SHARE INDIA

Society for Health Allied Research and Education India

ANNUAL REPORT
2022-23

SHARE INDIA Office of Research at MediCiti Institute of Medical Sciences (MIMS) Campus

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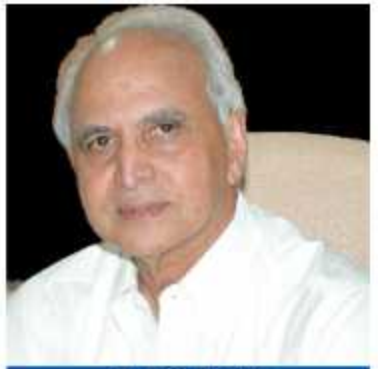
Contents

Message from our Chairman



Dr. P.S. Reddy

Over the years, SHARE INDIA has entrenched itself as a vibrant ecosystem of biomedical research. We have registered steady but remarkable progress in clinical and public health research, capacity building and affordable healthcare technologies. The essential components in our growth, development and evolution have been-enduring community engagement, a resilient and versatile team and strategic partnerships. The activities and achievements of the past year bear testimony to our cohesive, committed and collaborative spirit.

Over the past one year, several ongoing research initiatives across the spectrum from clinical research to public health research have successfully achieved major milestones and met the expectations of the prestigious funding agencies including the ICMR (Indian Council of Medical Research) and Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology (DBT), Government of India. For example, the Tuberculosis vaccine trial from ICMR and a study on Sero-surveillance for Dengue, Chikungunya and COVID-19 from BIRAC which were taken up during the active phase of the COVID-19 pandemic have progressed as per the funding agencies mandate and achieved the desired milestones. These projects also had a capacity building component and helped build capacity in conducting clinical trials at SHARE INDIA.

Growing from our earlier expertise in conducting mechanistic studies, large scale observational studies, we currently possess a rich talent pool of well-trained staff to conduct regulatory standard clinical trials. It is pertinent to mention here that SHARE INDIA is designated as one of the sites for a multicentric double blind three arm randomized control trial of three different single pill combination therapies for blood pressure control sponsored by the Imperial college, London.

The strong foundation that we laid more than two decades ago by creating a dynamic geocoded digital database of 50,000 individuals residing in 40 villages of rural Medchal on the outskirts of Hyderabad to serve their contemporary healthcare needs through the REACH (Rural Effective Affordable Comprehensive Healthcare) project helped us build an enduring relationship with the community. The trust and good-will of the local community and the continuous capacity building measures undertaken to train the faculty and students at MediCiti Institute of Medical Sciences (MIMS) in medical research have enabled and empowered us to execute large and complex projects of critical public health importance successfully even amidst challenging times.

Our spirit of collaboration, unyielding determination and the pursuit of ambitious goals led us on the path to developing an affordable artificial heart under the Indo-American Artificial Heart Program-A multi-institutional multi-country collaborative intramural project. It is currently in advanced stages of developing a left ventricular assist device. Similarly, the quest for developing a comfortable, highly functional, 3-D printed, yet affordable prosthesis to rehabilitate lower limb amputees and empower them for a productive life has reached an advanced stage in its development.

Several other important projects on various infectious diseases including HIV, Tuberculosis, Rabies, Skin diseases and Air borne infection control, to name a few are being implemented at several locations across India in collaboration with state governments, and national and international agencies such as, the United States Center for Disease Control and Prevention (CDC), National AIDS Control Organisation (NACO), India and the ICMR.

It is heartening to note that several faculty members at MIMS are increasingly engaging in research projects and effectively mentoring medical students as well in research endeavours. It was a proud moment indeed, when one such medical student's research work was awarded the second prize in the inaugural 'World Conference of Medical Student Research' conducted by the International Journal of Medical Students.

Reflecting on the collective pursuit of the entire team to promote and sustain a culture of research over the past two decades and the progress achieved, I am hopeful that the concerted efforts will continue to propel us forward toward pushing the frontiers of science in the service of humanity.

About SHARE INDIA

Indian American professionals from various medical and non-medical fields, all of whom earned 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 in India and for the purpose of giving back to mother country, two, not for profit societies SHARE INDIA (1986) and SHARE Medical Care (1987), were formed with a similar vision to translate the dreams into action. 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 is the brainchild of Dr. P.S. Reddy, Professor of Medicine, at the University of Pittsburgh, who is also the chairman of SHARE INDIA. He devotes half of his time in India to translate NRIs dreams into reality.

Along with CDC funded projects to the government, a variety of community welfare projects like REACH, LIFE, TETRA, HELP and CSSI are fully funded by generous donors. SHARE INDIA endeavours have 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, maternal mortality rate, immunization and cancer.

SHARE INDIA is entirely funded by voluntary contributions. Individual philanthropists, NRI's, and the private sector are the organization's primary donors. Donations are tax-exempt under section 35(1) (ii) of the Income Tax Act and 80G

Vision and Mission

- To provide quality and advanced medical care at lowest possible cost
- To develop a working model of Healthcare Delivery System for rural population
- To promote undergraduate, graduate, postgraduate and Continuing Medical Education
- And above all to promote Research

Philosophy of SHARE INDIA

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.

Governing Council, SHARE INDIA

Dr. P. Sudhakar Reddy	- Chairman
Mr. M. K. Agrawal	- Vice Chairman and Treasurer
Dr. Madhu K. Mohan	- Secretary
Dr. A. Gopal Kishan	- Member
Dr. Prakash N. Shrivastava	- Member
Dr. C. Venkata S. Ram	- Member
Dr. P. Naveen Chander Reddy	- Member
Mrs. G. Nandini Prasad	- Member
Mrs. Poornima Prabhakaran	- Member
Mr. K. Krishnam Raju	- Member
Dr. K. Madhava	- Member

Executive Team, SHARE INDIA

Dr. Vijay V. Yeldandi	-	Project Director, CDC Projects
Mr. N. Lakshminarasimhan	-	Head Finance and Accounts
Ms. Revina Suhasini Samuel	-	Head Operations & HR, CDC Projects
Mr. Purushotham Reddy R.	-	Head, Information Technology
Mr. Nitin C. Desai	-	Head Operations

Scientific Research Advisory Members, SHARE INDIA

1. **Dr. B. M. Gandhi:** Chief Executive Officer, Neo Biomed Services, New Delhi
2. **Prof. Seyed E. Hasnain:** Vice Chancellor, Jamia Hamdard University, Hamdard Nagar, New Delhi.
3. **Dr. G.V.S. Murthy:** Director, Indian Institute of Public Health, Hyderabad
4. **Prof. M.U. R. Naidu:** Director Dermatology Natco Pharama India; Former Dean Faculty of Medicine and Prof & Head Clinical Pharmacology & Therapeutics, the Nizam's Institute of Medical Sciences, Hyderabad
5. **Dr. Ganesh Oruganti:** Former Executive Director SHARE INDIA - Ghanpur Village, Medchal Mandal and District, TS
6. **Prof. Prabhakaran D.:** Executive Director, CCDC & Vice President, Research & Policy, PHFI Centre of Chronic Disease Control (CCDC) & Public Health Foundation of India (PHFI), New Delhi
7. **Prof. B. Sashidhar Rao:** Fellow of Telangana Academy of Sciences (FTAS) & Former Professor & HOD, Department of Biochemistry, Osmania University, Hyderabad
8. **Dr. P. S. Reddy:** Chairman, SHARE INDIA, Ghanpur, Mandal & District Medchal, Telangana
9. **Dr. B. Sesikeran:** Former Director, NIN-ICMR National Institute of Nutrition, Hyderabad
10. **Dr. J. Gowri Shankar:** Director, Indian Institute of Science Education and Research, Mohali, Punjab
11. **Dr. D. C. Sharma:** Head Technical Operations MRIDA, Palamur Biosciences Pvt Ltd., Karvina, Madigattla Village, Bhootpur Mandal, Mahabubnagar Telangana State
12. **Dr. G. Sundar:** Director, Birla Institute of Technology & Science (Pilani), Hyderabad Campus, Shameerpet, Hyderabad
13. **Dr. S. P. Vasireddi:** Chairman and Managing Director, Vimta Lab Life Sciences Facility, Hyderabad
14. **Dr. K. Vijayaraghavan:** Former Director Research SHARE INDIA and Deputy Director, NIN, Kakiteeya Nagar, Street No.2, Habsiguda, Hyderabad
15. **Dr. Vijay V. Yeldandi:** Professor, University of Illinois at Chicago, USA

Summary of SHARE INDIA Projects

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
1	Indo-American Artificial Heart Program	Dr. P.S. Reddy Premium Institute From USA and India, Engineering Institutions in India, Pre-Clinical GLP facility and Medical Device Manufacturers	Chairman, SHARE INDIA	Rs.17.20 Lakhs (2022-23)	Self-funding by Indian Institutions aided by SHARE INDIA / SHARE USA	On going
2	Longitudinal Indian Family hEalth - LIFE Study	Dr. Kalpana Betha	MBBS, M.D.	Rs.22.77Lakhs (2022-23)	SHARE INDIA / SHARE USA	On going
3	Mycoplasma Genitalium, differentiated Ureaplasma species, and pregnancy outcomes	Dr. Kalpana Betha Dr. Catherine L. Haggerty	MBBS, M.D. Associate Professor, University of Pittsburgh	US $ 46,318 (2016-23)	Fogarty International Center -NIH	Project Concluded Data Analysis in progress.
4	The influence of vaginal micro biota on adverse pregnancy outcomes in the LIFE study	Dr. Kalpana Betha Dr. Catherine L. Haggerty	MBBS, M.D. Associate Professor, University of Pittsburgh	Sub Study of Life	Fogarty International Center -NIH	Project Concluded Data Analysis in progress.
5	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	MBBS, M.D. Associate Professor, Texas A&M University Associate Professor, University of Pittsburgh	US $ 24,000 (2017-23)	Partial support from TAMU, Texas	Project Concluded Data Analysis in progress.

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
6	Technology Enabled community health workers to extend Telemedicine to Rural homes at Affordable costs TETRA Study follow up of six villages	Dr. D. Shailendra	MBBS, M.D.	Rs.4.38 Lakhs (2022-23)	SHARE INDIA / SHARE USA	On-going.
7	HEaLthy Pregnancy (HELP) study	Dr. Sapna Vyakaranam Dr. Kalpana Betha Dr. Aparna Varma Dr. Rashmi Pant Dr. Padma Yalamati	MBBS, M.D. MBBS, M.D. Department of Biochemistry, AIIMS, Bibinagar Consultant Biostatistician, SHARE INDIA Consultant Biochemist, CARE Hospitals	Rs. 2.34 Lakhs (2022-23)	SHARE INDIA / SHARE USA	Study concluded Data analysis is in progress.
8	A cluster randomized trial of a mHealth integrated model of hypertension, diabetes and antenatal care in primary care settings in India and Nepal. (mIRA Project)	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 Hygiene & Medicine, UK Professor, Community Programs, Kathmandu University School of Medical Science , Nepal MBBS, M.D. Chairman, SHARE INDIA	Role of SHARE INDIA is facilitating the work in villages when required initially.	Newton Fund	On -going
9	Caesarean Surgical Site Infection - CSSI Study.	Dr. Kalpana Betha Dr. K. Lakshmi Sailaja Dr. Catherine L. Haggerty	MBBS, M.D. MBBS, M.D. Associate Professor. University of Pittsburgh	Rs. NIL Lakhs (2022-23)	SHARE INDIA / SHARE USA	Study completed PLOS ONE Manuscript submitted. journal

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
10	Empowering Indian health researchers with computational modelling tools - HADM Small Grant	Dr. Guru Rajesh Jammy Dr. M. Raheel Sayeed Dr. Lincoln P. Choudhury	Director Research, SHARE INDIA Research Scientist, SHARE INDIA HIV Consultant, Delhi, India	US$7.500 2017-2023	NIH - University of Pittsburgh	Project Completed
11	Develop and test 3D printing technology to produce innovative limbs at affordable cost for the disabled in India	Dr. Prakash N. Shrivastava Dr. K. Madhava Mr.P. Nikethan Redy Dr. Srinivasa Prakash Regalla	Founder Member SHARE INDIA Professor Emeritus, University of Southern California. USA MD, General surgeon Project Manager Advisor for share India and Professor, Mechanical Engineering, Birla Institute of Technology and Science, Hyderabad	Rs. 3.82 Lakhs (2022-23)	SHARE INDIA / SHARE USA	Ongoing
12	IndEpi: A Platform for systematic Integration of Indian Epidemiology Datasets to enable Health Analytics and Disease Modelling	Dr. Rashmi Pant	Consultant, Biostatistician SHARE INDIA	Rs. 0.18 Lakhs (2022 - 2023)	Department of Science & Technology, Ministry of Science & Technology, Government of India	SHARE INDIA deliverable is completed

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
13	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.Kalpana Betha Dr. Rashmi Pant Dr. Vijay V. Yeldandi Dr. Servaas A. Morre Dr. Pierre Paul Michel Thomas	MBBS, MD. Consultant, Biostatistician Professor, University of Illinois at Chicago, USA Maastricht University, The Netherlands Institute of Public Health, Genomics, Maastricht University, The Netherlands	Rs. 12.89 Lakhs (2022 - 2023)	DBT, Government of India	On going
14	Harnessing a population - based cohort for an epidemiological study on Dengue and Chikungunya and drive capacities to conduct clinical trials	Dr D Shailendra	MBBS, M.D.	Rs. 121.17 Lakhs 2022-23	National Biopharma Mission, BiRAc Government of India	On going
			ICMR Funded Projects			
15.	TB prevalence and interventions for reducing TB and LTBI in high -risk key population of rickshaw drivers and construction workers	Dr Shikha Dhawan	Director Programs, SHARE INDIA	Rs.1.25 Lakhs (2022-23)	ICMR	Project completed
16.	Improving TB diagnosis at Designated Microscopy Centers (DMCs) by introduction of Quality Management Systems and optimum utilization of rapid molecular diagnostics and its cost implications	Dr Shikha Dhawan	Director Programs, SHARE INDIA	Rs.1.78 Lakhs (2022-23)	ICMR	Project completed

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
17.	A Phase III, randomised, double blind, three arm placebo controlled trial to evaluate the efficacy and safety of two vaccines VPM1002 and Immuvac (Mw) in preventing Tuberculosis (TB) in healthy household contacts of newly diagnosed sputum positive pulmonary TB patients - TB Vaccine trial , sub site of BMMRC.	Dr. K. Sailaja	MBBS, M.D. Pulmonology	Rs.6.17 Lakhs (2022-23)	ICMR	Ongoing
18.	Capacity building for undertaking the "A Phase III, randomised, double blind, three arm placebo controlled trial to evaluate the efficacy and safety of two vaccines VPM1002 and Immuvac (Mw) in preventing Tuberculosis (TB) in healthy household contacts of new pulmonary TB patients "	Dr. K. Sailaja	MBBS, M.D. Pulmonology	Rs.13.06 Lakhs (2022 - 23)	ICMR	Ongoing
19	**RABIES** Human rabies deaths and animal bite burden in India: A cross sectional survey	Dr. Vijay V Yeldandi Dr Prashant Vennela Dr.Viswanath	Professor, University of Illinois at Chicago, USA Public Health Specialist, Infection Prevention & Control, SHARE INDIA Consultant Microbiologist.	Rs.6.01 Lakhs (2022-23)	ICMR-NIE	On going

S. No.	Title of the study	Investigators	Designation / Institution Name	Project Exp. 2022 -23/ (Unaudited) Project Cost Approved	Funding source	Project status
20	**mHEALTH - AVATHAR :** Development of an mHealth Educational Intervention to Improve the Prevalence of Viral Suppression among Persons Living with HIV and Low Literacy in India	Dr. Vijay V. Yeldandi Mark S. Dworkin Casey Luc Sierra Upton Sabitha Gandham	Professor, University of Illinois at Chicago, USA MD, MPH&TM, University of Illinois at Chicago Department of Epidemiology and Biostatistics MPH University of Illinois at Chicago Department of Epidemiology and Biostatistics MS, MPH University of Illinois at Chicago Department of Epidemiology and Biostatistics. MSW, SHARE INDIA	Rs. 0.29 Lakhs (2022-23)	UIIC USA	Ongoing, ICMR HMSC and local TSAC approval received
21	A community - based prevalence of skin disorders in rural Mandals / Divisions of Medchal and Shamirpet of Medchal - Malkajgiri district, Telangana State	Dr. Vijay V .Yeldandi	Professor, University of Illinois at Chicago, USA	Rs.4.72 Lakhs (2022-23)	Pfizer	On going

Technical Assistance to Government of India – "Global Fund Project to fight AIDS"						
22	Design and develop comprehensive advocacy, communication strategies and tools for NACP	Dr Shikha Dhawan	Director Programs, SHARE INDIA (GFATM Project)	Rs.238.32 Lakhs (2022-23)	Global Fund through NACO, Ministry of Health & Family Welfare, Govt. of India.	On going
Technical Assistance to Government of India – "CDC funded Projects"						
23.	National Initiative to Strengthen and Coordinate HIV/TB Response in India – NISCHIT Plus ,	Dr. Vijay V. Yeldandi Dr. Jayakrishna Kurada Dr. Satish Kaipilyawar	Professor, University of Illinois at Chicago, USA Project Director, CDC Projects, SHARE INDIA. Sr. Technical Program Manager Treatment Associate Project Director TB	US $ 2,253,960(2022-23) Rs.(1803.16 Lakhs)	Centers for Disease Control and Prevention (CDC), Atlanta, USA.	On going
24	Laboratory Quality Systems in HIV - LaQSH Plus	Dr. Vijay V. Yeldandi Mr.Lokabiraman	Professor, University of Illinois at Chicago, USA Project Director, CDC Projects, SHARE INDIA. Team Lead	US $ 1,194,855(2022-23) Rs. (955.88 Lakhs)	Centers for Disease Control and Prevention (CDC), Atlanta, USA.	On going
25	Building Systems Capacity on Outbreaks Laboratory Surveillance Training Emergency Response -BOLSTER	Dr. Vijay V. Yeldandi Dr Prashant Vennela Mr Richa Kedia	Professor, University of Illinois at Chicago, USA Project Director, CDC Projects, SHARE INDIA. Public Health Specialist, Infection Prevention & Control. (IPC) Lead Public Health Consultant & Program Manager (Surveillance)	US $ 1,220,126 (2022 - 23) Rs.(946.10 Lakhs	Centers for Disease Control and Prevention (CDC), Atlanta, USA.	On going

1 Artificial Heart Program (AHP)

Vision:

Promote bio-engineering research in Engineering Institutes of India in collaboration with Medical Institutions, Engineering Industries and Medical device developers to develop medical devices in India.

Objectives:

Moon-shot: Develop total artificial heart
Immediate: Development of Left Ventricular Assist Device (LVAD) / Extracorporeal Membrane Oxygenator (ECMO).

Key activities:

SHARE INDIA jump started its activities toward the development of a blood pump suitable for bench testing and pre-clinical readiness. The LVAD has two critical parts, Motor and Pump Head. The commercially available, CentriMag pump is used as a control standard for the development of the blood pump.

The disposable pump head was developed by CBIT, KITS and SNIST. The 3D printed prototype underwent in-vitro hemolysis testing in AIG Hospital using a mock loop testing system developed by our team. It showed minimal hemolysis comparable to similar devices in extensive use. After the successful trials on the prototypes, the pump parts were injection moulded using medical grade polycarbonate. Vasantha Tool Crafts Pvt. Ltd. has collaborated with the team and taken up the task for the design of the moulds and initial manufacturing of the injection moulded pump head and impeller. To assemble the pump halves, biocompatible adhesive is used. A robotic arm and UV equipment are proposed to be procured for high quality assembly of the parts.

The motor is being developed by Laxven Systems. The motor works on Maglev principle, which levitates and rotates the impeller which is inside the pump without any physical contact. The team is also developing a console unit for the motor.

Simultaneously, in-vivo control studies are being performed with existing LVAD/ECMO devices on sheep at Palamur Bioscience Labs. In March 23, the US team visited the animal facility and assisted the team in conducting a successful 5-day sheep study using CentriMag.

The injection moulded pump and CentriMag are being tested for hemolysis, activated thrombosis and hydrodynamics. Along with this, in-vitro testing for von Willebrand factor accrued deficiency is being developed at AIG Hospital, Hyderabad.

Organisation	Investigators /Co-ordinators
SHARE INDIA	Dr. P.S. Reddy Dr. Shikha Dhawan Dr. B. M. Gandhi Dr. A. G. K. Gokhale Mr. Nitin C. Desai
AIG Hospital	Dr. P. Naveen Chander Reddy Dr. Sukesh Kumar Reddy Dr. Naresh Kumar
Chaitanya Bharati Institute of Technology, Hyderabad.	Dr. Ravinder Reddy. Mr. Rugveda Thanneeru
Sreenidhi Institute of Science and Technology, Ghatkesar, Hyderabad	Dr. K. T. Mahhe Mrs. Sadia Alvi
Kakatiya Institute of Science and Technology, Warangal.	Dr. Venu Madhav K, PhD Dr. Ganesh Kumar Gampa, PhD Dr. Saikumar Gadakary, PhD
Vasantha Tool Crafts, Hyderabad	Mr. Dayanand Reddy Mr. Suresh Kumar
Laxven systems, Cherlapalli, Hyderabad	Mr. Ramesh Reddy, Mr. Rahul Vennam
Palamur BioScience Labs, Mahbubnagar.	Mr. K. Venkata Reddy Dr. DC Sharma
Shree Pacetronix Ltd, Pithampur, Indore, MP	Mr. Atul Sethi Mr. Aakash Sethi

COLLABORATORS

ACKNOWLEDGMENTS

We gratefully acknowledge critical voluntary help being provided by the following international experts from the inception of the project:

- **Prof. Harvey Borovetz**, Professor of Bioengineering, University of Pittsburgh, USA
- **Dr. Shawn Bengston**, Director of Quality Management Systems, University of Pittsburgh, USA
- **Mr.Joseph Hanke**, Surgery Supervisor, McGowan Institute for Regenerative Medicine, University of Pittsburgh, USA
- **Dr. William R. Wagner**, Director of the McGowan Institute for Regenerative Medicine, University of Pittsburgh, USA
- **Dr. Edward Klein**, Director of Pathology Services at Division of Laboratory Animal Resources, Faculty from University of Pittsburgh, USA
- **Prof. James Antaki**, Professor of Heart Assist Technology, Cornell Engineering, Cornell University, Ithaca, New York, USA
- **Dr. James Long**, Cardio thoracic surgeon, Medical Director, Nazih Zuhdi Transplant Institute - INTEGRIS Baptist Medical Centre, Oklahoma, USA
- **Dr. Kurt Dasse**, Co-Founder, President & CEO, Inspired Therapeutics, Florida, USA
- **Dr. Barry Gellman**, Chief Technology Officer, Inspired Therapeutics, Florida, USA
- **Ms. Priscilla Petit**, Co-Founder, Director of Quality & Regulatory, Inspired Therapeutics, Florida, USA

Status of the project:

Motor and Controller:

Test rig was designed and fabricated to study 3D properties of the magnet. This setup measures variation in magnetic field due to linear movement (X, Y, and Z) and rotation. Controller unit to also be fabricated at Laxven Systems and will be completed by Dec 2023.

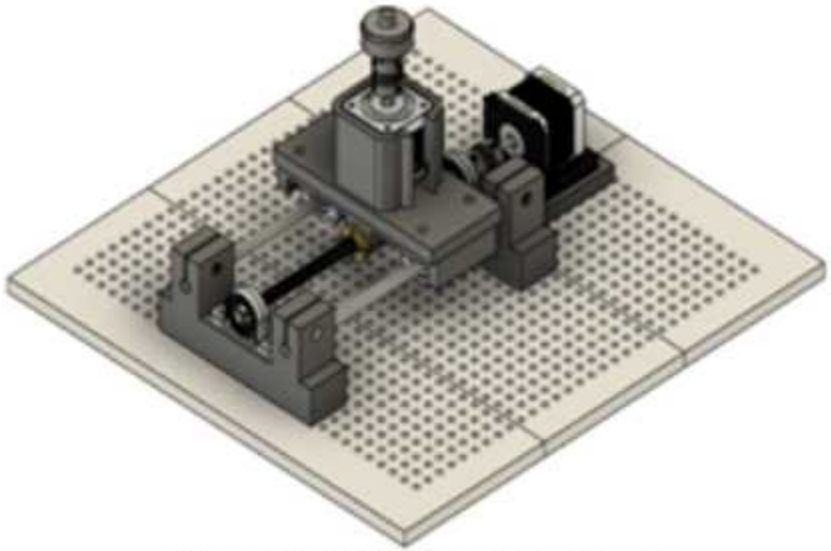


Figure 1 3D model of the magnet testing rig

Figure 2 Motor developed so far at Laxven

Pump casing and Impeller:

- Vasantha Tool Crafts is handling the design and manufacturing of the pump casing and impeller moulds. Medical grade polycarbonate is used for the manufacturing of pump parts.
- Modifications in the impeller design- height of the impeller, ID/OD of the impeller were made to accommodate the best fit for the magnets. Magnets were also inspected for dimensions at VTC.

Design changes in the pump casing were made and samples were sent for the ultrasonic welding trials at AMTZ.

Figure 3 Injection Moulded Pump Casing

Figure 4 Injection Moulded Impeller parts

Gluing:

A specialized glue dispensing robot and UV curing equipment has been proposed for purchase at KITS Warangal. Quotations for the equipment were received (Total Approx Rs. 13 Lakhs). 5 sets of pumps were sent to Delhi to be glued by this equipment. The glue was UV cured and tested for leakage. No leaks were observed. Parallelly, the ultrasonic welding of the pump casing is being explored at AMTZ, Vizag. Hydrodynamic testing for leakage is done for the pumps at high pressures.Suitable adhesive for sealing the impeller is being explored and vacuum testing on impellers done for quality control.

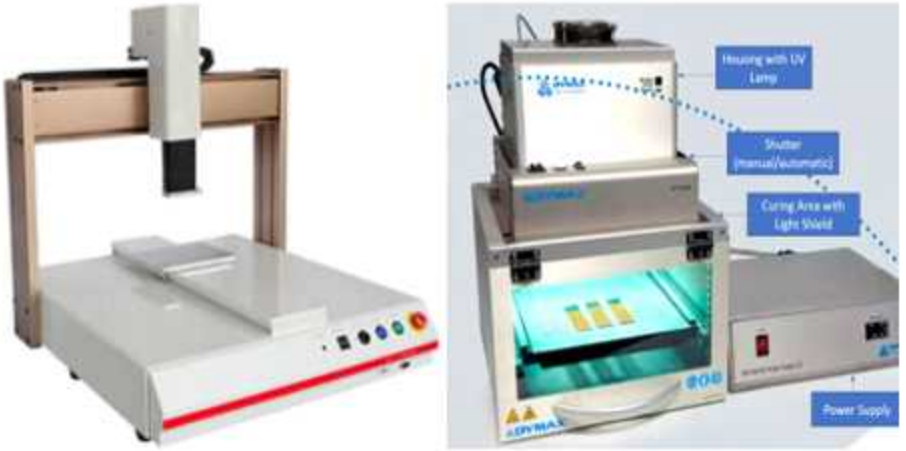


Fig 5 Glue Robot (Left), UV Equipment to Cure the Glue (Right)

Fig 6 Vacuum Test (-500mmHg) on glued impellers.

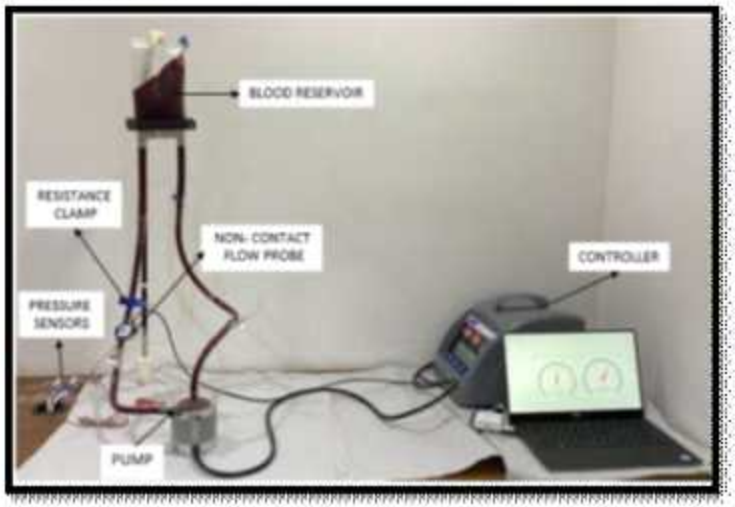
Hydrodynamic Test:

Hydrodynamic tests are performed to check for leakage of the pump at high pressures. (500mmHg). the tests are also done to evaluate pump performance by generating the H-Q curves. It consists of pressure and flow sensors to evaluate the data from the mock loop.

The INDUS and CentriMag centrifugal pumps will be tested for the hydrodynamics and the H-Q curves will be superimposed and compared. The curves aid in evaluating the pump performance and efficiency.

Hemolysis Test: Hemolysis is the rupture of the red blood cells, due to which hemoglobin enters the plasma. In a continuous flow blood pump, the blood undergoes a lot of shear and hence, mechanical damage of red blood cells causes hemolysis. A test facility was set up at AIG Hospital to conduct the mock loop experiments for hemolysis on Centrimag and the INDUS.

Total 18 hemolysis tests have been conducted so far on Centrimag and the 3D-printed prototypes and the injection moulded pump. More hemolysis tests to be conducted at different flow rates and pressure conditions to establish the hemocompatibility.



Activated Thrombosis Test:

With the guidance of Dr. Barry Gellman, the 'mickey mouse' connector was designed to eliminate ring thrombosis effect in the mock loop. The ring thrombus is mainly formed at the joints where tube and the barbed connectors meet. Hence a connector, which would be placed on the tube, is designed to reduce the gap and thereby eliminating the thrombus formation. Activated thrombosis test was performed on the CentriMag, without the 'mickey mouse' connectors. The test was successful with ring thrombus and clots observed in the loop. Further testing to be done using the 3D printed connectors.

Von Willebrand factor (VWF).

VWF is an essential protein in clotting mechanism. Qualitative or quantitative defect of it causes bleeding. Mechanical pumping of blood to result in breakdown of protein. Dedicated personnel has been appointed at AIG to conduct the VWF tests along with other team members. Platelet poor plasma is used to test the pump. The mock loop is prepared, and hourly samples collected from the running loop. These samples are tested for the following.

i. VWF Antigen level (ELISA kit)
ii. VWF Collagen binding activity (ELISA kit)
iii. VWF multimer analysis

One loop test was conducted on Centrimag. The samples were collected and analysed for the antigen level and collagen binding activity for VWF. 4.93% decrease in VWF: CB/Ag was observed from the baseline. Consumables for the multimer analysis are to be procured.

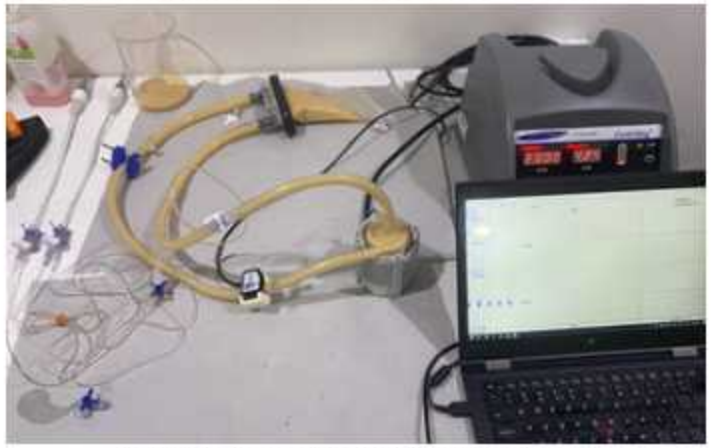


Fig 9: vWF Test with Platelet Poor Plasma

Animal Testing:

A major milestone of our program was achieved with a 96-hours long sheep study successfully conducted at Palamuru lab under the supervision of Dr. Sharma, Dr. Sukesh Reddy and other team members. The test was done using Centrimag impeller and controller. The study provided data on surgical cannulation and post-operative management of the sheep. Animal survival throughout the surgical procedure and post extubating was successfully achieved. One day sheep experiment is costed about Rs 3.5 lacs.

Our attempts to develop skills at Palamur Bioscience laboratories to keep sheep alive on Left Ventricular Assist Device (LVAD- "Artificial Heart") for 30 days are ongoing.Recently (March 7-14), Four experts from Pittsburgh visited the facility and imparted training in care of the sheep for 5 days on External LVAD available in the market (Centrimag).

Fig. 10 Team from Pittsburgh, USA , visited Palamur Bioscience for training .

Fig 11 Post-operative management of the sheep (March 2023)

2 Longitudinal Indian Family hEalth (LIFE) pilot study

Investigators

- Dr. Kalpana Betha, MBBS, M.D.
- Dr. D. Shailendra, MBBS, M.D.

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.

About the project: The Longitudinal Indian Family Health (LIFE) pilot study was established in 2009. The goal of this study is to understand the link between the environment in which Indian women conceive, pregnancy, and child birth, physical and mental health along with the development of the child. The LIFE study has the potential to pinpoint the root causes of many conditions that are excessively prevalent in India today, including poor pregnancy outcomes (pregnancy loss, low birth weight, pre-term birth) and developmental disorders of childhood.

Women have been recruited either prior to their conception or within their first trimester of pregnancy (<14 weeks gestation). Anthropometric measures, biological samples (blood, urine, stool, vaginal swabs) and detailed questionnaires were completed during registration, the first and third trimesters, and at the delivery. Cord blood and meconium were collected at delivery. Anthropometric measures were collected for each child, along with a detailed health questionnaire and developmental assessment from 6 months to 16 years was carried out. At 6-7 years, a detailed examination was done and between 3-4 years (to know any mental health problem) and 8-16 years (a cognitive function assessment) by clinical psychologist by using WISC-IV modified India scale and also obtained anthropometric measurements and health questionnaires data for both mother and child. Questionnaires were administered for each pregnancy loss and infant or child death.

HAPPY LIFE STUDY BABY

HAPPY FAMILY 3 CHILDERNS WERE BORN - LIFE STUDY

Status of the project:

- 1227 women aged between 15 and 35 years recruited before conception or within 14 weeks of gestation.
- Baseline data were collected from husbands of 642 women.
  1275 deliveries occurred.
- Women were followed through pregnancy, delivery, and postpartum.
  All the couple were followed between 5-6 years to assess their health problems, questionnaires were completed for each pregnancy loss and infant or child death.
- Children follow-up is ongoing and follow up visit from 06 months to 16 years were carried out.
- The developmental assessment was done every half yearly (6-24 months) and yearly (36-60 months) and at 6-7 years a detailed examination was done.
- Additional follow up visit were done between 3-4 years (to know any mental health problem) and 8-16 years (a cognitive function assessment) by Clinical psychologist by using WISC-1V modified India scale and also obtained anthropometric measurements and health questionnaires data for both mother and child.
- Sample collected at every visit were processed and stored at -80°c.
- Life bio bank has over 27,000 samples.

Manuscripts under preparation:

Comparison of blood pressure and blood sugar at 5 years of age between those with normal birth weight and low birth weight.

Comparison of various anthropometric and biochemical measures (non-communicable disease risk factors) in pre-pregnant women and their husbands at baseline and after 5 years of follow-up.

Measurement of BP of LIFE Study Child

Cognitive and development function assessment by clinical Psychologist

3 Mycoplasma gentalium, differentiated Urea plasma Species and Pregnancy Outcome

Investigators:

- Dr. Kalpana Betha, MBBS, M.D
- Dr. Catherine L. Haggerty, *Associate Professor, Department of Epidemiology, GSPH, Pittsburgh, PA, USA*

Funding Source: Fogarty International Center –NIH

About the Project:

Reproductive tract infections (RTI) present major health, social, and economic problems for women in developing countries. The objective is to understand extent from the poor pregnancy outcome due to reproductive tract infections in India. It 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 childbirth. Earlier a review was conducted on prevalence of Chlamydia trachomatis among child bearing age women in India and published in 2015. 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.

Aim:

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

Determinet Objectives:

he role of pre-pregnancy and prenatal vaginal infections with mollicutes including fastidious Mycoplasma genitalium and the newly differentiated Urea plasma 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, Urea plasma urealyticum, Urea plasma parvum, and adverse pregnancy outcomes, including spontaneous abortion and preterm birth. It also examines chorioamnionitis as an associated factor between Mycoplasma genitatium or Urea plasma infection and spontaneous preterm birth.

Status of the project:

DNA was isolated from 2000 and odd vaginal scrapings collected from the women at registration, 1st Trimester, 3rd Trimester, Delivery and 30 days after delivery by QIAamp cador Pathogen mini kit (QIAGEN), following manufacturers protocol. Probes and Primers were designed by Dr. Jorgen Skov Jensen (Statens Serum Institute, Denmark) for the following organisms: Mycoplasma genitalium (MG): FAM (organism) and HEX (Internal control), Chlamydia trachomatis (Ctr): FAM (organism) and Cy5(Internal Control), Mycoplasma hominis (Mh): FAM (organism) and HEX (Internal control), Trichomonas vaginalis (Tv): FAM (organism) and HEX (Internal control), Neisseria gonorrhoeae (Ng): FAM (organism) and HEX (Internal control), Ureaplasma urealyticum (UU), Ureaplasma parvum (UP) All the probes were standardized under specific cycling conditions; reamplified for Mh, Mg, Ng and Tv; As next steps approximately 800 and odd DNA samples should be amplified with the Mh, Mg, Ng and Tv probes Provided.

4. The influence of vaginal micro biota on adverse pregnancy outcome in the Life study

Investigators:

- Dr. Kalpana Betha, MBBS, M.D
- Dr. Catherine L. Haggerty, *Associate Professor, Department of Epidemiology, GSPH, Pittsburgh, PA, USA*

Source: Fogarty International Center –NIH

About the Project:

Women's health particularly of the reproductive health of rural women in developing countries is risk Influencing childbirth. 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 vaginitis 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 micro biota. 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

Aims and Objectives:

- To characterize and compare the pre-pregnancy vaginal micro biota Pregnant women who subsequently experience spontaneous abortion women who subsequently deliver preterm, to a control group of women who deliver at term.
- To characterize and compare the vaginal micro biota 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 pre-conception vaginal samples were analyzed using broad range 16S rRNA gene PCR with sequencing. Women who delivered at term had vaginal microbiota Dominated by Lactobacillus species.

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

Investigators:

- Dr. Kalpana Betha, MBBS, M.D
- Dr. Brandie N. Taylor, Associate Professor, School of Public Health, The Texas A&M University System, Texas, US
- Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH, Pittsburgh, PA, USA

Funding Source: Partial Support from Texas A & M University, USA

About the Project:
Early pregnancy loss is non-induced embryonic or fatal 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 500gm 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 INDIA conducted studies earlier on association of higher maternal Serum fluoride with adverse fatal outcomes and published its findings.

Aim:
- Determine if circulating pre-pregnancy and first trimester biomarkers of placental dysfunction (EGFL7, PIGF, sFLT-1, PP-13) are associated with SAB
- Determine if circulating pre-pregnancy and early pregnancy DAMPS (HG BM-1,HSP70) and innate immune signaling biomarkers (pentraxin-3) are associated with SAB
- 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:
Project completed Manuscripts under preparation

6. Technology Enabled health workers to deliver Telemedicine to Rural Homes at Affordable costs (TETRA)

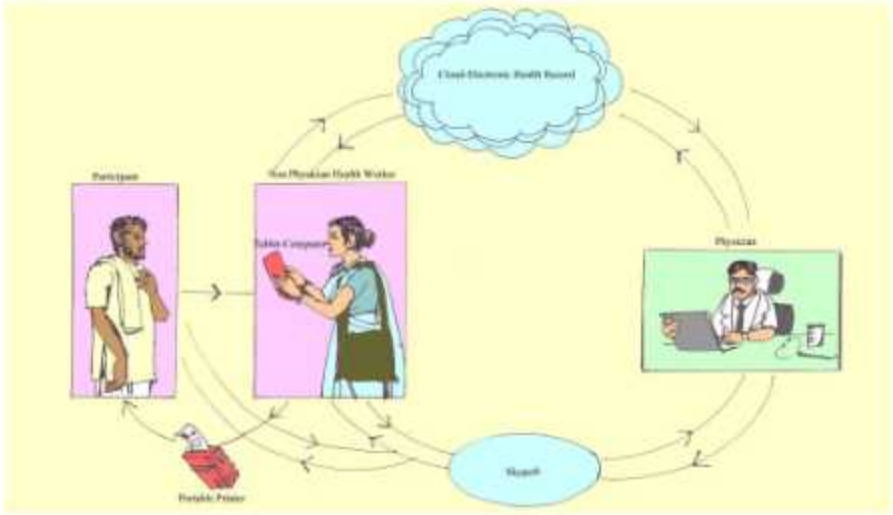
Investigators:

- Dr. D. Shailendra, MBBS, M.D

Funding source: SHAREINDIA and SHARE USA

Aims:
To demonstrate feasibility, effectiveness and sustainability of a low-cost telemedicine strategy for detection, treatment and monitoring of blood pressure and blood sugar in remote and underserved locations.

'TETRA' uses a novel strategy anchored by non-physician health workers (NPHWs) equipped with a tablet computer with embedded decision prompt systems (mHealth tool) linked to point-of-care devices for blood pressure and blood sugar measurement and guided remotely by a physician via Skype, screen individuals for hypertension and diabetes, facilitate a telemedicine consult, print a physician ordered e-prescription and distribute medication at the doorsteps of beneficiaries across six villages in Telangana (India). The NPHWs follow-up individuals with hypertension and diabetes once in three months and provide a continuum of care.



Approaching key strategies of intervention

Status of the Project)

- A paper on optimal strategies for blood pressure measurement and diagnosis of hypertension is under review by High Blood Pressure and Cardiovascular Disease Prevention Journal
- Project implementation deferred pending recruitment of operations manager, telemedicine physicians and certain field staff

Doctor on Skype call

Participant responding to Skype call

Blood pressure reading

Skype call with Doctor

Administration of study Questionnaire

7. HEaLthy Pregnancy (HELP) Study

Investigators:

- Dr. Sapna Vyakaranam, MBBS, M.D
- Dr. Kalpana Betha, MBBS, M.D
- Dr. Rashmi Pant, Biostatistician, SHARE INDIA
- Dr. Aparna Varma, Consultant, Professor and Head, Department of Biochemistry AIIMS, Bibinagar
- Dr. Padma Yalamati, Consultant Biochemist, NIMS Hospitals

Funding source: SHARE INDIA and SHARE USA

About the Project:
Hypertensive disorders of the pregnancy cover a spectrum of conditions including preeclampsia, eclampsia, chronic hypertension and preeclampsia superimposed on chronic hypertension. Preeclampsia is a major cause of maternal and perinatal mortality (number of still births and deaths of new-born in first week of life). Hypertensive disorders of the pregnancy occur in about 10% of all pregnant women around the world. Preeclampsia effects 3-5% of pregnancies. SHARE INDIA earlier conducted and published studies on hypertensive disorders of pregnancy..

Aims:
To identify whether the early rise in blood pressure or serum creatinine or serum uric acid 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 outcomes.

Objectives:
Measure blood pressure, serum uric acid, and serum creatinine 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.

Methods: Healthy Pregnancy (HELP) Study is a cohort study of pregnant women. The study initially enrolled 1000 pregnant women and followed them throughout the pregnancy till delivery, while these women visit the department of Obstetrics and Gynecology at MIMS.

Status of the project:

- Data was reorganized to make it analyzable.
- Work is being carried out on writing a cohort study paper.
- Help Study bio bank has over 7000 samples.

8 A cluster randomized trial of a mHealth integrated model of hypertension, diabetes and antenatal care in primary care settings in India and Nepal. (mIRA Project)

Investigators:

- Dr. 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. Aparna Varma, Consultant, Professor and Head, Department of Biochemistry AIIMS, Bibinagar, Telangana
- Dr. Padma Yalamati, Consultant Biochemist, NIMS Hospitals
- Dr. P. S. Reddy, Professor of Medicine, University of Pittsburgh and Chairman, SHARE INDIA
- Dr. Kalpana Betha, MBBS, M.D.
- 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 Gynaecology, 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 Rawat, Research Fellow, CCCC, PHFI, New Delhi

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

Funding source: Newton Fund

Objectives of the study:

In this project we propose to develop and evaluate an Electronic Decision Support System (EDSS) for non-physician Front Line Health Workers (FHWs) that incorporates ANC services with screening, detection and referral of high-risk pregnancies to the existing health system for appropriate clinical management.

We hypothesize that the EDSS enabled FHWs will not only enhance screening, detection and referral for Gestational Diabetes Mellitus (GDM) and Pregnancy Induced Hypertension (PIH), but also improve adherence to National ANC guidelines and provide a continuum of maternal care services to improve glucose and blood pressure control and health outcomes for both mothers and babies.

The research questions are:

1) Does an mHealth EDSS, provided to frontline health workers, enhance ANC by improving adherence to national ANC guidelines, and improve the screening, detection, referral and management of GDM and PIH, compared with usual care in primary healthcare settings?

2) What are the socio-economic, health-system and political factors affecting the implementation of the enhanced ANC?

3) What is the cost of the enhanced ANC intervention, the change in resource use, and the costs of the intervention relative to the value of the improved health outcomes achieved?

I. Partners:

The study is jointly funded by Medical Research Council, UK and Department of Biotechnology (DBT), Government of India. Our project will take place India (Telangana) and Nepal (Kathmandu) and will last 36 months. It will include a multi-disciplinary team of investigators coordinated by the Public Health Foundation of India (PHFI), India, with support from three regional coordinating Centres' in (a) MediCiti Hospital, Telangana, India (b) Kathmandu University, Nagaland (c) London School of Hygiene & Tropical Medicine (LSHTM), UK.

I. Phases of the project:

The study includes three phases and four components. The three phases are: 1) Developing an EDSS that integrates ANC with screening, detection, referral and management of GDM and PIH, 2) Piloting the EDSS and 3) Evaluating effectiveness through a cluster randomized controlled trial at primary healthcare level in India and Nepal.

The four components comprise of: 1) Formative research to understand the context, intervention development to develop the technology and how to deliver it, and a pilot test, 2) Cluster randomized controlled trial (cRCT)to randomly pick primary health center's to implement and evaluate the intervention and compare them to other Centre's who give usual care 3) Ongoing evaluation, using qualitative methods to understand the processes of implementation and 4)Economic analysis to see what the intervention costs and how cost effective it is.

Status of the project:

- Training to Medical Officers, Staff Nurses and ANM's Of Selected Primary Health Center's and Sub centers under Intervention Arm in five districts with subject experts Regarding Quality Antenatal Care, Screening and Management Of Anemia, Gestational Diabetes, Hypertension and demonstration Of mIRA App has been completed.

- Post training to Medical Officers, Staff Nurses and ANM's, the leading period which includes Healthcare Providers (MO/Staff Nurses/ANMs) hands on experience of mIRA APP in the Intervention health facilities is completed.

- Total "1320 "pregnant woman will be recruited into mIRA trial which includes 660 pregnant woman From "33" Intervention Arm Clusters and "660" Pregnant woman from "33" Control Arm Clusters.

- Presently in discussion with the Department of Biotechnology, Government of India mIRA Trial is expected to start in June-2023

Training medical officers on mIRA Electronic Decision Support System

Dr. Kalpana Betha, imparting training to medical officers,
staff nurses and ANM' at selected primary health center's and sub centers.

9 Caesarean Surgical Site Infection (CSSI)

Investigators:

- Dr. Kalpana Betha, MBBS, M.D
- Dr. P. Lakshmi Sailaja, MBBS, M.D
- Dr. Catherine L. Haggerty, Associate Professor, Department of Epidemiology, GSPH, Pittsburgh, PA, USA

Funding source: SHARE INDIA and SHARE USA

About the Project:
Surgical site infections are one of the most common associated infections in the low middle-income countries. 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 caesarean surgical site infections and the bacteria causing these infections and the antibiotic sensitivity and resistance pattern of the pathogens isolated.

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:

- **Manuscript submitted for publication in PLOS ONE Journal**

10 Empowering Indian health researchers with computational modeling tools

Investigators:

- Dr. Guru Rajesh Jammy, Director Research, SHARE INDIA
- Dr. Raheel Syed, Research Scientist, SHARE INDIA
- Dr. Lincoln P. Choudhury, Consultant

Funding Source: University of Pittsburgh

Computational model can help the Society translate observations into an anticipation of future events, act as a test bed for ideas, extract value from data and ask questions about behaviors. 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.

Objectives:
Utilize a validated agent-based model to project the HIV incidence in the state of Telangana from the year 2005, till year 2030. To understand the effect of some, select interventions on the HIV incidence for achieving the Sustainable Development Goals (SDG).

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 and was completed in April 2020. The results will be shared with various stakeholders in India.

11 Prosthetics & ORTHOTICS FOR the Disabled Program (POP)

Investigators:

- Dr. Prakash N. Shrivastava, Founder Member Share India. Professor Emeritus, University of Southern California, USA.
- Dr. Madhava, MD surgeon, Secretary of governing council Share India, Share India

TEAM: P. Nikethan Reddy, M.Tech, Project Manager.

ADVISOR: Dr. Srinivasa Prakash Regalla

DEVELOP, TEST AND VALIDATE. CUSTOMIZED 3D PRINTED BELOW KNEE PROSTHETICS AND ORTHOTICS THAT CAN BE MADE AT AFFORDABLE COST IN INDIA.

OBJECTIVES:

1. To Make, Field Test and Validate an innovative, hi-tech, customized, 3D printed, below knee prosthesis (BKP) that meets the specifications and needs of professional prosthetists.
2. Maximize the patient comfort so that a person can wear it for more than 8 hours/da, hold a regular job, and become a productive member of society.
3. Develop other accessories like Liners, insoles etc. that are necessary to make our products acceptable to patients and prosthetists around the world.
4. Develop a Rehabilitation Center at Mediciti/ Share India to advice, train and enable patients to handle daily jobs to achieve their highest potential.

KEY TECHNOLOGIES USED:

1. 3D printing, Photogrammetry, Remote Digital Patient Data Collection Cad/Cam, Image processing,
2. Physiotherapy, exercise, and training for rehabilitation

NOVELTY

1 Our prosthetic sockets are custom designed to exactly fit the shape of stump of each patient. This results in a comfortable fit "Sukhfit". Patients can comfortably wear it for over 8hours/day, to hold a full-time job and become productive member of society.

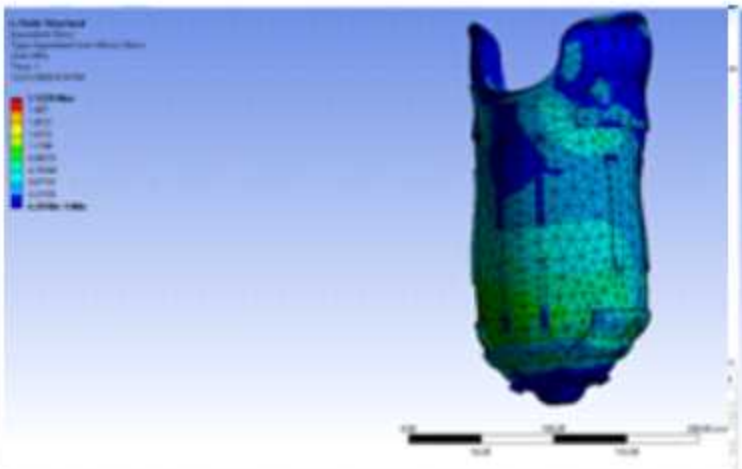
1. The digital data is collected remotely with our specially designed work bench (Indian IP in process). Photogrammetry software is used to produce a 3D model of the stump and STL file
2. The socket is 3D printed with special thermoplastic materials (single or composite). The socket is designed with specific ridges and reinforcements to ensure adequate strength based on ANSYS analysis. Field tests on patients is ongoing.
3. Our process now eliminates use of toxic materials like Plaster of Paris and laminating resins routinely used by prosthetists around the world.
4. Our process also minimizes human errors and need for multiple visits by patients to check for good fit.
5. The Share India "Sukhfit" socket is the first of its kind. It is environmentally safe, comfortable, durable, and affordable for the patient. The local expert prosthetist's in Hyderabad are excited about our product and ready to help us validate and market it.

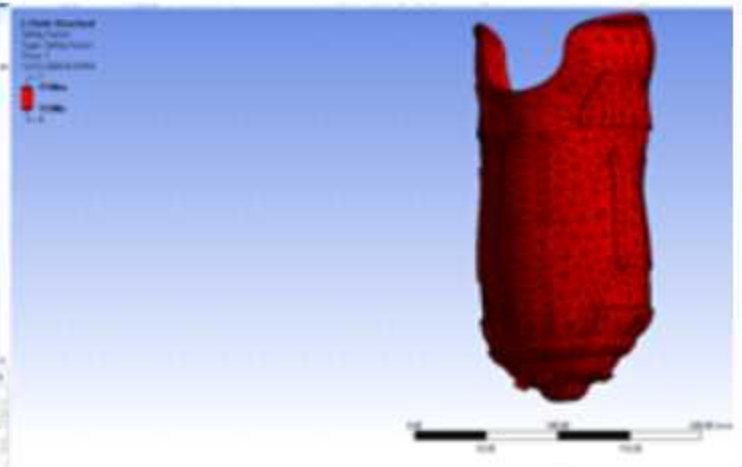
WORK DONE TILL DATE:

Made New Portable Work benches for Digital data collection from patients.

Modified the socket design (with Ribs, Ridges and other reinforcements so that the safety factor has increased from 10 to 14. Also the socket shape is made appealing to local Prosthetists.

New socket designs are tested using FINITE ELEMENT ANALYSIS and ANSYS programs. The Static Analysis Results for 80 kg person show Max. Stress reduction from 3.5 to 2.12 MPa and Safety factor Increase from 10 to 14.





Socket with the latest developed features are given to 4 patients for testing them.

NOVELTY

1. A proof of concept for making 3D printed prosthetic socket was demonstrated in 2018 with BIRAC grant funds in collaboration with BITS Pilani Hyderabad. This was based on ISOS (inner surface - outer surface technology). The toxic resin cladding required for the outer surface was not acceptable to the prosthetists. So we embarked on developing an enhanced 3D printing method that does not require the outer resin layer and produced the novel "Sukhfit" Model.
2. This new Sukhfit is being liked by the prosthetists and patients alike. It and is currently in the testing phase.
3. A Silicone rubber liner can greatly increase the comfort level of Sukhfit. Silicone liners are currently imported in India at a high unaffordable cost from Germany or USA. Therefore we have decided to make Indian made Reinforced Silicone Liners.

In addition to liners, Silicone rubber can be very useful material to make insoles for people with foot pain during walking and especially for patients with diabetes. Therefore we have developed and perfected methods to make customized insoles us

FUTURE DEVELOPMENTS:



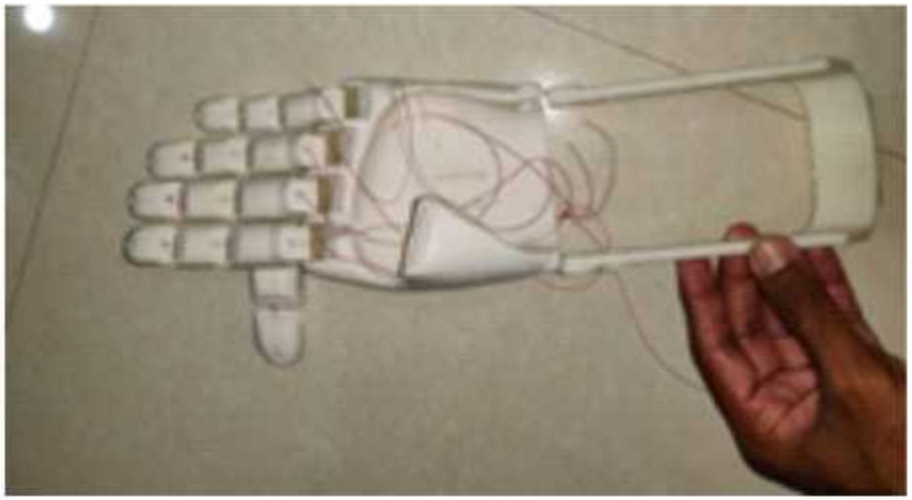
LINERS:

The new improved liner is under development, our design proposes to replace the foreign made and expensive silicone socks (>INR 20k). Liners are used to improve safety and comfort by adding a cushioning layer between the residual limb and the prosthetic socket. Liners also absorb some of the sudden shocks or loads applied on prosthetic limb while walking thus increasing the safety of the socket.

INSOLES: Insoles are used to provide comfort while walking and reduce foot pain. We made Insole from MCR and reinforced silicone rubbers with and without Arch support. Trails of testing them on patients are under progress.



3D PRINTED PROSTHETIC HAND: We also made a 3D Printed Prosthetic hand by 3D Printing technology. This Prosthetic hand serves as an artificial limb for the amputees. These devices are appealing because 3d printing allows for fast, and accessible manufacture, and because the CAD-modeled designs are easily scalable and can be readily customized patient-to-patient for aesthetics or functionality. This model works by with and without using electronics.



12 IndEpi: A platform for systematic integration of Indian Epidemiology datasets to enable health analytics and disease modelling Investigators

Investigators:

- Dr. Rashmi Pant, Biostatistician, SHARE INDIA

Funding Source: Department of Science and Technology, Government of India

Aims:

To create a national resource that integrates epidemiological evidence from existing sources on the health and well-being of the Indian population and make it available with tools of modelling and analysis to aid evidence-based policy making.

Methods:

This project will conduct secondary data analysis of the REACH, LIFE, MILES and HELP databases. The data science methods used will include Growth curve modelling, Social Network analysis and machine learning

Status of the project:

Completed planned activities in Year 1 and presented dashboards at the DST partners' meeting in Pune on February 7. 2020.

As next steps, we will upload models to the Public Health Informatics Platform (PHIP) to display results from machine learning methods for potential collaboration.

Year 2 activities were completed by transferring some models of child anthropometry to the PHIP. The project has completed its deliverables in terms of data annotation and analysis has been completed.

13 Lab on Wheels: An innovative point-of-care test to diagnose Chlamydiales in One Health setting Inpochlam.

Investigators:

- SHARE INDIA : Dr. Kalpana Betha, Dr. Vijay V. Yeldandi, Dr. Rashmi Pant
- Sam Higginbottom, University of Agriculture Technology and Sciences: [SHUATS], Allahabad, Uttar Pradesh: Dr. Jonathan A. Lai, - Dr. Rajiv Kant, Dr. Neeraj, Dr. Sarvjee 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: Department of Biotechnology, Government of India

About the Project:

Modern pathology laboratories are providing Point of Care (POC) services to the needy. However, often these are inaccessible and not 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:
The main objective is the collection of a clinical cohort of human patient samples, chicken broiler samples and poultry worker samples in India. Samples will be used for identification of Chlamydiales in a variety of biological and environmental samples in order to fully validate the Lab on Wheels and show its market potential in India, possible other less developed countries

Status of the project:

- Total participant need to enroll in the study 300 women
- Patient who visit OBG MIMS fertility clinic were 198
- 70 patients were infertile and 104 women were identified with PID (pelvicinflammatory disease) miscarriages and with other reasons
- All the collected 174 Blood and urine sample processed were stored at 80c

Explaining participant about the project *Sample processing by technician.*

14 Harnessing a population-based cohort for an epidemiological study on Dengue and Chikungunya and drive capacities to conduct clinical trials

Investigators:

- Dr. D.Shailendra, MBBS, M.D.

Funding Source: National Biopharma Mission, Biotechnology Industrial Research advisory council, Department of Biotechnology, Government of India

About the project
The project is collaborative effort of National Biopharma Mission (NBM), Biotechnology Industrial Research Advisory Council, Department of Biotechnology, Government of India .NBM aims to build capacity and develop a clinical Trials Network for vaccine trials in India . SHARE INDIA is one of the four Health and Demographic Surveillance Sites (HDSS) Selected to study.

- Prevalence
- Annual incidence of Dengue &Chikungunya in 1800 individuals aged 2 years and above After the COVID-19 outbreak, estimation of Prevalence
  Four–monthly incidence
  Cumulative sero-conversion of COVID-19 in 5000 individuals over one Year added asstudy objectives

Apart from sero-surveillance, fortnightly telephonic surveillance for Acute Febrile Illnesses (AFI) is being done on all 5000 individuals. Serum samples are being stored to explore aetiologies of AFI, if required.

Objectives:

- Preparation towards initiation of longitudinal incidence study
- To operationalize longitudinal incidence study at the site
- To establish GCP compliant field site for conduct of vaccine trials

Methods: SHARE INDIA will implement the common protocol for study and initiation of sample collection for studying sero prevalence of dengue and Chikungunya. The participants will be followed for 24 months for acute febrile episodes and tested for incident dengue and chikungunya cases. A total of 1800 participants aged 2-50 years in the Medchal area will be recruited for the study. In the year 3 of the study, SHARE INDIA will work towards developing a clinical trial site and by the end of third year should be ready for clinical trial for any vaccine candidates for the diseases. In view of the COVID-19 pandemic, it was decided that with established community presence and experience of maintaining population cohorts could be leveraged to fill knowledge gaps related to the actual burden of COVID diseases in the community as well as to improve understanding of the community transmission dynamics . A total of 5000 participant aged above 2 years in the medchal area will be recruited in the study.

Status of the project:

- All four rounds (done at a frequency of once-in-four months) successfully completed as per the protocol
- Verbal autopsy of all deaths during the study period also completed
- Technical milestones achieved submitted to the funding agency.
- The Acute Febrile Illnesses (AFI) incidence and sero-surveillance–a multi centric study across 15 sites in India is likely to commence in May, 2023

Anthropometric measurement

explaining the couple about the project.

Blood sample in process

15 TB prevalence and interventions for reducing TB and LTBI in high risk key population of rickshaw drivers and construction workers

Investigators:

- Dr. Shikha Dhawan, Program Director

Funding Source: Indian Council of Medical Research (ICMR)

Project Partners

- State TB Office, Delhi and Karnataka-National TB Elimination Program
- State TB Training & Demonstration Centre, Delhi and Karnataka-National TB Elimination Program
- Indian CST,Bangalore,Karnataka
- Ramaiah Medical College, Bangalore, Karnataka

Objective:

A provider-initiated activity with the objective of detecting TB and LTBI Early as possible in the key population i.e. Rickshaw drivers & Construction worker and to initiate the treatment/TB preventative therapy promptly.

The rickshaw drivers and construction workers were educated about TB and after obtaining consent; the questionnaire was administered by the deployed

trained project staff/medical interns/project assistant from SHARE INDIA, New Delhi and Ramaiah Medical College, Bangalore. The survey tool collected information on the demographic profile, past history of TB, family history of TB, close contact with patients with TB, nutrition and other habits like smoking, drinking etc. Diagnosis of LTBI was done by tuberculin skin test (TST) which was administered by trained project staff/postgraduates/ Public health Nurse/ interns. The TST results were interpreted after 48-72 hours by measuring the size of the induration (mm). The cut-off for TST was 10 mm induration. Based on TST results, individuals were identified as LTBI positive (infected with MTB) and LTBI negative. TST positive individuals and TB suspects were referred and linked to the nearest NTEP facility through project Staff. Active TB was treated by NTEP. TB preventive Treatment (TPT) (isoniazid for 6 months) was provided by NTEP. As TPT is a new intervention, all patients on INH were clinically monitored weekly and for liver function at 2 monthly by medical officers and District TB Officers (DTO) under NTEP. Counselling and health education was given to all the participants as a part of all interventions so as to increase awareness of the importance of detecting and treating LTBI.

Project Summary

TB prevalence and interventions for reducing TB and LTBI in high-risk key population of rickshaw drivers and construction workers" is SHARE INDIA, Ramaiah Medical College and Indian CST's – ICMR funded project which supports NTEP's existing guidelines to treat TB in high-risk groups (socially vulnerable and clinically high risk) and to reach the unreachable for the screening of TB and LTBI among rickshaw drivers and construction workers. We used a customized and cost-efficient approach to conduct prevalence surveys that could inform the extend of gaps and unmet needs of these group. These included

- model to use medical interns to conduct active case TB and LTBI interventions
- reduce barriers for early TB and LTBI case detection, including delay in presentation to NTEP facility, timely diagnosis and subsequent anti-TB treatment/TPT
- Pursue advocacy, communication, social mobilization to address the needs of TB and LTBI care in high risk key population.
- Foster community participation in TB care, prevention and health promotion.

Advocacy

Screening

TPT Initiation

TST administration

Results

At Delhi Site, 4000 rickshaw drivers were surveyed. 424 (10.6%) rickshaw drivers were found TB symptomatic, out of these 172 (41%) were refereed to NTEP facilities for TB testing and 03 (1.7%) positive TB cases were diagnosed. All 4000 rickshaw drivers were administered TST, however only 3385 TST readings could be done, out of which 640 (18%) were TST positives. Based on the individual study sites, the prevalence of LTBI ranged from 14-29% across the five study zones (Karol Bagh- 14%; Civil Lines- 14%, Pili Kothi- 17%; Hedgewar, Shahdara, Patparganj-18% and Central Delhi-29%). 323 (50%) participants who were LTBI positives were tested for TB at NTEP facilities and 04 (1.2%) TB cases were found. Out of the remaining 319, only 10 (3%) could be initiated on TB Preventive Treatment at NTEP Centres. Overall, 07 participants were diagnosed as TB positive cases out of these 06 were cycle rickshaw drivers while one was e-rickshaw driver.

At Bangalore site, the team surveyed 4110 construction workers. 53 (1.2%) TB symptomatic was found. TST was given to 4037 (98%) who consented and 35 (0.8%) LTBI positives were found. No TB case was diagnosed amongst TB symptomatic and LTBI positives.

16 Improving TB diagnosis at Designated Microscopy Centers by introduction of Quality Management Systems and optimum utilization of rapid molecular diagnostics and its cost implication

Investigators:

- Dr. Shikha Dhawan Program Director

Funding Source: Indian Council Of Medical Research

Rationale: A weak Quality Management System (QMS) may result in laboratory errors that can lead to both over- and under-diagnosis of TB, interruptions in service, and delayed reporting of results, leading to a negative impact on patient care. QMS provides an effective mechanism for health system improvement yielding long-term benefits in the quality, cost-effectiveness, and sustainability of public health programs. Models of laboratory-driven quality systems at Designated Microscopic Centers can lead to overall improvements in TB diagnosis by rapid molecular diagnostics as it focuses attention on areas of greatest need and accelerating improvement in areas such as staff competency, supply chain, instrument maintenance etc. Laboratories with quality systems also have a positive influence on performance in other areas of health care systems by allowing laboratories to demonstrate high standards of service delivery.

Study Details: A qualitative and quantitative checklist was used to conduct baseline assessment of DMCs to identify barriers to implementation of NTEP's policy and guidelines and developing action plan to address recommendations and corrective actions resulting from the assessment.

PROJECT FLOW

Data thus collected by desk review and quantitative data on laboratory performance and qualitative data was used to identify factors that either propel the QMS implementation forward, or alternatively, hinder the process. Capacity building and trainings were conducted to make incremental yields in establishment of QMS and enhance case finding activities by introduction/optimal utilization of rapid molecular diagnostics for TB. Supportive supervision, mentoring and handholding was provided to closer gaps as per baseline assessment. On closure of gaps and upon achieving 5-star rating, the DMC were certified for quality by ICMR, NTEP and SHARE INDIA.

Project Summary: Quality Management System (QMS) is built upon 12 Quality System Essentials (QSE). QSE in a laboratory includes effective engagement of administration, participation of competent staff, quality laboratory procedures in testing, documentation, management of inventory and equipment, continuous improvement and decision making based on facts. The ICMR funded SHARE INDIA, KIMS project was successful in introducing and implementing QMS at four DMCs under NTEP at Delhi and Odisha, an aspect often ignored for peripheral laboratories. Capacity building of NTEP staff was done in diagnostic algorithm, quality system essentials, quality indicators for CBNAAT, Truenat, smear microscopy, equipment maintenance, lab safety, documentation and quality manual, thereby also creating a pool of master trainers trained in quality systems. QMS streamlined laboratory processes including receipt of good quality sputum samples, reduced variability of test results in smear microscopy, reduced frequency of errors/invalids/indeterminates/specimen rejection for rapid molecular diagnostics (CBNAAT and Truenat) and optimized turn-around-time of laboratory test results for effective patient management at lab-clinical interface.

Results:

The laboratories at Odisha scored "above average" in QMS performance as compared to "average" performance by Delhi DMCs. The benchmark for QMS implementation was found to be at par for both public and private DMCs at Delhi, while the public DMC at Odisha performed better as compared to its private DMC. Delhi site KCC scored 71% (average) while RKM scored 72% (average). DMCs at Odisha-CHC scored 84 % (above average) while KIMS obtained 78% (above average) rating. Based on the gap analysis, a

recommendation report and action plan were prepared and submitted to each laboratory for implementation of QMS. Handholding was provided by project staff to overcome the gaps. Based on final external assessment, all four laboratories scored Excellent Grades (90-100%) and were felicitated with a 'Certificate of Excellence' in QMS by ICMR, CTD and SHARE INDIA.

Certificate of Excellence awarded by Central TB Division, ICMR and SHARE INDIA to peripheral laboratories under National TB Elimination Program on successful Implementation of Quality Management Systems(March 2022)

Status of the project:

- Implementing and monitoring a comprehensive TB diagnostic laboratory driven QMS will sow seeds in making scaling up of rapid molecular diagnostic across India cost effective.
- The project outcome will inform policy decision to scale up QMS and to include funding for quality improvement at DMCs.
- The example of DMC certification with its established structured processes and defined standards will demonstrate the benefits of systematic performance evaluation and on-going quality improvement to catalyze the impetus to improve patient care across the entire health care system.

17 A Phase III, randomised, double blind, three arm placebo controlled trial to evaluate the efficacy and safety of two vaccines VPM1002 and Immuvac (Mw) in preventing Tuberculosis (TB) in healthy household contacts of newly diagnosed sputum positive pulmonary TB patients

Investigators:

- Dr. K. Sailaja *MBBS, M.D.*

Funding Source: Indian Council of Medical Research (ICMR)

The Indian Council of Medical Research (ICMR) the apex governing. body in India for the formulation, coordination and promotion of biomedical research selected SHARE INDIA and Mediciti institute of Medical Sciences (MIMS) as s sub site of Bhagwan Mahavir Medical Research Center (MMMRC) for a vaccine study titled "a phase -III randomized double blind three arm placebo controlled trial to evaluate the efficacy and safety of two Vaccines -VPM 1002 and Immuvac (Mw) in preventing Tuberculosis (TB) in healthy household contacts of newly Diagnosed sputum positive Pulmonary TB patients "(July 2020 – June 2023)

The primary objective of the trial is to evaluate the efficacy of VPM1002 and Immuvac by comparing the reduction in incidence of TB over a three-year period among Indian healthy household contacts of newly diagnosed sputum positive PTB patients vaccinated with VPM1002 and Immuvac in comparison to placebo. The SHARE INDIA site was initiated on 13th July 2020 and has successfully enrolled 219 participants who are being followed-up as per the protocol timelines.

Status of the project: Currently visit 13 follow up is ongoing.

Status of the project:

- As per the protocol 219 participants were enrolled
- 13 visit (30th month) follow up is going on. With 98 % of retention rate.
- The study participant will be followed up to 38 months

TB Vaccine administration

19 RABIES Human rabies deaths and animal bite burden in India: A cross sectional survey

Investigators:

- Dr. Vijay V Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago
- Dr.Prashanth, Dr.Viswanath

Team:

- Ms.G.P.Sabitha Rani, Mrs. Vandana , Mrs.D.Mamatha
- Mr.Md.Faheem, Mr.B. Chetanand

Funding source: ICMR-NIE

Objectives:

Primary objectives

- Estimate the incidence of animal bite
- Estimate human rabies deaths by decision tree model

Secondary objectives

Estimate the proportion of animal bite cases received post exposure prophylaxis

Describe anti rabies vaccine supply chain at different levels of health care system

Estimate direct and indirect costs associated with animal bite cases

Boy is showing dog Bite on his Thigh

Obtaining consent From study participant

collecting data from the participants

Study design: cross-sectional survey of individuals

General population: All age groups. Inclusion criteria: Usual resident of the household and Exclusion criteria: Locked household, guest/visitor

Study plan: The study has three components

Community based survey: The project will be implemented across 4 districts (1. Kama Reddy 2. Mahabubabad 3. Hyderabad and 4. Narayanpet) and approximately 1600 houses will be surveyed across the selected 4 districts

Facility based survey: 9 facilities (4-PHCs, 2-DHs, 1 Medical college, 2-Private hospitals) will be surveyed to understand Animal bite and human rabies death reporting system and Anti-Rabies vaccine (ARV) supply chain at different level of health care system and Costs associated with animal bite cases

Modelling approach: Study participants: State and district nodal officers for Rabies program

Project Update:

- Rabies study has been initiated across Kama reddy, Narayan pet, Mahbubabad and Hyderabad districts in Telangana state.
- Survey completed in all 4 clusters
- Out of 36 facility surveys, 20 were completed and another 16 are under survey.
- Till date a total of 5300 households were surveyed.
  Data regarding various animal bites, related deaths, vaccinations, maintenance of cold chain, cost incurred due to animal bites was well captured and timely submitted to NIE team.

20 mHEALTH-AVATHAR : Development of an mHealth Educational Intervention to Improve the Prevalence of Viral Suppression among Persons Living with HIV And Low Literacy in India

Investigators:

- Dr. Vijay V Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago

Co- Investigator:

- Mark S. Dworkin, MD, MPH&TM, University of Illinois at Chicago Department of Epidemiology and Biostatistics
- Casey Luc, MPH University of Illinois at Chicago Department of Epidemiology and Biostatistics
- Sierra Upton, MS, MPH University of Illinois at Chicago Department of Epidemiology and Biostatistics
- Sabitha Gandham, MSW, SHARE INDIA.

Funding Source: University of Illinois at Chicago, USA

Introduction of the project:

This project is the beginning of this line of work in India and will refine a theory-based innovative mobile phone app featuring an Avatar to improve ART adherence, viral suppression, and retention in care in people living with HIV who have low levels of literacy. The PI of this project has a track record of research in India related to HIV and medication adherence, including examination of literacy and other factors associated with ART adherence among HIV-positive FSW in Hyderabad.14 The mHealth application developed for this project is called My Personal Health Guide (https://www.youtube.com/watch?v=1Wa69MwfhUI). It is designed to promote HIV medication adherence and retention in care in young AAMSM.

Process of recruitment: Researchers at SHARE India will also collaborate with NGOs and CBOs in Telangana regions such as Darpan, a local MSM, ROSE, HOPES NHP+ community-based organizations and networks to recruit HIV-positive and HIV-negative self-reported MSM. A representative or outreach worker will utilize their pre-existing list of HIV-positive members to contact and make them aware of the opportunity to participate in a study and will provide contact information to SHARE India for those who assent to learning more about the project. Participants will be recruited from the city of Hyderabad; we will seek a sample of at least 20 FSW who identified as street-

based and/or highway-based before the COVID-19 pandemic by working with a local NGO.

Objectives:

Explore the acceptability and feasibility of a mobile phone application developed in the U.S. for ART medication adherence in a global health setting (South India).

Identify factors associated with adherence and detectable viral load during the COVID-19 pandemic among a population of women living with HIV who have low literacy in South India.

Identify factors associated with adherence and detectable viral load during the COVID-19 pandemic among a population of MSM living with HIV who have low literacy in South India.

Target Populations:

HIV positive MSM, HIV Positive Women. female sex workers and ART staff

Sample Size:

HIV Positives who are on ART more than 6 months (Women 150, MSM250)

Status of the project

- Obtained Approvals from HMSC, ICMR and Local TSACS
- Planning to start the project.

21 A community-based prevalence of skin disorders in rural Mandals / Divisions of Medchal and Shamirpet of Medchal-Malkajgiri district, Telangana State

Investigator:

- Dr. Vijay V Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago Co- Investigator:
- Dr. Aparna Sykam *Ph.D, PGDPL*
- Dr. Shikha Dhawan *Ph.D., PGDM*
- Dr. Prasanth Venela *BDS, MBA*
- Mr. Mahesh Kumar Suryadevara, *MCA*
- Dr. Mahalingam Periasamy *MBBS, MD*
- Dr. Kirti Rajpurkar *MSc., Ph.D*
- Ms. G P Sabitha Rani, *MSW*

Funding source: Pfizer

AIM: To screen and diagnose the identified population for prevalence of skin disorders

Outcome: To determine the prevalence of skin disorders in urban and semi urban communities and their impact on quality of life

Target Beneficiaries: 2000 population with skin disorders

Geographies: People living in the Communities/Villages in Medchal and Shamirpet Mandals, of rural and semi-urban districts of Medchal-Malkajgiri, Telangana, India.

About the Project: Skin diseases contributed about 2% of the global burden of diseases measured in Disease Adjusted Life Years (DALYs) (1). The prevention and management of skin diseases received less attention in the past decades due to low mortality rates. However, a recent Global Burden of Disease Study finding revealed that skin diseases rank 18 in the top 20 diseases in terms of DALYs and are the fourth leading cause of nonfatal disease burden (2). Further, skin diseases increase clinical depression and anxiety. The prevalence and pattern of skin diseases are influenced by the overall ecosystem of the region including sociocultural milieu, topography, nutrition, genetics, etc.

Status of the project

- Developed Participant Information Tool (PIT), Investigator checklist, and Dermatologist Assessment Tool (DAT)
- Approved by Mediciti Ethics Committee
- Registered in Clinical Trials Registry -INDIA
- Developed online data management tool (REDCap)
- Recruitment of the staff is completed, staff are well trained on the data collection tools
- Dry run were done immediately after the completion of the training
- Local authorities were apprised about the study, and Subjects' recruitment has started

22 Design and develop comprehensive advocacy, communication strategies and tools for NACP

Investigator:

Dr. Shikha Dhawan

Funding Source: The Global Fund to Fight AIDS, TB, and Malaria GFATM)

Introduction: SHARE INDIA is selected as a Sub-Recipient under the National AIDS Control Organization (NACO), Ministry of Health and Family Welfare, Government of India for The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) funded project to "Design and develop comprehensive advocacy, communication strategies and tools". The project is designed to develop a new age communication and advocacy strategies to meet the 95-95-95 fast track targets by 2025 and provide a way for elimination of HIV/AIDS as a public health threat by 2030.

Under the project, community-based behavior change communication tools are being developed to achieve the targets set under National Strategic Plan (2017-24). The National and State Communication Digital Repository with standardized contents is under development for equitable access to general population, NACO and SACS. Tools for reach, recall and impact of communication activities are under different stages of development. Strategies are being implemented currently to address stigma and discrimination issues related to HIV and effective implementation of the HIV and AIDS (Prevention and Control) Act, 2017. It is proposed to use communication as a tool for improving gains across all program components with an overall aim to support NACO's IEC and Mainstreaming Division in a 360-degree multimedia approach encompassing advocacy and communication strategies.

Objectives

- To develop a new age communication and advocacy strategy to meet 95-95-95 fast track targets by 2025 and provide a way for elimination of HIV/AIDS by 2030.
- To develop need and community-based behavior change communication tools to achieve the targets set under National Strategic Plan.
- To develop, maintain and utilize National and State Communication Digital Repository.
- To develop and execute tools for reach, recall and impact of communication activities.
- Strategy development for addressing stigma and discrimination related to HIV and effective implementation of the HIV and AIDS (Prevention and Control) Act, 2017.

Key highlights

World AIDS Day: SHARE INDIA supported NACO to organize an event to observe World AIDS Day at Talkatora Stadium on 1st December, 2022. By aligning with the global theme of the World AIDS Day 2022 "EQUALIZE", the event emphasized on immense importance to work towards the proven practical actions needed to address the inequalities in the HIV infected and affected populations across the country and also help end AIDS. The event witnessed participation of more than 3000 individuals comprising young students from the Red Ribbon Clubs, positive community members, partner organizations and SACS from across the country.

Observation of World AIDS Day 2022 at Talkatora Stadium

Stigma & Discrimination #AbNahiChalega Campaign: On World AIDS Day 2022, SHARE INDIA and NACO successfully launched a National Level campaign on Stigma & Discrimination #AbNahiChalega as a step to eliminate HIV related Stigma at workplace, healthcare, education and community settings.

Digital Repository: On the occasion of the World AIDS Day, the digital media repository was Launched by Shri. S Gopalakrishnan the Special Secretary (Health), MoFHW. The Digital Media Repository of NACO is a virtual library of information, education, and communication Resources. It offers users theme-based reference material and supports communication material in vernacular languages for easy understanding.

Sampoorna Suraksha Kendra (SSK): SHARE INDIA supported NACO to develop campaigns for the Sampoorna Suraksha Strategy for HIV prevention among people who do not fall into the classic definition of Key Population, their HIV status is negative but they are at higher risk due to their risky behaviour or the behaviour of their spouse/ partner/s. A SBCC package was developed to scale up service uptake, provided under SSK.

Handbook on Prevention & Management of Stigma & Discrimination Associated with HIV & AIDS: This handbook provides specific guidelines for prevention and management of stigma and discrimination in line with the HIV and AIDS (P&C) Act, 2017. It provides various mitigation strategies for the four key settings which may be adopted to remedy the discriminatory attitudes, practices and institutions. The handbook was released on 30th October, 2022.

HIV and AIDS Policy for Establishment: The Policy emanates from section 12 of the HIV and AIDS (P&C) Act, 2017. It was notified by the Government of India on 13th May, 2022 and is Applicable on all establishments in India consisting of 100 or more persons and in case of a Healthcare establishment, consisting of 20 or more persons.

Technical Assistance to Government of India – CDC funded Projects

SHARE INDIA, aims to provide TA to India's National AIDS Control Programme (NACP) for achieving Undetectable-Untransmittable through quality laboratory testing, workforce development, improved result utilization, strong laboratory epidemiology platforms and strengthen the national response on improving the ART services and HIV-TB management for people living with HIV (PLHIV) through project LaQSH Plus (Laboratory Quality Systems in HIV) and NISCHIT Plus (National Initiative to Strengthen and Coordinate HIV/TB Response in India. Project NISCHIT(Tuberculosis) is providing technical assistant (TA) to the National TB Elimination Program (NTEP) through its work in collaboration with the Municipal Corporations in Maharashtra.

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 and mentoring, and provided training on operations research.

23 National Initiative to Strengthen and Coordinate HIV/TB Response in India – NISCHIT Plus (Treatment)

Investigator:

- Dr. Vijay V. Yeldandi, Clinical Professor of Medicine and Surgery,
- University of Illinois at Chicago, USA
- Dr. Jayakrishna Kurada , Senior Technical Program Manager .

Funding Source: Presidents Emergency Plan for AIDS relief (PEPFAR) – U.S. Centers for Disease Control and Prevention (CDC), Atlanta; 2015-2020 and 2020-2025

Introduction: SHARE INDIA has been awarded a five-year Cooperative Agreement NISCHIT plus (September 2020 – September 2025) by the President's Emergency Plan for AIDS Relief (PEPFAR) and the US Centers for Disease Control and Prevention (CDC) to strengthen the national response on improving the ART services and HIV-TB management for people living with HIV (PLHIV). As a key implementing partner, through project NISCHIT Plus (National Initiative to Strengthen and Coordinate HIV-TB response SHARE INDIA) provides technical assistance (TA) to the National AIDS Control Organization (NACO) and Andhra Pradesh State AIDS Control Society (APSACS) to enhance the treatment and retention cascade in the state of Andhra Pradesh (AP). Project would strengthen the capacities of health facilities in implementation and scale up successfully demonstrated ART service delivery models in the state of Andhra Pradesh.

Key accomplishments:

Expanding differentiated service delivery models: The project continued to facilitate demonstration and scale up of novel, customized care packages catering to diverse needs of the PLHIV, to sustain them on treatment, promote ownership, avoid potential out of pocket expenditure and reduce the time and effort to access care. The project has supported the establishment and operation of 33 standalone ICTCs and 25 community pharmacies under TI-NGOs/CBOs. The staff at these sites have been trained in ARV drug dispensation, inventory management, and reporting through the designated MIS. In addition to the drug dispensation, clinical support and hand holding has also been rendered in implementing ARTCs in 9 private medical colleges. The project has successfully implemented a family centric care model to deliver comprehensive HIV care to all the family members infected with HIV, at two high volume ARTCs (Old Government General Hospital (OGGH), Krishna district and KGH, Visakhapatnam district).

Fig : Hands on orientation of ARTC Staff on Family centric care ,OGGH,VIjayawada

Fig : Folders of white cards of family members labelled with family code

ART initiations at testing sites: The project successfully implemented a person -centric care model, resulting in timely ART initiation and prevention of linkage loss among PLHIV. ART initiations are scaled up from two to seven high volume HIV -Testing sites. With 91% of diagnosed PLHIV starting treatment.

Improving retention in care by data driven LFU retrieval campaign

As care, support and treatment services for PLHIV improves, retention in care still remains critical. Augmenting the State's efforts, outreach staff at the site level have supported in methodical tracking and tracing of PLHIV who had interruption in treatment (IIT). Using a multi-pronged approach of intensive phone follow-up, optimal utilization of HR with focused accountability for regular tracing and tracking patients who had interruptions in treatment, regular validation of contact details, promoting treatment literacy, the new LFU rate during the quarter was decreased from 1.8% (3551) (Jan-Mar22) to 1.3% (2780) (Oct-Dec22).

Camp approach for decentralized delivery of HIV treatment, care and support services

As a strategy to improve treatment and viral load coverage for PLHIV, the project has facilitated health camps at nearby government hospitals / Link ART centers. During Oct 22 – March 2023, a total of eighteen health camps were organized across the districts, providing an opportunity for 1457 PLHIV to access care and treatment services. During these camps, the project team offered a basket of services to the PLHIV such as clinical monitoring, pill dispensation, sample collection for CD4, VL testing, Additionally, 605 PLHIV were offered CD4 tests. By organizing these health camps, the project was able to bring care and treatment services closer to the community and reach out PLHIV. This approach helped to improve treatment adherence and viral load test coverage among PLHIV.

Viral load coverage & suppression: To ensure optimal VL coverage, the project has facilitated implementation of innovative approaches such as decentralised services for sample collection at LACs, camp approach for key populations to optimise VL coverage. As of February 2023, 74% (152.820/205.314) viral load coverage was achieved, and of those tested 94% (143.488 / 152.820) achieved viral suppression

DTG Adverse Effects Monitoring (AE Monitoring):

The project continued to support APSACS in the active monitoring and Documentation of adverse effects of DTG based regimens at 16 ARTCs with 19.386 registered PLHIV During the site visits, project staff ensured reporting of AEs in relevant documents. Technical Officers randomly validated AEs reported by the patients and guided appropriate treatment as needed.

Hepatitis Management: Project in collaboration with APSACS and National Viral Hepatitis Control Program (NVHCP), has implemented an integrated approach to HIV and HBV services by leveraging existing service delivery systems and platforms. As a result, all the PLHIV, who visit ART canters have been screened for Hepatitis B and C. By end of March 2023, a total of 1,58, 729 PLHIV for Hep B and 1,03,864 PLHIV for Hep C. are screened and out of them 2963 (1.88%) and 214 (0.22%) PLHIV were found positive for Hep B and C respectively.

Further measures were taken to ensure screened positives were linked to the nearby medical college hospitals for evaluation of progressive liver disease using liver function tests and USG abdomen. SHARE India has also furnished a centre wise linkage plan to APSACS leadership, leveraging nodal treatment centres under NVHCP along with a roster of medical gastroenterology super specialists for tele-medical consultation towards appropriate treatment of co-infected patients.

Hepatitis B vaccine drive: To prevent Hepatitis B among PLHIV and key populations, project has planned to integrate Hepatitis B vaccination into routine care. As part of this initiative, technical and operational support was provided to APSACS to implement a vaccination drive. On 6th Feb 2023, APSACS in collaboration with NVHCP, successfully launched vaccine drive for all PLHIV at the ART centres'. The technical and operational support provided includes ground work for vaccine preparedness, provision of IEC to address vaccine hesitancy and increase awareness, training of ARTC staff, real time data monitoring and hand holding support to ARTCs. Through transformative partnerships, Hepatitis B vaccine was integrated into routine care of PLHIV resulting in over 81549 receiving their first dose and 30359 receiving their second dose by end of March'23.

23.1 Tuberculosis (TB)

Investigators:

- Dr. Vijay V. Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago, USA
- Dr. Satish Kaipilyawar, Associate Project Director

NISCHIT PLUS (TB) is supported by the Centres for Disease Control and Prevention (CDC) to provide technical assistance to the National TB Elimination Program (NTEP) under the Ministry of Health and Family Welfare (MoHFW), Government of India (GoI). NISCHIT PLUS (TB) is implementing projects in 16 states namely Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Odisha, Rajasthan, Sikkim, Tamil Nadu, Telangana and West Bengal across the country to support the country's accelerated efforts to eliminate TB in India by the year 2025.

Key Activities:

Infection Prevention & Control: SHARE INDIA have strengthened the focus on TB IPC and AIC practices in healthcare facilities through a multi-disciplinary AIC unit established by Brihan mumbai Municipal Corporation (BMC) in 2016. The AIC project was successfully transitioned to the BMC in 2022. The IPC practices of 143 primary and secondary health institutes spreading across 10 wards of the city were assessed and actions were taken to improve the overall IPC compliance to 61% from the baseline score of 46%. The transition training for 355 health facility in-charges were completed on usage of the IT application for conducting AIC/IPC assessments and handed over to BMC for their use. These IPC activities expanded beyond Maharashtra, and in coordination with India's NTEP were launched on World TB Day 2022 as 'Going Germ free for TB free India' under the TB Mukt Bharat campaign across 10 states - Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Tamil Nadu, Telangana and West Bengal. The nominated State and District Nodal Officers for IPC from these states and Key health Facility Staff and Hospital infection control committee (HICC) members from all selected Primary, Secondary and Tertiary health facilities across 10 states were sensitised on IPC concepts and strengthening the IPC compliance through practical implementation of administrative environmental and Personal Protective Equipment (PPE) measures. The national training was conducted with Central TB Division (CTD) on 12-13th October 2022 followed by cascade training of district and health facility HICC members in selected districts in a phased manner. A total of 57 health facilities were assessed for baseline IPC measures using a standardised 61 indicator checklist. Considering sustainability and easy access of assessment data, an IT application was developed for head/In-Charge of concerned health facilities and is currently used across all the 10 states. The project also supported expanding Infection Prevention and Control practices in TB & HIV Facilities in two states viz Andhra Pradesh & Manipur with the aim to enhance IPC compliance in TB and HIV sub-facilities of all selected institutes. The team assessed 9 ART centres, 24 ICTCs,5 Link ART centres, 1 OST - HIV sub facilities and 18 DMCs, 10 CBNAAT labs, 3 DRTB wards, and 1 IRL lab -TB sub facilities in the 8 districts of Andhra Pradesh and 5 ART centres, 11 ICTCs, 2 Link ART centres, 1 PPTCT and 5 OST - HIV sub facilities and 12 DMCs, 4 CBNAAT labs, and 2 DRTB wards -TB sub facilities in the 4 districts of Manipur. Several measures to strengthen IPC compliance were implemented viz. implementing standard precautions, administrative controls, and environmental controls, biomedical waste management practices, providing staff training, conducting healthcare worker surveillance, and educating patients in the local language through Information, Education, and Communication (IEC). IEC materials were developed in English, Hindi and 6 other regional languages for field use across all 10 states.The project, 'Prtham' (Preventing Tuberculosis among Health workers at MGIMS Sevagram) was launched in January 2023 with support from CTD and Govt. of Maharashtra in collaboration with MGIMS Sewagram under the 'Going Germ free for TB free India' under the TB Mukt Bharat campaign. A total of 720 Nursing students, doctors and other health staff from MGIMS, Sewagram were trained in TB-IPC since February 2023.

The Expand ELEVATE E2 (Engaging Local Experts in Validating and Analysing TB-data to End TB in India) was launched in collaboration with CTD, MoHFW in 2021. Through this project, technical support is being provided to strengthen management capacity of NTEP program staff in 11 states across India to improve the quality of local TB data and data-driven decision making in the direction of achieving TB elimination in India by 2025.Total of 670 NTEP staff of district and sub-district level from the

intervention states were trained on data management. Regular supervision/ mentoring sessions/ visits conducted to support the district, sub-district NTEP staff to translate the data to come up with a district specific programmatic actions to improve the program indicators.

The End MDR-TB project in Dharavi Mumbai improved drug resistant TB (DRTB) outcomes by addressing adverse drug reaction (ADR) and migration in Dharavi slum. The project was implemented in 2020, peak of Covid-19 pandemic and in a period of 16 months, the proportion of lost to follow up was reduced to <2%. The good practices from the project successfully taken up in three other slums of the city. This paved way for newer projects in collaboration with Brihan mumbai Municipal Corporation (BMC) aiming to improve tuberculosis diagnosis and improve linkage to TB treatment in Indian Children.

The LTBI prevalence study (launched in 2021) along with CDC & BMC in Mumbai aimed to determine the prevalence of LTBI among household contacts (HHC) of bacteriologically positive TB index patients and determine the feasibility of TB screening and testing HHC for latent infection. The study provided the prevalence of LTBI infection in Mumbai (51.2%) among HHCs and provided learnings and field experiences for NTEP program implementation which were shared across at national and international forums. Simultaneously, the Household Contact Active and Latent Tuberculosis Intervention (HaALT) project in Nagpur continued to support NTEP Nagpur and Indira Gandhi Government Medical college (IGGMC) to detect and cure active TB and LTBI in household contacts through a package of interventions in programmatic setting and to improve diagnosis of pediatric TB through enhanced diagnostic techniques. A total of 1305 household contacts (HHC) were provided bi-annual follow-ups. A total of 1039 HHCs underwent IGRA test of which 44% were IGRA positive and 283 HHCs have successfully completed TPT regimen.

TB IPC training of nursing staff at MGIMS Sewagram, 10th March 2023

Participants of "Training for state nodal officers and project officers" along with DDG - TB, CTD and Branch Chief - TB, DGHT, CDC India in New Delh

Presentation on Project HAaLT by Dr. Munje at NATCON Agra, 27 Feb'23

Appreciation certificate from Sikkim to DA - SHARE INDIA, E2 Project

CDC team interacting with DRTB patients at

Data management training, Chhattisgarh.

24 Laboratory Quality Systems in HIV – (LaQSH Plus)

Investigators:

- Dr. Vijay V. Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago, USA
- Mr. Lokabiraman, Team Lead

Funding Source: Centers for Disease Control and Prevention (CDC), Atlanta; 2015-2020 and 2020-2025

Introduction: CDC-SHARE INDIA, through its project LaQSH (Laboratory Quality Systems in HIV), provided Technical Assistance (TA) for strengthening HIV laboratories in India under the National AIDS Control Programme (NACP) through quality laboratory testing, workforce development, improved result utilization and strong laboratory epidemiology platforms for informed Public Health response.

Key accomplishments

1. VL scale up and other approaches for VL coverage: The project has successfully scaled up Routine Viral Load (RVL) test capacity in the public sector laboratories by operationalizing all 64 labs. The project provided TA in terms of molecular lab design, technical specifications for ancillary equipment requirements and human resource in a molecular lab, site preparedness assessment using a standard tool, capacity building (CB) of lab personnel, and continuous advocacy with NACO/SACS, and institutions for making the labs operational and ensure ownership. Due to the concerted efforts, at the national level, all sixty-four (64) VL labs are now functional and linked with 689 ARTC for VL testing, state level robust sample transport system implemented. Outsourcing of VL tests has been completely phased out. The project provided TA on forecasting of kits and consumables required for sample collection at ARTC, testing at VL laboratories so as to monitor real time monitoring of consumption pattern and redistribution of kits based on utilization pattern and kit expiry.

2. Differentiated Service Delivery Models for Improving VL testing: In collaboration with SACS different and innovative service delivery models & multi-prolonged strategies were implemented to enhance VL testing. These strategies included a combination of demand generation activities, coordinated and timely provision of laboratory services to PLHIV especially for the priority populations through decentralized sample collection, and hub and spoke model. During April 2022- March 2023, a total of 2277 samples were collected through 132 community led camps conducted at specific sites such as TI NGOs, Linked ART centers, and homes across PEPFAR focus geographies in collaboration with Global fund and PEPFAR partners 1330 KP and 54 children and 893 General populations were reached through these camps. The DSD models for improving VL coverage among KP and Children contributed to 9% of overall VLC in North East states.

3. EQAS, Accreditation & Certifications: 8 out of 19 VL labs have been accredited in the focus districts/states. The project also supported to expand and strengthen VL EQAS network, by providing TA for roll out of national VL PT program in 2018 with four (4) VL labs and expanded to six-four (64) VL labs by 2022. The project coordinated with all the sixty-four (64) public sectors VL Labs to participate in proficiency testing (PT) by providing technical support, logistic coordination and follow-up for result submission from laboratories sites to ICMR-NARI for VLPT R2 2021, Repeat VLPT R2 2021(repeat panel sent to two VL laboratories) and VLPT R1 2022. 100% of NRLs, SRLs, VL labs registered, 100% registration of NRLs, SRLs, VL, ICTC and CD4 labs in Mumbai and Maharashtra and 99% of ICTCs & 96 % of CD4 labs are registered in NACO-PRAYOGSHALA. TA was provided for the NABL medical entry level testing [M(EL)T] certification of SA-ICTC in identified sites in the cluster districts, given in terms of selection of ICTCs, training on the processes of M(EL)T, documentation, submission and assessment. Twenty-five (38) ICTCs out of forty-six (99) targeted have been certified.

The project also supported NARI for developing draft proposal for NABL accreditation (ISO:17043) as a VL PT provider and revised RCA and CAPA form for VL testing. Additionally, project has developed SOPs for EQAS for HIV serology and conducted training for all NRLs.

Integrated lab services models for comprehensive management of PLHIV: The project facilitated LFA testing for TB and Cryptococcus's using TB LAM and CrAg testing across nineteen (19) ARTC in Mumbai. The project continued to support the Laboratory Component of TG Health and Wellness Centre in Manipur, Vizag and Vijayawada in Andhra Pradesh, providing single window comprehensive services including laboratory services. The

project piloted the Feasibility of Point of Care Testing (POCT) for sexually transmitted infections (STI) through a comprehensive health check-up for key population was done in Mumbai in collaboration with Mumbai Districts AIDS Control Society (MDACS) Sexual and Reproductive health services are provided through twenty-seven (27) Designated STI/ RTI clinics (DSRC) branded as Suraksha Clinic. The project supported HIV self-testing (HIVST) feasibility implemented by PATH targeting different key population groups across the country.

Integrated Cancer and Non-Communicable Disease (NCD) screening

In collaboration with Andhra Pradesh State AIDS Control Society (APSACS), National Health Mission (NHM), Andhra Pradesh Vaidya Vidhana Parishad (APVVP) and HIV India Alliance & private technology providers, project has facilitated NCD screening for High-Risk women such as Female Sex Workers (FSWs) and Women Living with HIV (WLHIV).

Andhra Pradesh is the first state in the country to initiate such a comprehensive NCD and Cancer screening program for high-risk women and it is envisaged to provide screening tests for about 100,000 HIV infected women including Female sex workers in the State. As of March 2023, Screening was done for 1856 women during the project period.

Major Technical Assistance Activities to Lab Services Division, National AIDS Control Organization (NACO)

1. HIV/ Syphilis Dual kit: The project is working closely with MSACS/ MDACS for collection of syphilis positive samples from identified sites required for kit validation. Project in coordination with ICMR-NARI conducted training on sample collection, handling, and transportation. This activity will further roll into supporting NACO and select SACS for training of lab technicians on using HIV-Syphilis dual kit.

2. STI Surveillance: This is a major TA area at the national level as this is the first time that expanded surveillance program has been implemented by including NG, CT and TV in surveillance through urine samples. The project has conducted a market survey for identification of kits available in India and for designing assay verification. This activity will be continuing further through support for conducting assay verification and finalisation of protocols and capacity building.

3. 100% Accreditation & Certification: The project had designed and developed training content for accreditation workshop aimed at attaining accreditation of 45 laboratories across the country. Follow-up plan implementing stepwise accreditation process has been developed and the project team members have been assigned laboratories for providing TA for accreditation. In cluster states, maintenance support is ongoing for 8 accredited labs.

Workforce development:

a. Viral load sample collection: Support for developing linkage plan, scheduling, onboarding of transport agency was provided to select states. The project also provided orientation to more than 1200 laboratory and ARTC staff was provided on sample collection, handling & transportation before the linkage plan was operationalized.

b. NCD cancer screening: 140 health care providers trained on NCD and Cancer screening, confirmatory test and referrals across 5 public health facilities.

25 Building systems capacity on Outbreaks Laboratory Surveillance Training Emergency response and Infection Prevention Control and Anti-Microbial Resistance – (BOLSTER) - IPC

Investigators:

- Dr. Vijay V. Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago, USA
- Dr. Prashant Vennela, Public Health Specialist, Infection Prevention & Control,

With the aim to address the gaps in Infection Prevention and Control (IPC) while capacitating and strengthening the selected hospitals in Andhra Pradesh and Telangana state on Hospital Acquired infection and Anti-Microbial Resistance, the project "Building systems capacity on Outbreaks Laboratory Surveillance Training Emergency Response - Infection Prevention and Control and Anti-Microbial Resistance (BOLSTER- IPC AMR)" is implemented by SHARE INDIA with support from Centers for Disease Control (CDC) India. In the state of Andhra Pradesh, the BOLSTER IPC project supported the Andhra Pradesh Vaidya Vidhana Parishad and the state quality team to improve the IPC practices in the 21 intervention facilities

through continuous onsite mentoring and periodic trainings. The project ended in the state of Andhra Pradesh.

In June 2022. In July 2022, the same project was initiated in the state of Telangana. In the state of Telangana, the project supports the Telangana Vaidya Vidhana Parishad (TVVP) and the Telangana State Quality Assurance Team (TSQAT) to provide technical assistance for improving the quality aspects of healthcare services delivery focusing on Infection Prevention & Control (IPC) and building the capacities of 21 primary and secondary healthcare facilities primarily focusing on the maternal and child health related IPC activities.

Key accomplishments in Andhra Pradesh (April 2022 to June 2022)
Training and capacity building:

- Conducted 12 virtual training sessions on IPC for 21 intervention facilities between April and June 2022.
- Supported internal capacity building for all the intervention facilities through classroom trainings and bedside trainings to strengthen the IPC core competencies of the IPC team of the facilities.
- Conducted onsite mentoring visits and meetings in all the intervention facilities for proper implementation and documentation of the IPC program in the facilities.

Description of IPC activities done in Telangana (July 2022 to March 2023)
Assessments:

- Conducted baseline assessment in selected TVVP facilities and developed an IPC situational analysis report with support from CDC SMEs. The report has been shared with Telangana State Quality Assurance Team/State Health Mission (SHM) to describe common observations, challenges, and opportunities of IPC programs at the facilities and recommend a way forward for the state to support the improvement of IPC programs at the facility and state level.
- Based on the request from the state, conducted functional surgical instrument inventory check across Maternal and Child Health (MCH) units of 21 project facilities to understand the availability and quality of instruments.

Figure: Functional surgical instrument inventory check at MCH units

State level training for TVVP Medical Officer

Training and capacity building activities:

Conducted various capacity building activities across 21 project HCFs through weekly virtual IPC training programs, supportive supervision and mentoring on IPC topics such as hand hygiene, personal protective equipment, biomedical waste management, environment cleaning, equipment sterilization and disinfection and conducted audits as part of monitoring and evaluation.

- Conducted 14 virtual IPC training programs in the reporting period between September 2022 and March 2023 on various IPC topics for nearly 180 IPC personnel working in HCFs located in Telangana and Andhra Pradesh.
- The project team with support from the ICNs conducted nearly 50 internal training activities such as classroom and bedside trainings across all 21 intervention facilities the supported in developing the core competencies of IPC teams of the facility.
- Supported 145 capacity building sessions through onsite mentoring across 21 intervention facilities on IPC program implementation and its documentation which resulted in
- Twenty-one facilities having dedicated Infection control officers (ICO)Fifteen facilities having dedicated hospital Infection control nurses (HICN)
- Fourteen HCFs to initiate and document hand hygiene audits using WHO HH tool.
- Three HCF to initiate bio-medical waste management audit and its documentation.
- Conducted two State level training for all Medical Superintendents, Head of the Departments and IPC teams working across all TVVP facilities on Safe Surgical Practices.
- IPC capacity building by SHARE at the 21 project HCF helped:

- Eleven HCF to receive Kayakalp certification.
- Nine HCF to receive NQAS certification.
- Nine HCF to receive LaQshya certification.
- Two intervention facilities to receive all three quality certifications (NQAS, Kayakalp, and LaQshya) from the state.
- Contributed as an SME in three state level training programs to build capacities of all strata of healthcare workers working across all Primary Healthcare Centrex (PHC) and Basti Davakhanas on IPC guidelines and protocols.
- Facilitated IPC - Technical Working Group meeting with experts from public and private sector to support Government of Telangana in strengthening implementation of Infection control activities.

Technical support to facilities on IPC

- Facilitated preparation and implementation of facility-specific IPC action plan across 21 HCFs as recommended by NCDC National IPC guidelines MoHFW.
- Shared soft copies of updated IPC resource material received from CDC Subject Matter Experts (SME) with all project staff and the intervention HCF IPC focal points.
- Supported strengthening of sterilization and decontamination practices in 21 HCFs through trainings, instrumentation audits for functionality, encouraging documentation of sterilization practices and usage of appropriate indicators as part of monitoring.
- Facilitated the process of identification of link nurses across 21 project HCFs to improve the adherence to aseptic techniques, increase the availability of biomedical waste bins and covers with lids, improve the supervision of environmental cleaning, adhere to safe infusion practices and care of devices.
- Supported staff to improve documentation of IPC activities in 46 GoI IPC Program (Kayakalp, NQAS, LaQshya and MusQan) registers managed by the healthcare facilities.
- Facilitated operationalisation of monthly hospital infection control committee meetings along with preparation and implementation of monthly activity plan across 19/21 project HCFs.

Others:

- Introduced the National center for Disease Control (NCDC) IPC and COVID -19 preparedness tool across all 21 intervention healthcare facilities (HCF) to support and guide hospital preparedness.

With constant efforts and engagement of the project team with the Telangana Vaidya Vidhana Parishad and the State Quality Assurance team: the TVVP has decided to strengthen Infection Prevention and Control in the state by appointing a dedicated Infection Control Nurse across all 179 TVVP facilities and instructed the Medical Superintendents of all the TVVP facilities to conduct regular HICC meetings in their respective facilities.

Disease surveillance

Investigators:

- Dr. Vijay V. Yeldandi, Clinical Professor of Medicine and Surgery, University of Illinois at Chicago. USA
- Ms. Richa Keelia, Lead Public Health Consultant & Program Manger

The disease surveillance activities under BOLSTER aim to work towards improving health systems and strengthening disease detection/ diagnostics, surveillance, and epidemiological/laboratory workforce capacity development. The activities carried out by the surveillance team are mentioned below:

Workshop and TOT on PM- ABHIM

1. **Trainings / Capacity Building:**

a. Trained pathologists/ medical officers/ laboratory technicians of Madhya Pradesh, Rajasthan, Gujarat and Ladakh on Quality Management System (QMS) for Assuring Optimal Technical Standards and Good Lab Practices in clinical diagnostic laboratories in accordance with ISO 15189 and Indian Public Health Standards IPHS 2022. Total 605 participants have been trained.

b. Trained 20 COVID-19 regional reference laboratory staff on Handling Infectious Biological Materials" in accordance with CDC's Biosafety in Microbiological and Biomedical Laboratories (BMBL) & International Air Transport Association - Dangerous Goods Regulations (IATA - DGR).

c. Trained 48 public health specialists on Scientific Writing to provide the public health experts with practical tools and strategies to communicate their research effectively increase their publication success and strengthen their grant proposals. A two days' national workshop was organized at Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGI), Lucknow, Uttar Pradesh.

d. Oriented 84 microbiologists and laboratory technologists (from 22 states) on laboratory-based diagnostics and surveillance of zoonotic diseases in New Delhi in collaboration with National Center for Disease Control, NCDC.

e. Trained 80 government officers (engineers and architects) in biosafety and biosecurity upgradation of district level and block level public health laboratories as per IPHS 2022.

2. Orientation Workshops & ToT on PM-ABHIM: SHARE INDIA provided continuous technical support for effective implementation of Integrated Public Health Laboratories (IPHL) and Block Pub Health units (BPHU) in context of Prime Minister's Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) and 15th Finance Commission–Health Grants (XV-FC) which are intended to strengthen health systems and close critical gaps in health care delivery systems in various states.

a. Supported regional and state-level orientation workshops in 26 states and union territories on the Prime Minister Ayushman Bharat Health Infrastructure Mission (PM-ABHIM), particularly the Integrated Public Health Laboratory (IPHL) and Block Public Health Unit (BPHU) initiatives. First workshop was organized by SHARE INDIA in collaboration with CDC in Rajasthan, which was attended by dignitaries from NCDC and NHSRC, State health officials, CMHOs, state/district/block pathologists, microbiologists, CHC In-charge officers, District Program Managers, architects/civil engineers, along with experts from CDC, JHPIEGO and PATH. Total of 150 officials were oriented. Similar workshops were supported in the states of Maharashtra, Uttar Pradesh and Sikkim.

b. ToT and Implementation support: Trained district and state officials and supported in mapping 97 Block Public Health Units (BPHUs) and 13 Integrated Public Health Laboratories (IPHLs) in Rajasthan which are key for surveillance activities in the state. Identified the sites where these can be developed after gap assessment of HR, infrastructure, services, etc. Monitoring and support for development of action plan for 7 IPHLs and 59 BPHUs.

3. Conducted architectural review/ assessments for all identified district hospital laboratory facilities for the 75 districts of Uttar Pradesh to help them meet the timeline set by the central government for implementation of Integrated Public Health Laboratories (IPHL) as per Indian Public Health Standards (IPHS 2022) for strengthening disease surveillance capacity.

4. Conducted detailed site assessment of the following sites for up gradation of district lab to IPHL, and blueprint (layout) developed has been shared with the state for further implementation and up gradation -1. Leh and Kargil District Hospital lab, 1.Ladakh 2. Nashik and Nanded District Hospital lab, Maharashtra, 3.Ambikapur, Chhattisgarh, 4.Kotputli, Rajasthan, 5.Hazaribagh, Jharkhand, 6. Namchi, Sikkim

5. Conducted detailed site assessment of District Hospital, Ambikapur (Kanker), Chhattisgarh for the establishment of IPHL and a gap analysis was performed and recommendations were provided to the state, which were implemented in collaboration with CDC. This is also one of the aspirational districts of NITI Aayog.

6. Supported strengthening of specimen referral mechanism between Primary and Secondary Healthcare Institutions.

7. Data Integration Support: Supported 60 sites in data integration and consolidation. IT assistance is being provided to the states of Rajasthan and Madhya Pradesh for the integration of laboratory data from variou

district and sub-district level laboratories in the state into the Integrated Health Information Platform (IHIP). Also, supported the Govt. of Chhattisgarh in laboratory data integration into a common platform (IHIP) and also consolidation of data from Sub-district, CHC and PHC level into LIMS in Ambikapur District Hospital, Surguja Division.

8. Other updates

- In continuation to the capacity building initiative, at the state and district levels, we have provided some general reagents, lab consumables and serological diagnostic kits to kick-start the Microbiological testing at district level in priority states.
- Diagnostic support has been provided to the state government of Chhattisgarh and the National Health Mission (NHM) to assist in the screening approximately 8000 women of childbearing age for Sickle Cell Anemia and Thalassemia in the Surguja district of Chhattisgarh, which has a predominantly tribal population and is part of the NITI Aayog's Aspirational District Program.
- Provided technical inputs and supported the National Health Mission in revision and finalization of standard technical specification for diagnostic equipment listed for district and block level labs as per IPHS 2022. SHARE INDIA participated in several rounds of Expert Group Technical Consultation Meetings.
- Supported HCT Division of NHSRC for the development of a list of reagents and consumables required for each equipment (district level labs) along with approximate rates.
- Participated in a meeting with the MoHFW and CDC for finalization of disinfection protocols for state level labs.
- Participated in meetings and provided inputs for review and revision of NCDC's Operational guidelines for Sentinel Surveillance sites for Zoonoses.
- Provided weekly situational updates on Covid-19 cases, deaths, vaccination, tests done, and test positivity across India and consular cities to CDC, India by analysis of Covid-19 data available on GoI's official websites.

Global Health / International Exchange Program

The 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.

Students visited SHARE INDIA-MIMS

S.No.	Name of the Student	Purpose of Visit	Parent Educational Institue
1	Ms. Sneha Nandiagam Panaik	Global Health Rotation at MIMS	University of Pittsburgh, USA

Inetrnational faculty visited SHARE INDIA - MIMS in 2022-2023

S.No.	Name of the Faculty	Designation and Purpose of Visit	Name of the Institue / University
1	Dr Harvey Borovetz	Professor of Bioengineering, Indo American Artificial Heart Program	University of Pittsburgh, USA
2	Dr Salim E. Olia	ECMO Coordinator, Adjunct Assistant Professor of Surgery Artificial Heart Program	University of Pennsylvania, USA
3	Dr Shawn Bengston	Director of Quality Management System, Artificial Heart Program	University of Pittsburgh, USA
4	Mr Joseph Hankey	Surgery Supervisor, Artificial Heart Program	University of Pittsburgh, USA
5	Dr. James Long	Cardio Thoracic Surgeon, Artificial Heart Program	INTEGRIS Nazih Zuhdi Transplant Institue, Integris Baptist Medical Center, USA
6	Dr. Pratap Khanwilkar	Consultant, Artificial Heart Program	University of Pittsburgh, USA
7	Dr. Mark S. Dworkin	Department of Epidemiology and Biostatistics, mHealth - Avathar	University of Illinois at Chicago, USA
8	Ms. Kara	Department of Epidemiology and Biostatistics, mHealth - Avathar	University of Illinois at Chicago, USA
9	Ms. Casey Morgan Luc	Department of Epidemiology and Biostatistics, mHealth - Avathar	University of Illinois at Chicago, USA

Publications 2022-2023

1. Shrikala AcharyaI, Prashant Deshpande, Edwin Sam Asirvatham, Amol Palkar,Charishma Jones Sarman, Chinmay LaxmeshwarID,Maninder Singh Setia5,Dhirubhai Rathod, Sagar Koli, Jayesh Dale3, Vijay Yeldandi3, Ramesh Allam6,Reshu Agarwal, Sanjeev Verma, Sunita Upadhyaya, Melissa Nyendak. **Utility of the lateral flow urine lipoarabinomannan tuberculosis assay in patients with advanced HIV disease at antiretroviral therapy centres in Mumbai, India. August 18, 2022.** PLoS ONE 17(9): e0273970. https://doi.org/10.1371/journal.pone.0273970121.

2.Sameena Azhar PhD, LCSW, MPHVaidehi Jokhakar,, Jason Vaudrey, Sabitha Gandham, Ganesh Oruganti, Vijay Yeldandi, **Associations between HIV stigma, gender, and depression among people living with HIV in Hyderabad, India,** J Community Psychol. 2022;1–18. wileyonlinelibrary.com/journal/jcop © 2022 Wiley Periodicals LLC.25 Aug 2022

3.Paushali Mukherjee, Ph.D., Sampada Bhide, M.D., Arunima Silasarma, MPH,Bushra Rizvi, Samridhi Uniyal, Karan Prasad,Prashant Vennela, BDS, MBA,Edwin Sam Asirvatham, Ph.D., Satish Kaipilyawar, MBBS, MHA, Anita Singh, M.D.,B Ravi Kumar MBBS, MPH, Lincoln P Choudhury, MPH, Shailendra Dandge, M.D,Manjunath Dinaker, M.D., Vijay V Yeldandi, M.D., Shikha Dhawan Ph.D.A **Pathophysiologic Approach to COVID-19 Management and Current Status of Treatment and Recommendations** Journal of the American Association of Physicians of Indian Origin – September 28, 2022. JAAPI 2(2):2022

4.Reshu Agarwal1* , Upasna Agarwal, Chinmoyee Das, Ramesh Allam Reddy, Rashmi Pant, Christine Ho,B. Ravi Kumar, Vandana Dabla, Patrick K. Moonan, Melissa Nyendak, Sunil Anand, Anoop Kumar Puri,Sanjay K. Mattoo, Kuldeep Singh Sachdeva, Vijay V. Yeldandi5 and Rohit Sarin. **Building communities of practice through case based e learning to prevent and manage TB among people living with HIV–India. December 20, 2022.** BMC Infectious Diseases (2022) 22:967https://doi.org/10.1186/s12879-022-07957-4

5.Monica Gudipally, MD; Fouzia Farooq, PhD, MPH; Kalpana Basany, MD; Catherine L. Haggerty, PhD, MPH; Gong Tang, Ph.D; Govindrao N. Kusneniwar, MD; Guru Rajesh Jammy, PhD, MPH; Clareann H. Bunker, PhD; P.S.Reddy, MD. **Impact of prepregnancy body mass index on adverse pregnancy outcomes: analysis from the Longitudinal Indian Family hEalth cohort study.** AJOG Global Reports February 2023, the Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-ncnd/4.0.

6. Vandana Dabla, Nalini Chava1, **Edwin Sam Asirvatham, Charishma Jones Sarman, Rashmi Pant, et al. COVID-19 Morbidity and Mortality and its Association with HIV and Health System Factors in India.** Biomed J Sci & Tech Res 44(4)-2022. BJSTR. MS.ID.007077

Finance Report

SHARE INDIA

Ghanpur Village, Medchal Mandal, Medchal Malkajgiri District-501401. TS

BALANCE SHEET AS AT 31 st March, 2023

	SCH. NO		As At 31.03.23		As At 31.03.22
			Amount (Rs)		Amount (Rs)
Source of Funds					
Capital Fund	1		21714745		9542294
Total			**21714745**		**9542294**
Application of Funds					
Fixed Assets	2				
Gross Block		46013315		42074283	
Less: Depreciation		37629951		34628703	
Net Block			8383364		7445580
Current Assets:					
Cash and Bank	3	80199765		80729392	
Balances	4	6970142		3312983	
Loans and Advances	5			81223	
Other Current assets		87169907		84123598	
Less:					
Current Liabilitiees and Provisions	6	73838526		82026884	
Net Current Asset			13331381		2096714
Total			**21714745**		**9542294**

INCOME AND EXPENDITURE ACCOUNT AS AT 31 st March, 2023

	SCH. NO	31.03.23	31.03.22
INCOME:		Amount (Rs)	Amount (Rs)
Donations		7500000	10350000
Grants		411639287	359519974
Other Income	7	3042708	3199994
Total		**422181995**	**373069968**
EXPENDITURE:			
Personnel Expenses	8	150250348	151610943
Power & fuel	9	641537	606923
Program expenses	10	256175498	203506193
Other Expenses	11	13187953	11980080
Total		**420255336**	**367704138**
Excess of Income over Expenditure before Depreciation		1926659	5365830
Less: Depreciation		3541549	7657316
Excess of expenditure over Income Transferred to Capital Account		**1614890**	**2291486**
NOTES TO ACCOUNTS	12		
As Per our report of even date attached			

For LUHARUKA & ASSOCIATES
CHARTERED ACCOUNTANTS
FRN 01882S

Place: Hyderabad
Date: 03.09.2023

(RAMESHCHAND JAIN)
PARTNER
M No. 023019

Place: Hyderabad
Date: 03.09.2023

For SHARE INDIA
Sd/-
Mr M.K. Agarwal - Vice Chairman & Treasurer
Dr. K Madhava- Member

Abbrevations:

AIG	Asian Institute of Gastroenterology
ANC	Antenatal Care
APSACS	Andhra Pradesh State AIDS Control Society
ATT	Anti-Tuberculosis Treatment
BIG	Biotechnology Ignition Grant
BIRAC	Biotechnology Industry Research Assistance Council
BOLSTER	Building Systems Capacity on Outbreaks Laboratory Surveillance Training Emergency Response and Infection Control Prevention and Anti-Microbial Resistance
CBIT	Chaitanya Bharathi Institute of Technology
CCCC	Centre for Control of Chronic Conditions
CDC	Centers for Disease Control and Prevention
CSSI	Caesarean Surgical Site Infection
CVD	Cardio-Vascular Disease
DBT	Department of Biotechnology
DMC	Designated Microscopy Centers
EQA	External Quality Assurance
GBP	British Pound
GFATM	The Global Fund to fight Aids, Tuberculosis and Malaria
GSPH	Graduate School of Public Health
HELP	HEaLthy Pregnancy
HIV	Human Immunodeficiency Virus
ICMR	Indian Council of Medical Research
IDSP	Integrated Disease Surveillance Programme
LaQSH	Laboratory Quality Systems in HIV
LIFE	Longitudinal Indian Family hEalth
LSHTM	The London School of Hygiene and Tropical Medicine
LTBI	Latent Tuberculosis Infection
MIRA	m Health integrated model of hypertension, diabetics and antenatal care in primary care settings.
MIMS	MediCiti Institute of Medical Sciences
NACP	National AIDS Control Programme
NACO	National AIDS Control Organization
NBM	National Biopharma Mission
NIH	National Institutes of Health
NISCHIT	National Initiative to Strengthen and Coordinate HIV/TB response
NTEP	National TB Elimination Program
PA	Pennsylvania
PHFI	Public Health Foundations of India
PIH	Pregnancy Induced Hypertension
PLHIV	People Living with HIV/AIDS
QMS	Quality Management Systems
REACH	Rural Effective Affordable Comprehensive Healthcare
Rs	Rupees
SIRO	Scientific and Industrial Research Organisation
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 Telemedicine to Rural Homes at Affordable costs
TSACS	Telangana State AIDS Control Society
UK	United Kingdoms
UOP	University of Pittsburgh
US $	United States Dollar
USA	United States of America

PROJECTS SUCCESS STORIES OF LIFE STUDY

K. Sharmishta w/o. K. Narayana (Pradeep) (precious pregnancy)

My infertility journey started off as a hard and heartbreaking one. We tried to get pregnant but months of disappointments turned into eight years. On suggestion and guidance of LIFE team, we consulted Dr. Kalpana and had all the investigations done and I underwent Laparoscopy surgery at MIMS.

After 3 months I became pregnant and delivered a baby girl. Now I proudly say that I am a blessed mother of two lovely daughters and throughout my life I am very much grateful to Dr. Kalpana who has supported me in life journey of motherhood. Also, I am very much thankful to the LIFE study for continuing their care and support and doing children follow up for developmental assessment.

Gaddam Chitti w/o. Bhaskar was diagnosed with severe pre-eclampsia with preterm delivery

I Gaddam Chitti w/o. Bhaskar would like to share my experience for being a part of LIFE study. I delivered two male children at MediCiti Hospitals. During my second pregnancy at 7months, I was diagnosed with severe pre-eclampsia and due to this complication I had preterm delivery. I delivered a male boy with low birth weight (1.8kgs).

The LIFE study has taken care and supported me right from my early visit to till delivery. During follow up visits, me and my children were closely monitored by collecting our health information, blood pressure and anthropometry measurements on regular intervals and also updated our health status. our children were regularly monitored. Physical, mental and social development and some play activity tests were done for assessment of communication skills, gross motor, fine motor, problem solving, language, behavior, cognition, self-help and social/ emotional behavior. Based on their assessment further activities and problem was identified and the child was shown to the pediatricians and psychologist.

Thanks to the LIFE study for giving this opportunity to our family and giving awareness and educating us for our children growth and development. Now me, my husband and my both children are doing well and we are all happy and healthy.

SHARE INDIA

Society for Health Allied Research and Education India

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