National HIV and AIDS Research Priorities 2016-2020

Zimbabwe
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The world has committed unprecedented human, technological and financial resources for HIV and AIDS in the last 3 decades. Substantial time and effort has been invested by researchers to identify prevention options, advancing treatment and cure research and vaccines for HIV infection. In Zimbabwe, researchers have made significant contributions to the body of knowledge in all areas of HIV prevention, and, treatment care and support. High quality and ethically sound research findings from Zimbabwe have informed policy and practice in HIV Testing Services (particularly couples counselling), use of treatment as prevention, timing of ART initiation in patients co-infected with TB, male circumcision, anti-retroviral options/strategies for treatment, prevention of perinatal transmission and more recently use of pre-exposure prophylaxis. Zimbabwe's outstanding record of HIV research output and leadership is evidenced by high numbers of presentations at major conferences, peer-reviewed publications in high impact factor journals and numerous evaluation and technical reports.

There are knowledge gaps in the effectiveness of identified programmes and interventions, in the translation of research to policy and utilisation of scientific breakthroughs. Analytical work to promote increased effectiveness and efficiencies in service delivery and programming is ongoing through monitoring and evaluation activities, but more needs to be done.

These latest HIV and AIDS Research Priorities are a fundamental ingredient of the national response as they provide guidance for the creation of evidence that we need to end AIDS by 2030. The ZNASP III makes a bold call for an evidence informed response to HIV and AIDS research taking place at national, institutional and community levels. Large data gathering initiatives such as ZIMPHIA and the ZDHS are critical in giving direction to the Zimbabwe National HIV and AIDS response as are other scientific initiatives at institutional level. Apart from ZNASP, the priorities need to be aligned to other local and global commitments such as ZIMASSET, SDGs and UNAIDS Fast Track to End AIDS by 2030.

As we strive to fulfil the promise of ZIMASSET and the SDGs and ensure we “leave no-one behind” in the national response, the challenge for us all now lies in the implementation of these identified priorities for evidence creation and its utilisation in both policy formulation and programming in enhancing the outcomes of our response to HIV and AIDS. I therefore want to appeal to all stakeholders to support these priorities through funding, implementation and eventual utilisation of evidence.

BRIGADIER GENERAL DR G. GWINJI
Permanent Secretary,
Ministry of Health and Child Care
Research and evaluations form a critical ingredient of the national response to HIV and AIDS. The call for evidence informed policies and programs in response to HIV and AIDS has been getting louder and louder in Zimbabwe, the Southern African region where the burden of the pandemic is most felt. Ending AIDS will strongly depend on the evidence we use to develop our policies, strategies and programs. We must continue to build a strong capability for research and evaluations particularly in view of the regular changes in the HIV and AIDS field. We need to be fully clear about researched and proven potential effects of interventions before committing resources to guarantee efficiencies in implementation.

These new priorities have been updated to reflect the accelerated efforts to achieve the 90-90-90 by 2020 targets through effective interventions for key populations; reducing infections in adolescents, young adults, women and girls; ensuring HIV sensitive social protections; pooled procurement of ARVs; HIV integration with TB, cancer and other NCDs; combination HIV prevention and treatment as prevention among others. The priorities will serve to ensure that Zimbabwe spends the available limited resources in the areas of greatest need and avoid unnecessary duplications.

The priorities were developed through a consultative process involving meetings, deliberations and guidance by and between researchers, programmers, implementers, donors and priority populations at national levels.

NAC would like to thank all the sectors and partners that dedicated their time, intellectual and financial resources towards this agenda. They include but not limited to the Ministry of Health and Child Care, National AIDS Council, Zimbabwe National Network For People Living With HIV, Medical Research Council of Zimbabwe University College of Health Sciences, Biomedical Research and Training Institute, UNAIDS, CDC, USAID, DFID, MSF other research institutions, public and private hospitals, county representatives, public and private sectors, civil society organizations, representatives of key populations, faith based organizations, implementing and development partners. We also thank the expert reviewers who provided critiques and valuable recommendations to improve the research priorities document.

We acknowledge the lead consultant for facilitating stakeholders consultative and validation meetings on research priorities and design of the agenda.

We cannot overemphasize the need to continue building research capacity, committing to funding for research and ensure that information gathered is of high quality and is disseminated and utilized to mitigate the effects of HIV and AIDS on our population.

DR T. Magure
CEO, National AIDS Council
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ABC</td>
<td>Abstinence; Be Faithful to one Faithful Partner, Consistent use of Condoms</td>
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<tr>
<td>ADR</td>
<td>Adverse Drug Reactions</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>AMTO</td>
<td>Assisted Medical Treatment Order</td>
</tr>
<tr>
<td>ART</td>
<td>Antiretroviral Therapy</td>
</tr>
<tr>
<td>ARV</td>
<td>Anti-retroviral (drugs)</td>
</tr>
<tr>
<td>BCC</td>
<td>Behaviour Change Communication</td>
</tr>
<tr>
<td>CARGs</td>
<td>Community ART Refill Groups</td>
</tr>
<tr>
<td>cART</td>
<td>Combined Antiretroviral Therapy</td>
</tr>
<tr>
<td>CBC</td>
<td>Community Based Care</td>
</tr>
<tr>
<td>CBO</td>
<td>Community Based Organizations</td>
</tr>
<tr>
<td>CHAI</td>
<td>Clinton Health Access Initiative</td>
</tr>
<tr>
<td>CHBC</td>
<td>Community Home Based care</td>
</tr>
<tr>
<td>CHBC</td>
<td>Community Home Based Care</td>
</tr>
<tr>
<td>CIPHER</td>
<td>Collaborative Initiative for Paediatric HIV Education and Research</td>
</tr>
<tr>
<td>DAAC</td>
<td>District AIDS Action Committee</td>
</tr>
<tr>
<td>DBS</td>
<td>Dried Blood Spots</td>
</tr>
<tr>
<td>DDIs</td>
<td>Drug-Drug Interactions</td>
</tr>
<tr>
<td>DFID</td>
<td>Department for International Development</td>
</tr>
<tr>
<td>DR</td>
<td>Drug Resistance</td>
</tr>
<tr>
<td>EID</td>
<td>Early Infant Diagnosis</td>
</tr>
<tr>
<td>GCP</td>
<td>Good Clinical Practices</td>
</tr>
<tr>
<td>GoZ</td>
<td>Government of the Republic of Zimbabwe</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>HIVDR</td>
<td>HIV Drug Resistance</td>
</tr>
<tr>
<td>IEC</td>
<td>Institutional Ethics Committees</td>
</tr>
<tr>
<td>IPT</td>
<td>Isoniazid Prophylaxis</td>
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<tr>
<td>IYCF</td>
<td>Infant and Young Child Feeding</td>
</tr>
<tr>
<td>KAP</td>
<td>Knowledge Attitudes and Practices</td>
</tr>
<tr>
<td>KAPB</td>
<td>Knowledge, Attitudes, Practices and Beliefs</td>
</tr>
<tr>
<td>MDR</td>
<td>Multi-Drug Resistance</td>
</tr>
<tr>
<td>MIPA</td>
<td>Meaningful Involvement of People Living with AIDS</td>
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<tr>
<td>MoHCC</td>
<td>Ministry of Health and Child Care</td>
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<tr>
<td>MPTs</td>
<td>Multipurpose Technologies</td>
</tr>
<tr>
<td>MRCZ</td>
<td>Medical Research Council of Zimbabwe</td>
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<tr>
<td>MSF</td>
<td>Medicines Sans Frontiers</td>
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<tr>
<td>MSM</td>
<td>Men who have Sex with Men</td>
</tr>
<tr>
<td>MTCT</td>
<td>Maternal To Child Transmission</td>
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<tr>
<td>NAC</td>
<td>National AIDS Council</td>
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<tr>
<td>NACP</td>
<td>National AIDS Control Programme</td>
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<tr>
<td>NBCP</td>
<td>National Behavior Change Program</td>
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<tr>
<td>NBSZ</td>
<td>National Blood Services Zimbabwe</td>
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<tr>
<td>NCD</td>
<td>Non Communicable Diseases</td>
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<tr>
<td>OI</td>
<td>Opportunistic Infections</td>
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<tr>
<td>OVC</td>
<td>Orphans and Vulnerable Children</td>
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<tr>
<td>PAAC</td>
<td>Provincial AIDS Action Committee</td>
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<tr>
<td>PEP</td>
<td>Post Exposure Prophylaxis</td>
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<tr>
<td>PLHIV</td>
<td>People Living with HIV and AIDS</td>
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<tr>
<td>PLWD</td>
<td>People Living with disabilities</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission</td>
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<tr>
<td>POS</td>
<td>Programme of Support</td>
</tr>
<tr>
<td>PPP</td>
<td>Public Private Partnerships</td>
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<tr>
<td>PrEP</td>
<td>Pre-Exposure Prophylaxis</td>
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<tr>
<td>PTB</td>
<td>Pulmonary Tuberculosis</td>
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<tr>
<td>RAC</td>
<td>Research Advisory Committee</td>
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<tr>
<td>SADC</td>
<td>Southern Africa Development Community</td>
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<tr>
<td>SDG</td>
<td>Sustainable Development Goals</td>
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<tr>
<td>STI</td>
<td>Sexually Transmitted Infection(s)</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>UAV</td>
<td>Unmanned Aerial Vehicles</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNAIDS</td>
<td>United Nations Joint Program on HIV and AIDS</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>UZCHS</td>
<td>University of Zimbabwe College of Health Sciences</td>
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<tr>
<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
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<tr>
<td>VMMC</td>
<td>Voluntary Medical Male Circumcision</td>
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<td>WAAC</td>
<td>Ward AIDS Action Committee</td>
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<tr>
<td>WAC</td>
<td>Ward AIDS Coordinator</td>
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<tr>
<td>YIS</td>
<td>Youth in School</td>
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<tr>
<td>YOS</td>
<td>Youth Out Of School</td>
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<tr>
<td>ZDHS</td>
<td>Zimbabwe Demographic Health Survey</td>
</tr>
<tr>
<td>ZIMASSET</td>
<td>Zimbabwe Agenda for Sustainable Social and Economic Transformation</td>
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<tr>
<td>ZIMPHIA</td>
<td>Zimbabwe Population-based HIV Incidence</td>
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<tr>
<td>ZNASP</td>
<td>Zimbabwe National HIV and AIDS Strategic Plan</td>
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</tbody>
</table>
Executive Summary

It is critically important to continually identify high priority areas in health research. Health research priority setting processes guide researchers and policymakers to target research with the greatest public health benefit. In low-income countries, clearly articulated national health research priorities can transform a donor-driven research agenda to an agenda driven by countries’ needs. There is need to continually update these priorities because of the emergence of new health problems and re-emergence of old diseases that result in new challenges. This is particularly relevant to the HIV epidemic landscape where new scientific discoveries can rapidly shift the strategic direction of current practice in prevention, treatment, care and support.

The Zimbabwean government through the National AIDS Council (NAC) in collaboration with local and international partners provides leadership for a national multi-sectoral response to HIV and AIDS. Zimbabwe has made great strides in responding to HIV and AIDS through its focus on prevention of new infections, and improving access to treatment and care services, mobilizing human and material resources, despite significant economic challenges over the past two decades. The country has reduced the HIV prevalence from over 26.5% at its peak in 1997 to 13.81% in 2015 amongst adults (15-49 years). Significant high new infections continue to be reported in both adults and children.

In 2015 Zimbabwe developed a five year results based National HIV and AIDS Strategic Plan with three key impact results, namely:

• To reduce HIV incidence by 50% among children, adolescents and in adults by 75%, by 2018.
• To reduce HIV-related mortality by 80% for children, adolescents and adults by 2018.
• To increase domestic financing of the HIV response to 30% by 2018

and the following key outcomes that will contribute to achieving the impact results

• All adults and children have increased access to effective HIV prevention services and are empowered to participate in inclusive and equitable social mobilization to address drivers of the epidemic
• 90% of all PHLIV know their HIV status, 90% of HIV+ receive sustained antiretroviral therapy, 90% of those on treatment have durable viral load suppression
• Key government and civil society institutions have improved capacity to effectively and efficiently manage a multi-sectoral AIDS response

In support of the achievement of the above impact and outcome results, the National AIDS Council and partners in the national response, recognized the need to update the 2013-2015 HIV and AIDS research priorities for the period 2016-2020.

Achievement of ZNASP III goals requires greater emphasis on identification and implementation of high-impact research priorities, innovative programming, research capacity strengthening and maintaining robust M&E systems. The National AIDS Council, individual researchers, local regional and international research institutions, funding organizations and stakeholders including policy and decision makers will be guided by this document to prioritize and harmonize research on HIV and AIDS in Zimbabwe, in line with ZNASP III (2015 - 2018) goals and objectives. Further, this document will be used as a tool for advocacy and resource mobilization to contribute to the achievement of the Zimbabwe National HIV strategic vision; of a Zimbabwe with zero new infections, zero discrimination and zero AIDS related deaths leading towards ending AIDS by 2030 as enunciated in ZNASP III (2015 - 2018).
## THEMATIC AREA 1: PREVENTION

### Socio-behavioral Communication Change Programs (SBCCP)
- Appropriate and effective behaviour change programmes for specific groups (youths, married couples, mobile populations, etc).
- Effective models of sex education in schools and SRH knowledge among youth.
- Community mobilization to increase prevention uptake and evaluation of best practices for integration of HIV prevention into youth-friendly services.
- Prevalence, risk and exposure factors evaluations programmes for most at risk groups and key populations.

### HIV Testing Services (HTS)
- Delivery models for HTS tailored adolescents and young adults.
- Effectiveness of HTS, quality of HTS.
- Feasibility of Community based HTS.
- Evaluation of self-testing.
- Addressing structural barriers to HTS and linkage to care.

### Treatment as prevention
- Logistical issues.
- Assess Impact of test and treat all on incidence.

### Condom promotion and programming
- Investigate reported high uptake vs actual use vs increase in STI's.
- Innovative approaches to mitigate gender power dynamics in condom usage.

### Pre-Exposure Prophylaxis (PrEP)
- KAP studies of preparedness among providers and users and with special focus on young women and adolescents.
- Acceptability, safety and effectiveness.
- Promote clinical trials to evaluate of newer PrEP formulations.
- Adherence (barriers/ motivators) and drug resistance monitoring.
- Evaluate PrEP delivery models rings, films, oral, long acting injectables.
- Delivery models most suited for key populations.
- Risk compensation with widespread PrEP availability.
- PrEP for special groups to include Sex Workers.

### PMTCT
- Access for mothers/infants.
- Option B+ roll out, uptake, adherence, sustainability, coverage.
<table>
<thead>
<tr>
<th>Effect of intrauterine ART exposure on infant's growth</th>
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<tbody>
<tr>
<td><strong>SRH and Gender</strong></td>
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<tr>
<td>Test models for integration of Gender into Reproductive Health programmes</td>
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<tr>
<td>Impact of gender inequity/ GBV effect on transmission</td>
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<td><strong>VMMC</strong></td>
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<td>Assess reasons for current low uptake, risk compensation, sustainability</td>
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<tr>
<td>Efficacy and feasibility of non-surgical methods among adolescents</td>
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<td>Cost effectiveness</td>
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<td><strong>Post exposure Prophylaxis</strong></td>
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<tr>
<td>How to improve awareness among providers and population</td>
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<td>PEP in discordant couples and MARP</td>
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<td>Adherence to PEP</td>
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<td>HIV associated stigma</td>
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<td>Blood safety-donor retention strategies</td>
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<td><strong>Vaccine Development</strong></td>
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<tr>
<td>Improve basic knowledge and determine acceptability among policy makers, providers and general population</td>
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<td>Community preparedness studies before research implementation</td>
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<td>Promote clinical trials testing of new candidate vaccines</td>
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<td><strong>THEMIATIC AREA 2: TREATMENT CARE AND SUPPORT</strong></td>
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<tr>
<td><strong>Access</strong></td>
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<tr>
<td>Evaluate access to HIV care in the private sector among adolescents, MSM, artisanal miners, sex workers, hard to reach populations</td>
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<tr>
<td>Efficacy, control and management as well as availability of ART (to include pediatric HIV and the adolescent care treatment and support)</td>
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<tr>
<td>Cost of access among PLHIA</td>
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<td>Address drug stock outs</td>
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<td>Rationalize ART drugs distribution ensure equitable distribution by using realtime/ up to date drug consumption logs.</td>
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<td><strong>Treat All Approach</strong></td>
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<td>Adherence among asymptomatic patients with high CD4</td>
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<tr>
<td>Research into country bottle necks towards treat all (resources human/ finance, logistics and supply chain issues)</td>
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<tr>
<td>Determine extent of loss to follow-up among different groups (pre-ART, ART).</td>
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<tr>
<td>Evaluate ART outcomes (viral suppression and retention in care) among mobile population subgroups to include cross-border traders, migrant workers and truck drivers).</td>
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<tr>
<td>Quality of life and adherence to ART</td>
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<td>Cost of care in hospitals</td>
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<tr>
<td><strong>Quality of care in CHBC</strong></td>
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<tr>
<td>Research on impact of traditional medicines on ART adherence, drug interactions, pharmacovigilance for traditional therapies</td>
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<tr>
<td>Develop best practices to guide transition from Paediatric to adolescent HIV care</td>
</tr>
</tbody>
</table>

### Nutrition

- Nutrition and food security impact on ART adherence
- Relationship between nutrition and PMTCT

### Laboratory

- Evaluate new technologies for viral load monitoring (DBS, UAVs for DBS transportation)
- Early Infant Diagnosis

### THEMATIC AREA 3: ENABLING POLICY AND LEGAL ENVIRONMENT

- Systems strengthening-evaluations of HR policies; health financing
- Evaluation functionality of health equipment/ health facilities
- Monitoring and Evaluation- impact of intervention
- Roles and Coordination of government vs. non-government structures
- Main streaming /Integration of HIV and AIDS-Gender/ adolescents; mentally challenged, military, most at risk and key populations, etc
- Assessing levels of integration of services
- Funding mechanisms and coordination-Donors and Partners
- Service delivery assessments
- Meaningful Involvement of People Living with AIDS (MIPA)
- Community level assessment - correlation studies. e.g. cancers and HIV
A. Overview of HIV and AIDS in Zimbabwe and the National Response

Zimbabwe continues to experience one of the worst HIV infection rates in sub-Saharan Africa. The principal mode of HIV transmission is heterosexual contact, which accounts for 92% of all HIV infections in the country (Zimbabwe National AIDS Council, 2015). The HIV epidemic in Zimbabwe peaked in 1997 and is steadily declining. HIV incidence rates among adults aged 15-49 reduced from 2.63% in 2000 to 0.8% in 2015 due to the scale up of various prevention and treatment programmes. In terms of absolute numbers, the new HIV infections among all adults 15+ declined nationally from 90,720 in 2000 to 58,949 in 2015. Among children a declined was noted from 26,112 in 2000 to 4,938 in 2015. 2015 estimates indicate a prevalence of 14.7%. The second most important mode of HIV transmission in Zimbabwe is vertical transmission, in which the mother passes HIV to her child during pregnancy, childbirth, and or breast feeding. As of 2015, an estimated 1,412,790 million adults and children in the country were living with HIV (MOHCC, 2015). Significant gains have been made in the reduction of MTCT, overall mortality, number of new infections and life years gained by those on treatment. The country has seen a 50% reduction of new HIV infection rate among adults and 75% in children born from HIV positive mothers in the last decade. HIV related deaths have also been reduced by over 60% as a result of our very successful treatment and support program. Because of the increased burden of disease due to HIV, Zimbabwe has continued not only to scale up prevention, care, and treatment programs to combat the disease but also to strengthen monitoring and evaluation systems for these programs (MOHCC, 2015).


Periodic revision of health research priorities translates to better utilization of limited resources. Research serves as a mechanism for effective knowledge generation, information sharing and management that will inform the country's HIV response. The emergence of new health problems and reemergence of old diseases as well as the need for better utilization of resources for high impact results makes research important. Central to research is the need to transform the health care delivery system in order to effectively address these challenges.

The National AIDS Council (NAC) in consultation with partners in the then Research Advisory Committee (RAC), published the first National HIV and AIDS Research Priorities (2010 -2012) as a result of the consultative process that started in 2008. This document identified research priorities in the four broad thematic areas of prevention, treatment and care and cross-cutting issues.

Researchers and research funding organizations continue to support NAC's efforts to have a well-coordinated research initiative in Zimbabwe. A review of research proposals that were approved by the Medical Research Council of Zimbabwe (MRCZ), showed that there is significant completed planned and ongoing in all fields of HIV that include "treatment and prevention Clinical trials", "Basic HIV science", "Socio - Behavioral research"; "Service delivery"; "Adolescent health"; "Women and Gender"; "Perinatal HIV prevention and treatment"; "Opportunistic Infections" and "Traditional medicines". An estimated 90% of these proposals are externally funded through competitive grants, with external collaborators. In all the research projects limited or no reference is made to the national research priorities document. In all these categories, treatment studies were the most prominent accounting for about 60%, whilst Prevention studies accounted for 20% and Mitigation studies, 20%.
An emerging priority area for which research needs to be up-scaled is HIV and AIDS prevention and treatment among adolescents, young women and girls, and other key populations. There has been a significant focus on pediatric HIV with studies being conducted on HIV and AIDS, and TB prevention among pregnant women and children, treatment strategies for children and mitigation of effects of the epidemic on this population.

The Medical Research Council of Zimbabwe continues to execute its ethical regulatory role which involves monitoring of the research activities. During the period 2013-2015, they were able to increase their monitoring role and a number of research studies had site inspections done. MRCZ is currently raising awareness of the research regulatory framework in the country, research ethics issues such as the process of informed consent for minors and legal issues of guardians and other vulnerable groups when conducting HIV and AIDS research. The MRCZ has trained research teams from various academic and research institutions on GCP and have been instrumental in training and setting of Institutional Ethics Committees (IECs). Delays in translating high impact research outcomes into policy remains a major challenge which will need to be looked into during the 2016 - 2020 period.

The 2016 - 2020 Research Priorities have been developed, specifically to:

1. Inform researchers, partners and stakeholders involved in the national response of specific research issues that are critical to enable better understanding of the HIV pandemic, this time with a special focus on national response priorities identified in ZNASP III.

2. Serve as an instrument for the coordination of HIV and AIDS research in the country.

3. Guide researchers and research organizations to areas of importance to the country, which can receive funding support where resources are available.

C. Achieving 90-90-90 and ending AIDS by 2030

As enunciated in the ZNASP III (2015-2018) strategic document, Zimbabwe has adopted the UNAIDS "90-90-90" strategy which calls for detection of 90% of HIV positive individuals by 2020, 90% of whom should be on anti-retroviral therapy (ART) and 90% of who should achieve sustained virologic suppression. Reaching these targets by 2020 will reduce the HIV epidemic to a low-level endemic disease by 2030. Moving the National Response towards this universal test and treat model will pose huge challenges to our health system. Sustaining the current prevention, treatment and care investment to save more lives entails rapid scale up of male circumcision using WHO's implementation standards and guidelines to 80% coverage by 2018; implementation of comprehensive HIV prevention programmes for sex workers, adolescents and young people, and discordant couples; regulate and rapidly scale-up of innovative community HIV testing initiatives; integrating social norm and behaviour change interventions into the delivery of social and HIV-related services, community system strengthening and investment case approach to the national response. The contribution of research to achieving these set goals cannot be overemphasized. Innovative strategies to increase HTS services and linkage to care, retention in care and ensuring an uninterrupted supply of medicines will hold the key. Research will be central to continuous monitoring and evaluation of the set strategies. Results from high impact research including locally implemented clinical trials will continue to be expeditiously adopted to inform country policies on prevention, treatment and care.
D. Role of NAC in HIV and AIDS Research

The National AIDS Council (NAC) continues to provide leadership and coordination for the national multi-sectoral HIV and AIDS response through relevant policies and systems including research priorities, research financing where possible, research dissemination and utilisation of evidence. There are continued efforts to ensure that HIV research capability and evidence utilisation are strengthened.

E. Research Partnerships

Over the years, Zimbabwe has adopted a multi-sectoral approach in responding to HIV and AIDS which will continue, to ensure that all sectors play their role based on their mandate and comparative advantage. The country is committed to fulfilling the international and regional obligations including: Sustainable Development Goal number 3.3 of ending AIDS by 2030 (UN Sustainable Development Summit September 2015); UN Political Declaration on HIV and AIDS, the Global Plan towards elimination of new HIV infections in children and keeping mothers alive, Maseru and Brazzaville Declarations, and the Maputo Plan of Action, among others. Given that the precursor guidance document on National HIV and AIDS Research Priorities expired at the end of 2015 (Zimbabwe National HIV and AIDS Research Priorities Report 2013-2015), and in recognition that research is necessary to guide policy, the National AIDS Council sought technical assistance to update the priorities for the period 2016 to 2020. These research priorities have been developed in line with the current Zimbabwe National HIV and AIDS Strategic Plan (ZNASP III) - 2015-2018, a five-year, multi-sectoral framework, developed to inform and guide the national response towards achieving zero new infections of HIV, zero discrimination, and zero AIDS related deaths, achieving the 90-90-90 goals and ending AIDS by 2030.

F. Regulation of Health Research in Zimbabwe

The Medical Research Council of Zimbabwe (MRCZ) being the National Research oversight body will continue to review and grant ethical approvals for research proposals. All academic Institutions, Research Institutions and tertiary and provincial hospitals must have Ethics Committees in place to review and approve research carried out in their institutions before research implementation. All researchers are reminded of the need to seek approvals from both their local Institutional Ethics Committees and the MRCZ.

G. Guiding Principles for HIV and AIDS Research Priorities

ZNASP III (2015 - 2018) has several guiding principles which will guide the national HIV and AIDS response, including these research priorities. The principles are as follows:

Results based management

In order to fully realize value for money, the GoZ and its partners will promote results, accountability and good governance at all levels.

Rights based approach

The National HIV response recognizes, upholds and strives to protect and promote the rights, dignity, non-discrimination of the people especially PLHIV, key populations, people with disabilities, youths, women, children and others who are socially excluded.

Equity for fairness and justice

The HIV response will support and uphold interventions that promote allocation of resources preferentially to the needy, to address challenges related to unfair differences.
Evidence Informed
Interventions for the HIV response will be based on empirical evidence. Allocation of resources will be determined by the value, impact and potential for scaling up evidence based initiatives.

Accountability
Accountability based on multisectoral involvement, mutual involvement, financial reporting and program reporting.

Shared Responsibility and Global solidarity
Commitment of political leadership; allocation of resources to ensure high impact; and to close the HIV investment gap with assistance from developmental partners.

Gender sensitivity and responsiveness
A gender responsive national multisectoral AIDS response will be promoted and implemented.

Sustainable financing
Resource funding is dwindling due to subdued economic performance, job losses with declining domestic funding from the AIDS Levy and donor fatigue. This will impact negatively on the HIV funding situation. Sustainable funding initiatives and mechanisms are required.

Good Practices for learning
Lessons learnt and best practices documentation will be used at critical stages of programmes implementation at all levels in the country for an improved and effective response.

Community involvement ownership and partnership
Communities will be empowered to take control of their resources and multisectoral stakeholders including government sectors, DPs, FBOs, CSOs Private sector-including the informal sector (SMEs), PLHIV will be aligned towards achieving the country’s goals and results.

Positive Health, Dignity, and Prevention (PHDP)
PLHIV will be fully recognized and given an important role in the national HIV response, to ensure their involvement in all interventions, at all stages.

Country ownership and partnership
All stakeholders including the government, development partners, private sector, faith-based organisations and communities of people living with HIV and Zimbabwean communities shall align their efforts towards the results envisioned.

Rights-based and gender transformative approaches
Protection and promoting the rights of those who are socially excluded, marginalised and vulnerable will be critical for a successful National Response.

Efficiency, effectiveness and innovation
Sustainable domestic funding options through improved efficiency in service delivery and innovative approaches aimed at achieving more at reduced cost without compromising on quality of services.
The revision of the 2013-2015 National HIV and AIDS research priorities to the 2016-2018 Priorities involved the following processes:

i. Holding a stakeholders meeting to review and revise the current Zimbabwe National HIV and AIDS Research Priorities on 16th August 2016.

ii. Carrying out extensive literature searches/desk review of reports, to identify gaps in the issues raised during the stakeholders meeting and to incorporate them into the priorities raised from the meeting.

iii. Targeted consultations with relevant research institutions to solicit further input from key professionals.

iv. Formulating issues raised into actual research questions/priorities.

v. Ranking/Recommending/Advising on which issues will get the first attention in the implementation of the research priorities in line with ZNASP III (2015-2018).

The updated priorities focused on three (3) broad thematic areas, namely "Prevention"; "Treatment Care and support"; and "Enabling Policy and Legal Environment".

Specific areas of focus at a glance under the three broad areas are:

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Treatment Care and Support</th>
<th>Enabling Environment- Legal and Policy Framework</th>
</tr>
</thead>
</table>
| - Social and Behaviour Change Communication  
- HIV Testing and Counseling  
- Condoms  
- Treatment as Prevention  
- PMTCT  
- Voluntary Medical Male Circumcision  
- Pre-Exposure Prophylaxis  
- Treatment and Control of STI  
- Post Exposure Prophylaxis  
- Vaccines  
- Blood Safety | - Antiretroviral therapy  
- Nutrition  
- Community based care  
- Support for OVC | - Coordination and management including policy and legal frameworks  
- Coordination and Management including financing and resource mobilization, and information management  
- Systems Strengthening  
- Mainstreaming/Integration of HIV and AIDS with other Programs |

a. **The Stakeholders/ Prioritization Workshop**

This workshop brought together participants from NAC, MoHCC, MRCZ, academic institutions, research organizations, PLHIVA, and partners to include UNAIDS, WHO, USAID, PEPFAR, CDC, CHAI, SW. The workshop was opened by keynote addresses by the Ministry of Health and Child Care and the Chief Executive Officer of the National AIDS Council. The facilitator gave a panoramic review of the 2013 - 2015 period highlighting major Research achievements and gaps. Research Priorities meeting objectives were presented. The Research Prioritization tool adapted from Varkevisser, C.M., Pathmanathan, I., Brownless, and A. 1991. Designing and conducting health systems research projects. Module 3: Identifying and prioritizing problems for research. In: Health
The tool consists of a seven point criteria that ranks issues from 1 to 3 for each point. Ordinarily, all topics scoring higher overall marks are deemed high in priority. Topics that scored lower on the ethical criteria were considered problematic and were ranked lower on the priority list.

The following are the components of the priority scoring tool presented and used at the meeting.

<table>
<thead>
<tr>
<th>Relevance</th>
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<tr>
<td>1 = Not relevant</td>
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<tr>
<td>2 = Relevant</td>
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<tr>
<td>3 = Very relevant</td>
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<th>Avoidance of duplication</th>
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<tr>
<td>1 = Sufficient information already available</td>
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<tr>
<td>2 = Some information available but major issues not covered</td>
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<tr>
<td>3 = No sound information available on which to base problem solving-</td>
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<td>2 = Study feasible considering available resources</td>
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<tr>
<td>3 = Study very feasible considering available resources</td>
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<th>Political acceptability</th>
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<td>1 = Topic not acceptable to high level policy makers</td>
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<td>2 = Topic more or less acceptable</td>
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<td>3 = Topic fully acceptable</td>
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<th>Applicability</th>
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<tr>
<td>1 = No chance of recommendations being implemented</td>
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<tr>
<td>2 = Some chance of recommendations being implemented</td>
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<td>3 = Good chance of recommendations being implemented</td>
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<td>1. Information not needed urgently</td>
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<td>2. Delay acceptable</td>
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<tr>
<td>3. Data urgently needed for decision making</td>
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**Prioritization procedure**

The Nominal Group Technique was used. Participants were divided into three thematic groups: prevention, care and treatment and support and enabling environment and policy framework. In each thematic group were a set of 4 -5 subthemes for which each of the participants were asked to come up with key research areas and questions that they wanted to be addressed. A leader in the
group then synthesized all the research questions for the group. The second phase was devoted to scoring of the research questions using the provided criteria in the research prioritization tool, based on group consensus. A plenary then followed. The top ten questions in each thematic group were discussed. Some questions were dropped, rephrased or others combined into one based on suggested changes/ modifications during the plenary discussion. Consensus was reached after taking into account diverging values and viewpoints of stakeholders.

b. Stakeholder Consultation and Targeted Top Researcher Solicitation
To enhance national ownership of this document, a number of local stakeholders were consulted through brief face to face interviews. These included key government departments, research and academic institutions, development partners, and key stakeholders such as UNAIDS, WHO, CDC, USAID, DFID, CHAI, UZ College of Health Sciences to gather their input on perceived gaps and priority HIV and AIDS research areas in the coming 5 years.

c. Literature Review
In addition to the interviews, the consultant carefully reviewed the following relevant documents:
(1) Zimbabwe National HIV and AIDS Research Priorities 2013-2015
(2) Zimbabwe National HIV and AIDS Strategic Plan III 2015-2018
(3) National HIV and AIDS Report 2015
(4) PEPFAR Zimbabwe National Country Operational Plan Strategic Direction 2015.

An extensive literature review was undertaken to decipher how other countries went through the prioritization process, determine other key topical issues in HIV research through major and recent HIV and AIDS conference reports, recent publications from high impact factor journals such as the New England Journal of Medicine, JAIDS, Lancet, Southern HIV and AIDS Research Forum. Technical reports from Ministry of Health and Child Care, WHO, UNAIDS, CDC and USAID were used as resources. Key documents that contributed to this process are listed in the reference section of the draft Research Priorities Document.
A. THEMATIC AREA 1: PREVENTION

In ZNASP III, prevention of new infections and reduction of transmission remains a national priority in the response to HIV and AIDS with Zimbabwe having adopted the "combination prevention strategy". The strategy aims at reducing or preventing infection if exposure has occurred, reducing the probability of infection if transmission has occurred and finally influence behaviour change where social or cultural norms, values and practices remain barriers to adopting effective prevention behaviour. The high impact interventions include social and behaviour change communication, condom promotion and distribution, voluntary male circumcision, PMTCT, HIV Testing Services, Pre-exposure prophylaxis for negative persons, treatment of those who are infected to suppress HIV replication, prevention and control of sexually transmitted infections, blood safety and Post Exposure Prophylaxis and testing of new vaccine candidates.

Research questions were identified for each of the interventions and are detailed as follows:

1. Social and Behaviour Change Communication Programme

Several challenges and gaps have been identified in the National Behaviour and Communication Programme (NBCP) of ZINASP II which are largely due to flaws in implementation. This remains fragmented with inadequate coverage and intensity which has impact on the key or most at risk populations (e.g. the young people and in particular those out of school)

Identified research questions in this area are:

- How effective are the models being used for behaviour change in Zimbabwe, especially as relates to young people and those out of school?
- What are the factors that lead to relapse in behaviour?
- What are the current key drivers of HIV?
- Who are the most at risk groups and key populations? e.g Men having sex with men, female sex workers, migrant workers, etc. (What are their risk and exposure factors and infection dynamics; what is their HIV prevalence; what interventions are currently in place targeting these groups?)
- What advocacy programs address adolescent reproductive health physical needs (sanitary wear). (e.g. lessons learned from initiatives on reusable sanitary wear? How sustainable are these initiatives?)
- What is the impact of alcohol and other forms of drugs abuse on HIV transmission dynamics among adults, young adults and adolescents?
- Does teaching of sexuality in schools increase HIV knowledge among youth?
- What is the effectiveness of current models being used to reach youth adolescents and young adults?
- To what extent are workplace HIV policies implemented/translated into workplace programs?
- To what extent is there harmonization of sectoral policies with National HIV and AIDS and TB Workplace policies?
- Is stigma and discrimination adequately addressed in the NBCP? If not how can this be improved?
• How can we better understand the correlation of risk perceptions on HIV prevention, adherence and retention
• What impact does stigma and discrimination have on key outcomes including HTS uptake, enrolment and retention in care and adherence?
• What are the cost effective strategies in utilization of social media platforms to improve HIV prevention and research outcomes?

2. HIV Testing Services (HTS)
HIV counseling and testing remains a key prevention strategy in the national response to HIV. Achieving the first 90 in the 90-90-90 strategy requires high uptake of HTS irrespective of the method used. ZNASP III advocates HTS for priority populations including couples (formal and informal unions); partners of PLHIV on the national Pre-ART and ART programme; children (0-14 years), young people (aged 15-29 years) and key populations.

Identified research questions in this are
• How should we optimize HTS (where should services be provided, who should deliver it & explore the value of self-testing)
• How to mitigate against social harms associated with self-testing.
• Explore beliefs & perceptions around universal test and treat strategy.
• Which subsets of population are captured by different models
• How effective are pre-test counselling approaches?
• Post-test counselling effect on behaviour change, linkages, repeat testing
• The ethics of testing and care provision for children-especially for HIV-positive children.
• What have been the effects of individual motivation towards voluntary testing and counselling?
• How effective and what is the uptake of provider initiated testing and counselling (PITC) as a delivery method?
• How to overcome reluctance to provide partner testing/index partner testing
• Determine and improve quality of counselling particularly for pregnant women
• Determine the feasibility of HTS on high risk groups - only (targeted testing) to achieve more with less.
• Design protocols to regularly and continuously evaluate the uptake (and coverage) of testing in Zimbabwe to achieve the first 90?
• What are the reasons for inadequate integration of HTS with other services?
• How effective are referral systems for HTS?
• Evaluate Impact of HTS policy shift from parental consent towards consenting for children

3. Prevention of mother to child transmission
90% of all paediatric HIV infection is through mother to child transmission of HIV. Advances in treatment of HIV disease and introduction of option B+ for PMTCT have made paediatric HIV infection eminently preventable, and in developed countries, new paediatric infections through vertical transmission have largely been eliminated, with reported mother-to-child transmission (MTCT) rates of less than 2%. This has been achieved through use of interventions that include HIV testing as part of routine antenatal care, labour and delivery and postnatally, provision of lifelong triple therapy to positive mothers and their partners. In 2015, approximately 68,187 HIV positive pregnant women required PMTCT services.

The goal of the programme in Zimbabwe to eliminate new HIV infections among children by 2015 (reducing MTCT to less than 5% from 12.11% in 2014) and improving the survival of
mothers and children has not been met. Currently the rate of MTCT in Zimbabwe, including breastfeeding is 6.39%. Validation indicators specify that new paediatric HIV infections have to be less than or equal to 50 per 100,000 live births, and mother-to-child transmission rates of HIV have to be less than 5% in breastfeeding populations or less than 2% in non-breastfeeding populations for at least one year.

**Identified research questions in this area are:**

**Specifically addressing children/paediatric HIV**
The need to address children's right to HIV testing and to access care- are currently being affected by cumbersome consent and guardianship issues.
- How can we increase number of laboratories offering EID
- How can we ensure quality of DBS samples
- What is the best model of transport for DBS samples?
- Evaluate proportion of infants being tested vs number of women delivering
- What are the challenges being met by children (>5 years) in accessing testing and care easily?
- What is being done about paediatric HIV care services and decentralisation?
- How effective are the models being used for pediatric initiation on ART?
- What is causing the low virologic testing coverage (13%) for exposed infants?
- Impact of food insecurity on ART adherence in children

**Specifically addressing the mothers**
- Are all HIV positive pregnant women able to access and utilise PMTCT services? If not, why?
- What are the factors associated with inadequate follow up of babies born of HIV positive mothers? What are the challenges?
- What are the motivators and barriers for ART use among breastfeeding women
- What are the challenges in availability to all women, of a standardized, comprehensive and gender sensitive package in PMTCT services such as contraception and ART?
- Evaluate implementation of each of the 4 prongs for eMTCT:
  - only planned pregnancies amongst HIV positive women,
  - screening of all pregnant women,
  - scale-up early antiretroviral treatment for all HIV-positive pregnant women,
  - ARV prophylaxis for the infant;
- To what extent are ANC user fees at point of service serving as a barrier to access to and utilization of PMTCT services?
- What are the factors that affect retention of mother-baby pairs on PMTCT?
- To what extent is the Infant and Young Child Feeding (IYCF) policy understood by the service providers at different levels in the health delivery system and the community?
- What role does the breast feeding policy play in stigma, discrimination and confidentiality?

4. **Treatment as Prevention**
By reducing the viral load in people living with HIV, which improves their health, ART reduces HIV transmission. HIV Prevention is achieved from increasing access to treatment and emphasizes risk reduction and safer sex will enhance the prevention benefits of treatment. Operations research is required to define models for delivering services and impact evaluation.
Identified research questions in this area

- How to deliver services for maximizing impact of treatment on HIV incidence
- Design models to ensure very high coverage of HIV testing
- How to ensure repeated testing for high risk groups
- How to ensure seamless and strong linkage to care for all who test positive
- Methods to ensure very high retention in care particularly for key and MARPs

5. Male Circumcision

Zimbabwe adopted the voluntary medical male circumcision (VMMC) as an additional key HIV prevention strategy in 2009. Over the years this programme has been decentralized and scaled up through training of personnel and investment in delivery systems. Zimbabwe missed the target to circumcise 1,200,000 sexually active males to reduce HIV incidence by half by 2015. Although the initial priority has been to target sexually active men, neonatal circumcisions will be conducted simultaneously. ZNASP III aims to up-scale the VMMC programme to achieve 80% coverage of circumcision for all eligible males by 2018 through maximizing on the existing political commitment at all levels. VMMC will provide an important opportunity for HTS as an entry point for linkage to early HIV care and treatment service, SRH information and referrals to other programmes. An integrated approach will be utilized.

At the end of June 2016, approximately 640,000 men had been circumcised. The challenges cited for low uptake include low levels of community mobilization and education on male circumcision, inadequate capacity at health facilities to conduct counselling and testing and voluntary VMMC procedures.

Identified research questions in this area are:

- What are the factors that are causing low uptake of male circumcision?
- Are there other alternative methods of circumcision?
- What is the most effective community mobilisation and communication strategy and what effect has this on behaviour change modification?
- What is the extent of resultant behaviour disinhibition and what impact will this have on the pandemic.
- How can we scale up VMMC to increase uptake in a cost effective way?
- Explore capacity gaps in VMMC provision and scale-up (i.e. infrastructural, community and personal impediments).
- Which are the best models for increasing acceptability, and uptake of VMMC?
- What are the issues around acceptability of neonatal circumcision?
- Efficiency of linkages/integration between HIV Testing and Counselling (HTS) and VMMC
- What are the gender dynamics surrounding male circumcision? What are their implications for uptake of VMMC?
- What is the cost effectiveness of circumcision since its inception?
- Evaluate how many cases of HIV infection have been averted by the VMMC program since its inception.

6. Condom Promotion and Distribution

In Zimbabwe condoms are distributed for free by the government and through social marketing but current information on condom use is based on self-reporting, whose reliability is compromised by bias and inconsistency in the data. Condom promotion and distribution should be integrated in FP, STI services, VMMC, HTS, eMTCT and ART programmes, and in
specific programmes that focus on most at risk and key populations e.g. young people, sex workers, migrant populations, people with disabilities and PLHIV and key populations. Challenges identified include condoms not being readily available and easily accessible; inadequate knowledge on correct use; low uptake of female condoms compared to the male condoms.

**Identified research questions in this area are:**
The need for in depth study of the following:
- Causes of low uptake of female condoms and low acceptability of condoms by married couples.
- Determinants of condom use among couples
- The myths, misconceptions and negative perception surrounding consumption of public sector distributed condoms.
- The strategy that can be adopted to improve correct use of condoms.
- Other strategies that can be adopted to make condoms more readily available and accessible to the community.

7. **Sexually Transmitted Infections (STIs) - Prevention And Control**
The presence of untreated STIs can increase both the acquisition and transmission of HIV. Challenges of STI services include low uptake due to double stigma associated with STIs and HIV, frequent stock outs of STI drugs and consumables; low levels of training of health workers in syndromic management; inadequate awareness and knowledge among the general population of STIs and their relationship with HIV as well as failure to do comprehensive partner contact tracing.

**Identified research questions in this area are:**
- What is the feasibility, acceptability of self-screening for STIs
- How accessible/user-friendly are treatment services of STI(s) for sexual minorities?
- How advocacy models can be adopted to increase access to STI services by sexual minorities?
- What strategies exist or can be developed to reduce the double stigma associated with STI and HIV?
- How can training on HIV and syndromic management of STIs for health workers be integrated?

8. **Pre-Exposure Prophylaxis (PrEP)**
Pre-exposure prophylaxis (PrEP) is a newer HIV prevention approach where HIV-negative individuals use anti-HIV medications to reduce their risk of becoming infected if they are exposed to the virus. It is an additional tool to consider in the HIV prevention toolbox. PrEP has been shown in a number of randomized controlled trials to be effective at preventing HIV acquisition by up to 75% among heterosexual African couples when adherence is optimum. Relevant to our heterosexual epidemic are the novel methods for delivering PrEP that are being explored. These include female controlled oral and topical agents. For example, the ASPIRE study that was conducted locally showed 27% effectiveness in reducing incident HIV infection by using a monthly vaginal ring impregnated with dapivirine hence overcoming the need for daily or coitally dependent adherence. These multipurpose technologies (MPT) which combine contraceptive as well as antiviral activities may be particularly suited to the needs of adolescent women. Additionally long-acting injectable depot antiretroviral agents that also have the
possibility of being combined with contraceptive agents are undergoing safety phase trials in Zimbabwe among other places. PrEP presents few significant safety risks, and there is no evidence of behavioral risk compensation. The effective and cost-effective use of PrEP will require development of best practices for fostering uptake and adherence among people at substantial HIV risk who include adolescent girls, young HIV negative sexually active women seeking contraception services, MSM, sex workers, pregnant women and serodiscordant couples.

**PrEP Research Areas of interest**

- Promote the conduct of clinical trials to evaluate newer PrEP formulations
- KAP studies of preparedness among providers and users with special focus on young women and adolescents
- Conduct of population based acceptability, safety and effectiveness studies
- Evaluation of the most acceptable delivery models to key populations
- Define use of PrEP in the context of sociocultural norms
- How to promote and expand PrEP use particularly in high risk groups
- What are the barriers and motivators for adherence to PrEP
- Post implementation field studies to monitor drug resistance to allay/offset fears of building drug resistance.
- Evaluate PrEP delivery models i.e. vaginal rings, films, oral, long acting injectables.
- Risk compensation with widespread PrEP availability.
- Design correct clear simplified messaging on use of PrEP (daily vs intermittent vs precoital).
- Feasibility of PrEP distribution by nurses supported by community care workers at primary care level.
- Design and implement research to determine the reduction in HIV incidence when PrEP is added as part of a combo with other HIV prevention strategies in selected high risk population groups.
- Qualitative research to evaluate the emergence of behavior risk compensation after introduction of PrEP

9. **Post Exposure Prophylaxis (PEP)**

PEP services consist of counselling and risk assessment, HIV testing and counselling provision of short term ARV based on the assessed risk and follow up post PEP service counselling. Gaps and challenges identified include inadequate awareness of PEP services among most people and communities and stigma associated with HIV or rape.

**Identified research questions in this area are:**

- What are the levels of awareness of PEP at national level?
- What programmes exist or can be designed that reduce stigma associated rape
- How to best establish the availability and accessibility of PEP and linkages between service providers

10. **Blood Safety**

Demand for safe blood exceeds supply. The absence of a donor retention strategy has affected the supply and reliability of blood availability. Zimbabwe has attained a 100% screening of blood for transfusion transmissible infections (TTIs), including STIs.
Identified research questions in this area are:

- What area in health care is there the largest demand for safe blood?
- What models can be adopted for Zimbabwe as donor retention strategies?
- What is the sero-conversion rate in blood donors and what is its association with MC?
- Explore multiplexing pathogen detection systems for blood safety to expand the range of pathogens detected and reduce costs.

11. **HIV Vaccines**

Development of a safe, effective and affordable vaccine to prevent HIV infection is the best hope for ending or controlling the epidemic. The search for a safe and effective HIV vaccine has progressed further and faster in the last few years than at any time since the epidemic began. This progress poses new questions, new opportunities and new challenges on how the HIV vaccine research should move forward. Even the discovery of a vaccine that provides partial protection and only protects some people who get vaccinated, could have a major impact on the rates of transmission and help control the pandemic, particularly for populations at high risk of HIV infection. A partially effective vaccine will decrease the number of people who get infected with HIV, further reducing the number of people who can pass the virus on to others. A therapeutic vaccine could also benefit people living with HIV by helping slow the progression of the disease and preventing or delaying the onset of AIDS. Zimbabwe will immensely benefit from HIV vaccine research and current efforts by the University of Zimbabwe to participate in vaccine development clinical trials is strongly encouraged.

**Research Areas of Interest in Vaccine Research**

- Design basic science research to characterize locally relevant vaccine
- Design and conduct clinical trials testing of new candidate vaccines.
- Acceptability among policy makers, providers and general population,
- Community based vaccine preparedness studies.

**Top Ten HIV Prevention Research Priorities identified in order of descending priority:**

1. Which Behaviour Change programmes are effective for specific groups (youths, married couples, mobile populations, etc)
2. Condom use (measuring use and promotion use in long term partnerships)
3. HTS - Quality of HTS in view of Test and Treat, testing key populations, targeted HTS and impact/coverage of VCT
4. Treatment as prevention in the context of test and treat
5. PMTCT - Coverage for pregnant, post-partum and breastfeeding, ART Access for mothers/infants; children >5years; follow up of babies and retention of mother and children in care
6. Male Circumcision-why low uptake; demand creation; role of women; disinhibition issue.
8. Post exposure Prophylaxis- lack of awareness; HIV associated stigma
9. Prevention for key populations, adolescents and young adults, MSM and hard to reach populations like artisanal miners, migrant workers, cross-border traders, truck drivers
10. HIV Vaccine Candidates Research - National, providers' and community sensitization, promote local research into new vaccine candidates
B. THEMATIC AREA 2: TREATMENT CARE AND SUPPORT

Reduction of mortality and morbidity amongst PLHIV is the second national priority for the national HIV and AIDS response in the coming three years.

1. **Antiretroviral Therapy (ART)**

   Zimbabwe is committed to ensuring that all people in need of ART have access to the service as part of the national strategy to improve the quality of life of PLHIV. 1,412,790 adults and children were living with HIV 2015, with 5, 7% (80,059) children 0-14 years and as women and 59% women. Again in 2015, 1,136,729 adults aged 15 years + giving an ART coverage of 72%. There were 61,198 children 0-14 yrs in need of ART and the ART coverage for children was recorded as 99.8%. Considering the high coverage of ART, the country considers implementation of the 'test and treat' strategy as a feasible strategy. More needs to be done to improve adult ART coverage. The introduction of improved combined antiretroviral therapy (cART) has dramatically improved the clinical outcome and life expectancy of HIV positive people. Several recent clinical research findings suggest that either a cure or a durable remission of infection might be possible.

Identified research questions in the area are:

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<tr>
<th>ART Area</th>
<th>Identified Research Questions</th>
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| Access, efficacy, control and management of Antiretroviral Therapy (ART) | • How best can we reduce time between adaptation and implementation of new treatment guidelines?  
• Evaluate strategies to improve regulatory pathways for licensing of new safer more efficacious antiretroviral drugs  
• How are the issues of access and equity managed in our delivery system  
• What are the levels of knowledge among the service providers (in terms of the drugs and their side-effects);  
• What is the quality of training they get and how it affects the quality of care they give?  
• Design models of HIV and AIDS care that target families as a unit rather than individuals  
• What strategies can we use to strengthen cross-border collaborations for HIV/TB treatment  
• Evaluate loss to follow-up for pre-ART care.  
• How can we address barriers to HIV care treatment and support among selected target populations (i.e. adolescents, miners, health care workers,  
• Barriers to IPT in HIV-positive persons  
• Comprehensive screening protocols for comorbidities to include TB, diabetes, hypertension, cancer  
• Scaling up screening for MDR TB among HIV positive populations  
• Early identification of 2nd and 3rd Line failure, what are the issues? |
| Adolescent ART                                        | • What are the challenges faced by adolescents  
• How to address challenges faced by adolescents on ART  
• How to mitigate against challenges faced by adolescents transition from Adolescent to adult ART care |
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<th>ART Area</th>
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| Test and Treat Strategy | • Evaluate potential barriers to rapid national transition and strategy implementation (resources, logistics, supply chain issues etc)  
• Measure uptake real time using treatment facility data to inform progress  
• Are user fees a barrier to test and treat strategy?  
• How to optimize retention in care for patients on early ART (high CD4 counts and healthy). |
| Pulmonary tuberculosis (PTB) | • What is the effectiveness, reliability and simplicity of the TB diagnostic protocols? How can adherence to protocols by providers be ensured?  
• What are the reasons for low rates of initiation on ART in diagnosed TB patients?  
• Effectiveness of integration of HIV and AIDS and TB collaborative activities  
• TB screening at all Health Facilities initiating people on ART.  
• Determine health workers knowledge of TB/HIV collaborative activities which include introduction and timing of ARV treatment?  
• What is the knowledge level of the service providers on TB and HIV and AIDS collaborative activities (includes the quality of training they get and how it affects the quality of care they give).  
• Prevalence of TB Drug resistance in HIV positive persons: how to recognize, diagnose and manage drug resistance |
| Traditional Medicines and ART | • Extent of use of traditional therapies/ non-conventional herbal products among patients on ART in communities?  
• Impact of traditional therapies on ART adherence and viral suppression |
| ART and the Private Sector | • Access to HIV treatment and care in the private sector, which models?  
• Strategies for strengthening PPP  
• Protocols for reporting of side effects in the private sector |
| HIV Drug Resistance | • Develop protocols for surveillance of HIV drug resistance (Early Warning Indicators, prevalence of Acquired and Primary Resistance)  
• Feasibility of pre-ART resistance testing in selected populations  
• System for identifying drug failure and how to manage it. |
| ART, Non-Communicable Diseases (NCDs) and ageing | • Determine the prevalence of NCD among ART patients above 55 yrs.  
• Determine proportion of ART patients above 55 years at National level.  
• Evaluate coping mechanisms for persons who are ageing while taking ART  
• Role of ART in development of NCD among ageing persons  
• The chronic complications that will/are arising as people on ART age- the complications of drugs and morbidities that are accelerated as a result of HIV - i.e. heart disease, diabetes, renal disease etc. how to screen, and manage these |
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| Drug dosing in persons ageing on ART         | • Drug dosing in persons ageing on ART - is there a need to reduce doses, will the medications be available  
• Incidence of ART toxicity among ART patients above 50 years  
• Develop protocols for monitoring bone, kidney, metabolic, cardiovascular, and liver health in older patients  
• Evaluate drug-drug interactions when starting or switching ART and concomitant medications.                                                                                                                                 |
| HIV Reservoirs and Cure Research              | • Promote clinical trials on new drugs that can penetrate HIV reservoir sites  
• Promote research on immune based therapies for cure  
• Can early treatment lead to a cure in children? In adults? And how early is early enough?  
• Can combinations of interventions be used to reverse HIV latency and eliminate infected cells  
• Investigate immune responses that can be induced or revived that would lead to HIV control?  
• Can gene therapies generate enough HIV-resistant cells to cure infection?  
• How much should the HIV reservoir be reduced to have an effect?  
• How and when can we confidently deem a person "cured" of HIV? What biomarkers can we use?                                                                                                                                 |
| Pharmacovigilance for ART                     | • How to invest in medical bio-analytics research for monitoring adherence and safety by detecting and quantifying drug concentrations. (e.g. ZIMPHIA project)  
• Impact of genetics on susceptibility to diseases and responses to medicines. High disease burden and high incidences of ADRs in patients on ART.  
• Impact of genetic status of Zimbabwean populations on drug response (e.g. Efavirenz ADRs)  
• Ensure equitable geographical coverage of testing facilities i.e. link availability of testing facilities with disease burden for various locations and populations.  
• Multiplicity of testing platforms and impact on quality of results  
• Affordable methodologies to support treatment regimes, which are capable of being scaled up  
• Evaluate current ADRs reporting systems capacity to detect and quantify ADRs  
• Drug-drug interactions (DDI) in a clinical landscape of polypharmacy due to multiple diseases coexisting on same patient e.g children prone to infections and the elderly with NCDs  
• Explore inter-individual and inter population variability in drug response to optimize response to treatment                                                                                                                                 |
| Traditional Medicines and Alternative Therapies | • What are the interactions between conventional and alternative therapies?  
• Drug side effects and how can they be ascribed to conventional or alternative therapies  
• Effectiveness of alternative therapies                                                                                                                                                                                                 |
2. **Community Based Care (CBC)**

CHBC is an integral component of the continuum of care and support under ZNASP III. Community-based health workers are key partners in health care delivery and play a critical role in promoting equitable expansion of coverage for a range of preventive, treatment and care services to communities. Services provided in Zimbabwe include palliative care, nursing care, counselling and psychosocial support, spiritual support, and nutrition and referral services. The challenges around CHBC which include limited skills and experience of CHBC service providers, lack of standards and quality assurance for CHBC services and inconsistent supply of CHBC kits and other supplies. A systematic appraisal of the current evidence on the effectiveness of community-based health workers in delivering these services is important in developing guidance on health policy and system support that focuses on optimizing the use of community-based health workers for the HIV and AIDS National response.

**Research questions identified in this area**

- Evaluation of the referral system between CHBC, ART and other services: What are the challenges and benefits and how it can be improved nationally for all clients, caregivers and health facilities?
- What is the quality of care on the ground?
- What is (and what should be) the preparation and support for the caregivers?
- What is the availability of resources for caregivers?
- What is the role of nutrition as a factor in determining outcomes for those on CHBC?
- What is the national coverage of CHBC?
- What are the challenges and opportunities of CHBC?
- Explore use of decentralized of ART services
- Evaluate innovative differential models of care to enable improved ART outcomes
- What are the communities’ perspectives and responses towards CARGs?
- Evaluate health care sensitizations done before CARGs
- Evaluate community leader’s attitudes to CARGs
- Role of community disclosure groups in improving retention in care
- Role of community disclosure groups in increasing HTS uptake
- Test the use of treatment monitoring recruiters/navigators to increase retention in care
- Impact of religious beliefs on ART adherence and outcomes
- Feasibility of community HIV testing, ART initiation and drug refills using community lay workers

3. **Orphans and Vulnerable Children**

About 1 million children in Zimbabwe have lost one or both parents due to HIV and AIDS and related causes. As of December 2010, Zimbabwe had approximately 1.6 million orphans and vulnerable children with only 410,000 receiving care and support through the Programme of Support (PoS). Zimbabwe has developed a national plan of action to guide care and support services for OVC with services ranging from social and legal protection, care and support, access to education, health, food and shelter. However challenges cited in ZNASP II include that not all OVC have been identified or assessed for support; there are financial constraints to meet the needs of all OVC; and inadequate M&E system to monitor the provision of basic services. Lack of capacity within the government departments to facilitate OVC services delivery and a weak coordination of OVC services at provincial, district and community levels as well as inconsistent quality of services for OVC were also identified as challenges.
Research questions identified in this area are:

- Assessment and documentation of the real needs by OVC.
- What is the best care system for OVC e.g. fostering, extended family, institutionalization of the OVC?
- OVC with special needs (physically and mentally challenged) - what programmes are in place to serve them?
- What should be done to harmonize services for OVC e.g. ART clinics vs food distribution and other safety nets for OVC (Government, NGOs, other organizations).
- How best to address vulnerability of OVC to HIV infection, other forms of abuse.
- Quantification of risk and strategies prevention of infections among OVCs.
- Evaluations of current OVC interventions to determine their effectiveness.
- Economic evaluation of current interventions
  - How are OVC identified and are they included in the process?
  - Assessment and documentation of the real needs of OVC.
  - Evaluation of the effectiveness of different social protection/initiatives e.g. BEAM, AMTO, PoS, etc.
- How best to optimize retention in care and adherence, and linkages to care support system for HIV + OVC?
- What is the best method of protecting OVC in communities (prevention of disease transmission when OVC is taking care of ill caregivers)?
- What is the most cost-effective means of providing economic support for OVC?
  - There is a gap in OVC issues on addressing the transition from adolescence to adulthood. What are the most effective ways of addressing this?
  - OVC with special needs (physically and mentally challenged) - what programmes are in place to serve them?
  - What is known about stigma and discrimination among HIV+ OVC?
- Do systems that monitor legislation protecting OVC and ensuring their inclusion in social protection and food security initiatives exist? What are the ideal models?

4. Nutrition
Optimum nutrition will prolong the period of asymptomatic infection in PLHIV, and will enable them to mount an effective immune response to fight opportunistic infections and to optimise benefits of ART. In Zimbabwe challenges faced include food and nutrition insecurity at household level due to environmental factors and low food production. There is lack of programmatic data on nutrition and other related interventions (e.g. food distribution).

Research questions identified in this area

- What food distribution programmes are on the ground and how are they coordinated?
- Correlation between nutrition and ARVs (what evidence is there on food and drugs combinations).
- Research on initiatives that guarantee seamless linkages between clinical services and food distribution to ensure continuous food security for vulnerable HIV positive groups e.g. OVC, TB patients, pregnant and lactating mothers.
- Food security before ART initiation: Is there adequate emphasis given on proper food consumption before ART is initiated.
- Ensure more food security in urban areas with more HIV positive populations and increasing urban poverty.
- What assistance is given to the vulnerable households?
• How sustainable is nutritional support/food hand-outs
• Assess HIV/TB nutritional profiles among prisoners

5. **Cost of Care in Institutions**
Research on the cost of care in hospitals and other institutions for HIV and AIDS, and AIDS-related illnesses is clearly lacking. This information is needed to compare different modalities of delivery of care and their outcomes. Related to this is the economic dynamics of people living with HIV (PLHIV).

**Research questions identified in this area are:**
• What is the cumulative cost of care in hospitals and related institution for people living with HIV?
• How do PLHIV cope with HIV and AIDS at the workplace, at home when they require treatment and especially when they require institutional care?
• How do families prioritise needs, including health care costs of the HIV positive family member against inadequate family disposable incomes?

6. **Laboratory Services**
Participants at the priority setting meeting recommended that there is need to define the type and quality of laboratory services available for HIV and AIDS.

**Research questions identified in this area are:**
• What is the availability of functional equipment and supplies related to the management of PLWHA?
• What is the utilization of the available equipment by PLHIV including their accessibility and costs?
• Evaluation of laboratory services offered to assess full diagnostic capacity of treatment centres.
• Evaluate effect of use of non-laboratory personnel on the quality of HIV testing?
• Determine causes of HIV misdiagnosis and institute clear simple QA/QC procedures

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**Top Ten “Treatment, Care and Support” Research Priorities identified in order of descending priority:**
1. Access, efficacy, control and management as well as availability of ART (to include paediatric HIV and the adolescent care, treatment and support)
2. Logistical considerations to support test and treat strategy
3. Quality of care in CHBC
4. Pharmacovigilance of ART drugs and alternative therapies
5. Health systems: drug management and control, functionality of health systems
6. High frequency of changing treatment guidelines and protocols
7. PTB: diagnosis, adherence to treatment and drug resistance
8. Nutrition - Impact of food insecurity on ART adherence
9. ART adherence, retention and follow up as well as drug resistance
10. Cost of ART care in hospitals

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C. THEMATIC AREA 3: ENABLING ENVIRONMENT-THE POLICY AND LEGAL FRAMEWORK

An enabling policy, legal and social environment is a pre-requisite for successful implementation of the national response as well as being central to the promotion of human rights in the context of HIV and AIDS response. The existence of such an environment facilitates services uptake, reduction of stigma and discrimination, removal of social, legal and or policy barriers to services uptake and provides a unique opportunity to address gender inequalities, social and cultural norms and practices that prevent people from adopting prevention behaviours.

1. Coordination of the National Response

The National AIDS Council is mandated by an Act of Parliament to coordinate and manage the national HIV and AIDS multi-sectoral response whilst the Ministry of Health and Child Care has the technical mandate of coordinating the health sector response. The decentralised coordinating structures include the PAACs, DAACs, and WAACs. Civil society organisations and private sector are coordinated through umbrella networks such as Zimbabwe AIDS Network and Zimbabwe Business Council on HIV and AIDS among others. These include Limited resources (human, financial, technological) ; lack of clarity of the mandate, roles and responsibilities of coordinating structures especially non-governmental structures as well as lack of a coordinated HIV and AIDS financing mechanism by donors and other partners.

Research questions identified in this area

- What are the actual roles of the PACs, DACs and WACs and do they reflect the current needs of the national response?
- What are the roles of other coordinating non-governmental structures?
- What are the challenges being faced by NAC in coordinating the national response (including financing of HIV and AIDS) and how can these challenges be addressed?
- What is the role and impact of volunteer groups?

2. Monitoring and Evaluation

In line with the three ones principle, Zimbabwe has a single national Monitoring and Evaluation System for the national response to HIV and AIDS. The system is complemented by a national M&E Plan which has specific indicators and targets. Although progress has been made in data collection and international reporting, challenges still reside in a number of areas such as data quality management and utilization of data among others. Under ZNASP III community, district, and provinces will be capacitated to generate and use appropriate evidence for decision making.

The following are the issues identified for research in this area:

- What proportion of HIV interventions have an evaluation/assessment plan?
- To what extent are research and evaluation findings being used to guide programme and policy decision making?
- Establish systems of collecting information on the individuals accessing ARVs from private doctors, mission hospitals and pharmacies.
- Review and evaluate and strengthen M&E policies and systems in place at all levels
- What are the current HIV and AIDS Clades (ABC), Strains (HIV 1 & 2)?
- Establishing the sensitivity to antiretroviral drugs of strains circulating in Zimbabwe.
- How cost effective are the current HIV and AIDS interventions?
- What tools are available to measure impact of interventions and how effective are they?
- Surveys to measure the number of people accessing ARVs and their sources.
- How to design and implement clear protocols for dissemination of high impact HIV research results and rapid adoption into policy.

3. **Systems Strengthening**

An efficient and effective health system is a pre-requisite for the national HIV and AIDS multi-sectoral response. According to ZNASP II, the current health system is weakened by a number of organizational challenges including vertical sub-systems that result in uneven quality of services, fragmentation and sometimes duplication of service. Issues of governance and leadership have compromised service. Collaboration between public and private sector health systems remains weak and largely uncoordinated. The system should be able to respond not only to current demands but also to future emerging and re-emerging HIV/AIDS problems and other routine activities.

**Research questions identified in this area**
- Evaluate the effectiveness of policies in place in the health sector to curb brain drain.
- How do health worker incentives policies affect staff retention, performance and distribution in Zimbabwe?)
- How effective is the leadership and governance structure for the health system?
- How do we optimize the functionality of available health facilities?
- To what extent does health worker training influence the quality of HIV and AIDS services?
- Health Financing -how are budgets allocated? Is it according to disease burden in specific areas?
- Critically assess the exemption system run by social welfare officers, how it works and how such a system can be implemented without impacting equity.
- Impact of changes in user fees charging regimes on health expenditure and service utilization.
- Rural posting/deployment of Human Resources for Health -identify ways to improve deployment systems to rural areas used by large employers of health personnel post crisis in Zimbabwe.
- To assess the impact of key changes in deployment policy and systems on the staffing of rural areas.
- Identify lessons learnt in the development of deployment policy and systems in post crisis situations- focus on public sector systems and large non-government systems.
- What strategies can be developed to ensure collaboration between public and private health sector health providers?
- Design an effective way of obtaining information on the individuals accessing ARVs from Private Doctors and Private Hospitals.
- How can the investments framework be utilized to maximize available and potential funding?
- What are the issues surrounding the procurement and supply chain management of ARVs and related commodities in terms of the logistics at the levels of;
- Drug delivery and support systems
- Drug management and stock control as well as service provider performances

4. **Mainstreaming / Integration of HIV and AIDS**

In ZNASP III mainstreaming of HIV, gender and human rights has been identified as the key strategy to support sectors in their response by facilitating sector efforts to ensure that sector practices and programmes strengthen the national response.
Research questions identified in this area

- To evaluate the impact of HIV&AIDS programmes on quality of life of women and girls.
- What are the availability, accessibility and acceptability of female controlled devices?
- Measure the extent of mainstreaming of HIV, gender and human rights within the prioritized public sector organizations and the private.
- How to address antecedent factors of gender imbalance (both male and female).
- Assessing level of integration of HIV into SRH programs for adolescents in order to develop models of integration.
- Integration of HIV and AIDS and Mental Health Care- What are the challenges.
- What interventions exist for most at risk and key populations and should these be integrated with mainstream population HIV services or be targeted and stand alone?
- Evaluate positive/ negative impact of pMTCT on delivery and uptake of other reproductive and child health services.
- Community-level co-relational studies of reproductive cancers and HIV including studies to characterize burdens, presentations and complications associated with cancers.
- Cervical cancer service delivery gap analysis: capacity, prevention, and screening, at community level, including how to address rural/urban disparities.
- Investigating cost effective methods of screening for malignancies at community level
- What is the extent of involvement, (including OVC/adolescence/mentally challenged?)
- How best MIPA initiatives can be evaluated?
- To what extent is the Integrated Logistic System effective and efficient in supporting HIV and AIDS programmes?
- Extent of stigma associated with disclosure/stigma.
- What is being done for the minority groups living with HIV and AIDS (are they particular in MIPA activities?)
- Legislation on alcohol and other forms of drug abuse in recognition of them as facilitators for risky behavior and HIV transmission

Top Ten "Enabling Policy and Legal Environment" Research Priorities identified in order of descending priority:

1. Systems strengthening-evaluations of HR policies; health financing
2. Evaluation functionality of health equipment/ health facilities
3. Integrated monitoring and Evaluation systems - impact of interventions
4. Comprehensive legal frameworks for promoting access to prevention, treatment care and support services for key populations
5. Mainstreaming/Integration of HIV and AIDS-Gender/adolescents; mentally challenged, military, most at risk and key populations.
6. Robust protocols to ensure rapid translation of high impact research into policy
7. Assessing levels of integration of services
8. Mechanisms to ensure the National AIDS response is fully funded and efficiently implemented based on timely, reliable strategic information
9. Funding mechanisms and coordination in face of restricted funding streams
10. Effectiveness of service delivery assessments
The following are the perceived limitations in the process of developing the National HIV and AIDS Research Priorities.

- The previous National HIV/AIDS Research Priorities were not widely disseminated, particularly targeting research institutions and therefore could not be used effectively for fostering linkages among national and international stakeholders (i.e., mobilizing, disbursing, and monitoring resources and information sharing on the HIV/AIDS epidemic and its consequences in Zimbabwe).

- Participation in the prioritization workshop was not representative of all the various stakeholders involved in HIV research and evaluation activities and may have undermined some quarters.
Strong advocacy is required to coordinate, disseminate and utilization of information generated through research, specifically for studies that address the identified priorities, if research is to contribute meaningfully to the national response.

The priorities list is not exhaustive, nevertheless it serves as a useful guide for areas of focus, as Zimbabwe continues to execute cutting edge research and in the process build capacity for the future.

The scientific support system in health research in Zimbabwe is highly developed. A significant number of academic and non-academic institutions conduct quality research on HIV and AIDS and its related health challenges. The National AIDS Council has created platforms for improvement in the coordination of numerous efforts in the national response but challenges remain. These challenges and gaps have been described in ZNASP III, on which the current research priorities are based. These challenges impede complete harmonization and alignment of the response. Rigorous research into gaps in the areas of capacity building and infrastructure development, human resource and health financing need to be done.

The economic and social challenges affecting Zimbabwe over the past decade have remained a hindrance to the capacity and functioning of the overall health delivery system. This has had a negative effect on capacity to implement research.

There is a critical need to characterize population groups who are most at risk and who may act as reservoirs for HIV infection (e.g. the commercial sex workers; prisoners; MSM). Gender mainstreaming in the national response to HIV and AIDS is taking a pivotal position and information gathering through research in this area will be vital.

Training in research methodology particularly for health professionals at district and provincial levels will be critical to close the gap in research skills. There has to be national-level commitment to build a critical mass of trained practitioners and experts of varied relevant backgrounds, who can effectively design, conduct, supervise and analyze research with the ultimate goal of advancing, improving and enhancing Zimbabwe's national response to HIV and AIDS.

The delays in uptake and implementation of high impact research findings to inform policy and programs remains the key pursuit of these priorities, in an environment that seeks to strengthen generation and utilization of high quality evidence.

The research database which has been developed by NAC and which will be available in the public domain online will foster sharing of latest and past research information with all stakeholders and decision makers. The need for a functional and comprehensive health research inventory in Zimbabwe showing who is doing what and where, research needs, research capacity in terms of human skills available and research facilities, cannot be overemphasized to avoid duplication of efforts.


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## List of Participants to the National Stakeholders HIV and AIDS Research Priority Meeting

### August 2016

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<th>PARTICIPANT NAME</th>
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<td>Collen Masimirembwa</td>
<td>Africa Institute of Biomedical Science and Technology</td>
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<td>Isaac Taramusi</td>
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