We participate in finding solutions for health challenges.

Our Activities
focus on these critical health areas:

- Women’s Health
- Water, sanitation and hygiene
- Enteric Disease and Hepatitis
- HIV/AIDS prevention, care and treatment
- Tuberculosis diagnosis, treatment and control
- Maternal, newborn, child, and adolescent health
- Strengthening primary care, health systems and immunisation supply chains

The Centre for Infectious Disease Research in Zambia (CIDRZ) is an independent non-profit Zambian company registered as a non-governmental organization that is committed to answering key research questions relevant to Zambia and the region. It supports the financial and technical local ownership of high quality, complementary and integrated healthcare services within the Zambian public health system, and facilitates clinical, research and professional development training.

Through close and on-going collaboration with the Government of the Republic of Zambia, Ministry of Health and other line Ministries, and by partnering with multiple leading local and international universities, CIDRZ ensures that the latest research methodologies are used to answer locally-relevant questions in improving healthcare delivery. CIDRZ runs several fellowship programmes aimed at building capacity of Zambian researchers to participate in finding solutions to health challenges. 

Achieving HIV Epidemic Control in Zambia - ACHIEVE.

Our alliances with various prominent local and international universities, guaranteeing that cutting-edge research methodologies are applied to address relevant grass root enquiries which advance deliverables on healthcare. Pioneering implementation science, qualitative research, capacity building projects, clinical trials and health systems strengthening, has enabled CIDRZ to generate accurate analysis to inform policy which in turn fortifies local and international healthcare.
Our Mission

To improve access to quality healthcare in Zambia through innovative capacity development, exceptional implementation science and research, and impactful and sustainable public health programmes.
Welcome to our 2018 Annual Report, which details our work in supporting Zambia’s attainment of key health priorities in line with the country’s Seventh National Development and Health Strategic Plans and the United Nations’ Sustainable Development Goals. Below are some brief highlights with more detail in the pages that follow.

CIDRZ was born out of a desire to capitalize access quality health services and has developed a colossal footprint in Zambia, which continues to morph both regionally and internationally. This has allowed us to develop a robust efficient healthcare model that strategically positions CIDRZ, to cultivate credible platforms with which the increasing level of foreign direct investment into Zambia can partner for top-drawer select health services.

We remain appreciative for the continued support from our funders, partners, clients, stakeholders to ensure our services are grass-root level while working in tandem with government’s quest to end the AIDS epidemic in Zambia. We overcome previous ordeals making healthcare accessible to an epidemic in Zambia. From previous study findings, a toolkit that should be widely embraced was developed to assess local needs and preferences while scaling-up differentiated service delivery models in Zambia and other regions. We expanded our efforts in implementation of DSD models to 71 facilities benefiting 60,045 stable clients.

CIDRZ actively participated in the development, revision and implementation of the 2018 Zambia Consolidated HIV Guidelines on HIV prevention and treatment which was rolled out and implemented in the 706 CIDRZ-supported facilities with support from PEPFAR/CDC. This has allowed all HIV clients received quality care.

CIDRZ’s experience in quality health care provision has exhibited our tenacity as we continue to grow from strength to strength. With support from Akeso Associates coupled with funding from the Bill & Melinda Gates Foundation, CIDRZ supported sites are not only the first, but unprecedented in Africa, to use the ShangRing no-flop method for voluntary medical male circumcision which was pre-qualified by the World Health Organisation (WHO) in June 2018. Our experience in data management assisted in the development of quality monitoring guidelines and strategies such as: cohort monitoring guidelines for eMTCT, e-first implementation strategies, DQMS template, DSD guidelines and HIV/T ST monitoring tools. We continued to upscale SmartCare, with 21 sites transitioned from using paper-based tools for reporting care and treatment delivery. This resulted in a total number to 127.

CIDRZ remains a reliable partner to the Ministry of Health (MoH). The CIDRZ Central Laboratory (CCL) has over the years supported the Zambia’s HIV Care and Treatment Programme by providing timely and accurate tests. We have stood on impenetrable ground on our word on quality and excellence. Our state-of-the-art laboratory equipment and systems remain remarkable due to our drive and robust management being consistent over the years.

In mid-2017, the laboratory CIDRZ was awarded accreditation in ISO 15189:2012 in the field of Hematology, Serology and Virology in mid-2017, fetching the status of first medical laboratory in Zambia to be endorsed by Southern Africa Development Community Accreditation Services (SANQAS). The International Organization for Standardization (ISO) standard – 15189, provides specific requirements for quality management systems in laboratory sampling and carrying-out tests. It entails testing executed using both standard and non-standard methods, and laboratory developed methods.

As we remain in perpetual pursuit of supremacy in health care, let’s join together to build a bright and promising service offering as high-level health care to South Africans for making 2018 a year of accessible quality.

Izukanki Sikazwe MBChb, MPH
CEO

Message from the Board Chairperson

With inequalities that exist in our country in all spheres of the social, economic and cultural lives of our people, CIDRZ has been part of the team in the health sector that has been driving the agenda of ensuring that this gap is reduced in the sector. In line with the sustainable development goals objective of covering diverse communities, CIDRZ has continued to drive the agenda by strategically working with operational grassroots, in the country to provide health services, by working with the national, provincial and district government heads in charge of health to set the agenda for the health sector in Zambia.

Our report demonstrates CIDRZ efforts in ensuring that all people know their HIV status, treatment, adherence and CD4 levels of government can partner to address health service delivery and make CIDRZ research has shaped the health care sector in Zambia.

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On behalf of the Board of Directors, I would like to thank CIDRZ management and staff for the tremendous effort exerted to not only provide quality services but provide confirmation upon which the government can make strategic decisions to spur the health sector in Zambia to remove one step to position the health sector in Zambia.

Bradford Machila LLB, LLM
Board Chairperson

Letter from our CEO

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Bradford Machila LLB, LLM
Board Chairperson
Management

Provide Strategic Direction to the Organisation

CIDRZ has three strataums of management which consist of the Executive Committee (EXCO), Leadership Team and Management Forum.

Executive Committee

Dr Inukanji Sikazwe
Chief Executive Officer and Director

Mr Emmanuel Osa-Emezi
DComm (Disco), MComm (S&Int Taxation, CASA)
Deputy Chief Executive Officer

Achim Sinkala
ACMA, CIMA, FZICA, MBA
Chief Financial Officer

Ronald Sinkala
MSc, MBA, ACIB, FZICA
Company Secretary

Anthony Musaluke
BEng D.I.C
Chief Operating Officer

Dr Rose Chilangasi
MBChB, MSc
Chief Scientific Officer

Dr Carolyn Bolton-Moore
MBBCh, MSc
Chief Medical Officer

Rondjina Realy
FCIS, MBA
Director, Human Resources

Leadership Team

The leadership team comprises of Directors in various technical and operational departments within CIDRZ. All EXCO members are part of the leadership team.

Dr Ranjit Warrier
BSc, PhD
Director, Biomedical Research

Dr Mwazana Ww Mwazana
MBChB
Director, Clinical Care

Dr Meuangalwa Mudlane-Mwewe
MBChB, MBA
Director, Paediatric HIV Treatment & Prevention

Dr Monde Muyoyeta
MBChB, PhD
Director, TB Programmes

Dr Sharon Kapambwe
MBChB, MPH
Director, Reproductive, Maternal, Newborn & Child Health

Dr Theodora Sovery
MD
Director, Monitoring and Evaluation

David Ojak
Director, Central Laboratory

Dr Michael Herce
MD, MPH, MSc
Director, Implementation Science

Emmanuel Lumbwe
MSc, CFA, CFE
Director, Internal Audit

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MD, MPH, MSc
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David Ojak
Director, Central Laboratory

Dr Michael Herce
MD, MPH, MSc
Director, Implementation Science

Emmanuel Lumbwe
MSc, CFA, CFE
Director, Internal Audit
Management Forum

The Management Forum is responsible for internal communications within CIDRZ and plays a critical role in bridging the gap between senior management and staff. The forum assists the organisation to find functional innovative solutions to strategic and short term challenges CIDRZ encounters.

Members Include:

1. Angela Mulesho
2. Barbara Kavaya
3. Boniface Phiri
4. Brenda Kayumba
5. Bupe Sithake
6. Cheryl Rudd Mallaghan
7. Clement Mongoose (Vice Chairperson)
8. Dr. Albert Manasyan (Chairperson)
9. Daniel Banda
10. Dr. Daniel Mwamba
11. Dr. Mary Kabuuku
12. Dr. Mashini Illunga
13. Dr. Natalie Vishaviski
14. Dr. Oscar Mwimude
15. Elizabeth Makedde
16. Gerald Muche
17. Gordon Mwanza
18. Helen Bwalya Mwamba
19. Hope Banda (Secretary)
20. Imasiku Lubasi
21. Inonge Simuzhi
22. John Daka
23. John Sinyangwe
24. Kaunda Kaunda
25. Kambalanda Skombe
26. Kudakwashe Mucheka
27. Lane-Lee Lyabuulo
28. Lawrence Muoma
29. Mabvuto Phiri
30. Mwanda Mwencachonya
31. Mwasama Lumpa
32. Physiwell Sikatayo
33. Sharma Shailendra
34. Stanley Musole
35. Taniya Tembo
With support from PEPFAR and CDC, CIDRZ works closely with the Ministry of Health towards the attainment of the ambitious 90:90:90 targets. We merely initiated 72% of our targeted new positives onto treatment at a population level in Lusaka, but nonetheless, successfully identify over 90% of the estimated people living with HIV who were introduced to treatment thus meeting the first two 90s. In as much as we did not succeed in meeting the last 90, we worked closely with the sites and communities to scale up viral load testing which we intend to continue with in 2019.

CIDRZ successfully placed:

- Over 70 clinical and laboratory staff in various sites, supported additional shifts from MoH staff, and trained an additional 162 staff.
- An additional 171 clinicians in public facilities and 104 clinicians in private facilities were oriented in the HIV consolidated guidelines to support surge campaigns.
- 50% of eligible clients in various differentiated service delivery (DSD) models. This has significantly reduced the number of patients accessing services through 'traditional' clinic visits.
- Successfully scaled up index testing to all sites with a yield of about 22%.
Prevention of Mother to Child Transmission of HIV

Increased Uptake of HIV and Syphilis Counselling, Testing and Treatment

We used a family centred approach to achieve the programme goals which encouraged partners and biological children to be tested for HIV.

Build Health Care Provider (HCP) Capacity in 100% of Priority Districts to Provide PMTCT Services

CIDRZ provided training, onsite mentorship, and orientation series on review of the National Consolidated Guidelines, mHealth (sms technologies for dry blood spot (DBS) result reporting.

Some of the achievements include the following:

- Support of 706 health facilities
- Total antenatal clinic (ANC) attendance of 180,096 (99%) pregnant women against expected pregnancies of 181,539
- 176,394 (99%) of the attendees had a known HIV status, 103% against the target of 172,459
- Identified 18,627 HIV-positive, 74% against the target with positivity rate of 71%. Of the 18,627 positive women, 15,887 (86%) were on ART, an achievement slightly below the target of 90%
- 176 peer treatment supporters and 160 MOH psychosocial counsellors in PMTCT services
- 61 HCP in long-acting reversible contraceptives
- 58 HCPs from 18 Lusaka sites in HIV-exposed infant Cohort monitoring and these participated in the pilot of mother-infant pair (MIP) Cohort Monitoring

CIDRZ trained:
Integration of HIV Services in MNCH and Other Departments to Improve Access to HIV Diagnosis, Care, and Treatment for Pregnant and Breastfeeding Women (PBFW), and Their Infants

In collaboration with the District Health Office, HIV services were successfully integrated at all service points, including family planning, postnatal, under-five clinic, nutrition corner and outreach services and Child Health Week. CIDRZ also took a leadership role in scaling up same day Test and Start.

Improved Early Infant Diagnosis (EID) Sample Transport and Result Reporting to Increase EID Testing by 90%

To address this, CIDRZ:

- Reduced the turnaround time for early infant diagnosis (EID), by addressing gaps with DNA-PCR testing, DBS sample handling, result reporting, and expedited treatment initiation for HIV-positive infants and young children
- Mentored HCPs and Treatment supporters on EID and DBS sample collection
- Trained and equipped all cellular network-accessible sites with our mHealth-based electronic DNA-PCR result reporting system that transmits EID testing results to the facility and allows community agents to trace the mother

WE USED A FAMILY CENTRED APPROACH TO ACHIEVE THE PROGRAMME GOALS
Provide HIV Testing Services (HTS) Across a Wide Range of Community and Facility Settings, Reaching at Least 500,000 Individuals

Key to achieving the UNAIDS 90:90:90 is ensuring that 90% of the people know their HIV status before they can be linked to treatment and have their viral load suppressed. As such, CIDRZ with PEPFAR/CDC support:

- Targeted testing strategies were rolled out to increase testing yield and numbers of positives identified, which included:
  - Integrating HTS into all entry points in health facilities. We increased the number of testing points through service integration, increased number lay counsellors, and messaging focused on the importance of test and start.
  - Scaling up index testing and targeted high-volume sites often with multiple testing points. Overall, 33,698 contacts were tested. Of these, 3,058 (9%) tested positive.
  - Rolling out of HIV self-testing (HIVST) in 2018.

- Education on the need for people to know their HIV status forms part of the core activities that CIDRZ conducts. In 2018, CIDRZ:
  - We engaged more than 40 radio programmes on leading radio stations talking about adolescent health, HIV and AIDS, TB, PMTCT, VMMC, and other public health related issues.
  - Supported community mobilization which in turn promoted uptake of clinical services. This was disseminated through drama performance groups, radio and television programmes.
  - Scaled up HTS activities by testing within workspaces such as factories, construction sites, security companies and fishing camps.
  - Opened four ‘Key Population’ (KP’s) friendly clinics in Lusaka Province where KPs can access services.

- We supported the provision of HIV testing services (HTS) to 1,881,744 clients in 706 sites against an annual target of 500,000, and
- 78,366 HIV-positive clients were identified with an overall linkage of 95% against an annual target of 90%.

- Provide education through community mobilization to promote clinical services uptake:
  - Supported the provision of HIV testing services (HTS) to 1,881,744 clients in 706 sites against an annual target of 500,000, and
  - 78,366 HIV-positive clients were identified with an overall linkage of 95% against an annual target of 90%.
To optimize test and treat services and accelerate ART uptake and linkage to care, CIDRZ created extra clinical work space through the provision of 13 pre-fabricated structures, distributed 70 private enclosed tents, re-organised existing clinical spaces and adjusted patient flow to improve efficiency and reduce patient waiting times.

In addition to routine health system strengthening activities, CIDRZ allocated 39 extra clinical staff for the surge campaign, employed an additional 162 Peer Educators, and supported at least 3 Dedicated Health Care Workers (HCWs) and Psychosocial counselors to accelerate linkage and ART initiation for all positive clients in all 60 CIDRZ-supported high-volume facilities. CIDRZ continued to provide technical support and hands-on mentorship to the 816 peers aiming at increasing linkage to treatment.

- CIDRZ, with the support of PEPFAR/CDC, rolled out and implemented the new 2018 Zambia Consolidated HIV Guidelines in the 706 CIDRZ-supported facilities to ensure that all HIV clients received quality services.
- Provided hands on mentorship targeting newly hired staff using an integrated approach to address all gaps noted in the continuum of care.
Ensuring Fair Treatment For All

Key to achieving the UNAIDS 90:90:90 is ensuring that 90% of the people know their HIV status before they can be linked to treatment, and have their viral load suppressed. As such, CIDRZ

Improved Access to Prevention, Care and Treatment

• Supported and scaled up implementation of Test and Treat at all 706 health facilities, which accomplished an intake of 74,524 clients on ART representing 72% of the newly enrolled clients target

• CIDRZ exceeded the Lusaka Surge target, achieving 100% of the target in 16 of the 20 health facilities in the Lusaka region.

• Scaled up diverse differentiated service delivery (DSD) models to 71 facilities

• 60,046 stable clients are currently enrolled in DSD models and 153,440 of 165,917 clients identified as stable patients received Multi-Month scripting of ART.

Fast Tracking HIV Stable Patients has Decoupled ART Clinics

Health strengthening systems is a critical component in Zambia and HIV has been recognized as one of the major public health problems on the country. ART treatment has continued to scale up in most health facilities which has led to an increase in demand for HIV services thus leading to congestion in health facilities. In order to decongest ART clinic, Centre for Infectious Disease Research in Zambia (CIDRZ) with support from the United States President’ Emergency Plan for AIDS Relief (PEPFAR) and partnership of U.S. Centers for Disease Control and Prevention (CDC) has been working with the University of Maryland, Centre for Infectious Disease Research and Control (CIDRZ) Senior Research Pharmacist Muhubwa Muliana explained how the introduction of a new model which describes how stable patients at CHL-C Level Hospital.

“Fast Tracking HIV Stable Patients has Decoupled ART Clinics is one of the ways under Fast Track to decongest the ART facility and also is one of the ways under Fast Track to address this challenge by: the model which has 237 people.

The main contributing factor remains high dropout amongst those diagnosed and initiated on treatment on the same-day but this was mitigated through patient pairing who missed their pharmacy collection or clinical appointments who missed their pharmacy collection or clinical appointments and/or clinical appointments were followed up, 17,355 patients (23%) returned to care, of the remaining 35,097 patients, 4,839 patients were reported as self-transfers, 1,191 were reported dead and the rest had either stopped to come back or were not traced

CIDRZ’s experience in working with HIV clients on ART has shown that while many can be put on treatment, not all are retained on treatment over a period of time as some drop out for varied reasons. This is a reflection of as far as ensuring adherence and viral load suppression is concerned, in essence, CIDRZ introduced novel ways to address this challenge by:

• Providing phones and talk time on a monthly basis to facility in Changa and their educators in all supported facilities to call back patients late for their appointment

• Supported monthly community sensitisation activities and internet community follow ups for patients late for their appointment. 52,442 patients who missed their pharmacy and/or clinical appointments were followed up, 17,355 patients (23%) returned to care, of the remaining 35,097 patients, 4,839 patients were reported as self-transfers, 1,191 were reported dead and the rest had either stopped to come back or were not traced.

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In the absence of a cure for HIV, adherence to lifelong ART treatment is key to reducing and preventing HIV transmission amongst or between sexual partners. This is because with viral load suppressed, the chances of transmitting the virus diminishes. To achieve this, CIDRZ collaborated with District Medical Office staff to:

• Provide technical support and training of facility staff on guideline-adherent viral load collection

• Strengthen documentation in patient files and Smart Care

• Mentor staff on the use of VL guidelines, and monitor viral load laboratory processes in all the 706 supported facilities

CIDRZ recorded a total of 74,317 suppressed (<1,000 c/ml) VL results; 24% of the annual target of 313,185. This target was not achieved due to low VL testing throughout the county including CIDRZ Central Lab, however, the capacity for testing has been increased.

Improve Scale up of Viral Load Testing and Achieve 90% Suppression for all on Treatment

Expand ART Services to Reach Key Populations (KPs)

CIDRZ formulated strategies that facilitate an inclusive approach to provision of essential services, targeting KPs with HIV services.

• Test and Treat services were increased among KPs by reaching 354, representing 150% of the annual target, 58 were found HIV positive and 56 were linked to care

• In collaboration with CDC and the University of Maryland, 84 people were trained in providing KP friendly services

In 2018, CIDRZ increased the number of facilities proving KP friendly services.

• Conducted eight testing drives to hot spots

• Provided mass sensitisation and screening for HIV and STIs targeting KP's and their clients and children

• Delivered prevention services, such as condom distribution (5,760 distributed to brothels and individuals), VMMC, and engagement screening

• 83 clients were initiated on Pre-Exposure Prophylaxis (PrEP)
Paediatric Care and Support

Improve Paediatric HIV Case Finding to Identify 90% of Children Living with HIV

- Paediatric test drives focusing on index testing were conducted in 175 sites
- 87 Peers and 36 HCWs were trained in index testing
- 133 peers and 85 HCWs were mentored in Provider Initiated Testing and Counselling
- Supported HIV testing during Child Health Week at 89 facilities during which 1288 DBS were collected, and 14,480 children were tested. 75 were positive and 58 were started ART. The remaining 17 are being followed up.

Support Provision of Paediatric HIV Prevention, Care and Support Services

To achieve this objective, the programme conducted:

- Onsite orientations on early infant diagnosis, oriented 704 Health Care Workers (HCW)
- 55 caregiver support group visitations, reaching 1579 caregivers
- Monthly community sensitizations to increase the uptake of paediatric HIV prevention, care and support services reaching 5454 community members
On Retention of Paediatric HIV Exposed and Infected Children, CIDRZ

Tracking of HIV exposed infants with a final HIV infection status determined; introduced baby-mother pairing; supported paediatric specific clinic days which created a child-friendly environment. Six trainings in adherence and disclosure counselling were conducted.

Support Equity of Access to Disadvantaged Children

In partnership with the Expanded Church Response, CIDRZ supported HIV testing of 18,674 Orphans and Vulnerable Children. CIDRZ actively participated in the development, revision and implementation of the 2018 national guidelines on HIV prevention and treatment.

Improve Adolescent HIV Prevention, Care and Treatment Services to Address the Risk of New HIV Infections within this Population

CIDRZ supported community sensitisation on availability of youth friendly health services in high volume facilities:
- 12 facilities were oriented towards adolescent one stop shops (274 adolescents and 124 HCPs)
- 18 new youth-friendly spaces were established, some sites had youth-friendly spaces revamped

The programme established Differentiated Service Delivery (DSD) services in 40 sites.

Weekend and after hours HTS and ART services were implemented in high volume sites; 9816 adolescents accessed HTS; 90 tested HIV+; 62 were initiated on ART.
CIDRZ accomplished epidemic control of TB by engaging in different activities and engagements which include:

**Increased TB Case Detection in PLHIV**

CIDRZ supported sites notified 13,107 TB patients during the financial year. Of these, 57% were TB/HIV co-infected. Activities to support TB case detection included the recruitment of 327 peers and treatment supporters to support community and facility TB activities, and strengthened TB screening among PLHIV. Of the 313,581 people currently on ART, 96.9% were screened for TB. During 2018, CIDRZ:

- Supported both active facility and community TB case finding activities including but not limited to TB case finding during World TB day, National Health Week, Kuomboka Ceremony, and TB case finding month
- Conducted trainings on TB and TB/HIV targeting Health care workers (HCWs), community health workers and community leaders
- Supported the digital X-ray machines at Lusaka Correctional Facility Clinic, Chainda South clinic and Kanyama 1st level hospital
- Conducted contact tracing through the CHW’s. Enablers including 104 bicycles, 364 gumboots, 364 raincoats, 364 umbrellas, 145 cooler boxes and 100 back packs were given to the CHW. 88% of the bacteriologically confirmed TB cases were contact traced; of the contacts, 2% were diagnosed with TB
- Provided paediatric TB supplies to hospitals in Western, Eastern, Luakka and Southern provinces
- Enabled infection control clinical meetings in 29 health facilities in Western province and at Levy Mwanawasa Hospital
- In collaboration with the clinic and district staff, developed infection control plans for 8/9 facilities in Shibuyuni, 10/18 facilities in Rufunsa and on 5 high volume sites in Southern Province
- Installed 120 wall fans in 68 facilities to help improve mechanical ventilation in poorly ventilated rooms.
- Supported renovation of Kanyama TB corner, Ngombe TB corner and Maternal and Child Health waiting area; George Clinic laboratory; Ngwerere TB corner, and Nakambala Urban container to improve cross ventilation

**Maintain High Rates of HIV Testing Among TB and Presumptive TB Patients**

To prevent TB through the scale up of TB preventive therapy (TPT) and infection prevention and control interventions, CIDRZ:

- Supported uptake of isoniazid Preventive Therapy (IPT) in supported sites. Of the 77,395 referrals, 35% were initiated on IPT, a slight improvement from last year’s 30%. This low performance is attributable to policy level and supply chain factors, monitoring and evaluation factors, and fears and misconceptions about IPT. Despite the low uptake, there has been a general improvement over the months
- Strengthened the TB courier system through integration with the HIV courier system in rural centres and provision of bicycles in urban centres
- Provided paediatric TB supplies to hospitals in Western, Eastern, Luakka and Southern provinces
- Enabled infection control clinical meetings in 29 health facilities in Western province and at Levy Mwanawasa Hospital
- In collaboration with the clinic and district staff, developed infection control plans for 8/9 facilities in Shibuyuni, 10/18 facilities in Rufunsa and on 5 high volume sites in Southern Province
- Installed 120 wall fans in 68 facilities to help improve mechanical ventilation in poorly ventilated rooms.
- Supported renovation of Kanyama TB corner, Ngombe TB corner and Maternal and Child Health waiting area; George Clinic laboratory; Ngwerere TB corner, and Nakambala Urban container to improve cross ventilation

**To improve Multi Drug Resistant (MDR) TB Outcomes, Surveillance, Referral for Treatment and Diagnosis of TB**

To improve Multi Drug Resistant (MDR) TB outcomes, surveillance, referral for treatment and diagnosis of TB, CIDRZ equally provided training in Fluorescent Microscopy (FM) for 47 laboratory staff, and GeneXpert Technology at 12 facilities, targeting 20 laboratory staff. The TB department also conducted data quality assurances (DQAs) and technical services support (TSS); Oriented data associates on TB indicators and registers; distributed TB registers; and supported 9 facilities and 1 district TB data review meetings in SP and Chongwe respectively.

- 111 MDR TB patients in Luakka district received food hampers monthly. Each food hamper contained: Mealie meal, Cooking oil, Eggs, Milk, Soya chunks, Kapenta, beans, groundnuts and butternut.
- A total of 79 rifampicin resistant cases were detected of which 66(83.5%) were linked to treatment.
The Voluntary Medical Male Circumcision programme provided direct support delivery for staff, supplies and equipment. CIDRZ through PEPFAR and CDC support operated 30 static sites in Western, Eastern and Lusaka provinces with targeted outreach activities occurring at the occasion to an eligible group of clients who have been mobilized.

15 sites through MoH providers were also supported, and overall, 49,417 circumcisions were conducted in 2018 against the target of 11,208. Under VMMC, 39,542 (98%) clients were tested for HIV and linked all 172 HIV positive clients to ART care and treatment.

CIDRZ hosted Lusaka District Health Office partners planning and review meetings; two international delegations from Namibia and Zimbabwe to learn best practices in VMMC service, and ShangRing training.

We are excited because CIDRZ sites are the first in Africa to use the ShangRing no-flip method, pre-qualified by WHO in June 2018. Akeso Associates, with funding from GAVI Foundation, sponsored master trainers for training 25 successful ShangRing trainer of trainers (TOT). We commenced ShangRing Active Surveillance on 27 August 2018.
1. Strengthening Pharmaceutical Services

The Pharmaceutical Services Department continued to build capacity in MoH staff to strengthen supply chain, pharmaceutical patient care, Quality Pharmaceutical data capturing and commodity management across supported sites and provinces.

- Service delivery of HIV prevention, clinical laboratory services have created demand, improved accessibility and enabled quality care.
- CIDRZ supported drug potency through improved storage conditions by procuring/improved accessibility and enabled quality care.
- The programme provided clinicians with essential medical supplies, commodity security and efficient logistics management in the district.
- The Pharmaceutical Services Department managed medical supplies, commodity security and efficient logistics management at the district level.

2. Ensuring capacity of Laboratories to Provide Effective Services at Facility Level

- CIDRZ provided clinicians with essential diagnostics for decision making.
- In Lusaka Province, the CIDRZ Central Laboratory ICC tested AIR/PMCT samples from supported facilities without laboratories. The organization has continued to provide backup testing services to transitional laboratories in an event of equipment breakdown and reagent stock out.
- In 2018, the following tests were analyzed: 12,194 Chemistries, 70,214 CD4 counts, 38,176 Full Blood Counts; 80,227 Viral Load; 129,974 Chemistries; 70,544 CD4 counts; 21 sites transitioned from using paper-based tools for reporting care and treatment indicators, and the total number of sites using SmartCare to 127.

3. Strategic Information Significant to Quality Programming

- CIDRZ closely monitored its facility performance through monthly, quarterly, and yearly reports, with a special emphasis on index testing and linkage. Performance findings are shared with programme and facility teams to address gaps identified.
- Data review meetings are held in facilities, through documentation and the frequency with which they are held in facilities is radically strengthened.
- With support from Pink Ribbon and Red Ribbon, the cervical cancer (CaCx) prevention programme worked closely with the Ministry of Health (MoH) and the Ministry of Chiefs and Traditional Affairs (MOCTA), and other implementing partners to strengthen and expand access and uptake of cervical cancer screening in both urban and rural parts of the country.
- The programme continued to:
  - Expand community awareness and promotion of cervical cancer prevention.
  - Train 3 Medical Licentiates and 1 clinical officer in cervical cancer treatment.
  - Purchase and installed for 4 additional LEPT centers that were established.
  - Increase district-level cervical cancer screening and treatment services. In collaboration with MoH, 36 nurses and clinical officers were trained in cervical cancer screening using VIA and treatment with Cryotherapy and thermal ablation in Lusaka, Luapula and Southern Provinces.
- Over 3,000 women were screened during this financial year with over 1000 receiving treatment with cryotherapy or thermal ablation.

4. Women Cervical Cancer Programme; Addressing Challenges of Cancer in Zambia

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Additional activities included:

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Elton John Juvenile Offenders’ Health (EJJOH) Project

With support from the Elton John AIDS Foundation (EJAF), CIDRZ is implementing the Elton John Juvenile Offenders’ Health (EJJOH). This project was designed to provide a comprehensive package of interventions tailored towards the needs of incarcerated juveniles in 11 of the 87 of Zambia’s correctional facilities, and two approved schools for juveniles across the country.

The project aims to reduce illness and death, while improving the quality of life of incarcerated juveniles as well as reduce their risk of acquiring HIV through provision of holistic adolescent friendly HIV prevention and social services. In addition, the project supports mental health services as well as legal services to unordered (remanded) juveniles to expedite case disposal.

CIDRZ under the TB department commenced implementation of this project on the 1st February 2018 and achievements which:

- Engaged and obtained stakeholders’ buy-in from the Zambia Correctional Service (ZCS) Command
- Formed strategic partnerships with CELIM and UBUMI to provide nutritional support to inmates found with any of the ailments being screened by EJJOH
- Revamped and trained Prison Health Committees (PHHCs) in 12 out of 13 targeted juvenile holding facilities from which 201 PHHC members (64 juveniles, 60 adult inmates and 77 officers) were trained, to help run and sustain planned project activities
- Symptomatic based TB screening was done on both old and new inmates and identified 1022 presumptive TB cases
- Conducted baseline sensitisation and mass screening for HIV, TB, Hepatitis B, Malnutrition, Mental Health and STIs (syphilis) in 3 of the 13 targeted facilities. A total of 2,495 (138 Juveniles, 2,339 adult inmates, 15 correctional officers, 6 circumstantial children) tested for HIV
- 684 inmates (138 juveniles) tested for syphilis
- 168 inmates (138 juveniles and 30 adults) were screened for mental health
- All those found with health issues were referred for specialised treatment
- 138 Juveniles from the 3 correctional facilities were tested for Hepatitis B
Generally, all four DSD models received widespread approval from all stakeholders. Streamlined ART initiation, (START) received strong support from patients, community members, HCWs and policy makers because it was aligned with Option B+ and the newly endorsed Universal Test and Treat (UTT) policies and secondly; illustrative of a caring government, eager to bring ARVs closer to patients. The other 3 DSD models, FastTrack, CAG and UAG received strong support from most stakeholders due to reduced decongestion and travel. Patients recounted reduced costs and stress of balancing treatment with work and family obligations. In all four models, some patients reported insurmountable poverty and food insecurity.

Over the years, some patients on ART, disengaged from care for different reasons among them: fewer clinic staff to attend to the increasing numbers of people that needed the services; crowded clinics; long travel and waiting times; and individuals who had interfered with work and other obligations. This has led to fatal consequences on the health of these patients.

To address these challenges, the Ministry of Health with support from the Centre for Infectious Disease Research in Zambia (CIDRZ), and funding from the Bill and Melinda Gates Foundation (BGF), developed the Community ART for Retention in Zambia study (CommunityART), which sought to develop varied bespoke service delivery models to meet patient needs and reduce unnecessary burdens on the health care system in Zambia.

The CommunityART programme was implemented in Eastern, Lusaka and Southern, Provinces starting in 2015 with the intention to:

• Determine the acceptability, appropriateness, and feasibility of differentiated HIV service delivery models in Zambia
• Evaluate the effectiveness and efficiency of these models
• Develop a toolkit that can be widely adapted to assess local needs and preferences and scale-up differentiated service delivery models in Zambia and other regions.

The CommunityART study implemented and evaluated the following differentiated service delivery models:

• Streamlined ART initiation (START)
• Health care worker managed groups i.e. Urban Adherence Groups (UAGs)
• Client Managed Groups i.e. Community Adherence Groups (CAGs)
• In-Facility Managed Model i.e. FastTrack

The Project Targeted:

• ART naïve clients and who meet the Zambian HIV guidelines for treatment initiation at the time
• Stable ART clients, defined as:
  - HIV-positive adolescents and adults who were 14 years and above; and had been on ART for at least six months
  - These clients should have had CD4 count of at least 200 cells/mm3 in the last 6 months as per the national guidelines. If this was not available, the clinician at the facility should determine whether patient was stable; and lastly
  - The client should not have been acutely ill

Community ART Toolkit

The toolkit for the Community ART study is available at http://185.17.232.66/viden/commart-toolkit/ and was launched during the study dissemination meeting in September 2018. The toolkit aims to provide evidence-based guidelines to HIV-AIDS, health-systems specialist and practitioners who wish to implement the four differentiated care models of FastTrack, START, CAG, and UAG. The findings comes from mixed methods and experiential data, workshops on client and health-provider experience. It avoids duplicating information by providing extensive links to various websites including differentiatedcare.org and C-QUIN.

More uniquely, the toolkit includes study materials – protocol, monitoring tools, job aides, standard operating procedures and abstracts/publications; that can be adapted by other researchers.
CIDRZ piloted the first year study start-up to lay the foundation for successful implementation. The team established the study calendar and internal Scientific Committee to manage learning outputs.

Specifically, the study has achieved the following:

- Developed user stories, cases and intentions, monitoring how they will interact with Public Health Patient Experience Management System (PPEMS)
- Conducted structured interviews with intended users and key stakeholders to better understand technical literacy, preferences, and any perceived barriers to use
- Developed technical requirements to guide software configuration
- Conducted a landscape analysis of the Zambian National Health Information System (HIS) architecture to ensure PPEMS development will align with National strategies and systems
- Constructed a detailed data model based on validated tools and survey instruments, characterizing data capture, workflow, and skip logic
- Constructed a business process model that outlines how captured data will flow through the system, system components, and data exchange

The Study Advisory Committee was formally constituted and includes:

- Dr. Consity Mwale - Lusaka Provincial Medical Officer
- Dr. Jelita Chinyonga - Director, Quality Improvement Directorate – MoH
- Professor Sekelani Banda - Director, MOH Training Directorate
- Dr. Nzali Kancheya - Associate Director of Programs, CDC Zambia Country Office
- Dr. Ashwin Budden - PCC Human Centered Design (HCD) Consultant, and
- Dr. George Sinyangwe - USAID Zambia Country Office

As a follow on to the BetterInfo study, Bill & Melinda Gates Foundation has funded another project: Leveraging Patient-Centred Care to Improve HIV Outcome in Zambia (PCC). This will be a phased approach targeting ~60,000 patients on ART, 6 CIDRZ supported districts which will involve 40 health facilities.

The PCC study will offer timely & dedicated attention to harnessing the power of the local patient experience & principles of patient centered care, layered onto an existing fully-funded PEPFAR/CDC award for HIV prevention, care and treatment. This will be led by diverse teams with a track record of successfully delivering timely programmes & innovations within the context of a sturdy Zambian organization.

The PCC uses patient experience-oriented approach by:

- leveraging existing health systems improvement activities;
- enhancing synergies with strategies to promote differential care;
- and focusing on improvement efforts at facility level.

How do we help facilities focus on their local barriers, adapt and shape health care practices at/around the facility, to needs of specific communities?

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CIDRZ has a broad portfolio of programme and research projects that seek to address maternal, neonatal and child health ranging from perinatal health, post-partum haemorrhage, cervical cancer, and family planning. In partnership with the Global Network for Women and Children’s Health Research, CIDRZ conducted the very first RCT evaluating the impact of the Essential Newborn Care protocol on perinatal outcomes in Zambia by training both skilled and unskilled birth attendants.

CIDRZ is implementing several programmes and conducting studies to help strengthen and improve on the provision of RMNCH services which include:

**PREEMI: Preterm Resources, Education, and Effective Management of Infants**

With support from ELMA Foundation, the PREEMI programme provides technical assistance in maternal and newborn health through onsite coaching and mentorship, capacity building, provision of medical supplies and equipment. This initially started in Lusaka district and eventually spread its activities to Rufunsa, and Luapwa Districts (Lusaka Province) and Lusaka, Mambwe, Chiluba, and Chipata districts (Eastern Province). Through collaboration with the Saving Mothers Giving Life initiative, the PREEMI programme creates Kangaroo Mother Care (KMC) rooms in General Hospitals in Southern, Luapula, Eastern, and Lusaka provinces.

The programme supported and co-ordinated the development of the National Essential Newborn Care Training Guidelines and contributed to the development of the National Kangaroo Mother Care Guidelines. Additionally, in close collaboration through the Ministry of Health Child Health Unit, the programme conducted a partners mapping exercise leading to the creation of a partners’ database and a training database fully managed by MoH.
Cardboard Cot or Incubator in Neonatal Thermoregulation (CCot): A Randomized Crossover Trial (2018 – 2019)

Hypothermia of the newborn infant has long been recognized as potentially life-threatening. Neonatal hypothermia is extremely common worldwide, with prevalence ranging from 32 to 85%, including tropical countries with high ambient temperature. Currently, the leading cause of global neonatal death is complications from preterm birth. To reduce neonatal hypothermia, WHO recommends a set of interlinked procedures called the “warm chain” (the WHO thermoregulation protocol) to be followed after birth. The “warm chain” includes warm delivery rooms, immediate drying, skin-to-skin contact as continuously as possible, early breastfeeding, delayed bathing and weighing, appropriate bundling, keeping mother and baby together, warm transportation, warm resuscitation, and training/raising awareness. Even with this protocol in place, hypothermia is still a frequent problem associated with increased mortality in infants. The increased proportion of childhood deaths that occurs during the neonatal period indicates the crucial importance of the reduction of these deaths if countries are to achieve Sustainable Development Goal (SDG) 3.

With support from the Chiesi Foundation, the CCot study is an innovative cardboard cot lined with a reflective polyester film (e.g. Mylar) that the study designed. This cot provides a way to keep babies warm at a better rate with each cot costing less than $1.00. Our study will provide an opportunity to obtain both quantitative and qualitative data around the acceptability, feasibility, and cost-benefit of using the cardboard cot for management of neonatal hypothermia in Lusaka, Zambia.

CDC Detect: Point of Care HIV-1 Diagnosis to Improve Rates of ART Initiation Amongst Infants

The CDC Detect study is the first of its kind to conduct a field evaluation of the Alere™ q HIV-1/2 Detect testing platform using a novel Point of Care (POC) HIV Community Model. Working in six health facilities within Lusaka District, the study aims to inform the scale up of this novel model, and to estimate the effects of the POC Early Infant Diagnosis (EID) Community Model on XDR testing positivity; HIV-positive infant case finding, ART linkage, initiation and 3-month retention among HIV-infected infants/young children.

CDC Detect: Point of Care HIV-1 Diagnosis to Improve Rates of ART Initiation Amongst Infants

Diagnostic test accuracy of a mobile colposcope (Gynocular™), HR-HPV testing, and VIA for detection of high-grade squamous intraepithelial lesions of the cervix in women living with HIV

WHO guidelines on comprehensive cervical cancer (CaCx) control, currently recommend visual inspection after application of acetic acid (VIA) as a primary screening test for cervical cancer in low and middle income countries (LMICs). This involves inspection of the cervix with the naked eye after application of 3% acetic acid. This approach has several limitations. First and foremost, VIA is reported to have lower sensitivity and specificity leading to high numbers of false negative and positive test results of Cervical Intraepithelial Neoplasia (CIN). Left untreated, CIN can progress to cervical cancer. Our study will implement colposcopy telemedicine, which has greater effectiveness and functionality than the current standard of care screening services in Zambia. The Gynocular study is a first of its kind clinical trial to determine the diagnostic accuracy of the novel colposcope (Gynocular™) in routine programmatic settings in Lusaka, Zambia and validate the Swede score among HIV-infected women.

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04 Training & Research
CIDRZ Central Laboratory

CIDRZ became the first medical laboratory in Zambia to be accredited by Southern Africa Development Community Accreditation Services (SADCAS).

The CIDRZ Central Laboratory (CCL) became the first laboratory in Zambia to be accredited by SADCAS. Accreditation in accordance to ISO 15189 strengthens community confidence in results and helps improve patient care. It provides continuous staff education, and attracts professional reference due to accuracy and competence. Many countries are embracing accreditation as a mandatory action in regulated areas. Accreditation also helps governments meet their responsibilities and safeguard the public and protect the environment.

The laboratory’s resolve to be a competent, reliable leader in both research and diagnostic services in Zambia. Accreditation in accordance to ISO 15189 strengthens community confidence in results and helps improve patient care. It provides continuous staff education, and attracts professional reference due to accuracy and competence.

These external audits are conducted by a third party on behalf of SADCAS to ensure patient safety in international laboratories participating in different trials and assessments across the world. We are very proud to be part of this cohort of laboratories audited internationally by SADCAS. We have had excellent audit reports over the last eight years. We continue to improve our quality and operation systems to ensure competence as a laboratory that serves national and international interests.

The laboratory’s other area of strength includes participation in annual external quality assessment audits by the U.S National Institutes of Health (NIH), Division of AIDS (DAIDS).

The laboratory leadership submitted an application for expansion of the laboratory’s scope. These testing scopes will be: cytometry, TB, serology, and clinical chemistry to complete a full laboratory service in Zambia. Accreditation to include; flow cytometry, TB, serology, and clinical chemistry to complete a full laboratory service in Zambia.

The laboratory also got the following recognition:

- CCL was also recently recognized for its excellent achievement in ISO accreditation by the African Society for Laboratory Medicine (ASLM) at the December 2018, biannual Conference in Abuja, Nigeria.
- The CCL has over the last decade successfully participated in external quality assessments (EQA), own standard samples from several international organisations with a mandate to provide assessment of laboratories based on risks. We continue to receive samples from the College of American Pathologists, One World Accuracy, National Health Laboratory Services of South Africa and the UK National External Quality Assurance Services (UK NEQAS). These samples are prepared and tested in the same manner as patient samples. Once results are submitted to the provider, each laboratory is compared to a peer of thousands of laboratories. Our collaboration with Ministry of Health (MoH) has grown stronger over the years. The CCL has continued to support the Zambia National HIV Care and Treatment Programme by providing quality routine and specialised tests. Based on our expertise to validate the performance of test methods and equipment, the CCL has worked with the MoH to verify the same suitability of use.

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Welcome
David Ojok
New CIDRZ Central Laboratory Director

David has worked with CIDRZ Central Laboratory for the last four years as Head of Laboratory QA/QC and has been central in establishing, coordinating, and monitoring lab Quality Management Systems (QMS) programmes at the Central Laboratory. He has 15 years’ experience in the operations and QMS of clinical and research laboratories. Before moving to CIDRZ Central Laboratory, he worked as Lab Shift Leader at Makerere University and Johns Hopkins University Core Lab (MU-JHU Core Lab) at Makerere University. He has vast experience implementing and monitoring of both College of American Pathologists (CAP) and ISO 15189 QMS. He is a vetted nominated representative for accreditation, ISO 15189 Lab Technical Assessor and an advisory committee member on the Medical Laboratory Accreditation Programme for SADCAS. He has experience working with Division of AIDS National Institutes of Health (DAIDS/NIH) clinical trial Networks including HIV Vaccine Trials Network (HVTN), International Maternal Paediatric Adolescent AIDS Clinical Trials Network (IMPaACT), PROMISE, Microbicides Trial Network (MTN) and AIDS Clinical Trial Group (ACTG). He is currently pursuing his PhD studies in International Public Health.

The CIDRZ Laboratory Innovation for Excellence (LIFE) project is a 5-year PEPFAR funded initiative to close the gaps in scaling-up HIV viral load (VL) and HIV early infant diagnosis (EID) testing in Eastern, Luapula, Southern and Western Provinces of Zambia. The project is a collaborative effort between CIDRZ, Association of Public Health Laboratories (APHL), the Wits Health Consortium (WHC), and the global health consultancy group (GHC). The VL/EID testing cascade involves multiple steps, which require sample stabilization at a laboratory within 24 hours of collection, stored frozen, transported to a testing facility and results transported back after process.

Currently in its first year, the project has identified gaps in the VL/EID courier system, sample stabilization, testing facilities, and results return on a per-site basis in the four provinces. We are on the clock working to narrow those gaps by providing personnel, equipment, solar power, technical support, documentation systems, vehicle and motorbike fueling and their maintenance, rider training, point-to-point electronic tracking of sample transport and result return. The project has initiated the idea of the VL/EID courier dispatcher, who is a single point of contact for sites that have not received their expected sample pickup and GPS tracking of each motorbike or vehicle used for courier. The strengthening of the sample transport, stabilization, and result return systems is a critical aspect of controlling the HIV epidemic and furthering the goals of a new uninfected generation.
Through the Primary Care and Health Systems Strengthening (PC/HSS) department, CIDRZ has been working with the Ministry of Health’s Child Health and Nutrition Unit, supporting many activities and initiatives within the Expanded Programme on Immunisations (EPI), including new vaccine introduction and supply chain system design, as well as a myriad of other primary care/HSS projects in WASH and infection prevention and control. Following last year’s system design results, on how to improve the country’s immunisation supply chain and to efficiently get potent vaccines to every child at the right place and time, CIDRZ has partnered with Government and other EPI partners; to spearhead the development of a national strategy to optimise the country’s EPI. The strategy incorporates the system design work, along with initiatives to address other challenges the country faces such as unknown coverage rates, inaccurate and untimely data, poor vaccine management practices and inequities in vaccine administration, with a focus at the lowest levels.

The department has diversified and expanded its funding base in 2018, with Gavi a global key player in vaccine awarding it a grant. The grant is aimed at technical assistant to Government, to improve immunisation services through targeted support, working to build capacity and transfer skills, with the aim of improving coverage and equity.

While core activities for the PC/HSS department have revolved mainly around immunisations, the department also works to support other cross cutting areas which include:

- Expanding into emergency relief response with the cholera outbreak this past year
- Working more broadly with cervical cancer while engaged with the HPV vaccine introduction.

The three key objectives of this grant are to:

- Strengthen management and governance capacity,
- Strengthen and support capacity building of the immunisation supply and cold chain, and
- Support coordination and functioning of national EPI activities

Among other key support include:

- CIDRZ seconding a National EPI logistician, who is seconded to the Child Health Unit and supports national vaccine quantification and forecasting, and all other national vaccine and supply chain related duties
- Development of the country’s application to GAVI for national roll-out of the HPV vaccination which was approved in 2018, and is slated for introduction June 2019
- Technical support during the submission of the national Cold Chain Equipment Optimisation Platform (CCEOP) application requesting $11.5m in funds for cold chain expansion across the country
- Expanding into emergency relief response with the cholera outbreak this past year
- Working more broadly with cervical cancer while engaged with the HPV vaccine introduction.
Hepatitis HIV Vaccine Trials Network

Generating Evidence to Address Hepatitis Challenges in Zambia

With support from International Epidemiological Databases to Evaluate AIDS in Africa (IeDEA), CIDRZ continued its work on the clinical epidemiology of HIV-Hepatitis B virus coinfection through the IeDEA Hepatitis Cohort. This study has directly helped the Zambian Ministry of Health to formulate treatment guidelines which has informed World Health Organization policies.

IeDEA Hepatitis Cohort is a prospective cohort study of >1,000 HIV-infected adults in Lusaka urban district who started antiretroviral therapy in 2013 - 2015. Among this group, >300 have chronic hepatitis B coinfection. The cohort receives standard ART but is closely monitored by the study every 3 - 6 months up to 4 years. The study runs up to 2021.

1. Alcohol and HIV

Within the cohort, 40% of patients have reported drinking substantial amounts of alcohol (mainly Opaque and Lager beers but also Kachasu, Kajililji, and spirits). During follow-up many patients fail to reduce their consumption despite counseling that is provided in ART clinic. Some patients underreport their alcohol intake, and this was discovered by detecting alcohol metabolites in urine among cohort participants who had self-reported being abstinent. This is important because it suggests that drinking among patients taking ART could be higher than what is reported.

Given the impact that the HIV pandemic has had on Zambia’s social and economic spheres, CIDRZ remains at the forefront in the search for cutting-edge solutions. CIDRZ is actively engaged with the global HIV Vaccine Trials Network (HVTN), and has been involved in the following clinical trials:

- **HVTN 111**: A phase 1 clinical trial to evaluate the safety and immunogenicity of HIV clade C DNA and of MF59-adjuvanted clade C Env protein, in healthy, HIV-uninfected adult participants.
- **HVTN 120**: A phase 1/2a clinical trial to evaluate the safety and immunogenicity of ALVAC-HIV (vCP2438) and of MF59®- or AS01B-adjuvanted clade C Env protein, in healthy, HIV-uninfected adult participants. Participants enrolment was completed, and the study is in follow up phase until November 2019.
- **HVTN 705**: A multicenter randomized double-blind placebo controlled phase 2b efficacy study of a heterologous prime/boost vaccine regime of Ad_Mos4 HIV and aluminum phosphate adjuvanted Clade C gb140 in preventing HIV infection in women aged between 18 and 35 in Sub-Saharan Africa. The study was initiated and the recruitment process is still underway, but is expected to be concluded by the end of March 2019. The HVTN 705 study is presently the most advanced effort in the world hoping to demonstrate whether this state of the art mosaic technology-based vaccine can protect individuals from HIV infection. CIDRZ is very proud to be making such contributions which if successful will make a huge difference to the HIV pandemic.

2. High rates of hepatitis B functional cure

Like HIV, Hepatitis B is a lifelong infection. In the field of Hepatitis B, it is called ‘functional cure’ when the body’s immune system clears the virus from the bloodstream (and only the liver reservoir remains) allowing patients to stop taking treatment. Unfortunately, functional cure occurs in only 1% of patients in most research studies. Within the IeDEA Hepatitis cohort, we have documented a strikingly high rate of functional cure (~10%) among HIV patients with HBV coinfection. We believe that the immunological boost coming from taking ART is helping the body not only fight HIV but also to take control of HBV.

3. Hepatitis B therapy as HIV prevention

Several antiretroviral drugs for HIV can also treat Hepatitis B virus. In a 2018 case series published in Hepatology, a leading liver journal, we assessed the use of hepatitis B therapy with AAs as HIV pre-exposure prophylaxis (PrEP) patients at the University Teaching Hospital.

HVTN 705 in Brief

- Community Outreach team identified communities where we have recruited successfully.
- The study was activated in August 2018; 31 out of the targeted 150 participants have enrolled to date.
- Retention rate is currently 100%.
- Proposed completion of enrolment is March 2019.
CIDRZ has a newly established Enteric Vaccine Research Unit whose goal is to provide a platform for coordinated development and deployment of state-of-the-art technologies and analysis. This can be effectively utilised for vaccine discovery, and early development and testing of clinical products.

The unit has added, to its portfolio, three of the top five aetiological agents of childhood diarrhoea namely (i.e. Enterotoxigenic E coli (ETEC), Shigella and Salmonella) from the two (Rotavirus and Vibrio Cholerae) it had been working on in the past. Some studies were commissioned in 2018 and focused on:

1. Increasing the effectiveness of licensed vaccines

   - A randomised controlled trial of two versus three doses of Rotarix vaccine for boosting and longevity of vaccine immune responses in Zambia (RODAS-2). This study aims at trying to adapt the current dosing regimen of the Rotarix given at 6 and 10 weeks to a three-dose regimen with an added dose at 9 months of age. We will evaluate both the magnitude and longevity of immunogenicity in the second year of life.
   - A randomised controlled trial comparing vaccination regimen of oral cholera vaccine, the standard two dose given 14 days apart and the experimental two doses but given at 6 months following the first dose of the vaccine. We will evaluate age-specific vibriocidal titers in participants to determine if the delayed dosing regimen is comparable to the standard regimen. The implication will be having an alternative dosing schedule which can be deployed in outbreak situations and humanitarian crises.

2. Determining safety, reactogenicity, immunogenicity and efficacy of new vaccines

   - A phase IIIb An Open-label, Randomised, Controlled, Single Centre, Phase IIIb Study to Assess the Immunogenicity, Reactogenicity and Safety of Three Live Oral Rotavirus Vaccines, ROTAVAC®, ROTAVAC SCm and Rotarix® in Healthy Zambian Infants. This is the first trial to be done on Africans to determine if this vaccine could be an option to the current licensed Rotarix™ used in the national immunisation programme.
   - A Phase 1 age descending placebo controlled clinical trial to examine the safety, tolerability, and immunogenicity of an oral inactivated ETEC Vaccine (ETVAX®) with dmLT adjuvant in healthy adults and children in Zambia. The study is the first one that will use data from endemic countries as a basis for its licensure unlike other vaccines that were first tested and licensed using data from developed countries.
   - A Phase 3 double-blind, randomised, active comparator-controlled, group-sequence, multinational trial to assess the safety and efficacy of a trivalent P2-VP8 subunit rotavirus vaccine in prevention of severe rotavirus gastroenteritis in healthy infants. This study will test a new candidate vaccine for use in neonates which is an injectable vaccine aimed at circumventing the challenges live efficacy and immunogenicity in developing countries faced by oral rotavirus vaccines.
   - A Phase 1 age descending placebo controlled clinical trial to examine the safety, tolerability, and immunogenicity of an oral inactivated ETEC Vaccine (ETVAX®) with dmLT adjuvant in healthy adults and children in Zambia. This study is the first one that will use data from endemic countries as a basis for its licensure unlike other vaccines that were first tested and licensed using data from developed countries.

3. Developing a Model for Evaluating New Vaccines Aimed at Accelerating Vaccine Development

4. Additional Laboratory Capacity

   - Evaluating and validating a rapid diagnostic assay for ETEC and Shigella. We are validating a test that can be used in resource limited setting and has a ~60minute turn-around time from sample collection to results. We hope that this will strengthen the current surveillance system for the two pathogens and help with management of diarrhoea associated therewith.
   - The unit has also added to its vaccine evaluating assays the Vibriocidal assay. This test will help determine and quantify the functional immune responses induced by oral cholera vaccines in both local and regional studies because our laboratory is the only one in the region to have this capacity.

The unit is currently a recipient of two pump priming grants from the HICVAC network to set up a model for evaluating new rotavirus vaccines while the other one is set for evaluating new typhoid vaccines. These models are collectively called Human Infection Challenge Models and have advantages of requiring few subjects in shorter periods of time to evaluate candidate vaccines. The unit is currently developing at both clinical and laboratory capacity to set these models in preparation for actual testing of candidate vaccines.
The Fellowship Programme

CIDRZ continues to build the next generation of African and International researchers and public health leaders. For the 2018/19 stream, we are pleased to host seven CIDRZ HealthCorps, and two Global HealthCorps Fellows.

Tikulirekuti Banda (Zambia)
Enteric Diseases and Vaccines Research

Tikulirekuti holds a Bachelor of Arts in Development Studies and Sociology from the University of Zambia and is currently studying for her Master's degree in Public Health, Health Policy, and Management. She has been involved in a collaboration with researchers at George Clinic, University of Zambia and the University of Copenhagen. Tikulirekuti joined CIDRZ as a Global HealthCorp Fellow in 2018.

Cynthia Phiri (Zambia)
Enteric Diseases and Vaccines Research

Cynthia holds a Bachelor of Science (BSc) in Biomedical Sciences from the University of Zambia and a Master of Science (MSc) in Infectious Diseases from the London School of Hygiene and Tropical Medicine. Prior to the fellowship, she worked as a laboratory scientist in the Virology Laboratory at the University Teaching Hospital. As a CIDRZ HealthCorps Fellow, Dr. Phiri is attached to the Clinical Trials Group.

Rakesh Kumra Serej (India)
Analysis Unit

Rakesh holds a PhD in Health Statistics from the Institute of Medical Science, India, a MSc from the Institute of Medical Science, India and is a Master of Population Science from the International Institute for Population Science, India. He has worked as a Research Associate while doubling as a Statistician at Meenakshi Mission Hospital, India. Monitoring and Evaluation Officer at National AIDS Control Organization, and Future Group International and a Statistician at ICMR, University in India. He is currently working with the CIDRZ Analysis Unit.

Aybüke Koyuncu (USA)
Analysis Unit

Aybüke recently completed her Masters in Public Health in Epidemiology and Biostatistics at the University of California, Berkeley. She worked as a Research Assistant and Data Analyst on projects in Zimbabwe, Tanzania and Nepal focusing on maternal and child health and the prevention of mother-to-child transmission of HIV. As a CIDRZ HealthCorps Fellow, Aybüke works with the analysis team.

Branishka Lewis (Bahamas)
PMTCT Programme

Branishka has an MSc in Public Health from the University of London and an Associate Degree in Nursing from the College of the Bahamas, Bahamas. She has worked as a registered nurse with the Department of Public Health in the Bahamas and as a PMTCT Coordinator at the National HIV Centre in Bahamas. Branishka has also participated in trainings related to HIV. As a CIDRZ HealthCorps Fellow, she is attached to the PMTCT Programme.

Mwila Lundamo (Zambia)
Qualitative Research

Mwila holds a Master of Philosophy (MPhil) in International Health from the University of Bergen, Norway and a Bachelor of Arts in Sociology and Development Studies from the University of Zambia. He has worked for the University of Zambia as a part-time tutor in Social Science Research Methods, and Statistical Methods for Social Sciences. As a CIDRZ HealthCorps Fellow, Mwila works with the social qualitative research team.

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Financials
CIDRZ has continued to undergo rigorous evaluation by NGOsource and has been granted the “Equivalency Determination Status” which equates to a U.S. 501(c)(3) charity based on the strengthening of its financial practices, governance and management. Earning this status makes it easier for donors to confidently consider CIDRZ as a grantee for its credibility and efficiency.

<table>
<thead>
<tr>
<th>Audited Balance Sheet</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSETS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property, Plant and Equipment</td>
<td>24,093,109</td>
<td>22,399,373</td>
</tr>
<tr>
<td>Current assets</td>
<td>134,716,417</td>
<td>100,011,427</td>
</tr>
<tr>
<td>TOTAL ASSETS</td>
<td>158,809,520</td>
<td>122,410,800</td>
</tr>
<tr>
<td>EQUITY AND LIABILITIES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserves and grants</td>
<td>75,937,688</td>
<td>62,283,610</td>
</tr>
<tr>
<td>Long term payables</td>
<td>7,345,674</td>
<td>8,190,576</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>78,536,162</td>
<td>91,936,493</td>
</tr>
<tr>
<td>TOTAL EQUITY AND LIABILITIES</td>
<td>158,809,520</td>
<td>122,410,800</td>
</tr>
</tbody>
</table>

**Note**: Exchange Rate: 1 Kwacha = US $1

**Audited Schedule for Financial Report for the Period Ended 30 Sept 2018**

<table>
<thead>
<tr>
<th></th>
<th>2018 Kwacha</th>
<th>2017 Kwacha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme income</td>
<td>319,199,529</td>
<td>282,870,499</td>
</tr>
<tr>
<td>Programme expenses</td>
<td>(343,676,193)</td>
<td>(291,664,480)</td>
</tr>
<tr>
<td>Operating (deficit)/surplus</td>
<td>(6,476,666)</td>
<td>(6,794,065)</td>
</tr>
<tr>
<td>Other income</td>
<td>55,321,969</td>
<td>68,533,508</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>(51,923,988)</td>
<td>(57,434,891)</td>
</tr>
<tr>
<td>Results from operating activities</td>
<td>(2,658,085)</td>
<td>6,945,008</td>
</tr>
<tr>
<td>Finance costs</td>
<td>13,311,747</td>
<td>(10,407,297)</td>
</tr>
<tr>
<td>(Deficit)/surplus for the year</td>
<td>10,654,552</td>
<td>(5,148,190)</td>
</tr>
<tr>
<td>Other comprehensive income for the period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items that will not be reclassified to surplus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer of excess depreciation</td>
<td>198,186</td>
<td>175,739</td>
</tr>
<tr>
<td>Total comprehensive (deficit)/surplus for the period</td>
<td>10,853,338</td>
<td>(4,946,559)</td>
</tr>
<tr>
<td>Cash Flow</td>
<td>2018</td>
<td>2017</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>Kwacha</td>
<td>Kwacha</td>
</tr>
<tr>
<td>Cash flows from operating activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus/(deficit) for the period</td>
<td>10,654,052</td>
<td>(5,118,290)</td>
</tr>
<tr>
<td>Adjustments for Non Cash Items</td>
<td>(3,299,367)</td>
<td>12,504,050</td>
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<tr>
<td>Net cash used in operating activities</td>
<td>24,655,642</td>
<td>(8,872,652)</td>
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<tr>
<td>Cash flows from investing activities</td>
<td>(11,163,513)</td>
<td>(21,713,146)</td>
</tr>
<tr>
<td>Net increase/(reduction) in cash and cash equivalents</td>
<td>20,756,804</td>
<td>(18,081,248)</td>
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<tr>
<td>Cash and cash equivalents at 1 October</td>
<td>62,537,186</td>
<td>91,524,993</td>
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<tr>
<td>Exchange gains (losses) on cash and cash equivalents</td>
<td>11,864,225</td>
<td>(10,906,066)</td>
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<tr>
<td>Cash and cash equivalents at 30 September</td>
<td>95,458,215</td>
<td>62,537,185</td>
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</table>

<table>
<thead>
<tr>
<th>Programmes Income</th>
<th>2018 Kwacha</th>
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<tbody>
<tr>
<td>ACHIEVE</td>
<td>285,436,482</td>
</tr>
<tr>
<td>GATES FDC</td>
<td>7,652,176</td>
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<tr>
<td>CHOLERA CONTROL AWARD</td>
<td>8,004,931</td>
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<tr>
<td>CDC DETECT</td>
<td>3,751,448</td>
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<tr>
<td>ELTON JOHN</td>
<td>2,809,910</td>
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<tr>
<td>IDEA</td>
<td>2,559,378</td>
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<tr>
<td>TB REACH</td>
<td>2,558,731</td>
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<tr>
<td>VILLAGE REACH</td>
<td>2,515,959</td>
</tr>
<tr>
<td>MAC PMTCT</td>
<td>2,506,845</td>
</tr>
<tr>
<td>LIFE</td>
<td>2,443,845</td>
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<tr>
<td>NIH - CTU</td>
<td>2,138,338</td>
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<tr>
<td>CDC 8 PLUS</td>
<td>2,221,917</td>
</tr>
<tr>
<td>Z CHECK</td>
<td>1,995,967</td>
</tr>
<tr>
<td>PREEMI</td>
<td>1,852,704</td>
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<tr>
<td>HVTN</td>
<td>1,824,959</td>
</tr>
<tr>
<td>SHARE</td>
<td>1,796,869</td>
</tr>
<tr>
<td>DOVE</td>
<td>1,554,856</td>
</tr>
<tr>
<td>SB AERAS</td>
<td>1,492,117</td>
</tr>
<tr>
<td>TASP</td>
<td>1,578,052</td>
</tr>
<tr>
<td>ROTAVAC TRIAL</td>
<td>1,238,934</td>
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<tr>
<td>LIVER FIBROSIS</td>
<td>1,026,674</td>
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<tr>
<td>CHASE</td>
<td>725,383</td>
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<tr>
<td>BACTIVAL</td>
<td>684,847</td>
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<tr>
<td>STAND</td>
<td>62,570</td>
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<tr>
<td>OTHER PROJECTS</td>
<td>2,262,483</td>
</tr>
<tr>
<td></td>
<td>335,389,959</td>
</tr>
</tbody>
</table>
Governance

Comprised of skilled individuals with expertise in government, non-profit management, business, research, public health, and community programming, our Board is governed by a ratified Charter, and is supported by a certified Secretary in accordance with the Companies Act of 2005. Meeting quarterly as a group, the Directors also sit on specific sub-Committees: Finance and Audit, Research and Programmatic Performance, Human Resources and Operations, Business and Investment Development and Nomination.

Finance & Audit - Chair, Patrick Wanjelani

Overssees financial reporting process, selection of auditors, and receipt of internal and external audit results. CIDRZ Director of Internal Audit reports directly to this committee.

Members: Mr Kabaye Mwale, Beatrice Grillo

Research & Programmatic Performance - Chair, Dr Chipepo Kankasa

Provides high-level strategic oversight/scientific guidance to research and healthcare activities to ensure alignment with the Ministry of Health strategic direction. This committee includes representatives from MoH, Ministry of Community Development and Social Welfare; and the Network of People Living with HIV as non-executive directors.

Members: Dr Kevin Marsh MD, Dr Mike Saag MD

Human Resources & Operations - Chair, Christopher Mubemba

This committee ensures that organisational procedures are effective, appropriate, robust, ethical and legal.

Members: Beatrice Grillo, Charles Mpundu, Kondwa Chibiya-Sakala

Business & Investment Development - Chair, Charles Mpundu

Evaluates CIDRZ revenue projections, business opportunities and practices.

Members: Kondwa Chibiya-Sakala

Nomination Committee - Chair, Bradford Machila

Recommends suitable individuals for appointment to the Board, ensuring a balance of skills, experience and independence; and considers CIDRZ senior level succession planning.
Partners and Donors in 2018

- Aeras
- Alere
- American Institutes for Research (AIR)
- Barclays Bank Zambia
- Bill & Melinda Gates Foundation
- Broadreach
- Centre for the AIDS Programme of Research in South Africa (CAPRISA)
- Chiesi Foundation
- Churches Health Association of Zambia (CHAZ)
- Columbia University
- Comic Relief
- Department for International Development UK (DFID)
- Elton John AIDS Foundation (EJAF)
- Elizabeth Glaser Paediatric AIDS Foundation (EGPAF)
- ESTHER Foundation
- European & Developing Countries Clinical Trials Partnership (EDCTP)
- European Union (EU)
- FIND
- Fogarty Global Health Fellowship
- GAVI Alliance
- Global Health Corps
- HIV Research Trust

- HIV Vaccine Trials Network (HVTN)
- International Epidemiologic Databases to Evaluate AIDS (IeDEA)
- International Maternal, Paediatric, Adolescent AIDS Clinical Trials (IMPAACT)
- Johns Hopkins University
- London School of Hygiene and Tropical Medicine (LSHTM)
- M4C AIDS Fund
- Medical Research Council (MRC)
- PATH
- Pharmaceutical Society of Zambia
- Pink Ribbon Red Ribbon
- Roche Molecular Systems
- Sanitation and Hygiene Applied Research for Equity (SHARE) Consortium
- Scandinavian Biopharma
- Swiss Cancer League
- TB Alliance – Global Alliance for TB Drug Development
- The ELMA Foundation
- The ELMA Vaccine & Immunizations Foundation
- The University Teaching Hospital (UTH)
- Thrasher Research Fund
- Tides Foundation

- U.S. Centers for Disease Control and Prevention (CDC)
- U.S. National Cancer Institute (NCI)
- U.S. National Institute of Allergy and Infectious Disease (NIAID)
- U.S. National Institute of Child Health and Human Development (NICHD)
- U.S. National Institutes of Health (NIH)
- U.S. President’s Emergency Plan for AIDS Relief (PEPFAR)
- United Nations Children’s Fund (UNICEF)
- United Nations Office on Drugs and Crime (UNODC)
- United States Agency for International Development (USAID)
- University of Alabama (UAB)
- University of Bern
- University of Maryland, Baltimore (UMB)
- University of Oxford
- University of Rochester
- USAID DISCOVER Health (formerly SHARE II)
- VillageReach
- WaterAid Zambia
- Wellcome Trust
- Zambia AIDS Related Tuberculosis Project (ZAMBART)
- Zambia Emory Research Project (ZEHRP)
- Zambian Center for Applied Health Research and Development (ZCHARD)