal
3. PGIMER, Chandigarh
4. NICED, Kolkata

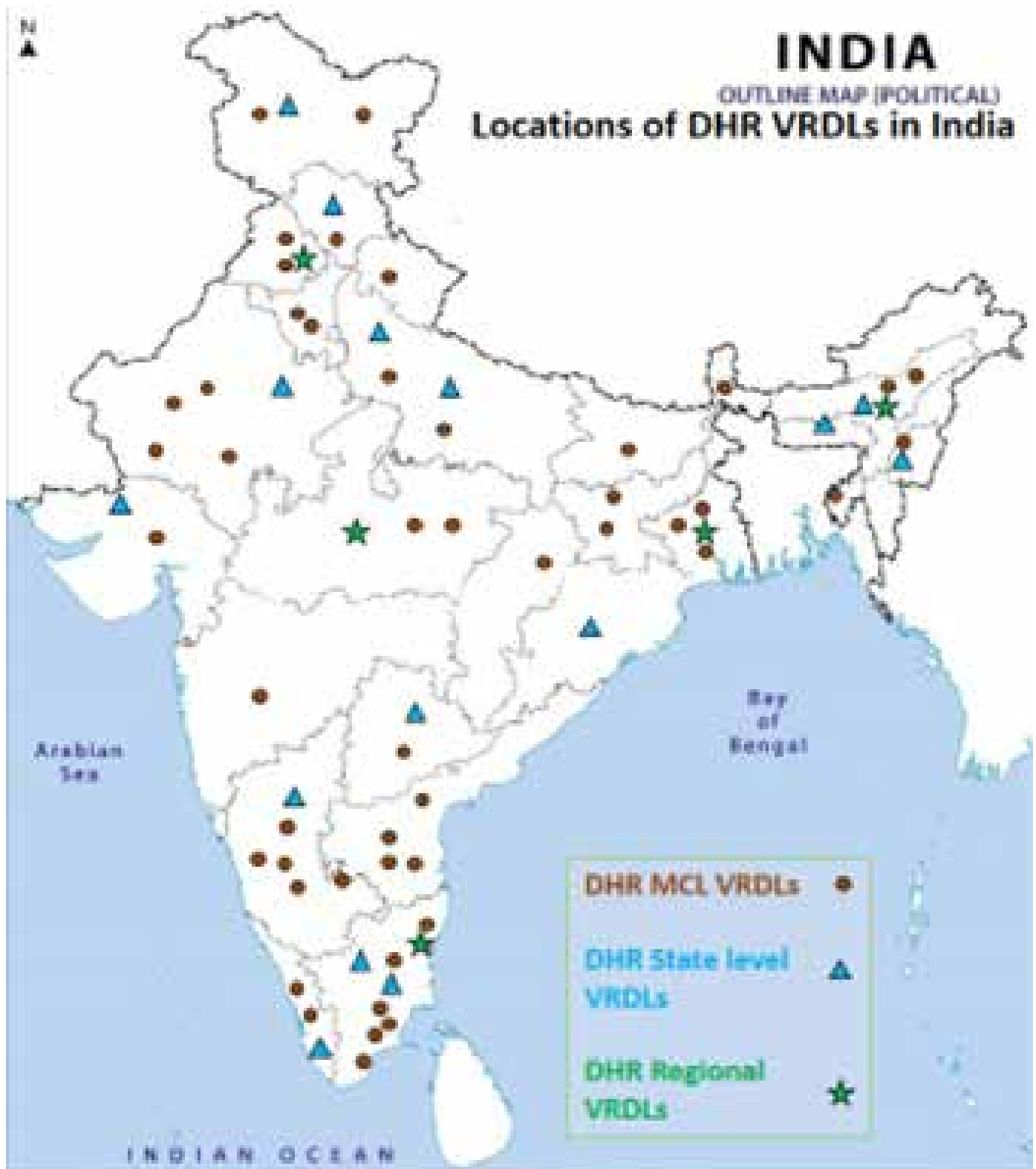
State Level VRDLs

5. Gauhati Medical College, Gauwahati, Assam
6. IGMC, Shimla, Himachal Pradesh
7. NEIGRIHMS, Shillong, Meghalaya

8. Sher-i-Kashmir Institute of Medical Sciences, Srinagar
9. Bangalore Medical College & Research Institute, Bangalore
10. B.J Medical College, Ahmedabad
11. SMS Medical College, Jaipur, Rajasthan
12. KGMU, Lucknow, UP
13. Patna Medical College, Patna, Bihar
14. Madurai Medical College, Madurai, Tamil Nadu
15. Government Medical College, Theni, Tamil Nadu
16. IGGMC, Nagpur, Maharashtra
17. Government Medical College, Agartala, Tripura
18. Osmania Medical College, Hyderabad, Telangana
19. Government Medical College, Jammu, J&K
20. Government Medical College, Amritsar, Punjab
21. Sri Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh
22. Late Sri Baliram Kashyap Memorial Medical College, Jagdalpur, Chhattisgarh
23. Pt. B.D Sharma PGIMS, Rohtak, Haryana
24. Dr. Rajendra Prasad Government Medical College, Tanda, Himachal Pradesh
25. Government Siddhartha Medical College, Vijaywada, Andhra Pradesh
26. Government Medical College, Thiruvanthapuram, Kerala
27. Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur
28. UPRIMS, Saifai, UP
29. Jhalawar Medical College, Jhalawar, Rajasthan
30. M.P Shah Medical College, Jamnagar, Gujarat
31. Government Medical College, Mysore, Karnataka
32. Govt. Medical College, Patiala, Punjab
33. S N Medical College, Jodhpur, Rajasthan
34. Jorhat Medical college, Jorhat, Assam
35. IGMCRI, Puducherry
36. Tezpur Medical College, Tezpur, Assam
37. RIMS, Ranchi, Jharkhand
38. IPGMER, Kolkata, WB
39. SP Medical College, Bikaner, Rajasthan
40. Gulbarga Institute of Medical Sciences, Gulbarga, Karnataka

Medical College Level VRDLs

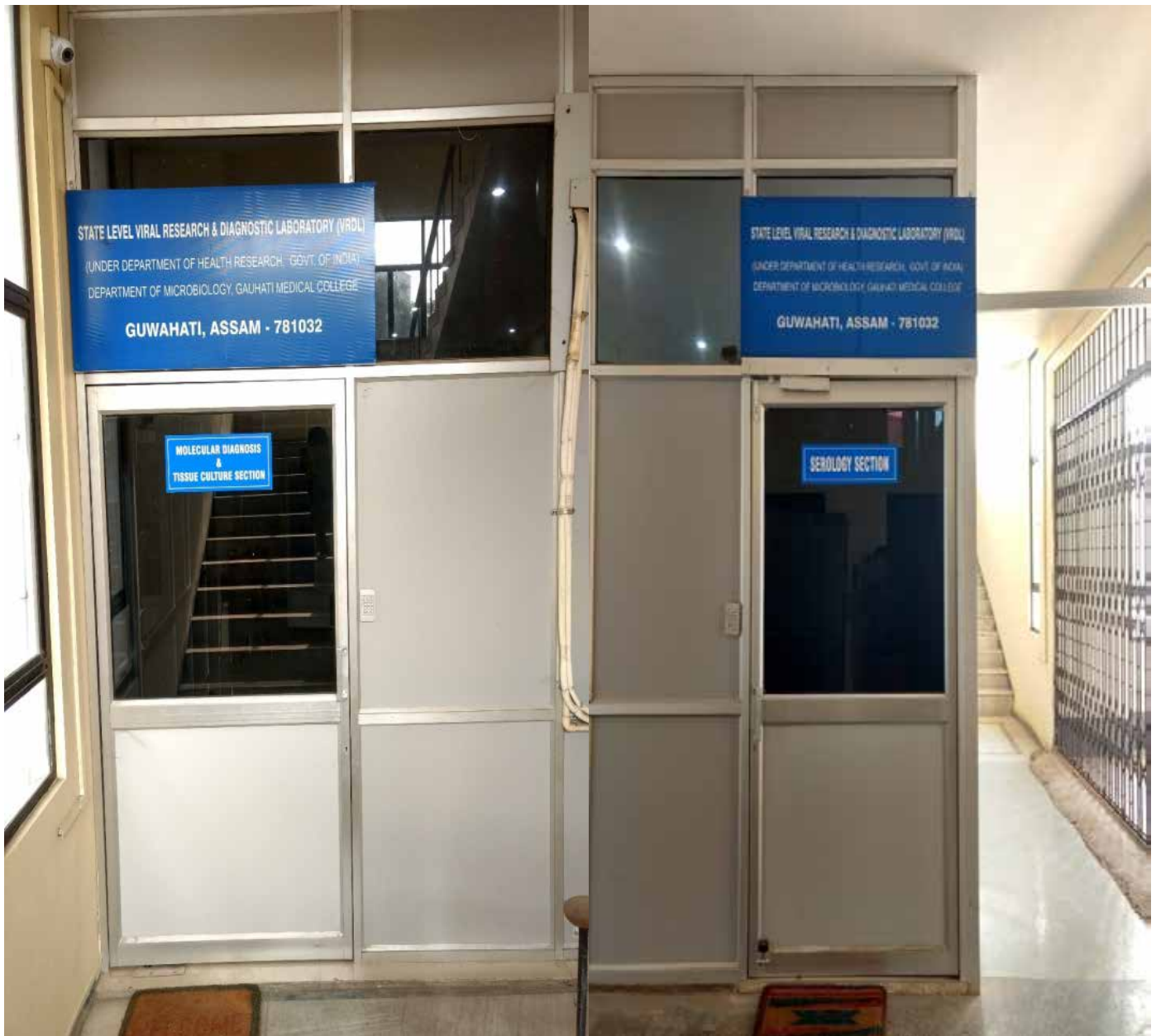
Geographical Spread of VRDLs across the Country



Few Glimpses of functional VRDLs



State Level VRDL- Guwahati Medical college, Guwahati



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

4

CHAPTER

4.1 Health research is predominantly carried out in the Medical Colleges/Institutions providing education in allied subjects. Medical Colleges are the back bone 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 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 the 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 the Medical Colleges to set up appropriate research facilities, the Department of Health Research rolled out the MRU Scheme in the year 2013-14 for 12th Five Year Plan and the Scheme has been extended for implementation during 2017-18 to 2019-20.

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.

4.5 The scheme entailed setting up of 80 MRUs in the Government Medical Colleges/ Research Institutions during the 12th Five Year Plan period. However, 58 MRUs were funded upto 2016-17. The scheme has been extended from 2017-18 to 2019-20 (14th Finance Commission Period) with the target of establishing another 32 MRUs, bringing the total target upto 90 MRUs upto 2019-20, as follows:

Year	Physical Targets	Estimated 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

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

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

Contribution from the State Governments:

- o To provide requisite space (minimum 300 sqmtr), 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 centres after five years.

Status of Implementation

- i. Against the total target of covering 90 medical colleges, 74 MRUs have been approved. (36 in 2013-14 and 13 in 2014-15, 21 in 2015-16, 4 in 2017-2018).
- ii. Funds have been released to 66 MRUs (29 in 2013-14, 13 in 2014-15, 12 in 2015-16, 4 in 2016-17 and 8 in 2017-2018).
- iii. Against the BE/RE provision of Rs. 36.00 crores, an expenditure upto December 2017 is Rs. 31.00 crores.

4.7 List of Medical Colleges/Institutions sanctioned & funded for establishment of Multi-Disciplinary Research Units (MRUs) upto December, 2017 is as follows:

S.No.	State	No. of MRU Sanctioned	Name of the medical college
1.	Andhra Pradesh	4	1. Siddhartha Medical College, Vijayawada, AP
			2. SV Medical College, Tirupati, AP
			3. Andhra Medical College, Visakhapatnam, AP
			4. Rangaraya Medical College, Kakinada, AP
2.	Assam	2	1. Silcher Medical College and Hospital, Silcher, Assam
			2. Fakhruddin Ali Ahmed Medical College, Barpeta, Assam
3.	Chandigarh UT	1	1. Government Medical College, Chandigarh
4.	Chhattisgarh	1	1. Pandit JNM Medical College, Raipur, Chhattisgarh
5.	Delhi (NCT)	3	1. University College of Medical Sciences, Delhi
			2. Vallabh Bhai Patel Chest Institute, Delhi
			3. Maulana Azad Medical College, Delhi
6.	Goa	1	1. Goa Medical College, Goa
7.	Gujarat	2	1. M.P.Shah Medical College, Jamnagar, Rajasthan
			2. Surat Municipal Institute of Medical Education & Research (SMIMER), Surat, Gujarat
8.	Haryana	1	1. Pandit B.D. Sharma PGIMES, Rohtak, Haryana
9.	Himachal Pradesh	2	1. Indira Gandhi Medical College, Shimla, HP
			2. Dr. R.P. Govt. Medical College, Tanda, HP
10.	Jammu & Kashmir Srinagar	2	1. Govt. Medical College, Jammu, J&K

S.No.	State	No. of MRU Sanctioned	Name of the medical college
			2. Govt. Medical College, Srinagar, J&K
11.	Jharkhand	1	1. MGM Medical College, Jamshedpur, Jharkhand
12.	Karnataka	5	1. Mysore Medical College and Research Institute, Mysore
			2. ShimogaInstt. of Medical Sciences, Shimoga, Karnatka
			3. Karnataka Institute of Medical Sciences, Hubli, Karnataka
			4. Mandya Institute of Medical Sciences, Karnataka
			5. Dharwad Institute of Mental Health & Neuro Sciences
13.	Kerala	2	1. Medical College Thiruvananthapuram, Kerala
			2. Calicut Medical College, Calicut, Kerala
14.	Madhya Pradesh	3	1. S.S. Medical College, Rewa, MP
			2. Netaji Subhash Chandra Bose Medical College, Jabalpur
			3. M.G.M. Medical College, Indore, MP
15.	Maharashtra	2	1. Seth G.S Medical College & KEM Hospital Mumbai
			2. Dr. V.S Memorial Medical College, Solapur, Maharashtra
16.	Manipur	1	1. Regional Institute of Medical Sciences, Imphal, Manipur
17.	Orissa	3	1. S.C.B. Medical College, Cuttack, Odisha
			2. VSS Medical College, Burla, Odisha
			3. M.K.C.G Medical College, Berhampur, Odisha
18.	Punjab	3	1. Government Medical College, Amritsar, Punjab
			2. Govt. Medical College, Patiala, Punjab
			3. Guru Gobind Singh Medical College & Hospital, Faridkot
19.	Rajasthan	4	1. Dr. S.N. Medical College, Jodhpur, Rajasthan
			2. Sardar Patel Medical College, Bikaner, Rajasthan
			3. SMS Medical College, Jaipur, Rajasthan
			4. RNT Medical College, Udaipur Rajasthan
20.	Tamil Nadu	9	1. Madras Medical College, Chennai, TN
			2. Tirunelveli Medical College, Tirunelveli, TN
			3. Coimbatore Medical College, Coimbatore, TN
			4. Dr.ALM Post Graduate Institute of Basic Medical Sciences, Taramani, TN
			5. Chengalpattu Medical College, Chengalpattu, TN
			6. Thanjavur Medical College, Thanjavur, TN
			7. Govt. Theni Medical College, Theni, TN
			8. Govt. Mohan Kumarmangalam Medical College, Selam

S.No.	State	No. of MRU Sanctioned	Name of the medical college
			9. Madurai Medical College, Madurai, TN
21.	Telangana	2	1. Osmania Medical College, Hyderabad, Telangana
			2. Gandhi Medical College, Secundrabad, Telangana
22.	Tripura	1	1. Agartala Govt. Medical College, Agartala, Tripura
23.	Uttar Pradesh	4	1. King George Medical University, Lucknow, UP
			2. Rural Institute of Medical Sciences & Research, Safai, Etawah, UP
			3. GSVM Medical College, Kanpur, UP
			4. Institute of Medical Sciences, Banaras Hindu University
24.	Uttarakhand	2	1. Govt. Medical College, Haldwani (Nainital), Uttarakhand
			2. Veer Chandra Singh Garhwali Govt. Medical Science & Research Institute, Shrinagar, Uttarakhand
25.	West Bengal	4	1. R.G. Kar Medical College, Kolkata, WB
			2. Institute of Post Graduate Medical College Education & Research, Kolkata, WB
			3. Nil Ratan Sarkar Medical College, Kolkata, WB
			4. Medical College & Hospital, Kolkata, WB
26.	Bihar	1	1. IGIMS, Patna, Bihar
Total (25 States/UTs)		66	

4.8 List of medical colleges approved for MRUs but funds could not be released due to non-completion of codal formalities, including settlement of pending UCs against other schemes of MoHFW, is given in Table (2) below:

Table (2)

S.No.	State	Name of Medical College
1	Jammu & Kashmir	1. Sher-e-Kashmir Medical College, Srinagar
2	Madhya Pradesh	1. GR Medical College, Gwalior
4	Maharashtra	1. B.J. Medical College, Pune, Maharashtra
5	Rajasthan	1. Government Medical College, Kota
		2. J.L.N Medical College & Associated Group of Hospital, Ajmer
		3. Rajasthan University of Health Sciences, Jaipur *
6	Assam	1. Jorhat Medical College, Assam*
7.	Jharkhand	1. RIMS, Ranchi*
	Total	8 Medical Colleges

*UCs against these colleges have been cleared and release of funds is in pipeline.

Initiation of Research Activities by the MRUs:

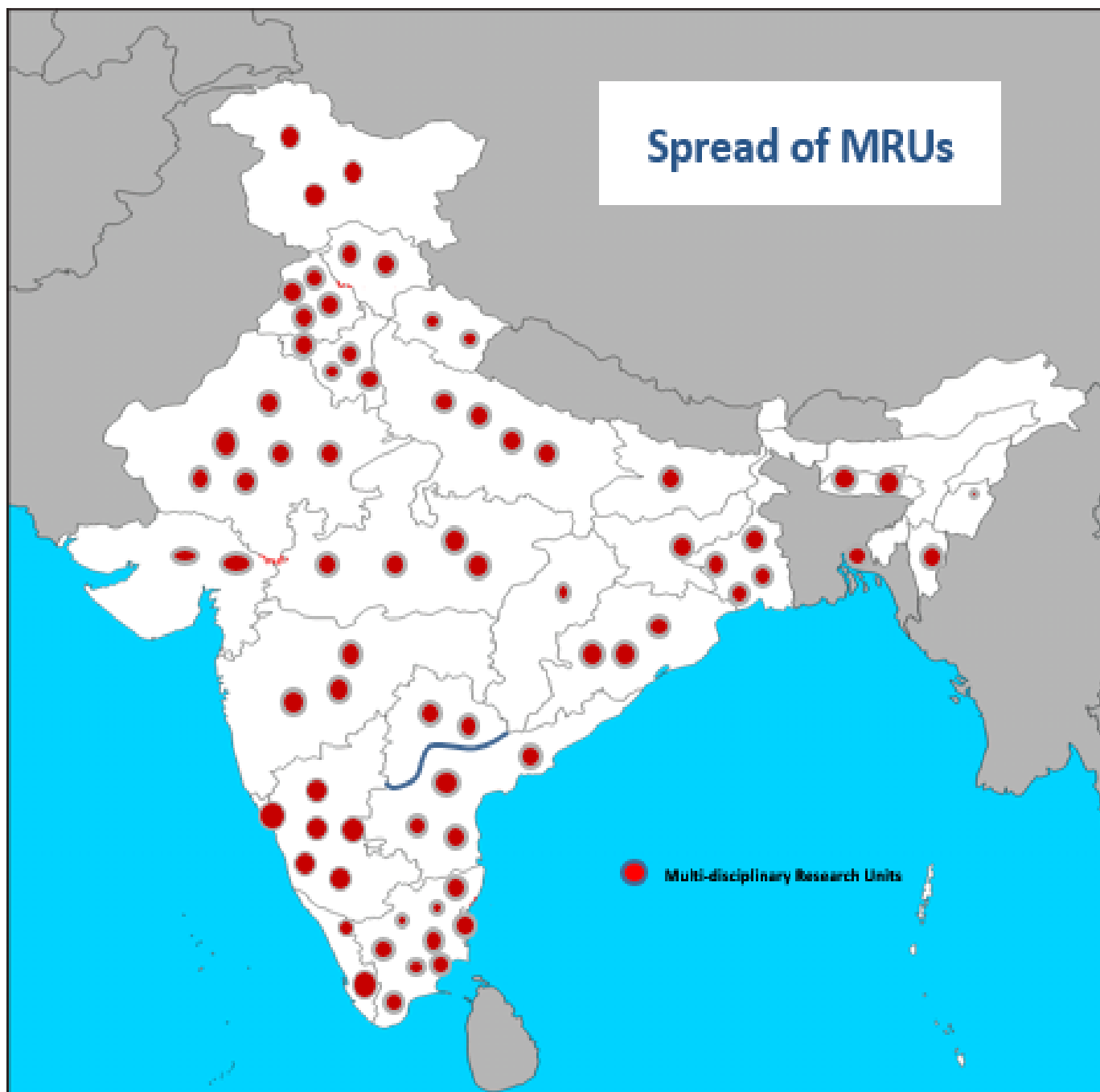
4.9 The concept research proposals, after approval from the respective Research Advisory Committee from the respective Medical Colleges, which were funded in September 2013, were invited for review. A total of 162 concept research proposals on Non-communicable Diseases (NCDs) were screened in the Special Project Review Committee meeting on 13.11.2014. A total of 79 research proposals were shortlisted. The details are given in Table (3) below:

Table (3)

S.No.	Name of Medical College	No. of Research Proposals shortlisted
1	Osmania Medical College, Hyderabad, Andhra Pradesh.	2
2	Silcher Medical College and Hospital, Assam	3
3	Pandit B.D. Sharma PGIMES , Rohtak, Haryana	2
4	Indira Gandhi Medical College, Shimla, Himachal Pradesh	2
5	Govt. Medical College, Jammu, Jammu & Kashmir	3
6	Govt. Medical College, Srinagar, J & K	5
7	MGM Medical College, Jamshedpur, Jharkhand	4
8	Mysore Medical College and Research Institute, Mysore, Karnataka	4
9	Shimoga Instt. of Medical Sciences, Shimoga, Karnataka	4
10	VSS Medical College, Burla,, Orissa	3
11	Government Medical College, Amritsar, Punjab	3
12	Madras Medical College, Chennai, Tamil Nadu	3
13	Tirunelveli Medical College, Tirunelveli, TamilNadu	4
14	Coimbatore Medical College, Coimbatore, Tamil Nadu	2
15	Dr.ALM Post Graduate Institute of Basic Medical Sciences, Taramani, TamilNadu	6
16	Govt. Medical College, Haldwani (Nainital) Uttrakhand	2
17	VallabhBhai Patel Chest Institute, Delhi	3
18	Seth G S Medical College and KEM Hospital, Mumbai	1
19.	Chengalpattu Medical College, Chengalpattu	1
20.	SCB Medical College, Cuttack	1
21	SreeAvitomThirumal Hospital for women & Children, Medical College, Thiruvananthapuram, Kerala	
22.	SS Medical College, Rewa	1
23.	Karnataka Institute of Medical Sciences, Hubli	1
24.	Surat Municipal Institute of Medical Education & Research (SMIMER), Surat	2
25.	University College of Medical Sciences & GTB Hospital, Delhi	7
26.	Regional Institute of Medical Sciences, Imphal	4
27.	RG Kar Medical College, Kolkatta	2
28	Calicut Medical College, Calicut, Kerala	3
	Total no. of research proposals	79

4.10 Since each medical college has constituted its own local Research Advisory Committee (RAC), which decides research projects under MRU, role of DHR & ICMR is limited to providing handholding to the medical colleges on designing research proposals and monitoring of progress of the research activities and achievement of outcomes. For this purpose, a National Level Research Advisory Committee (NAC) consisting of three expert members has been constituted for making suggestions 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.

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



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

5.1 Public health system in India has a wide network of primary health centers 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-art-facilities created by centre and also by some of the state governments. The professionals and policy makers have a general view that modern methods of diagnosis and management cannot be practiced at 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 National JALMA Institute for 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/ other institutions; State or Centre), health systems operators (Centre/state health services) and the beneficiaries (community).

5.4 The Model Rural Health Research Units being set up under the scheme would 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 professionals of State health system for the use of modern field adaptable methods and the model developed.
- iii. Undertake various research projects in close 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 diseases in rural areas. The activity will be entirely supported by DHR for its sustenance. In total, 15 MRHRUs are to be established during the XII Plan 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 entire 12th Plan was Rs.67.66 crores.

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

Rs.3.075 Crores per MRHRUs sanctioned for civil works/Equipment. Besides, recurring expenditure of Rs.84.44 lakhs towards staffing, consumables, etc.

Action expected from the States:

- Provide requisite land sufficient to construct

covered space of about 620 sq. meters, in close proximity to the PHC/CHC, free of cost.

- Signing of MoA with the DHR for implementation of the programme.

Status of Implementation

- 14 MRHRUs have already sanctioned and an amount of Rs. 37.90 crores has been released during 2013-14 to 2016-17.
- Against the Provision Rs. 9.00 crores in 2017-18, grant of Rs. 8.003 crores has been released upto December 2017.
- List of 14 approved MRHRUs sanctioned till 31-12-2017 is given in the table (4) below:

Table (4)

S.No	State	Location of MRHRU	Linked Medical College	ICMR Mentor Instt./ Centre
1	Assam	PHC Chabua	Assam Medical College, Dibrugarh	RMRC, Dibrugarh
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, Dibrugarh
5	Rajasthan	BhabpurKalan, 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	RaichurInstt. of Medical Sciences, Raichur	RMRC, Belgaum
9	Andhra Pradesh	Old RHTC Premises, Chandragiri ,	S.V. Medical College, Tirupati	NIN, Hyderabad

S.No	State	Location of MRHRU	Linked Medical College	ICMR Mentor Instt./ Centre
10	Odisha	Block, CHC, Tigiria	SCB Medical Collge, Cuttak	RMRC, Bhubaneshwar
11	Madhya Pradesh	PHC Badoni, Datia	GR Medical College, Gwalior	RMRCT, Jabalpur
12	Chattishgarh	Somni PHC, Rajnandgaon	Govt. Medical College Rajnandagaon	RMRCT, 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

Initiation of research activities by the MRHRUs:

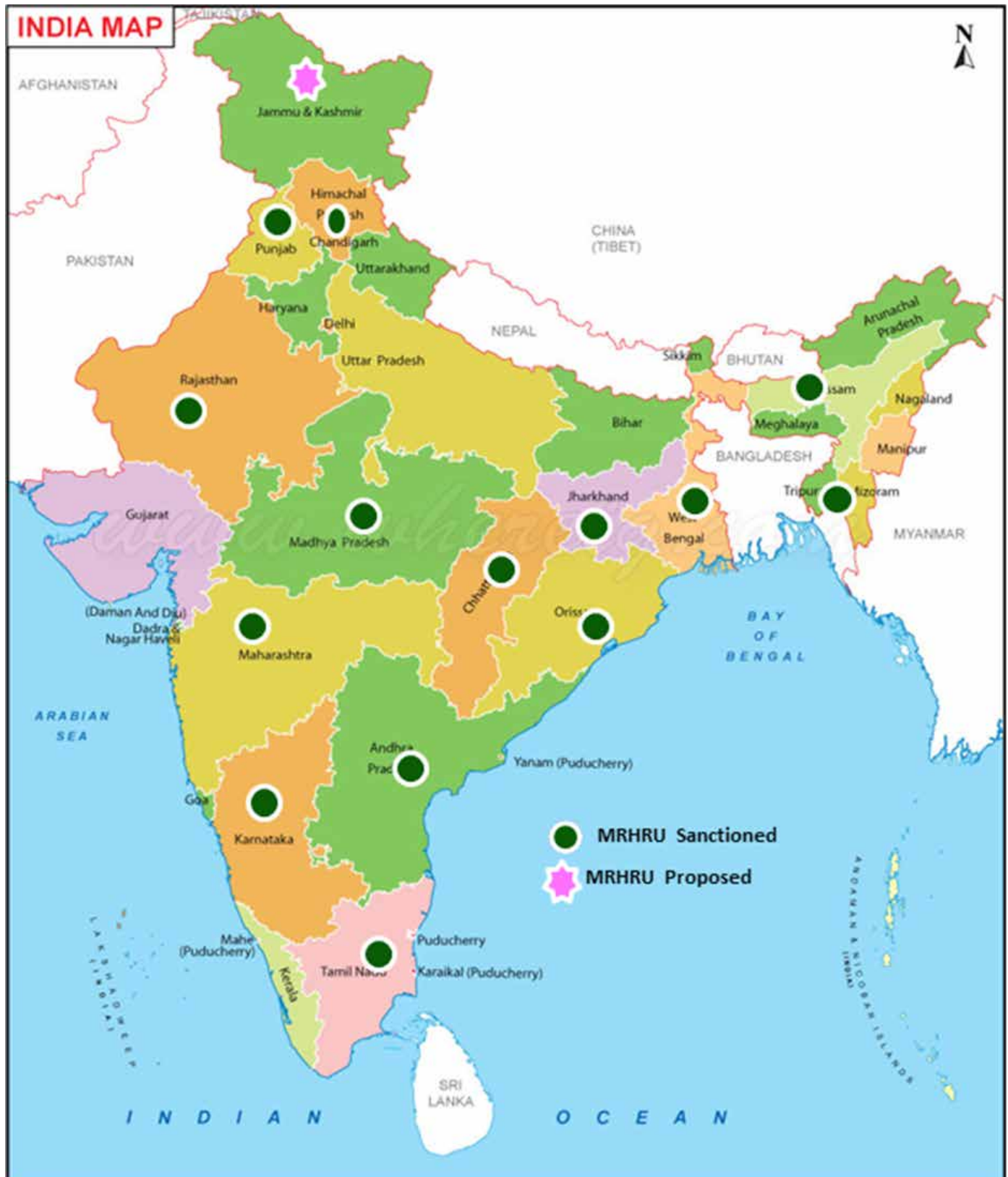
- 5.6 Guidelines have been formulated for composition of Research Advisory Committee (RAC), Terms of Reference and Procedure for Land Transfer by State to Department of Health Research. All MRHRUs have constituted the RAC and have submitted the research proposals after approval through respective RAS.
- 5.7 All the research projects submitted by these MRHRUs have been reviewed by Special Project Review Committee (SPRC) and the details are given in the Table (5) as below:

Table (5)

S.No.	Name of the MRHRU Project	No. of Research Proposals shortlisted
1.	MRHRU at CHC Haroli (Tanda) HP	6
2.	MRHRU at PHC, Chabua, Assam	3
3.	MRHRU at Kherengbar Hospital, Khumulwung, Tripura	3
4.	MRHRU at Kallur (Projects approved by Research Advisory Committee (RAC) under Chairmanship of Dr. Kolandaswamy)	5
5.	MRHRU at Bhanpur Kala, Govt. Health Clinic, Jaipur, Rajasthan	4
6	Andhra Pradesh at Old RHTC Premises, Chandragiri (Dist. Chittoor)	3

Besides the above mentioned research projects undertaken by individual MRHRUs, a Multi-centric project on "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 also been initiated at Rajasthan, Tamil Nadu, Punjab, Maharashtra and Karnataka, MRHRUs.

Map showing country-wide establishment of Model Rural Health Research Units (MRHRUs) in the States



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

6

CHAPTER

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 to translate the existing health leads 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.

The Scheme was originally approved by Cabinet Committee on Economic Affairs (CCEA) on 6th February, 2014 at a total estimated cost of Rs.1242 crores for the 12th 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 crores, as follows:

Year	Committed Expr. of on-going projects	Physical Targets		Administrative Expenditure, including PMIUs	Grand Total (Rs. in Crores)
		No. of projects	Estimated Expr (Rs. in crore)		
2017-18		41	95.00	0.86	101.86
2018-19	6.00	41	95.00	0.86	99.36
2019-20	3.50	41	95.00	0.86	95.86
Total	9.50	123	285.00	2.58	297.08

6.2. The Scheme has the following components for funding:

- (1) Research studies with emphasis on public health

The objective of this component is to support research studies on disease burden, risk factors, diagnosis & treatment, etc of major diseases. The studies will be limited to Non- communicable diseases. In this category a total number of 63 studies, with the maximum duration of 3 years and cost range between Rs.50 lakh - Rs.3 crores each, can be funded at a total estimated cost of Rs. 135 crores.

- (2) Translational Research Projects

The objective of this component is to translate

the already identified leads into products and 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/Organisations. Total Number of 30 projects with a duration of 1-3 years and cost range of Rs.50 lakhs-10 crores can be funded with a total estimated cost of Rs. 90 crores during 14th Finance Commission period.

- (3) 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. Total number of 15 projects with a cost range of Rs. 50 lakh-10 crore and duration of 1-3 years per project can be funded under this component, at a total estimated cost of Rs.45 crores.

- (4) 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 diseases, to facilitate public choice and controlling health care costs, while maximizing health outcomes. 15

projects with a cost range of Rs.50 lakh to Rs.2 crores and duration of 1-3 years can be funded under this component at a total estimated cost of Rs.15 crores.

- (5) Support to ICMR and non-ICMR scientists for participation in conferences abroad in identified priority areas of the Department and conduct of national & international seminars & conferences.

The component is intended to provide financial support for taking part in international conferences/seminars/symposia etc. The activity of organizing international conferences/seminars/symposia to share experiences on health research issues is also proposed under this component. Non-ICMR scientists would mainly cover the faculty and students of the medical colleges. Total estimated cost of this component is Rs.6.00 crores.

STATUS OF IMPLEMENTATION:

Financial Achievement:

Year	Budget Estimate (B.E) Rs. in Crore	Revised Estimate (RE) Rs. in Crore	Actual Expenditure Rs. in Crore
2013-14	40.00	5.35	4.95
2014-15	31.00	23.50	23.26
2015-16	30.50	16.00	13.99
2016-17	14.25	16.99	15.99
2017-18	20.00	30.00	18.12*

*includes proposal of release of 1.52cr which is in pipeline

Physical Achievement:

Components of the Scheme	No. of Projects Sanctioned				
	2013-14	2014-15	2015-16	2016-17	2017-18
Research Studies with emphasis on Public Health	40	74	22	9	29
Translation Research	-	12	11	2	4
Inter-sectoral Coordination	-	5	3	-	3
Cost-effectiveness analysis	-	9	5	-	2
Total	40	100	41	11	38

HUMAN RESOURCE DEVELOPMENT FOR HEALTH RESEARCH

7

CHAPTER

Introduction

7.1 The Scheme of 'Human Resource Development for Health Research' under the 12th Plan period was approved at an estimated cost of Rs. 597.00 crores.

Objectives of HRD Scheme

- To increase the overall availability of trained personnel for health research from medical colleges across the country through scholarships, fellowships and career advancement scheme etc. for faculty and young medical doctors and other scientists to take up medical and health research as a career.
- To focus on the creation of a cadre of trained medical/health researchers in specific identified priority areas of health research viz., Clinical Trials; Toxicology; Good Clinical Practices (GCP); Good Laboratory Practices (GLP); Quality Control (QC) & Quality Assurance (QA); Genomics; Proteomics; Clinical Psychology, Geriatrics; Modern Biology; Biotechnology; Stem cells; Genetics; Drugs Chemistry; and Operational Research etc..
- To create, support, nurture and encourage the trainees from these medical colleges to forge linkages with other scientists from universities, research institutes etc. to develop multidisciplinary and multi-sectoral teams necessary for addressing critical national and local health problems.
- To establish suitable online teaching and learning facilities to facilitate training in health research in various subjects in a more effective manner and for promoting biomedical/health research.

Area of Research

Toxicology	Quality Control (QC) and Quality Assurance (QA)
Genomics	Modern Biology
Proteomics	Biotechnology
Geriatrics	Genetics
Stem cell research	Drugs Chemistry
Clinical Trials	Operational Research
Good Clinical Practices (GCP)	Health Informatics
Good laboratory Practices (GLP)	Medical Ethics
Disease Modeling	Health Economics
Environmental Health	Mental Health/Clinical Psychology
Any other area recommended by the Committee as per National Health Policy/ National Health Goals	

Components of the Scheme

1. Short Term Fellowships in India/Foreign

Short Term Fellowship for training abroad / in Indian Institutions in identified areas (1-3 months) to persons employed as regular faculty not above the age of 55 years) at an expenditure of about Rs.7.5/1.8 lakh per Fellow.

2. Long Term Fellowships in India/Foreign

Long Term Fellowship (6 to 12 months) for training abroad/ Indian Institutions in identified priority areas (6 to 12 months) to persons employed as regular faculty not above the age of 45 years, at an

approximate expenditure of about Rs. 25/5.5 lakh per Fellow.

3. Fellowship programme specifically for women

For women candidates who have had a break in their career to bring them into mainstream of health research. A research project upto Rs. 30 lakhs for a period of 3 years and a stipend to the selected fellow. Age 30-50 years

4. Fellowship programme for young scientists in newer areas

To fulfil the objective of creation of inclination / attitude of research among the young bright students from the Medical Colleges / Universities. Research Project upto Rs.30 lakhs for a period of 3 years. Maximum Age 35 years

5. Programme to encourage [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 research project upto a grant of Rs. 100 lakhs for a period of 5 years along with a stipend of Rs. 10 lakhs per year for a period to 5 years

6. Start-up Grant for projects

The Start-up grant, with an average cost of Rs. 30 lakh per research project, for three years, will

be considered for each fellow /trainee, who has developed a research project.

7. Strengthening of research through the establishment of online courses and Web Portal on health research for students, faculty and other researchers

The activity will be carried out in close coordination / association with Medical Council of India, Department of Information Technology, National Knowledge Network and other stakeholders. This programme will help prospective Institutions and individuals to access resources both financial and technical on research and promote research across the country.

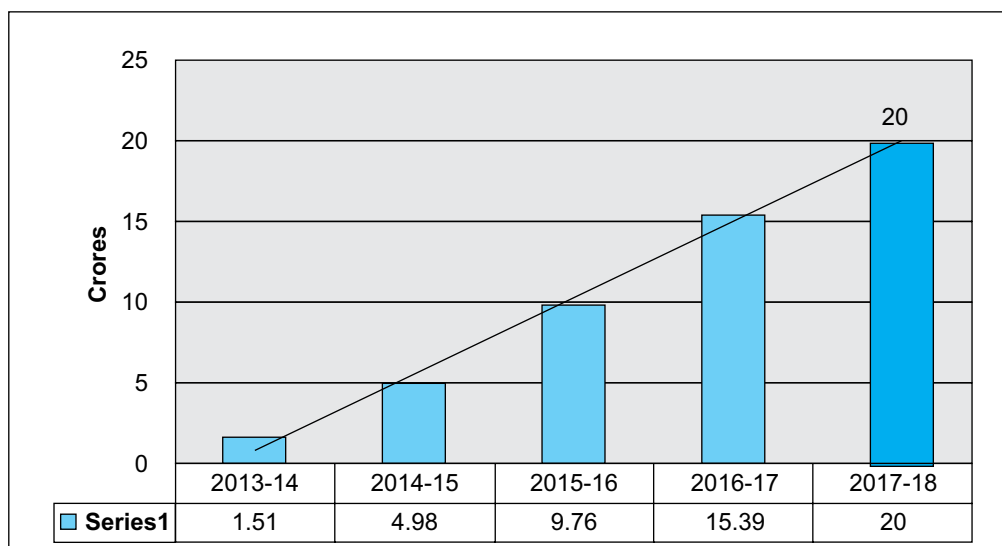
8. Support to Indian Institutions for imparting training

Support to selected domestic Institutions for providing training with 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.

Financial and Physical Achievement

7.2 The year-wise physical and financial achievements of the scheme are given in the tables/ graphs below:

Graph Showing the year wise Financial Achievement of the HRD scheme



Achievement : 13.81 crores

Table showing the Year wise financial achievement of the HRD scheme

Year	BE (Rs. InCr)	RE (Rs. in Cr)	Actual Expenditure (Rs. in Cr)
2013-14	45.00	4.50	1.51
2014-15	19.00	5.00	4.98
2015-16	8.00	10.00	9.76
2016-17	13.00	16.00	15.39
2017-18	20.00	26.00	13.81 (Upto December, 2017)

Physical Achievements

S. No.	Fellowship	2013-14	2014-15	2015-16	2016-17	2017-18	Total
1	Long Term Foreign	4	8	9	9	7	37
2	Short Term Foreign	-	17	9	7	2	35
3	Long Term Indian	3	1	3	2	-	09
4	Short Term Indian	3	4	5	1	1	14
5	Women Scientist	-	-	13	12	10	35
6	Young scientist	-	-	8	13	10	31
7	NRI	-	-	2	-	-	2
8	Support to Conferences	-	1	7	1	10	19
9	Support to Institutions	3	5	8	7	6	29
10	Start-up Grant	-	6	6	25	4	41
11	Online course					1	1
	2nd year grant				27	61	88
	Total Fellowship	13	42	70	104	112	341

YEAR-WISE STATUS OF IMPLEMENTATION:**Year : 2013-14****(i) Fellowships:**

S.No.	Types of Fellowships	No. of fellows	Sanctioned Amount (Rs. in lakhs)
1.	Long Term in Foreign Institutes	4	69.5
2.	Long Term in Indian Institutions	3	16.5
3	Short Term in Indian Institutions	3	4.60
	Administrative expenses	3.30	
	Total	10	93.90

(ii) Support to Institutes:

S.No.	Name of the Institute	Area	Non-recurring (equipment etc (Rs.in lakhs)	Recurring @ Rs.10.00 lakhs per year	Total first year Sanctioned Amount (Rs.in lakhs)
1.	J. N. Medical College, Belgaum	GLP	Nil	10.00	10.00
2.	JSS College of Pharmacy, Mysore	Drug Chemistry	19.0	10.00	29.00
3.	Manipal College of Nursing, Manipal	Geriatrics	8.10	10.00	18.10
Total:					57.10

Year : 2014-15**(i) Fellowships:**

Type of Fellowships	No. of fellows	Sanctioned Amount (Rs in lakhs)
Short Term Fellowships in Foreign Institutes	17	126.00
Long Term Fellowships in Foreign Institutes	8	155.00
Long Term Fellowships in Indian Institutes	1	1.90
Short Term Fellowships in Indian Institutes	4	6.20
Support to scientific/professional association/bodies	1	1.00
Start-up grants	6	67.50
Administrative expenses		20.00
Total amount sanctioned		377.60

(ii) Support to 5 Institutes:

	Name of the Institute	Area	Sanctioned Amount (Rs in lakhs)
1.	National Institute of Virology, Pune	Modern Biology	10.00
2.	National Institute for Research in Reproductive Health, Mumbai	Genetics	10.00
3.	All India Institute of Medical Sciences, New Delhi	Operational Research	16.00
4.	Post Graduate Institute of Medical Education and Research, Chandigarh	Environmental health	57.10
5.	Nootan Pharmacy College, Visnagar, Gujarat	Quality Control & Quality Assurance	27.75
Total amount sanctioned			120.85

Year : 2015-16

(i) Fellowships :

Type of Fellowships	No. of fellows	Amount (Rs in lakhs)
Long Term Fellowships in Foreign Institutes	9	169.00
Long Term Fellowships in Indian Institutes	3	11.60
Short Term Fellowships in Foreign Institutes	9	63.60
Short Term Fellowships in Indian Institutes	5	8.20
Women with Break in Career	13	162.60
Young Scientist	8	111.48
NRIs/PIOs/OCI	2	81.14
Support to Conference	7	11.50
Start-up grant	6	112.20
Total		731.32

(ii) Support to Institutes :

	Name of the Institute	Area	Amount (Rs in lakhs)
1.	National Institute of Virology, Pune	Epidemiology and investigations of outbreak and emerging infections	51.30
2.	Indian Institute of Public Health, Bhubaneswar	Clinical and public health ethics	16.92
3.	National Institute for Research in Tuberculosis, Chennai	Operational and implementation training programme	10.00
4.	All India of Medical Science, Delhi	Neurosurgery simulations	59.79
5.	National Institute for Research in Reproductive Health, ICMR, Bombay	Genomics and Proteomics	60.00
6	Sri Devraj Urs Academy of Higher Education & Research – Kolar (Karnataka)	Cytogenetics and molecular genetics	8.60
7	Dr. B. N. Nagpal, National Institute of Malaria Research New Delhi-110077	Health vector borne diseases	20.00
8	Dr Namita Mahapatra Regional Medical Research Centre, Chandrasekharapur Bhubaneswar	Sero molecular diagnostics	22.00
	Total amount sanctioned		248.61

Year : 2016-17**(i) Fellowships :**

	Fellowship	Nos.	Sanctioned Amount (Rs. in lakhs)
1.	Long Term Foreign	7	182.30
2.	Long Term Indian	2	6.20
3.	Short Term Foreign	6	38.84
4.	Short Term Indian	1	1.80
5.	Women with break	12	157.03
6.	Young Scientist	10	141.00
7.	NRI/PIO/OCI	-	-
8.	Support to Conference	1	1.00
9.	Start-up Grant	11	154.74
10	2nd grant for fellowship	19	223.93
	Total Amount Sanctioned		906.84

(ii) Support to Institutes :

	Name of Institute	Area	Sanctioned Amount
1.	Govt. Theni Medical College, Theni, Tamilnadu	Virology	55.84
2.	Ganga Hospital, Coimbatore	Spinal Cord Injury	60.00
3.	Moving academy of Medicine and Biomedicine, gurgaon	Clinical laboratory practice	44.94
4.	2nd year grant to 8 support to institutes		64.76
	Total Amount Sanctioned		225.54

Year: 2017-18

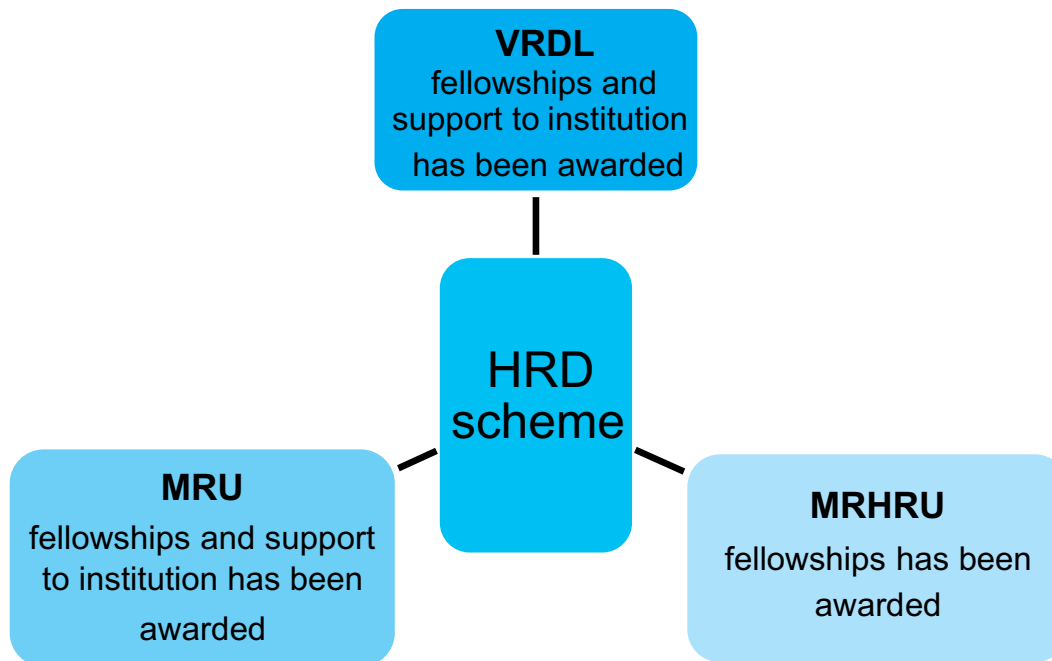
(i) Fellowships:

	Fellowship	Nos.	Sanctioned Amount
1.	Long Term Foreign	7	162.94
2	Short Term Foreign	2	12.34
3	Short Term Indian	1	0.20
4	Women Scientist	10	125.59
5	Young Scientist	10	121.94
6	Support to Conference	10	20.36
7	Start-up Grant	4	50.74
8	Online Course	1	49.45
9	2nd Year Grant	36	422.72
10	3rd Year Grant	25	251.88
	Total Amount Sanctioned	106	1218.16

ii) Support to Institutes

S. No.	Name & Institute	Area	Sanctioned Amount
1	Sree Chitra Tirunal Institute for Medical Science & Technology, Trivandrum	Health Technology Assessment	32.16
2	Prof. Divaya Mehrotara, Vice Dean Faculty of Dental Sciences King George's Medical University, Lucknow	Digital Designing & Manufacturing of pediatric facial prosthesis	60.00
3	Dr. N. Mahapatra, Scientist 'F' Regional Medical Research Centre (ICMR), Bhubaneswar (Odisha)	Health Informatics	25.00
4	Dr. Rakesh M. Rawal Senior Scientific Officer and Head Division of Medicinal Chemistry and Pharmacogenomics Dept. of Cancer Biology The Gujarat and Cancer Research Institute Civil Hospital Campus, Asarwa, Ahmedabad	Stem cell research	20.55
5	Dr. Amrutha Kumari B, Associate Professor Dept. of Microbiology Mysore Medical College & Research Institute (MMC&RI) Irwin Road, Mysore	Modern Biology	10.00
6	Prof. Bhushan Patwardhan, Ph.D, FNASc, FAMS Director, Centre for Complementary and Integrative Health, Interdisciplinary School of Health Sciences, Savitribai Phule Pune University, Pune	Traditional Medicine and Integrative Health	14.50
	Total		162.21

Networking of all the Schemes of DHR through HRD



The scheme has been continued beyond 12th Plan, for the period 2017-18 to 2019-20, with the approval of SFC in its meeting held on 18.9.2017, as follows:

S. No.	Fellowships/ Projects	2017-18	2018-19	2019-20	Total for 3 years
Physical Targets					
1	Short Term Fellowship Abroad	15	20	30	65
2	Long Term Fellowship Abroad	20	30	40	90
3	Short Term Fellowship at Indian Institutes	30	50	70	150
4	Long Term Fellowship at Indian Institutes	30	50	70	150
5	Women Scientists who have had break in career [Category 'A', Category 'B']	15	20	30	65
6	Scholarship / Fellowship Programme to Young Scientist in newer areas for three years	15	20	30	65
7	To encourage health research personnel (NRIs/ PIOs/OCl) to come back to India	5	8	10	23
8	Support to Institution	8	9	10	28
9	Start -up Grant	30	45	60	135
10	Support to Conferences	5	10	15	30
11.	Total Fellowship	173	262	365	800
Financial Targets (Rupees in crore)					
12.	Total (Financial)	25.06	45.28	63.95	134.29

HEALTH TECHNOLOGY ASSESSMENT (HTA) IN INDIA

8.1 The Government of India is committed to extend healthcare services to its 1.34 billion population as part of India's Universal Health Coverage (UHC) agenda. However, it is a challenge to devise ways to reduce catastrophic Out Of Pocket (OOP) expenditure on healthcare and ensure affordable access to essential health care for the entire population with the limited resource envelope. The 2014 World Bank Report estimated the OOP spending on healthcare in India to be as high as 89%. Extending adequate healthcare services to the population requires optimal utilization of existing resources to ensure that the greatest amount of health is bought for every rupee spent. This can be ensured with the help of Health Technology Assessment (HTA), which is a widely used methodology internationally for optimization of resource allocation in health.

8.2 HTA is a method of evidence synthesis that considers aspects pertaining to clinical effectiveness, cost-effectiveness, social, ethical and legal implications of the use of "health technology" for healthcare interventions. The main purpose of conducting an HTA is to inform policymakers about all these aspects of health interventions in an explicit way and based on evidences.

8.3 To facilitate the process of transparent and evidence informed decision making in the field of health, Government of India has set up Health Technology Assessment in India (HTAI) under the Department of Health Research (DHR), Ministry of Health & Family Welfare (MoHFW). It is 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, and in turn help in efficient use of the limited health budget and provide people access to quality healthcare at

minimum cost.

HTA in India

8.4 Evidence-based decision making in a pluralistic society like India is a challenging task. Therefore, to maintain the consistency of the procedure and outcome, HTAI has developed standard guidelines that will be followed by the Secretariat at DHR and Technical Partners (TP) of DHR located in institutions administered by Centre/ States while conducting HTA study. HTA in India aims to evaluate the available evidences regarding cost and clinical effectiveness of a health intervention that will help in reducing the OOP expenditure of patients and maximizing coverage. In addition to that it will also consider social and ethical aspects regarding the use of health interventions that will help in minimizing the variations in patient care and overall streamlining the medical reimbursement and procurement procedures by the user departments. It ensures greater reach of health programmes in terms of coverage by minimizing cost and accessibility in terms of inclusion of cost for awareness and acceptability.

8.5 Although, a thorough review, synthesis of the evidence and economic evaluation are critical steps toward evidence-based decision making, they are not sufficient. Framing the key question and feasibility of implementation/ acceptance of the outcome is beyond scientific focus. Framing the question is the responsibility of the decision makers or user departments (Governments, payers, and providers) and acceptability depend upon the stakeholders. HTAI will focus on evidence review and synthesis. The implementation of the outcome policies will be done by the user departments.

Purpose of HTA

8.6 Immediate goals of HTAI are:

1. To inform Government Health Department Officials about undertaking Public Health Programs.
2. To inform Research Agencies about evidence gaps and unmet health needs
3. To inform Hospitals and other Health Care Organizations and help in decisions regarding technology acquisition and management
4. To inform Clinicians and Patients about the appropriate use of Health Care Interventions for a particular patient's clinical needs and circumstances.

There could be other possible roles of HTAIn as it evolves, such as:

1. To Inform Regulatory Agencies about the commercial use (e.g., marketing) of a drug, device or other medical technology.
2. To inform Payers (Governments Health Departments, Health Plans/ Drug formularies, Patient Groups etc.) about the technology coverage and reimbursement.
3. To inform Health Care Experts about the role of a technology in Clinical Protocols or Practice Guidelines.
4. To inform lawmakers and other political leaders about policies concerning technological innovation, health financing and regulation of health care.

8.7 HTAIn consists of a DHR in-house Secretariat, Technical Appraisal Committee (TAC), Technical Partners (TP) and Regional Resource Hubs. User department(s) give their topic(s) to the Secretariat. The topics are prioritized and allocated to an appropriate TP/ Resource Hub to conduct the HTA study. HTA proposals as well as the outcome of the study is appraised by the TAC and stakeholders. Thereafter, final outcome is forwarded to the User Department for appropriate health interventions. Secretariat is the point of co-ordination for TAC, TP and User Department.

User Department

8.9 User Department could be Central and State Health Ministry or any Government Healthcare Provider or Agency that are directly or indirectly involved in the health sector in India. They come up with the topic for HTA study with clear policy question(s) depending upon likely usage of certain health technologies for programmes or projects of healthcare.

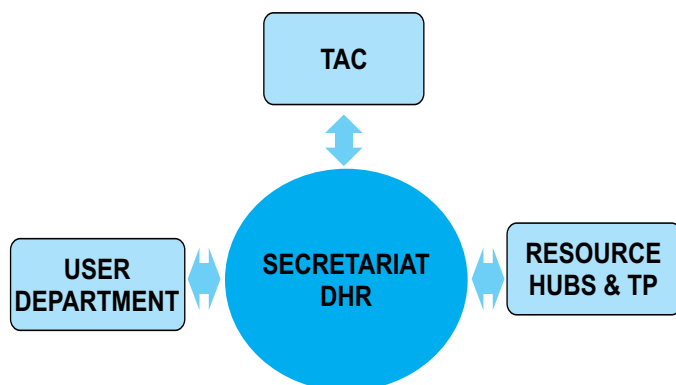
HTAIn Secretariat

8.10 HTAIn Secretariat or Secretariat is a DHR-in-house body that co-ordinates between the User Department, TAC and TP/ Resource Hubs. Secretariat takes the topic from the user department, prioritizes it, identifies the potential TP and allocates the topic to them to conduct HTA study. It keeps monitoring the progress of the study and also provides necessary assistance to the TP wherever required. Secretariat can also undertake topics for HTA analysis in certain situations. Besides that, secretariat conducts all the TAC and Stakeholders consultation meetings in DHR and ensures transparency at all stages of HTA by consultation and regular updates.

Regional Resource Hubs

8.11 DHR is setting up Regional Resource Hubs in collaboration with the State Governments in Institutes administered by the Centre/ States. DHR will provide requisite manpower to these hubs so that these hubs provide technical support for a bunch of States located in the vicinity. The mentor

HTAIn Structure



of the hub would liaise with the officials of the State Governments and sensitize them about a need for Health Technology Assessment (HTA) for any health intervention. The hubs would also ensure robust HTA on the topics relevant to the States and also ensure uniformity/ consistency of methodologies/ processes documented by DHR in its Process Manual. At present 6 resource hubs have already been established:

- (i) **Postgraduate Institute of Medical Education and Research (PGIMER)** - It is a premier medical and research institution in Chandigarh, Punjab. Health Economics is one of the sub-specialties within the School of Public Health whose faculty is engaged in capacity building of health care professionals and conducting high-impact policy relevant economic analysis for health care programs and policies. PGIMER will liaise with the State Govt. of Jammu & Kashmir, Haryana and Himachal Pradesh.
- (ii) **Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST)** - It is an autonomous institute of national importance situated in Thiruvananthapuram, Kerala. The Achutha Menon Centre for Health Science Studies (AMCHSS) within the SCTIMST is recognized as a centre of excellence for public health training by the MoHFW and has been identified to be a resource hub for HTAIn.
- (iii) **National Institute for Research in Reproductive Health (NIRRH)** - It is an ICMR Research institute situated in Mumbai, Maharashtra. Department of Bio-statistics in NIRRH has good experience working with the Government of Maharashtra and has been identified as a Resource hub that will liaise with the State Govt. of Andhra Pradesh and Telangana.
- (iv) **National Institute for Research in Tuberculosis (NIRT)** - It is a tuberculosis research organization located in Chennai, Tamil Nadu. NIRT carries out research on TB and HIV-TB. Department of Bio-statistics in

NIRT offers courses regarding public health and has been identified to be a regional resource hub for HTAIn.

- (v) **Regional Medical Research Center (RMRC)** - Located in Bhubaneswar, Odisha, RMRC has been identified to be one of the resource hubs. It is an advanced research institute in the field of medical sciences. The main focus area of research of the institute is on locally prevailing communicable and non-communicable diseases, tribal health and malnutrition in Odisha and adjoining states. It will liaise with the State Govt. of Bihar, West Bengal and Jharkhand.
- (vi) **Indian Institute of Public Health (IIPH)** - Situated in Meghalaya, Shillong, it is 4th of its kind established under the aegis of Public Health Foundation of India (PHFI). Its main objective is to build up a large human resource base of public health professionals by establishing a network of world-class colleges and schools of public health. IIPH resource hub they will liaise with the North-Eastern States.

8.11 Besides all these, approval for the resource hub in SAST –Karnataka, Civil Hospital/IIPH, Gujarat and Medical College, Bhopal is underway. DHR is also getting in touch with other states' health officials regarding the establishment of hubs such as Delhi and Uttar Pradesh.

Technical Partners

8.12 Technical Partners are Institutes of the Central/ State Government which have been identified with regards to their capacities, expertise and previous experiences in the HTA. TP will undertake the HTA study allotted to them and ensure consistency and uniformity with Process Manual through regular interactions and by also making a template available for each stage of the 'Assessment'.

8.13 So far, 11 HTAIn Technical Partners have been identified - (i) AIIMS, Delhi (ii) NIMS, Delhi (iii) NHSRC, Delhi (iv) PHFI, Delhi (v) Institute of Economic Growth, Delhi (vi) IIT, Mumbai (vii)

NIV, Pune (viii) NARI, Pune (ix) IIHMR, Jaipur and (x) IIPH, Bhubaneswar and (xi) IIT, Chennai

Technical Appraisal Committee

8.14 Technical Appraisal Committee (TAC) is a multidisciplinary body with experts drawn from different areas viz economists, clinicians, researchers, social scientists, policy experts etc. The Committee is invariably headed by an eminent person. It ensures the appraisal of the topics taken up for HTA at different stages.

8.14 Till date, five 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.

Medical Technology Assessment Board (MTAB):

8.15 It has also been decided to constitute the Medical Technology Assessment Board (MTAB) which will operate as a sanding recommendatory body to the Government. It will consider and approve the recommendations form the Technical Appraisal Committee on all HTA studies.

HTAIn Objectives and Significance

8.16 The main objectives of HTAIn is maximizing health, reducing Out of Pocket Expenditure (OOP), and minimizing inequality in healthcare services. These objectives can be achieved by supporting the process of decision-making in health based on scientific evidence, developing systems and mechanisms to assess new and existing health technologies by a transparent and inclusive process and appraising health interventions and technologies based on available data.

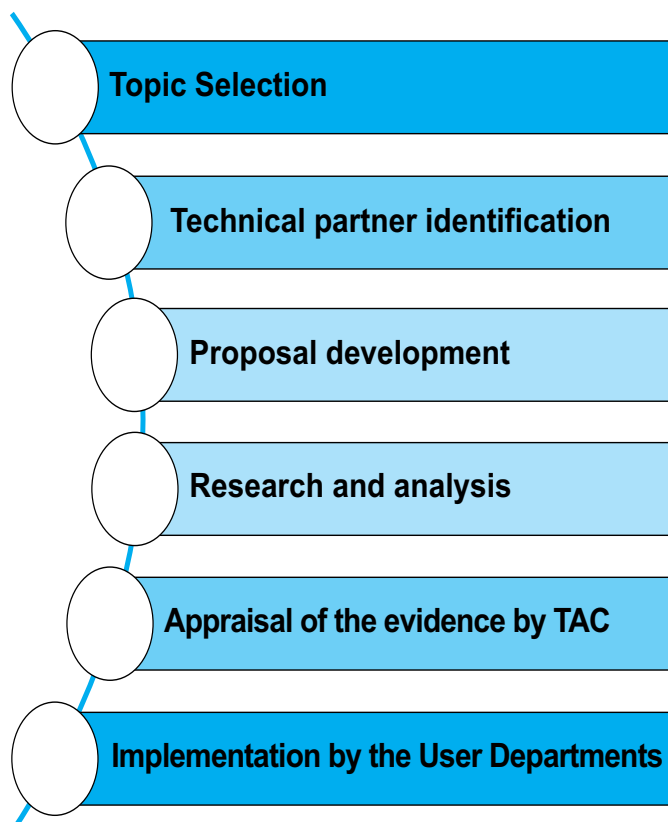
8.17 Introduction of a new or existing health technology into the public health system based upon their cost and clinical effectiveness will help in efficient allocation of scarce healthcare budget. It will help further in developing Standard Treatment Guidelines and accelerate the country towards Universal Health Coverage (UHC) that is one of the

main objectives of Sustainable Development Goals (SDGs).

8.18 HTAIn will inform healthcare policy decision making, ensure healthcare accessibility to all and educate and empower the public to make better informed decisions for health.

HTAIn Procedure

8.19 User Department gives the topic to the secretariat with a clear policy question they want to address. Topics are selected and prioritized on the basis of given set of "prioritization criteria". Once the topics are selected a potential technical partner, depending upon their area of expertise and capacity, is identified to take up that topic to conduct the HTA study . TP is asked to develop a formal HTA proposal that is appraised by the TAC and, if approved, funds are sanctioned to the TP to conduct the HTA study. Once the results of the study are out they are again presented in front of the TAC for appraisal. Finally results are handed over to the user department. Proposal and results are also discussed in front of the stakeholders for their comments and feedback.



Topics Allocated:

8.20 Topic selection and prioritization is done by the TAC and Secretariat according to the need of the society. The criteria of topic selection are - (i) Size of population affected by disease (Incidence/Prevalence) (ii) Burden of disease (Severity of disease) (iii) Effectiveness of available intervention (iv) Economic impact on House hold expenditure (v) Availability and relevance of evidence for conducting HTA (vi) Health sector priority and policy objectives. Once selected topics are assigned to a potential technical partner. Presently, eight topics have been assigned to various technical partners and resource hubs to conduct HTA analysis.

Cervical Cancer Screening	• PGIMER, Chandigarh
Intraocular lens	• HTAIn Secretariat
Breast Cancer Screening	• NHSRC, Delhi
Safety Engineered Syringes	• PGIMER, Chandigarh
Implants for Family planning	• NIRRH, Mumbai
Non-invasive Hemoglobinometers	• AIIMS, Delhi
Screening for Diabetes	• PGIMER, Chandigarh
Intrauterine Balloon Tamponade	• NIRRH, Mumbai

One topic i.e. Intra-ocular lens for cataract surgery is taken up by the HTA Secretariat as an in house study. Secretariat is receiving several new topics and their prioritization and TP identification is underway.

Stakeholders

8.21 Stakeholders are individuals, organizations or communities that have a direct interest in the process and outcomes of a health technology assessment. Stakeholders in the HTA process include patients, health professionals' organizations, user

departments (e.g. RSBY or NPPA, NHM), Central Government and/or State Government, 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 and so on.

8.22 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.

8.23 Till date, four stakeholders consultation meetings have been conducted in relation to - (i) Intra Ocular Lens for Cataract Surgery (ii) Screening of Breast Cancer and Cervical Cancer (ii) Hemoglobinometers and (iv) Safety Engineered Syringes (SES). Stakeholders appreciated the concept of HTAIn and provided their valuable inputs in the proposals. Results of one of the topics i.e. Safety Engineered Syringes were out and discussed in a stakeholders consultation meeting held in IRCS building, DHR, New Delhi on 12th December, 2017. The results were appreciated and well accepted by all the stakeholders.

Budgetary Allocations for implementation of HTA are as follows:

Rs. in Crores

BE 2017-18	RE 2017-18	BE 2018-19
5.00	6.00	6.00

IMPLEMENTATION OF THE SCHEMES IN THE NORTH EASTERN REGION

9.1 Department is taking due care and also taking pro-active steps to ensure sanctioning of proposals in the North Eastern Region under the following five schemes rolled out for implementation since 2013-14:

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

4) Scheme for Human Resources Development for Health Research

5) Grant-in-Aid Scheme for Inter -Sectoral Convergence & Coordination for Promotion and Guidance on Health Research

9.2 Scheme-wise position of implementation of the above schemes in NE states is as follows:

(1) Establishment of Network of Research Laboratories for Managing Epidemics and Natural Calamities.

9.3 The Virology Research & Diagnostic Labs (VRDLs) have been approved in the following institutions under the scheme:

(1) *Establishment of VRDLs in Govt. Medical College:*

S. No.	Name of the State	Name of the medical college sanctioned the VRDL	Funds released (Rs. in lakhs)	
			2013-14 to 2016-17	2017-18 (upto December, 2017)
1	Assam	Regional Medical Research Centre (RMRC), ICMR, Dibrugarh (Regional Lab)	631.00 + 68.62	-
		Guwahati Medical College, Guwahati (State level lab)	297.00 + 50.00	43.54
		Tezpur Medical College & Hospital, in Tezpur District-Sonitpur (Medical College Level)	167.10	-
		Jorhat Medical College & Hospital, District – Jorhat (Medical College Level)	173.90	-
		Fakhruddin Ali Ahmed Medical College & Hospital, District-Barpeta (Medical College Level)		173.90
		Silchar Medical College, Silchar (Medical College level lab)		173.90
2.	Manipur	Regional Institute of Medical Sciences, Imphal (State level lab)	196.37	
		Jawarhar Lal Nehru Institute of Medical Sciences, Imphal (Medical College level lab)	157.00 + 30.00	
3.	Meghalaya	1. North Eastern Indira Gandhi Regional Institute of Health & Medical Sciences (NEIGRIHMS) Shillong, (State level Lab)	297.00	-
4.	Tripura	Government Medical College, Agartala (Medical College level lab)	130.00 + 30.00	

(2) Multidisciplinary Research Units (MRUs) in Govt. Medical Colleges:

S.No.	Name of the State	Name of the medical college sanctioned the MRU	Funds released (Rs. in lakhs)	
			2013-14 to 2016-17	2017-18 (upto December, 2017)
1	Assam	Silcher Medical College and Hospital, Silcher	125.00	-
		Fakhruddin Ali Ahmed Medical College, Barpeta	151.47	201.60
		Jorhat Medical College, Jorhat	0.0	0.0
2.	Manipur	Regional Institute of Medical Sciences, Imphal	250.00	-
3.	Tripura	Agartala Govt. Medical College, Agartala	348.52	-

9.4 There are only 10 medical colleges in the NE States. Efforts will be made to cover few more medical colleges during the extended period of the scheme upto 2019-20.

(3) Model Rural Health Research Units (MRHRUs):

9.5 MRHRUs have been sanctioned in the following NE States:

S.No.	State	Location of MRHRU	ICMR mentor Institute/ Centre	Linked Medical College	Funds released(Rs. in lakhs)	
					2013-14 to 2016-17	2017-18 (upto December, 2017)
1	Assam	PHC Chabua	RMRC, Dibrugarh	Assam Medical College & Hospital, Dibrugarh	300.00	1.075
2.	Tripura	Kherengbar Hospital Khumulwung	RMRC, Dibrugarh	Agartala Government Medical College	407.5	0.00

(4) Scheme for Human Resources Development for Health Research:

Rs.in lakhs

Name of the State	2013-14 to 2015-16	2016-17	2017-18 (upto December, 2017)
Manipur (2 fellowships)			
Assam(5 fellowships)			
Nagaland (4 fellowships)			
Tripura (1 fellowship)	78.56	101.64	-

(5) Grant-in-aid Scheme for Inter-Sectoral Convergence & Coordination for Promotion and Guidance on Health Research:**Implementation of the scheme in NE States:***Rs.in lakhs*

Name of the State	2013-14 to 2015-16	2016-17	2017-18 (upto December, 2017)
Meghalaya (one project)	26.86	12.94	
-			
Assam (one project)	-	37.17	-
Grand Total	26.86	50.12	-

BHOPAL MEMORIAL HOSPITAL & RESEARCH CENTRE (BMHRC), BHOPAL

10.1 Bhopal Memorial Hospital & Research Centre (BMHRC) was set up in 1998 under the Bhopal Memorial Hospital Trust (BMHT) as per directions of the Supreme Court with a mission to provide free health care to the victims of Bhopal gas tragedy, a MIC gas leak incident in Bhopal, which is considered as the world's worst industrial disaster that occurred on the night of 2-3 December 1984.

10.2 The Supreme Court vide its Order dated 19.07.2010 directed winding up of the Trust and taking over of the Hospital by the Govt. of India for running it through the Department of Biotechnology and Department of Atomic Energy. Subsequently, the Union Cabinet in its meeting held on 4th January, 2012 decided transfer of administrative control of BMHRC to the Department of Health Research, Ministry of Health & Family Welfare.

10.3 BMHRC, is a 350-bedded super specialty hospital set up with the objectives

- To provide state-of-the-art super-specialty medical facilities to all registered gas victims and their entitled dependents.
- To carry out basic, clinical and epidemiological research in all disciplines in the hospital.
- To determine long-term effects of Methyl Isocyanate (MIC) on human tissue and to plan treatment modalities based on the findings.
- To utilize the existing infrastructure to train doctors, nurses and paramedical personnel.

10.4 With a mission to carry out research on long-term effects of MIC in the surviving population of the Bhopal gas tragedy and other medical conditions

a Research Department with ultra-modern laboratories and equipment was established in January 2004. In-utero exposure to MIC and its possible implications in the immune system and toxico-genomic consequences following exposure in the survivors of the tragedy are the two major research objectives of the Department.

10.5 From the year 2000 (clinical services started on 1st July) till the current year lakhs of the patients have been treated at the main hospital and the eight mini units (providing primary health care at the doorstep). The patients are referred to the main hospital through the medical outreach primary health care programme (health care delivery at the door step) of the eight Health Centres which are situated at various methyl-iso-cyanate (MIC) gas affected areas of Bhopal at Kainchi Chola, Station Bajaria, Chandbad, Teela Jamalpura, Ginouri, Jahangirabad, Karond and Bal Vihar. The Health Centres are well equipped to provide emergency care and preventive, curative, restorative, rehabilitative treatment. These Centres provide basic investigations including haematological and biochemical tests, along with plain X-rays and ECGs. Medicines are dispensed at the Health Centres to both new and follow up patients. The Health Centres have a team of specialists in internal medicine, ophthalmology, general physicians, pathology / X-ray technicians, optometrist, pharmacists and nurses.

PATIENT CARE

- A total of 386332 Gas Victim Patients and 39946 Gas Victim Dependent (Children) have been registered in the hospital till 31 December 2017.

- The total number of patients treated in the hospital OPD from 01 January to 31 December 2017 is 213709. The number of patients admitted at the hospital from 01 January to 31 December 2017 is 8826.
- A total of 408174 gas victim patient visits and 16778 gas victim dependent visits were recorded in the Health Centres of BMHRC, Bhopal from 01 January to 31 December 2017. A total of 8334 patients were referred by the Health Centres to the Main Hospital for further treatment during the year 2017.

10.6 ACADEMICS

Nursing College

Bhopal Nursing College is running Post Basic B.Sc Nursing (since November 2004) and General Nursing & Midwifery (from 1st July 2011), B.Sc. Nursing (40 seats), M.Sc. Nursing (5 seats, 3-OBG & 2-MSN) since the academic year 2016-17. The College is recognized by Indian Nursing Council, MP State Nursing Council, and affiliated to MP Medical Science University Jabalpur.

Details of Courses offered at Bhopal Nursing College

Course	Year	No of students/Batch
M.Sc. Nursing	1st year 2016-17	2
B.Sc. Nursing	1st year 2016-17	33
PBBS Sc Nursing	1st year 2016-17	34
	1st year 2nd year 2016-17	34
GNM	Internship 2016-17	45
	3rd year 2016-17	49

Para Medical Institute

Paramedical Institute was established in August, 2004. It is recognised vide M.P. State Paramedical Council, Ministry of Health Education, Govt. of M.P. Education Department and affiliated to Medical University, Jabalpur.

Current Status of the Students in Para Medical Institute of BMHRC, Bhopal is as follows :

Ist Year students 2017-18 : 66

IIInd Year students 2016-17 : 55

Other Training / Internship / Dissertation / DNB Programme etc.

Following are the details of the Training / Internship / Dissertation / DNB Programme Conducted during the period 1st January 2017 to 31st December 2017

S. No.	Training Done in the Departments of BMHRC	Type of Training
1	DNB Course in the Department of Anaesthesiology	DNB (Post MBBS) course - 3 years DNB (Post Diploma) course - 2 years
2	Psychiatry	Clinical Training / 15 days Training in Mental Health for Medical Officers of state of Madhya Pradesh/Internship
3	Physiotherapy	6 months Internship/ 5 months training / one or two months
4	Medicine and Surgical Wards of BMHRC	Clinical training to the students in general medicine and surgical wards of BMHRC
5	Hospital Administration Training	One month Observation training program / Summer Internship training in hospital administration
6	Nursing	Six months Internship in Dietetics Mental Health Nursing/ Medical Surgical Nursing
7	Stores	Training in Hospital Pharmacy
8	Microbiology / Transfusion Medicine / Pathology/Research	6 months Dissertation programme

10.7 Research

Several Projects on different disciplines / issues were undertaken in BMHRC, Bhopal that were approved by the Intuitional Ethics Committee (IEC) of BMHRC, Bhopal. Following are the IEC approved Research Projects in BMHRC, Bhopal in the year 2017:

S.No	Title of Research Project
1.	Antimicrobial profile of frequently isolated Gram-negative organisms: A retrospective study from a tertiary care hospital in Central India.
2.	Diagnosis of Tuberculous Meningitis by Cartridge Based Nucleic Acid Amplification Test: A retrospective study from a tertiary care hospital from Central India.
3.	Occurrence of HBV- HCV co-infection in a super specialty hospital in central India: A retrospective study.
4.	A study of Sero-Prevalance of Transfusion Transmitted Infections amongst blood donors and assessment of the need of Nucleic acid Testing (NAT) for enhancement of blood safety.
5.	To compare peripheral blood smear (microscopy), rapid diagnostic test, antigen based ELISA and PCR for detection of malaria in blood donors to prevent transfusion transmitted malaria.
6.	Paraoxonase-1 (PON-1) gene variants in chronic obstructive pulmonary disease: A case-control study.
7.	Development of a tool for the assessment of health literacy towards organ donation amongst adult population from Bhopal.

S.No	Title of Research Project
8.	Case control study for the assessment of tear film function and ocular surface disorder in 100 diabetic patients and compare it with age matched non diabetic patients attending MINI UNIT V BMHRC.
9.	Potential role of p53 expression,proliferation index and microvessel density in predicting clinicopathological behaviour in oral squamous cell carcinoma.
10.	A comparative analysis of clinical behaviour and histological features between intracranial hemangiopericytomas/SFT and meningiomas.
11.	Pilocytic and Pilomyxoid astrocytomas: A comprehensive study of clinical behavior and histomorphologic spectrum of the tumors.
12.	Cost Effectiveness Analysis of the Impact of Using CB NAAT for Diagnosis of DR-TB.
13.	Wnt gene polymorphism in HBsAg positive patients. A pilot study from a Tertiary care hospital.
14.	Molecular characterization of carbapenemase resistant Gram negative bacilli at a tertiary care hospital in Central India.
15.	Study of tear film status in patients undergoing Phacoemulsification surgery pre and post operatively.
16.	Synchronized targeting of multiple cellular cascades of solid tumors with a natural product & its site specific delivery –a new paradigm in phytotherapy.
17.	Deciphering the epigenetic signature of glioma: prognostic relevance in tumor recurrence.
18.	Establishment of Biodosimetry Laboratory at Department of Research, Bhopal Memorial Hospital and Research Centre (BMHRC), Bhopal and Networking with Biodosimetry Laboratory of Institute of Nuclear Medicine & Allied Sciences (DRDO), Delhi.
19.	Multi- centric validation of 'TB-Detect' and 'TB Concentration and Transport' kit and 'TB DNA extraction' kit for the diagnosis of TB and drug resistant TB.
20.	To study the Functional and Radiological Outcomes in Minimally Invasive Transforaminal Lumbar Interbody Fusion in a Tertiary Care centre: A retrospective analysis.
21.	To compare surgical outcome of different techniques of pterygium excision with conjunctival auto grafting.
22.	An audit on platelet utilization from a tertiary care hospital.
23.	A study to assess the effectiveness of yoga therapy on stress and depression among women undergoing infertility treatment in selected hospital of Bhopal, MP.
24.	A study to assess the quality of life among breast cancer female patients undergoing cancer treatment in selected cancer hospital of Bhopal.
25.	A comparative study of effect of dexmedetomidine and tramadol for post spinal anaesthesia shivering.
26.	A prospective observational study to compare the efficacy of bilateral transversus abdominis plane (tap) block versus traditional parenteral analgesia for post-operative pain management in laparoscopic cholecystectomy.
27.	Deciphering the Immuno – molecular signature of virus –host interplay in Hepatitis B: the clinical relevance.

Other Major Achievements:

(i) **Digitization of Patient Medical Records at BMHRC Health Centres:** Digitization of Patient Medical records at BMHRC Health Centres has been undertaken and as on date 12711 nos. of patient records are digitized.

(ii) **Up-gradation of Facilities/Infrastructure :** In Line with the recommendation of Infrastructure Committee meeting held at BMHRC on 31-08-2013 & 01-09-2013 under the Chair of Prof. N.K. Mehra (AIIMS, New Delhi), the Infrastructural development & up-gradation works are being undertaken through the Central Public Works Department. The works are in progress and would be completed soon. As per the recommendation of Infrastructure Committee following major additional Services are in the process of being upgraded / established.

- Community Ophthalmic Centre at Health Centre-5 (Ginnori).
- Women Health Centre at Health Centre-3 (Chandbarh).
- Geriatric Care Centre at Health Centre-2 (Station Bajarai).

(iii) **Swachhta Action Plan :** In line with implementation of Swachh Bharat Action Plan by BMHRC, it was resolved to promote Menstrual Hygiene Management (MHM) in identified five Govt. schools in nearby locations, with an aim to develop focused and systematic intervention to provide holistic support to adolescent girls and women.

In this regard, tender procedures for installation of Sanitary Napkin Dispenser & Incinerator at the specified schools are in progress.

(iv) **Provision of Handicapped Toilets :** For facilitating the persons with disabilities provision for a separate toilet with necessary arrangements for safety of handicapped persons (male/female) made at (Eye Block-2) of BMHRC Hospital Complex.

(v) **Implementation of Roof Top Solar (RTS) Project:** BMHRC has been identified for installation of Roof Top Solar panels with a output capacity of 1000 KW. In this regards feasibility study conducted by the agency & power purchase agreement would be signed shortly for initiation of installation works.

10.8 BE/RE 2017-18 and fund released upto December, 2017 and allocation under BE 2018-19 in respect of BMHRC are as follows:

Rs. in crores

Head of Account	BE 2017-18	RE 2017-18	Releases up to December, 2017	BE 2017-18
GIA- General	59.71	35.00	20.64	38.00
GIA-Creation of capital Assets	50.00	11.10	6.30	15.00
GIA-Salaries	78.29	78.29	54.00	87.00
Total Bhopal Memorial Hospital & Research Centre	188.00	124.39	80.94	140.00

INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR)

11

CHAPTER

10.1 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.

10.2 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.

10.3 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.

Intramural Research

10.4 Intramural research is carried out through a countrywide network 26 institutes/centres, 15

deal with communicable diseases; 6 with Non-Communicable Diseases, 1 deal with diseases related to Reproductive and Child Health (RCH); 1 deal with nutritional deficiencies and 3 deal with disease related to Basic Medical Sciences including hemoglobinopathies and traditional medicine.

Extramural Research

10.5 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 which emphasize a time-bound, goal-oriented approach with clearly defined targets, specific time frames, standardized and uniform methodologies, and often a multi-centric structure.

10.6 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:

- The India State-Level Disease Burden Initiative: The estimates of disease burden and risk factors from 1990 to 2016 for every state of India have been reported which would ensure a more nuanced health policy and system development in each state.
- TB Diagnostic Initiative: TruNAT Rif, an indigenous, cost effective, rapid molecular diagnostic kit for TB/MDR-TB has been developed in collaboration with ICMR, DBT and the industry. The feasibility study of TruNAT at 100 microscopy centres at 50 districts across 10 states has been completed.

It has been recommended for roll out under RNTCP at Primary Health Centres (DMCs) in a phased manner.

- ICMR has embarked upon exploring novel strategies for vector control. ICMR signed a MoU with Monash University for working on Wolbachia-based vector control strategy for Aedes mosquito.
- The revised National Ethical Guidelines for Biomedical and Health Research Involving Human Participants and National Ethical Guidelines for Biomedical Research Involving Children have been developed and released.
- Implementation of MIP Vaccine in leprosy contacts under Programme settings: Mycobacterium IndicusPranii (MIP), the world's 1st leprosy vaccine developed in India, is being piloted as preventive vaccine for contacts of patients in Gujarat and Bihar. Also, Nikusht, a real-time monitoring software developed by ICMR has been introduced into the National Leprosy Elimination Programme (NLEP).
- ICMR has launched three new diagnostic kits for the detection of Crimean-Congo haemorrhagic fever (CCHF) in Sheep and Goat, Crimean Congo haemorrhagic fever (CCHF) in Cattle, Japanese Encephalitis virus (JEV) from Mosquito.
- ICMR has signed an MoU with Federation of Indian Chambers of Commerce and Industry (FICCI) for commercialization of ICMR technologies under the program 'Health Technology Acceleration and Commercialization (HTAC).
- The Indian Council of Medical Research (ICMR) and the Department of Health and Family Welfare of the Ministry of Health and Family Welfare (MoHFW), GOI signed a Memorandum of Understanding (MoU) with the International Vaccine Institute (IVI), South Korea to collaborate on vaccine research and development.
- ICMR's flagship programmes on India TB Research Consortium, tribal health research, vector borne disease science forum and special programmes for medical colleges have made steady progress which led to the development of new research programmes on tuberculosis, malaria, nutrition etc.
- ICMR-INDIAB, an epidemiological study on diabetes: The study is a landmark study as this is the first representative study providing authentic epidemiological data on diabetes, prediabetes, hypertension, dyslipidemia and obesity from the various States of India. The ICMR-INDIAB study gains significance as it is collecting representative data from the various States and Union Territories in India. The study has been completed in 14 states and one UT and the data obtained has been shared with the State health departments. Data provide a snap shot of the existing burden of pre diabetes, diabetes, hypertension and obesity in the country.
- Post –Elimination Agenda for Kala Azar (SPEAK) India Consortium: ICMR in partnership with MoH & FW, NVBDCP, Drugs for Neglected Diseases Initiative (DNDi), London School of Hygiene and Tropical Medicine (LHSTM) and Bill & Mellinda Gates Foundation (BMGF) has set up the VL consortium, which aims to develop a forum for constructive discussion around the transmission dynamics of VL and brings together the scientific, logistic and practical expertise, and to define the gaps in our understanding that threaten sustained elimination to analyze the existing or new findings, develop protocols, methodologies and actions that can rapidly provide the missing information.
- National Cancer Registry Programme: Since 1982 providing systematic, continuous

data in cancer incidence, burden, mortality, trends, clinical care and survival through 30 Population Based Cancer Registries (PBCR) and 27 Hospital Based Cancer Registries (HBCR).

- Determined Nutritive Value of Indian Foods: The nutritive value of over 650 Indian foods was assessed and brought out as a publication "Nutritive Value of Indian Foods", which is one of the most widely used publications across all sectors.
- Preparedness of ICMR to handle Zika virus outbreak: ICMR-NIV established surveillance at 25 sites in the country for Zika testing. Repeated training and capacity building done for 25 labs + 11 IDSP labs. Four cases of Zika virus detected through ICMR's surveillance network (3 in Gujarat and 1 in Tamil Nadu). Entomological surveillance for ZV also established. Till date >50,000 human samples and >25,000 mosquito samples have been screened by ICMR network.
- National Anti-Microbial Resistance Surveillance Network (AMRSN) continued to enable compilation of National Data of AMR at different levels of Health Care. Pfizer one of the global leaders in anti-infectives and medical therapy is committed to combat AMR and has partnered with ICMR as part of its Corporate Social Responsibility (CSR) activity to achieve the unified goal of reducing AMR
- National Rotavirus surveillance network (NRSN) (2012-2016): The study carried out at 4 Major referral labs, 7 ICMR's Regional labs and 23 hospital sites to see the trend in burden of rotavirus diarrhoea as well as impact of Rotavirus vaccine under Universal Immunization Program (UIP). Rotavirus was detected in 36.3% of children with acute gastroenteritis enrolled in surveillance.
- Continued ongoing Molecular Medicine Centres, Advanced Centres of Research, Task Force Projects, in various research institutions, universities of the country in different Biomedical Subjects viz. Allergy, Anatomy, Anthropology, Biochemistry, Cellular and Molecular Biology, Genomics, Haematology, Human Genetics, Immunology, Nano-Medicine, Organ Transplantation, Pharmacology, Physiology, Stem Cell Research, Traditional Medicine, Toxicology etc. and validation of non-codified traditional formulations.
- Under Human Resource Development (HRD), ICMR selected 120 candidates for Junior Research Fellowship (JRF) through national level exam conducted in July 2017, 909 medical undergraduates were selected for short term studentship (STS), Post-doctoral Research Fellowship (PDF) was granted to 14 candidates and financial assistance was given to a total of 470 seminars/symposia/conferences. MD/Ph.D Programme is continuing in three universities and presently 98 students are engaged in this programme; seven students joined in three universities during 2017-18. A total of 327 non-ICMR scientists were given financial assistance to attend conferences abroad. ICMR institutes continued to provide training to various State level health officials.
- Under International Cooperation in Health Research, partnerships in Health Research (under 2 MoUs) with various international organizations/agencies was continued during the year. Total 42 exchange visits of Scientists were arranged for various international collaborative programmes/projects
- ICMR funded a total of 1213 extramural research projects including fellowships in various areas of health research during the year.

BE/RE 2017-18 and fund released upto December, 2017 and allocation under BE 2018-19 are as follows:

Rs. in crores

Head of Account	BE 2017-18	RE 2017-18	Releases upto December, 2017	BE 2017-18
GIA- General	550.00	653.60	353.75	770.00
GIA-Creation of capital Assets	200.00	290.00	150.00	200.00
GIA-Salaries	400.00	470.00	296.25	446.00
Total ICMR	1150.00	1413.60	800.00	1416.00

Annexure

BE/RE/ actual expenditure 2016-17 and BE/RE 2017-18 with actual expenditure upto December, 2017 and BE 2018-19 in respect of Demand No.43-Department of Health Research

(Rs. in crores)

S. No.	Scheme/ Programme	Budget Head	2016-17 (Plan+Non Plan)			2017-18			BE 2018-19
			BE	RE	Actual Expr.	BE	RE	Actual Expr. upto December, 2017	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Secretariat-Social Services	Secretariat-Social Services	10.80	10.80	9.15	12.00	15.40	7.90	34.00
2	Human Resource Development for Health Research	Advanced Training in research in medicine and health	13.00	13.00	15.38	20.00	26.00	13.82	30.00
		International cooperation in medical and health research	1.00	1.00	0.29	1.00	1.00	0.11	1.00
3	Grant-in-aid Scheme for inter-sectoral convergence & promotion and guidance on research governance issues	Inter-sectoral coordination in medical, biomedical and health research	14.25	14.25	15.99	20.00	30.00	16.63	35.00
		Promotion & guidance on research governance issues.	0.00	0.00	0.00	5.00	6.00	0.41	6.00

S. No.	Scheme/ Programme	Budget Head	2016-17 (Plan+Non Plan)			2017-18			BE 2018-19
			BE	RE	Actual Expr.	BE	RE	Actual Expr. upto December, 2017	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4	Managing epidemics and national calamities	Matters relating to epidemics, natural calamities and development of tools to prevent outbreaks	39.25	39.25	44.25	56.00	66.00	41.14	70.00
		Development of Tools to prevent Outbreaks of Epidemics	2.25	2.25	1.63	3.00	5.00	1.66	5.00
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.	24.25	24.25	24.25	36.00	45.00	27.32	50.00
		Establishment of Model Rural Health Research Units.	6.00	6.00	6.00	9.00	11.00	8.00	13.00
6	Indian Council of Medical Research (ICMR)		894.00	1094.00	1077.40	1150.00	1413.60	800.00	1416.00
7.	Bhopal Memorial Hospital & Research Centre, Bhopal		140.00	140.00	129.26	188.00	124.39	80.94	140.00
	Total		1144.80	1344.80	1323.60	1500.00	1743.39	997.93	1800.00

Figures include provision of Rs.75.00 crore in 2017-18 and Rs.100.00 crores in 2018-19 under NE component



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