SHARE

Annual Report 2018-2019

SHARE INDIA RESEARCH OFFICE,
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SHARE INDIA

Annual Report 2018-2019

About SHARE INDIA

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Indian-American professionals from various medical and non-medical disciplines, all of whom obtained their education from undivided Andhra Pradesh, started a not for profit society 'Science Health Allied Research Education' (SHARE) in USA in 1981. To support causes for health in India and for the purpose of giving back to the mother country, two not for profit societies SHARE INDIA (1986) and SHARE Medical Care (1987) were formed.

SHARE INDIA is a research society and recognised as a Scientific and Industrial Research Organisation (SIRO) by Ministry of Science and Technology, Government of India.

SHARE INDIA relies mostly on voluntary contributions for its funding. Its principal donors are NRI's, private sector and individual philanthropists. Donations are tax-exempt under section 35(1) (ii) of the Income Tax Act.

SHARE is a brainchild of Dr. P.S. Reddy, Professor of Medicine, at University of Pittsburgh, who is also the chairman of SHARE INDIA. He devotes half his time to work in India to translate NRI's dreams into reality. Along with US Centres for Disease Control and Prevention (CDC) funded, technical assistance projects to the government, a variety of community based research projects like REACH, LIFE, MILES, TETRA, HELP, CSSI and more are in effect that are completely funded by generous donors. SHARE INDIA brought significant improvements in the areas of pre-natal and post-natal care, TB, pregnancy, birth control, awareness and prevention of HIV, infant care, infant mortality rate and maternal mortality rate, immunization etc.

Vision

Strive to create healthy population by innovation and increasing, imparting and applying knowledge.

Mission

- Creating research culture in medical colleges of India and promoting global health.
- Adapting health care delivery through information technology; innovating new models of effective health care delivery at low costs; taking healthcare to doorsteps.
- Developing devices to make them available at affordable costs.
- Sowing seeds for personalized and precision medicine.
- Challenging old concepts and finding contextually relevant evidence based truths in medicine.
- Collaborating with other institutions and professionals to foster research, innovation and education/training in health sciences.

Objective

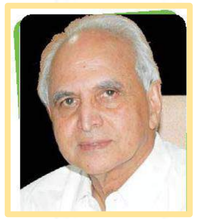
To provide comprehensive, effective, affordable health care to people and build capacity for innovation/research to address health care challenges of today and the future.

Philosophy of SHARE

Nature has created a divided world of those who have the capacity to give and those who have the need to receive. We are the lucky few who are blessed with the capacity to give rather than receive. Let us thank God for giving the capacity and opportunity to give by giving.

Contents

Chairman's Message



Dr. P.S. Reddy

The primary aim of SHARE INDIA has been to create, cultivate and nourish an environment conducive for high quality research. We foster research culture by creating an ecosystem to catalyze the conversion of innovative ideas into promising solutions to address contemporary healthcare challenges. Enriching this culture and sustaining it in future is what we strive for as we move forward.

One of our main objectives is to perpetuate research by training new researchers recurrently to create research environment in *M*edical Colleges of India.In this regard we have been training faculty at *M*ediciti Institute of *M*edical Sciences, Ghanpur village with hands-on experience. Endeavours to promote and maintain excellence in research have been accelerated by collaborations with leading research organisation and universities across the world, notably from the USA.

Over the past two decades, University of Pittsburgh has been a constant companion in training and mentoring our staff and creating opportunities for world class research at SHARE INDIA. Several of our staff have been trained as part of this initiative and have gained proficiency to do high quality research independently. TETRA (Technology Enabled Community Health Workers Extending Telemedicine to Rural homes at Affordable costs) is one such example. It was initiated in 2014 by Fogarty grant awarded to University of Pittsburgh and SHARE INDIA and its continuity beyond the grant period has produced results as exemplified by the recent publication in prestigious PLOS One journal. The article also received wide attention in leading Indian print and electronic media, including the official newsletter of Department of Science and Technology, Government of India, an achievement in itself. The main motto of TETRA is to provide basic health services to the population at the doorstep using technology that saves cost, increases co*v*erage and also produces a wealth of data towards precision and personalised medicine. Lessons from TETRA are very encouraging and its scope is amenable to designing a comprehensive mHealth / telemedicine implementation project beyond few diseases that addresses the health for all strategy.

Other initiatives like the Indo-American Artificial Heart program which is a joint initiative of a team of engineers and doctors from India and the USA has taken up speed. Our Indian collaborators have extended beyond six educational institutes and three industry partners. Four institutions from United States are providing mentorship and nurturing indigenous development of this technology. This year, the project developed the first generation impellor and tests for hemolysis thereby creating a fresh *wav*e of talent from different streams of science coming together to co-develop and collaborate on one goal.

It is also heartening to see several research projects continue with increased interactions of collaborators and mentors. The results of the same will bear fruit in the near future.

We are very thankful and grateful to the donors from USA and India for investing in us. We could not have accomplished the goals without their support, enthusiasm and encouragement.

Recipients of the Sheth Distinguished Faculty Award for International Achievement

L to R : 1. Dr. P.S. Reddy, Professor of Medicine, University of Pittsburgh and Chairman, SHARE INDIA. **2. Dr. Mark A. Nordenberg,** Emeritus Chancellor, University of Pittsburgh.

L to R : 1. Mrs. Madhuri Sheth, 2. Dr. Tushar Singh, 3. Dr. P.S. Reddy, 4. Dr. Jagdish N. Sheth.

Team SHARE INDIA

Governing Council Members
Dr. P. S. Reddy, Chairman
Professor of Medicine, University of Pittsburgh, PA, USA.

Mr. M.K. Agarwal, Vice Chairman and Treasurer,
Founder and CEO, GATI Ltd., Hyderabad.

Dr. V. Malakonda Reddy, Secretary
Educator and Founder of CBIT and MGIT Engineering Colleges, Hyderabad.

Dr. K. Madhu Mohan, Secretary General
Endocrinologist, Maryland, USA.

Dr. A. Gopal Kishen, Member
Nephrologist and former Medical Superintendent,
Osmania Hospital, Hyderabad.

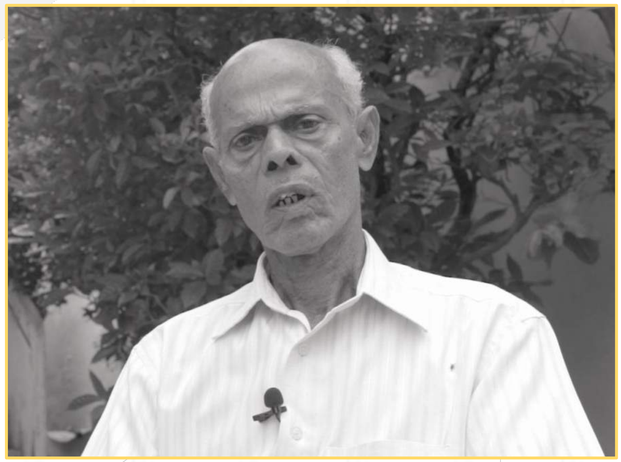
Dr. Prakash N. Shrivastava, Member
Professor Emeritus, University of Southern California, USA.

Mr. C Ramesh Reddy, Member
Chairman & Managing Director,
Laxven Systems, Hyderabad.

Dr. M. Dinaker, Member
Chief Physician,GYD Clinics and Diagnostics.

Executive team

- Dr. K. Vijayaraghavan Director Research
- Dr. Ganesh Oruganti Executive Director
- Dr. Jammy Guru Rajesh Associate Research Director
- Dr. Ramesh Reddy Allam Deputy Project Director
- Dr. Satish Kaipilyawar Associate Project Director
- Nitin C. Desai, Administrator Projects
- N. Lakshmi Narasimhan Finance Manager
- Revina Suhasini HR Manager
- Purushottam Reddy Data Manager



I am Chennella Krishna Reddy from the village, Ravalkol. I can say that, before SHARE INDIA came to our village, senior citizens faced a lot of problems. We did not have proper health care facilities or processes which looked after senior citizens.

After, the arrival of SHARE INDIA Project to our village, things started changing positively. Earlier, we required help from others to go to the medical centre for our regular checkups. With the assistance provided by thema, we can be independent now. They truly understand and care for senior citizens, right from picking up senior citizens early in the morning, providing them breakfast and lunch, conducting the tests with diligence.

Every step of their process shows compassion and care. They make us understand how to take preventive measures to lead a healthy life.

http://sharefoundations.org/ckr.html

Scientific Research Advisory Committee Members

Dr. B. M. Gandhi,
CEO, Neo Biomed Services, New Delhi.

Prof. Hasnain E. Seyed,
Vice Chancellor, Jamia Hamdard University, Hamdard Nagar, New Delhi.

Dr. Murthy G.V.S.,
Director, Indian Institute of Public Health, Hyderabad.

Dr. Ganesh Oruganti, Executive Director,
SHARE INDIA, Ghanpur, Medchal Mandal and District, Telangana State.

Prof. Prabhakaran D.,
Executive Director of Centre of Chronic Disease Control (CCDC) & Vice President, Research & Policy, Public Health Foundation of India (PHFI), New Delhi.

Dr. Gowri Shenker J.,
Scientist and Former Director, Center for DNA Fingerprinting & Diagnostics, (Laboratory of Bacterial Genetics), Hyderabad.

Prof. Rao B. Sashidhar,
Fellow of Telangana Academy of Sciences (FTAS) & Former Professor and Head, Department of Biochemistry, Osmania University, Hyderabad.

Dr. P. S. Reddy,
Chairman, SHARE INDIA and Professor of Medicine, University of Pittsburgh, PA, USA.

Dr. Sundar G., Director,
Birla Institute of Technology and Science Pilani, Hyderabad

Prof. Suman Kapur,
Sr. Professor and Dean, International Programs and Collaboration Division, Birla Institute of Technology and Science Pilani, Hyderabad.

Dr. Sesikeran B.,
Scientist and Former Director, NIN-ICMR, National Institute of Nutrition, Hyderabad

Dr. Vasireddi S.P.,
Chairman and Managing Director,
Vimta Labs Life Sciences Facility, Hyderabad.

Dr. Vijayaraghavan K.,
Scientist and Director Research, SHARE INDIA,
Ghanpur, Medchal Mandal and District, Telangana State.

Dr. Vijay V. Yeldandi,
Professor, University of Illinois at Chicago, USA
Patron member, SHARE

Research Advisory Committee meeting

The fourteenth Research Advisory Committee (RAC) meeting was held on March 06, 2019 under the Chairmanship of Dr. P. S. Reddy at SHARE INDIA Office, MIMS Campus, Ghanpur Village. During the meeting, the investigators presented eleven research studies including two brainstorming presentations for the upcoming activities and RAC members gave suggestions, guidance and few modifications to presented studies.

Research Projects

Sl.	Title of the study	Investigators	Designation / Institution Name	Project cost (Sanctioned Amount)	Funding source	Project status
1	Longitudinal Indian Family hEalth - LIFE Study	Dr. Kusneniwar Govindrao N Dr. Kalpana Betha Dr. Jammy Guru Rajesh Dr. K. Vijayaraghavan	Professor, Community Medicine, MIMS Professor, Obstetrics & Gynecology, MIMS Research Scientist, SHARE INDIA Director Research, SHARE INDIA	Rs. 33 Lakhs (2017-19)	SHARE INDIA / SHARE USA	Ongoing
2	Mycoplasma genitalium, differentiated Ureaplasma species, and pregnancy outcomes	Dr. Kalpana Betha Dr. Catherine L. Haggerty	Professor, Obstetrics & Gynecology, MIMS Associate Professor, University of Pittsburgh	US $ 46,318 for two years (2016-19).	Fogarty International Center -NIH	Ongoing - No cost Extension approved.
3	The influence of vaginal microbiota on adverse pregnancy outcomes in the LIFE study	Dr. Kalpana Betha Dr. Catherine L. Haggerty	Professor, Obstetrics & Gynecology, MIMS Associate Professor, University of Pittsburgh	Sub Study of Item No. 2 above	Fogarty International Center -NIH	Ongoing - No cost Extension approved.
4	The role of pre pregnancy and prenatal danger associated molecular patterns in pregnancy complications (DAMP) - LIFE Study Samples	Dr. Kalpana Betha Dr. Brandie N. Taylor Dr. Catherine L. Haggerty	Professor, Obstetrics & Gynecology, MIMS Associate Professor, Texas A&M University Associate Professor, University of Pittsburgh	US $ 24,000 (2017-19)	Partial support from TAMU, Texas	Ongoing
5	Prospective study of preconception and prenatal biomarkers of preterm birth - LIFE Study Extension	Dr. Kalpana Betha Dr. Catherine L. Haggerty	Professor, Obstetrics & Gynecology, MIMS Associate Professor, University of Pittsburgh	US $ 936,756	NIH - University of Pittsburgh	Grant will be reapplied
6	Maternal Nutritional Status and Pancreatic Beta Cell Function in Asian Indian Infants (Short title: ABC in Infants (Asian Indian Beta-Cells in Infants))	Dr. Poornima Prabhakaran Dr.Lisa Staimez Dr.Kalpana Betha	Associate Professor, PHFI Associate Professor, Emory University Professor, Obstetrics & Gynecology, MIMS	US $ 4,000	Center for Chronic Disease Control (CCDC), New Delhi.	Ongoing
7	Technology Enabled community health workers to extend Telemedicine to Rural homes at Affordable costs - TETRA Study PHASE - 1	Dr. D. Shailendra Dr. K. Vijayaraghavan	Professor, Pharmacology, MIMS Director Research, SHARE INDIA	Rs. 40.57 Lakhs Interim grant for feasibility study (2014-15)	Hewlett Packard	Completed
	TETRA Study PHASE - 2 PILOT STUDY	Dr. D. Shailendra Dr. K. Vijayaraghavan	Professor, Pharmacology, MIMS Director Research, SHARE INDIA	US $ 19,733 seed grant for pilot study (2015-16)	Fogarty International center - NIH	Completed
	TETRA Study PHASE - 3 FOLLOW UP OF SIX VILLAGES	Dr. D. Shailendra Dr. K. Vijayaraghavan	Professor, Pharmacology, MIMS Director Research, SHARE INDIA	Rs. 43 Lakhs for follow-up of 6 villages (2017-19)	SHARE INDIA / SHARE USA	Ongoing and ICMR funding sanctioned, awaiting for release of funds. Extension planned
	TETRA Study PHASE - 4 FOLLOWUP OF SIX VILLAGES	Dr. D. Shailendra Dr. K. Vijayaraghavan	Professor, Pharmacology, MIMS Director Research, SHARE INDIA		SHARE INDIA / SHARE USA	Follow up of the study without medication is currently ongoing
8	HEaLthy Pregnancy (HELP) study	Dr. Padma Yalamati Dr. Kalpana Betha	Professor, Biochemistry, MIMS Professor, Obstetrics & Gynecology, MIMS	Rs. 11 Lakhs (2017-19)	SHARE INDIA / SHARE USA	Ongoing - study extension planned
9	Improving Antenatal Care (ANC) to enhance adherence to National ANC guidelines, including the screening, detection, referral and management of gestational diabetes and pregnancy induced hypertension (PIH), using electronic decision support system enabled Frontline Health Workers , in primary healthcare settings of India and Nepal: a cluster-randomized trial	Dr. D Prabhakaran Dr. Oona Campbell Dr. Biraj Karmacharya Dr. Kalpana Betha Dr. P. S. Reddy	Vice President (Research & Policy), PHFI, Delhi Professor, Epidemiology, London School of Hygeine & Medicine, UK Professor, Community Programs, Kathmandu University School of Medical Sciences, Nepal Professor, Obstetrics & Gynecology, MIMS Chairman, SHARE INDIA	GBP 150,000	Newton Fund	Project approved and will commence in July, 2019.
10	Caesarean Surgical Site Infection - CSSI Study.	Dr. Kalpana Betha Dr. K. Lakshmi Sailaja	Professor, Obstetrics & Gynecology, MIMS Assistant Professor, Obstetrics & Gynecology, MIMS	Rs. 2.00 Lakhs	SHARE INDIA / SHARE USA	Last few participants recruitment, data collection to complete in 2019.

Research Projects

Sl.	Title of the study	Investigators	Designation / Institution Name	Project cost (Sanctioned Amount)	Funding source	Project status
11	Empowering Indian health researchers with computational modelling tools	Dr. Donald S. Burke Dr. P.S. Reddy Dr. Clareann H. Bunker Dr. Saumadipta Pyne Dr. Supriya Kumar Prof. Ramanan Laxminarayan	Dean, University of Pittsburgh Chairman, SHARE INDIA Professor Emeritus, University of Pittsburgh Professor, Indian Institute of Public Health, Hyderabad Epidemiologist, University of Pittsburgh Professor, Public Health Foundation of India, Delhi	US $ 62,140 for three years (2015 to 2018). US $ 20,713 (2017-18)	NIH - University of Pittsburgh	Ongoing - No cost Extension approved.
12	HIV modelling capacity development among Indian researchers (Supplement grant of Empowering Indian health researchers with computational modelling tools)	Dr. Jammy Guru Rajesh Dr. M. Raheel Sayeed Dr. Lincoln P. Choudhury Dr. P. S. Reddy Dr. Supriya Kumar	Associate Research Director, SHARE INDIA Research Scientist, SHARE INDIA HIV Consultant, Guwhati, India Chairman, SHARE INDIA Epidemiologist, University of Pittsburgh	US $ 27,372	NIH - University of Pittsburgh	Ongoing - No cost Extension approved.
13	Empowering Indian health researchers with computational modelling tools (Agent based modelling of HIV in Telangana State)	Dr. Jammy Guru Rajesh Dr. M. Raheel Sayeed Dr. Lincoln P. Choudhury	Associate Research Director, SHARE INDIA Research Scientist, SHARE INDIA HIV Consultant, Guwhati, India	US $ 7,500 One year 2017 -2018	NIH - University of Pittsburgh	Ongoing - No cost Extension approved.
14	Develop and test 3D printing technology to produce innovative limbs at affordable cost for the disabled in India	Dr. Srinivasa Prakash Regalla Dr. Prakash N. Shrivastava Dr. D. Sudheer Reddy	Professor, Mechanical Engineering, Birla Institute of Technology and Science, Hyderabad Director, SHARE INDIA Professor, Orthopedics, MIMS	Rs. 47.65 Lakhs for 2-1/2 years (2015 to June 2017)	Biotechnology Industry Research Assistance Council (BIRAC), DBT, Government of India	Ongoing, expansion and further development in progress
15	Association of brain metabolites, brain white matter hyperintensities and non-invasive retinal markers with cognotion in type 2 diabetes in India - BRAIN STUDY	Dr. Rajani Santhakumari Dr. Shailendra Dandge Dr. Madhavi Chevuturu Dr. G. V. S Murthy Dr. G. Suresh Dr. Robert M. Boudreau Dr. Caternia Rosano	Associate Professor, Physiology, MIMS Professor, Pharmacology, MIMS Professor, Ophthalmology, MIMS Director, Indian Institute of Public Health, Hyderabad Neuroradiologist, Yashodha Hospital, Hyderabad Professor, University of Pittsburgh Professor, Epidemiologist, University of Pittsburgh	US $ 257,484 (For two years). Annually US $128,742	NIH	Re-applying for another Grant.
16	IndEpi: A Platform for systematic Integration of Indian Epidemiology Datasets to enable Health Analytics and Disease Modelling (R & D Proposal under the ICPS Programme of DST.)	Dr. Rashmi Pant Dr. Jammy Guru Rajesh	Bio Statiscian, SHARE INDIA Associate Research Director, SHARE INDIA	Rs. 77.29 Lakhs	Department of Science & Technology, Ministry of Science & Technology, Government of India	Grant sanctioned and currently first year project activities ongoing
17	SERA (Sexual and Reproductive Health Assessment) - A study on sexually transmitted infections (STI) among general and Key populations groups in Hyderabad, India	Dr. Ramesh Reddy Allam Prof. Servaas Morre, Dr.Kuldeep Singh Sachdeva Dr. Asha Hedge Dr. Servaas A. Morre Dr. Vijay V. Yeldandi Dr. M. Dinaker Dr. Ganesh Oruganti Dr. Kalpana Betha Dr. Rashmi Pant Dr. Pierre Paul Michel Thomas	Deputy Project Director, SHARE INDIA Maastricht University, The Netherlands DDG, NACO National Consultant, NACO Amsterdam,The Netherlands Professor, University of Illionis at Chicago, USA Member, SHARE INDIA Executive Director, SHARE INDIA Professor, Obstetrics & Gynecology, MIMS Bio Statiscian, SHARE INDIA Institute of Public Health, Genomics, Maastricht University, The Netherlands	Rs. 10.00 Lakhs + Kits to be provided (2018-2020)	Institute of Public Health Genomics, Maastricht University, Maastricht, The Netherlands SHARE INDIA	Pilot study completed and regular study will commence from April, 2019.
18	InPoChlam: Innovative Point of Care Chlamydiales. Joint industrial R&D projects between India and EUREKA member countries Belgium, The Netherlands, Spain and United Kingdom	Dr. Ramesh Reddy Allam Dr. Rashmi Pant Dr. Vijay V. Yeldandi Dr. Servaas A. Morre Dr. Pierre Paul Michel Thomas	Deputy Project Director, SHARE INDIA Bio Statiscian, SHARE INDIA Professor, University of Illionis at Chicago, USA Maastricht University, The Netherlands Institute of Public Health, Genomics, Maastricht University, The Netherlands	Rs. 148 Lakhs (2019-22)	DBT, Government of India	Grant applied in Feb- 2019. Awaiting sanction .
Technical assistance to Government of India —CDC funded Projects						
19a	National Initiative to Strengthen & Coordinate HIV/TB response in India - NISCHIT	Dr. Vijay V. Yeldandi Dr. Ganesh Oruganti Dr. Ramesh Reddy Allam	Professor, University of Illionis at Chicago, USA Executive Director, SHARE INDIA Deputy Project Director, SHARE INDIA	US $ 1,000,000 (2016-17), US $ 1,200,000 (2017-19)	Centers for Disease Control and Prevention (CDC), Atlanta, USA	Ongoing
19b	Laboratory Quality Systems in HIV – LaQSH	Dr. Vijay V. Yeldandi Dr. Ganesh Oruganti Dr. Ramesh Reddy Allam	Professor, University of Illionis at Chicago, USA Executive Director, SHARE INDIA Deputy Project Director, SHARE INDIA	US $ 2,500,000 (2016-17), US $ 1,000,000 (2017-19)	Centers for Disease Control and Prevention (CDC), Atlanta, USA.	Ongoing
19c	Strengthening TB Action and Response - STAR	Dr. Vijay V. Yeldandi Dr. Ganesh Oruganti Dr. Satish Kaipilyawar	Professor, University of Illionis at Chicago, USA Executive Director, SHARE INDIA Associate Project Director, SHARE INDIA	US $ 2,500,000 (2016-17), US $ 700,000 (2017-19)	Centers for Disease Control and Prevention (CDC), Atlanta, USA.	Ongoing

Indo-American artificial heart program

An international Consortium working to creaet cost effective devices in India

ACTIVITY REPORT

Indo-American artificial heart program

SHARE INDIA endeavours to promote bioengineering research in Engineering Institutes of India in collaboration with Medical Institutions, Engineering Industries and Medical device developers in India and United States for development of total artificial heart.

OBJECTIVES:-

Develop total artificial heart.

Immediate: Promote bioengineering research in Engineering Institutes of India in collaboration with Medical Institutions, Engineering Industries and Medical device developers.

Development Approach of the Project

M/s. Laxven Systems is developing Centrifugal Levitation Pump for extracorporeal LVAD and CBIT is developing Centrifugal Pump with magnetically coupled impellor and Pivot bearing. KITS also entered into the scene recently and is working on Centrifugal Pump. SNIST is working on fabrication of Centrifugal Pump impellor and housing by Injection molding. SNIST is also working on Axial Levitation Pump for implant.

STATUS OF THE PROJECT

1. HEMOLYSIS TESTING OF PUMP WITH HUMAN BLOOD

Test protocol for testing of Centrifugal pump was finalized with the help of Dr.Salim Olia. Test was conducted as per the protocol at BITS, Hyderabad campus initially with original CENTRIMAG pump and later with centrifugal pump developed by Mr. Rugveda.

Test method was established at MediCiti Hospital also. All chemicals and equipment is available now. Spectrometer is calibrated. Next series of tests can be done at MediCiti.

At present design of components and optimisation of surfaces is in progress to minimize the problem of Hemolysis.

2.Optimisation of pivot bearing

Bearing has a ball which moves on spherical surface. CFD studies have to be done for this pump considering HEMOLYSIS and THROMBOSIS. Mr. Rugveda is conducting these studies. A heavy duty 3D printing machine is received by CBIT. Pump can be printed with Polycarbonate material on this machine. This is the ultimate material to be used which is bio compatible. After the machine is installed this will be done

3. CFD STUDIES AT KITS

HP-28 workstation and ANSYS 19 software was purchased by KITS, Warangal at a cost of Rs. 19 Lakhs. CFD studies were conducted and H-Q curves generated for Rugveda's pump.

4. LEVITATION PUMP AT LAXVEN SYSTEMS

Fine tuning of Levitation motor was done by improving the processing speed . Final PCB's were ordered and received. It is under integration and testing. It will be ready by 15'h April, 2019..

5. MACHINING OF TITANIUM IMPELLER AT KAARTHIK MOULDS AND DIES

Titanium material which is bio compatible is received from DRDO on special request. Impeller was machined by precision machining on 4 axis machining centre. Mr. Nagendra Chowdary is working on this. Drawings are generated for pump with the help of DRDO. The pump housing and impeller will be 3D printed with poly carbonate in CBIT with newly installed 3D printer.

WINTER INSTITUTE IN GLOBAL HEALTH WORKSHOP AT BITS

Artificial heart team participated in this International workshop at BITS and gave 5 talks on 16th Jan 2019.

Indo-American artificial heart program

People involved:

Advisors

Dr. P. S. Reddy, Chairman, SHARE INDIA.
Dr. A. G. K. Gokhale, Cardiothoracic Surgeon, Apollo Hospitals, Hyderabad.
Dr. B. M. Gandhi, Chief Executive Officer, Neo Blamed Services, New Delhi.

Project coordinator

Dr. A. Subhanada Rao, Director, Advancement and Research,
Sree Nidhi Institute of Science and Technology.

Jump start facilitated by

United States of America & University of Pittsburgh, Pittsburgh, PA, USA

Dr. Robert L Kormos, Prof. of Cardiac Surgery;
Dr. Harvey Borovetz, Prof. of Bioengineering;
Mr. Salim Olia, Artificial Heart Engineer;

Cornell University, New York, USA

Dr. James Antaki, Professor of Bioengineering.

INTEGRIS Nazih Zuhdi Transplant Institute, INTEGRIS Baptist Medical Center Oklahoma City, OK, USA.

Dr. James Long, Director.

Indo-American artificial heart program

INDIA

Birla Institute of Technology - BITS PILANI, Hyderabad

Dr. Suman Kapur,
Senior Professor, Department of Biological Sciences;

Dr. Srinivas Prakash Regalia,
Professor and Head, Department of Mechanical Engineering;

Dr. Sanket Goel, Associate Professor,
Department of Electronics and Electrical Engineering.

Chaitanya Bharathi Institute of Technology (CBIT)

Dr. P. Ravinder Reddy, Principal;
Mr. Rugveda, Research Associate.

Sree Nidhi Institute of Science and Technology(SNIST)

Dr. A. Subhanada Rao, Director, Advancement and Research.

Dr. K.S.R. Siva Sai,
Professor and Head, Department of Biotechnology.

Dr. A. Purushotham,
Professor, Department of Mechanical Engineering.

Kakatiya Institute of Technology and Science, Warangal

Dr. Venu Madhav Kotturu,
Prof. and Head, Dept. of Electronics & Instrumentation Engineering

Dr. Ganesh Kumar Gampa,
Associate Professor, Department of Mechanical Engineering

Dr. A. Madhuker Reddy,
Asst. Professor, Department of Electrical and Electronics Engineering

Dr. K. Eswaraiah, Professor,
Department of Mechanical Engineering

SHARE INDIA

Dr. Vijay V. Yeldandi,
Clinical Professor of Medicine and Surgery,
University of Illinois and member, SHARE INDIA.

Laxven Systems, Hyderabad:

Mr. Ramesh Reddy, Chairman and Managing Director.
Shree Pacetronix Ltd., Indore:
Mr. Atul Sethi, Chairman and Managing Director;
Mr. Vikas Gokha le, Technical Director.

Shrishti Resins, Hyderabad

Mr. K.P. Reddy, Chairman and Managing Director.

Sri Koteswara Cam Systems Pvt Ltd., Hyderabad:

Mr. Koteshwara Rao, Managing Director.

Path Care Lab. Pvt Ltd., Hyderabad:

Dr. G. V. Prasad, Chairman and Managing Director;
Ms. Nandini Prasad, Director.

Kaarthik Moulds & Dies, Hyderabad:

Mr. Nagendra Chowdary G.

Consultant:

Mr. K. Vijay Saradhi

Funding source: Self funding by Indian Institutions aided by SHARE INDIA and SHARE USA

Research Projects

1. Longitudinal Indian Family Health (LIFE) pilot study (Ongoing)

About the Project: There are several environmental factors that influence human health and seldom efforts are made to understand the influences of the eco-system**. SHARE INDIA** strongly believes in the 'One Heath' approach for advancing human health through community partnership and empowerment.

The LIFE (Longitudinal Indian Family health) study is being conducted in villages of Medchal-Malakajgiri District in Medchal Mandal, Telangana, India as a long-term research study to examine socio-economic and environmental influences on children's health and development in India. **The LIFE Pilot** is a prospective cohort study of Indian women followed from pre-conception, through conception, pregnancy, and delivery, and furthering it with physical, mental health and development of their children. This study is designed to identify the root causes of conditions including adverse pregnancy outcomes and childhood diseases and developmental disorders.

Aims: To understand the links between the environmental conditions in which Indian women conceive, become pregnant, give birth, the physical and mental health along with development of their children.

Objectives: Identify factors which contribute to the causation of low birth weight, maternal, fetal, neonatal, infant, childhood mortality, childhood disorders and diseases. Identify antecedents of cardio-vascular disease from pre-pregnancy through pregnancy and young adulthood in women.

Cost : Rs. 33 Lakhs (2018-19).

Status of the study:

Under this study, since 2009, a total of 1227 women aged between 15 and 35 years were recruited before conception or within 14 weeks of gestation. Women were followed through pregnancy, delivery and postpartum. Follow-up of 1230 children is ongoing as on 31st March 2019.

Baseline data were collected from husbands of 642 women. Anthropometric measurements, biological samples and detailed questionnaire data were collected during registration, the first and third trimesters, delivery and at one month postpartum. Anthropometric measurements and health questionnaire data are obtained for each child, and a developmental assessment is done at 1, 6, 12, 18, 24, 36, 48 and 60 months along with a screening for any mental health problems. The children aged 6-7 years had a detailed blood examination . Questionnaires are completed for pregnancy loss and death of children under 5 years old. The LIFE Biorepository preserves over 90,000 samples.

Research Projects

1. Longitudinal Indian Family Health (LIFE) pilot study (Ongoing)

The activities and status of the LIFE Study as on 31st March, 2019 are summarized as below:

- In all forty villages of Medchal, women were contacted and antenatal follow-up data and biological samples have been collected.
- Regular antenatal visits at 1st and 3rd trimester, post-delivery visits at one month, children follow-up visits at every 6 months up to 24 months and thereafter every 12 months up to 60 months are ongoing. Follow-up visits between 36 to 48 months (3-4 years) and 72 to 84 months (6-7 years) and 8-16 years for children.
- Apart from regular children follow-up to assess their health status and developmental milestones, we are also screening them to assess mental health problems at age group of 3-4 years.
- Children 6-7years old followed up. In this follow-up we are assessing various health problems using the standardized questionnaire and investigations like fasting blood sugar (FBS), Thyroid profile, S.creatinine, hemoglobin (Hb%), blood grouping and RH typing, urine and stool sample routine examination.
- Recording the mother and child's blood pressure, height and weight measurements. These children will be screened for diabetes, high blood pressure, Thyroid, Kidney problems, overweight/obesity, anemia and worm infestation
- Children in 8-16 years age group also followed-up The WISC-IV scale is administered between 8-11years and 12-16 years. WISC-IV scale is used to assess cognitive function (intelligence) of 8-16 years age group children. We are also assessing their sexually maturity rating (SMR) scale. Additionally, we are also doing health status, anthropometry & blood pressure recording every year from 8-16 years children and also anthropometry and blood pressure in mothers.
- All children born at MediCiti Hospital as well as outside MediCiti are tracked and their status is obtained at regular intervals. In case of child death the mother was interviewed to complete a verbal autopsy form.

Status of Field work as on 31st March, 2019

Sl.	Details	
1	No. of villages in Medchal Mandal	40
2	No .of villages covered till date	40
3	No. of women recruited (Interview + Lab completed)	1227
4	No. of currently pregnant women	0
5	No .of abortions	275
6	No. of women in 1st Trimester	0
7	No. of women in 3rd Trimester	0
	Total Deliveries	
	Deliveries at MediCiti Hospital (MIMS)	924
8	Deliveries at Outside Hospitals	349
9	PNC- 1month follow up	1134
10	**Child Follow-up visits (No. of questionnaires completed by age of the child)**	
	06months	990
	12months	954
	18months	1005
	24months	979
	36months	950
	48months	871
	60months	841
11	No. of children screened for mental health problems in the age group of 3-4 years	976
12	6-7years children follow-up	602
13	No. of under five children deaths	40
14	**5-6years couples follow up visit: (questionnaire & lab completed**	
	Women	977
	Men	883
15	8-16 years children followup :	
	96-98months follow up visit	107
	WISC-IV scale (8-11years)	115
	SMR scale	115

2. Mycoplasma genitalium, differentiated Ureaplasma species, and pregnancy outcomes (Ongoing)

About the Project: Reproductive tract infections (RTI) present major health, social, and economic problems for women in developing countries. The objective is to understand the extent for poor pregnancy outcomes due to reproductive tract infections in India. This study emerged as an intermediary outcome of the LIFE study, where SHARE INDIA team has been following the pregnant women for a longitudinal study to understand the environmental influences on child birth. Earlier a review was conducted on prevalence of Chlamydia trachomatis among childbearing age women in India and published in 2015[1]. The present study is a resultant of the observations made during the review and field experiences through community engagement in Medchal –Malkajgiri district in rural Telangana, India.

Aims: To identity the burden of poor pregnancy outcomes due to reproductive tract infections in India.

Objectives: Determine the role of pre-pregnancy and prenatal vaginal infections with mollicutes including fastidious Mycoplasma genitalium and the newly differentiated Ureaplasma spp. termed U. urealyticum (UU) and U. parvum (UP) in Pre-Term Birth (PTB) and Spontaneous abortion (SAB). The study also aims to determine the relationships between vaginal infection with Mycoplasma genitalium, Ureaplasma urealyticum, Ureaplasma parvum, and adverse pregnancy outcomes, including spontaneous abortion and preterm birth. It also examines chorioamnionitis as an associated factor between Mycoplasma genitalium or Ureaplasma infection and spontaneous preterm birth.

Status of the project: The project is studying 188 women who delivered preterm, 218 women who experienced spontaneous abortion and 436 control women who delivered at term in the LIFE study. RT PCR isolation of DNA was completed from 2000 samples. Seven probes were standardized. Completed PCR testing for 100 samples for Trichomonas and Mycoplasma genitalium.

Principal Investigators:

Dr. Kalpana Betha, Professor and Head; Department of Obstetrics and Gynecology, MIMS.
Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

1 Kalpana Betha, Jamie M. Robertson, Gong Tang, Catherine L. Haggerty. Prevalence of Chlamydia rachomatis among Childbearing Age Women in India: A Systematic Review. Hindawi Publishing Corporation Infectious Diseases in Obstetrics and Gynecology Volume 2016, Article ID 8561645,6 pages

Story of a beneficiary from LIFE

"I had suffered three abortions in the past before coming to SHARE INDIA. I was a bit worried at the start of my treatment, but the compassion and care shown by Dr Kalpana, has put rest to all my apprehensions and worries. Under able guidance and care, I had delivered a baby boy. I feel a great emotional connection with the hospital. I think, it is by divine blessing that, we have found Dr Kalpana, who has relentlessly helped us in every way possible..."

http://sharefoundations.org/rti.html

3.The influence of vaginal microbiota on adverse pregnancy outcomes in the LIFE study (Ongoing)

About the Project: Women's health particularly of the reproductive health of rural women in developing countries is a risk influencing child birth. Studies conducted earlier across the globe have demonstrated that, a homogeneous Lactobacillus-dominated microbiome has long been considered the hallmark of health in the female reproductive tract. In contrast, a vaginal microbiome species as observed with bacterial vaginosis, has been associated with increased risk for acquisition and transmission of sexually transmitted infections, PTB and pelvic inflammatory disease. However, many asymptomatic healthy women have diverse vaginal microbiota. More refined approaches are needed to assess risk, promote health, and prevent and treat disease. While conducting the longitudinal study LIFE, it was observed that, there is a cohort of women who experience multiple problems due to vaginal micro biota at labor and delivery. Focusing on maternal health, SHARE INDIA team earlier conducted studies on cervical carcinoma. The experience of the health researchers of the SHARE INDIA provided impetus to conduct further study among pregnant women on mother's health.

Principal Investigators:

- Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.
- Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH,University of Pittsburgh, PA, USA.

Aims and Objectives:

To characterize and compare the pre-pregnancy vaginal microbiota of:
a) pregnant women who subsequently experience a spontaneous abortion

b) women who subsequently deliver preterm, to a control group of women who deliver at term.

c) To characterize and compare the vaginal microbiota at labor and delivery among women who deliver preterm and a control group of women who deliver at term

Status of the project: The project is studying 20 cases of women with spontaneous abortion, 20 cases of women who delivered preterm and 20 control women who delivered at term Archived preconception vaginal samples were analyzed using broad range 16S rRNA gene PCR with sequencing. Women who delivered at term had vaginal microbiota dominated by lactobacillus sp.

4.The role of pre pregnancy and prenatal danger associated molecular patterns in pregnancy complications (DAMP) - LIFE Study Samples (Ongoing)

About the Project: Early pregnancy loss is non-induced embryonic or fetal death or passage of products of conception before 20 weeks gestation. Early pregnancy loss is also termed as spontaneous abortion or miscarriage. The World Health Organization (WHO) defines it as expulsion or extraction of an embryo or fetus weighing 500 g or less. National Health Portal of India, states, spontaneous abortion in the first trimester is common, affecting at least 15–20% of the clinically recognized pregnancies. Approximately 80% of all cases of pregnancy loss occur within the first three months of pregnancy (first trimester). This study is taken with the cohort of pregnant women of LIFE study to understand the factors associated with early pregnancy serum markers of cellular damage, innate immune signaling, angiogenesis and preeclampsia subtypes to promote maternal health. SHARE conducted studies earlier on association of higher maternal Serum fluoride with adverse fetal outcomes and published its findings.

Aims:

a) Determine if circulating pre-pregnancy and first trimester biomarkers of placental dysfunction (EGFL7, PIGF, sFLT-1, PP-13) are associated with SAB

b) Determine if circulating pre-pregnancy and early pregnancy DAMPS (HG BM-1, HSP70) and innate immune signaling biomarkers (Pentraxin-3) are associated with SAB

c) Determine if pre-pregnancy and early pregnancy circulating markers of oxidative stress (MDA,GDH) are associated with SAB

Objectives: Examine the relationship between early pregnancy serum markers of cellular damage, innate immune signaling, angiogenesis and preeclampsia subtypes.

Status of the project: The project is studying 50 cases of women who had spontaneous abortion and 100 control women who delivered at term. First pregnancies with singleton gestation that have stored plasma available from pre-conception and the first trimester in the LIFE study were taken.

Principal Investigator:

Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.

Co-Investigators:

Dr.Brandie N. Taylor, Associate Professor, School of Public Health, The Texas A&M University System, Texas, USA.

Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Funding source: Partial support from Texas A & M University Amount: US $ 24,000 (2017-19).

5,Prospective study of preconception and prenatal biomarkers of preterni; birth - LIFE Study Extension (Upcoming)

About the Project: Preterm birth (premature birth) is a significant public health problem across the world because of associated neonatal (first 28 days of life) mortality and short- and long-term morbidity and disability in later life. Preterm is defined by World Health Organization (WHO) as babies born alive before 37 completed weeks of gestation or fewer than 259 days of gestation since the first day of a woman's last menstrual period (LMP). Normally, a pregnancy lasts about 40 weeks. According to WHO, every year about 15 million babies are born prematurely around the world and that is more than one in 10 of all babies born globally. As per WHO estimates of 2013 almost one million children die each year due to complications of preterm birth. Across 184 countries, the rate of preterm birth ranges from 5% to 18% of babies born. In India, out of 27 million babies born every year (2010 data), 3.5 million babies born are premature.

The National Health Portal of Government of India states that, newborn deaths (those in the first month of life) account for 40 percent of all deaths among children under-five years of age. Preterm birth is the world's number one cause of newborn deaths, and the second leading cause of all child deaths under five, after pneumonia. Therefore, as an extension of the LIFE project, it is proposed to study broad range of preconception and prenatal serum biomarkers in the cohort of pregnant women registered under LIFE study.

Aims: To examine a broad range of preconception and prenatal serum biomarkers in the above Cardiovascular Disease (CVD) pathways in relation to the risk of Pre-Term Birth (PTB).

Objectives: Determine if preconception biomarkers: lipid, inflammatory/immune, glucose, blood pressure and vitamin D predict PTB. Examine longitudinal changes in the above biomarkers across pregnancy (preconception, first and third trimester and delivery) In relation to PTB. Examine shared pathways leading to pregnancy loss and PTB.

Status of the project: Grant applied, approval is awaited.

Principal Investigator:

- Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.

Co-Investigator:

- Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Funding source: NIH through University of Pittsburgh, Amount: US $ 936,756.

6. Maternal Nutritional Status and Pancreatic Beta Cell Function in Asian Indian Infants (Ongoing)

About the Project: The mother is the only source of nutrition for fetal growth including brain development. Maternal nutritional status (anthropometry, macro- and micro-nutrients) before and/or during pregnancy is therefore a potential predictor of offspring cognitive function. The relationship of maternal nutrition to offspring function is unclear. This study aims to examine the association of maternal nutritional status with offspring beta cell function. This helps to understand their influence on both the mother and the fetus and how various conditions like diabetes, obesity, over nutrition and under nutrition during and after pregnancy may influence the ability of the offspring to adapt to changes in insulin demand later in life.

Aims and Objectives: To examine the association of maternal nutritional status [i.e., first trimester body mass index (BMI); and pregnancy weight gain] with beta cell function of their infants at 6-months of age. Outcome measures will be collected at two time points: birth and 6-months postpartum. At birth, cord blood will be analyzed for glucose, c-peptide, and insulin and will be used to calculate maternal and fetal glycemia, insulin resistance, static insulin secretion, and insulin clearance. At 6 months of age, infants will undergo an oral glucose tolerance test, with samples analyzed for glucose, C-peptide, and insulin to assess pancreatic beta-cell function, measured by the oral disposition index. Other calculated measures at 6 months will include insulin resistance, static insulin secretion, and insulin clearance.

Status of the project: A total of 150 women were included and cord blood was collected from them for analysis of glucose, insulin and c-peptide. A total of 130 infants were followed up at 8 months and venous blood was collected for analysis of glucose, insulin and c-peptide. Analysis of cord blood for insulin and c-peptide was done for 52 cases.

Principal Investigators:

- Dr. D. Prabhakaran, CCDC
- Dr. Poornima Prabhakaran - PHFI
- Dr. Lisa Staimez, Emory University
- Dr. Kalpana Betha, SHARE INDIA, MIMS

Funding Source: Center for Chronic Disease Control (CCDC), New Delhi; Amount: $ 4,000

We (I and my Husband) had enrolled in the program in 2009. They conducted tests and gave us a file. Every month, they would check on my health and enquire about my periods. When I stopped getting periods, they had confirmed, I was pregnant. From that moment. Till the time, I had given birth to my son; they held my hand firmly through all the way. I feel, SHARE INDIA to be part of my family, the love and affection showed by them, I had never felt that way in any other clinic or hospital. I can't express it in words; they make us feel that we are all part of one family. The care and compassion shown by their doctors always give comfort to all our worries and anxieties.

To work with SHARE INDIA is one of the most satisfying experiences in my life. Every day is filled new challenge and hope. To bring healthcare facilities to remotest parts of rural India and help them tackle a variety of ailments, gives me the motivation to learn and grow.

I feel it is a great privilege to work with SHARE INDIA. I had grown up in a village, during my childhood, I have seen people of my village suffer due to lack of proper healthcare facilities. I was determined to join an organisation which brings world-class facilities to Rural India. SHARE INDIA inspired us to go beyond our limitations. I feel like every day, I am learning and evolving to solve the challenges which we face at the grassroots level.

http://sharefoundations.org/micro.html

7. Technology health Community Health Workers Extend Tele-medicines at Rural Home at affordable Costs (TETRA) (Ongoing)

About the project: Cardiovascular disease is the leading cause of death in India. Morbidity due to cardiovascular disease also contributes to significant impoverishment of individuals, families and the nation. The project which commenced in December, 2014 envisages reducing the burden of cardiovascular disease in the community by improving control of hypertension and diabetes in a community setting. The concept of a community health worker(CHW) being used as a focal operator to liaise between the community and the health care providers is an innovative option to improve availability, accessibility and affordability of services intended to address the growing burden of cardiovascular disease. **TETRA** is in fact a continuation of the efforts made under the Mobility and Independent Living in Elders (MILES) project of SHARE INDIA which helped us to understand the prevalence of age-related chronic disease in older adults and provide support. Some of the findings under this project were published.. Further, a study of technology enabled health care also has been published.

Aims: To increase access to high-quality medical care to rural India.

Objectives: Assess the feasibility, effectiveness and costs of the technology enabled community health workers extending telemedicine to rural homes to control hypertension and diabetes. The Quarterly follow-up of all individuals with hypertension and diabetes across 6 villages is ongoing.

A summary of the current status of the project:

Total Number of villages covered : : 6

Total population of the 6 villages : 14241

Total number of individuals aged 20 years and above : 9509

I. HYPERTENSION:

Total number of individuals aged 20 years and above Screened for Hypertension : 7023

Total Number of Hypertensives :1671 (23.8%

Number of Known Hypertensives (%): 914 of 1671 (54.7%)

Number of Newly detected Hypertensives (%) : 757 of 1671(45.3%)

Percentage of individuals with Hypertension under control at baseline : 32%

Percentage of individuals with Hypertension under control currently : 60.1 %

I am suffering from Diabetes and High Blood Pressure, and this had caused a lot of anxiety for my family members and me. SHARE INDIA, with their expertise and care, has helped me to understand what are preventive measures I should take to keep my diabetes and High Blood pressure. They have made me know that, with proper diet and exercise, I can always keep my Sugar and BP in control.

http://sharefoundations.org/tetra1.html

II. DIABETES:

Total number of individuals aged 20 years and above Screened for diabetes	: 6811
Total number of Diabetics (%)	: 676(9.9%)
Known Diabetics	: 454 (454 of 676=67.71%)
Newly Detected Diabetics	: 222(222 of 676=32.8%)
Number of individuals with Diabetes under control at baseline (%)	:147 (21.7%)
Number of individuals with Diabetes under control currently (%)	: 212 (31.3%)

Publication: A research paper on **TETRA** study entitled "Technology enabled non-physician health workers extending telemedicine to rural homes to control hypertension and diabetes **(TETRA)**: A pre-post demonstration project in Telangana, India was published in PLoS One journal on 19" February 2019. The Publication received significant attention in the Indian media with the New Indian Express, The Hindu, Deccan Chronicle, Andhra Bhoomi and Dainik Jagran covering the story in detail. In addition,' India Science Wire' which is a newsletter published by the department of Science and Technology, government of India also carried the story on the research publication and described the innovative approach used in TETRA study.

Moving Forward: The **TETRA** strategy is soon going to be expanded to Include screening of all individuals in the household for multiple health conditions such as, thyroid abnormalities, anemia, kidney disease, eye and ear diseases, tuberculosis apart from the already existing screening for hypertension and diabetes. In due course of progress of the expanded TETRA we aim to establish an FHIR based electronic health record for the population in rural Medchal.

Principal Investigator:

Dr. K. Vijayaraghavan, Director Research, SHARE INDIA.

Co-Investigator:

Dr. D. Shailendra, Professor, Department of Pharmacology, MIMS.

Funding source: SHARE INDIA and SHARE USA. ICMR approved, funds awaited.

Amount: Rs. 43 Lakhs for follow-up of 6 villages (2018-19).

8.Healthy Pregnancy (HELP) Study (Ongoing)

About the Project: Hypertensive pregnancy disorders cover a spectrum of conditions, including preeclampsia/eclampsia, gestational hypertension, chronic hypertension, and preeclampsia superimposed on chronic hypertension. Preeclampsia is a major cause of maternal and perinatal mortality (number of stillbirths and deaths of newborn in the first week of life) and morbidity. Hypertensive disorders of pregnancy occur in about 10% of all pregnant women around the world. Preeclampsia affects 3–5% of pregnancies. Along with preeclampsia, other diseases which are included in the group of hypertensive disorders of pregnancy are eclampsia, gestational hypertension and chronic hypertension. SHARE INDIA earlier conducted and published studies on hypertensive disorders of Pregnancy[1].

Aims: To identify whether the early rise in blood pressure or serum creatinine or serum uric acid or serum cystatin C or urine protein creatinine ratio compared to the 1st trimester (baseline) value predicts the later onset of hypertensive disorders. It also aims to study the association between these markers and maternal and fetal out-comes.

Objectives: Measure blood pressure, serum uric acid, serum creatinine and serum cystatin C (stored at -80°C) and urine protein creatinine ratio every month during the course of pregnancy and examine the tracking of these markers to identify which marker, individually or in combination helps in the prediction of hypertensive disorders at the earliest.

Status of the project:

We have completed 1000 subjects recruitment and are planning to extend the study by enrolling 300 more pregnant women.

Principal Investigator:

- Dr. Sapna V, Professor, Department of Biochemistry, MIMS.

Co- Investigators:

- Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.
- Dr. Aparna Varma, Professor and Head, Department of Biochemistry, MIMS.
- Dr. Rashmi Pant, Biostatistician, SHARE INDIA.
- Dr. Padma Yalamati, Professor, Department of Biochemistry, MIMS.

Funding source: SHARE INDIA and SHARE USA. Amount: Rs. 11 Lakhs (2018-19).

HELP DATA AS ON 31st MARCH, 2019	
No of women to be enrolled in the study	1300
Deliveries at MIMS	697
Outside deliveries	171
Abortions at MIMS	11
Abortions outside	13
Live birth MIMS	665
Live birth outside	148
Still birth at MIMS	3
Still birth outside	0
IUD at MIMS	18
IUD Outside MIMS	10
Gestational Hypertension	52
Pre-eclampsia with out sever features	23
Pre-eclampsia with sever features	10
Eclampsia	1
Hypothyriodism	94
Hyperthyriodism	10
Sub clinical Hypothyriodism	39
Sub clinical Hyperthyriodism	11

9.Improving Antenatal Care (ANC) to enhance adherence to National ANC guidelines, including the screening, detection, referral & management of gestational diabetes and pregnancy induced hypertension (PIH), using electronic decision support system enabled frontline health workers, in primary healthcare settings of India and Nepal:

A cluster-randomized trial (Upcoming)

About the Project: India's health system faces great challenges in tackling a rapidly escalating burden of pregnancy related health issues. Key issues include lack of healthcare facilities, limited access to healthcare providers, and high out-of-pocket costs for consumers. It is therefore imperative that innovative solutions are developed to address these issues. India's three tier healthcare system provides nurse/midwife level primary healthcare at the sub-centre. The PHC, which is usually led by one doctor, is expected to provide comprehensive primary healthcare for up to 30,000 residents. This leads to considerable strain on PHC resources potentially resulting in inadequate quality of care. In this context, there is an urgent need for innovations in healthcare delivery. One promising strategy involves 'task shifting,' where front-line, non-physician health workers are delegated some of the tasks traditionally performed by physicians. It is therefore, visualized to develop an electronic based system which helps the non-physician health care workers in the field (ANM, ASHA, MPHW etc.) to screen and provide ANC services per the national guidelines.

Objectives: Develop and evaluate an electronic decision support system for non-physician frontline health workers that incorporate ANC services with the screening, detection and referral of high risk pregnancies to the existing health system for appropriate clinical management.

Status of the project: Project accepted for funding and collection of data from the government PHC's is being done to plan implementation of the study.

Principal Investigators:

- Dr. D. Prabhakaran, Vice President (Research and Policy), PHFI, Delhi.
- Dr. Oona Campbell, Professor, Epidemiology, The London School of Hygiene and Tropical Medicine (LSHTM), UK.
- Dr. Biraj Karmacharya, Professor Programs, Kathmandu University of Medical Sciences, Nepal.
- Dr. P. S. Reddy, Professor of Medicine, University of Pittsburgh and Chairman, SHARE INDIA.
- Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.

Co- Investigators:

- Dr. Sailesh Mohan, Centre for Control of Chronic Conditions (CCCC), PHFI, New Delhi.
- Dr. Poornima Prabhakaran, CCCC, PHFI, New Delhi.
- Dr. Ajay V. CCCC, PHFI, New Delhi.
- Dr. Ambuj Roy, Department of Cardiology, AIIMS, New Delhi.
- Dr. Sandosh Padmanabhan, Department of Medicine, University of Glasgow, UK.
- Dr. Sonia Anand, Professor, Department of Medicine, McMaster University, Canada.
- Dr. Abha Shrestha, Department of Obstetrics and Gynecology, Kathmandu University of Medical Sciences, Nepal.
- Dr. Pablo Pere, Associate Professor, Cardiologist and epidemiologist, LSHTM.
- Dr. Clara Calvert, Assistant Professor, LSHTM.
- Dr. John Cairns, Professor of Health Economics, LSHTM.
- Dr. Ishita Rawa I, Research Fellow, CCCC, PH FI, New Delhi.

- **Funding source: Newton Fund Amount: GBP 150,000.**

Research Projects

10.Caesarean Surgical Site Infection (CSSI) study (Ongoing)

About the study: Surgical site infections are among the most common hospital acquired infections. As per studies conducted in India, they make up to 14-16% of inpatient infections. Objective of present study was to evaluate the risk factors associated with caesarian surgical site infections and the bacteria causing wound infections in obstetric operations and the antibiotic sensitivity and resistance pattern of the pathogens isolated. Earlier studies of the SHARE INDIA team focussed on the prevalence and determinants of caesarean section[1].

Aim: To reduce incidence of surgical site infections following caesarean sections.

Objectives: Estimate the incidence of caesarean surgical site infections following caesarean sections at MediCiti Hospital. Identify risk factors associated with SSI following caesarean and to determine the bacteriological profile of SSI linked with caesarean section.

Status of the project: A total of 2000 cases of patients who underwent caesarean section were included and all women completed one month follow up post operatively. Among them CSSI was found in 6.5% of cases.

Principal Investigator:

- Dr. Kalpana Betha, Professor and Head, Department of Obstetrics and Gynecology, MIMS.

Co- Investigator:

- Dr. P. Lakshmi Sailaja, Assistant Professor, Department of Obstetrics and Gynecology, MIMS

Funding source: SHARE INDIA and SHARE USA. Amount: Rs.1 Lakh (2018-19).

SHARE INDIA regularly comes to our village for health checkups. I had informed them when I stopped having my periods. They had conducted all the tests and told me; I was pregnant with twins. This news had caused a lot of anxiety and concern among our family members. But the doctors of SHARE INDIA had assured us that there was no reason to worry and they will help us in every way. True, to their word, they have provided us with proper advice and assistance. Without them, we would have suffered anxiety and stress. I had delivered healthy twins; My family is indebted to SHARE INDIA for all their affection and love.

http://sharefoundations.org/cssi1.html

Capacity building Programs:

11. Empowering Indian health researchers with computational modeling tools (Completed)

About the Program: Computational models can help us translate observations into an anticipation of future events, act as a test bed for ideas, extract value from data and ask questions about behaviours. A key feature of today's computational models in health is that they are able to study a biological system at multiple levels, including molecular processes, cell to cell interactions, and how those interactions result in changes at the tissue and organ level. This enables safe and effective new therapeutics to advance more efficiently through the different stages of clinical trials. Simulation software is now starting to be used to develop highly accurate personalized human organs, medical devices and biologics. Today, simulation technologies can detect how these models will respond under stress or in any lifelike situation. When finally brought to market, the device will result in the highest levels of quality and safety for both patients and providers. To train the health care researcher in computational modeling tools, one day training was conducted at MediCiti Institute of Medical Sciences.

Objectives: To enhance evidence based, data driven decision making through innovations in information communication technology.

Status of the project: A training program was conducted in March 2019 on computational modeling techniques for undergraduates and post graduates of MIMS.

Principal Investigators:

- Dr. Donald S. Burke, Dean, GSPH and Associate Vice Chancellor for Global Health, Health Sciences, University of Pittsburgh, PA, USA.
- Dr. Clareann H. Bunker, Associate Professor Emerita, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.
- Dr. Saumyadipta Pyne, Scientific Director, PHDL, University of Pittsburgh.

Co-Investigators:

- Dr.P. S. Reddy, Chairman, SHARE INDIA.
- Dr. Supriya Kumar, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.
- Prof. Ramanan Laxminarayan, Vice President Research and Policy, Public Health foundation of India, Hyderabad.
- Dr. Jammy Guru Rajesh, Associate Research Director, SHARE INDIA.
- Dr. Mohammed Raheel Sayeed, Research Scientist, SHARE INDIA.

Funding source: Fogarty International Center - NIH Amount: US $ 62,140 for three years (2015 to 2018), US $ 41,427 (2015-17), US $ 20,713 (2017-18)

12. HIV modeling capacity development among Indian researchers (Administrative Supplement grants of Empowering Indian health researchers with computational modeling tools). (Completed)

About the Project: In India, HIV, epidemiology is growing faster and with the commitments of Governments for Global Goal for HIV including the Sustainable Development Goals and UN Targets of 90-90-90 (by 2020, 90% of people living with HIV know their status, 90% of people diagnosed with HIV infection receive sustained antiretroviral therapy and 90% of people receiving antiretroviral therapy will have viral suppression) it becomes relevant to adopt new modeling tools to understand the dynamics of the HIV epidemic. This project is to build an agent-based, bottom-up modeling approach to develop a simulation tool for estimating and predicting the spread of the human immunodeficiency virus (HIV) in a given population.

Aim: To develop synthetic representative population & conduct agent based modeling on HIV.

Status of the project: A synthetic population of Telangana was created and Agent Based modeling was conducted for HIV with various scenarios. The parametrization of the model is complete and it is being run on the Telangana state population. The results will be shared with various stakeholders in India and a manuscript is under preparation.

Principal Investigator:

Dr. Jammy Guru Rajesh, Associate Research Director, SHARE INDIA.

Co-Investigator:

Dr.Mohammed Raheel Sayeed, Research Scientist, SHARE INDIA.

Consultant:

Dr. Lincoln Choudhury, Consultant.

Mentors:

Dr. Mark S. Roberts, Professor and Chair, Health Policy and Management, Director, Public Health Dynamics Lab, University of Pittsburgh, PA, USA.

Dr. John Grefenstette, Professor, Health Policy and Management, Senior Scientist, Public Health Dynamics Lab, University of Pittsburgh, PA, USA.

Funding source: Fogarty International Center - NIH. Amount: US $ 27,372. (2016-19)

13.Empowering Indian Health Research with Computational Modeling Tools: (Ongoing))

About the Project: Using computational modeling tools in health care gained significance in the recent years for understanding predicting epidemic response. Particularly in HIV care, prevention of parent to child transmission has been a focus where success is seen in national program with introduction of antiretroviral therapy to all pregnant women infected with HIV. To understand the prevention of parent to child transmission of HIV efficiency in synthetic population of Telangana state, India an Agent Based Modeling was performed using computational modeling method.

Aim: Agent based modeling on HIV in the state of Telangana. INDIA

Status of the project: The Agent Based modeling was performed specifically for prevention of parent to child transmission (PPTCT) intervention efficiency in Telangana state population synthetic. The results will be shared with various stakeholders in India and a manuscript is under preparation.

Principal Investigator:

- Dr. Jammy Guru Rajesh, Associate Research Director, SHARE INDIA.

Co-Investigator:

- Dr.Mohammed Raheel Sayeed, Research Scientist, SHARE INDIA.

Consultant:

- Dr. Lincoln Choudhury, Consultant.

Funding source: Fogarty International Center - NIH. Amount: US $ 7,500 (2018-19)

14. Artificial limb/Prosthetic limb project.

Develop and test 3D printing technology to produce innovative limbs at affordable cost for the disabled in India(Ongoing).

About the Project: Development and use of Prosthetics has been in vogue since ancient times. However, from the early nineteenth century the advent of Hangar Limb ushered prosthetics into modern era. Studies have shown that substantial percentages of people with congenital limb loss or acquired limb loss choose not to use a device, despite having access to one. Low usage rates of prostheses may result from result from a lack of aesthetic design, weight, and availability of insurance and health care, and high costs. In this scenario, 3D printing is becoming an integral part of prosthesis creation, resulting in response to several tangible issues, including reduced access to conventional prostheses in a timely manner and, in some cases, restricted access. Therefore, efforts were made for development of technology to manufacture affordable and high comfort below-knee prosthesis with innovative reverse engineering and 3D printing technologies that enable high level fit leading to great comfort while the innovative materials give greater strength.

Aim: Create innovative limbs at affordable cost to meet the needs of people, acknowledging their economic and health status.

Objectives: Develop and test 3D printing technology to produce innovative limbs at affordable cost for the disabled in India.

Status of the project: About twenty patients are walking with the device safely and comfortably for over 1 year. The PSPR Model "SUKHFIT"181101 is being tested in Dr. Rory Cooper's lab in Pittsburgh and shows that the socket is lightweight and sturdy (>250,000+ cycles and still going). The results to be presented at international conference in Tokyo during October 2019

Principal Investigator:

Dr. Srinivasa Prakash Regalia, Professor and Head, Department of Mechanical Engineering, BITS Pilani, Hyderabad.

Co-Investigators:

Dr. Prakash N. Shrivastava, Professor Emeritus, University of Southern California, USA. Member, **SHARE INDIA.**

Dr. Sudheer Reddy, Orthopedics Surgeon, MIMS.

Funding source: Biotechnology Industry Research Assistance Council (BIRAC): Department of Biotechnology, Government of India. Amount: Rs. 47.65 Lakhs for 2-1/2 years (2015 to June 2017).

15. Association of brain metabolites, brain white matter hyper intensities and non-invasive retinal markers with cognition in type 2 diabetes (T2DM) in India - BRAIN STUDY (Upcoming)

About the Project: The incidence of type 2 diabetes mellitus (T2DM) is increasing worldwide, and has become a significant public health problem. It is associated with mortality and significant morbidity, including neurological disability. Although the effects of diabetes on the in brain metabolism and significant alterations have been demonstrated during the development of T2DM its association with brain metabolites, brain white matter hyper intensities with cognition is still to be proved. Even mild form of cognitive dysfunction might hamper everyday activities depending on the work and situation, which requires various cognitive domains such as general intelligence, processing speed, psychomotor efficiency, attention, perception, learning, memory, and executive functions. This study probes understanding factors associated with cognitive impairment in T2DM, and ultimately lead to measures to prevent or reduce this risk. Earlier studies were conducted on T2DM and published .

Aim: To increase understanding of the factors associated with cognitive impairment in Type 2 diabetes (T2DM), and ultimately lead to measures to prevent or reduce this risk. The study will determine whether brain white matter hyper-intensities and brain metabolites (using MRI), retinal vascular injury markers, and cognitive function differ between Asian Indians with and without T2DM.

Objectives: Determine whether biomarkers of cognitive impairment differ between persons with and without T2DM recruited from a population-based sample of middle-aged, rural South Indians. Measure the association between biomarkers and cognitive function (continuous) in persons with, and in persons without, T2DM. Explore the interrelationships among these markers to identify the strongest predictor of cognitive function adjusting for other predictors and covariates.

Status of the project: Grant is being resubmitted.

Principal Investigator:

- Dr. Rajani Santhakumari,Associate Professor, Department of Physiology, MIMS.

Co-Investigators:

- Dr. D. Shailendra, Professor, Department of Pharmacology, MIMS.
- Dr. Madhavi Chevuturu, Professor of Ophthalmology, MIMS.

Consultants from India:

- Dr. Suresh G., Neuroradiologist, Yashodha Hospital, Hyderabad.
- Dr. G. V. S. Murthy, Director, IIPH, Hyderabad.

Consultants from USA:

- Dr. Caterina Rosano, Professor of Epidemiology, GSPH, University of Pittsburgh, PA, USA.
- Dr. Robert M. Boudreau, The Center for Aging and Population Health (CAPH), University of Pittsburgh, PA, USA.

Funding source: Fogarty International Center - NIH. Amount: US $ 257,484 (For two years). Annually US $128,742.

16.IndEpi: A platform for systematic integration of Indian Epidemiology datasets to enable health analytics and disease modeling (R and D proposal under the ICPS program of DST) (Upcoming)

About the Project: Public health surveillance is defined as continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice. Such surveillance can serve as an early warning system for impending public health emergencies; document the impact of an intervention, or track progress towards specified goals. It will also help monitor and clarify the epidemiology of health problems, and allow priorities to be set and inform public health policy and strategies. Public health surveillance can include both communicable (e.g., syphilis, HIV, etc.) and non-communicable (e.g., cancer) diseases; however, infectious and communicable diseases receive the most attention within the surveillance community, because of their potential to affect a large proportion of the population within a short period of time. There are several platforms providing data sets on divergent diseases and an attempt to integrate these Indian epidemiological data sets is made to create user friendly interface which would help scientists and researchers looking for data.

Aim: Integrate, organize and make available to the scientists and policy makers an easily usable interface, tentatively called IndEpi 1.0.

Objectives:

- Data Synthesis and Integrative Modelling–
- Develop a common platform integrating public health databases (IndEpi V.1.0).
- Conduct epidemiological investigations. Big data analytics and visualizations:
- Create population level simulations and predictions based on parameters assimilated from IndEpi 1.0.
- Generate easily interpretable, visually accessible and policy relevant evidence that may provide inputs to all stakeholders.

Pilot testing:

- Perform case studies on synthesis of IndEpi 1.0 with select independent epidemiological studies.

Status of the project: Project approved and awaiting release of funds from DST.

Principal Investigator:

- Dr. Rashmi Pant, Biostatistician, SHARE INDIA.

Co-Investigator:

- Dr. Jammy Guru Rajesh, Associate Research Director, SHARE INDIA.

Funding source: Department of Science and Technology, Ministry of Science and Technology, Government of India. Amount: Rs. 77.29 Lakhs.

17. SERA (Sexual and Reproductive Health Assessment) - A study on sexually transmitted infections (STI) among general and Key populations groups in Hyderabad, India (Upcoming)

About the Project: Sexually transmitted infections (STIs) continue to be a significant global public health issue, with an estimated 357 million people becoming ill each year with one of four STIs- syphilis, Chlamydia trachomatis, Neisseria gonorrhoeae and Trichomonas vaginalis. In addition, more than 290 million women have a human papillomavirus (HPV). In the context of HIV, Key populations which include Female Sex Workers (FSW), Men having sex with Men (MSM) and Injecting Drug Users (IDU) constitute the core for STI and spread of human immunodeficiency virus (HIV). Prevention and treatment of STIs among KPs has been a national priority for the National AIDS Control Program in India. There are now available a variety of tests for use at or near the point of patient care (POC) for STIs . These include a wide range of rapid diagnostic tests (RDTs) for HIV, hepatitis C virus and syphilis, among others, with which it is possible to detect infection using finger prick blood, or in some cases, oral fluid. In addition, other types of POC tests, including simple molecular tests for use in primary healthcare settings, have also become available recently. However, there is limited evidence available on the utility and feasibility of NAAT-based screening for STI in India as the GeneXpert systems are a recent introduction in public health program in India.

Aim: To determine the utility and feasibility of NAAT-based screening for sexually transmitted infections in India.

Objectives:

- To estimate the prevalence of common STIs in the general and key population of Hyderabad using NAAT (Nucleic Acid Amplification testing)
- To estimate the IgG sero-prevalence of C. trachomatis in the general and key population in Hyderabad
- To determine factors associated with the prevalence of common STIs

Sub-objective:

- To assess the degree of agreement between current syndromic diagnostic techniques and treatment algorithms and NAAT based test results for STIs

Status of the project: Pre pilot completed on Sept., 2018. Regular study to commence in May, 2019.

Principal Investigator:

- Dr.Ramesh Reddy Allam, Deputy Project Director, SHARE INDIA

Co-PI: Prof. Servaas Morre, The Netherlands

Co-investigators

- Dr.Kuldeep Singh Sachdeva, DDG, Basic Services Division, NACO
- Dr.Asha Hegde, National consultant PPTCT and STI, NACO
- Prof. Dr. Servaas A. Morre, Laboratory of Immunogenetics, VU Medical Center, Amsterdam, The Netherlands.
- Dr. Vijay V Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago, USA.
- Dr. Dinaker, Consultant, SHARE INDIA
- Dr. Ganesh Oruganti, Executive Director, SHARE INDIA
- Dr. Rashmi Pant, Biostatistician, SHARE INDIA
- Dr. Pierre Paul Michel Thomas, Institute of Public Health Genomics, Maastricht University, Maastricht, The Netherlands

Funding: 10 lakhs INR+Testing Kits funded by Maastricht University, The Netherlands

18. InPoChlam: Innovative Point of Care Chlamydiales. Joint industrial R&D projects between India and EUREKA member countries Belgium, The Netherlands, Spain and United Kingdom (Upcoming)

About the Project: Modern pathology laboratories are Providing Point of Care (POC) services to the needy. However, often these are in accessible and ill affordable to patients living in rural areas. The One Health approach underlines the necessity to understand the environment and provide pragmatic solutions for prevention and treatment of infectious diseases.

Aim: Inpochlam is Joint industrial Research and development project between India and EUREKA member countries (Belgium, The Netherlands, Spain and United Kingdom). The goal of this collaborative innovation across borders is to foster ONE HEALTH through affordable, innovative solutions for prevention and control, point of care diagnostics and treatment of infectious disease (Chlamydia) to improve prevention, treatment outcomes and efficient utilization of health resources.

Objective: Optimization of the Lab on Wheels for Chlamydiales in the One Health setting Validation Lab on Wheels on the road in Netherlands and Belgium Application of Lab on Wheels in India Comparison of the Lab on Wheels versus traditional diagnostics in India, Netherlands and Belgium and create of a transmission model

Status of the project: Grant applied in Feb - 2019, Awaiting sanction.

Investigators: India

SHARE INDIA:

- Dr. Ramesh Reddy Allam ,
- Dr. Vijay V Yeldandi,
- Dr. Rashmi Pant
- Sam Higginbottom, University of Agriculture Technology and Sciences - [SHUATS], Allahabad, Uttar Pradesh:
- Dr. Jonathan A. Lal,
- Dr. Rajiv Kant,
- Dr. J Neeraj.
- Dr. Sarvjeet Herbert,
- Dr. Bipasha David, NTR College of Veterinary Sciences, Vijayawada, Andhra Pradesh:
- Dr. T. Srinivasa Rao,
- Dr. D. Narendra Nath,
- Dr. Ch. Bindu Kiranmayi.

The Netherlands

- Microbe : Prof. Dr. Servaas Morre, Anne Ammerdorffer, Sander Ouburg, Pierre Thomas
- BiosparQ : Dr.Gerold de Valk Belgium UGent: Dr. Daisy Vanrompay, Dr. Ir. Sven Arnouts

Funding source for Indian partners: Department of Biotechnology Project period: 3 years (2019-2022) Amount: Rs. 130 Lakhs

SHARE INDIA has gained substantial experience in providing TA to promote heath systems strengthening by establishing a model of Private Public Partnerships for HIV prevention and treatment; Strategic Information and human capacity development through capacity building, supportive supervision & mentoring and provided training on operations research. Currently there are three, CDC cooperative agreements; (a) National Initiative to Strengthen and Coordinate HIV/TB Response (NISCHIT); (b) Laboratory Quality Systems in HIV (LaQSH); and (c) Strengthening TB Action and Response (STAR) with SHARE INDIA.

19.PROJECTS FUNDED BY US- CENTRES FOR DISEASE CONTROL AND PREVENTION (CDC- INDIA)(Ongoing)

19.a. National Initiative to Strengthen and Coordinate HIV/TB Response (NISCHIT)

Background: SHARE INDIA started working with Central and State Governments and other private partners, involving the community and society at large for public health issues focussing on HIV/AIDS prevention and care. In 2005, SHARE INDIA received a grant from US Centres for Disease Control and Prevention through a Cooperative Agreement to build human capacities for HIV/AIDS health care in Andhra Pradesh.

The united state of Andhra Pradesh, a southern state of India was then considered as one of the epicentres for HIV epidemic in the country with high prevalence of HIV. Andhra Pradesh has a total population of around 76 million and six million of these live in or around the city of Hyderabad. The HIV prevalence at antenatal clinics was around 2% in both 2004 and 2005 - higher than in any other state - while the general population prevalence was 0.97% in 2005-2006. The vast majority of infections in Andhra Pradesh are believed to result from sexual transmission. SHARE INDIA team forayed in to studies in the year 2007 and 2009 to understand the dynamics of the HIV epidemic and sexual networks of Men having sex with Men and reasons for voluntary HIV testing.1 Further on the studies focussed on the HIV infections among truck drivers. HIV prevalence at STD clinics was 22.8% in 2005. At the same time India was estimated to have a HIV burden of about 2-5-3 million being the second largest home for People living with HIV/AIDS (PLHIV) in the world next to South Africa threating and concerning with dire consequences on the country's progress.

Steps to engage the Private Sector to widen access to HIV care services:

Therefore, committing itself to the cause of HIV/AIDS prevention and control, in the year 2005, SHARE INDIA partnered with the National AIDS Control Organisation (NACO) and the then Andhra Pradesh State AIDS Control Society (APSACS) to strengthen the HIV/AIDS counseling and testing services in private sector. In this process, SHARE INDIA started building the capacities of the faculty and medical students in 20 private medical colleges/schools in Andhra Pradesh. There were about 1000 students in each of these schools churning out about 100 medical graduates every year from each school. Most of these medical institutions were located in urban or semi-urban areas and about 5000 faculty and students were trained with four days clinical training on PEP and HIV clinical management with support from experts of CDC, Atlanta and in house experts on HIV clinical management of SHARE INDIA. The training activities emboldened the managements and faculty of 20 private medical teaching institutions to initiate HIV/AIDS counseling and testing centres with their infrastructure and participate in prevention of parent to child transmission of HIV/AIDS program. For this purpose, a unique platform was created with formation of Andhra Pradesh AIDS Consortium (APAIDSCON) with 15 medical schools partaking and implementing the HIV/AIDS services including conducting deliveries and surgeries for pregnant PLHIV. By the year 2009, about 1000 babies were delivered in these institutions and the facility integrated HIV/AIC counseling and testing centres were conducting about 10% of the HIV tests done by the rest of 600 odd testing centres of the state. The evaluation of the APAIDSCON project is published2.

Providing access to HIV clinical management in private sector: In 2005, there were only three CD 4 testing machines available in the entire state in public sector making it difficult to access HIV clinical services, and therefore, SHARE INDIA instituted a CD4 testing machine in private sector for the first time making CD4 testing accessible at a discounted price under the project APAIDSCON which helped a total of 4165 PLHIV access subsidized CD4 testing. An innovative indigenous sample transporting mechanism was developed and in partnership with GATI logistics services, the samples were hand delivered on surface / air transport free of cost.

Transition of HIV clinical care to Public sector with linkages: About 10,000 PLHIV were treated in the 20 private medical institutions were slowly transitioned to the HIV care in public sector with a linkage and network plan drawn out to reduce the cost and make services easily accessible to the PLHIV.

Technical assistance to Government of India —"CDC funded Projects"

Experiences in HIV clinical care assessments and evidence based response: The CDC continued to support SHARE INDIA with consecutive cooperative agreements to support India's National AIDS Control Program for human capacity development and institutional strengthening under President's Emergency Plan for AIDS Relief (PEPFAR). SHARE INDIA during the period 2010 to 2015 strived build the capacities district level units called District AIDS Prevention and Control Units (DAPCU) in 189 HIV high burden districts spread across 22 states in India for decentralized and evidence based response. In the process of building the district level planning and strengthening the HIV/AIDS response, SHARE INDIA at the request of NACO conducted an assessment of HIV/AIDS clinical services provided at 357 Antiretroviral Treatment (ART) Centres in spread across the country. The findings of this assessment were published. These efforts provided insights into the leaky cascade of HIV/AIDS care continuum and ideas for actions to be initiated to strengthen HIV care. One of the major findings was focused on higher mortality due to TB among PLHIV which had been the most common opportunistic infections. SHARE INDIA identified during the course of this assessment factors contributing to mortality and retention on care of PLHIV and effectiveness of TB case finding.

HIV-TB clinical care and case management: Garnered with the vast experience and cognizant of the need to strengthen the response for HIV-TB co-infection among PLHIV to reduce morbidity and mortality, National Initiative to Strengthen and Coordinate HIV-TB response (NISCHIT) was started. India adopted the WHO guidelines and recommendations to convert hitherto alternate day treatment to daily anti tuberculosis treatment for TB (daily ATT) and decided to provide 'Single Window' services to PLHIV for management of TB. This required a mammoth exercise for policy level planning, formulation of national guidelines, capacity building of the ART Centres staff and establishing joint coordination and monitoring mechanism of NACP and Revised National Tuberculosis Control Programme (RNTCP). SHARE INDIA provided the necessary technical support in formulation of the national framework for the policy and developed guidelines for implementation of 3Is (Isoniazid Prevention Treatment, Intensified Case Finding and Infection Control) and provision of daily ATT after proper diagnosis of TB with CBNAAT. A national curriculum for training more than 5000 staff from 540 ART Centres was developed and a plan based on Program Evaluation Review Technique (PERT) and Critical Path Method (CPM) was designed. All the staff were trained in short span of three months. This plan success was presented in a recent International Union Conference held in 2019.

Intensified efforts for TB case management:

Nestling on the efforts made in training the ART Centre staff, NACO and Central TB Divisions initiated the joint frame work for HIV-TB coordination mechanism for seamless services to PLHIV with IPT and daily ATT. SHARE INDIA identified the barriers to access the changed daily regiment for TB treatment and published its findings.To rollout this, SHARE INDIA supported the ART centres in HIV high burden districts of East Godavari, Guntur and Krishna in Andhra Pradesh and Mumbai, Pune and Thane in Maharashtra. In the ART centres in Maharashtra, efforts lead to more than 95% PLHIV attending the ART Centres getting screened for TB, >95% PLHIV diagnosed with TB provided with ATT within seven days from diagnosis, >95% completing TB treatment. SHARE INDIA supported the national program in formulation of policy guidelines for introducing Isoniazid Prophylaxis Treatment (IPT) to all PLHIV who have latent TB, or asymptomatic at the ART centres and also systemic analysis of airborne infection control (AIC) measures initiated at the ART centres in Maharashtra. SHARE INDIA team is engaged in supporting the health care providers for health care workers surveillance, diagnosis and treatment of MDR and XDR TB and identifying and addressing the latent TB cases in Mumbai along with technical support in addressing the side effects of TB treatment in partnership with Central TB Division, PATH International, Tata Institute of Social Sciences and Greater Mumbai Municipal Corporation and Government of Maharashtra.

Community engagement for PLHIV in Pre-ART surge ART centres:

To further critical HIV care at the ART centres and accelerate efforts to reach the UNAIDS fast track targets of 90-90-90, 40 ART centres in the three cluster districts of Andhra Pradesh were supported to identify PLHIV to place on treatment under 'Treat all' policy. Learning from the past experiences prompted SHARE INDIA to involve the community members of PLHIV for outreach to make telephonic and home contacts of PLHIV who are not on ART and bring them back to HIV care. The outreach network support from GFATM was leveraged for this purpose and this translated into a PLHIV in Pre-ART surge at the ART centres and increased the HIV care patient loads. The community engagement in follow up mechanisms to bring PLHIV back into HIV care had been successful adding a 20% increase to the 50% of PLHIV followed up in the Andhra Pradesh. The effect of implementation of Treat all Policy has been studies and published.

Enhance access to ART care:

Realizing the need to respond to the growing numbers of PLHIV at the ART centres and provide differentiated care to various categories of patients Differentiated Care Services Models were introduced with multi month scripting, multi month drug dispensation and decentralized ART dispensation at the Link ART centres. In consultations and deliberations with NACO, SACS, PEPFAR, CDC, Global Health, GFATM and other partners service delivery and differentiated care with triaging the patients helped to identify the unstable patients for advance disease management as per WHO protocols. These efforts were furthered, widening the provision of ART dispensation at four Central Prison Hospitals in Andhra Pradesh which addressed the travel and systemic constraints to PLHIV Prison inmates accessing treatment. In addition, mainstreaming HIV care services into the Tribal health plan, two Link ART centres were established to enhance access to ART services in the remote and hard to reach tribal populations in East Godavari district. Models of Community based ART dispensations among Key populations are being piloted in CBOs in East Godavari District.

Changing paradigm for 90-90-90 in AP:

The efforts of SHARE INDIA team accentuated achieving the global 90-90-90 fast track targets, with increased numbers accessing HIV/AIDS diagnosis, and more than 80% of PLHIV who know their status getting on treatment. The third ninety is impacted from hitherto 1% PLHIV with known viral suppression rising to 30%. The efforts are on and with augmenting efforts to utilize HIV viral load tests, decentralized identification of treatment failures, enhanced referrals to State AIDS Clinical Expert Panel (SACEP) mechanism, and provision of alternate as well as 2nd line and 3rd line treatments in Andhra Pradesh, it is expected that, the third ninety targets would be achieved with increased number of PLHIV retained in HIV care, achieving viral load suppression in line with U=U (Undetectable=Un-transmittable) paradigm.

Tools to measure and improve HIV care performance:

Continuous monitoring and evaluation of the program is inbuilt into the DNA of the SHARE INDIA projects. In line with PEPFAR and CDC guidelines earlier, the APAIDSCON project was externally evaluated and the report is in public domain. Various monitoring and evaluation tools were developed using technology. One such innovation ingeniously developed is a mobile phone based Technology enabled Adherence Monitoring tool (TeAM) application aimed to monitor the treatment adherence among patients on ART provided with multi month drugs. SHARE INDIA is presently engaged in supporting the national program in predictor analysis, data analysis to identify morbidity and mortality etc.

Strong partnerships for enhanced HIV care:

SHARE INDIA had a long history of partnerships with PEPFAR and CDC and their partners including USAID, GFATM, and WHO to leverage the resources to and provide Technical Assistance to NACO and SACS implement 'Test and Treat' policy and pilot innovative models for differentiated care for PLHIV in India.

Next steps:

SHARE INDIA now plans to foray into expanding the HIV-TB case management, improve quality of HIV care at the ART centres with differentiated care and multi month scripting, index testing of the Key Populations, hard to reach populations, pilot recency assay, scale up engagement of community in ART dispensations, treatment adherence monitoring, prevent loss to follow up and tracking, tracing of the patients, encourage greater utilization of routine viral load tests and its results for early switch/change to appropriate alternate, 2nd line and 3rd line regimen etc. to reach the 90-90-90 targets.

A note on some of the recent initiatives taken up under Project NISCHIT

a. Differentiated Service Delivery Models: With adoption of "Test and Treat" policy in India, more patients on HIV were initiated on treatment and hence maintaining quality became essential to ensure retention and better treatment outcomes. To enhance quality of treatment services SHARE INDIA has supported provision of differentiated care services to PLHIV. Differentiated service delivery, also known as Differentiated care, is a client-centered approach that simplifies and adapts HIV services to reflect the preferences and expectations of PLHIV while reducing unnecessary burden on the health system.

b. Multi-Month Dispensation improving retention in care: Multi Month Dispensation (MMD) is one of the strategies of Differentiated Service Delivery Models (DSDM), where the patient receives antiretroviral medication for three months and will have less clinic visits. Multi-Month drug dispensation proved to be potentially effective approach in ensuring access to quality care, retention and adherence to treatment. Significant efforts made by the project has yielded positive outcome where about 53,989 eligible PLHIV were initiated on 3MD in and among those 93% of them reported on time pill pick up which has demonstrated positive impact on treatment adherence. SHARE INDIA provided technical assistance to Andhra Pradesh State AIDS Control Society (APSACS) to successfully scale up Multi Month Dispensation across all the 40 ART centers in the state.

Standard operating procedures (SoPs), Job aids, M& E tools, regular onsite and virtual monitoring of health centers aided in achievement of the outcomes.

c. Decentralisation of HIV care and treatment services - ART initiation at testing centres: To decentralize and mainstream HIV care and treatment services with the health system, an innovative approach of providing HIV treatment (ART initiation) at peripheral health centers was implemented. Decentralization of HIV services with the general health system helps to increase access to ART services and decongest the ART centers. It is also envisaged that this model aids in reduction of linkage loss between HIV diagnosis and ART initiations and enhance retention of PLHIV on ART.

d. The intervention was undertaken at LAC-plus centres located at Area Hospitals of Nuziveedu, Bapatla and Ramachandrapuram located in Krishna, Guntur and East Godavari districts respectively. Feasibility assessment was undertaken in the three sites to ascertain the possibility of ART initiation where availability of resources and specialist medical officers was a criterion. Nominated staff was trained. Recording tools were modified to suit the intervention and updating the patient's details in Inventory Management System (IMS) was initiated at Link ART Centre plus sites. Decentralizing HIV treatment substantially increased access to care and treatment to people living with HIV, where about 40 % of eligible PLHIV were initiated on ART.

e. Integration of HIV/AIDS services in Tribal Health: Tribal health was one of the areas of concern where the tribal population faces burden of diseases exacerbated by the low access to healthcare especially for HIV/AIDS. Improved access to health services will result in patients undergoing treatment adhering to it, resulting in healthier and longer lives. Integrating HIV/AIDS-related services into the tribal health plan provides the opportunity to enhance the quality of care provided to PLHIV in the hard-to-reach tribal areas of East Godavari district and has demonstrated positive outcomes in providing access to ART treatment services and engaging them on care. To integrate HIV/AIDS care, support and treatment services in tribal health facilities, two Link ART centers at Area Hospital, Chintoor and Community Health Center, Kunavaram, tribal areas of East Godavari district. A special drive was conducted to track PLHIV who had missed doses (MIS)/Lost to Follow up (LFU) and initiate them on ART and about 102 LFUs were successfully tracked and retained on care. Seven out of 18 PLHIV who are on Pre ART and LFU and 13 On ART and LFUs reported at the LAC centre and got initiated on ART. About 70 % of LFUs and MIS cases were linked to Link ART Centres for re-engagement in care.

f. Prison intervention: Prisoners have been identified as one of the special groups under NACP, and NACO aims to address all high-risk populations living in prisons and other closed settings in the country. Enhancing access to ART dispensation within the central prison hospitals ensured access to comprehensive care and treatment to the prison inmates. To provide access to ART treatment and improve adherence to treatment to the prison inmates, Link ART Centre were established within central prison hospital located at Rajahmundry, Visakhapatnam, Kadapa and Nellore districts. Prison Hospitals are adequately staffed, where in medical doctors, staff nurses, laboratory technicians, pharmacists and other paramedical staff, were oriented on HIV care and treatment guidelines. With this initiative, it is envisaged that there will be considerable reduction of lost to follow Up cases, increase in adherence levels among Prison inmates on ART, as the ART drugs are available within the prison hospital, which will also in-turn reduce the burden on state government.

Working towards UNAIDS target of 3rd 90

a. Scaling up HIV viral load test and uptake of test results: Viral load measurement is a critical tool to assess the impact of HIV treatment efforts, and is endorsed by the World Health Organization (WHO). SHARE INDIA supported 20,955 PLHIV access to viral load test from the three focused districts of Andhra Pradesh and of them 67% (14,107) are virally suppressed. To accelerate scale up of HIV-1 viral load test uptake and utilisation of test results, onsite support was provided to ART centres in identification of eligible PLHIV for test, developed and implemented monitoring tools to accelerate referral and linkage.

b. Undetectable = Un-transmittable (U=U): To promote U=U campaign, SHARE INDIA continued to mount its technical assistance on counseling and patient messaging that HIV treatment as prevention strategy, and has developed patient education materials on treatment adherence and reaching suppressed viral load.

c. ART- Center of Excellence; To provide comprehensive care and treatment services to the PLHIV, Center of Excellence (CoE) was established and operationalized on December 1, 2018, at Siddhartha Medical College, New Government General Hospital, Vijayawada, in the state of Andhra Pradesh. SHARE INDIA has provided necessary support to train and orient the service providers and members of the State AIDS Expert Clinical Panel (SACEP) to make the newly established CoE fully functional. CoE staff were trained on functioning of CoE and provided hands on support for conducting SACEP. SHARE INDIA team strengthened SACEPs among the ten ART plus centres in the state by building capacities of the staff and through distinct mentoring and monitoring. With introduction of e-SACEP mechanism, there was reduction in time to review patients and recommend for switch to appropriate alternate regimen. Patients eligible for second line ART and alternate first line as recommended by SACEP are being initiated on second line ART at respective ART centres. Over a period of six months a total of 621 patients were reviewed with suspected treatment failure, among those 156 patients were recommended for 2nd line and 33 patients for 3rd line

d. Key populations: Around the world, key populations (KPs) face much higher rates of HIV and AIDS than the general population and are most at risk for contracting HIV. UNAIDS estimated that 40 to 50 percent of all new HIV infections may occur between individuals in key populations and their immediate partners. As per the NACO HIV estimates report 2017, HIV epidemic in Andhra Pradesh continues to be a concentrated epidemic. Access to testing, care and treatment services is low among key population due to fear, stigma and discrimination. To increase access to treatment, SHARE INDIA partnered with FHI 360 (LINKAGES) to build capacities of Targeted Intervention (TI) organizations working with key population, in the three project focus districts of Andhra Pradesh, on the importance of HIV testing, ART treatment and uptake of viral load. SHARE INDIA also supported FHI 360 and TI's in identifying and ensuring mobilization of key population to access HIV testing, Treatment and viral load testing services. SHARE INDIA has provided technical assistance to state AIDS control society in viral load monitoring among key population. In the fiscal year 2017-2018, from three focused districts of Andhra Pradesh, 738 (81%) out of 914 eligible KPs have undergone viral load test and among them 499 (68%) are virally suppressed.

e. HIV-TB prevention and management: Worldwide, tuberculosis (TB) is one of the top 10 causes of death, and the leading cause from a single infectious agent (above HIV/AIDS); millions of people continue to fall sick with the disease each year. In 2017, TB caused an estimated 1.3 million deaths (range, 1.2–1.4 million) among HIV-negative people, and there were an additional 300, 000 deaths from TB (range, 266 000–335 000) among HIV-positive people. India has the second-highest burden of HIV-TB cases in the world, as out of the 2.1 million people living with HIV, 110,000 are co-infected with TB and accounted for 32% of global deaths among HIV – negative people (Global Tuberculosis Report 2015, WHO). Hence screening of PLHIV attending ART centres for TB, has become important. To reduce the HIV-TB burden and the morbidity and mortality associated with dual infections concerted efforts towards prevention, early detection, and prompt management of HIV as well as TB became essential. It is aimed to provide single window services for management of HIV-TB co-infections at ART centres so as to improve access to HIV-TB care and ensure seamless services to PLHIV. CDC and SHARE INDIA supported NACO /SACS in developing policies and implementation of single window services for co-infected HIV-TB patients in the select focused districts of Maharashtra and Andhra Pradesh.

f. Policy & Guidelines: SHARE INDIA along with US Centers for Disease Control and Prevention - Division of Global Health and TB (CDC-DGHT) India, has provided technical support to NACO and Central TB division in the development of the guidelines on Prevention and Management of TB in PLHIV at ART Centres, which was released by NACO in 2016. (http://www.naco.gov.in/ Guidelines on Prevention and Management of TB among PLHIV.pdf)

g. Scale up of TB screening among PLHIV: SHARE INDIA was instrumental to operationalize delivery of single window services to PLHIV which includes referral for diagnosis of TB to DMC/CBNAAT, provision of daily Anti TB Treatment (ATT), and initiation of Isoniazid Preventive Therapy (IPT) for TB prevention. It has facilitated improved access to TB screening and diagnostics among people living with HIV , where > 90% of them were systematically screened for TB and those tested and diagnosed with TB 99% were initiated on Anti TB Treatment.

h. Strengthening capacities of health staff: With an intent to orient and equip ART center staff to implement the guidelines on prevention and management of TB in PLHIV, trained about 956 ART staff including Medical Officers and Staff Nurses from 510 ART centers across the country . A comprehensive training package covering all the key components of single window services - TB screening, early referral for CBNAAT and daily TB treatment for PLHIV was developed to orient ART center staff. Taking these efforts further, all the ART centre's staff in Andhra Pradesh and Maharashtra had been trained on the revised guidelines. SHARE INDIA also supported in capacity building of District AIDS Prevention Control Unit and Revised National Tuberculosis Control Program staff, which led to strengthened coordination and implementation of collaborative TB/HIV activities. It has significantly contributed for improvement in number of PLHIV screened and tested for TB and has ensured 99% initiation of TB treatment among TB co-infected PLHIV and reduced referral loss. Assessment of Airborne Infection Control measures at 31 ART centres in Pune, Thane and Mumbai was conducted (FY 2017 – 2018).

i. Capacity building of ART centers staff on NIKSHAY software: To ensure correct and complete recording and reporting of HIV-TB activities in revised HIV-TB tools and TB treatment card in NIKSHAY software at the ART centers, training cum orientation was conducted for all the ART centre staff of Pune, Thane and Mumbai. About 130 ART staff across 31 ART centers from the focussed districts attended the trainings. Technical support was also provided for all the ART centres' staff from other districts in Maharashtra on HIV-TB tools and real time registration in NIKSHAY software.

j. Re-engaging patients in care: Retention in HIV care and treatment is defined as continuous engagement of people living with HIV/AIDS (PLHIV) in prevention and care and support services from the time of diagnosis. Despite significant success in HIV Program, many PLHIV will not be retained due to various reasons like death, opted out of treatment and the most important reason is that they do not turn up on their pill pick-up day. Many of the ART centres has high patient volume with standard limited allocation of human resources and limited time which are critical systemic constraints to implement guidelines and it is challenging for the ART centre staff to identify those PLHIV who requires focused counselling /clinical services and provide them with the same.

k. Engaging with Communities: Evidence suggests that engaging communities is essential in advocating for a robust response to the epidemic and delivering services that can reach everyone in need and tackling HIV-related stigma and discrimination. Communities are engaged to identify HIV –positive individuals, link them to HIV treatment and services and ensure that they achieve viral load suppression and long term retention in care.

l. Collaborations with networks: SHARE INDIA partnered with community networks (district level) to re-engage PLHIV in care. Engaged community members as peer navigators to reach those PLHIV who are not accessing treatment, educate and mobilise them to access treatment.

m. Technology Enabled Adherence Monitoring Tool (TeAM): Adherence to treatment is a key determinant for people living with HIV/AIDS. To monitor and support treatment adherence of PLHIV with low adherence levels (<95%), a mobile application was developed and piloted Technology enabled Adherence Monitoring tool (TeAM) in four ART centers from the focused districts in the state. Patients registered on the TeAM were provided with select reminder messages for improved drug adherence. While it is too early to assess the impact of the pilot initiative, Mobile health interventions have the potential to improve retention in care and clinical outcomes for PLHIV.

n. e-NISCHIT: SHARE INDIA, in collaboration with India's National Institute of Tuberculosis and Respiratory Disease (NITRD), Project ECHO (Extension for Community Healthcare Outcomes), U.S Centers for Disease Control and Prevention (CDC) and the National AIDS Control Organization (NACO) launched virtual e-NISCHIT (National Initiative to Strengthen Collaboration between HIV-TB through e-Learning) program. This initiative aims to build capacities of healthcare providers from ART centres on HIV-TB co-management, by providing a platform for live interaction with subject experts. This model is based on the hub-and-spoke knowledge-sharing networks, led by expert teams for case based learning and discussions. Within a span of one year from its inception, 40 interactive live sessions were conducted, where experts in HIV-TB arena from Government of India, World Health Organization and premier private healthcare institutions provided their inputs on 30 live cases presented from the field during the sessions. The initiative has successfully reached to approximately 1500 health care providers in 115 ART centres from Northern and Southern states of the country.

On World TB Day 2019, CDC's "Global TB Elimination Champions" highlights organizations, individuals, and initiatives that have made meaningful contributions to end TB around the world.

www.cdc.gov/globalhivtb/who-we-are/events/world-tb-day/worldtbday.html

SHARE INDIA, along with India's National Institute of Tuberculosis and Respiratory Disease, Project ECHO (Extension for Community Healthcare Outcomes), CDC, and the National AIDS Control Organization of India led virtual e-NISCHIT (which stands for electronic National Initiative to Strengthen and Coordinate HIV/TB Response) ECHO clinics to educate health care providers from antiretroviral treatment (ART) centers on HIV-TB co-management–reaching approximately 1,500 health care providers in 115 ART centers around the country in 25 interactive sessions. About 25 experts in HIV-TB from the Government of India and private institutions provided input to 21 live cases presented from the field during these sessions.

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Data for Impact

Strategic information

Data quality assessments:

Accurate and consistent data is essential for program management and effective monitoring for improved program outcomes. To ensure correct reporting of data, continuous data quality assessment measures are taken up along with site level distinct mentoring and monitoring support. In line with implementation of new interventions several monitoring tools, Job-aids, dashboards, standard operating procedures were developed by the project team. All these resulted in reduced /error free reporting of data and quality data.

Efforts were made to ensure data entry in Inventory Management System (IMS developed by NACO) and to reduce the gap between IMS and Monthly Progress Report (MPR), which has resulted better performance by the ART centres in NACO quarterly feedback report.

Virtual Monitoring: In addition to the regular site level technical assistance and continuous quality improvement measures, SHARE INDIA has provided technical assistance to APSACS for monitoring of process and implementation of newer initiatives like multi month dispensation at the ART centers.

Using ZOOM technology (video conferencing) structured virtual review meetings were held once in every month with all the staff of ART centers in the state of Andhra Pradesh, to inform and improve the service delivery of the centers.

The project staff had provided centre wise written feedback on a monthly basis with identified gaps and probable solutions. Post written feedback, phone follow-up was made to enquire action taken status, based on the feedback.

Regular virtual review meetings with ART centres staff resulted in improved program outcomes viz.,, improved screenings vs initiations on 3MD, decreased errors in recording and reporting and Monthly Progress Report. Virtual review helped the ART centres to initiate the more number of PLHIVs on ART. Apart from reducing travel cost and time of program staff, it also helped in real time monitoring of program implementation. It has served as a platform for cross learnings and experience sharing between ART centres and also for strengthening capacities of health staff. Virtual monitoring proved to be a cost effective monitoring tool that has demonstrated positive outcomes.

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Co-Investigators:

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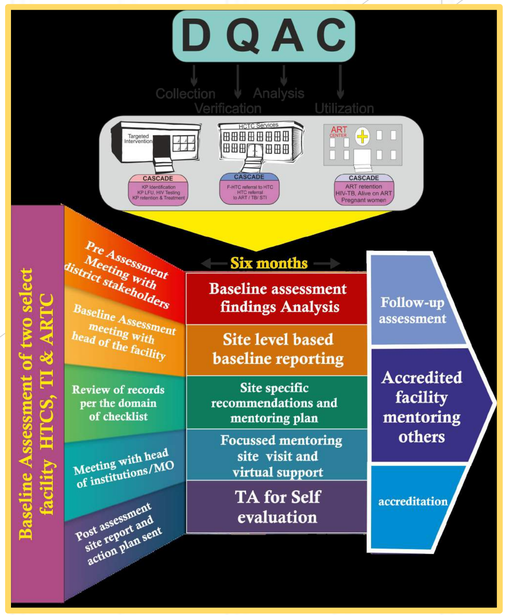
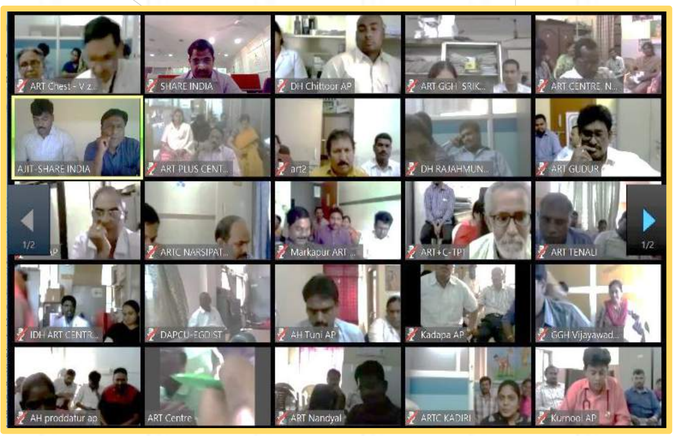
Dr. Ramesh Reddy Allam, Deputy Project Director, SHARE INDIA.

Funding source: US Centers For Disease Control and Prevention (CDC)

Amount: US $ 1,000,000 (2017-18), US $ 1,200,000 (2018-19).





19.b. Laboratory Quality Systems in HIV (LaQSH) (Ongoing)

Project LaQSH and the U.S. Centers for Disease Control and Prevention (CDC) provided technical assistance (TA) to the National AIDS Control Organization (NACO), Government of India (GoI), for implementing Quality Management Systems (QMS) and Viral Load (VL) testing in India's National AIDS Control Programme (NACP) laboratories through the President's Emergency Plan for AIDS Relief (PEPFAR). We are working in the Focused Districts of Andhra Pradesh, Maharashtra, Nagaland, Manipur and Mizoram to provide Free Access to Quality HIV-1 Viral Load Testing

The project facilitated development of the national guidelines for HIV-1 viral load laboratory testing in 2018, which was launched by the Honorable Union Minister of Health and Family Welfare Shri Jagat Prakash Nadda, Government of India. This immunological monitoring is for utilization by 540 ART centres and 64 viral load laboratories and to guide treatment options for nearly 1.3 million people living with HIV (PLHIV) in India.

Developed capacity building modules and Training Programs:

The QMS Checklist and Facilitator's Manual was designed in the year 2016 to implement QMS in HCTS laboratories, which was approved by NACO. The modules are also being used for blended training.

A cascade training model was used effectively to deliver training through a pool of master trainers trained centrally to reach trainees at the local level.

Regional Training of Master Trainers were organised at 9 locations–Mumbai, Pune, Bangalore, Delhi, Kolkata, Hyderabad, Chennai, Dimapur and Lucknow and 274 personnel were trained to be part of the Resource Pool (Master Trainers); 124 belonged to the focused states of Andhra Pradesh, Maharashtra and Nagaland.

The Training of Master Trainers aimed to build the capacity and orient officers of State Referral Laboratories (SRLs), State AIDS Control Society (SACS) and District AIDS Prevention Control Unit (DAPCUs) on the mentoring and monitoring tool for stand-alone HCTS laboratories and SACS personnel, on the principles of SA-HCTS laboratory mentoring, and to create an environment for strengthening SA-HCTS mentoring through SRLs.

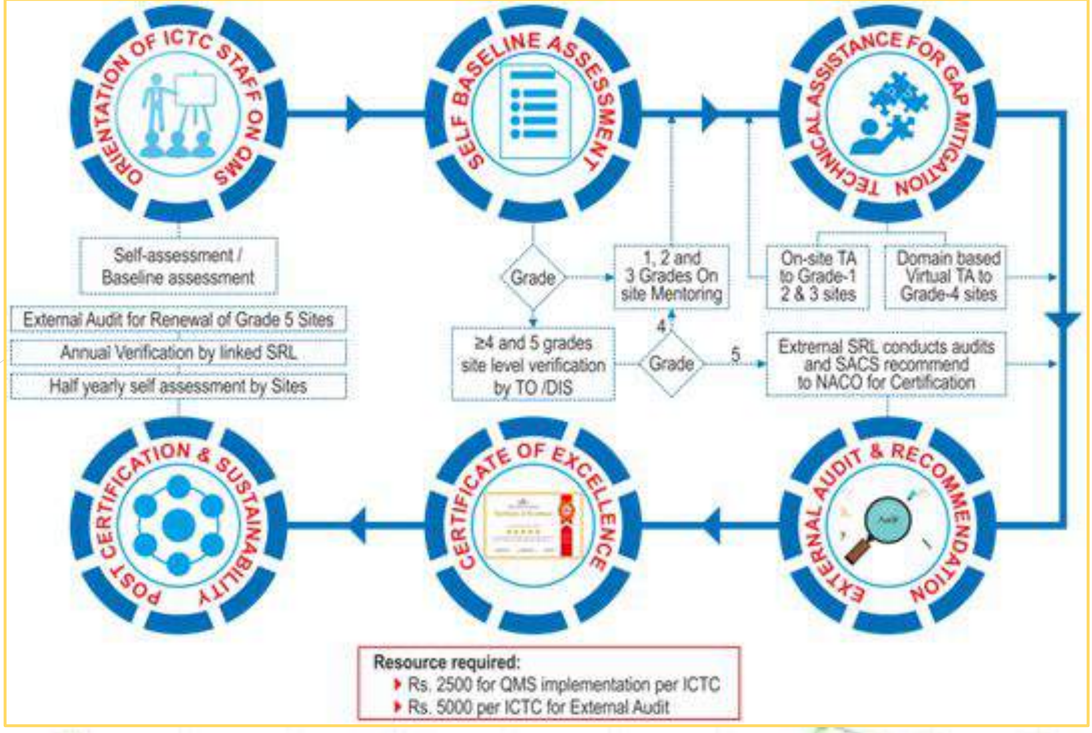
896 personnel from 264 HCTS laboratories were trained in 15 batches on QMS across the focused districts. The state and SA-HCTS laboratories were trained, mentored and monitored by the SRL/NRL (resource pool), with support from the national team comprising members of NACO, CDC and SHARE INDIA.

Technical assistance for step-wise quality management systems:

Distinct mentoring, monitoring and advocacy initiatives were provided to the HCTS laboratories in the focused districts that preceded through baseline assessments.

Baseline assessments of 264 SA-HCTS laboratories were organized between October and November 2016.District- and state-level stakeholders were closely involved in the baseline assessments and in the review of action taken.

Dissemination workshops were organized at administrative headquarters of all focused districts and drew participation of 785 representatives from all laboratories in that particular district, district health officials, DAPCUs as well as officials from NACO, SACS and SRLs.



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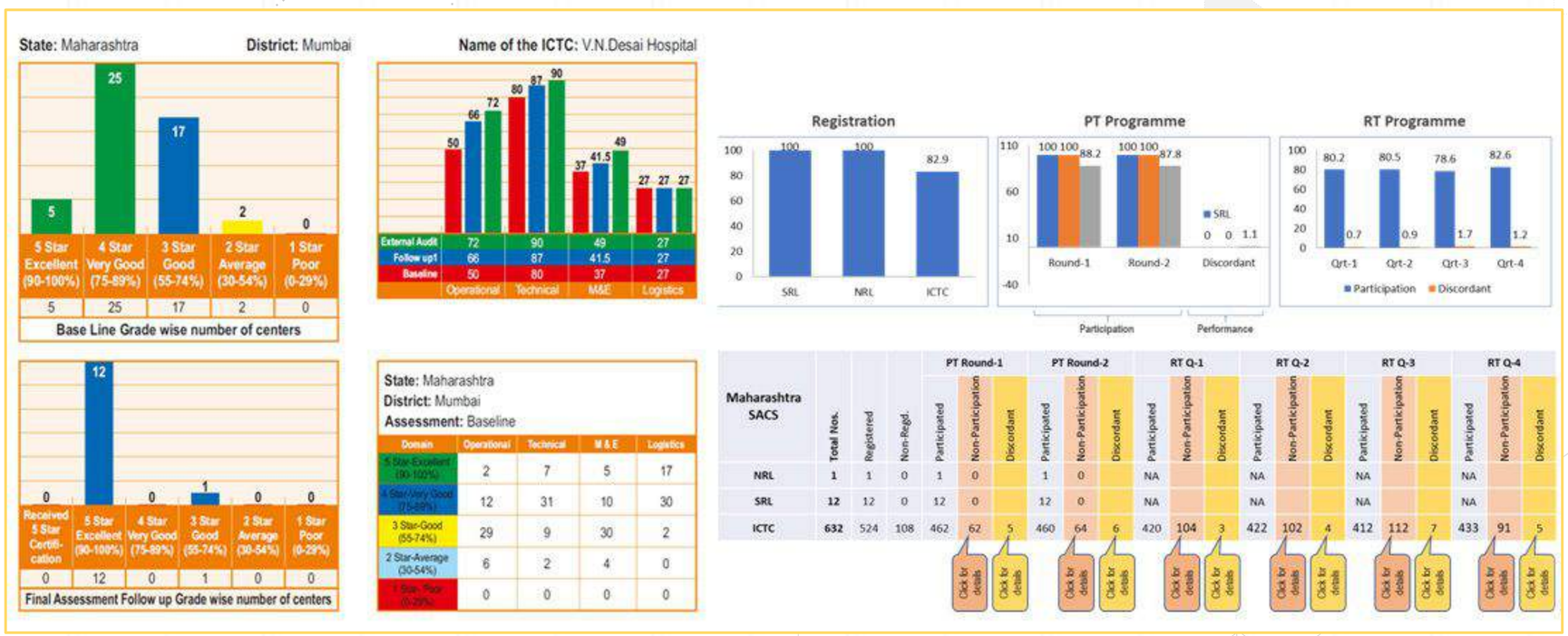

The HCTS QMS Checklist was designed as a desktop-based application SA-HCT QMS E-Tool. The front-end user interface of this tool was designed in Microsoft-Excel using Visual Basic, and the SQL server 2014 was used for the back-end data storage. Stakeholders such as the District AIDS Prevention and Control Units (DAPCUs), SRLs, State AIDS Control Societies (SACSs) and NACO can use the dashboard view to understand the status of QMS performance in their district, state or nationally. As an outcome of the QMS a standardized web-based NEQAS data management tool was developed to collect the Proficiency and Reverse testing data from all the HCTS, SRLs and aggregated data is reported at APEX lab, NARI and NACO.

http://nacoprayogshala.in/

A differential technical assistance and mentoring plan was developed to focus amongst laboratories requiring greater improvement. On-site hand-holding and capacity building were slotted for all laboratories with a rating of Grades 1, 2 and 3. In line with this, a domain-wise performance of laboratories rated Grade 4 was reviewed and those performing poorly were visited for on-site support and the rest were provided virtual assistance. The objective of both forms of technical assistance was to focus on improving the HCTS laboratories QMS performance and achieve a Certificate of Excellence. Among the total 264 HCTS in Andhra Pradesh, Maharashtra, Nagaland, Manipur and Mizoram, 160 HCTS laboratories received on-site support and 104 HCTS laboratories received virtual assistance.

HCTS QMS assessment tool: The HCTS QMS assessment tool is designed in Microsoft-Excel. This tool consists of five sheets that generate a site-wise assessment score, site-wise summary, site- and domain-wise final scores with star rating. It provides analysis tables for decision-making and for initiating action. PT/RT data management system: This is a web-based tool to capture the data of PT-RT from the HCTS laboratories and transmit it to SRLs and feedback from SRLs to HCTS. Through this tool the SRLs, NRLs, SACS and NACO will be able to view and assess data on the status of PT-RT participation from the HCTS laboratories to understand whether issues of discordance are addressed and generate aggregated information in the dashboard.

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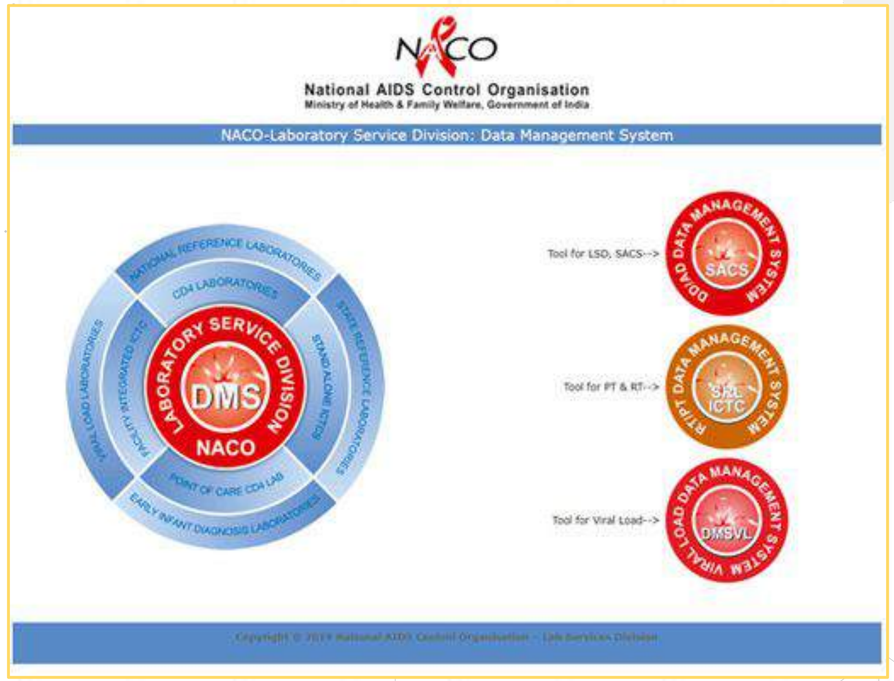

An HCTS laboratory is selected for an external audit only after it scores over 90 per cent in its self-assessment and the findings are verified virtually.

Implemented QMS in 264 laboratories in the focused districts to ensure quality in the HIV Counseling and Testing Services. 118 laboratories have received the national award of Certificate of Excellence from NACO, assuring quality HIV testing for nearly 5 crore PLHIV per year.

Supported NACO to scale-up QMS in >5500 HCTS laboratories through phased implementation approach and provided refresher training to DAPCU and SRL staff in implementation of QMS in non-focused districts. Baseline assessments were conducted in Vizianagaram, Visakhapatnam, Nellore and Chittoor. The training in implementation of QMS in HCTS in non-focused districts was conducted in Telangana in 3 SRLs. It was provided to 163 Laboratory Technicians (LTs) in 10 districts across Telangana.

Home

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Co-Investigators:

Dr. Ganesh Oruganti, Executive Director, SHARE INDIA.

Dr. Ramesh Reddy Allam, Deputy Project Director, SHARE INDIA.

Funding source: US Centers for Disease Control and Prevention (CDC) Amount: US $ 2,500,000 (2017-18), US $ 1,000,000 (2018-19).

19.c. Project Strengthening TB Action and Response (STAR): (Ongoing)

STAR is supported by the US Centers for Disease Control and Prevention (CDC), Atlanta, under the Global Health Security Agenda (GHSA) to provide technical assistance to the National TB Control Program under the Ministry of Health and Family Welfare (MoHFW), Government of India (GOI). SHARE INDIA supports projects in Maharashtra in Mumbai, Nagpur, and other states to support the elimination of TB in India by the year 2025.

The STAR project has supported and transitioned three projects to the Revised National Tuberculosis Control Program (RNTCP), Mumbai. These projects are as follows. (1) In partnership with Tata Institute of Social Sciences (TISS), STAR Project extended support to TISS counsellors to improve the treatment adherence of patients undergoing treatment for Multi Drug-Resistant tuberculosis (MDR-TB). This intervention has contributed to the increase in MDR-TB treatment success by reducing the instances of loss to follow-up. (2) In partnership with Foundation for New and Improved Diagnostics (FIND), SHARE INDIA extended support to Cartridge Based Nucleic Acid Amplification Test (CBNAAT) laboratory quality improvement project. (3) In partnership with Hinduja hospital, the STAR Project supported in implementing the new MDR TB treatment guidelines with drug susceptibility based individualized treatment for MDR TB patients for the Mumbai District TB control program.

Project STAR currently encompasses four major components, namely Airborne Infection Control (AIC) in Mumbai, the End MDR-TB (EMTBD) project in Dharavi, Household contacts Active and Latent Tuberculosis intervention (HAaLT) project in Nagpur, and Engaging Local Experts in Validating and Analysing TB-data to End TB (ELEVATE) in Mumbai. Each of these four interventions retains specific program objectives and dedicated workforce.

Airborne Infection Control in Mumbai: Airborne transmission of tuberculosis in healthcare settings is a major public health concern. In overcrowded outpatient departments (OPD), vulnerable populations waiting for medical care, exposed to those with undiagnosed TB, can become infected and ill, as can healthcare workers. The AIC project works on making the secondary- and primary-level healthcare institutions AIC-compliant through a technical unit set up in the Municipal Corporation of Greater Mumbai (MCGM). A team of seven heterogeneous groups of professionals from microbiology, architecture, nursing, monitoring and evaluation and public health are recruited and trained on airborne infection control by CDC. The unit is operational since October 2016 and covers 13 wards/TB districts of Mumbai.

On World TB Day 2019, CDC's "Global TB Elimination Champions" highlights organizations, individuals, and initiatives that have made meaningful contributions to end TB around the world.

www.cdc.gov/globalhivtb/who-we-are/events/world-tb-day/worldtbday.html

SHARE INDIA (which stands for "Society for Health Allied Research and Education" INDIA) in collaboration with Municipal Corporation of Greater Mumbai has established an innovative airborne infection control (AIC) unit that conducts health care facility assessments for compliance with AIC practices and provides mentorship for proper and effective implementation of AIC interventions to prevent transmission of TB in health care facilities. The SHARE team has assessed AIC activities in over 110 health care facilities in Mumbai and provided support to over 1,000 health care providers on AIC measures.

III. Project Strengthening TB Action and Response (STAR): (Ongoing)

Objectives

To build the capacity of the health system for airborne infection control compliance and health care worker surveillance in Mumbai and hand over the AIC unit and the healthcare worker surveillance activity to MCGM.

To expand the team and provide technical assistance to other states for establishing AIC interventions and compliance.

Activities of AIC Project

Assessments and training

Baseline AIC assessments were conducted in 178 primary and secondary MCGM health institutes of 13 wards in Mumbai.

More than 3000 MCGM healthcare workers were sensitized on AIC practices. They were trained to use personal protective equipment such as respirators, oriented on the importance of natural ventilation, free air flow and health care worker surveillance.

Total 394 follow-up assessments were conducted after the assessment. Follow-ups are done every four months.

Developing tools:

A standardized tool of 41 indicators was developed from national AIC guidelines to capture the administrative, environmental and personal protective equipment compliance in MCGM health institutes. This tool is taken to the field and duly filled on site. The data collected from the tool is analyzed and, based on the results, specific recommendations are made to the institution. This data is used to monitor the compliance level of the institution at an interval of every four months.

Sensitization:

Four-day induction training, comprising didactics and site visits, was conducted by CDC and SHARE INDIA for MCGM AIC units in July 2016.

An AIC sensitization workshop for MCGM commissioners, engineers and architects was conducted in January 2017. The AIC team's contribution in TB control was appreciated and awarded by MCGM on the occasion of World TB day on 24 March 2018.

The AIC team conducted a webinar session on the e-NISCHIT platform across India on Airborne Infection Control in ART settings at the HIV-TB ECHO clinic for the ARTCs of Andhra Pradesh, Tamil Nadu, Delhi and Uttar Pradesh on 4 April and 16 May 2019.

Accomplishments

The AIC unit makes a baseline assessment of primary and secondary healthcare facilities. The team conducts continued follow-up assessments once every four months to ensure AIC recommendations are implemented. A total of 178 baseline assessments and more than 400 follow-up visits were conducted to the assessed institutes. Sixty-five percent of the AIC recommendations were implemented in the facilities and they are progressing towards compliance.

The AIC team conducts onsite sensitizations on airborne infection control measures. Over 3000 healthcare workers of MCGM were trained on the components of AIC to reduce the risk of transmission of TB. The AIC team often has been invited as technical experts for conducting assessments at various sites in Maharashtra other than project area and is extending its expertise to other states.

The team conducts ongoing TB symptom-screening of the MCGM health care workers and more than 1500 health care workers have been screened for TB, as well as their general health.

The figure above depicts the result of AIC intervention in the health care institutions functioning in seven wards of Mumbai. The 'Y' axis represents the government health care facilities covered by the AIC project. Each row consists of the observations from one health care facility on 41 indicators for AIC compliance that is being assessed by the project.

The 'X' axis records the responses of health care facility against each of the 41 indicators being tracked by the project. The responses are colour coded. Red colour represents the state of indicator not found implemented, blue colour represents the indicators that are not applicable for the institution, yellow colour represents the indicators that are in-progress towards implementation and finally green colour represents successful implementation of the indicators. During the baseline assessment, it was found that the level of AIC compliance were low among many health care facilities. This is the reason for many red colour cells in the figure representing the observations from baseline assessment. The AIC team made recommendations to enhance the level of compliance based on the assessment. Implementation of these recommendations resulted in the improvement in compliance level. These changes in the status of the indicators is tracked and recorded in the subsequent follow up visits.

Impact:

Health care facilities mentored in 10 operational wards implemented 65 percent of the recommendations that were provided by the AIC team. Alterations to the existing building structure ensured optimum air flow. This reduced the probability of new TB infections inside the health care facility.

The project initiated the practice of health care worker surveillance, which ensured regular TB symptom screening and maintenance of health records for the health care providers.

Compliance on the use of personal care equipment, such as respirators, among the health care workers has increased.

Public health administrators from 6 states have shown interest in replicating the Mumbai model of AIC.

The End MDR-TB in Dharavi (EDTB Project):

Dharavi is the third-largest slum in the world, with an estimated population of 700,000 people. It spans 535 acres. Dharavi is defined by low-rise, closely packed houses, with a high density of population. This slum is occupied by people who migrate to the city to find jobs in the informal economy. It is also the most literate slum in the world, with a literacy rate of 69 percent. Prevalence of multi-drug-resistant TB in a densely populated area such as Dharavi is very high. Treatment completion for MDR-TB is low because patients commonly experience intolerance to drug toxicities, and also because they may be part of a highly mobile population. Many of those who work in Dharavi are economic migrants and leave Mumbai, presumably for home, soon after treatment initiation. The TB program reported that only 39 percent of people with MDR-TB in Dharavi complete treatment. Patients who do not complete treatment for MDR-TB may transmit the strain to household members, die from the disease, or feeling temporarily better, may return to work in Dharavi and transmit MDR-TB to their fellow workers. Given the enhanced transmission factors mentioned above, including crowded work and home conditions, as well as malnutrition, MDR-TB poses significant threats to the population of Dharavi specifically, to Mumbai generally, and to the communities to which, patients return in other parts of India. To address the increasing threat of TB and MDR-TB in the Dharavi slum, the CDC, SHARE INDIA in collaboration with MCGM, has planned to enhance community outreach and diagnosis, improve MDR-TB treatme nt adherence and treatment outcomes, and prevent further transmission of TB and MDR-TB. The End MDR-TB Dharavi Project is a comprehensive TB control program for Dharavi. The project aims to work on active case-finding among household contacts of MDR-TB patients and support early detection of MDR-TB cases in Dharavi. The project then strives to improve MDR-TB treatment outcomes by addressing migration, prevent lost to follow-up by addressing overall Adverse Drug Reactions (ADR) with focus on detecting early hearing loss by way of use of point-of-care audiometry. The project is also working on the prevention of TB transmission by conducting sensitizations as a part of workplace interventions in small-scale industrial outlets for early referral, treatment and promoting cough hygiene. This STAR project proposes to work with the MCGM program staff at eight public health institutions (PHI) that are located throughout Dharavi. Under the RNTCP program, Dharavi falls under Dadar district, which is divided into three tuberculosis units (TUs). TU1 is located in the Urban Health Centre (UHC) and TU2 is located at Pila Bungalow, serves the patients from the slums of Dharavi. These two TUs record higher load of TB cases from the district. TU3 is located at Shree Cinema, which is predominantly utilized by the non-slum population.

Objectives

To actively find cases among household contacts of MDR-TB patients and link them to the health system.

To improve MDR-TB treatment outcomes by addressing migration, lost to follow-up related to ADR, and sensitization and prevention of TB transmission in the workplace and community settings.

Activities

Intensive planning activities: Regular meetings are held with District TB Officers (DTO), Medical Officers (MO), Senior DOTS Plus Supervisors (SDPS) and TISS Counsellors to explore and understand crucial gaps related to (1) pattern of migration in Dharavi, (2) the volume of the lost to follow-up due to ADR, (3) referrals for ADR, including audiometry as part of monitoring hearing loss among patients on Second Line Injectable (SLI) and ECG for Bedaquiline patients, and (4) patient flow, the mechanism for contact tracing and active case finding.

Adverse drug reaction monitoring: The project will work to improve MDR-TB treatment outcomes by preventing lost to follow-up by addressing overall adverse drug reactions. The team has successfully field tested tools to monitor and track adverse drug reactions, subsequently reducing lost to follow-up due to ADR. The project aims to work on early detection of MDR-TB cases among household contacts of MDR patients through regular home visits and provides appropriate referrals to care and treatment. The household contact tracing tool has been field tested at Dharavi and improved in content.

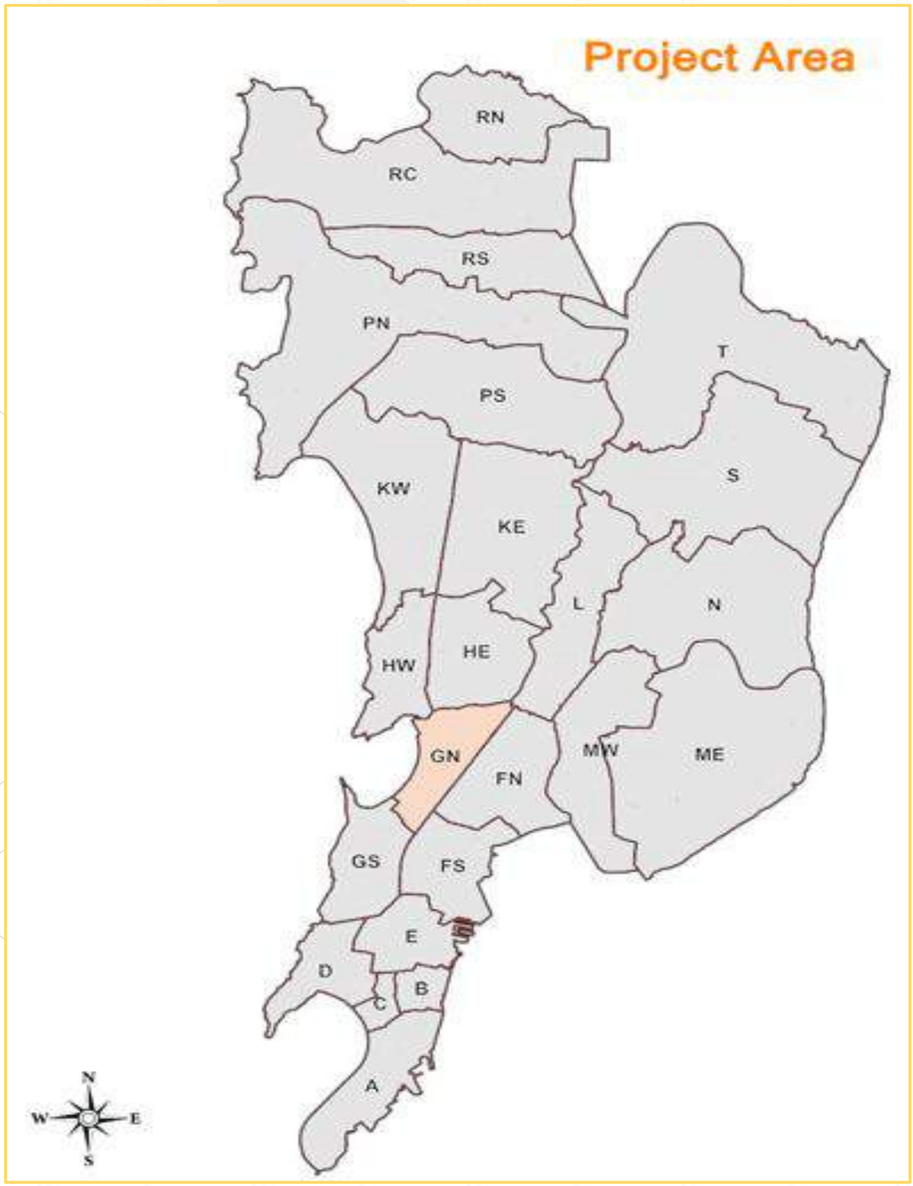
Sensitization workshops on health and hygiene are planned at workplaces as a part of workplace interventions in small-scale industrial outlets in Dharavi to improve health awareness. A pilot testing of content for workplace sensitization was conducted by the project team with 10 workers in the industries in Dharavi.

SHARE INDIA procured an audiometer from Shoebox, USA. This apparatus helps the project staffs to monitor the hearing capacity of MDTR patient who are currently being administered with second line injectable drugs. The team has undergone an online training session from the Shoebox online training center. Demonstration of the audiometer was given to CTO (City Tuberculosis Officer), the District Tuberculosis Officer and the DTC staffs of Dadar district. A microplan is prepared and more equipment will be procured to routinely monitor the hearing loss. This activity will prevent sensorineural deafness.

To encourage the use of newer drugs such as Bedaquline, the project will use the Smartheart Pro ECG device (electro cardiogram), which will be easy to use compared to the traditional ECG to monitor QTC prolongation on ECG of patients that are put on Bedaquiline.

Impact: The project will improve MDR-TB treatment outcomes, prevent sensorineural hearing loss, upscale strategies to pre-empt and prevent migration and bring out learnings to improve newer drug uptake and enhance treatment success.

Household contact Active and Latent Tuberculosis Intervention in Nagpur (HAaLT in Nagpur): HAaLT intervention in Nagpur provides technical assistance to the RNTCP in two districts, Nagpur Urban and Nagpur Rural of Maharashtra, to facilitate linkage for treatment for 2000 to 5000 household contacts among slum and non-slum dwellers to initiate active contact detection, and diagnosis of latent TB infection (LTBI). The results from this pilot project will establish best practices for contact investigation, LTBI testing and treatment for contacts. The project is likely to provide inputs for policy formulation on LTBI Management in India.



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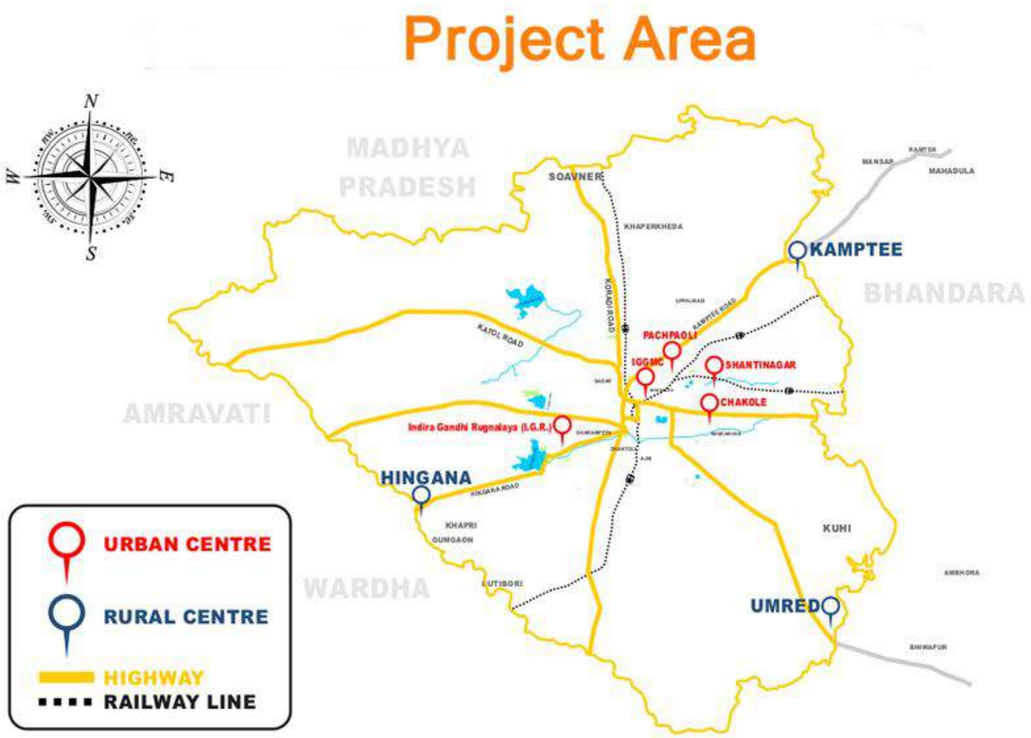
Objectives

- To support RNTCP to use household contact tracing for the rapid detection of undiagnosed cases of TB
- To explore the feasibility of diagnosis of LTBI using interferon gamma release assays
- To explore the feasibility of treatment of LTBI to all household contacts <6 and ≥6 years old
- To prevent TB through shorter, 'patient-friendly,' TPT regimens to improve adherence
- To improve diagnosis of paediatric TB through enhanced diagnostic techniques
- To identify epidemiologic factors associated with TB and LTBI



Impact: Proposal building with the involvement of all stakeholders

The proposal was developed by Indira Gandhi Government Medical College & Hospital (IGGMC), Nagpur, CDC Atlanta and SHARE INDIA. The Central TB Division (National Operational Research Committee), New Delhi reviewed and approved the proposal. A detailed protocol was developed by CDC, IGGMC, SHARE INDIA and was reviewed by all the stakeholders in a meeting that was called by IGGMC at Nagpur. The ethics protocol for the latent-TB intervention was reviewed by the experts at Ethics Committee, IGGMC, Nagpur. The protocol formally received approval in July 2019.The CDC is in the process of getting the protocol approved from the Human subjects non-research determination from the Human subjects protection committee.

- **Sensitization and building linkages:** The RNTCP was approached and sensitized on the details of the project, the State TB Officer, (STO) and DTOs formally agreed to extend support and cooperation for the implementation of the project. The government departments will assist with staffing, training programs, X-ray facilities, and Rifapentine drug supply through DTO and CTO for the operational research project. A series of planning meetings are underway with all stakeholders in Nagpur along with CDC, State TB Training and Demonstration Centre (STDC), Qiagen; the partner for diagnostics interferon-gamma release assay (IGRA) testing kit, SHARE INDIA and the IGGMC. Several meetings and field visits were conducted with RNTCP officials working in all the TUs in the districts and all officials are now familiar with the objectives of the project and the role of each government health care worker in the project.
- **Development of project documents:** The expert team has developed standard operating protocols (SOP) for household visit, contact screening for TB, paediatric diagnosis, blood collection, storage and transportation, LTBI treatment, follow-up, data flow, etc.. The SHARE INDIA team has also developed Information Education Communication (IEC) material in the local language (Marathi) and English to spread awareness about latent TB infection in the community and has designed a training curriculum for training of Medical officers of TB, RNTCP and project staff.
- **Implementation phase**: Upon receipt of all approvals and resources, the implementation will be planned from the last quarter of 2019.

Impact: The project is likely to provide valuable lessons on best practices on LTBI implementation, prevent active TB and give insights for policy formulation on LTBI management and TB prevention in India.

Engaging Local Experts in Validating and Analysing TB-data to End TB in Mumbai (ELEVATE).

This project component focuses on improving data quality to help the tuberculosis program make better decisions based on reliable and accurate data. A series of workshops are planned on data analysis to capacitate the local district TB office staff to analyze and utilize TB programmatic data for program implementation and management. Based on the response from the participants, SHARE INDIA plans to advocate implementing the workshop at pan-India level.

Relevant details of the patients under RNTCP are entered in the NIKSHAY website (the web-enabled patient management system for TB control under RNTCP). But data always has some challenges, such as missing or duplicate data, where the same case is reported multiple times, demographics or test results are missing, or information on the cases is not updated, or a treatment outcome is not documented. The primary issue is the data management capacity of the RNTCP local staff. Cleaning data during collection, at entry and after entry can ensure better data quality. Our mission is to ensure that we have the best quality data possible so that it reflects the true situation of TB.

In response to this situation, the ELEVATE project was implemented by SHARE INDIA with the help of technical support from CDC. The project addresses some of the major issues concerning data and it use.

Objectives

- To engage Mumbai RNTCP experts in validating and analyzing TB program information to end TB.
- To extend these workshops to other interested states and provide technical assistance to strengthen evidence based decision making and program management.

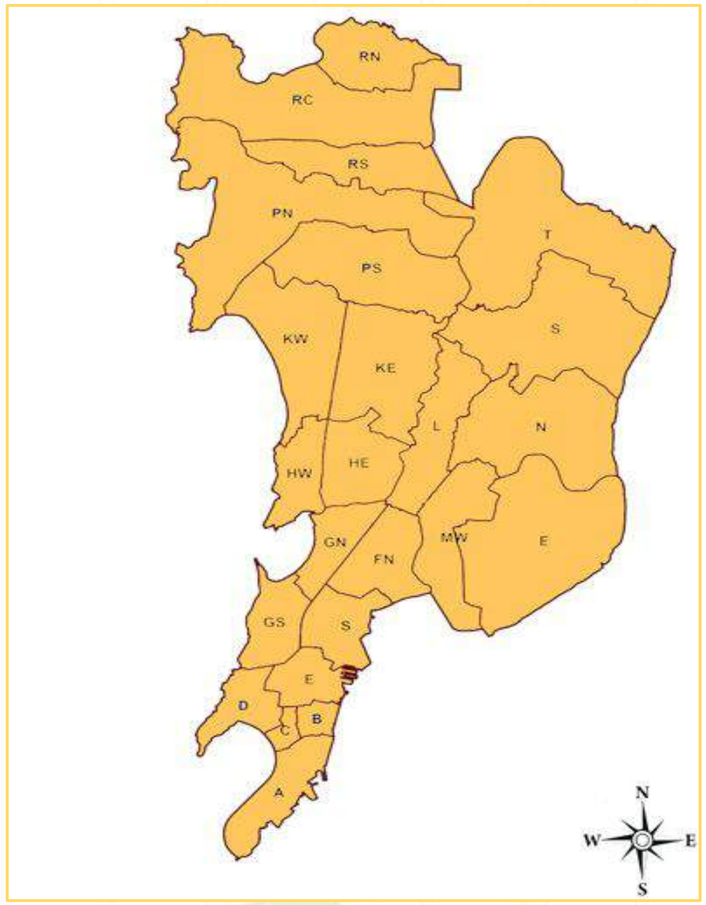
Activities

- Workshop: A total of 113 people were trained to enable the use of TB programmatic data at local level and hands-on analysis of NIKSHAY data in the Epi Profile (Excel-based) dashboard. The training was provided on data analysis to capacitate the local District TB office staff to analyze and utilize TB programmatic data for program implementation and management. The first phase of the workshop on data analysis was organized on 11–12 December 2018 in Mumbai. This workshop was attended by DTOs, SDPS, statistical assistants (SAs) and data entry operators (DEOs) from eight wards in Mumbai. The participants found the training helpful to plan their activities and make informed decisions. The second phase of the training was done on 11–12 April 2019, where the representatives from the remaining 16 wards in Mumbai participated. Based on the response from the participants, SHARE INDIA plans to advocate implementing and upscale the workshop at pan-India level.
- Excel dashboard was prepared with technical inputs from CDC to analyse and present the data available to each tuberculosis unit (TU). This dashboard was handed over to the officials in RNTCP. They were trained to export data from NIKSHAY, clean and validate the data in Excel and then import data into the dashboard. With the help of the ELEVATE dashboard participants could understand and visualize the status of their unit effortlessly, which enabled them to make informed decisions.
- Post-workshop mentoring visit: The SHARE INDIA team visited 24 districts of Mumbai to understand the workshop feedback and provide support to the district teams on data analysis.
- MS Office 2016 installation: The ELEVATE dashboard was only compatible with MS Excel 2016 and majority of the offices in Mumbai were using MS Excel 2010 or below. It was necessary to upgrade the software to make the ELEVATE dashboard functional. Therefore, information pertaining to software upgrades was gathered from each health facility. Then a vendor was identified for the installation of MS Office 2016. Now facilities have their computers upgraded and are able to use the ELEVATE dashboard.

Technical assistance to Government of India —"CDC funded Projects"

Impact

- An excel dashboard was prepared with the technical inputs from CDC and SHARE staff to analyze and present the data available with each implementing unit of the Revised National Tuberculosis Control Program (RNTCP).
- RNTCP staffs across 24 wards from Mumbai are able now to import, clean, analysis and generate report from TB data available in NIKSHAY. The RNTCP staff can use the data from NIKSHAY to understand the epidemiology and situation of TB in their area. This information is expected to help them make informed decisions pertaining to program implementation.



P.I Dr. VIjay Yeldandi

Sl	Name	Designation(18-19)
1	Dr. Satish Kaipilyawar	Associate Project Director
2	Dr. Sampada Bhide	Project Manager
3	Dr. Kirti Rajpurkur	AIC Microbiologist
4	Dr. Arvind Manjrekar	AIC Officer
5	Ar. Vidisha Ule	AIC Architecture
6	Ms. Jaya Nair	Project Manager
7	Ms. Arunima Silsarma	AIC Officer
8	Mr. Reju V. Sheju	Documentation Officer
9	Dr. Takshashila Taskanda	Project Cordinator
10	Ms. Kalyani Gajbiye	Assistant Data Manager
11	Ms. Smita Waghmare	Project Officer
12	Ms. Sruti Pote	Project Associate
13	Ms. Sucheta Soares	Project Coordinator

Funding: 2018-19 USD 460,899.

Seminars, conferences, workshops, trainings and health camps conducted

Satellite session on Computational Modelling for Health and 8th Annual Research Methodology Course

The Satellite session on computational Modeling for Health and Eighth Annual Research Methods course was conducted by SHARE INDIA –MediCiti Institute of Medical Sciences from March 25-28, 2019 at Leonia Holistic Destination, Shamirpet, Hyderabad.

The participants for the course were faculty and undergraduate medical students' from MediCiti Institute of Medical Sciences(MIMS) and the trainers were faculty from MIMS trained under the Fogarty International center capacity building grant awarded to University of Pittsburgh-SHARE INDIA for a period of five years from 2012-2016.

Consistent with its previous versions, the objective of the course was to build research capacity among faculty and medical students at MIMS. This was second time in a row that computational modeling for health was included as part of the course to sensitize the participants to the rapidly expanding relevance of computational skills and disease modeling in prevention of disease and; promotion and protection of health.

A total of 12 enthusiastic participants actively participated in the four day course designed specifically to impart skills in medical research. The course curriculum was designed to enable students to learn actively and experientially. Each day, the principles of medical research were conveyed effectively by way of interactive lectures in the morning session and; the application of such concepts in addressing real life challenges was facilitated in a workshop mode in the afternoon session.

The participants were divided into three groups for the afternoon sessions and each group was closely guided, supervised and mentored by a faculty member. Over the first three days, each group framed a research question and developed a research concept note incorporating the following elements: a research question, brief background, literature review, materials and methods, dummy tables for data tabulation, data analysis plan, an informed consent form and a brief statement on expected outcomes.

On the final day of the research methods course, each of the three groups actively presented their comprehensive research proposals to the larger group comprising the faculty and the peer group for critical review and suggestions. One of the research proposals was ready to be submitted to the ethics committee (IRB} for approval. The four day research course was supported in part by funding from an NI H (USA) grant and SHARE INDIA.

The STAR project is in operation since 2016 in Mumbai and has been supporting an AIC unit for Municipal Corporation of Greater Mumbai (MCGM), supporting and providing technical assistance for TB counselors program for Tata Institute of Social Sciences (TISS) for improving MDRTB drug adherence, supporting second line drug sensitivity testing at Hinduja hospital for individualized MDR TB treatment at MCGM institutions and with Foundations for Innovative and New Diagnostics (FIND) to improve Cartridge-based nucleic acid amplification test (CBNAAT) quality improvement.

The projects with TISS, Hinduja and FIND have successfully transitioned to the Revised National Tuberculosis Control Program(RNTCP) and since 2018 the STAR project is supporting the AIC unit expansion in few more states, End MDR TB in Dharavi Mumbai and assisting Indira Gandhi Government Medical college (IGGMC) for implementing a short course treatment implementation project for addressing Latent TB infection (LTBI) for Urban and Rural Nagpur.

Course on Introduction Health Technology Assessment(HTA)

SHARE INDIA, along with New Castle University, Institute of Health & Society and Campbell Collaboration conducted a 5-days course from 16-20 July 2018 at SHARE INDIA, Hyderabad. The aim of this self-sponsored course was to bring together a group of scientists, health researchers and public health practitioners in India for increasing their knowledge and lay foundation for the use of HTA, evidence synthesis and economic evaluation in their programs or research. A total of 9 participants from different institutes (Ministry of Health and Family Welfare, National Institute of Epidemiology, Achutha Menon Centre for Health Sciences Studies, All India Institute of Medical Sciences, Population Council, IQVIA Consulting and Information Services) attended this course.

Free Health Camps

FREE HEALTH CAMPS

A Mega Medical camp was conducted on March 20th 2019 at Peddakothapalli near Nagarkurnool, in collaboration with Indian Red Cross Society. Approximately 850 people were screened on the day of the camp.

The District collector and other officials appreciated the efforts of the SHARE INDIA staff and Indian Red Cross Society on organising such a successful camp.

Global health / International exchange program

SHARE INDIA exchange program aims to promote cultural understanding and cooperation among medical students and other health professionals and increase awareness of the discrepancies between health systems around the globe. SHARE INDIA undertakes exchange program to enhance opportunities for global education and training for current and future medical workforce in India.

List of students who attended the clerkship in the University of Pittsburgh (UOP) under the Global health / International exchange program (2018-19)

Sl.	Name of the Student	University visited	Year of visit
1	Katikaneni Padma Sri	University of Pittsburgh, PA, USA	2019
2	Popuri Sowmya Bhashini	University of Pittsburgh, PA, USA	2019
3	Abbagoni Vaidarshi	University of Pittsburgh, PA, USA	2019

Students visited SHARE INDIA – MIMS

Sl.	Name of the Student	Purpose of Visit	Parent Educational Institute
1	Dr. Roriguez Katherine Marie	Global Health 2018	RUSH University, Chicago Illinois,USA
2	Dr. Bampoe Audrey Naa Adobea	Global Health 2018	RUSH University, Chicago Illinois,USA
3	Dr. Rzepczynski Allison Patricia	Global Health 2018	RUSH University, Chicago Illinois,USA
4	Ms. Nisha Oruganti	Student to study about Tetra Study	California, USA
5	Ms. Revathi Kollipara	Observership & Research	RUSH University, Chicago. Illinois, USA
6	Ms. Shriya Gandhi	Observership & Research	RUSH University, Chicago. Illinois, USA
7	Mr. Jordan Scharping	Observership & Research	RUSH University, Chicago. Illinois, USA
8	Ms. Sonya Kothadia	Observership & Research	RUSH University, Chicago. Illinois, USA

International faculty visited SHARE INDIA – MIMS in 2018-2019

Sl.	Name of the Faculty	Designation and Purpose of Visit	Name of the Institute / University
1	Dr. Harvey Borovetz	Professor of Bioengineering, Artificial Heart Program	University of Pittsburgh, USA
2	Dr. Salim E. Olia	Artificial Heart Engineer, Artificial Heart Program	University of Pittsburgh, USA
3	Dr. Sanjeev G. Shroff	Chair in Bioengineering Professor of Medicine, Artificial Heart Program	University of Pittsburgh, USA
4	Dr. Clareann H. Bunker	Associate Professor Emerita, Guiding the team in Research Methodology	GSPH, University of Pittsburgh, USA
5	Dr. Ayse Zengin	Research Fellow Medicine Monash Health, Research on Bone Health	Monash University, Australia

National Investigators

Dr. Ajay V. S.
CCCC, PHFI, New Delhi.

Dr. Ambuj Roy
Department of Cardiology, AIIMS, New Delhi.

Dr. Aparna Varma,
Professor and Head, Department of Biochemistry, MIMS.

Dr. Enakshi Ganguly
Professor, Department of Community Medicine, MIMS.

Dr. Ganesh Oruganti
Executive Director, SHARE INDIA.

Dr. B. S. Garg
Director and Professor of Community Medicine, Mahatma Gandhi Institute of Medical Sciences, Sewagram.

Dr. Jammy Guru Rajesh,
Ph.D Scholar, University of Pittsburgh, Associate Research Director, SHARE INDIA

Dr. Kalpana Betha,
Professor and Head, Department of Obstetrics and Gynecology, MIMS

Dr. Kuseneiwar Govindrao N.,
Professor and Head, Department of Community Medicine, MIMS.

Dr. P. Lakshmi Sailaja
Assistant Professor, Department of Obstetrics and Gynecology, MIMS.

Dr. Madhavi Chevuturu
Professor, Department of Opthalmology, MIMS.

Dr. Mohammed Raheel Sayeed
Fellowship at Harvard University, Research Scientist, SHARE INDIA.

Dr. G. V. S. Murthy
Director, IIPH, Hyderabad.

Dr. Pawan Kumar Sharma
Professor, Department of Community Medicine, MIMS.

Dr. Poornima Prabhakaran
Centre for Control of Chronic Conditions, PHFI, New Delhi.

Dr. D. Prabhakaran
Vice President (Research and Policy), PHFI, New Delhi.

Dr. Rajani Santhakumari
Associate Professor, Department of Physiology, MIMS.

Dr. Ramesh Reddy Allam
Deputy Project Director, SHARE INDIA.

Dr. Rashmi Pant
Biostatistician, SHARE INDIA.

Dr. Sailesh Mohan
Centre for Control of Chronic Conditions, PHFI, New Delhi.

Dr. Sapna V.
Professor, Department of Biochemistry, MIMS.

Dr. Satish Kaipilyawar
Associate Project Director, SHARE INDIA.

Dr. D. Shailendra
Professor, Department of Pharmacology, MIMS.

Dr. Srinivasa Prakash Regalla
Professor and Head, Department of Mechanical Engineering, BITS Pilani, Hyderabad.

Dr. K. Vijayaraghavan
Director Research, SHARE INDIA

International Investigators

Dr. Abha Shrestha
Department of Obstetrics and Gynaecology, Kathmandu University of Medical Sciences, Nepal.

Dr. Anne Newman
Professor and Chair, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Dr. Biraj Karmacharya
Professor programs, Kathmandu University of Medical Sciences, Nepal.

Dr. Brandie N. Taylor
Associate Professor, School of Public Health, The Texas A&M University System, Texas, USA.

Dr. Caterina Rosano
Professor, Department of Epidemiology, GSPH University of Pittsburgh, PA, USA

Dr. Catherine L. Haggerty
Associate Professor, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Dr. Clara Calvert
Associate Professor, The London School of Hygiene and Tropical Medicine, UK

Dr. Clareann H. Bunker
Associate Professor Emerita, Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Dr. Donald S. Burke
Dean, GSPH and Associate Vice Chancellor for Global Health, Health Sciences, University of Pittsburgh, USA.

Dr. Jane Cauley
Distinguished Professor, Department of Epidemiology and Associate Dean, Research, GSPH, University of Pittsburgh, PA, USA.

Dr. John Cairns
Professor of Economics, The London School of Hygiene and Tropical Medicine, UK

Dr. John Grefenstette
Professor, Health Policy and Management, Senior Scientist, Public Health Dynamics Lab, University of Pittsburgh, USA

Dr. Joseph M Zmuda
Associate Professor, Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Dr. Mark S Roberts,
Professor and Chair, Health Policy and Management, Director, Public Health Dynamics Lab, University of Pittsburgh, USA

Dr. Oona Campbell
Professor, Epidemiology, The London School of Hygiene and Tropical Medicine, UK.

Dr. Pablo Perel
Associate Professor, Cardiology and Epidemiologist, The London School of Hygiene and Tropical Medicine, UK

Dr. Prakash N. Shrivastava
Professor Emeritus, University of Southern California, USA. Member, SHARE INDIA.

Dr. Robert M. Boudreau
The Center for Aging and Population Health (CAPH), University of Pittsburgh, PA, USA.

Dr. Sandosh Padmanabhan
Department of Medicine, University of Glasgow, UK.

Dr. Saumyadipta Pyne,
Scientific Director, PHDI, University of Pittsburgh.

Dr. Sonia Anand
Professor, Department of Medicine, McMaster University, Canada.

Dr. M. B. Srinivas
Professor, Electronics and Electrical Engineering Department and Dean, Administration, BITS, Hyderabad.

Dr. Supriya Kumar
Department of Epidemiology, GSPH, University of Pittsburgh, PA, USA.

Dr. Suresh G.
Neuroradiologist, Yashodha Hospital, Hyderabad.

Dr. Tushar Singh
Geriatrics, Clinical Trials, Epidemiology, CDC, Atlanta, USA.

Publications

On several occasions, SHARE INDIA's technical assistance to the government and research programs were able to have an impact beyond its activities. It reached populations or pioneered technologically advanced health Program practices in ways that have far-reaching and lasting consequences like REACH. Over the years SHARE INDIA has increased the percentage of its paper submissions and acceptance rate overall. Medical papers published in international and national accredited journals of repute which are peer reviewed and acclaimed academically are listed below.

2005

1. Sowjanya AP, Jain M, Poli UR, Padma S, Das M, Shah KV. Rao BN, Devi RR, Gravitt PE, Ramakrishna G. Prevalence and Distribution of High-Risk Human Papillomavirus (HPV) Types In Invasive Squamous Cell Carcinoma of the Cervix and in Normal Women in Andhra Pradesh, India.BMC Infect Dis. 2005; 5:116.

2007

2. J. A. Schneider, G. S. Saluja, G. Oruganti, S. Dass, J. Tolentino, E. 0. Laumann, V. Yeldandi, D. Pitrak. HIV Infection Dynamics In Rural Andhra Pradesh South India: A Sexual-Network Analysis Exploratory Study. AIDS Care, October, 2007, 19:9, 1171 –1176.

2008

3. J A Schneider, A Dude, M Dinaker, V Kumar, E 0 Laumann, A Holloway-Beth, G Oruganti, G S Saluja, V Chundi, V Yeldandi, K H Mayer. General Hygiene, Sexual Risk Behaviour and HIV Prevalence In Truck Drivers from Andhra Pradesh, South India: Implications For Prevention Interventions. International Journal of STD & AIDS 2008, Volume-20; 00: 1-7.

4. Sudha Sivaram, Gurcharan Singh Saluja, Manik Das, P. Sudhakar Reddy and Vijay Yeldandi. Reasons for Seeking HIV-test: Evidence from a Private Hospital in Rural Andhra Pradesh, India. J HEALTH POPUL NUTR Dec-2008; Volume 26(.4): 431-441 ISSN 1606-0997.

2009

5. J A Schneider MD MPH, A Dude PhD, M Dinaker MD, V Kumar MBBS, E 0 Laumann PhD, A Holloway-Beth MS, G Oruganti MD, G S Saluja MBBS, V Chundi MD, V Yeldandi MD, and K H Mayer MD. General Hygiene, Sexual Risk Behaviour And HIV Prevalence In Truck Drivers From Andhra Pradesh, South India: Implications For Prevention Interventions. International Journal of STD &AIDS Volume 20(1) January 2009, 39-45, PMCID: 19103892.

6. Tatineni A., Vijayaraghavan K., Reddy P.S., Narendranath B, and Reddy R.P., Health Metrics Improve Childhood Immunization Coverage in A Rural Population of Andhra Pradesh. Indian Journal of Public Health, 2009,53:41;43.

7. Annie Dude, Ganesh Oruganti, Vinod Kumar, Kenneth H. Mayer, Vijay Yeldandi, John A. Schneider. HIV Infection, Genital Symptoms and Sexual Risk Behaviour among Indian Truck Drivers from a Large Transportation Company in South India. Journal of Global Infectious Diseases, January –June, 2009 / Vol-1 / Issue-1Doi:10.4103/0974-777X.52977.

8. Sowjanya AP, Paul P, Vedantham H, Ramakrishna G, Vidyadhari D, Vijayaraghavan K, Lakshmi S, Sudula M., Ronnett BM, Das M., Shah KV, Gravitt PE for the Community Access to Cervical Health Study Group. Suitability of Self-Collected Vaginal Samples for Cervical Cancer Screening in Peri urban Villages in Andhra Pradesh, India. Cancer Epidemiol Biomarkers Prey. 2009;18(5):1373-8.

2010

9. Piyathilake CJ, Badiga S, Paul P., Vijayaraghavan K., Vedantham H, Sudula M., Sowjanya P, Ramakrishna G, Shah KV, Partridge EE, Gravitt PE. Indian Women with Higher Serum Concentrations of Folate and Vitamin-6,2 are Significantly less likely to be Infected with Carcinogenic or High Risk (HR) Types of Human Papillomaviruses (HPVs). International J Women's Health 2010: 2:7-12.

10. Vedantham H, Silver MI, Kalpana B, Rekha C, Karuna BP, Vidyadhari K, Mrudula S, Ronnnett BM, Vijayaraghavan K, Ramakrishna G, Sowjanya P, Laxmi S, Shah KV, Gravitt PE; CATCH Study Team. Determinants of VIA (Visual Inspection of the Cervix after Acetic Acid Application) Positivity in Cervical Cancer Screening of Women in a Peri-Urban Area in Andhra Pradesh, India. Cancer Epidemiol Biomarkers Prey. 2010; 19(5): 1373-80.

    John A. Schneider, Rakhi Dandona, Shravani Pasupneti, Vemu Lakshmi, Chuanhong Liao, Vijay.

11. Yeldandi, Kenneth H. Mayer. Initial Commitment to Pre-Exposure Prophylaxis and Circumcision for HIV Prevention amongst Indian Truck Drivers. PLoS ONE 2010 Jul 30; 5(7): el 1922. PMC 20689602.

12. Gravitt PE, Paul P, Katki H, Vedantham H, Ramakrishna G, Sudula M, Kalpana B, Ronnett BM, Vijayaraghavan K, Shah KV. Effectiveness of VIA, Pap and HPV DNA Testing in a Cervical Cancer Screening Program in a Peri urban Community in Andhra Pradesh, India. PLoS ONE, 6-1 1-2010; 10-PONE-RA-19715.

Publications

2011

13. John A. Schneider, Stuart Michaels, Sabitha R. Gandham, Rachel McFadden, Chuanhong Liao, Vijay V. Yeldandi, Ganesh Oruganti. A Protective Effect of Circumcision Among Receptive Male Sex Partners of Indian Men Who Have Sex with Men. AIDS Behav published online 17th June, 2011.

14. Vagish Hemmige, M.D., Hannah Snyder, B.A., Chuanhong Liao, M.S., Kenneth Mayer, M.D., Vemu Lakshmi, M.D., Sabitha Rani, M.S.W., Ganesh Oruganti, M.D., John Schneider, M.D., M.P.H. Sex Position, Marital Status, and HIV Risk Among Indian Men Who Have Sex with Men: Clues to Optimizing Prevention Approaches. AIDS PATIENT CARE and STDs, Volume 25, Number X, 2011, © Mary Ann Liebert, Inc., DOI: 10.1089/apc.2011.0079.

15. Namratha R. Kandula, MD, MPH, Raghavesh Pullalarevu, MD, Neerja Khurana, BDS, MPH, Vijay Yeldandi, MD, Ganesh Oruganti, MD, Sabitha Gandham, John Schneider, MD, MPH. Health Communication / Behavior Change Communication - Abstract ID#: 207442.

16. Bhongir AV, Nemani S, Reddy PS. - Rural-Urban Epidemiologic Transition of Risk Factors for Coronary Artery Disease ... and Nearby Rural Area - A Pilot Study. Journal of Association of Physicians of India April 2011; 59: 222-226.

17. Gurumurthy Sastry M, Shruti Mohanty, Aparna Varma Bhongir, A.K. Mishra, Pragna Rao. Association of Higher Maternal Serum Fluoride with Adverse Fetal Outcomes. International Journal of Medicine and Public Health Apr-Jun-201 1 Vol 1, Issue 2,11-15 (ISSN; 2230-8598).

18. Gurumurthy Sastry M, Shruti Mohanty, Sapna Vyakaranam, Aparna Varma Bhongir, Pragna Rao. Transplacental Transport of Fluoride, Calcium and Magnesium. National Journal of Integrated Research in Medicine 2011; Vol. 2(3). July- Sep 2011 (eISSN: 0975-9840).

19. Silver MI, Paul P, Sowjanya P, Ramakrishna G, Vedantham H, Kalpana B, Shah KV, Gravitt PE. Shedding of Epstein-Barr virus and cytomegalovirus from the genital tract of women in a peri-urban community in Andhra Pradesh, India. J ClinMicrobiol. 2011;219(7):2435-9.

20. John A. Schneider, Divya Kondareddy, Gandham, Annie M. Dude. Using Digital Communication Technology Fails to Improve Longitudinal Evaluation of an HIV Prevention Program Aimed at Indian Truck Drivers and Cleaners. AIDS Behay. DOI 10.1007/$10461-011-0060-6 Springer Science+ Business Media, LLC 2011 Published on line 09th October, 2011.

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Dr. V. M. Kommula, Dr. A K. Mishra, Dr. Kusneniwar G.N, Dr. S. N. Chappa, Dr. Raghava Rao. K. V.

21. Profile Of HIV Positive Clients In An ICTC Of A Private Medical College, Andhra Pradesh: A Situational Analysis. NJIRM 2012; Vol. 3(2). April-June eISSN: 0975-9840. ANNUAL REPORT 2018-19

22. Ramesh Reddy, Geetha Parasadini, Prasada Rao, Chengappa K. Uthappa, Manoj V. Murhekar. Outbreak of cutaneous anthrax in Musalimadugu village, Chittoor district, Andhra Pradesh, India, July-August 2011. J Infect DevCtries 2012; 6(10):695-699.

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Publications

2013

27. Proma Paul , Amanda E. Tanner , Patti E. Gravitt , K. Vijayaraghavan , Keerti V. Shah , Gregory D. Zimet& CATCH Study Group. Acceptability of HPV Vaccine Implementation Among Parents in India. Health Care for Women International DOI: 10. 1080/07399332 .2012.740115 Published online: 23 Apr 2013.

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31. Deepak Kumar Pasupula P. S. Reddy. When is a South Indian Really Anemic? Ind J ClinBiochem - Published Online 12th October, 2013. Received: Association of Clinical Biochemists of India 2013.

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Auditor Report

Luharuka & Associates
Chartered Accountants

Networking Member of :
Singhi & Affiliates
Kolkata, India

5-4-187/3&4, 2nd Floor, Soham Mansion, M. G. Road, Ranigunj, Secunderabad - 500 003.
☎ : 2754 2635, 2754 1015 Fax : 040-2754 1015 E-mail : luharukaca@gmail.com

AUDITOR'S REPORT

To the Members,
SHARE INDIA

We have audited the attached Balance Sheet of **M/S. SHARE INDIA** as at **31st March, 2018** and the Income and Expenditure Account for the year ended **31st March, 2018** on that date annexed thereto which are in agreement with the Books of Accounts maintained by the Society. These Financial Statements are the responsibility of the management of the Society. Our responsibility is to express an opinion on the Financial Statements based on our Audit.

We conducted our audit in accordance with auditing standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Financial Statements are free of material misstatements. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the Financial Statements. An audit also includes assessing the Accounting principles, used and significant estimates made by Management as well as evaluating the reasonable basis for our opinion and report that.

We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of the audit.

In our opinion proper books of Accounts have been kept by the society so far as appears from our examination of the books.

In our opinion and to the best of our information and according to explanation given to us the said accounts read with notes gives a true and fair view.

i) In the case of Balance Sheet of the State of Affairs of the above named society as at **31-03-2018**

And

ii) In the case of the Income and Expenditure Account of the **EXCESS OF INCOME OVER EXPENDITURE** for the year ended **31st March, 2018**.

For LUHARUKA & ASSOCIATES
CHARTERED ACCOUNTANTS
(FRN:- 1882S)

(CA RAMESH CHAND JAIN)
(PARTNER) (M NO. 023019)

Place:- Secunderabad
Date:- 29/06/2018

Kolkata New Delhi Mumbai Chennai Guwahati Bengaluru

SHARE INDIA
MediCiti Buildings, Ghanpur Village, Medchal Mandal and District-501401.TS
BALANCE SHEET AS AT 31 st MARCH-2018

	SCH.NO		As At 31.03.18 Amount (Rs)		As At 31.03.17 Amount (Rs)
Source of Funds					
Capital Fund	1		12908843		12619325
Total			12908843		12619325
Application of Funds					
Fixed Assets	2				
Gross Block		32291000		26731631	
Less: Depreciation		19591698		15872720	
Net Block			12699302		10858911
Current Assets:					
Cash and Bank Balances	3	23522665		32657294	
Loans and Advances	4	2739910		2641859	
Other Current assets	5	710283		447253	
Receivables					
		26972858		35746406	
Less:					
Current Liabilities' and Provisions	6	26763318		33985992	
Net Current Asset			209540		1760414
Total			12908843		12619325

NOTES TO ACCOUNTS 12
As Per our report of even date attached

For LUHARUKA & ASSOCIATES
CHARTERED ACCOUNTANTS
FRN No : 018825

(RAMESHCHAND JAIN)
PARTNER
M No. 023019

Place: Hyderabad
Date: 29.06.2018

For SHARE INDIA

(Dr.V.Malakonda Reddy)
Secretary

Auditor Report

SHARE INDIA

Mediciti Buildings, Ghanpur Village, Medchal Mandal and District-501401.TS

Income And Expenditure Account for the year ended 31st March 2018

	SCH.NO	31.03.18 Amount (Rs)	31.03.17 Amount (Rs)
INCOME:			
Donations		8283169	8829435
Grants		163569167	147362111
Other Income	7	1677185	1288876
Total		**173529521**	**157480422**
EXPENDITURE:			
Personnel Expenses:	8	59232308	51496970
Power and Fuel:	9	723391	575523
Program Expenses	10	98040528	97244476
Other Expenses:	11	11524798	10091734
Total		**169521025**	**159408703**
Excess of Income over Expenditure before Depreciation		4008496	-1928281
Less: Depreciation		3718978	3007467
Less: Prior year adjustment			
Excess of Income over Expenditure Trf to Capital Account		289518	-4935748

NOTES TO ACCOUNTS 13

As Per our report of even date attached

For LUHARUKA & ASSOCIATES
CHARTERED ACCOUNTANTS
FRN No : 018825

(RAMESHCHAND JAIN)
PARTNER
M No. 023019

Place: Hyderabad
Date: 29.06.2018

For SHARE INDIA

(Dr.V.Malakonda Reddy)
Secretary

Schedule No.2

SHARE INDIA

MediCiti Buildings, Ghanpur Village, Medchal Mandal and District-501401.TS

Fixed Assets schedule forming part of Balance Sheet for the year ended 31st March 2018

(Amount in Rs)

		GROSS BLOCK			DEPRECIATION					NET BLOCK	
S.no	PARTICULARS	AS AT 01.04.17 Original Cost	ADDITION	Written off/Deletion	AS AT 31.03.18	UPTO 31.03.17	FOR THE YEAR	Prior YEAR TFR to Capital Fund	WITH DRAWL	UPTO 31.03.18	AS AT 31.03.18	AS AT 31.03.17
1	LAND	481849	0	0	481849	0	0	0	0	0	481849	481849
2	BOREWELL	26600	0	0	26600	16810	1410	0	0	18220	8380	9790
3	VEHICLES	2183291	0	0	2183291	1163887	247495	0	0	1411382	771909	1019402
4	OFFICE EQUIPMENT	12775825	1121103	17973	13878955	9539736	2020018	0	0	11559754	2319201	3236091
5	FURNITURE & FIXTURES	2513032	47436	47436	2513032	1251336	171800	0	0	1423136	1089896	1261696
6	BUILDING-RHC	1987790	0	0	1987790	901306	117827	0	0	1019133	968657	1086484
7	BUILDING(Research Center)	5749454	0	0	5749454	2195829	259962	0	0	2455791	3293663	3553625
8	MEDICAL EQUIPMENT	1013790	4456239	0	5470029	803816	900466	0	0	1704282	3765747	209974
	TOTAL	**26731631**	**5624778**	**65409**	**32291000**	**15872720**	**3718978**	**0**	**0**	**19591698**	**12699302**	**10858912**
	Previous year figure	22826669	6143969	2239007	26731631	15104260	3007467	0	2239007	15872720	10858912	

Auditor Report

SHARE INDIA

MediCiti Buildings, Ghanpur Village Medchal Mandal and District-501401.TS

SCHEDULES FORMING PART OF BALANCE SHEET FOR THE YEAR ENDED 31st MARCH 2018

		As at 31.03.18 (Rs)		As at 31.03.17 (Rs)
SCHEDULE : 1				
CAPITAL FUND:				
Balance as Per Last Balance sheet		12619325		17555073
ADD: Excess of Income over Expenditure for the Year		289518		4935748
Total		**12908843**		**12619325**

		As at 31.03.18 (Rs)		As at 31.03.17 (Rs)
SCHEDULE 3:				
CASH & BANK BALANCES:				
Cash on Hand		0		29515
Cash at Bank		4994264		15887418
FDR with Bank		17096795		10801747
Cash at Bank in FCR Account		912136		5834091
Cash at Bank (Current account)		519470		104522
Total		**23522665**		**32657294**

		As at 31.03.18 (Rs)		As at 31.03.17 (Rs)
SCHEDULE 4:				
LOANS, ADVANCES AND DEPOSITS: (Unsecured & Considered Goods)				
Advances		45000		10000
TDS Receivable(CY-64,051,PY-78,816)		368910		305859
Other Deposits		2326000		2326000
Total		**2739910**		**2641859**

		As at 31.03.18 (Rs)		As at 31.03.17 (Rs)
SCHEDULE 5:				
OTHER CURRENT ASSETS :				
Interest Accrued on FDR		710283		447253
Total		**710283**		**447253**

LUHARUKA & ASSOCIATES CHARTERED ACCOUNTANTS FRN-018825 SECUNDERABAD

SHARE INDIA GHANPUR (V) Medchal Mdl & Dist-501 401. T.S.

SHARE INDIA

MediCiti Buildings, Ghanpur Village Medchal Mandal and District-501401.TS

SCHEDULES FORMING PART OF BALANCE SHEET FOR THE YEAR ENDED 31st MARCH 2018

		As at 31.03.18 (Rs)		As at 31.03.17 (Rs)
SCHEDULE 6:				
Current Liabilities & Provisions				
Out standing Expenses		226309		394517
Sundry Creditors		9094		159081
Grant Received in Advance		13702190		21906133
Other Current Liabilities		12825725		11526261
Total		**26763318**		**33985992**

		For the year (Rs)		For the year (Rs)
SCHEDULE 7:				
Other Income:				
Bank Interest on FDR		813849		775638
Bank Interest S.B a/c		476026		380632
Other Income		387310		132606
Total		**1677185**		**1288876**

		For the year (Rs)		For the year (Rs)
SCHEDULE 8:				
Personnel Expenses:				
Salaries and Wages		56139285		47667272
Other Personnel Expenses		1517797		1792297
Staff Gratuity		1135473		1708000
PF Employer contribtion		439753		329401
Total		**59232308**		**51496970**

SHARE INDIA GHANPUR (V) Medchal Mdl & Dist-501 401. T.S.

Auditor Report

SHARE INDIA
MediCiti Buildings, Ghanpur Village Medchal Mandal and District-501401.TS

SCHEDULES FORMING PART OF BALANCE SHEET FOR THE YEAR ENDED 31st MARCH 2018

		For the year (Rs)		For the year (Rs)
SCHEDULE 9:				
Power and Fuel:				
Electricity & Fuel expenses		723391		575523
Total		**723391**		**575523**

		For the year (Rs)		For the year (Rs)
SCHEDULE 10:				
Program Expenses				
Programmer Expenses		7044853		8631912
Programme Expenses		66362299		59629926
Conveyance & Travelling expenses		24633376		28982638
Total		**98040528**		**97244476**

		For the year (Rs)		For the year (Rs)
SCHEDULE 11:				
Other Expenses:				
Bank Charges		116394		69821
Audit Fees		177000		172500
Professional Charges		515900		456950
Rates & Taxes		2500		39206
Rent		5295748		4384875
Postage & Telephone		1583034		1390274
Office Supplies		706565		660716
Vehicle maintenance		9966		119574
Staff Welfare		1257239		1266391
General and office expenses		1860452		1531427
Total		**11524798**		**10091734**

LUHARUKA & ASSOCIATES CHARTERED ACCOUNTANTS FRN-01882S SECUNDERABAD

SHARE INDIA GHANPUR (V) Medchal Mdl & Dist-501 401. T.S.

SHARE INDIA
NOTES TO ACCOUNTS

1. Depreciation has been provided on Straight Line Method taking the useful life of assets as mentioned below:

Name of the block	Useful life (in Years)
Building	30
Electrical fittings	10
Furniture & Fixtures	10
Vehicle	08
Medical Equipment	05
Office Equipment	05
Computers and Printers	03

   When the assets are not usable, depreciation have been charged fully.

2. Previous year's figures have been regrouped wherever necessary.
3. Un Secured Loans & Advances and Sundry Creditors, Sundry Debtors balances are subject to Confirmation.
4. In projects where grant received, income has been accounted to the extent of expenditure and depreciation. Any excess grant received is shown as advance grant received under "Current liabilities and provisions".

SIGNIFICANT ACCOUNTING POLICIES:

1. **GENERAL** :

   The accounts are prepared on Historical Cost Convention and in accordance with normal accepted standards.

2. **RESEARCH AND DEVELOPMENT EXPENDITURE** :

   Revenue expenditure is charged to income and expenditure account and capital Expenditure is added to the cost of Fixed Assets in the year in which it is incurred.

3. **FIXED ASSETS** :

   All Fixed assets are stated at cost less depreciation.

4. The accounts are prepared on the basis of accrual system of accounting.

For LUHARUKA & ASSOCIATES
CHARTERED ACCOUNTANTS
FRN 01882S

(RAMESHCHAND JAIN)
PARTNER
M No. 023019

Place: Hyderabad
Date: 29/06/2018

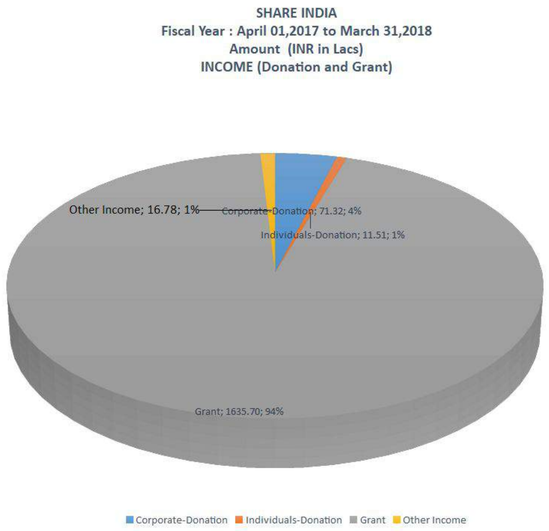
For SHARE INDIA

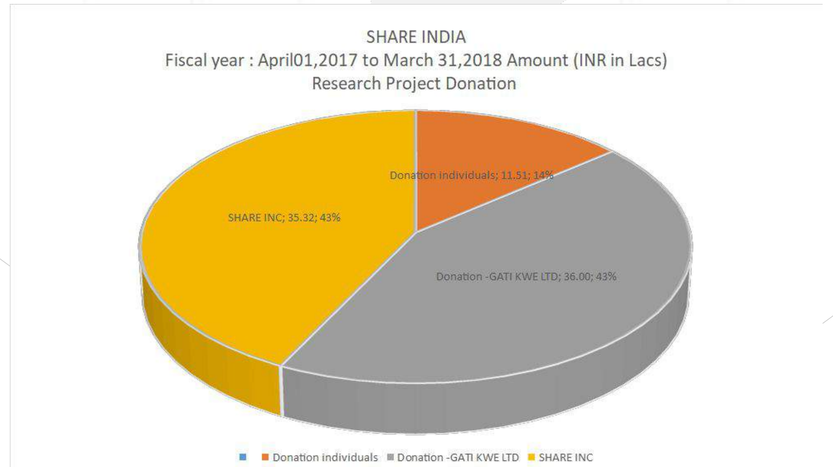
(Dr.V.MALAKONDA REDDY)
SECRETARY

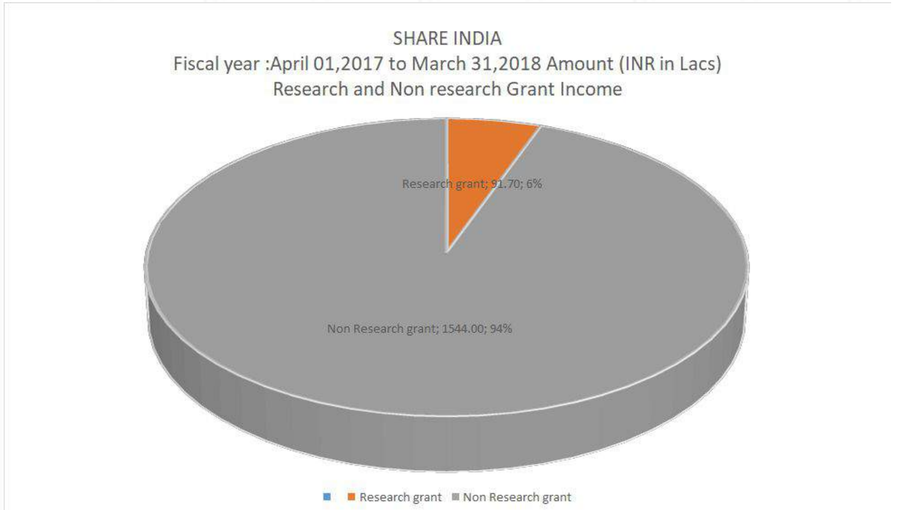
LUHARUKA & ASSOCIATES CHARTERED ACCOUNTANTS FRN-01882S SECUNDERABAD

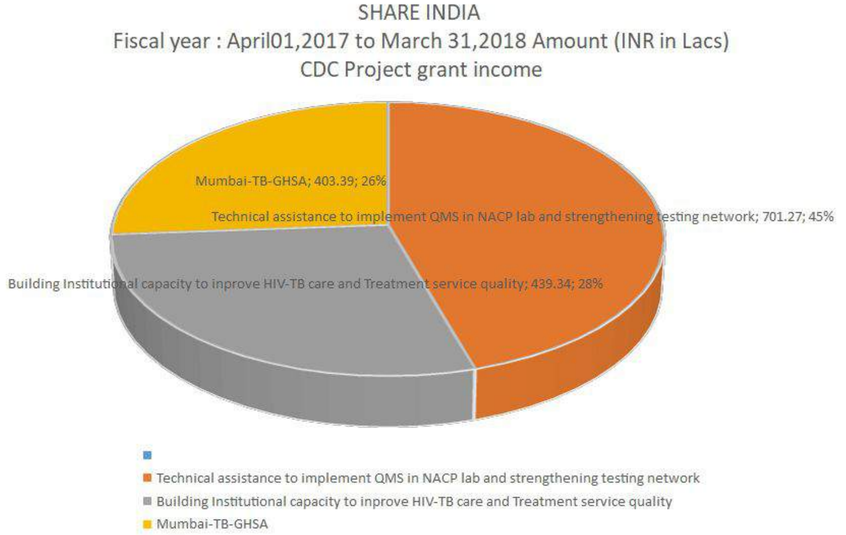
SHARE INDIA GHANPUR (V) Medchal Mdl & Dist-501 401. T.S.

PIE CHARTS

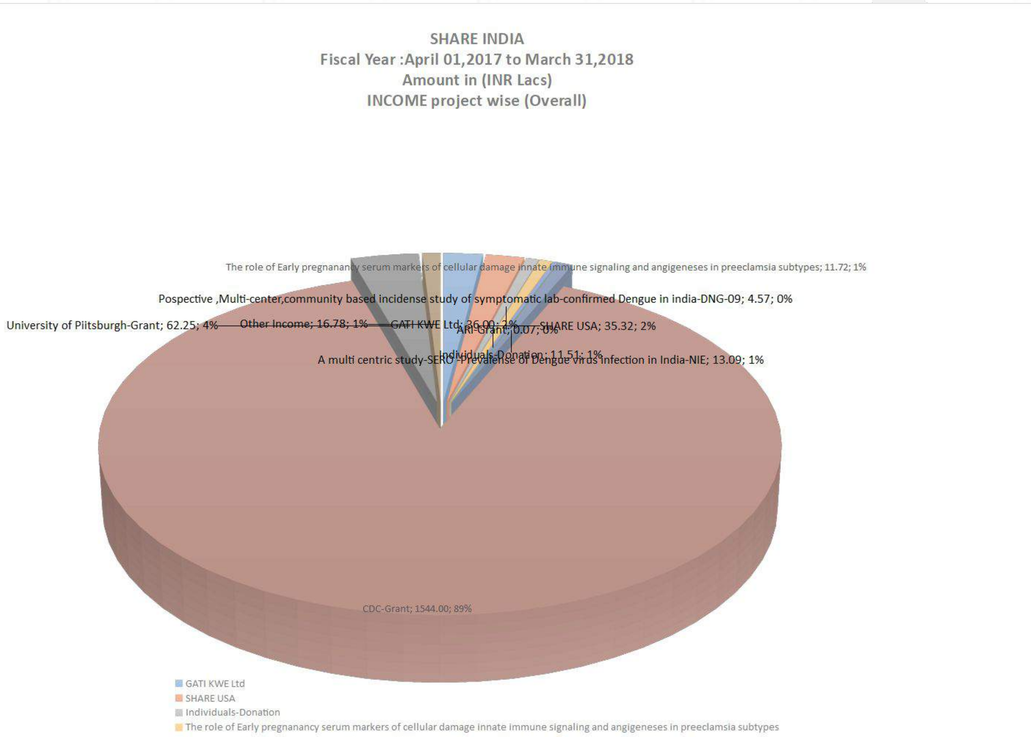

SHARE INDIA
Fiscal Year : April 01,2017 to March 31,2018
Amount (INR in Lacs)
INCOME (Donation and Grant)
Other Income; 16.78; 1%
Corporate-Donation; 71.32; 4%
Individuals-Donation; 11.51; 1%
Grant; 1635.70; 94%
Corporate-Donation
Individuals-Donation
Grant
Other Income

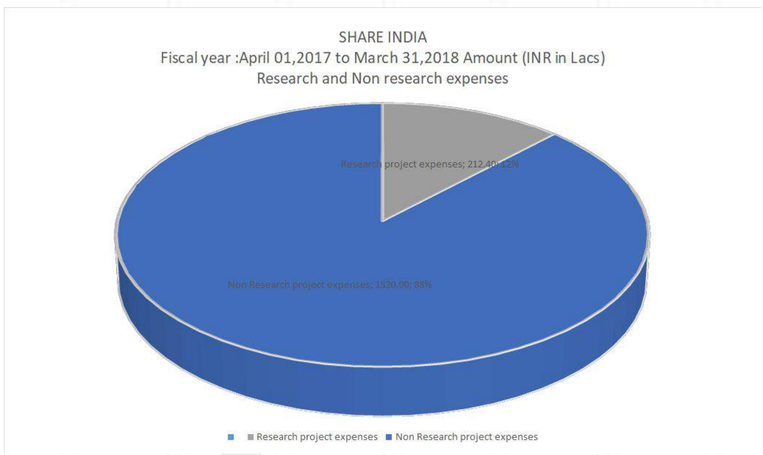

SHARE INDIA
Fiscal year : April01,2017 to March 31,2018 Amount (INR in Lacs)
Research Project Donation
Donation individuals; 11.51; 14%
SHARE INC; 35.32; 43%
Donation -GATI KWE LTD; 36.00; 43%
Donation individuals
Donation -GATI KWE LTD
SHARE INC

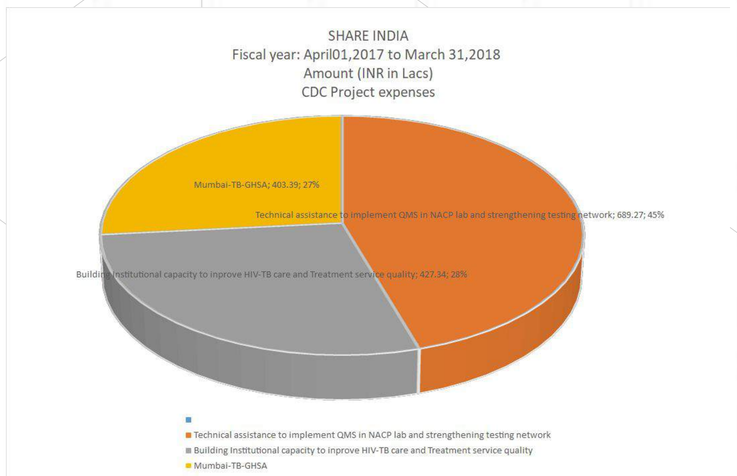

SHARE INDIA
Fiscal year :April 01,2017 to March 31,2018 Amount (INR in Lacs)
Research and Non research Grant Income
Research grant; 91.70; 6%
Non Research grant; 1544.00; 94%
Research grant
Non Research grant


SHARE INDIA
Fiscal year : April01,2017 to March 31,2018 Amount (INR in Lacs)
CDC Project grant income
Mumbai-TB-GHSA; 403.39; 26%
Technical assistance to implement QMS in NACP lab and strengthening testing network; 701.27; 45%
Building Institutional capacity to inprove HIV-TB care and Treatment service quality; 439.34; 28%
Technical assistance to implement QMS in NACP lab and strengthening testing network
Building Institutional capacity to inprove HIV-TB care and Treatment service quality
Mumbai-TB-GHSA

PIE CHARTS


SHARE INDIA
Fiscal Year :April 01,2017 to March 31,2018
Amount in (INR Lacs)
INCOME project wise (Overall)
The role of Early pregnanancy serum markers of cellular damage innate immune signaling and angigeneses in preeclamsia subtypes; 11.72; 1%
Pospective ,Multi-center,community based incidense study of symptomatic lab-confirmed Dengue in india-DNG-09; 4.57; 0%
University of Piitsburgh-Grant; 62.25; 4%
Other Income; 16.78; 1%
GATI KWE Ltd; 36.00; 2%
SHARE USA; 35.32; 2%
Ani Grant; 0.07; 0%
Individuals-Donation; 11.51; 1%
A multi centric study-SERO Prevalense of Dengue virus infection in India-NIE; 13.09; 1%
CDC-Grant; 1544.00; 89%
GATI KWE Ltd
SHARE USA
Individuals-Donation
The role of Early pregnanancy serum markers of cellular damage innate immune signaling and angigeneses in preeclamsia subtypes
Pospective ,Multi-center,community based incidense study of symptomatic lab-confirmed Dengue in india-DNG-09


SHARE INDIA
Fiscal year :April 01,2017 to March 31,2018 Amount (INR in Lacs)
Research and Non research expenses
Research project expenses; 212.40; 12%
Non Research project expenses; 1520.00; 88%
Research project expenses
Non Research project expenses


SHARE INDIA
Fiscal year: April01,2017 to March 31,2018
Amount (INR in Lacs)
CDC Project expenses
Mumbai-TB-GHSA; 403.39; 27%
Technical assistance to implement QMS in NACP lab and strengthening testing network; 689.27; 45%
Building Institutional capacity to inprove HIV-TB care and Treatment service quality; 427.34; 28%
Technical assistance to implement QMS in NACP lab and strengthening testing network
Building Institutional capacity to inprove HIV-TB care and Treatment service quality
Mumbai-TB-GHSA

Abbreviations

ANC	Antenatal Care
ARI	Acute Respiratory Infection
ATT	Anti-Tuberculosis Treatment
BIG	Biotechnology Ignition Grant
BIRAC	Biotechnology Industry Research Assistance Council
BITS	Birla Institute of Science and Technology
CAPH	The Center for Aging and Population Health
CBIT	Chaitanya Bharathi Institute of Technology
CCCC	Centre for Control of Chronic Conditions
CDC	Centers for Disease Control and Prevention
CPR	Cardio Pulmonary Resuscitation
CSSI	Caesarean Surgical Site Infection
CVD	Cardio-vascular Disease
DBT	Department of Bio-Technology
GBP	British Pound
GSPH	Graduate School of Public Health
HELP	Healthy Pregnancy
HIV	Human Immunodeficiency Virus
ICHHA	International Centre for Human Health Advancement
ICMR	Indian Council of Medical Research
InPoChlam	Innovative Point of Care Chlamydiales
KITS	Kakatiya Institute of Technology & Science
LaQSH	Laboratory Quality Systems in HIV
LIFE	Longitudinal Indian Family hEalth
LSHTM	The London School of Hygiene and Tropical Medicine
LVAD	Left Ventricular Assist Device
MILES	Mobility and Independent Living in the Elderly Study
MIMS	MediCiti Institute of Medical Sciences
MoU	Memorandum of Understanding
NACP	National AIDS Control Program
NACO	National AIDS Control Organization
NIH	National Institute of Health
NISCHIT	National Initiative to Strengthen & Coordinate HIV/TB response
PA	Pennsylvania
PHFI	Public Health Foundation of India
PIH	Pregnancy Induced Hypertension
PLHIV	People Living with HIV/AIDS
REACH	Rural Effective Affordable Comprehensive Healthcare
RNTCP	Revised National Tuberculosis Control Program
Rs	Rupees
SERA	Sexual and Reproductive Health Assessment
SIRO	Scientific and Industrial Research Organisation
SNIST	Sree Nidhi Institute of Science and Technology
STAR	Strengthening TB Action and Response
TAMU	Texas A and M University
TA	Technical Assistance
TB	Tuberculosis
TETRA	Technology Enabled community health workers to extend Tele medicine to Rural homes at Affordable costs
UK	United Kingdom
UoP	University of Pittsburgh
US $	United States Dollar
USA	United States of America

DONATIONS

ONLINE DONATIONS

Donations made to SHARE INDIA in India are exempt from Income Tax under Sec. 35(1)(ii). Cheques / DD may be sent in the name of 'SHARE INDIA' to the administrative office.

Anything you can give will make a tremendous difference. It could be monetary contribution – you could specify where it has to be used or leave it to SHARE INDIA to disburse, based on priority and need. It could be in kind, through a product or service you can offer. We would be grateful for any personal involvement from you for helping us out.

DONATE THROUGH CHEQUE/DD

Please mail the Cheque /DD to the below Address

SHARE INDIA RESEARCH OFFICE,

MediCiti Institute of Medical Sciences Campus,

Ghanpur(Village), Medchal(Mandal), Medchal(Mandal),

Medchal-Malkajgiri(Dist.)

Telangana,INDIA.

Pin Code:501401

DONATE THROUGH WIRE TRANSFER

If you are an Indian Donor the following are Account Details for NEFT.

Name of the Beneficiary: SHARE INDIA
A/c no: 2423101000354
IFSC Code No: CNRB0002423
Bank Name: Canara bank
Type of Account: Savings Account
Branch Name: Industrial Finance Branch

If you are an International Donor, the following are Account Details for Wire Transfer.

Name of the Beneficiary: SHARE INDIA
A/c no: 2423101000158
IFSC Code No: CNRB0002423
Bank Name: Canara Bank
Type of Account: Savings Account
SWIFT Code of Bank: CNRBINBBIFH

SHARE INDIA

Society for Health Allied Research and Education India
MediCiti Institute of Medical Sciences (MIMS) Campus
Ghanpur Village, Medchal Mandal,
Medchal Malkajgiri District - 501 401
Telangana State, INDIA

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