ANNUAL REPORT

2023-24

Y. R. Gaitonde

Centre for AIDS Research and Education

A unit of the Y.R. Gaitonde Medical Educational and Research Foundation

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Executive Summary

In 2024, YRGCARE solidified its legacy as a leader in HIV/AIDS care, research, and community empowerment, serving over 20,000 individuals across India. Our comprehensive programs delivered antiretroviral therapy (ART), mental health support, and digital health innovations, aligning with global goals like UNAIDS' 95-95-95 targets and advancing Sustainable Development Goals (SDGs) 3, 5, 10, and 17. Key milestones included scaling pre-exposure prophylaxis (PrEP) for high-risk groups, forging global research partnerships with the NIH and WHO, and launching stigma-reduction campaigns that empowered marginalized communities.

Despite these successes, YRGCARE faced significant challenges such as the shrinking funding for routine HIV programs and US research grants like USAID in 2025. This consequently led to the closing of our flagship program Project ACCELERATE funded by the USAID through Johns Hopkins University. Other challenges included the limited traction with Indian CSR funds prioritizing education and WASH (Water, Sanitation and Hygiene) in schools, and staff turnover due to expiring grants. We addressed these by diversifying funding through local philanthropy, initiating CSR dialogues to highlight our community impact, and implementing staff retention strategies like cross-training and transparent communication. These efforts reinforced lessons on the need for a broader value proposition and clear financial planning.

Looking to FY 2025, YRGCARE envisions a transformative future as a global model for health equity. Our strategic priorities include rebranding with a new logo, mission, and vision to showcase our expertise in health systems and community resilience, securing atleast 20% more diversified funding, and scaling digital health to reach 10,000 additional beneficiaries. New initiatives, like a Knowledge Hub and CSR-aligned health programs, will leverage our 30+ years of scientific and community experience. With gratitude to our donors, partners, staff, volunteers, and beneficiaries, we invite stakeholders to join us in creating a healthier, stigma-free world. Together, we will turn challenges into opportunities and drive lasting impact.

ORGANIZATIONAL OVERVIEW

Mission

To transform lives by delivering holistic healthcare, fostering inclusive partnerships, and advancing transformative research. Rooted in integrity and sustainability, we address immediate and emerging social needs, empowering communities to achieve equitable and lasting health outcomes.

Vision

A world where health equity flourishes through communities, innovative solutions, and compassionate care.

The Ethos of YRGCARE: Guiding Light, Unwavering Care

YRGCARE has been a steadfast partner in your journey, serving with unwavering dedication and humility for over 30 years. From the brightest days to the darkest nights, we have stood by your side, adapting, evolving, and delivering care where it's needed most. Our new logo embodies this commitment. The bright yellow dot represents our accessibility, warmth, and readiness to serve anyone, anytime, anywhere. The black dot acknowledges life's challenges, symbolising resilience and YRGCARE's role as a source of comfort and strength.

This transformation is more than a change of symbol—it reflects who we are today: bold, forward-thinking, and ready to meet evolving needs with compassion and courage. Whether in the spotlight or the shadows, YRGCARE remains committed to delivering transformative care with integrity and passion.

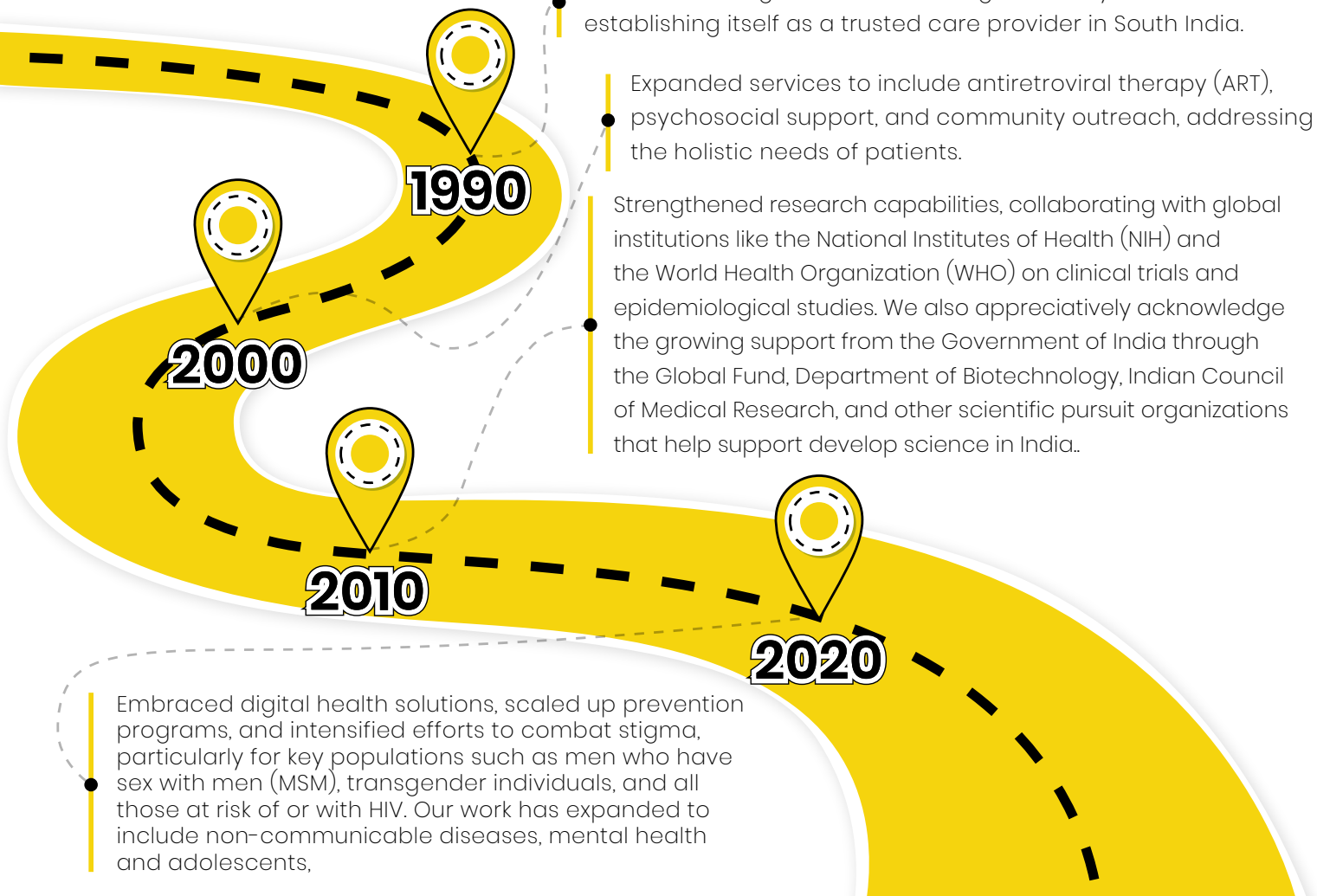
This logo stand as a beacon of our mission: accessible, comforting and ready to rise to any challenge.

Because at YRGMERF, Care Never Stops

BRIEF HISTORY AND EVOLUTION

YRGCARE was founded in 1993 by *Dr. Suniti Solomon* in Chennai, India, in response to the growing HIV/AIDS epidemic. *Dr. Solomon*, a pioneering microbiologist, identified one of the first HIV cases in India in 1986, which spurred her to establish a centre focused on research, care, and education. Initially, YRGCARE operated as a small clinic providing HIV testing and counselling, filling a critical gap in India's healthcare system at a time when stigma and limited resources hindered HIV care.

Over the decades, YRGCARE evolved into a leading institution in HIV/AIDS management: Today, YRGCARE operates multiple facilities in India, including its flagship centre in Chennai, and has impacted thousands through its integrated model of care, research, and advocacy. The organization has also expanded its scope to address related health issues, such as tuberculosis (TB), hepatitis, non-communicable diseases (NCDs) and nutritional needs and support to vulnerable populations including people living with HIV and hepatitis, while maintaining HIV/AIDS as its core focus.



Focused on diagnostics, counselling, and early treatment, establishing itself as a trusted care provider in South India.

Expanded services to include antiretroviral therapy (ART), psychosocial support, and community outreach, addressing the holistic needs of patients.

Strengthened research capabilities, collaborating with global institutions like the National Institutes of Health (NIH) and the World Health Organization (WHO) on clinical trials and epidemiological studies. We also appreciatively acknowledge the growing support from the Government of India through the Global Fund, Department of Biotechnology, Indian Council of Medical Research, and other scientific pursuit organizations that help support develop science in India..

Embraced digital health solutions, scaled up prevention programs, and intensified efforts to combat stigma, particularly for key populations such as men who have sex with men (MSM), transgender individuals, and all those at risk of or with HIV. Our work has expanded to include non-communicable diseases, mental health and adolescents,

KEY FOCUS AREAS AND STRATEGIC PRIORITIES FOR 2025

Key Focus Areas

1. Comprehensive HIV Care: Providing ART, opportunistic infection management, mental health support, and nutritional counselling to improve patient outcomes.
2. Research and Innovation: Conducting clinical and behavioural research to develop new treatments, diagnostics, and prevention strategies.
3. Community Engagement: Empowering communities through health education, stigma reduction, and support for key populations.
4. Public Health Advocacy: Influencing policy to enhance HIV/AIDS funding, access to care, and integration of services into national health systems. This includes non-communicable diseases and mental health, adolescents' health and supportive needs.
5. Co-morbidity Management: Addressing co-infections like TB and hepatitis, which significantly affect people living with HIV.

Strategic Priorities for 2025

1. **Scaling Digital Health Interventions:** Leverage telemedicine and mobile health apps to enhance access to care, especially in rural and underserved areas, ensuring continuity of ART and follow-up.
2. **Advancing PrEP and Prevention:** Expand pre-exposure prophylaxis (PrEP) programs and promote awareness to reduce new HIV infections, targeting high-risk groups.
3. **Strengthening Research Collaborations:** Deepen partnerships with global and national research bodies to contribute to HIV vaccine development and long-acting therapeutics.
4. **Reducing Stigma and Discrimination:** Implement community-based campaigns and training for healthcare providers to foster inclusive environments and improve service uptake.

5. **Sustainability and Funding:** Diversify funding sources through grants, corporate partnerships, and social enterprises to ensure long-term program viability.

6. **Capacity Building:** Train healthcare workers and peer educators to strengthen local health systems and support decentralized HIV care delivery.

By aligning its efforts with these priorities, YRGCARE aims to enhance its impact in 2025, contributing to global goals like the UNAIDS 95-95-95 targets (95% of people living with HIV knowing their status, 95% of diagnosed individuals on ART, and 95% of those on ART achieving viral suppression).

SDGs AND YRGCARE

The Sustainable Development Goals (SDGs) are a set of 17 global goals established by the United Nations to address pressing challenges like poverty, inequality, health, and environmental sustainability by 2030. Based on the revised YRGCARE Organizational Overview, YRGCARE's work aligns with several SDGs, particularly through its mission to combat HIV/AIDS, provide equitable healthcare, conduct research, and empower communities.

SDGs Covered by YRGCARE

Good Health and Well-being

- **Relevance:** SDG 3 aims to ensure healthy lives and promote well-being for all, with specific targets like ending the AIDS epidemic by 2030 (Target 3.3) and ensuring universal access to healthcare (Target 3.8).
- **YRGCARE's Contribution:**
  - YRGCARE's focus on comprehensive HIV care (ART, mental health, nutrition) and prevention (PrEP programs, education), work towards directly addressing HIV/AIDS management and reducing new infections.
  - By managing co-infections like TB and hepatitis, YRGCARE tackles related health challenges, aligning with SDG 3's holistic health approach.
  - The digital health interventions (telemedicine, mobile apps) expand access to care, particularly in underserved areas, supporting universal health coverage.
  - YRGCARE's support for the UNAIDS 95-95-95 targets (95% of people living with HIV knowing their status, 95% on ART, 95% virally suppressed) directly contributes to ending the AIDS epidemic.
- **In action:** Delivering comprehensive HIV care, including ART, mental health, and nutrition support and Expand Digital Access: Use telemedicine and apps to reach rural communities.

Gender Equality

- **Relevance:** SDG 5 focuses on achieving gender equality and empowering women and girls, including ensuring equal access to healthcare and addressing gender-based vulnerabilities (Target 5.6).
- **YRGCARE's Contribution:**
  - Emphasizes equity as a core value, ensuring inclusive services for marginalized groups, including transgender individuals and women, who face heightened HIV risks due to social and gender inequalities.
  - By reducing stigma and discrimination through community campaigns, YRGCARE fosters environments where women and gender-diverse individuals can access care without fear, empowering them to seek health services.
  - Programs targeting key populations (e.g., sex workers, transgender communities) address gender-specific barriers to healthcare, aligning with gender equality goals.
- **In Action:** Ensuring inclusive services for all and Combat Stigma: Launch campaigns to foster inclusion.

Reduced Inequalities

- **Relevance:** SDG 10 seeks to reduce inequalities within and among countries, including ensuring equal opportunities and access to services for marginalized groups (Target 10.2).
- **YRGCARE's Contribution:**
  - YRGCARE's commitment to equity and serving marginalized populations (e.g., MSM, transgender individuals, sex workers) reduces disparities in healthcare access.
  - Community engagement and stigma reduction efforts empower vulnerable groups, addressing social exclusion and promoting inclusion.
  - By expanding services to rural and underserved areas via digital health, YRGCARE bridges geographical inequalities in healthcare access.
- **In Action:** Empowering communities through education and stigma reduction and Expand Digital Access: Use telemedicine and apps to reach rural communities.

Partnerships for the Goal

- **Relevance:** SDG 17 emphasizes global partnerships to achieve sustainable development, including collaboration for knowledge sharing, capacity building, and resource mobilization (Targets 17.6, 17.9).
- **YRGCARE's Contribution:**
  - YRGCARE's research collaborations with global institutions like the NIH, contributing to knowledge sharing and innovation in HIV/AIDS management.
  - Capacity building through training healthcare workers and peer educators strengthens local health systems, aligning with global development goals.
  - Efforts to secure diverse funding (grants, corporate partnerships) demonstrate a commitment to sustainable resource mobilization.
- **In Action:** Advance Research: Collaborate on HIV vaccines and long-acting therapies and Build Capacity: Train healthcare workers to strengthen local systems and improve vaccine literacy in communities.

Additional SDGs with Partial Alignment

Quality Education (Partial)

- YRGCARE's community education and training programs for healthcare workers and peer educators contribute to raising awareness and building skills, aligning with SDG 4's focus on inclusive education (Target 4.7). However, this is not a primary focus.
- Empowering communities through education and Build Capacity: Train healthcare workers.

No Poverty (Indirect)

- By providing free or low-cost HIV care and addressing co-morbidities, YRGCARE reduces the financial burden of healthcare for low-income populations, indirectly supporting poverty reduction (Target 1.2).
- Our "*Kathir Dhan*" program leverages social contributions to support the needy with nutritional support through healthy meals and specific nutrition as well.
- **In Action:** Ensuring inclusive services for all implies accessibility for economically disadvantaged groups.

- Health Camp as part of PROJECT ACCELERATE on the occasion of World AIDS Day

- Nutritional hamper distribution for Camp Rainbow beneficiaries

- Nutritional hamper distribution programme for OVC

PROJECTS AND INITIATIVES

Project Accelerate

Project objective

To accelerate progress toward ending HIV by 2030 through technical support, policy support, and innovative and person-centered service delivery, in collaboration with NACO, SACS, and key stakeholders. Program ACCELERATE aims to strengthen HIV prevention, treatment, and care efforts across priority states by leveraging community empowerment, government partnerships, and advancements in managing HIV and related comorbidities.

Target Audience/Beneficiaries

- People Living with HIV (PLHIV): Ensuring access to high-quality, person-centered prevention, treatment, and care services.
- At-Risk Populations: Including key and vulnerable groups such as transgender individuals, people who inject drugs, sex workers, and men who have sex with men, who receive targeted interventions for HIV prevention and support.
- Healthcare Providers & ART Centers: Strengthening the capacity of healthcare workers and ART centers to deliver effective and inclusive HIV services.
- Government Agencies (NACO & SACS): Providing technical assistance to strengthen national and state HIV programs, policies, and implementation frameworks.

Key Initiatives

HIV Testing Innovations

KEY ACTIVITIES AND IMPLEMENTATION PROCESS:

- Index testing at high-load publicly funded facilities (ARTCs, ICTCs, LACs).
- Community-based testing in Maharashtra and Telangana.
- Distribution of self-test kits via “Safe Zindagi”.

Outcomes & Impact:

- 6,316 index testing contacts completed HIV testing; 1,047 new PLHIV were identified.
- 662 KPs were tested through community-based testing; 38 new cases were diagnosed.
- 649 self-test kits were received, 507 clients shared results, and six were confirmed HIV-positive.

Challenges & Lessons Learned:

- Demand for self-testing is growing but requires better linkage to confirmatory testing.

Orphans and Vulnerable Children (OVC) Support Programme

KEY ACTIVITIES AND IMPLEMENTATION PROCESS:

- HIV testing for children of PLHIV parents
- Linkage to ART and viral load monitoring
- Psychosocial and nutritional support

Outcomes & Impact:

- 45,114 individuals accessed services (26,005 children and 19,109 caregivers)
- 25,443 children tested for HIV; 7,947 found HIV-positive and linked to ART
- 90% of eligible CLHIV completed viral load testing; 95% were virally suppressed

Challenges & Lessons Learned:

- Law and order issues in Manipur affected service delivery.
- Coordination with SACS is crucial for sustainability.

Care, Support and Treatment

KEY ACTIVITIES AND IMPLEMENTATION PROCESS:

- Systematic case tracking & follow-ups
- Strengthening treatment adherence & retention (Second 95)
- Improving viral load testing & suppression (Third 95)

Outcomes & Impact:

- 13% increase in ART coverage, ensuring better adherence and survival rates
- 11% improvement in viral load suppression, strengthening long-term treatment success
- Improved data-driven decision-making for patient-centered HIV care

Challenges & Lessons Learned

Data accuracy and coordination are necessary

Scaling up differentiated care is necessary

CASE STORIES

Breaking Barriers

A Story of Hope, Resilience, and Transformation

Index testing plays a critical role in identifying individuals at risk of HIV and linking them to life-saving treatment. During a recent index testing campaign, a 32-year-old woman living with HIV was identified as a priority for follow-up. Although she had been aware of her HIV status for five years, she had not initiated antiretroviral therapy (ART). Her journey was marked by fear, societal stigma, and deep-seated misconceptions about HIV treatment. Four years earlier, she had lost her first husband to AIDS. Now remarried to an HIV-negative partner and pregnant, she remained hesitant to start ART despite her 8-year-old daughter being on treatment. Her reluctance was driven by internalized stigma and pressure from her mother-in-law, who frequently blamed her for "ruining" her son's life. This ongoing discrimination created a hostile environment, making adherence to care even more challenging.

An Index Testing Coordinator (ITC) contacted her and was met with resistance. "I don't feel sick, so why should I take medicine?" she questioned. This is a common challenge in public health interventions—individuals often delay treatment due to the misconception that ART is only necessary when symptoms appear. Recognizing these barriers, the ITC provided consistent counseling, emphasizing that starting ART early ensures long-term health and reduces the risk of transmission to her child and partner.

The ITC also addressed the broader issue of stigma within the household. By engaging the mother-in-law in discussions about HIV, treatment, and support, he helped shift perceptions. "HIV is a manageable condition, not a life sentence," he explained. Over time, these efforts led to a transformation in the family dynamic. Once a source of distress, the mother-in-law started supporting her daughter-in-law's journey toward better health.

With continued follow-up and counseling, the woman eventually started ART. Today, she and her daughter are under treatment, leading healthier lives. Beyond her own journey, she has become an advocate in her community, encouraging others to get tested and seek care. "Fear and stigma shouldn't hold you back. Testing and treatment save lives," she now tells others.

This case underscores the vital role of index testing in HIV response. By actively tracing and engaging contacts of people living with HIV, index testing helps identify undiagnosed cases, reduce transmission rates, and support treatment adherence. Moreover, it highlights the importance of community engagement and targeted interventions in addressing stigma and ensuring better health outcomes for individuals and families affected by HIV.

Healing and Hope

JJ's Transformation through the OVC Program

Comprehensive HIV care for children goes beyond medical treatment—it requires a holistic approach addressing adherence, nutrition, psychosocial support, and family engagement. 9 year-old JJ from Mokokchung District, Nagaland exemplifies the impact of such care.

Born to parents living with HIV, JJ faced severe health challenges, with a dangerously high viral load of over 600,000 copies. His non-verbal condition made ART adherence difficult, as he would only accept medication from his father, whose long work hours disrupted consistent dosing.

Enrolled in the OVC program in April 2021, JJ received personalized interventions. The team worked with his parents through home visits and counseling, creating a sustainable adherence plan. His father ensured timely ART administration, while his mother introduced supportive routines. Nutritional aid and regular ART refills further stabilized his health.

With time, JJ's viral load dropped below 1,000 copies, marking a turning point. Gaining weight and improving interactions, he was able to enroll in school, engaging with peers for the first time. Despite ongoing challenges, including limited access to specialized education, efforts are underway to secure further support.

JJ's journey highlights the power of family-centered HIV care. With USAID's support, funded through Johns Hopkins University and their technical guidance, the OVC program not only stabilized his health but empowered his family, proving that children living with HIV can do more than survive-they can thrive.

LIGHTHOUSE ADOLESCENT APDC ABBOTT

Objective of the Project

The project aims to sensitize and educate young individuals by providing a non-biased, adolescent-friendly environment that supports their sexual health, medical health, physical and mental well-being, and career aspirations.

INTERVENTION GEOGRAPHY

Aizawl, Mizoram

TARGET AUDIENCE

Adolescents and young adults aged 13–24 years

Key Activities and Implementation Process

The center operates as an open-access space where anyone between the ages of 13 and 24 can walk in, register and avail the services. To ensure confidentiality, biometric registration is offered. Based on the client's needs, the center provides a range of services, including:

A. Medical Services

- Testing for HIV, HBV, HCV, STIs, Random Blood Sugar and Blood Grouping

B. Counseling Services

- Mental health support
- ART motivational counseling for individuals living with HIV
- Career guidance
- Menstrual hygiene education
- Family counseling

C. Awareness Programs

- Health and well-being awareness sessions conducted in schools, colleges and at the center
- Topics tailored to the interests and needs of registered clients

D. Recreational & Infotainment Activities

- Indoor games: Chess, Carrom, UNO, Ludo
- Entertainment: Music, Library access, Movies and TV shows

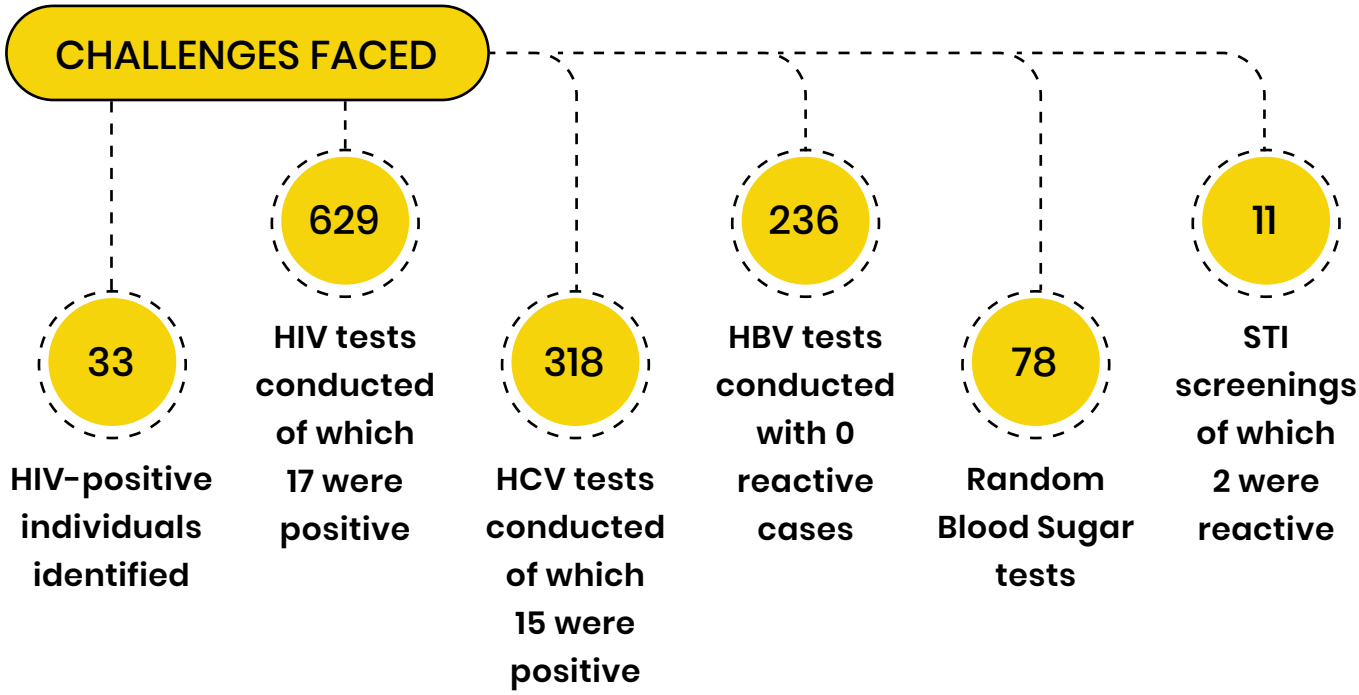
E. Extracurricular Activities

- Quiz competitions
- Birthday celebrations
- Poster-making competitions
- Music and guitar sessions

F. Internships: Internship opportunities for graduate and postgraduate students

Project Outcomes

- Total Registered Individuals: 1,513, including 85 Persons Who Inject Drugs (PWID).
- College Awareness Programs Conducted: 10



Challenges Faced

In Aizawl, varying college schedules and limited availability of time pose challenges for client engagement. Saturdays are holidays, and Sundays are dedicated to church programs, while most schools operate until 3–4 PM. Although many registered clients, primarily students, are interested in visiting the center, time constraints often make it difficult for them to access services.

To address this, we attempted to adjust the center's operating hours; however, this approach did not yield the desired results. As a result, client retention remains a challenge due to their restricted availability.

Lessons Learned

This initiative has been highly impactful in educating and raising awareness among adolescents. Both clients and their families have had a positive experience with the center's services. Given that smoking and chewing tobacco are prevalent in Aizawl from an early age, the center plays a crucial role in addressing these challenges and promoting healthier lifestyle choices among young individuals.

Empowering Lives: Real Stories from Our Center

Case Study 1

Finding Hope Through Counseling

Elina (Name Changed), an 18-year-old college student was referred to YRGCARE's adolescent centre at Aizawl, Mizoram by an outreach worker in August 2024. Upon registration, she was introduced to the various services offered, including medical tests and counseling sessions. She shared with our staff that she had previously visited psychiatrists multiple times and had been prescribed antipsychotic medications, but her struggles persisted.

During her counseling session, she revealed that she came from a broken family—her parents had separated, and she was being raised by her aunt along with her brother. Her mother was alcohol-dependent, and recently, her family discovered that her brother had started injecting drugs. Once a top-performing student, she found it increasingly difficult to focus on her studies due to the turmoil at home. Her brother's disappearance from home further worsened her emotional state, and conflicts with her aunt deepened her distress.

Recognizing her need for consistent support, she began attending weekly counseling sessions at the center. Over time, with structured guidance and emotional support, she showed significant improvement both mentally and physically. She has regained her focus and is now working toward rebuilding her academic performance and emotional resilience.

"Before coming to the center, I felt completely lost. My family situation was overwhelming. I had no real support. I couldn't focus on my studies, and even after visiting psychiatrists, nothing seemed to help. When a YRGCARE outreach worker brought me to the center, I didn't expect much. But from the very first session, I felt heard and understood. The counselors patiently guided me, helping me process my emotions and regain my confidence. Week after week, I started feeling stronger—mentally and emotionally. Now, I can focus on my studies again. I no longer feel alone. This center has given me the support I never had at home."

- *Elina*, a beneficiary, Aizawl, Mizoram

Case Study 2

Overcoming Fear and Embracing Treatment

During a visit to YRGCARE's adolescent center at Aizawl, Mizoram, *Maria* (Name Changed), a 19-year-old girl, who was studying to become a beautician, joined a group of friends celebrating a birthday at the center. As part of awareness efforts, she introduced the center's services to her friends and encouraged them to undergo voluntary HIV testing.

During pre-test counseling, she was aware of risk behaviors and provided detailed information on HIV transmission, prevention, and the importance of Antiretroviral Therapy (ART) treatment. Unexpectedly, her test result came back HIV positive. Initially, she struggled to accept the diagnosis, as she had placed complete trust in her only boyfriend.

Through continued counseling, her counsellor helped her understand how ART treatment could enable her to live a long and healthy life. Her fears gradually subsided, and she began to accept her situation. The staff accompanied her to undergo baseline tests and facilitated her ART linkage at Civil Hospital.

Today, she is on ART, leading a healthy life, and continuing her course, demonstrating remarkable resilience in the face of adversity.

"The day I got tested at the center changed my life forever. I never imagined I would be HIV-positive. I felt my whole world collapse. But the counsellor didn't let me fall apart. She sat with me, explained everything about ART treatment, and reassured me that I could still live a long, healthy life. Their words gave me the strength to take the next step. YRGCARE center gave me the knowledge, strength, and hope to move forward."- *Maria*, a beneficiary, Aizawl, Mizoram

Case Study 3

A New Beginning After Addiction

A 23-year-old young man (Name Changed) *David*, lost his mother at the age of 15. Shortly after, his father remarried, which triggered feelings of isolation and depression. Struggling emotionally, he fell into peer pressure and began snorting heroin. When his family discovered his addiction, he eventually ran away from home. For months, he lived on the streets, surviving on whatever food he could find.

In May 2024, center's outreach workers found him and encouraged him to visit YRGCARE's adolescent center. Upon arrival, his comprehensive health screening was conducted, and fortunately, all his test results were negative.

Recognizing the severity of his addiction, he was provided daily counseling sessions and introduced to the Opioid Substitution Therapy (OST) program. With consistent support, he made significant progress and remained committed to recovery.

Today, while still receiving OST treatment, he has successfully turned his life around. He now works as a chef at a restaurant in Aizawl and is determined to stay on the path of recovery, striving to build a stable future free from substance dependence.

"I never thought I could escape my addiction. The YRGCARE staff didn't judge me. They tested me, provided counseling, and most importantly, helped me start OST. With their support, I slowly regained control of my life. I'm proud to say that today I have a job. I still receive treatment, but I no longer feel trapped by my past. This center gave me a second chance, and I'm rebuilding my life." – *David*, a beneficiary, Aizawl, Mizoram

CAMP RAINBOW

Project Objective

- To provide children and adolescents with the opportunity to participate in Camp Rainbow sessions to expand their knowledge about their illness, rediscover their childhood, restore hope and renew their sense of possibility.
- To provide children in the age group of 10-17, and their families, free access to groceries and other nutrition supplies when they come for Day Camps or follow-up Camps.

INTERVENTION GEOGRAPHY

Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Maharashtra, Manipur, Mizoram, Nagaland, Tamil Nadu and Telangana.

TARGET AUDIENCE

Children, Adolescents, and Families

Key Activities and Implementation Process

- 5-day Residential Camps and 3-day Family Weekend Camps (FWC)
- Hospital Outreach Programs (HOP) - inpatient (bedside) and outpatient care settings
- Home Away from Home Programs (HAH)
- Outings in Chennai to the Zoo, Railway Museum, etc
- Nutritional Hamper Distribution
- Donation based gift items - Festival based - Diwali and Christmas gifts, Setting up Library and reading books, pencils, etc.

Outcomes and Impact

Trained Seasonal Camp Staff

- **Reach:** 64 program staff and 13 medical staff.
  - April 21-23 2023: Leadership Team Training by Mary Silvia, Associate Director, Programs & Growth, SeriousFun Children's Network.

- April 30 - May 4 2023: Staff Training
- Sep 12-13 2023 - Leaders in Training
- Family Weekend Camp Hyd, May 26-27 & June 8, 2023 (Refresher training and prep)

Follow up and Outreach Training

- **Reach:** 484
  - Hospital Based - 155 program staff, 53 medical staff
  - Community Based: 122 program staff and 9 medical staff
  - Training of interns for programs with children with cancer/thalassemia approx. 5 days each quarter (60 interns)
  - Dec 14-16 2023: Capacity Building Workshop for students of social work at Madurai for FWC - 25 students
    - Volunteers from Stella Maris College = 60 (provided confidence building, skills training and opportunities to contribute as a off site volunteer for camp)

Residential Camp

- **Reach:** Campers: 133 ; Siblings: 63; Mothers: 71
- May 6-10, 2023: 5-days residential camp, Chennai: 53 campers & 4 Leaders-in-Training with 31 camp staff

- May-June 2023: Family Weekend Camps: 72 campers, 4 leaders-in-training, 63 siblings and 71 mothers/caregivers with 89 camp staff
  - **Dates/Locations**
    - May 12-14, 2023: 3-day Family Weekend Camp, Chennai
    - June 9-11, 2023: 3-day Family Weekend Camp, Hyderabad

Hospital Based

- **Reach:** 1234 Children/Adolescents, 102 parents/caregivers, 18 siblings
  - Apollo Inpatient and Outpatient Clinic for children with cancer and blood disorders - twice a week - (approx. 40 sessions)
  - VHS Outpatient clinic for children, adolescents and young adults with thalassemia once a week - (approx. 20 sessions)
  - May 17 & Oct 18 2023: Day Camp/Carnival at the YRGCARE Pediatric Clinic, Chennai
- **Institution of Child Health**, Play Centre - Nov 2023-March 2024
- **Reach:** 2,858

Home Based

- **Reach:** 311 Children/Adolescents, 107 parents/caregivers, 16 siblings
  - St Jude's 23 sessions
  - CanKids Chennai 21 sessions
  - Aug-Dec 2023: CanKids Bengaluru 4 sessions
  - Sep 9 2023: Camp Outing - Railway Museum - St Jude's
  - Sep 28 2023: Camp Outing - Railway Museum - Children & Adolescents with HIV
  - Oct 29 2023: Camp Outing - Vandalur Zoo - CanKids Chennai
  - Caregivers Connect with Golden Butterflies - 4 sessions

Celebrations and Gifts

- **Reach:** 569
  - Nov 25-26 2023: Diwali Shopping in 6 locations Tamil Nadu-Chennai, Dindigul and Theni, Maharashtra-Pune, Karnataka-Bangalore, and Jaipur. 100 children/adolescents
  - Dec 2023 Christmas Celebrations with Santa's Gifts (4 locations- Apollo, St Jude's, CanKids, YRGCARE - 75 children/adolescents
  - Nutrition Hampers - 14 locations - TN Jayankondam (2), Trichy (2), Tanjore (2), Chennai (5), Dindigul, Sivagangai and Theni - 394 families

Partnerships

- Support for children's medications and skills building: Golden Butterflies Children's Palliative Care Foundation, Chennai
- Donors for Nutrition Hampers: Rotary Club IT City, Adhi Raksha Welfare Trust
- Donor-Special Event: Rajasthan Cosmo Club, Altimetrik
- Hospital Based Networks: HOPE Team, Apollo Hospital Teynampet, Chennai and VHS, Taramani. Institute of Child Health, largest govt. pediatric hospital, Energy Projekt
- Home Based Networks: CanKids and St Jude's
- Networks for Skills Building Opportunities for Young Adults with HIV - Human Touch, Goa and Rishi Foundation, Bengaluru
- Volunteers/Camps and Special Events: MAC, Chennai, Ethiraj College, Stella Maris, Patrician College, Madras School of Social Work, Madras Christian College, Presidency College, Tata Institute of Social Sciences
- Camper Recruitment: Milana, Bengaluru; ADWS+, Jayakondan, TN; ARCOD, Krishnagiri, TN; NPT+, Trichy, TN, TDNP+, Tanjore and Theni, TN; NEST & PWN+, Chennai, TN; Society for Serving Humanity, Dindigul, TN and SWNP+, Sivagangai, TN.
- Medical Staff and Supplies during camp: MMHRC/RI Madurai

Challenges Faced and Lessons Learned

- 100% Adherence - Children and families forget to take medication, avoid taking them due to misconceptions, find it challenging to adhere while travelling, etc.
    - U=U - All persons living with HIV who have a viral level which is undetected - Target Not Detected (TND) or Undetectable cannot transmit HIV infection to their partners and others.

      This is called U=U or Undetectable = Untransmissible.
    - Residential camps and follow up meets help improve the knowledge levels and understanding of children and families relating to HIV medication and adherence. Additionally, their self stigma or feelings of hurt on being discriminated against are addressed through interactive sessions like HIV Q&A and ART Drama wherein children, adolescents and families are able to openly ask their questions and also learn from their peers' experiences.
    - Other opportunities for learning are the Med Time at residential camp wherein taking meds is celebrated together as a large camp family — no hiding, no secrets, no feelings of hurt and humiliation.

Overview of Studies Conducted During the Year

Rationale for Family Weekend Camp

To rebuild the lives of adolescents, and their families, affected by serious illness.

To provide families with opportunities to engage with each other and other families; have some fun experiences, learn new skills, improve their knowledge about HIV, make new friends, and overall build confidence, self esteem, resilience, hope, social connectedness and a positivity towards their own status.

A post camp evaluation is done with adolescents, siblings and mothers from Tamil Nadu, Andhra Pradesh and Telangana.

The camp team recruits families who typically have challenges with their adherence to medications, and have various psychosocial issues relating to children, adolescents, which generally impacts their overall well being.

This evaluation study is done to retrospectively assess the impact of our camps on families to gain feedback about our programme on aspects such as what works best, what needs to be improved and what type of alternatives are required.

RESEARCH AND STUDIES

National HIV COHORT Program - COHORTS of HIV Resistance and Progression in Indian Children and Adults (COHRPICA)

Objectives

1. Establish well-characterized cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative) and HIV-infected individuals (including Early HIV-infection, HIV-infected adults – with and without comorbidities, and HIV-infected children)
2. Establish a state-of-the-art biorepository of biological specimens collected from the above cohorts and other prospective and retrospective studies in India.

COHRPICA Infected and Uninfected participants were screened and enrolled at YRGCARE sites. A total of 47 Infected participants were screened 44 enrolled, among them 15 were with comorbidities (5 -TB & 10 Diabetes) and 29 without comorbidities. 37 participants were followed up out of which 3 TB coinfected and 4 Diabetes coinfected were followed up with.

Uninfected samples were collected at the YRGCARE sites in Chennai, Nellore, and Aizawl. At the Chennai and Nellore sites, 231 participants were screened and 138 were enrolled; 35 participants took part in follow-up visits. At the Aizawl site, 198 participants were screened and 60 were enrolled.

A Longitudinal COHORT Study to Understand HBV Dynamics and Functional Cure

Objectives

- Follow 500 HBsAg+ participants longitudinally and bank specimens for prototype biomarker testing
- To study the HIV, HCV coinfection rate among the enrolled MSM and IDU individuals.
- To proceed further to analyze further with immunological and molecular characteristics with the available bio specimens.

Target Audience/Beneficiaries

- The researchers from JHU, YRG and other stakeholders who support and work with YRGCARE will be interested to conduct further research with these individuals.
- Additional investigations such as HBsAg quantitation, HBCrAg, anti-HBs, HBeAg Qualitative, RealTime HBV viral load, HBsAg isoforms will be performed

Key Activities and Implementation Process

Project Narrative

This study will shed a light on HBV immune dynamics among HBV infected individuals. It is designed to enroll hardest among hard to reach populations with unique high-risk behavior such as abnormal sexual practices and injecting drug uses. This study finding will give insights for new targeted management and prevention strategies for high risk populations.

In our sites across the country, individuals with high-risk behaviours such as MSM and IDUs were screened for HBsAg positivity and those found positive were enrolled.

Until Mar 31 2024 we enrolled 190 individuals from 10 different sites around the country.

Impact coinfection and Hepatitis Delta Virus (HDV) infection

One hundred and ninety participants were enrolled between 01 Apr 23 and 31 Mar 24. Median age of MSM participants was 32 years. Overall, HIV/HBV co-infection prevalence was 26% which was notable and alarming among these high risk individuals.

A notable impact from these results is the presence of HDV infection, (i.e) with HIV/HBV co-infection, prevalence of anti-HDV was 16%; prevalence by city ranged from 0 to 36%. More frequent injection, needle sharing, and heroin injection were associated with triple infection compared to HIV/HBV co-infection; there was no association with HIV RNA or ART use. The S/Co of HBsAg was significantly higher among those with triple infection (median: 1880 vs. 107; $p<0.01$). In MSM with HIV/HBV infection, prevalence of triple infection was 4% (city range: 0-10%). There were no correlates associated with triple infection vs. co-infection in MSM.

The high prevalence of HDV infection among PWHHB, especially PWID, is particularly alarming given its role in accelerating liver disease. The correlation with HBsAg levels supports the dependence of HDV on HBsAg to replicate. These data underscore the

importance of routine screening for anti-HDV, and HBV vaccine scale-up in high burden settings to avert not only HBV infection, but also HDV infection.

Study on HBV Prevalence Among MSM Living with HIV in India

Objectives

To characterize the prevalence and correlates of Hepatitis B virus (HBV) among men who have sex with men (MSM) living with HIV across 12 Indian cities.

Target Audience/Beneficiaries

- The researchers from JHU, YRG and other stakeholders who support and work with YRGCARE will be interested to conduct further research with these individuals.
- The findings also have implications for public health programs targeting MSM and individuals living with HBV-HIV coinfection

Publications

1. *Talia A Loeb1, Mihili P Gunaratne, Syed Iqbal, Mark Anderson, Allison M McFall, Pradeep Amrose, Mary A Rodgers, Aylur K Srikrishnan, Ashwin Balagopal, Gregory M Lucas, Shruti H Mehta, DavidL Thomas, Gavin Cloherty, Chloe L Thio, Sunil S Solomon*. Hepatitis B virus in people who inject drugs and men who have sex with men living with HIV in India: a cross-sectional study. Open Forum Infectious Diseases. 2024 In press

2. *Hussain Syed Iqbal, Mihili P Gunaratne, Talia A Loeb, Amrose Pradeep, Allison M McFall, Aylur K Srikrishnan, Mark Anderson, Mary A Rodgers, David D Celentano, Shruti H Mehta, Gavin A Clohertly, Sunil S Solomon*. High prevalence of hepatitis B virus among MSM living with HIV in India. J Viral Hepat 2024 May;31(5):271-274

Key Activities and Implementation Process

- Study Design: This study used stored specimens collected from MSM individuals, which was designed as a cross-sectional study that enrolled MSM individuals from different parts of India (ClinicalTrials.gov Identifier: NCT01686750).
- Participants: The study participants were Men who have Sex with Men (MSM) living with HIV recruited through respondent-driven sampling (RDS) across 12 Indian cities (Bangalore, Belgaum, Mangalore, Bhopal, Coimbatore, Delhi, Chennai, Hyderabad, Madurai, Vijayawada, Lucknow, and Vishakapatnam).
- Data Collection: Interviewer-administered electronic survey and blood sample collection. This study examined the prevalence and correlates of Hepatitis B virus (HBV) among 1125 men who have sex with men (MSM) living with HIV across 12 Indian cities.
- Laboratory Methods: HIV testing using rapid diagnostic kits as per the National AIDS Control Organization HIV testing algorithm and HBV testing (HBsAg) using the ARCHITECT HBsAg Next Qualitative assay.
- Statistical Analysis: Descriptive statistics and multilevel logistic regression to assess HBV prevalence and correlates.

Outcomes and Impact

Laboratory data from a total of 1125 MSM were used. Among them HIV and HBV prevalence was studied. Overall eight percent HBV prevalence was documented, high degree of variation was observed between sites (0.5% to 19%). Significant association was found between HBV infection and other demographics such as older age (25-44 years), variable sexual behaviours (MSM, history of sex work etc), daily/seasonal employment or unemployment.

Notably insertive anal sex behaviour with their partners was negatively associated with HBV infection. Also no significant association was found with the use of antiretroviral therapy or HIV viral suppression.

The burden of HBV among MSM living with HIV in India is described, this is crucial for developing targeted public health interventions. This suggests designing a program for early HBV screening, vaccine awareness and HBV Literacy among high risk individuals. More specific approaches for this marginalized population are required particularly for the younger adults that includes early screening, awareness about HBV and vaccination. We found many MSM individuals are on PrEP and are unvaccinated for HBV. Monitoring this population will guide us to advocate for additional requirements that will be helpful for HBV prevention and control in this vulnerable population.

Challenges Faced and Lessons Learned

- When we approach this hardest among a hard-to-reach population, many times we might be able to get self-reported data rather than from health care providers.
- Their vaccination details might be scarce and they will not have knowledge on this.

Study of HIV-1 Drug Resistance to Dolutegravir (DTG) - A World Health Organization Recommended First-Line Therapy

Objectives

- To study the prevalence and pattern among HIV infected individuals initiating first-line HAART
- To study the rate of HAART failure and associated DR associated among individuals failing DTG based first-line HAART In India
- To study the prevalence of minority Drug Resistance Mutations (DRMs) among HAART naïve and failures

Publications

1. *Syed Iqbal, Talia Loeb, Mark Anderson, Mihili Gunaratne, Aylur Srikrishnan, Mary Rodgers, David Thomas, Allison M McFall, Rifa Khan, Ashwin Balagopal, Gregory M Lucas, Shruti H Mehta, Chloe L Thio, Gavin Cloherty, Sunil S Solomon*. High Prevalence of Triple Infection (HIV/HBV/HDV) among Key Populations with HIV in India. Conference on Retroviruses and Opportunistic Infections (CROI) March 9-12, 2025
2. *Matthew M. Hamill Mihili P. Gunaratne Allison M. McFall H. Syed Iqbal Canjeevaram K. Vasudevan Santhanam Anand Sunil S. Solomon Shruti H. Mehta Aylur K. Krishnan David D. Celentano Gregory M. Lucas et al.*, Increasing Syphilis Prevalence Among MSM Across India Despite Improvements in the HIV Care Continuum. Conference on Retroviruses and Opportunistic Infections (CROI) March 3-6, 2024

This study has an enrollment target of 150 participants: 50 in the ART-naïve category and 100 in the ART-failure category. Participants in the ART-failure category must be on a DTG-based first-line drug. Each enrolled participant will undergo sequencing of the RT, PR, and INT genes to identify drug resistance mutations (DRMs) associated with NRTI and integrase inhibitors.

During the year 2023-2024, we enrolled a total of 115 participants. This included 50 ART-naïve participants and 65 ART-failure participants. Among the 50 ART-naïve participants, one participant had a very low viral load of 213 copies/mL and was therefore excluded from the study. Among the 65 participants enrolled in the ART-failure arm, we assessed the HIV-1 plasma viral load. We found that 38 participants had a viral load of less than 1000 copies/mL and were hence excluded from the study. Thus, overall, out of the 50 participants planned for the ART-naïve group, we enrolled 49 participants.

Out of the 49 enrolled participants in the ART-naïve category, we were unable to amplify/sequence 6 samples. Among the 27 enrolled participants in the ART-failure category, we were unable to amplify/sequence 12 samples.

We examined the presence of surveillance drug resistance mutations (DRMs) among ART-naïve participants for the PR, RT, and INT genes. We found that 2 (4.8%) participants had surveillance DRMs against NNRTI drugs. Both participants had a DRM at positions K103 and E138, with one having the K103N and E138K mutation and the other the K103N and E138A mutation. These mutations confer resistance to both EFV, NVP and RPV drugs.

Treatment Failure and Drug Resistance In HIV-1 Subtype C Infected Individuals Starting Dolutegravir-Based First-Line Therapy in India

Funding Agency

Indian Council of Medical Research (ICMR) and CRDF Global (Indo-US Collaboration)

Principal Investigators & Collaborators

- **Indian PI**: *Dr. S. Gomathi*
- **Indian Mentor**: *Dr. K.G. Murugavel*
- **International PI**: *Prof. Rami Kantor*, Brown University, USA

Introduction

Recently, WHO has recommended using DTG as a first line or alternative first-line regimen globally. This drug is known to be highly effective ARV in terms of viral suppression, CD4 recovery, less side effects and high genetic barrier to development of drug resistance. Subtype specific differences in response to ARV and development of resistance have been observed. In India, HIV subtype C is common, not much research has been conducted to study the drug resistance. In this project, we will study

1. Base level drug resistance to DTG prior to initiating DTG therapy.
2. Does DTG resistant virus develop in people who fail therapy?
3. Why most of the patients failing DTG therapy do not develop DTG resistance, and how these viruses escape therapy in the absence of mutations and how it differs between countries.

Objectives

- Study the pattern and prevalence of drug resistance among HIV-1 infected individuals initiating DTG based first-line therapy.
- Study the impact of low-level viremia and resistance on treatment outcomes among HIV-1 infected individuals initiating DTG-based first-line therapy.

- Study the impact of minority drug resistance variants on treatment outcomes among HIV-1 infected individuals initiating DTG based first-line therapy.
- Examine alternative pathways to drug resistance among HIV-1 infected individuals initiating DTG based first-line therapy.

Target Audience/Beneficiaries

- HIV-1 infected individuals initiating DTG-based first-line therapy in India.
- Healthcare providers and policymakers involved in ART regimen optimization.

Key Activities & Implementation Process

- A longitudinal cohort study involving 150 ART-naïve, HIV-1 infected individuals initiating DTG-based therapy at YRGCARE.
- Participants were followed for 18 months at 6-month intervals.

Viral load (VL) monitoring and drug resistance testing (Sanger sequencing & NGS)

- Sanger sequencing performed in India.
- NGS performed at Rami Kantor's lab at Brown University.
- Genotypic resistance testing conducted at baseline, 6 months, 12 months, and 18 months.

Outcomes & Impact (Quantitative & Qualitative Data)

Baseline Enrolment & Sequencing

We previously completed enrollment for the planned n=150 at baseline. Sequenced 126/150 PRRT and 102/132 INT; overall 101/150 with 3 regions (Protease (PR), Reverse Transcriptase (RT) and Integrase (INT)) in plasma RNA. Sequenced 103/150 PRRT and 98/150 INT; overall 94/150 with 3 regions in DNA.

Follow-up Findings

Study Progress and Findings

During the study period, we conducted follow-ups for 12th and 18 months, along with Sanger sequencing of both RNA and DNA to assess treatment failure and drug resistance.

6 Month Follow-up

- **Completed for 103 out of 150 participants (44 missed appointments; 3 deceased).**
- **VL <1,000 copies/mL**
  - → 36 participants had VL between 20–999 copies/mL
  - → 54 participants had VL<20 copies/mL
- **Viral Load (VL) >1,000 copies/mL: Observed in 13 participants, with sequencing completed for 12/13 in PRRT and 6/13 in INT.**
  - → Among them, 5 participants had sequences covering all three regions (PR, RT, and INT).
- **DNA Sequencing**
  - → During this reporting period, DNA sequencing was conducted for 7/13 PR, RT and INT in participants with VL >1,000 copies/mL
  - → Among those with VL <1,000 copies/mL, PR, RT sequencing was done for 18/36 and INT for 21/36
  - → Among those with VL <20 copies/mL, PR, RT sequencing was done for 18/54 and INT for 17/54
  - → Overall, DNA sequencing was completed for 41 samples covering all three regions (PR, RT, and INT)

12 Month Follow-up

- **During this reporting period, completed 12th month follow-up for 30 out of 150 participants along with RNA and DNA sequencing.**

VL >1,000 copies/mL: Found in 9 participants.

- → PR, RT sequencing completed for all 9 and INT sequencing for 7/9.
- → 7 participants had sequences covering all three regions.
- → Detected NNRTI mutations V179D and E138A in 2 participants, but no NRTI or PR mutations.
- → INT polymorphic mutation L74M observed in 3 participants.

Overall samples obtained for 85 participants (23 missed appointments, 3 expired, 39 unable to contact).

- → Among them, 5 participants had sequences covering all three regions (PR, RT, and INT).

DNA Sequencing

- → During this reporting period, DNA sequencing was conducted for those with VL <1,000 copies/mL, PR, RT sequencing was done for 24/34 and INT for 21/42.
- → Overall, DNA sequencing was completed for 51 samples covering all three regions (PR, RT, and INT).

18 Month Follow-up

During this reporting period, completed 12th month follow-up for 77 out of 150 participants along with RNA and DNA sequencing

- → 30 had VL <20 copies/mL.
- → 36 had VL between 20–499 copies/mL
- → 1 had VL between 500–1,000 copies/mL.
- → 10 participants had VL >1,000 copies/mL.

RNA Sequencing Results

- → PRRT sequencing completed for 8/10 and INT sequencing for 5/10 participants.
- → INT polymorphic mutations L74MLI observed in 2 participants, with no RT or PR mutations detected.

DNA Sequencing

- → Completed for all 77 participants.
- → 9 had PRRT alone, and 3 had INT alone.
- → 32 participants had sequences covering all three regions.

Subtype Analysis

99.5% of sequences remained subtype C.

Key Insights

- DTG resistance was rare despite treatment failure, suggesting alternative mechanisms of virologic failure.
- Identified polymorphic mutations (L74M, L74MLI) in integrase (INT) that may contribute to treatment outcomes.
- Low-level viremia was observed in a significant proportion of participants, with ongoing analysis on its clinical impact.

Lessons Learned

- Need for alternative resistance pathways investigation in DTG-based therapy failures.
- Importance of long-term follow-up and retention strategies for better study outcomes.

Research & Studies Conducted

- Study findings contribute to understanding DTG resistance patterns in HIV-1 Subtype C, a less-studied population.
- Data from this project inform national ART guidelines and resistance surveillance strategies.

Collaborations & Outputs

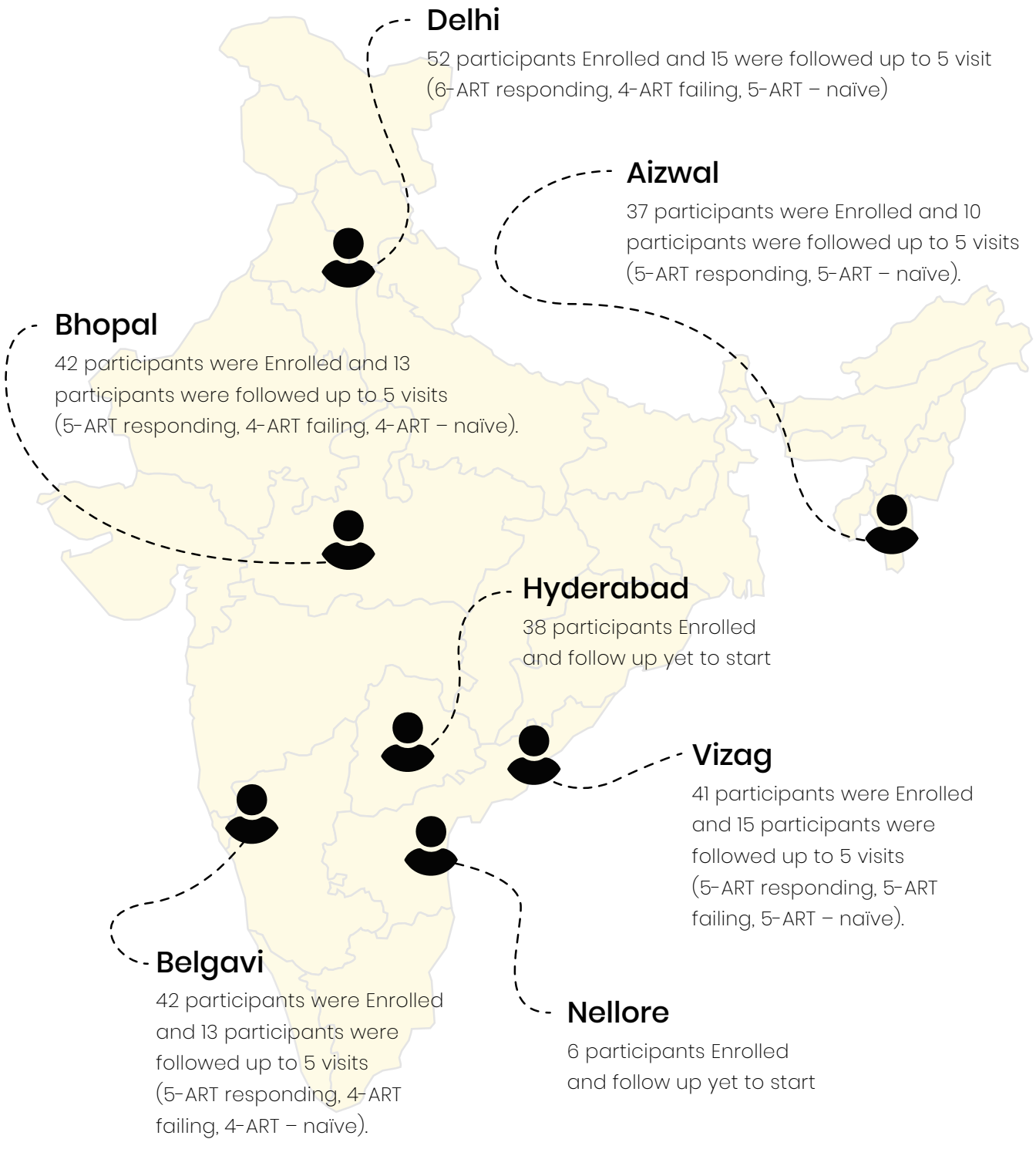
- Partnership with Brown University for advanced resistance sequencing.
- Findings will be disseminated through publications, conferences, and policy briefs.

Developing Broadly Neutralizing Monoclonal Antibody Mediated Prevention and Treatment Strategy by Assessing Their Effectiveness in Neutralizing HIV-1 Subtype C Circulating in India across Different Regions and Distinct Risk Groups

Objectives

1. To examine the association between whole genome diversity of HIV-1 subtype C with special reference to envelope (env) gene and degree of susceptibility to neutralizing antibodies in people living with HIV (PLHIV) in different risk groups, distinct geographical regions in India and at various stages of disease progression with and without co-morbidities.
2. To prospectively analyse co-evolution of proviral and circulating pol and env sequences under antiretroviral therapy and their association with sensitivity and resistance to broadly neutralizing antibodies having distinct epitope specificities on viral envelope protein.
3. To concurrently examine homeostatic and virus-specific immune signatures associated with virological suppression, reservoir dynamics that impact sensitivity to bnAbs.
4. To optimize bnAb combinations and examine whether they can demonstrate enhanced neutralization breadth, potency of circulating versus dormant provirus.

The Study designed to recruit HIV infected with & without any comorbidities population and HIV uninfected Individuals – healthy control. This group further subdivided into ART Naïve, ART responding and ART failing.



Delhi

52 participants Enrolled and 15 were followed up to 5 visit (6-ART responding, 4-ART failing, 5-ART – naïve)

Aizwal

37 participants were Enrolled and 10 participants were followed up to 5 visits (5-ART responding, 5-ART – naïve).

Bhopal

42 participants were Enrolled and 13 participants were followed up to 5 visits (5-ART responding, 4-ART failing, 4-ART – naïve).

Hyderabad

38 participants Enrolled and follow up yet to start

Vizag

41 participants were Enrolled and 15 participants were followed up to 5 visits (5-ART responding, 5-ART failing, 5-ART – naïve).

Belgavi

42 participants were Enrolled and 13 participants were followed up to 5 visits (5-ART responding, 4-ART failing, 4-ART – naïve).

Nellore

6 participants Enrolled and follow up yet to start

The R2 Switch: Anti-Retroviral Therapy Appears to Skew the Latent Reservoir Towards Latency-Promoting Viral Strains in HIV-1C Infection

Team from YRGCARE: *Dr. Arun Panchapakesan, Manisenthil Shanmugam, Dr. K G Murugavel, Dr. Dinesha T R, Dr. Boobalan J, Vishal Kumar*

Collaborators: *Prof. Udaykumar Ranga* and his team at the HIV-AIDS Laboratory, JNCASR

Overview of the Work

Introduction

HIV-1C generates diverse promoter variant strains with multiple copies of key Transcription Factor Binding Sites (TFBS). In a multi-center longitudinal study, we previously identified nine distinct promoter variants circulating in India. This study investigates how variations in the TFBS profile of the LTR, particularly the duplication of the RBE III-binding motif, influence the characteristics of the latent reservoir in natural HIV-1C infection.

Methods

A cohort of HIV-1 positive subjects at different infection stages was studied. CD4+ cells were isolated before ART initiation and at multiple follow-up points, then activated. Genomic DNA and cell-associated RNA were amplified and sequenced using the Illumina NovaSeq platform, with LTR variant proportions quantified via a custom Python script. Latency establishment and reversal kinetics were assessed using sub-genomic reporter viral strains. The CUT & RUN assay validated TFBS occupancy. Integration Site Loop Amplification (ISLA) identified genomic integration sites. The inducible latent reservoir was evaluated using U-TILDA. Additionally, ChIP-seq data from the ROADMAP database was analyzed using custom Python scripts.

Results

We found that latent reservoirs were progressively enriched with viral strains containing two copies of the RBE III-binding motif—a phenomenon we term the 'R2 switch.' This shift was absent in the acute infection phase but emerged spontaneously over time and appears to be significantly accelerated by ART. In some subjects from the acute phase, dual-RBE III strains were present only as minority variants. Further, in co-infection scenarios, dual-RBE III strains exhibited notable resistance to reactivation compared to the canonical virus when enriched CD4 cells were subjected to diverse activation

conditions in both DNA reservoirs and cell-associated RNA. To support these findings, we developed multiple reporter-virus-and-cell models using T cell lines and primary CD4 cells. We are currently characterizing the Transcription Factor Binding profile of R2 viruses via CUT & RUN and investigating the impact of epigenetic modifications and integration site selection on reactivation properties.

Conclusions

Our work demonstrated that ART appears to preferentially select for LTR variant viral strains that resist latency reversal. We propose that by selectively eliminating transcriptionally active strains within the reservoir, ART drives a shift toward the R2 switch.

Impact of the Work

We have shown, for the first time, a novel mechanism of viral persistence on Anti-Retroviral Therapy. Our work has significant implications for ART initiation, treatment duration, post-treatment control, and cure strategies Our future work will be to characterize the R2 duplication, and examine its clinical effects on the patients.

Publications/Poster Presentations from the Present Work

- Ranga, U., Panchapakesan, A., & Saini, C. (2024). HIV-1 subtypes and latent reservoirs. Current Opinion in HIV and AIDS, 19(2), 87-92. PMID: 38169308
- Poster presented on the above work at the IAS AIDS 2024 conference in Munich
- Bhange, D., Panchapakesan, A.*, Singh, J., Singh, S., Saini, S., Mishra, M., Ranga,U. (2024). Anti-Retroviral Therapy predisposes the latent reservoir towards LTR variants containing multiple copies of the RBE-III binding site. (Manuscript in Preparation)
- Parihar, D., Shanmugam, M., Dinesha, T.R., Murugavel, K.G., Krishnan, A.K., Ranga, U., Panchapakesan A. (2024) Establishment of an early HIV-1 clinical cohort to study viral evolution in HIV-1C. (Manuscript in preparation)

Impact of Indian HIV-1 Subtype C Genetic and Neutralization Diversity to Broadly Neutralizing Antibodies for Therapeutic Management

Objectives

To prepare and characterize the diversity and genetic properties of HIV-1 env pseudotyped virus from plasma samples of HIV-1 infected participants across different geographical region of India

To understand the neutralization profile/susceptibility of currently circulating Indian HIV-1 env pseudotyped viruses against known bNAbs with varied specificities.

To assess the best bNAb combination with improved breadth and potency to neutralize HIV-1 with diversified neutralization profile

This study aims to enroll 100 ART-naïve participants to comprehensively analyze the HIV-1 Env gene. The Env gene sequencing will be conducted across the entire study population to characterize its diversity and genetic properties. Following the sequencing, the Env gene will be cloned into a vector to prepare pseudovirus, which will then be used in a neutralization assay.

During the year 2023-2024, we successfully enrolled all 100 ART-naïve participants. The demographic characteristics of the study population reveal that the median age was 28 years (IQR 23-32), with a majority of the participants being male (94%). The median viral load among participants was 65,550 copies/mL (IQR 30,350-204,000).

The PCR protocol was optimized to amplify the full-length Env gene and 37 participants' full Env gene was PCR amplified and Env sequencing was performed.

Understanding Disease Dynamics Towards Effective Management of Prevention and Treatment of HIV/AIDS

Objectives

1. Establish well-characterized cohorts. Nellore Site - HIV infected - Individuals with chronic HIV infection (CHI), Individuals with Early HIV infection (EHI) and Healthy cohort (HCN). Delhi Site - HIV infected - Individuals with chronic HIV infection (CHI), Individuals with Early HIV infection (EHI) and Healthy cohort (HCN)
2. Investigating the Cytotoxic T Lymphocyte (CTL) escape mutants in the latent reservoir of different T cell subsets

We had enrolled 15 participants in each cohort HCN, CHI and EHI at the Nellore and Delhi site. In the EHI at Delhi site only 12 participants were enrolled. Follow up visit completed for Delhi and Nellore site. In the Delhi site, out of 15 CHI participants enrolled 14 have completed M1 visit, 9 have completed M6 visit and 5 have completed M12 visit. In EHI out of 12 enrolled 7 have completed M1 visit and 4 have completed M2, M3, M4, M5, M6, M9 and M12 visits.

In Nellore site, out of 15 CHI participants enrolled 7 have completed M1 visit, 11 have completed M6 visit, 7 have completed M12 visit, 5 have completed M18 visit and 5 have completed M24 visit. Whereas in EHI out of 15 participants enrolled 4 have completed M1, M2, M3 visit, 5 have completed M4 visit, 3 have completed M5 visit, 1 have completed M6 visit, 4 have completed M9 visit and 1 have completed M12 visit.

HLA typing for 47 participants completed and Deep sequencing was done to identifying CTL escape mutants for 25 participants. For HLA class I, HLA-A, HLA-B and HLA-C genes were sequenced and for HLA class II, HLA-DRB1, HLA-DPB1 and HLA-DQB1 were sequenced. Class I - Most common HLA-A allele found was HLA-A*01:01:01 and HLA-A*11:01:01 with the allele frequency of 0.13, among HLA-B the most common allele was HLA-B*44:03:02, and HLA-B*51:01:01 with the allele frequency of 0.10. Class -II – The most common HLA-DRB1 allele was HLA-DRB1*10:01:01, HLA-DRB1*07:01:01, HLA-DRB1*15:02:01 and HLA-DRB1*15:01:01 with the allele frequency of 0.14. The most common HLA-DQB1*06:01:01 with the allele frequency of 0.29, followed by HLA-DQB1*03:02:01 with the 0.21. the most common HLA-DQB1 allele was HLA-DPB1*04:01 with the allele frequency of 0.46

MHC Class -II- Among HLA-DRB1 gene, we couldn't find HIV Epitope match (from the IEDB database) for 04:03:01, 10:01:01, 12:02:01, 14:04:01, and 16:02:01 alleles. For HLA-DQB1 gene, we couldn't find HIV Epitope matches for 02:02:01, 03:01:01, 05:01:01, 05:02:01, 05:03:01, and 06:01:01. For HLA-DPB1 gene, we couldn't find HIV Epitope matches for 04:01:00, 03:01:00, 09:01:00, 14:01:00, and 26:01:00. Based on HLA-DRB1 restriction data, we found the following number of epitopes against HIV genes p17 (n=05), p24 (n=17), gp120 (n=21), and gp41 (n=16). Based on HLA-DQB1 restriction data, we found the following number of epitopes against HIV gene p24 (n=05). Based on HLA-DPB1 restriction data, we couldn't find any match for Env or Gag proteins.

We investigated CTL escape mutants in HIV-1 Pol among 13 CHI participants and 12 EHI participants to understand the distribution of HLA alleles and their associated epitopes across HLA-A, HLA-B, and HLA-C genes. The distribution of class I HLA alleles shows that the most predominant HLA-A alleles were 11:01:01 (n=9, 18%) and 33:03:01

(n=7, 14%). The predominant HLA-B alleles were 58:01:01 and 44:03:02 (n=6, 12% each), while the most predominant HLA-C alleles were 06:02:01 and 07:06:01 (n=6, 12% each).

We focused on epitope analysis across these HLA genes, particularly in the context of HIV-1 Pol sequence. The HLA-A gene exhibited the highest number of epitopes, with 44 identified in the HIV pol region. Among the 15 epitopes in the PR region, one epitope (KMIGGIGGFI), spanning positions 45-54 of PR, was observed in 2 participants and covered the DR positions 47I, 48G, 50I, and 54I of the PR gene. Among the 29 epitopes in the RT region, one epitope (NTPVFAIKK), spanning positions 57-65 of RT, was observed in 5 patients and covered the DR position K65.

Among the 31 epitopes observed for HLA-B, 5 were in the PR region, 15 were in the RT region, and 11 were in the INT region. Among the 5 epitopes in the PR region, one epitope (KMIGGIGGF), spanning positions 45-53 of PR, was observed in 1 participant and covered the DR positions 47I, 48G, and 50I of the PR gene. Among the 15 epitopes in the RT region, one epitope (DAYFSVPL), spanning positions 113-120 of RT, was observed in 2 patients and covered the DR position Y115. Another epitope (NNETPGVRY), spanning positions 136-144 of RT, was also observed in 2 patients and covered the E138 DR position. Among the 11 epitopes in the INT region, no epitopes spanned DR positions.

In contrast, the HLA-C gene displayed only 9 epitopes, of these 2 were in the protease gene, 4 were in the RT gene, and 3 were in the Gag/pol-TF (transframe peptide) region. None of these epitopes spanned DR positions (Table 7).

Comparing EHI and CHI cohorts revealed interesting insights. EHI participants showed a slightly higher prevalence of escape mutations across all three HLA genes compared to CHI participants. When comparing participant-level data between EHI and CHI cohorts, in the HLA-A gene, among the 13 CHI participants, there were a total of 14 escape mutations, with 5 participants having a maximum of 2 escape epitopes and 4 participants having no escape epitopes. Among the EHI participants, 12 participants had 16 escape epitopes in total, with 6 participants having a maximum of 2 escape epitopes and 2 participants having no escape epitopes at all.

In the HLA-B gene, among the 13 CHI participants, 9 escape epitopes were observed, with 1 participant having a maximum of two mutations and 5 participants showing no escape mutations. Among the 12 EHI participants, 12 escape epitopes were observed, with 2 participants having a maximum of 2 escape epitopes and 2 participants having none.

Regarding HLA-C, none of the CHI participants had escape epitopes, whereas 4 escape epitopes were observed among the EHI participants (Table 8 a and b).

Furthermore, specific participants in the EHI cohort (BEHI002, BEHI003, BEHI008, BEHI011) showed escape mutations across all three HLA genes.

Among all the participants, we conducted sequencing to analyze drug resistance mutations. We observed drug resistance mutations in 8 participants. Of these, 6 had RT DRMs (with 1 participant having both RT and IN DRMs), 1 had PR DRMs, and 2 had IN DRMs (Table 9). The drug susceptibility profile is mentioned in the table. All these participants with DRMs also had CTL escape mutants in the Pol gene.

Two Abstract submitted and poster presentation in Immunocon 2024

Abstract 1

Next-Generation Sequencing Reveals Dynamics of HIV-1 Immune Escape Across Infection Stages and HLA Alleles

TR Dinesha1, C Vishal Kumar1, R Mohan1, P Manikandan1, Shobha Mohapatra1, AK Ganesh1, Udaykumar Ranga2, AK Srikrishnan1, KG Murugavel1

1 – Y.R. Gaitonde Centre for AIDS Research and Education (YRGCARE)

2 – Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)

Abstract 2

Cytotoxic T-Lymphocyte Escape Mutations and Drug Resistance in HIV: Insights from Next-Generation Sequencing

TR Dinesha1, C Vishal Kumar1, R Mohan1, P Manikandan1, Shobha Mohapatra1, AK Ganesh1, Udaykumar Ranga2, AK Srikrishnan1, KG Murugavel1

1 – Y.R. Gaitonde Centre for AIDS Research and Education (YRGCARE)

2 – Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)

Evaluation of Multiple Interventions to Improve HIV Treatment Outcomes among People Who Inject Drugs in India: A Randomized Factorial Trial with a Randomized Adaptive Component for Those Experiencing Early Treatment Failure (POINTER)

Objectives

The goal of this study is to improve HIV care outcomes for people who inject drugs (PWID) in India. The study will implement a two-phase trial to evaluate whether HIV treatment outcomes in HIV infected PWID can be improved with three different interventions:

i) By offering a faster treatment start time (same-day antiretroviral therapy [ART] initiation vs. standard),

ii) By provided community-based HIV care in PWID-focused centres (vs. centralized government-based HIV care) and,

iii) Providing an enhanced adherence support to participants who experience treatment failure at six months (vs. routine adherence support).

Target Audience/Beneficiaries

The target audience for the study are people who inject drugs(PWID) who are HIV positive with a HIV viral load of >1000 copies/ml.

Key Activities and Implementation Process

The study is being implemented in 2 sites in India- Delhi & Kanpur (Uttar Pradesh). Till 31st March 2024, both sites were actively screening & recruiting participants for the study.

Outcomes and Impact (Quantitative and Qualitative Data)

The study is currently in the enrollment phase and so outcomes & impact are not applicable for the study at this point.

Challenges Faced and Lessons Learned

One of the initial challenges faced during the start-up phase of the trial included mobilising community members for enrolling in the study. But we were able to get community buy in through a series of community engagement activities like community meetings & awareness sessions. It is important to note that no study/project can succeed without the support of the community for whom we are working.

A Precision Randomized Trial to Evaluate the Impact of Tailored Hepatitis C Virus (HCV) Treatment Adherence Support on HCV Treatment Outcomes in HIV/HCV Co-Infected and HCV Mono-Infected People Who Inject Drugs (PWID) in India. Supporting Treatment Outcomes among PWID (The STOP-C Study)

Objectives

The overall goal of this protocol is to evaluate whether HCV treatment outcomes (sustained virologic response, treatment completion, adherence) and post treatment outcomes (HCV reinfection, HIV viral suppression) in HCV mono- and HIV/HCV co-infected PWID can be optimized by tailoring treatment support in 7 PWID-focused integrated HIV/HCV prevention treatment centres.

To evaluate whether the intensity of treatment adherence support affects sustained virologic response rates in HCV mono- and HIV/HCV co-infected participants receiving HCV DAAs in PWID-focused centres.

Target Audience/Beneficiaries

The target population are People Who Inject Drugs (PWID) who are actively infected with Hepatitis C virus.

Key Activities and Implementation Process

The study is being implemented in 7 sites in India - Aizawl, Amritsar, Bilaspur, Churachandpur, Delhi, Kanpur and Ludhiana. All 7 sites completed screening and enrolment of participants by end of 2022 and were actively following participants for follow up visits till 31st March 2024.

Outcomes and Impact (Quantitative and Qualitative Data)

The study is currently in the enrollment phase and so outcomes & impact are not applicable for the study at this point.

Challenges Faced and Lessons Learned

- Study activities were affected by COVID epidemic. To overcome challenges, COVID related precautions were taken at all the sites. Participants were dispensed hepatitis C medicines at their residence.
- Initially, at few of the sites participants could not travel to study site for completion of study visits, later modifications were done in study protocol to conduct study visits in the field sites.

FINANCIAL OVERVIEW

Consolidated Balance Sheet for the Period From 01.04.2023 to 31.03.2024

Liabilities	31.03.2024 (Rs in lakhs)
Reserves & Funds	11,552.35
Current Liabilities & Provisions	173.33
	11,725.68

Assets	31.03.2024 (Rs in lakhs)
Fixed Assets	
Fixed Asset	6,329.39
Investments	1,810.55
Loans, Advances & Deposits	3,585.74
	11,725.68

Consolidated Balance Sheet for the Period From 01.04.2023 to 31.03.2024

EXPENDITURE	31.03.2024 (Rs in lakhs)
Designated Project Expenses	7,522.93
Non-Designated Project Expenses	2,647.83
Depreciation – Non-Designated Project Assets	103.24
Excess of Income Over Expenditure	1,036.99
	11,310.99

INCOME	31.03.2024 (Rs in lakhs)
Designated Project Grants	7,522.93
Non-Designated Project Income	3,788.07
	11,311.00

Partnerships and Collaborations

Ongoing Projects

Clinical Services and Research

S.No.	Funding Type	Agency/Donor	Title
1	FCRA	Gilead Sciences	Impact of DAA scale-up on HCV RNA prevalence in a community of PWID in Imphal, India: A seroepidemiology and modeling study
2	FCRA	Boston University	Predictors of Resistance Emergence Evaluation in MDR-TB Patients on Treatment (PREEMPT)
3	FCRA	The Regents of the University of California	A5300B/I2003B/PHOENIx: Protecting Households On Exposure to Newly Diagnosed Index Multidrug-Resistant Tuberculosis Patients (PHOENIx MDR-TB)

Community Services and Research

S.No.	Funding Type	Agency/Donor	Title
1	FCRA	SeriousFun Children's Network (SFCN)	Camp Rainbow
2	FCRA	Johns Hopkins University	Strategies to improve the HIV care continuum among key populations in India
3	FCRA	Johns Hopkins University	Individual, Network and Spatial drivers of HIV and HCV among Drug Users in India
4	FCRA	USAID/Johns Hopkins University	HIV Services for Key Populations
5	FCRA	Johns Hopkins University	Integrating HCV services into HIV programs for PWID in India

S.No.	Funding Type	Agency/Donor	Title
6	FCRA	Johns Hopkins University	PWID Opportunities to Improve TrEat and Retain (POINTER)
7	FCRA	International AIDS Vaccine Initiative	Defining a target product profile (TPP) for next-generation HIV prevention vaccines
8	FCRA	Johns Hopkins University	Supporting, Mobilizing, and Accelerating Research for TB Elimination
9	FCRA	US Department of State, Federal Assistance Award	Experience America - From Dream to Reality- Building bridges of opportunity
10	NON FCRA	Mumbai District AIDS Control Society	Transportation of Blood/Plasma sample of HIV Infected Patients
11	NON FCRA	Mumbai State AIDS Control Society	Transportation of Blood Sample for HIV Viral Load Testing
12	NON FCRA	Telangana State AIDS Control Society	Targeted Intervention
13	NON FCRA	Telangana State AIDS Control Society	Establishment of Care and Support Cenre in Nalagonda
14	NON FCRA	Telangana State AIDS Control Society	Link Worker Scheme
15	NON FCRA	Telangana State AIDS Control Society	Sampoorna Suraksha Kendra (SSK)
16	NON FCRA	GFATM/PLAN India	Global Fund Supported NFCRA Project titled C-19 RM Key-Population
17	NON FCRA	Altimetrik India Private Limited	Basic Need and Health Care - Providing opportunities for Children and teens living with HIV to participate in a 3 day family weekend camps: to enhance their knowledge levels about HIV so as to empower them to make the right decisions to improve their adherence levels.

Laboratory Services and Research

S.No.	Funding Type	Agency/Donor	Title
1	FCRA	International AIDS Vaccine Initiative	Development of early HIV Infection cohort to determine immune biological and viral characteristics and the impact of early initiation of treatment on the subsequent immune responses and correlation with disease progression and management
2	FCRA	Abbott Diagnostics	Virus Discovery and Surveillance at Indian Sentinel Sites (Chennai, Delhi and Aizawl/ Mizoram)
3	NON FCRA	Department of Biotechnology	Population-based research studied to understand disease dynamics towards effective management of prevention and treatment of HIV/AIDS, including co morbidities and co-infections"-Phase-II of the Collaborative Programme on HIV/AIDS Research
4	NON FCRA	Department of Biotechnology - Wellcome Trust	Developing broadly neutralizing monoclonal antibody mediated prevention and treatment strategy by assessing their effectiveness in neutralizing HIV-1 subtype C circulating in India across different regions and distinct risk groups
5	NON FCRA	Indian Council of Medical Research	Treatment failure and drug resistance in HIV-1 subtype C infected individuals starting Dolutegravir based first-line therapy in India
6	NON FCRA	Indian Council of Medical Research	Study of HIV-1 Drug resistance to Dolutegravir – A World Health Organization recommended first-line therapy
7	NON FCRA	Indian Council of Medical Research	Impact of Indian HIV-1 subtype C Genetic and Neutralization Diversity to Broadly Neutralizing Antibodies for Therapeutic Management

Completed Projects

Community Services and Research

S.No.	Funding Type	Agency/Donor	Title
1	FCRA	John Snow India Pvt Ltd (JSIPL)	The MOMENTUM Routine Immunization Transformation and Equity project (M-RITE)
2	FCRA	The John C Martin Foundation	Pre-Risk Exposure (PrEP) for Tanswoman in India
3	FCRA	US Department of State, Federal Assistance Award	To organize workshops for 500 employees of 20 private corporate entities (10 each in Hyderabad and Chennai) to sensitize them toward transgender persons in their workforce, adopt inclusive policies, and create a safe and nurturing work environment for the transgender community.
4	NON FCRA	Altimetrik & Vattikuti Technologies	Altimetrik Support for Children Living with Cancer
5	NON FCRA	GFATM/PLAN India	Strengthening Targeted Intervention and Enhancing Access to Integrated HIV/TB Services for TG people, PWID/ PWUD and Bridge Population & Scaling up HIV and TB intervention in prisons and other closed settings in 13 states
6	NON FCRA	Indian Council of Medical Research/ National AIDS Research Institute	Sentinel survey of the high-risk population through community-based organizations for the detection of Human Mpox virus infection in India

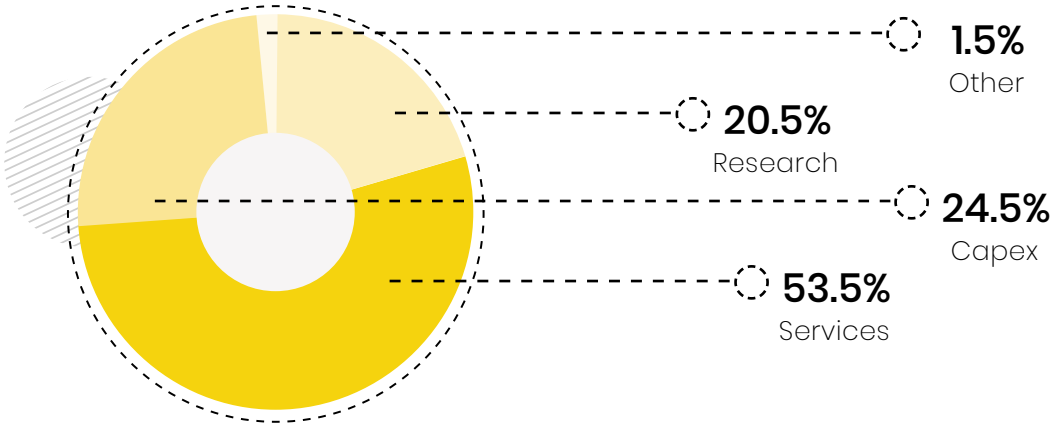
Laboratory Services and Research

S.No.	Funding Type	Agency/Donor	Title
1	FCRA	Abbott Diagnostics	Viral Surveillance in PWD populations in India/Assessing Prevalence of SARS-CoV-2 IgG/IgM Seroconversion in Indian populations
2	NON FCRA	DBT/ICMR	Consortium of Cohorts for HIV Resistance and Progression in Indian Children and Adults
3	NON FCRA	Indian Council of Medical Research	Study on the Hepatitis B virus vaccine response among HIV-1 infected individuals - A Multicentre study
4	NON FCRA	Translational Health Science and Technology Institute	Studying HIV-1 env diversity and selection of suitable immunogens across India and Africa for informing HIV-1 prevention strategies

Responsible Fund Utilization and Impactful Programs

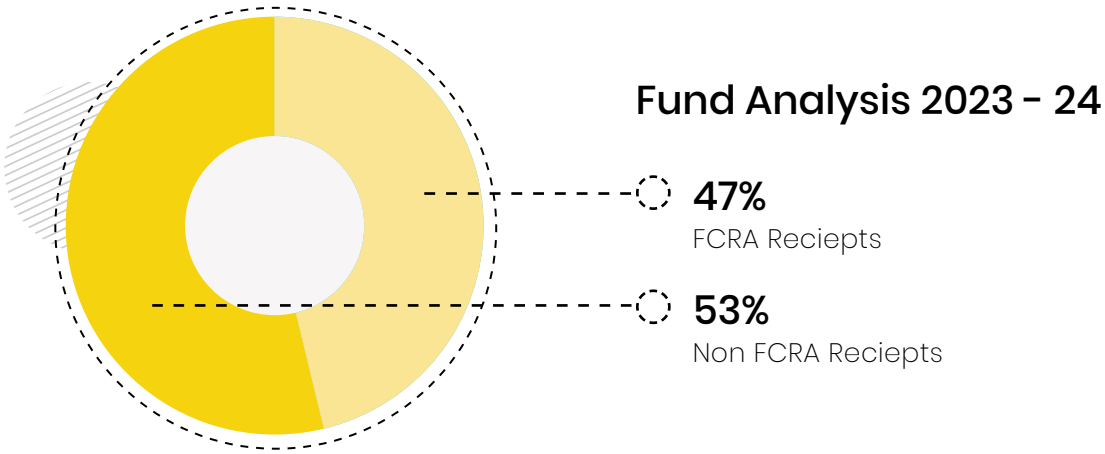
Advancing Our Mission with Transparency

In the year 2023-24, the organization demonstrated its steadfast commitment to its mission by strategically utilizing ₹101.72 crore to support impactful, community-driven programs which can be divided as follows:



Of this, an impressive 85% was directly allocated to program activities, ensuring that the majority of donor contributions were used to create tangible outcomes on the ground. The remaining funds were responsibly allocated to administrative costs (14%) and other related expenses (1%), reflecting a balanced and sustainable approach to organizational growth and outreach.

Being an FCRA compliant organization, we have received foreign funds. Along with domestic non-FCRA funds, this ensures diversity and balance in fund raising.



Key Projects and Initiatives

- **Project ACCELERATE** is a testament to the organization's role as a catalyst for change in the public health sector. In collaboration with PEPFAR, USAID, and NACO, this program delivers technical assistance to India's HIV/AIDS control efforts at the national, state, and district levels. With a focused approach on vulnerable populations and high-risk groups, Project ACCELERATE bridges critical gaps in care and service delivery, reinforcing the public health infrastructure through evidence-based strategies.
- **Clinics:** Providing accessible, community-based healthcare services with a focus on HIV treatment, prevention, and general wellness.
- **Camp Rainbow:** Offering holistic support and recreational therapy to children living with HIV, enhancing their quality of life through specialized camps and interventions.

Community Services & Research

We actively track infectious disease trends and the epidemiology of emerging pathogens across epidemic-prone settings. Key initiatives include:

- Virus Discovery and Surveillance as part of the Abbott Pandemic Defense Coalition for early detection of pandemic threats.
- TB Elimination Research with USAID and Johns Hopkins University (JHU).
- HIV and HCV Care projects among key populations, supported by NIH through JHU.
- HIV Prevention in Prisons and One Stop Centers for special populations, supported by GFATM via PLAN India.
- Projects with Telangana AIDS Control Society like care centers and targeted interventions.
- Biospecimen Transportation for Mumbai State/District AIDS Control Society.
- Experience America, a U.S. State Department-supported initiative empowering North Eastern Indian students to pursue higher education in the U.S.

Clinical Research

We conduct impactful clinical trials contributing to global health knowledge. Notable studies include:

- HCV sero-epidemiology and modeling in Imphal, supported by Gilead Sciences.
- PREEMPT Study on resistance emergence in MDR-TB, with NIH and Boston University.
- PHOENIX MDR-TB Trial, protecting households exposed to MDR-TB, funded by NIH through the University of California.

Laboratory Research

With advanced infrastructure, we collaborate with leading national and international institutions. Key studies include:

- HIV resistance and progression cohorts funded by DBT and ICMR.
- Early HIV Infection Cohort supported by USAID.
- HIV-1 subtype C research on monoclonal antibodies and drug resistance, funded by DBT and ICMR.

ECO Kitchen

ECO Kitchen is an initiative that brings together clean energy, dignified work, and community care. It uses eco-friendly biomass briquettes to power a steam boiler, helping us cook large volumes of food like rice, dal, and idlis while reducing emissions and conserving energy. The kitchen also creates flexible, dignified job opportunities for women, especially from underserved communities, helping them earn a living wage while managing their responsibilities at home.

Through our Kathir Dhan program, we turn surplus resources into meals for people who need them most. We also raise funds to provide groceries and rations to vulnerable families. In 2023–2024, Kathir Dhan reached over 5,10,730 people with nourishing meals and essential food support. At ECO Kitchen, every meal is a step toward a more just, compassionate, and sustainable world.

Transparency and Accountability

The organization upholds the highest standards of transparency and financial integrity. Donors and stakeholders are provided with detailed financial statements that clearly

outline income and expenditures. An independent auditor's report further validates the organization's commitment to ethical financial practices and responsible fund management.

The programmatic spending ratio of 85% reflects a mission-focused expenditure model, ensuring that the lion's share of resources directly fuels programs and services. This, combined with strategic administrative management and donor engagement, has positioned the organization as a trusted steward of public and private funds.

Regular internal reviews, compliance with donor guidelines, and transparent reporting mechanisms ensure that all projects remain aligned with stated goals.

By aligning resource allocation with strategic priorities and maintaining transparent operations, the organization has not only maximized its impact but also strengthened the trust of its partners, beneficiaries, and donors. These efforts reaffirm its role as a leader in social development and public health innovation in India.

TEAM AND ORGANIZATIONAL DEVELOPMENT

Staff and Volunteer Contributions (2023–2024)

The year 2023–2024 has been marked by the continued dedication, resilience, and passion of the foundation's staff and volunteers. Our team remained at the heart of every initiative—working tirelessly across clinical, laboratory, community outreach, and administrative domains to further our mission in infectious diseases care, research, and education.

Staff Excellence:

Our multidisciplinary staff demonstrated unwavering commitment to addressing the evolving challenges of public health. Highlights include:

- Scaling up HIV and infectious disease testing and treatment services.
- Strengthening quality management systems in clinical and laboratory operations.
- Active participation in national and international scientific forums and capacity-building workshops.

Volunteer & Internship Engagement:

Our volunteers, including students, interns, and community health advocates, played a vital role in expanding our reach. From supporting awareness campaigns to assisting with field-based research and data collection, their contributions enriched our work and deepened our engagement with local communities.

This year, our internship program continued to be a meaningful part of the foundation's work, bringing in bright, motivated students from across India and beyond. Interns joined us from fields like public health, psychology, life sciences, social work, and medicine, each contributing in their own way to ongoing projects and day-to-day activities.

One of the standout experiences for many interns was their involvement in Camp Rainbow —a camp-based psychosocial support program for children and adolescents living with HIV. Interns played an active role in helping plan, organize, and run camp activities alongside the foundation staff, counselors, and volunteers.

At the camps, interns helped lead games, workshops, and discussion circles, working closely with young participants to build trust, encourage self-expression, and create a space where the children could feel safe, supported, and seen. For many interns, this experience was a powerful reminder of the human side of public health—one that deepened their understanding of both the challenges and the resilience of children living with chronic conditions.

Beyond Camp Rainbow, interns also supported data collection and analysis, community outreach events, lab work, and patient education efforts. Their curiosity, willingness to learn, and collaborative spirit added real value to our programs.

The Pediatric OPD also served as a key referral point for Camp Rainbow, where many of our young patients had the opportunity to participate in creative, therapeutic programs outside the hospital setting. This continuity between clinic-based care and psychosocial support helps reinforce the holistic, long-term approach we aim for.

None of this would be possible without the ongoing generosity of the Kathir Dhan community. Their commitment ensures that children and families can access specialized care without financial burden. We're deeply grateful for their support, which continues to make a meaningful difference in the lives of the children we serve.

Media Recognition:

The work of our staff and volunteers gained recognition in several media outlets over the past year. Notable mentions included:

- Coverage in *The Hindu* and *Times of India* on our community testing drives and youth engagement programs.
- Interviews with key staff featured on local television channels and health podcasts, highlighting our leadership in HIV prevention and care.
- Social media campaigns led by our communications team, amplifying volunteer stories and frontline efforts.

A major highlight was the media coverage around World AIDS Day, where the foundation's contributions were prominently acknowledged. Events held by the foundation—ranging from awareness campaigns to panel discussions—were reported in both print and online platforms. These stories helped amplify key messages around stigma reduction, access to treatment, and the lived experiences of people affected by HIV.

Our communications team also remained active on social media, sharing stories from the field, spotlighting staff and volunteer efforts, and marking important health observances to engage the wider public.

We extend our sincere gratitude to every individual who contributed their time, skill, and spirit to YRGCARE's vision. Their efforts continue to drive meaningful change and inspire future innovations in public health.

Training and Capacity Building Initiatives at YRGCARE

During the financial year 2023–2024, the foundation reinforced its long-standing commitment to building human capital as a cornerstone of its mission. While continuing to lead in HIV care and research, the organization broadened its training and capacity-building focus to include a wider spectrum of infectious diseases and prevention strategies programs.

Through a structured and multidisciplinary approach, the foundation in this year has conducted a wide range of workshops, certification programs, and skill development sessions that targeted both internal staff and external health professionals. These programs aimed to strengthen technical competencies in HIV and infectious disease prevention, care, diagnostics, research methodologies, and community-based interventions.

By partnering with national and state agencies, the foundation extended its capacity-building initiatives across the public health ecosystem—contributing to a more resilient, responsive, and informed workforce.

Key Training Initiatives (2023–2024)

HIV Counselling and Testing (HTC) Certification Training

The foundation conducted both online and in-person HTC certification training to support health professionals across India. The program was open to counsellors, laboratory technicians seeking NABL certification, and individuals from psychology and social work backgrounds. The training equipped participants with essential knowledge and skills for providing high-quality counselling and testing services, particularly in HIV and related infections.

Ethics and Informed Consent Training

In recognition of the sensitive nature of work in infectious diseases, the foundation continued to deliver comprehensive ethics training for laboratory, clinical, and community staff. These sessions emphasized confidentiality, informed consent, and ethical best practices while interacting with patients and handling biological samples—ensuring respect, dignity, and transparency in all patient interactions.

Organizational Policy and Compliance Training

Staff across departments received structured training on YRGCARE's internal policies, workplace standards, and employee protection protocols. These sessions aimed to create a well-informed workforce aware of their rights, responsibilities, and institutional compliance requirements. Regular refresher sessions were conducted to reinforce adherence to organizational standards.

'Enhance' Personal Development Training

As part of a holistic capacity-building strategy, the 'Enhance' training program continued to offer staff opportunities for personal and professional development. Topics included communication skills, time management, stress management, digital literacy, and creative problem solving. These sessions were led by experienced staff members and encouraged voluntary participation to promote individual growth and workplace engagement.

The foundation's capacity-building efforts in FY 2023–2024 reflect its evolving role in public health—strengthening the response not only to HIV but also to a broader range of infectious diseases through education, prevention, and sustainable health system development.

Culture and Team Achievements

In 2023–2024, the foundation's progress was defined not only by milestones achieved, but by the spirit in which they were realised—together, with empathy, integrity, and purpose. Our culture reflects our mission: to deliver holistic healthcare, foster inclusive partnerships, and drive transformative research that meets immediate and emerging social needs.

At the core of our work are the communities we serve—people living with HIV, adolescents facing stigma, LGBTQ+ individuals, families in under-resourced rural and urban areas, and those affected by tuberculosis and hepatitis. Our engagement with these communities is rooted in humility and trust. We meet them not as beneficiaries, but as co-creators—individuals whose lived experience shapes how we deliver care, design programmes, and set research agendas.

Our team culture continues to prioritise respect, inclusion, and professional growth. This year, we saw strengthened collaboration across departments, peer mentorship, and expanded roles for young professionals. Whether in the laboratory, the field, or the office, our teams have approached every challenge with adaptability and a deep commitment to equity. Within the organisation, staff are supported to lead, listen, and learn. Open dialogue and cross-functional learning have enhanced our collective ability to respond to complex health challenges with creativity and compassion.

The YRG approach extends beyond service delivery—it is about meeting people where they are, geographically, emotionally, and socially. Through home visits, outreach events, and support groups, we continue to build meaningful relationships rooted in dignity and shared responsibility. The trust we have cultivated over decades is evident

in how openly communities engage with us—and we honour that trust by providing care that is ethical, informed, and accessible.

This human-centred approach also positions us as a meaningful contributor to the Sustainable Development Goals (SDGs). Through our integrated model of care, research, education, and advocacy, we advance SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), and SDG 17 (Partnerships for the Goals). Our work to expand telehealth, address co-morbidities, empower marginalised populations, and reduce stigma directly supports the global goal of health equity by 2030.

In 2023–2024, our greatest achievements were not only in services delivered or metrics met, but in the relationships, we deepened, the communities we stood beside, and the values we embodied. Looking ahead to 2025, our strategic priorities—including expanding PrEP, scaling digital health, and building sustainable systems—are grounded in the belief that equitable, lasting health outcomes require shared commitment and collaborative action.

As we move forward, we remain anchored by our vision: a world where empowered communities and inclusive partnerships address emerging social needs, and holistic care ensures lasting well-being for all.

This ethos will be powerfully embodied in the launch of our refreshed visual identity. Our new logo—with its vibrant yellow and grounded black—will represent the duality of care: optimism and resilience, readiness and reflection. It will be more than a symbol; it will reflect who we are as an organisation—bold, compassionate, and unafraid to meet adversity with care.

Challenges, Lessons Learned, Future Goals and Strategic Plans

Key Challenges in 2024:

- Shrinking Funding for HIV Programs: Reduced funding for routine HIV programs, coupled with a shrinking US research funding pool due to shifting priorities, strained operational budgets.
- Misalignment with Indian CSR Priorities: Indian corporate social responsibility (CSR) funds, a promising resource, largely focus on education, water, sanitation, and hygiene (WASH), or core community programs, often overlooking YRGCARE's HIV-focused work or perceiving limited brand value in partnerships.
- Staff Retention Issues: The expiration of large grants led to significant staff drop-offs, including highly qualified and trusted personnel, exacerbated by unclear funding processes that hindered workforce stability.

How Challenges Were Addressed:

- Diversifying Funding Streams: YRGCARE pursued alternative funding sources, including local philanthropy and international grants focused on digital health, to offset reductions in traditional HIV funding.
- Engaging CSR Stakeholders: Initiated dialogues with Indian corporates to highlight the social impact of HIV programs, emphasizing alignment with employee health and community well-being, though with limited success.
- Staff Support Measures: Implemented retention strategies like cross-training and flexible roles to maintain expertise, while transparently communicating funding updates to staff to rebuild trust.

Lessons Learned:

- Need for Broader Value Proposition: YRGCARE's HIV-focused identity limits appeal to CSR and new funders who prioritize broader community or visible impact areas, necessitating a rebrand to showcase its expertise in health systems, psychosocial support, and community resilience.
- Importance of Funding Clarity: Ambiguity in funding processes erodes staff morale and trust, highlighting the need for transparent financial planning and diversified revenue models.
- Leveraging Existing Strengths: YRGCARE's vast community networks and scientific expertise are underutilized assets that can attract new partners if positioned strategically.

These lessons inform a forward-looking strategy centred on rebranding, transparent operations, and leveraging YRGCARE's unique capabilities.

Future Goals and Strategic Plan

Key Priorities and Goals for 2025:

- Rebrand YRGCARE: Launch a rebranding campaign to position YRGCARE as a leader in health equity, community resilience, and scientific innovation, appealing to diverse funders and stakeholders.
- Secure Sustainable Funding: Tap into Indian CSR and global health funds by aligning programs with broader health and community priorities, targeting a 20% increase in diversified funding.
- Strengthen Workforce Stability: Retain talent through clear career paths, competitive benefits, and transparent funding updates, aiming to reduce staff turnover by 50%.
- Expand Program Reach: Scale digital health and PrEP initiatives to reach 10,000 additional beneficiaries, particularly in rural and marginalized communities.

New Projects and Initiatives:

- Rebranding Campaign: Introduce a new logo, mission, and vision to reflect YRGCARE's broader impact:
  - New Logo Concept: A vibrant, interconnected design symbolizing health, community, and innovation, with a rising sun to honor Dr. Suniti Solomon's legacy and green-blue hues for trust and vitality.
  - New Mission: To transform lives by delivering holistic healthcare, fostering inclusive partnerships and advancing transformative research. Rooted in integrity and sustainability, we address immediate and emerging social needs, empowering communities to achieve equitable and lasting health outcomes.
  - New Vision: A world where health equity flourishes through communities, innovative solutions, and compassionate care.
  - This rebrand will highlight YRGCARE's expertise in complex research, program delivery, and psychosocial support, making it relevant to CSR priorities like employee wellness and community development.

- CSR-Targeted Programs: Launch pilot projects integrating HIV care with workplace health or community resilience, such as corporate wellness workshops or stigma-free health camps, to attract CSR partnerships.
- Knowledge Hub Initiative: Create a digital platform to share YRGCARE's community and scientific insights, offering training modules and case studies to global health organizations, generating revenue and partnerships.

Long-Term Vision and Plan:

- Vision: By 2030, YRGCARE aims to be a global model for health equity, leveraging its community and scientific expertise to address HIV and broader health challenges, while sustaining operations through diverse, stable funding.

How to Achieve It:

- Rebranding for Relevance: The new logo, mission, and vision will reposition YRGCARE as a versatile health leader, attracting CSR, government, and global health partners by showcasing its transferable expertise in health systems and community engagement.
- Revenue Diversification: Build a mixed funding model (CSR, social enterprises, global grants) to reduce reliance on traditional HIV grants, targeting 50% of funding from non-traditional sources by 2030.
- Knowledge Monetization: Expand the Knowledge Hub to offer consultancy and training, capitalizing on YRGCARE's 30+ years of experience to fund core programs.
- Community-Centric Growth: Deepen community partnerships to co-design programs, ensuring relevance and impact, while scaling digital tools to maintain low-cost, high-reach services.
- Talent Investment: Establish a talent development fund to retain and upskill staff, ensuring continuity of expertise despite funding fluctuations.

By embracing these strategies, YRGCARE will transform challenges into opportunities, reinforcing its legacy as a pioneer in health equity and innovation.

Join Our Mission: Learn more or partner with us at YRGCARE's website to create lasting change.

ACKNOWLEDGMENTS

YRGCARE's impact in combating HIV/AIDS and advancing health equity is made possible by the unwavering support of our donors, partners, staff, volunteers, and beneficiaries. Your dedication fuels our mission to create a healthier, stigma-free world.

Thank You:

- Donors: Your generous contributions, from local philanthropists to global health organizations, sustain our programs, research, and outreach. Your belief in our vision ensures we reach thousands with life-changing health services.
- Collaborators like the National Institutes of Health (NIH), National AIDS control Organisation, USAID, GFATM and other sources, amplify our impact through shared expertise and resources. Your partnership/ support to our initiatives drives innovation and systemic change.
- Staff: Our dedicated team of healthcare professionals, researchers, and support personnel work tirelessly to deliver compassionate care and pioneering solutions. Your expertise and resilience are the backbone of YRGCARE.
- Volunteers: Your selfless commitment to community outreach, education, and support services empowers those we serve, fostering hope and inclusion.
- Beneficiaries: The courage and trust of individuals and communities living with or affected by HIV inspire us daily. Your stories shape our work and remind us of the human impact behind every initiative.

Recognition of Key Contributors:

- Dr. Suniti Solomon's Legacy: Our founder's vision continues to guide YRGCARE, inspiring our pursuit of excellence in HIV care and research.
- Global Research Partners (NIH, JHU): Your collaboration on clinical trials and epidemiological studies has positioned YRGCARE as a global leader in HIV research. We proudly also acknowledge the support of ICMR, DBT-Government of India agencies for their support to YRGCARE. Our work with IAVI through USAID funding is also a remarkable science developing initiative. Mentorship we received from Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru is remarkable.
- Local Community Leaders: Grassroots advocates and peer educators have been instrumental in reducing stigma and expanding our reach to marginalized populations.
- Corporate Supporters: Early adopters of our CSR-aligned programs have laid the foundation for innovative partnerships, supporting workplace health and community resilience initiatives.
- YRGCARE Chennai Team: The flagship team's dedication to delivering comprehensive care and scaling digital health solutions has set a benchmark for our network.

Together,
your contributions weave a
tapestry of hope and progress.
We are deeply grateful and
look forward to continued
collaboration as we strive for a
healthier, more
equitable future.

YRGCARE

Old No. 15, New, 34, East St, Opp. Hotel Sri Krishna Bhavan, Kilpauk Garden Colony, Kilpauk, Chennai, Tamil Nadu 600010

Suniti Solomon Centre (A YRGCARE Clinic)

Pachaiyappa's College, 9, Hostel Road, Chetpet, Chennai, Tamil Nadu 600031

Opened in June 2024