

Chapter

5

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 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. The professionals and policy makers have a general view that modern methods of diagnosis and management cannot be practiced at peripheral level.

5.2 Medical doctors working in the State public health system do not get opportunity for orientation on modern advances in a regular fashion in their settings and therefore, are unable to utilize advances in medical science in their work. Because of this, transfer of technology to the end users becomes very difficult.

5.3 Further, wide variations exist in the pattern of diseases prevalent in different geographical areas, 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 finding/technology at the rural level has been found to be major lacuna in the provision of quality medical services to rural population.

5.4. To bridge the gap, Department of Health Research has rolled out a scheme for **'Establishment of 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 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 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).

5.5 The Model Rural Health Research Units being set up under the scheme would undertake following functions:

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

5.6. 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 the 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 XIIth Plan is Rs.67.66 crores.

FUNDING NORMS:

Rs.3.00 Crores per MRHRUs is provided for civil works/Equipment. Besides, recurring

expenditure of Rs.50 lakhs per annum is also provided 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

- 12 MRHRUs have already sanctioned and an amount of Rs.28.90 crores has been released during 2013-14 to 2015-16.
- Against the Provision Rs. 6.50 crores in 2016-17, grant of Rs. 2.41 crores has been released upto December, 2016.
- List of 12 approved MRHRUs sanctioned till 31-12-2016 is given in the table (9) below:

TABLE (9)

| S.No. | State | Location of MRHRU | ICMR mentor Institute/Centre | Linked Medical College |
|-------|------------------|--|------------------------------|--|
| 1. | Assam | PHC Chabua | RMRC, Dibrugarh | Assam Medical College & Hospital, Dibrugarh |
| 2. | Himachal Pradesh | CHC, Haroli | NJIL&OMD, Agra | Dr RPG Medical college, Tanda |
| 3. | Rajasthan | Bhanpur Kala, Government Health Clinic, Jaipur | DMRC, Jodhpur | SMS Medical College, Jaipur |
| 4. | Tamil Nadu | State Rural Health Centre at Tirunelveli | NIE, Chennai | Tirunelveli Medical College |
| 5. | Tripura | Kherengbar Hospital Khumulwung | RMRC, Dibrugarh | Agartala Government Medical College |
| 6. | Karnataka | PHC, Sirwar, ManviTaluk, Raichur | RMRC, Belgaum | Raichur Institute of Medical Sciences, Raichur |

| | | | | |
|-----|----------------|---|------------------|---|
| 7. | Punjab | CHC Bhunga (Hoshiarpur) | NIOP, New Delhi | Govt. Medical College, Amritsar |
| 8. | Maharashtra | Sub District hospital (SDH), Dahanu (Thane) | NIRRH, Mumbai | Grant's Medical College and JJ Group of Hospitals, Mumbai |
| 9. | Andhra Pradesh | Old RHTC Premises, Chandragiri (Dist. Chittoor) | NIN Hyderabad | S.V. Medical College, Tirupati |
| 10. | Odisha | Block, CHC, Tigiria | RMRC Bhubaneswar | S.C.B. Medical College, Cuttak |
| 11. | Madhya Pradesh | Datia | RMRCT, Jabalpur | G.R. Medical College, Gwalior |
| 12. | Chhattisgarh | PHC, Lakharam Block (Bilaspur) | RMRCT, Jabalpur | Chhattisgarh Institute of Medical Sciences, Bilaspur |

5.7 Proposals for establishment of MRHRU in West Bengal and Jharkhand have been approved and funds will be released in 2017-18.

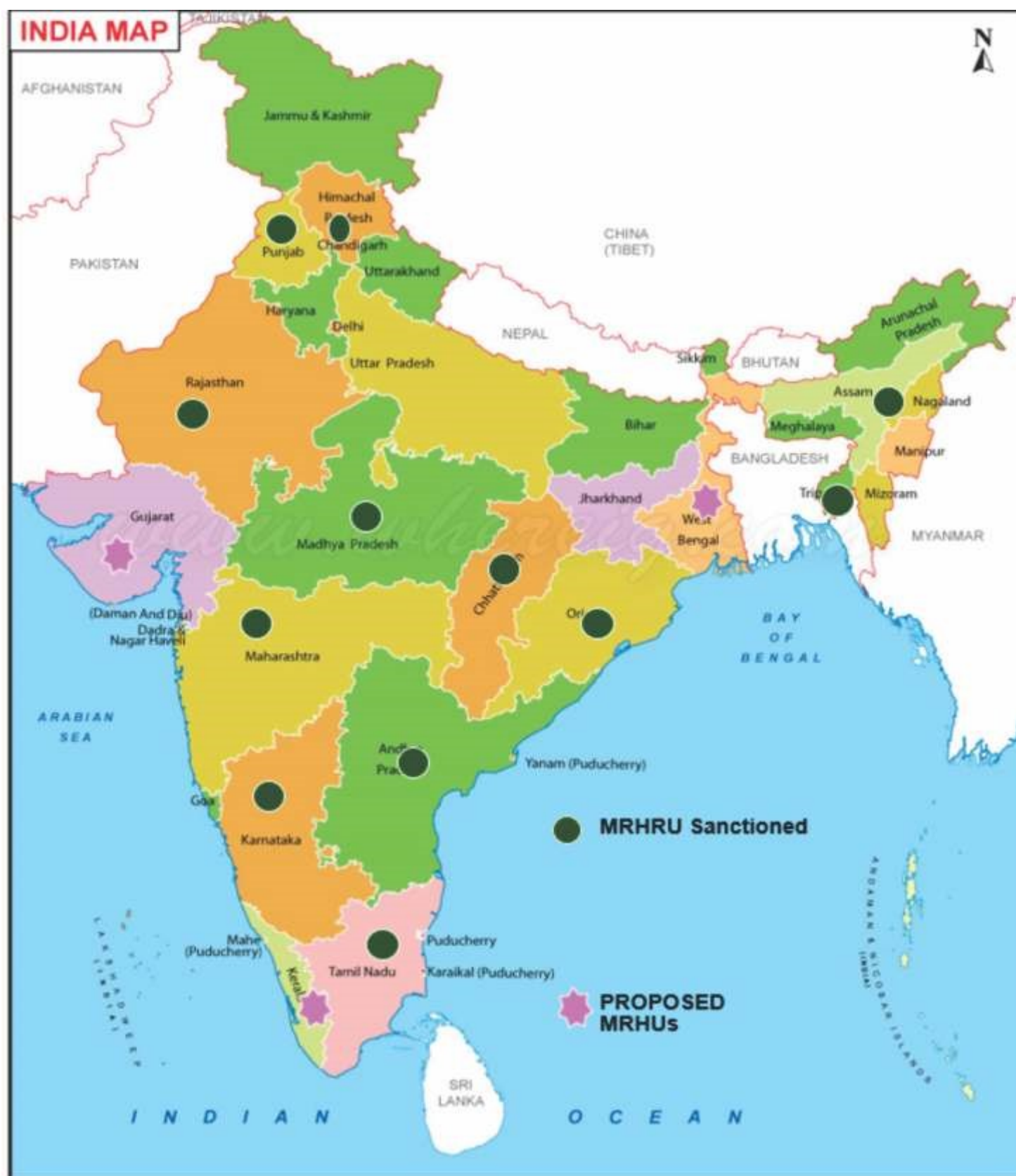
Initiation of research activities by the MRHRUs:

5.8 Necessary guidelines have been provided for composition of Local Research Advisory Committee (LRAC), and their Terms of Reference. Six MRHRUs have initiated research activities as per details given in Table (10) as below:

TABLE (10)

| Sr. 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 |

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





Building of Tamil Nadu MRHRU



Building of Rajasthan MRHRU

Chapter

6

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

6.1 The scheme launched during 2013-14 aims at providing support in the form of grant-in-aid for carrying out research studies to identify existing knowledge gap and to translate 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 better utilization of available knowledge. The Scheme has been approved by Cabinet Committee on Economic Affairs (CCEA) on 6th February, 2014 at a total estimated cost of Rs.1242 crores.

6.2. The Scheme has 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 287 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. 289.00 crores.

(2) Translational Research Projects

The objective of this component is to translate already identified leads into products and processes in areas of human healthcare, through coordination amongst agencies involved in basic, clinical and operational research for use in 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 No. of 115 projects with a duration of 1-4 years and cost range of Rs.3-10 crores can be funded with an estimated cost of Rs. 510 crores during the 12th Plan 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. 181 projects with a cost range of Rs. 50 lakh-10 crore and duration of 2-3 years per project can be funded under this component, at an estimated cost of Rs.298 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. 171 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 an estimated cost of Rs.136 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 medical colleges. Total estimated cost of this component is Rs.6.00 crores. **Table (11)**

STATUS OF IMPLEMENTATION:

TABLE (11)

| Year | No. of Projects Sanctioned | | Funds released (Rs. in Crore) |
|-------------------------------|----------------------------|---|----------------------------------|
| | New | Next instalment of already sanctioned projects | |
| 2013 -14 | 40 | | 4.95 |
| 2014 -15 | 100 | | 23.26 |
| 2015 -16 | 41 | 51 | 13.99 |
| 2016-17 (upto December, 2016) | 11 | 90 | 10.03 |
| Total | 192 | 141 | 52.23 |

Chapter

7

SCHEME FOR HUMAN RESOURCES DEVELOPMENT FOR HEALTH RESEARCH

7.1 The scheme for **Human Resource Development for Health Research (HRD)** is intended to create a pool of talented health research personnel in the country by upgrading skills of faculty of medical colleges, mid-career scientists, medical students etc by specialized training in priority areas of health research in leading National and International institutions. Financial assistance to institutions for upgradation of infrastructure to enable such institutions to provide training with state of art technologies and development and implementation of online web based courses on

health research is also an important component of the scheme. The scheme also has a separate component specifically for training of women scientists who have had a break in their career and for encouragement of Non-resident Indians (NRIs), Persons of Indian Origin (PIO) and Overseas Citizen of India (OCI) serving abroad in health research activities, to come back to India for undertaking research in identified areas.

7.2. Total approved cost of the scheme is Rs 597 crores for the 12th Plan period, involving award of 2585 fellowships and development of 1694 research projects by the trainees.

PRIORITY AREAS 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 | |

BENEFICIARIES:

- Regular employees of Govt. Medical colleges/ Institutions
- Private Institution/ NGOs (Registered with the DSIR, Govt. of India) as research

institutions.

- Individual scientists in regular employment in the Universities, medical colleges, postgraduate institutions, recognized research and development

laboratories and NGOs.

- Scientific/Professional Bodies & Associations.

COMPONENTS OF THE SCHEME:

(1) Support to Institutions for imparting training of the Fellows:

Support to 50 selected domestic institutions will be provided for training to candidates selected by the Department under this scheme in specially designed programmes/ identified priority areas. Such identified institutes will be given one time grant upto Rs. 50 lakh for gap filling/up gradation of facilities and up to Rs. 10 lakh per year for five years to meet the expenses on equipments, consumables, etc.

(2) Short Term Fellowships

- i. Short term training (1-3 months) in Indian institutions to researchers employed as regular faculty (not above the age of 55 years)
- ii. Short term fellowships for training abroad in identified areas (1-3 months) to persons employed as regular faculty (not above the age of 55 years).
- iii. Short term specialized training (1-3 months) to mid-career or senior level faculty of medical colleges working/involved with three other approved schemes of DHR.

(3) Long Term Fellowships

- i. Long term training fellowships (6 to 12 months) at Indian Institutions to persons employed as regular faculty, not above the age of 45 years.
- ii. Long term fellowships for training abroad in identified priority areas (6 to 12 months) to persons employed as regular faculty, not above the age of 45 years.
- iii. Long term training (6-12 months) to the faculties of medical colleges in Indian institutes (at least 2 persons per medical

college per year) working/involved with three other approved schemes of DHR.

(4) Fellowship programme specifically for women

This fellowship is for women candidates who have had a break in their career to bring them into the mainstream of health research.

(5) Fellowship programme for young scientists in newer areas

This programme aims to fulfill the objective of creation of inclination / attitude of research among young bright students from the medical colleges / universities.

(6) Start-up Grant for projects

Start-up grants, 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

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

- Online courses along with contact programmes in relevant institutions
- Online resource material for researchers
- Online mentoring for researchers
- Interactive forums and e groups for researchers

(8) Support to Scientific/ Professionals/ Association/Bodies

Support will be provided to Scientific /Professionals/ Associations/Bodies engaged in the field of medicine, surgery, microbiology, pathology etc. for undertaking various activities/ events to promote higher standards in medical/health research and for devising

guidelines for policy making and prevention and management of different diseases.

(9) Programme to encourage health research personnel [Non-resident Indians (NRIs), Persons of Indian Origin (PIOs), Overseas Citizens of India (OCI)] serving abroad, to come back to India for undertaking research in identified areas

This initiative aims to bring back and attract Indian scientists working abroad to pursue medical/health research in India. There is provision to support brilliant medical doctors/scientists of Indian origin from all over the world who wish to return to India, to take up research positions in ICMR or other medical college/institute of their choice to pursue their research objectives.

STATUS OF IMPLEMENTATION:

Year -2013-14:

(i) Fellowships: Table (12)

TABLE (12)

| 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 | 4.6 |
| | Administrative expenses | | 3.3 |
| Total | | 10 | 93.90 |

(ii) Support to Institutes:

TABLE (13)

| 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: (Table 14)

TABLE (14)

| Type of Fellowships | No. of fellows | Sanctioned Amount (Rs in lakhs) |
|---|----------------|------------------------------------|
| Short Term Fellowships in Foreign Institutes | 17 | 126 |
| Long Term Fellowships in Foreign Institutes | 8 | 155 |
| Long Term Fellowships in Indian Institutes | 1 | 1.90 |
| Short Term Fellowships in Indian Institutes | 4 | 6.2 |
| Support to scientific/professional association/bodies | 1 | 1.00 |
| Start-up grants | 6 | 67.5 |
| Administrative expenses | | 20 |
| Total amount sanctioned | 37 | 377.60 |

(ii) Support to 5 Institutes: Table (15)

TABLE (15)

| | Name of the Institute | Area | Sanctioned Amount (Rs in lakhs) |
|-------------------------|---|-------------------------------------|------------------------------------|
| 1 | National Institute of Virology, Pune | Modern Biology | 10.0 |
| 2 | National Institute for Research in Reproductive Health, Mumbai | Genetics | 10.0 |
| 3 | All India Institute of Medical Sciences, New Delhi | Operational Research | 16.0 |
| 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: (Table 16)

TABLE (16)

| Type of Fellowships | No. of fellows | Sanctioned Amount (Rs in lakhs) |
|--|----------------|------------------------------------|
| Long Term Fellowships in Foreign Institutes | 9 | 169 |
| Long Term Fellowships in Indian Institutes | 3 | 11.6 |
| Short Term Fellowships in Foreign Institutes | 9 | 63.60 |
| Short Term Fellowships in Indian Institutes | 5 | 8.2 |
| 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 | 112.2 |
| Total | 62 | 731.32 |

(ii) Support to 5 Institutes: Table (17)

TABLE (17)

| | Name of the Institute | Area | Sanctioned 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 | 8.6 |

| | | | |
|---|--|------------------------------|--------|
| 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: (Table 18)

TABLE (18)

| | Fellowship | Nos. | Sanctioned Amount (Rs.) |
|-------------------------|--------------------------------------|------|-------------------------|
| 1. | Long Term Foreign | 7 | 18230000 |
| 2. | Long Term Indian | 2 | 620000 |
| 3. | Short Term Foreign | 6 | 3884000 |
| 4. | Short Term Indian | 1 | 180000 |
| 5. | Women with break | 12 | 15703496 |
| 6. | Young Scientist | 10 | 14099500 |
| 7. | NRI/PIO/OCI | - | - |
| 8. | Support to Conference | 1 | 100000 |
| 9. | Start-up Grant | 11 | 15474467 |
| 10 | 2 nd grant for fellowship | 19 | 22393178 |
| Total Amount Sanctioned | | | 9,06,84,641 |

(ii) Support to 5 Institutes: Table (19)

TABLE (19)

| | Name of Institute | Area | Sanctioned Amount |
|-------------------------|--|------------------------------------|-------------------|
| 1. | Govt. Theni Medical College, Theni, Tamilnadu | Virology | 5583889 |
| 2. | Ganga Hospital, Coimbatore | Spinal Cord Injury | 6000000 |
| 3. | Moving academy of Medicine and Biomedicine, gurgaon | Clinical laboratory practice | 4494417 |
| 4. | 2 nd year grant to support 8 institutes | | 6475890 |
| Total Amount Sanctioned | | | 2,25,54,196 |

The total grant allocated for the year 2016-17 is Rs.13.00 crores. Utilization upto December, 2016 is Rs.9.15 crores.

Chapter 8

IMPLEMENTATION OF THE SCHEMES IN THE NORTH EASTERN REGION

1.1 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 Natural Calamities.
- 2) Establishment of Multi-disciplinary Research Units (MRUs) in Govt. Medical Colleges
- 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

1.2 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.

1.3 The Virology Research & Diagnostic Labs (VRDLs) have been approved in the following institutions under the scheme: Table (20)

TABLE (20)

| S.No. | Name of the State | Name of the medical college sanctioned the VRDL | Funds released (Rs. in lakhs) | |
|-------|-------------------|---|---|-------------------------------|
| | | | 2013-14 to 2015-16 | 2016-17 (upto December, 2016) |
| 1 | Assam | Regional Medical Research Centre (RMRC), ICMR, Dibrugarh (Regional Lab) | 631.00 | - |
| | | Guwahati Medical College, Guwahati (State level lab) | 297.00 | - |
| | | Tezpur Medical College & Hospital, in Tezpur District-Sonitpur (Medical College Level Lab) | 167.10 | - |
| | | Jorhat Medical College & Hospital, District - Jorhat (Medical College Level Lab) | 173.90 | - |
| | | Fakhruddin Ali Ahmed Medical College & Hospital, District-Barpeta Medical College Level | Funds will be released after completion of certain codal formalities. | |
| | | Silchar Medical College, Silchar (Medical College level lab) | | |

| | | | | |
|----|-----------|---|--------|---------------------------|
| 2. | Manipur | Regional Institute of Medical Sciences, Imphal (State level lab) | | 196.37 (Under Process) |
| | | JawaharLal Nehru Institute of Medical Sciences, Imphal (Medical College level lab) | 157.00 | 30.00 (Under Process) |
| 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 (Under Process) |

(2) Multidisciplinary Research Units (MRUs) in Govt. Medical Colleges: Table (21)

TABLE (21)

| S.No. | Name of the State | Name of the medical college sanctioned the MRU | Funds released (Rs. in lakhs) | |
|-------|-------------------|--|------------------------------------|--|
| | | | 2013-14 2014-2015 & 2015 -16 | 2016-17 (upto December, 2016) |
| 1 | Assam | Silcher Medical College and Hospital, Silcher | 125.00 | - |
| | | Fakhruddin Ali Ahmed Medical College, Barpeta | 125.00 | - |
| 2. | Manipur | Regional Institute of Medical Sciences, Imphal | 250.00 | - |
| 3. | Tripura | Agartala Govt. Medical College, Agartala | 125.00 | - |

1.4 There are 10 medical colleges in the NE States. Efforts will be made to cover few more medical colleges under the scheme during the 12th Plan period.

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

1.5 MRHRUs have been sanctioned in the following NE States: Table (22)

TABLE (22)

| S. No. | State | Location of MRHRU | ICMR mentor Institute/ Centre | Linked Medical College | Funds released (Rs. in lakhs) | |
|--------|---------|--------------------------------|-------------------------------|---|-----------------------------------|----------------------------------|
| | | | | | 2013-14 2014-2015 & 2015-16 | 2016-17 (upto December, 2016) |
| 1 | Assam | PHC Chabua | RMRC, Dibrugarh | Assam Medical College & Hospital, Dibrugarh | 250.00 | 40.57 |
| 2. | Tripura | Kherengbar Hospital Khumulwung | RMRC, Dibrugarh | Agartala Government Medical College | 300.00 | 0.00 |

(4) SCHEME FOR HUMAN RESOURCES DEVELOPMENT FOR HEALTH RESEARCH: Table (23)

TABLE (23)

| Name of the State | Rs. in lakhs | |
|--------------------------|--------------------|----------------------------------|
| | 2013-14 to 2015-16 | 2016-17 (upto December, 2016) |
| Manipur (2 fellowships) | 78.56 | 10.86 |
| Assam (5 fellowships) | | |
| Nagaland (4 fellowships) | | |
| Tripura (1 fellowship) | | |

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

Implementation of the scheme in NE States: Table (24)

TABLE (24)

Rs.in lakhs

| Name of the State | 2013-14 to 2015-16 | 2016-17 (upto Dec,2016) |
|--------------------------|---------------------------|--------------------------------|
| Meghalaya (one project) | 26.86 | - |
| Assam (one project) | - | 37.17 |

Chapter 9

BHOPAL MEMORIAL HOSPITAL & RESEARCH CENTRE (BMHRC), BHOPAL

9.1 Bhopal Memorial Hospital & Research Centre (BMHRC) was set up in 1998 under the Bhopal Memorial Hospital Trust (BMHT) as per directions of Hon'ble 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.

9.2 The Supreme Court vide its Order dated 19.7.2010 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.

9.3 BMHRC, is a 350-bedded super specialty hospital set up with following 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.

9.4 The Hospital and its attached academic

institutions have well equipped eight health centers.

9.5 The major achievements in 2016 are:

Patient Care

- A total of 387730 people affected by the gas tragedy and 31091 dependents have been registered in the hospital till November 2016.
- The total number of patients treated in the hospital OPD from January to November 2016 is **204439**. The number of patients admitted at the hospital in the above mentioned period is **10380**.

Academic

- DNB course in Anesthesiology and Critical care is successfully being conducted at BMHRC and four students have appeared for the examination this year.
- Teaching and Academic programs are a regular activity at BMHRC. In the year 2016 B Sc Nursing and M Sc Nursing programs were initiated successfully at Bhopal Nursing College for the academic year 2016 to 2017, affiliated to the MP Medical Science University, Jabalpur.
- The students of both 1st year and 2nd year Post Basic BSc Nursing achieved 100% results in the year 2016. All first ten positions for the same were got by students of Bhopal Nursing College, BMHRC.
- Besides this, many short term training

and internship programs were conducted during the year for students of various disciplines at BMHRC e.g. Pathology, Microbiology, Physiotherapy, Nursing, Hospital Management, Dietetics, Psychiatry and Mental Health, Research etc. Nursing and MBBS students of AIIMS, Bhopal were posted for clinical posting in Psychiatry to BMHRC.

- At the department of Psychiatry, training in Mental Health of Medical Officers and Staff Nurses from various districts of Madhya Pradesh was provided for District Mental Health Program in coordination with the Nation Rural Health Mission.

Research

- In the year 2016 ten students underwent short-term instrumentation training program, two students underwent five months training in research, five students underwent summer training at the department. A National symposium cum workshop was organized on the theme, 'Disease versus Diagnostics-Molecular Cytogenetics', which was attended by 41 people.
- Nine members of this department qualified the on-line NleCer on Health Research Fundamentals conducted by NIE, ICMR, in the elite category.

- There have been many paper presentations at various national conferences by various faculty members at the hospital as well as publications.

Up-gradation of Facilities/Infrastructure

For further improvement of clinical services provided by BMHRC, procurement of new equipment to replace old non-functioning equipment is underway and orders for following equipment have been placed and installation is under process.

- i. Haemodialysis Machine
- ii. Digital Subtraction Angiography
- iii. Four Anaesthesia Workstations
- iv. Continuous Renal Replacement Therapy Machine

Procurement of further nineteen different equipment is in the pipeline.

Bio-safety level three laboratory was established in the Department of Microbiology. The Department of Microbiology has been designated as National Reference Laboratory for Tuberculosis.

To convert BMHRC website into a dynamic website and to update it accordingly has been processed and up gradation is underway.

Budget allocation (2016-17) and fund released till date are as under: Table (25)

TABLE (25)

| Budget Head | Rs. in Crs | |
|--------------------------------------|---------------------------|---------------|
| | Revised Budget Allocation | Fund Released |
| Grant-in-Aid: Salary | 70.00 | 53.55 |
| Grant-in-Aid: General | 30.00 | 25.00 |
| Grant for creation of Capital Assets | 40.00 | 21.61 |
| Total | 140.00 | 100.16 |



Bhopal Memorial Hospital and Research Centre (BMHRC)



Interior of Bhopal Memorial Hospital and Research Centre (BMHRC)



Advanced Surgical facility at Bhopal Memorial Hospital and Research Centre (BMHRC)

Chapter

10

INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR)

10.1 Indian Council of Medical Research (ICMR), New Delhi, is the apex body in India for formulation, coordination and promotion of biomedical research. It 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 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 to reduce 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 of 31 institutes/centres, out of which 17 deal with communicable diseases; 6 with Non-Communicable Diseases, 2 deal with diseases related to Reproductive and Child Health (RCH); 3 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:

- Insecticide impregnated papers for supply to NVBDCP has been successfully prepared by VCRC, Pudducherry. These papers are under process for third party validation.
- ICMR has embarked upon exploring novel strategies for vector control. ICMR is in the process of signing a MoU with Monash

University for working on Wolbachia-based vector control strategy for Aedes mosquito.

- The Guidelines on diagnoses and management of Rickettsial infections are formulated and have been put on ICMR Website
- 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.
- Studies were initiated under medical innovation scheme to promote new idea proposals likely to have translational value .
- The guidelines on the anti-tubercular drug management and prevention of ADRs were prepared under Clinical pharmacology programme and released on World TB Day.
- ICMR's flagship programmes on tribal health research, vector borne disease science forum and special programmes for medical colleges have made steady progress which led to development of new research programmes on tuberculosis, malaria, nutrition etc.
- New field station of NIRTH established at Keylong in Lahul and Spiti area of HP to work on the health problems of tribals and Satellite Centre of NIIH at Chandarpur, Maharashtra in the area of sickle cell anemia and G6PD started functioning.
- During the year, new infections/outbreaks like Nipah Virus, CCHF, ZIKA etc were successfully investigated.
- Preparedness for new emerging infections like Ebola and Zika Virus.
- Translational programme is focusing on leads emerged from the research for further development, testing and validation. ICMR has developed a micronutrient mix as well developed a mobile App on Recommended dietary allowances for helping in prevention of malnutrition.
- ICMR has initiated action to set up an India TB Research Consortium to work together for finding better solutions for TB control.
- An MoU has been signed with Sun Pharma for malaria elimination in MP in PPP mode.
- **The Mycobacterium Indicus Pranii (MIP) vaccine is now being taken up by National Leprosy Eradication Programme (NLEP) under Implementation Research (IR) mode.** Surveillance network such as Antimicrobial surveillance network and rotavirus surveillance network help in tracking the resistance and roll out new vaccine for its efficacy.
- Under Human Resource Development (HRD), ICMR selected 150 JRF through National level exam, 1032 medical undergraduates were selected for short term studentship (STS), Post-Doctoral Fellowship (PDF) was granted to 16 candidates and financial assistance was given to total 245 seminar/symposia/conferences and foreign travel assistance was given to 121 applicants. MD/Ph.D. Programme is continuing in 3 universities and 14 students are engaged. More than 500 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 three MoUs with various international organizations/agencies were continued during the year. Seven exchange visits of Scientists were arranged for various international collaborative programmes/projects. For International

Research Co-operation - 105 projects were approved in Health Ministry's Screening Committee meetings held during the year. Total 12 Junior Scientist and 6 Senior Scientists were selected for ICMR International Fellowship during 2016-17.

- ICMR scientists published a total of 720 research papers in various National and International journals. A total of 12 patents were filed and one granted.
- ICMR funded a total of 466 extramural research projects including fellowships in various areas of Health Research during the year.

Technologies transferred to Industry

1. Development of IgG (Immunoglobulin G) Assay for detection of anti Crimean-Congo Hemorrhagic Fever Virus (CCHFV) antibodies in Sheep and Goat - Technology transferred to M/s Cadila Healthcare Pvt. Ltd, Ahmedabad.
2. Development of IgM assay for detection of anti Kyasanur Forest Disease Viruses (KFDV) antibodies - Technology transferred to M/s Cadila Healthcare Pvt. Ltd, Ahmedabad.
3. Development of IgG assay for detection of anti Crimean-Congo Hemorrhagic Fever Virus (CCHFV) antibodies in Bovine - Technology transferred to M/s Cadila Healthcare Pvt. Ltd, Ahmedabad.
4. Development of IgM assay for detection of anti Chandipura Virus (CHPV) antibodies - Technology transferred to M/s Cadila Healthcare Pvt. Ltd, Ahmedabad.
5. Detection of Japanese encephalitis virus from mosquito using MAb based antigen capture ELISA. - Technology transferred to M/s Cadila Healthcare Pvt. Ltd, Ahmedabad.
6. Use of IgY antibodies against rotavirus

infection. in children and Poultry - Technology transferred to Venky's (India) Ltd, Pune.

7. Nylon knitted seamless gloves for tobacco Harvesters - Bureau of Indian Standard (BIS), New Delhi has finalized the 'National Standard' for these gloves and allotted an IS No. 16390:2015 and its Specifications have been gazetted for public use w.e.f 6th November, 2015. The technology was released on 29th January, 2016 by Shri Santosh Kumar Gangwar, Hon'ble Minister of State for Textiles (Independent Charge), Govt. of India in an event on 'Curtain Raiser of Technotex 2016' organized by the Ministry of Textiles, Govt. of India and FICCI.

Technologies in the pipeline

1. Multiplex RT-PCR for Dengue and Chikungunya
2. ELISA for Rotavirus
3. Development of Anti-KFD IgG ELISA for Kyasanur Forest Disease.
4. Development of Anti-CCHF Human IgG ELISA assay
5. Development of Anti-CCHF Human IgM ELISA assay
6. Kyasanur Forest Disease (KFD) Real time RT-PCR
7. Technology for drinking water testing for enteric viruses
8. Development of recombinant vaccine for Hepatitis E vaccine and combination of E & B vaccines using a novel approach
9. Development of Kyasanur Forest Disease (KFD) nested RT-PCR
10. Development of a quadruplex PCR to identify different sero-groups of *V. cholerae*

| Annexure | | | | | | | | | | |
|--|---|---|---------|-------|-------|--|----------|-------|--|-------|
| BE/RE 2016-17 and actual expenditure upto December 2016 and BE 2017-18(Rs. in crores) | | | | | | | | | | |
| S. No. | Scheme/ Programme | Budget Head | 2016-17 | | | | 2016-17 | | | |
| | | | PLAN | | | Actual expr. upto December 2016 | NON PLAN | | | BE |
| | | | BE | RE | BE | | BE | RE | Actual expr. upto December 2016 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1 | Secretariat-Social Services | Secretariat-Social Services | 0.00 | 0.00 | 0.00 | 0.00 | 10.80 | 10.80 | 5.38 | 12.00 |
| 2 | Human Resource Development for Health Research | Advanced Training in research in medicine and health International cooperation in medical and health research | 11.75 | 11.75 | 9.15 | - | - | - | - | 18.00 |
| 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 Promotion & guidance on research governance issues. Matters relating to scientific societies and associations, charitable and religious endowments | 12.75 | 12.75 | 10.04 | - | - | - | - | 18.00 |
| | | | 0.00 | 0.00 | 0.00 | - | - | - | - | 5.00 |
| | | | 0.00 | 0.00 | 0.00 | - | - | - | - | - |

| | | | | | | | | | | | | | |
|----|--|--|---------------|---------------|---------------|--|--|---------------|---------------|---------------|--|--|----------------|
| | | in medicine and health research. | | | | | | | | | | | |
| | | Coordination with Governments/organizations | 0.00 | 0.00 | 0.00 | | | - | | | | | - |
| 4 | Managing epidemics and national calamities | Matters relating to epidemics, natural calamities and development of tools to prevent outbreaks | 37.25 | 37.25 | 33.93 | | | - | | | | | 53.00 |
| 5 | Development of infrastructure for promotion of health research | Promotion, coordination and development of basic, applied and clinical research-Multi-disciplinary Research Units (MRUs) | 21.75 | 21.75 | 20.51 | | | - | | | | | 32.00 |
| | | Establishment of Model Rural Health Research Units. | 5.50 | 5.50 | 2.41 | | | - | | | | | 8.00 |
| 6 | Indian Council of Medical Research (ICMR) | | 545.00 | 745.00 | 430.65 | | | 284.00 | 284.00 | 200.25 | | | 1090.00 |
| 7. | Bhopal Memorial Hospital & Research Centre, Bhopal | | 40.00 | 40.00 | 21.61 | | | 100.00 | 100.00 | 78.55 | | | 188.00 |
| 7 | *Provisions for Projects/Schemes of North East areas. | | 75.00 | 75.00 | - | | | - | - | - | | | 75.00 |
| | Total | | 750.00 | 950.00 | 528.48 | | | 394.80 | 394.80 | 284.18 | | | 1500.00 |



DEPARTMENT OF HEALTH RESEARCH

Ministry of Health & Family Welfare
Government of India
New Delhi