

Republic of Kenya



Ministry of Health



# KENYA HIV AND AIDS RESEARCH AGENDA

2014/15-2018/19

**maisha!**

National AIDS Control Council

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**KENYA HIV AND AIDS  
RESEARCH AGENDA  
2014/15-2018/19**



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## FOREWORD



**James Macharia**  
Cabinet Secretary,  
Ministry of Health

In the last 30 years of the HIV epidemic, the world has devoted unprecedented human, technological and financial resources. Researchers have devoted substantial time and effort to identifying prevention options, advancing treatment and cure research and vaccines for HIV infection. Kenya, in particular has made significant contributions to the body of knowledge in all areas of HIV prevention, treatment and care. High quality and ethically sound research findings from Kenya have informed policy and practice in HIV testing and counselling, male circumcision, anti-retroviral options for treatment, prevention of perinatal transmission and more recently prevention on pre and post exposure to HIV. Kenya's outstanding record in HIV research leadership is evidenced by high numbers of peer-reviewed publications in high impact factor journals and high numbers of proposals processed through ERCs monthly. Kenya's contribution to Vaccine development remains highly regarded with trials in Kenya offering hope for a future free of HIV.

Beyond bio-medical research, Kenya has informed implementation strategies based on evidence that continue to guide local and global policy. Behavioural studies and research on structural interventions are the basis upon which bio-medical interventions have achieved significant successes. HIV prevalence has halved, over 600,000 of HIV infected people are on treatment, incidence has reduced, sexual debut increased and different sectors invested in the HIV response.

However HIV still remains a challenge with over 100,000 new infections in 2013 being way higher than the 58,000 deaths in the same year. There are knowledge gaps in the effectiveness of programmes and interventions, in utilisation of scientific breakthroughs in real life. Investment in research and development is limited with many instances where interventions being implemented are not based on evidence. Analytical work to promote increased effectiveness and efficiencies in service delivery and programming are still under-developed.

The research agenda for Kenya's HIV response aims at enhancing coherence in the choice of investigation areas and application of research with Policy guidance and envisioned results as set out in the KASF. It must be accompanied by increased investments in the capacity of Kenyan researchers to conduct gold standard relevant research and publish. Time periods between translation of research findings into policy and practice will be diminished when we have relevant research. Resources for HIV must also be channelled towards research to optimize efficiency and cost effectiveness in responding.

This agenda has been developed by NACC with input from many stakeholders. It provides a roadmap for stakeholders and partners toward areas of investment in HIV research. The Government of Kenya challenges partners to utilize this agenda to prioritise choice of study areas and investments.

A stylized, handwritten signature in black ink, consisting of several overlapping loops and strokes.

**Hon. James Macharia**  
Cabinet Secretary, Ministry of Health

## ACKNOWLEDGEMENT



**Dr. Nduku Kilonzo PhD**  
*Director, National AIDS  
Control Council*

This Kenya HIV and AIDS Research agenda is the first guiding document for Kenya's HIV research priorities. It is aimed at informing HIV and AIDS research in alignment with the KASF and the health sector strategic and investment plan to accelerate Kenya's achievement of her goals. The agenda was developed through a consultative process involving meetings, deliberations and guidance by and between researchers, programmers, implementers, donors and priority populations at national and county levels.

NACC thanks all the sectors and partners that dedicated their time, intellectual and financial resources towards this agenda. They include but not limited to government institutions; the Ministry of Health research unit, the National AIDS and STI control programme (NAS COP), NACOSTI, Ministry of Education, Universities and 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. Particular thanks go to the Kenya Medical Research Institute (KEMRI), the Centres for Disease Control (CDC), the International AIDS Vaccine Initiative (IAVI), FHI360 and UNAIDS for their investment towards the process of developing this agenda. We also thank the expert reviewers who provided critiques and valuable recommendations to improve the research agenda.

We acknowledge the lead consultant, funding support from the International AIDS Vaccine Initiative in facilitating stakeholders consultative and validation meetings on research priorities, design, printing and production of the agenda.

NACC is committed to strengthening HIV and AIDS research through enhanced tracking of on-going studies, routine reviews of HIV related research for dissemination and policy information, commissioning of studies to increase the body of knowledge in key strategic areas of the response and investing in capacity development for local research solutions by local researchers. NACC encourages community participation through identified good practice. In particular, NACC will provide support to investigations that are informed by this agenda to accelerate delivery of KASF results. The challenge for us all now lies in the implementation of the priorities identified in this research agenda.

A handwritten signature in blue ink, appearing to read 'Nduku Kilonzo', with a long horizontal line extending to the right.

**Dr. Nduku Kilonzo PhD**  
*Director, National AIDS Control Council*

## EXECUTIVE SUMMARY

Research has been and remains pivotal to the gains realised in the past and into the future of HIV. Kenya has participated in global and regional partnerships to conduct cutting-edge HIV research which have generated ground-breaking findings that have informed local and global policy and practice. Gaps exist, with slow uptake of research findings. There has in the past existed no national guidance on research priorities against which researchers can develop questions and undertake investigations or partners align funding and other resources. Consolidation of research for accessibility to stakeholders, tracking of on-going studies and dissemination of results has increasingly become essential to fast track translation of relevant research results into policy and practice.

This Research Agenda addresses these gaps and further provides guidance on key interventions to address the practical elements of strengthened research coordination, implementation, dissemination and uptake. It takes cognizance of existing mechanisms for quality control including ethics review committees, outlines capacity development options for research, reviews and data analysis and embraces the use of technology to facilitate availability of research findings to programmers, policy makers, students, implementers and communities. The research agenda will accelerate attainment of Kenya AIDS Strategic Framework (KASF 2014/15-2018/19) results. It recognizes Counties as primary utilizers of research and therefore their role in research needs identification and coordination. To inform evidence planning and programming it proposes establishment of a multi-sectoral and interactive web-based Kenya HIV research hub, establishment of Communities of Practice (CoP) on KASF priorities to review evidence and mechanisms to advise on policy recommendations and practice. It proposes training and staffing of research units at national and county levels as relevant with skills in surveillance, statistics and systematic reviews.

Finally, the agenda proposes the development of HIV research financing strategy and resource mobilization in alignment with the Health Bill and NACOSTI plans. It identifies practical monitoring and evaluation mechanisms and accountability mechanisms to ensure that the goals identified by KASF are achieved and also lists a number of indicators that will be used to measure the success of the Research Agenda against each of the Strategic Directions of KASF that it strives to support.

# KEY RESEARCH PRIORITIES AT A GLANCE

Based on Key strategic directions and Key interventions identified

<b>1. REDUCING NEW HIV INFECTIONS</b>
<b><i>Granulate the HIV epidemic to intensify HIV prevention efforts to priority geographies and populations</i></b>
<ul style="list-style-type: none"> <li>• Validate new sensitive and user friendly technologies to improve access to CD4, viral load and TB diagnostics (biomedical research)</li> <li>• Determine optimal effective models for increasing uptake of HTC to linkage to care and adherence (implementation research)</li> <li>• Determine impact of alcohol and drug use on HIV prevention by different populations and geographies ( Clinical research)</li> <li>• Granulate Kenya’s HIV epidemic by County, age and population including size estimates (modelling) for adolescents, youth and key populations.</li> <li>• Map HIV sub-types and sexual networks in different regions and populations for appropriate prevention and treatment services (Modelling)</li> </ul>
<b><i>Adapt and scale up effective evidence-based combination prevention</i></b>
<ul style="list-style-type: none"> <li>• Determine optimal strategies and impact of behavioural and other evidence based Interventions in Kenya (implementation research)</li> <li>• Evaluate effectiveness of structural interventions (such as keeping girls in schools, cash incentives, MSM and Sex workers empowerment) in reducing HIV transmission amongst adolescents, key populations (implementation research)</li> <li>• Evaluate the feasibility and effectiveness of Implementation of Kenya Prevention Revolution combination prevention package in at least six counties</li> <li>• Conduct demonstrative studies for feasibility and scale up of new prevention technologies in different populations (Implementation research)</li> </ul>

<b><i>Maximise efficiency in service delivery through integration</i></b>
<ul style="list-style-type: none"> <li>• Determine optimal models for integration at service delivery that provide the best HIV outcome (implementation research)</li> </ul>
<b><i>Leverage opportunities through creation of synergies with other sectors</i></b>
<ul style="list-style-type: none"> <li>• Analyse the impact of the contribution, cost and interventions in different sectors on HIV prevention and treatment outcomes (Modelling).</li> </ul>
<b><i>Vaccine Development</i></b>
<ul style="list-style-type: none"> <li>• Fast track trials for development of Microbicides, Vaccines and Multiple Prevention Technologies (implementation)</li> </ul>
<b>2. IMPROVING HEALTH RESEARCH OUTCOMES AND WELLNESS OF PEOPLE LIVING WITH HIV</b>
<b><i>Improve timely linkage to care for persons diagnosed with HIV</i></b>
<ul style="list-style-type: none"> <li>• Identify and test interventions that address determinants and barriers to linkage into care for PLHIV (disaggregated by ages, gender and sub-populations)- (behavioural/ Implementation research)</li> <li>• Determine HIV transmission rates among HIV positive adolescents and individuals unaware of status (biomedical research/ modelling)</li> <li>• Determine optimal interventions for addressing gender and socio-cultural factors affecting effectiveness of PMTCT (implementation research)</li> <li>• Evaluate optimal HIV testing strategies for different epidemics in Kenya for optimal diagnosis of those HIV positive (Implementation research)</li> </ul>

<p><b><i>Increase coverage of care and treatment and reduce loss in the cascade of care</i></b></p>	<p><b><i>Improve national and county legal and policy environment for protection and promotion of the rights of priority, key populations and PLHIV.</i></b></p>
<ul style="list-style-type: none"> <li>• Determine outcomes and causes of LTFU among PLHIV on care and treatment (behavioural research)</li> <li>• Evaluate optimal models for scaling up sustainable coverage of HIV care, treatment and retention for viral suppression. (implementation research)</li> <li>• Determine optimal strategies for application of community interventions for effective linkage to care and retention (implementation research).</li> </ul>	<ul style="list-style-type: none"> <li>• Review national and county legislation and policy that impact access to HIV and SRH and participation in research for PLHIV, Key Populations and Adolescents (Implementation research/Policy Review and analysis).</li> </ul>
<p><b><i>Scale up interventions to improve quality of care and improve health outcomes</i></b></p>	<p><b><i>Reduce and monitor stigma and discrimination, social exclusion, and gender based violence</i></b></p>
<ul style="list-style-type: none"> <li>• Determine the prevalence and impact of mental health illnesses among PLHIV, Key Populations and Adolescents (disaggregated by age, gender and sub-populations) (behavioural research).</li> <li>• Determine the Prevalence and future impact of co-infections and co-morbidities among PLHIV (biomedical research, modelling).</li> <li>• Impact of co-infections and co-morbidities on outcomes to treatment and care (biomedical research).</li> <li>• Test interventions to reduce impact of alcohol and substance abuse on HIV outcomes (Clinical/ Implementation research)</li> </ul>	<ul style="list-style-type: none"> <li>• Determine the impact of stigma and discrimination on key outcomes including HTC uptake, enrollment and retention in care and adherence.</li> <li>• Evaluate effective and optimal interventions to reduce stigma, discrimination and social exclusion in Kenya (implementation research)</li> <li>• Test at scale GBV and HIV prevention and care programs for key populations and young girls in Kenya (implementation research)</li> <li>• Conduct age and population disaggregated stigma index, social exclusion and human rights violation studies (socio-behavioural studies)</li> </ul>
<p><b>3. USING HUMAN RIGHTS BASED APPROACH TO FACILITATE ACCESS TO SERVICES</b></p>	
<p><b><i>Remove barriers to health access in public and private entities</i></b></p>	<p><b><i>Improve access to legal and social justice and protection from stigma and discrimination in the public and private sector</i></b></p>
<ul style="list-style-type: none"> <li>• Determine Human Rights related barriers to access to HIV, TB and SRH services by sub-population, geography and type of facility (public or private) in priority counties (Behavioral Research).</li> </ul>	<ul style="list-style-type: none"> <li>• Determine barriers and facilitators of access to legal justice programs such as the HIV and AIDS Tribunal, county and country legal systems (socio-behavioral research).</li> </ul>

<b>4. STRENGTHENING INTEGRATION OF COMMUNITY AND HEALTH SYSTEMS</b>
<b><i>Provide a competent, motivated and adequately staffed workforce at national and county levels to deliver HIV services integrated in the essential health package</i></b>
<ul style="list-style-type: none"> <li>Determine the optimal distribution and retention of skilled workforce on HIV at county and country levels (implementation research)</li> <li>Determine effective mechanisms of task shifting and its impact on quality of HIV services and quality of care (Implementation research).</li> </ul>
<b><i>Strengthen health service delivery system at national and county levels for the delivery of HIV services integrated in the essential health package</i></b>
<ul style="list-style-type: none"> <li>Determine the most effective and efficient models for integration of HIV service delivery and care (implementation research)</li> </ul>
<b><i>Improve access to and rational use of quality essential products and technologies for HIV prevention, treatment and care services</i></b>
<ul style="list-style-type: none"> <li>Identify cost effective strategies in utilization of social media in research outcomes (Implementation Research)</li> <li>Evaluate cost effective technology applications in training, service delivery, commodities and supplies management (Implementation research)</li> </ul>
<b><i>Strengthen community service delivery system at national and county levels for the provision of HIV prevention , treatment and care services</i></b>
<ul style="list-style-type: none"> <li>Determine the effectiveness of community systems to deliver cost-effective HIV responses in priority counties (implementation research)</li> </ul>

<b>7&amp;8 INCREASING DOMESTIC FINANCING AND PROMOTING ACCOUNTABLE LEADERSHIP</b>
<b><i>Maximise efficiency of existing delivery options for increased value and results within existing resources</i></b>
<ul style="list-style-type: none"> <li>Undertake costing and expenditure analysis for HIV programs by different stakeholders and sectors to improve efficiency (Analysis)</li> </ul>
<b><i>Promote innovative and sustainable domestic HIV financing options</i></b>
<ul style="list-style-type: none"> <li>Undertake financial evaluation to determine feasibility of integrating HIV care and treatment into health insurance schemes</li> </ul>
<b><i>Build and sustain high level political and technical commitment for strengthened country and counties' ownership of the HIV response</i></b>
<ul style="list-style-type: none"> <li>Document effective models of engagement of county leadership for sustainability and ownership of the HIV Response (implementation research)</li> </ul>
<b><i>Effective and well-functioning stakeholder co-ordination and accountability mechanisms in place and fully operationalised at national and county levels</i></b>
<ul style="list-style-type: none"> <li>Evaluate effectiveness of existing HIV coordinating mechanisms at county and country levels (implementation research)</li> </ul>
<b><i>An enabling policy, legal and regulatory framework for the multi-sectoral HIV and AIDS response strengthened and fully aligned to the Constitution of Kenya 2010.</i></b>
<ul style="list-style-type: none"> <li>Analyse policy coherence and policy effectiveness in promoting HIV response (Analysis)</li> </ul>

Note: Strategic Direction 5 is on Research while Strategic Direction 6 is on Strategic Information. Implementation of this Research agenda seeks to address both.

## LIST OF ABBREVIATIONS

AIDS	Acquired Immuno Deficiency Syndrome
AFIDEP	Africa Institute of Development Policy
ART	Antiretroviral Therapy
CD4	Cluster of Differentiation 4
CDC	Center for Disease Control and Prevention
CoP	Communities of Practice
DOD	Department of Defence
ERC	Ethics Review Committee
ETR	End Term Review
FHI 360	Family Health International 360
GBV	Gender Based Violence
GDP	Gross Domestic Product
GOK	Government of Kenya
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counselling
IAVI	International AIDS Vaccine Initiative
KARSCOM	Kenya HIV and AIDS Research Coordinating Mechanism
KASF	Kenya AIDS Strategic Framework
KAIS	Kenya AIDS Indicator Survey
KAVI	Kenya AIDS Vaccine Initiative
KDHS	Kenya Demographic Health Survey
KEMRI	Kenya Medical Research Institute
KNASP	Kenya National AIDS Strategic Plan
KNH	Kenyatta National Hospital
LTFU	Loss to Follow Up
LVCT	Liverpool Voluntary Counseling and Testing
M&E	Monitoring & Evaluation
MoH	Ministry of Health
MPT	Multi Purpose Prevention Technologies
MSM	Men having sex with Men
MWA	Matatu Welfare Association
NACC	National AIDS Control Council
NASCOP	National AIDS and STI Control Programme
NACOSTI	National Commission of Science, Technology and Innovation
NGOs	Non Governmental Organizations
NSP	Needle and syringe programme
PLHIV	People Living With HIV
PMTCT	Prevention of Mother to Child Transmission of HIV
RH	Reproductive Health
TasP	Treatment as Prevention
TB	Tuberculosis
UoN	University of Nairobi
UNAIDS	United Nations Joint programme on HIV and AIDS
WHO	World Health Organization

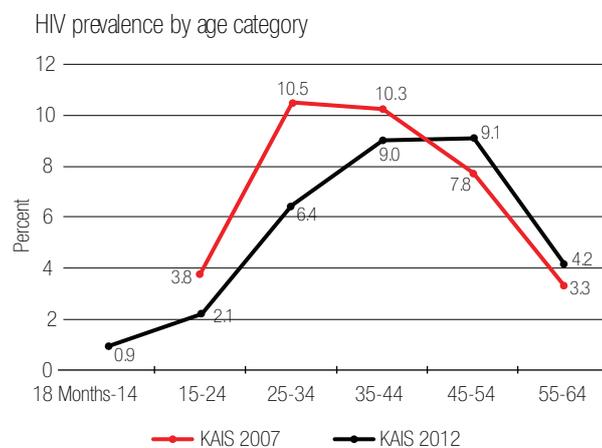
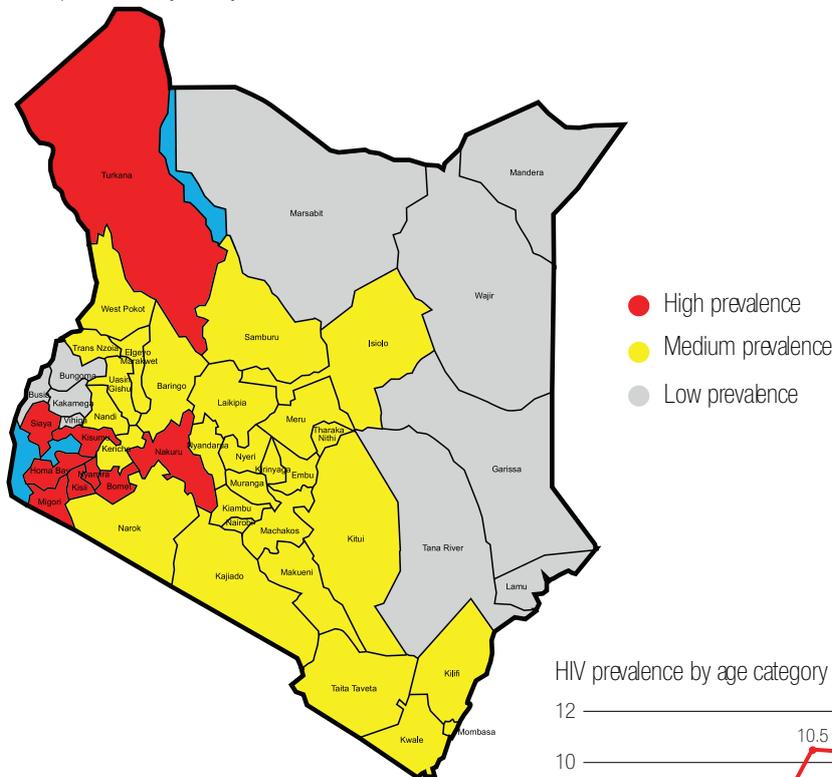
# 01 INTRODUCTION



## HIV and AIDS situation in Kenya

**H**IV continues to be a major challenge in Kenya with the national prevalence estimated at 6% with 1.6 million Kenyans living with HIV (Kenya HIV Estimates 2014). Kenya's HIV epidemic is both concentrated (high incidence and infection rates among particular key populations) and general (varying across different demographic categories) and geographically with ranging prevalence rates of 25.7 percent in Homabay County in Nyanza region to approximately 0.4 % in Wajir County in North Eastern region. The Kenya HIV Prevention Revolution Roadmap classified counties into high, medium and low incidence with 9 Counties accounting for 65% of 100,000 new HIV infections. It is estimated that close to 88,622 new HIV infections occurred annually with 13,000 being among children in the year 2013.

HIV prevalence by county, 2013



Source: KAIS 2007 and 2012

## **The Kenya AIDS Strategic Framework (KASF)**

The overall goal of KASF is to contribute to achievement of Vision 2030 through universal access to comprehensive HIV prevention, treatment and care through eight (8) strategic directions: 1) Reducing new HIV infections; 2) Improving health outcomes and wellness of all people living with HIV; 3) Using a human rights approach to facilitate access to services for PLHIV, Key populations and other priority groups in all sectors; 4) Strengthening integration of health and community systems; 5) Strengthening research and innovation to inform the KASF goals; 6) Promoting utilization of strategic information for research and monitoring and evaluation (M&E) to enhance programming; 7) Increasing domestic financing for a Sustainable HIV response; and 8) Promoting accountable leadership for delivery of the KASF results by all Sectors and actors.

KASF key strategic objectives in the next five years include the following:

1. Reduce new HIV infections by 75%
2. Reduce AIDS related mortality by 25%
3. Reduce HIV related stigma and discrimination by 50%
4. Increase domestic financing of the HIV response to 50%

Therefore, this research agenda is aligned with the KASF goal, objectives and seeks to identify and implement high-impact research priorities, innovative programming and capacity strengthening based on the identified Eight (8) strategic directions.

## **HIV and AIDS Research in Kenya**

Kenya has an outstanding track record in leadership for HIV research breakthrough as evidenced by the number of peer-review publications on Kenya HIV related research, clinical trials, socio-behavioral studies and an excellent ecosystem of research institutions with particular focus on HIV. Collaborative research efforts with global and regional partnerships have generated ground-breaking biomedical prevention findings on the efficacy of PMTCT; voluntary medical male circumcision; strategic use of ARVs for prevention as well as milestones towards the development of microbicide.

The country has also conducted epidemiological and behavioural studies that have informed strategic planning and programmatic efforts, including evidence of the disproportionate risk of HIV infection amongst MSM, people who inject drugs and sex workers. Kenya has an advanced system of national surveillance studies (such as KAIS and KDHS, Kenya HIV estimate, 2014) that provide valuable information for programs and research.

There however still remain research gaps in understanding drivers of the epidemic by populations and geography; in evaluating effectiveness and efficiency of various prevention and treatment programs by populations and geography to inform scale up; effectiveness of the multi-sectoral approach in HIV response and effectiveness of proven efficacious biomedical interventions and technologies in the real world.

The two major current scientific challenges include finding a cure for AIDS and a preventive vaccine against HIV. Understanding and solving socio-behavioral and structural issues remain a top priority for effective HIV response and in a resource constrained environment, the need for implementation research to identify what works and what doesn't is of utmost necessity.

Capacity for HIV research is still limited and unevenly distributed across counties. Inefficiencies in approvals by Ethics Review Committee (ERC), limited use of technologies and quality assurance mechanisms of ERC impact on efficiency and quality of evidence generated on HIV research.

A stronger emphasis on research and innovation to generate timely evidence to inform scale up of policy, programs and interventions that can save lives and improve health is part of the intended outcome. Through an innovation fund, Kenya will leverage on its track records on innovation and public-private partnerships to encourage home-grown technologies and solutions to key identified areas of HIV responses for KASF 2014-2019 and engage young investigators in HIV research.

The devolved government system provides a great opportunity for capacity strengthening of counties in HIV research, and deliver to the hard-to-reach populations the relevant mix of services in a culturally acceptable manner.

### **Why the Research Agenda in Kenya**

The Research Agenda will guide the prioritization and coordination of HIV and AIDS research in Kenya to promote attainment of KASF goals. It will provide guidance to donors and researchers seeking to align with national and county priorities. It will provide a mechanism for effective knowledge generation, information sharing and management that will inform the country's HIV response.

### **Objectives of the Research Agenda**

The overall goal of the HIV and AIDS Research Agenda is to guide implementation of Research at both National and County level to support the KASF. KASF objectives on research and innovation by 2019 include: Increased evidence-based planning, programming and policy changes by 50%; Increased implementation of research on the identified KASF-related HIV priorities by 50% and Increased capacity to conduct HIV research at country and county levels by 10%

### **Specific objectives**

- Define HIV research priorities for the next five years
- Provide a national framework to guide HIV research.
- Facilitate coordination of HIV and AIDS research among stakeholders
- Serve as a tool for resource mobilization and allocation for HIV research

### **Development of the Research Agenda**

This Research Agenda is a result of consultative meetings held between researchers, programmers, implementers, donors and key affected populations at national and county levels. It started with consultative meetings that led to the development of the Kenya HIV Prevention Revolution Road Map and the development of the Kenya AIDS Strategic Framework. It integrated consultative meetings between researchers and stakeholders representing discordant couples, MSM, Sex workers, PLHIV, adolescents and the chairs of task teams of KASF strategic directions on prevention, treatment, social inclusion and financing. Services of a consultant were engaged to conduct a literature review and assessment of suggested research priorities to ensure consistency with the Kenya AIDS Strategic Framework goals. A team of researchers, M&E experts, government officials, research sponsors, public-private hospital and KARSCOM members constituted a research task team under NACC to supervise and coordinate the development of this research agenda. The task team incorporated contributions, comments and feedback from both the national and national level experts collected during the development of research section of the Kenya HIV and AIDS strategic Framework and email-circulated reviews. A team of expert reviewers provided guidance and edits that led to a final stakeholders' validation workshop.

## Guiding principles for the Research Agenda

HIV Research in Kenya should be guided by the following principles:

- **Relevance:** Research should be of public Health importance and contribute to achievement of the KASF goals.
- **Multidisciplinary and complementary:** Promote partnerships among the different sectors to ensure a harmonized multi-sectoral HIV response.
- **Human rights Based Approach:** Research to ensure people have access to services regardless of gender, race and ethnicity and to protect their privacy and confidentiality.
- **Ethical Soundness:** Abide by all ethical requirements set by the country.
- **Gender sensitivity:** Integrate gender analysis and promote gender issues in all its facets.
- **Credibility:** Promote and contribute to prevention and treatment strategies that are effective, efficient and realistic to the HIV response in Kenya
- **Non-Mutual Exclusivity:** Research areas arising in the course of implementation of this agenda and not initially captured does not necessarily exclude its relevance for research.
- **Research Focus:** The research should have a national focus in view of the devolved system by providing an opportunity for counties to share and learn best practices.

## HIV and AIDS research challenges in Kenya

The following gaps in HIV and AIDS research in Kenya exist.

Challenge	Remarks
Delayed translation of research findings into policy, interventions and practice	There remains a gap between scientific discovery and integration of findings into the Kenyan national policies and services.
Uncoordinated research ecosystem	There are multiple institutions (national, civil society and private sector) conducting similar or complementary research projects, with limited cross-learning and a lack of connection or central hub for information exchange  Lack of coordination among organisations and funders conducting trials and demonstration projects of different biomedical products impedes cross-learning  Private and public hospitals are not linked to and collaborate with HIV researchers or part of the research information sharing ecosystem
Unclear post trial access and intellectual property agreements	Guidelines on post-trial access and intellectual property for proven efficacious technologies have not been clearly defined.
Disjointed research for HIV prevention	There is limited integration of biomedical, behavioural and structural interventions in clinical trials, demonstration projects and in implementation.
Uncoordinated public engagement for research and development	Community and stakeholder engagement and formative research are often vertical (product-specific or organisation-specific), with minimal public participation in HIV research.

Challenge	Remarks
Minimal translation of innovation to commercialization	Public-Private Partnerships for health product development and access have yet to be harnessed at country and regional level to ensure that research is linked to manufacturing and commercialization of innovation.
Limited recognition of local scientists as lead scientists in basic research, protocol designs and implementation science.	There needs to be regular and credible fora where local scientists can showcase their work
Limited capacity (technical and human resources) of Ethics and Regulatory Boards to adapt to rapid scientific and technological advances.	There needs to be more investment into the training and staffing of the Ethics and Regulatory Boards in the country
Lack of national HIV research and development prioritization and inadequate resource allocation (funding)	Kenya's national funding of health research and development is still below the funding targets for health research and development of 2-5% of GDP as recommended in the Algiers, Bamako and other regional declarations of commitment.
Lack of ownership of research by national universities and research institutions; because most researches are donor driven	Need for more investments into HIV research in the country to promote ownership.

### Regulation of Research in Kenya

Research on HIV and AIDS in Kenya is regulated by the Ethics Review Committees (ERC) under the overall leadership of National Council for Science, Technology and Innovation (NACOSTI). There are about 21 ERCs in the country mainly based in research institutions and institutions of higher learning. KASF proposed ERCs to be sensitised on KASF priorities and strengthened to facilitate efficiency in review and approval of high quality HIV related studies.

02

PRIORITY RESEARCH AGENDA  
FOR KASF



Below are a set of identified research priorities based on KASF Strategic Directions.

### Strategic Direction 1: Reducing New Infections

Under this strategic direction KASF targets to reduce annual new HIV infections among adults by 75% and reduce HIV transmission rates from mother to child from 14% to less than 5% through the following key intervention areas:

- Granulate the HIV epidemic to intensify HIV prevention efforts to priority geographies and populations
- Adapt and scale up effective evidence-based combination prevention
- Maximise efficiency in service delivery through integration
- Leverage opportunities through creation of synergies with other sectors

Gaps still exist in the key interventions areas with regard to Combination prevention interventions for the different sub populations as well as on barriers of access to services. The following biomedical, behavioural and implementation research priorities have been identified on this strategic direction;

KASF Intervention areas	Existing Gaps	Research priorities
1.1 Granulate the HIV epidemic to intensify HIV prevention efforts to priority geographies and populations	Inadequate data on barriers to access to services for high risk groups; use of old and costly technologies in HIV and TB care, inadequate documentation of alcohol and drug use in certain populations and regions.	<ul style="list-style-type: none"> <li>• Identify barriers to testing and access to interventions services by populations and per regions (behavioural research)</li> <li>• Validate new sensitive and user friendly technologies to improve access to CD4, viral load and TB diagnostics (biomedical research)</li> <li>• Determine optimal effective models for increasing uptake of HTC to linkage to care and adherence (implementation research)</li> <li>• Determine impact of alcohol &amp; drug use on HIV prevention by different populations (young adolescent and Key Populations) and geographies (behavioural &amp; clinical research)</li> </ul>
	Inadequate information on existing HIV sexual networks, circulating subtypes, HIV characteristics per region and populations	<ul style="list-style-type: none"> <li>• Granulate Kenya's HIV epidemic by County, age and population including size estimates for adolescents, youth and key populations (modelling).</li> <li>• Map HIV sub-types and sexual networks in different regions and populations for appropriate prevention and treatment services (Modelling)</li> </ul>
1.2 Adapt and scale up effective evidence-based combination prevention	<p>Lack of information on the impact of evidence based Interventions strategies.</p> <p>Limited knowledge on impact of risk perception on HIV prevention.</p>	<ul style="list-style-type: none"> <li>• Determine impact of evidence based Intervention strategies (implementation research)</li> <li>• Determine optimal strategies for implementation of effective behavioural interventions (implementation research)</li> <li>• Understand the correlation of risk perceptions on HIV prevention, adherence and retention (socio-behavioural)</li> <li>• Evaluation of effectiveness of implemented structural interventions (such as keeping girls in schools, cash incentives, MSM and Sex workers empowerment) in reducing HIV transmission amongst adolescents in Kenya (implementation research)</li> </ul>

KASF Intervention areas	Existing Gaps	Research priorities
	<p>Inadequate information on combined interventions that work for different sub populations</p>	<ul style="list-style-type: none"> <li>• Evaluate the feasibility and effectiveness of implementation of Kenya Prevention Revolution combination prevention package in at least six (6) counties.</li> <li>• Determine the optimal combination prevention and treatment package for different populations (Implementation Research)</li> <li>• Assess associations of hormonal contraception on HIV acquisition and treatment (biomedical research)</li> <li>• Evaluate Opiate Substitution Therapy, Medically Assisted Therapy and Needle Syringe Programs (implementation research)</li> </ul>
	<p>Inefficient translation of newly found efficacious prevention technologies into policies and practices and slow progress in discovery of cost-effective preventive options for at risk populations</p>	<ul style="list-style-type: none"> <li>• Conduct demonstration studies of Microbicides, Vaccines and Multiple Prevention Technologies (implementation research)</li> <li>• Evaluate the feasibility of scale up of pre-exposure prophylaxis options in different populations (implementation research).</li> <li>• Conduct demonstration studies for the feasibility and scale up of new prevention technologies (Implementation research)</li> </ul>
1.3 Maximise efficiency in service delivery through integration	Coexistence of multiple approaches to integration; limited knowledge on impact of integration on HIV prevention.	<ul style="list-style-type: none"> <li>• Determine optimal models for integration at service delivery that provide the best HIV outcome (implementation research)</li> </ul>
1.4 Leverage opportunities through creation of synergies with other sectors	Limited engagement and involvement of other sectors in the HIV response. Public-private partnership opportunities not fully harnessed to make HIV prevention everyone's business.	<ul style="list-style-type: none"> <li>• Analyse the impact of the contribution, cost and interventions in different sectors on HIV prevention and treatment outcomes (Modelling).</li> <li>• Undertake expenditure analysis of HIV programs.</li> </ul>
1.5 Vaccine Development	Complex HIV manifestations	<ul style="list-style-type: none"> <li>• Fast track trials for vaccines and microbicide developments. (Biomedical research).</li> </ul>

## Strategic Direction 2: Improving Health outcomes and wellness of people living with HIV

KASF identifies key focus areas for this component which include

- Improving timely linkage to HIV care and treatment among HIV infected children, adolescents and adults
- Improving ART coverage for children, adolescents and adults
- Improving retention on ART at least 12 months for children, adolescents and adults
- Improving viral suppression in children, adolescents and adults

Gaps exist in data and information for decision making along each areas of the cascade of care ranging from referrals and linkages, retention to care and viral suppression. A number of Research priorities have therefore been identified.

KASF Intervention areas	Existing Gaps	Research priorities
2.1 Improve timely linkage to care for persons diagnosed with HIV	Inadequate data on determinants of linkage to care by populations and geographies. Only 40% of children needing treatment are actually accessing ART, PMTCT continues to be affected by gender and socio-cultural issues despite many existing programs.	<ul style="list-style-type: none"> <li>• Identify and test interventions that address determinants and barriers to linkage into care for PLHIV (disaggregated by ages, gender and sub-populations)- (behavioural/ Implementation research)</li> <li>• Determine HIV transmission rates among HIV positive adolescents and individuals unaware of status (biomedical research/ modelling)</li> <li>• Determine optimal interventions for addressing gender and socio-cultural factors affecting effectiveness of PMTCT (implementation research)</li> <li>• Evaluate optimal HIV testing strategies for different epidemics in Kenya for optimal diagnosis of those HIV positive (Implementation research)</li> </ul>
2.2 Increase coverage of care and treatment and reduce loss in the cascade of care	Lack of information on Loss to follow up (LTFU) and limited knowledge of population level impact of the newly adopted WHO guidelines on HIV treatment.	<ul style="list-style-type: none"> <li>• Determine outcomes and causes of LTFU among PLHIV on care and treatment (behavioural research)</li> <li>• Determine optimal strategies for application of community interventions for effective linkage to care and retention (implementation research).</li> <li>• Evaluate impact of scaling up of the Kenya treatment guidelines on HIV acquisition and morbidity at individual and community level (implementation research)</li> </ul>
	Inadequate information on barriers to access treatment for pediatrics and adolescents	<ul style="list-style-type: none"> <li>• Determine barriers to ART access in pediatric populations and adolescents, in and out of school (behavioral research).</li> <li>• Determine size estimates of HIV positive adolescents and youth within the school system (Modelling)</li> </ul>
	Limited data on effective models for increasing adherence in Kenya	<ul style="list-style-type: none"> <li>• Determine effective models for increasing adherence in different health care and community settings to achieve optimal viral suppression (Behavioral/ Implementation research).</li> <li>• Evaluate impact of community supported interventions on adherence to ART and retention.</li> </ul>

KASF Intervention areas	Existing Gaps	Research priorities
2.3 Scale up interventions to improve quality of care and improve health outcomes	Limited data on HIV and mental health especially for PLHIV, Key Populations and Young Adolescents	<ul style="list-style-type: none"> <li>Determine the prevalence and impact of mental health illnesses among PLHIV, Key Populations and Adolescents (disaggregated by age, gender and sub-populations) (behavioural research).</li> </ul>
	Lack of data on prevalence and Impact of co-infections and co-morbidities on HIV care and treatment	<ul style="list-style-type: none"> <li>Determine the Prevalence of co-infections and co-morbidities among PLHIV (biomedical research).</li> <li>Understand co-relations between HIV, Sexually transmitted Infections and other comorbidities (Clinical, biomedical research)</li> <li>Model the future trends and impact of HIV on non communicable diseases (Modelling)</li> <li>Impact of co-infections and co-morbidities on outcomes to treatment and care (biomedical research).</li> <li>Determine Multidrug resistant TB and HIV trends by population and geography.</li> <li>Test interventions to reduce impact of alcohol and substance abuse on HIV outcomes (Clinical/ Implementation research)</li> </ul>

### Strategic Direction 3: Using Human Rights Based Approach to Facilitate Access to Services

Under this strategic direction, the Kenya AIDS Strategic Framework (KASF) proposes the following key intervention areas:

- Remove barriers to access of HIV, SRH and rights information and services in public and private entities
- Improve National and County legal and policy environment for protection and promotion of the rights of priority and key populations and people living with HIV
- Reduce and monitor stigma and discrimination, social exclusion and gender-based violence
- Improve access to legal and social justice and protection from stigma and discrimination in the public and private sector

In order to achieve the expected results in this strategic direction, a generation of new knowledge on the dynamics of human rights, gender, stigma and discriminatory policies on HIV response in Kenya is needed.

A number of research priorities have therefore been proposed to address the existing gaps:

KASF Intervention areas	Existing Gaps	Research priorities
3.1 Remove barriers to health access in public and private entities	There is lack of national data on barriers to health access disaggregated by sub-populations, geography and public and private entities. Without this data, programming to remove barriers in access will not be evidence-based.	<ul style="list-style-type: none"> <li>Determine Human Rights related barriers to access to HIV, TB and SRH services by sub-population, geography and type of facility (public or private) in priority counties (Behavioral Research).</li> </ul>
3.2 Improve national and county legal and policy environment for protection and promotion of the rights of priority, key populations and PLHIV.	There is lack of awareness and clarity of current Kenya constitution and legal implications that would provide an enabling environment for service delivery for Key and Priority Populations.	<ul style="list-style-type: none"> <li>Review of national and county legislation and policy that impact access to HIV and SRH and participation in research for PLHIV, Key Populations and Adolescents (Implementation research/Policy Review and analysis).</li> </ul>
3.3 Reduce and monitor stigma and discrimination, social exclusion, and gender based violence	There is no established national measurement of social exclusion. The stigma index and populations survey provide data on stigma. There is limited evidence of what works for stigma, discrimination and social exclusion [The KDHS collects data on GBV and data was availed by the violence against children (VAC) studies]. 33% of girls and 17% of boys are raped by the time they are 18 years, increasing their susceptibility to HIV infection.	<ul style="list-style-type: none"> <li>Determine the impact of stigma and discrimination on key outcomes including HTC uptake, enrollment and retention in care and adherence.</li> <li>Evaluate effective and optimal interventions to reduce stigma, discrimination and social exclusion in Kenya (implementation research)</li> <li>Test at scale GBV and HIV prevention and care programs for key populations and young girls in Kenya (implementation research)</li> <li>Conduct age and population disaggregated stigma index, social exclusion and human rights violation studies (socio-behavioural studies)</li> </ul>
3.4 Improve access to legal and social justice and protection from stigma and discrimination in the public and private sector	There is limited awareness and use of the HIV and AIDS Tribunal by the community, individuals and stakeholders. There is limited use of legal mechanisms for post-rape and social injustice.	<ul style="list-style-type: none"> <li>Determine barriers and facilitators of access to legal justice programs such as the HIV and AIDS Tribunal, county and country legal systems (socio-behavioral research).</li> </ul>

### Strategic direction 4: Strengthening integration of Community and Health Systems

The Kenya AIDS Strategic Framework (KASF) proposes the following interventions under this strategic direction;

- Provide a competent, motivated and adequately staffed workforce at national and county levels to deliver HIV services integrated in the essential health package
- Strengthen health service delivery system at national and county levels for the delivery of HIV services integrated in the essential health package
- Improve access to and rational use of quality essential products and technologies for HIV prevention, treatment and care services
- Strengthen community service delivery system at national and county levels for the provision of HIV prevention , treatment and care services

Some of the gaps identified in KASF that underpin the Kenya's health care system include; uneven distribution of health personnel geographically and across the health sector, inadequate post market surveillance for new technologies, inadequate information on models of integration as well as on community competencies. A number of research priorities have been identified to address gaps in information and data as far as these are concerned;

KASF Intervention areas	Existing Gaps	Research priorities
4.1 Provide a competent, motivated and adequately staffed workforce at national and county levels to deliver HIV services integrated in the essential health package	Inequitable distribution and retention of health workers and a number of theories on task shifting	<ul style="list-style-type: none"> <li>• Determine the optimal distribution and retention of skilled HIV workforce at county and country levels (implementation research)</li> <li>• Determine effective mechanisms of task shifting and its impact on quality of HIV services (Implementation research).</li> </ul>
4.2 Strengthen health service delivery system at national and county levels for the delivery of HIV services integrated in the essential health package	Lack of a coherent model of integrated care for adolescents and children.	<ul style="list-style-type: none"> <li>• Determine the most effective and efficient models for integration of HIV service delivery and care (implementation research)</li> </ul>
4.3 Improve access to and rational use of quality essential products and technologies for HIV prevention, treatment and care services	Inadequate strategies for efficient adoption of technologies	<ul style="list-style-type: none"> <li>• Identify cost effective strategies in utilization of social media to improve HIV prevention and research outcomes (implementation research)</li> <li>• Evaluate cost effective technology applications in training, service delivery, commodities and supplies management (Implementation research)</li> </ul>
4.4 Strengthen community service delivery system at national and county levels for the provision of HIV prevention, treatment and care services	Inadequate information on effectiveness of community capacities and competencies to address local epidemics and challenges.	<ul style="list-style-type: none"> <li>• Determine the effectiveness of community systems to deliver cost-effective HIV responses in priority counties (implementation research)</li> </ul>

## Strategic directions 7 and 8: Increasing domestic financing and promoting accountable Leadership

### Strategic Direction 7 proposes the following key interventions;

- Maximise efficiency of existing delivery options for increased value and results within existing Resources
- Promote innovative and sustainable domestic HIV financing options
- Align HIV resources/investment to strategic framework priorities

### Strategic direction 8 proposes the following;

- Good governance practices and accountable leadership entrenched for the multi-sectoral HIV and AIDS response at all levels
- Effective and well-functioning stakeholder co-ordination and accountability mechanisms in place and fully operationalised at national and county levels
- An enabling policy, legal and regulatory framework for the multi-sectoral HIV and AIDS response strengthened and fully aligned to the Constitution of Kenya 2010.

Gaps exist in sustainable financing ranging from the domestic mechanisms that are effective and sustainable, Information on cost effectiveness and efficiency of HIV programs, and governance issues such as inadequate county ownership at the decentralised levels. A number of research priorities have therefore been proposed to address some of these gaps.

KASF Intervention areas	Existing Gaps	Research priorities
7.1 Maximise efficiency of existing delivery options for increased value and results within existing resources	Inadequate information on cost effectiveness and efficiencies for HIV programs	<ul style="list-style-type: none"> <li>• Undertake costing and expenditure analysis for HIV programs by different stakeholders and sectors to improve efficiency (Analysis)</li> </ul>
7.2 Promote innovative and sustainable domestic HIV financing options	There are a number of existing models on domestic financing but there is no clearcut evidence on effectiveness	<ul style="list-style-type: none"> <li>• Undertake financial evaluation to determine feasibility of integrating HIV care and treatment into health insurance schemes</li> </ul>
7.3 Build and sustain high level political and technical commitment for strengthened country and counties' ownership of the HIV response	Devolution is likely to have an impact on HIV programming and need to identify mechanisms of better engagement of leadership.	<ul style="list-style-type: none"> <li>• Document effective models of engagement of county leadership for sustainability and ownership of the HIV Response (implementation research)</li> </ul>
8.1 Effective and well-functioning stakeholder co-ordination and accountability mechanisms in place and fully operationalised at national and county levels	With the implementation of the devolution system, there is need to re-evaluate effectiveness of previously established coordination mechanisms to deliver in a devolved system	<ul style="list-style-type: none"> <li>• Evaluate effectiveness of existing HIV coordinating mechanisms at county and national levels (implementation research)</li> </ul>
8.2 An enabling policy, legal and regulatory framework for the multi-sectoral HIV and AIDS response strengthened and fully aligned to the Constitution of Kenya 2010.	Multiple policy frameworks have increased incoherence in policy implementation and programming.	<ul style="list-style-type: none"> <li>• Analyse policy coherence and policy effectiveness in promoting HIV response (Analysis)</li> </ul>

# 03 KNOWLEDGE MANAGEMENT

ACTION, MEASUREMENT, EVALUATION, LEARNING AND RESPONSE



### 3.1 Operationalization of the Research Agenda

#### Coordination of HIV and AIDS Research

Effective coordination of HIV and AIDS research is critical. KASF proposes re-engineering of the KARSCOM for increased effectiveness and efficiency. The Kenya HIV and AIDS Research Coordinating Mechanism (KARSCOM) is tasked with the responsibility of coordinating and promoting HIV and AIDS research in line with the Kenya HIV and AIDS Strategic Framework priorities. KARSCOM draws its membership from a wide range of stakeholders that include universities, research institutions, NGOs, people living with HIV, GOK ministries and development partners. KARSCOM was established in 2007 and to enable it deliver on its mandate, a Research Strategy was developed and operationalized. Recommendations from the ETR of KNASP III highlighted the need to review the Research Strategy and align it to the Strategic Framework 2014/2015-2018/2019.

To increase evidenced planning and programming, the key interventions documented below will be prudent.

- Restructuring KARSCOM and aligning its roles around communities of practice in line with the 8 identified Strategic Directions in KASF to review evidence and propose policy recommendations
- Developing an information portal for Kenyan research that will capture HIV and AIDS researches and program activities (including ongoing and completed research).
- Collating and biennially publishing Systematic reviews of research on the KASF priorities
- Representation of county HIV research staff in all communities of practices identified in KASF
- Promotion of the National HIV and AIDS Biennial Research Conference which will enhance NACC's role of collating and disseminating existing Kenyan research for policy and practice.
- Hold regular Continuous Medical Education (CME) sessions to share HIV research findings organised by KARSCOM.

#### Capacities required for delivery of the Research Agenda

Financing for HIV research remains critical to ending AIDS. The KASF proposes a HIV Research financing strategy in alignment with the health bill and NACOSTI plans by 2015. Current financing for HIV Research remains low which hampers the conduct of research as well as related processes such as translation of research into practice and policy. KASF further proposes that 10% of HIV resources from the HIV fund should go to funding research through competitive, transparent processes. This will ensure that the proposed research agenda is implemented as per the identified research priorities. NACC will leverage the Research Agenda to mobilize resources from funders and sponsors.

Gaps exist in capacities for Research at both the national and county level in areas such as epidemiologic surveillance, statistical skills & data analysis and good clinical practices. Key competencies in development of quality research protocols, research procedures and proposals and Capacity to undertake reviews of research, literature, systematic reviews are needed.

Capacity strengthening for counties to ensure that county engagement with setting research agenda and monitoring of HIV research is necessary. Further at National level, capacity to review evidence against policy and make recommendations for adoption in policy and practice is required. To ensure efficient translation of research findings into policies and practices, training and staffing of research units with skills in surveillance, statistics and systematic reviews is a top priority.

Capacities for Ethics Review Committees to fast track and increase efficiency in approval processes, enhance innovation and quality assurance mechanisms are needed.

### 3.2 Action plan - Stakeholders Roles and Responsibilities

Stakeholders in HIV and AIDS Research will be expected to undertake some roles in order to ensure the Research Agenda is implemented as planned. Some of the stakeholders' (not an exclusive list) roles and responsibilities as outlined in the KASF include;

#### Interventions for implementation of Research on KASF related priorities

Intervention area	Recommended action	Lead Agency	Responsibility
National HIV Research Agenda	<ul style="list-style-type: none"> <li>Develop a national HIV Research agenda through a consultative process to complement the Health Research Agenda</li> <li>Strengthen synergies between HIV research and other health research areas such as TB and SRH</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>MoH</li> <li>KEMRI</li> <li>Parastatals</li> <li>Universities and teaching institutions</li> <li>Development and implementing partners</li> </ul>
Implement research agenda at National & County levels	<ul style="list-style-type: none"> <li>Invest in in-country capacity for sound research and peer reviewed publication</li> <li>Strengthen co-ordination and tracking of HIV research</li> <li>Sensitize Ethics Review committees on KASF priorities</li> <li>Strengthen Ethics Review committees to facilitate high quality HIV-related studies (fast track mechanisms; quality assurance, complex biomedical trial designs, key populations and adolescent ethics and sensitivities)</li> <li>Strengthen county HIV research capacities including epidemiologic surveillance, good laboratory and clinical practice and ethics</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>NASCOP</li> <li>NACOSTI</li> <li>MoH, KEMRI</li> <li>Parastatals</li> <li>Universities and teaching institutions</li> <li>Development and implementing partners</li> </ul>
Resource the HIV agenda	<ul style="list-style-type: none"> <li>Develop HIV research financing strategy in alignment with the Health Bill and NACOSTI plans</li> <li>Integrate research funding in KASF funding priorities and develop resource mobilisation plan</li> </ul>	<ul style="list-style-type: none"> <li>MOH</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> <li>NACOSTI</li> <li>NASCOP</li> </ul>

**Interventions for Increased evidence planning and programming**

HIV information portal for Kenya research, synthesising data routinely	<ul style="list-style-type: none"> <li>Establish a multi-sectoral and interactive web-based Kenya HIV research hub with geographic mapping of all research on HIV, TB and SRH.</li> <li>Track and continuously update HIV Research in Kenya, providing information on ongoing studies to reduce duplication.</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>MoH</li> <li>KEMRI</li> <li>Parastatals</li> <li>Universities and teaching institutions</li> <li>Development and implementing partners</li> </ul>
Reviews of research	<ul style="list-style-type: none"> <li>Invest in capacity development within responsible agencies for research reviews and collation</li> <li>Disseminate reviews of research on KASF priorities and briefs on emerging research biennially.</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>NASCOP</li> <li>MoH</li> <li>KEMRI</li> <li>Parastatals</li> <li>Universities and teaching institutions</li> <li>Development and implementing partners</li> </ul>
Communities of practices	<ul style="list-style-type: none"> <li>Establish communities of practice (CoP) on KASF priorities to review evidence and propose policy recommendations. The four proposed areas include: Community of Practice (CoP) on reduction of incidence, CoP on Reduction of mortality, CoP on Reduction of Stigma and Discrimination, CoP on increased ownership and financing of HIV and HIV research. The multi-disciplinary teams will meet bi-ennially (preferably at the NACC biennial conferences) to review evidence from the biennial systematic reviews and propose policy recommendations.</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>NACC and partners</li> </ul>
County Research engagements	<ul style="list-style-type: none"> <li>Establish standing or ad hoc research committees to identify county research priorities, determine policy changes from existing research and disseminate findings.</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>KEMRI</li> <li>NASCOP</li> </ul>
Use of technology	<ul style="list-style-type: none"> <li>Establish and utilize technological applications, including GIS and GPS options to improve tracking of HIV research and dissemination of results.</li> </ul>	<ul style="list-style-type: none"> <li>NACC</li> </ul>	<ul style="list-style-type: none"> <li>NASCOP</li> <li>KEMRI</li> <li>NACOSTI</li> </ul>

## Output and Outcome indicators

A range of output and outcome indicators have been identified in four major key areas. These include:

Scientific productivity	<ol style="list-style-type: none"> <li>1. Number of new peer reviewed papers from Kenya and by Kenyan investigators and by author line up (By Investigator and by discipline).</li> <li>2. Number of finished study reports uploaded into the research hub.</li> <li>3. Number of abstracts submitted to national and international conferences.</li> <li>4. Number of study protocols approved by ERCs quarterly.</li> </ol>
Knowledge Management and Information	<ol style="list-style-type: none"> <li>1. Number of website hits to the national HIV Research Hub.</li> <li>2. Number of national policies and guidelines developed and reviewed informed by emerging evidence.</li> <li>3. Number of new doctoral level and master level dissertations in HIV Research</li> <li>4. Number of new clinical trials and epidemiologic studies.</li> </ol>
Efficiency of Ethical Review Process	<ol style="list-style-type: none"> <li>1. Number of proposals reviewed within 2 months</li> <li>2. Percentage of HIV proposals approved within two months.</li> <li>3. Number of ERCs that have developed online submission process</li> <li>4. Percentage of studies showing community engagement during proposal application</li> </ol>
Capacity building at national and county levels	<ol style="list-style-type: none"> <li>1. Number of young investigators (ages 20-35) funded for HIV research as investigators</li> <li>2. Number of newly established training programmes on HIV research in Kenya</li> <li>3. Number of counties supported to carry out needs assessment and capacity building for HIV research</li> <li>4. Number of reports from communities of practice forums.</li> </ol>
National funding for HIV research	<ol style="list-style-type: none"> <li>1. Percentage of national resources mobilized for HIV (by NACC) that goes into HIV Research.</li> <li>2. Percentage of National Health Research Budget that funds HIV Research.</li> <li>3. Annual funding of research by international donors/funders in the country</li> <li>4. Number of investigator-driven research proposal funded (% funded by domestic or international)</li> <li>5. Number of staff working on HIV Research/ Research institutions</li> <li>6. Number of studies/scholarships funded for health research (domestic sources vs. international sources)</li> </ol>
Community and Public Engagement in HIV Research	<ol style="list-style-type: none"> <li>1. Number of prizes awarded to scientists, researchers and advocates for their excellence and innovation in HIV research</li> <li>2. Percentage of studies that developed and disseminated policy briefs on study findings to policy makers, ministry of health and ministry of science and technology</li> </ol>

# ANNEXES

## Key terms and Concepts

**Biomedical Research:** Biomedical research refers to the broad scientific field of inquiry into ways to prevent and treat diseases that cause illness and death in people and in animals through specialized medical interventions often based on life and physical sciences. Utilizing biotechnology techniques, biomedical researchers study biological processes and diseases with the ultimate goal of developing effective treatments, vaccines and cures. Discovery of new medicines, therapies and vaccines requires careful scientific experimentation, development, and evaluation. There are three broad categories of biomedical research in HIV; Basic Science, Clinical and Epidemiologic research.

**Socio-Behavioral Research:** Refers to the study of the variables that impact the formation of habits and decisions that impact many areas of daily life. The core areas of behavioral and social sciences research are those that have a major and explicit focus on the understanding of behavioral or social processes, or on the use of these processes to predict or influence health outcomes or health risk factors. Behavioral and social research is divided into three categories: (A) Research on behavioral and social processes; (B) Biopsychosocial research; and (C) Research on methodology and measurement in the behavioral and social sciences.

**Implementation Research:** Implementation research is the study of methods that can be used to promote the uptake of research findings into routine practice. Implementation research can consider any aspect of implementation, including the factors affecting implementation, the processes of implementation, and the results of implementation, including how to introduce potential solutions into a health system or how to promote their large scale use and sustainability. The intent is to understand what, why, and how interventions work in “real world” settings and to test approaches to improve them. Implementation research seeks to understand and work within real world conditions, rather than trying to set control for these conditions or to remove their influence as causal effects. This implies working with populations that will be affected by an intervention, rather than selecting beneficiaries who may not represent the target population of an intervention (such as studying healthy volunteers or excluding patients who have comorbidities). Implementation research is especially concerned with the users of the research and not purely the production of knowledge.

**Health Systems Research:** Is a subset within implementation science research that is concerned with delivery of the interventions in the health facility and community, the organisation of services in a facility, client flow and health-worker competencies. Also of importance is the structure of the health systems (for example, the roles played by governments, non-governmental organisations, other private providers, and citizens). The structure of the health systems is particularly important for implementation research on health. Our current context in Kenya is the devolution of the health care system.

## ANNEX 2: OTHER RESEARCH PRIORITIES IDENTIFIED FOR EACH STRATEGIC DIRECTION

Strategic direction	Priorities Identified
<b>Strategic Direction 1</b>	<ul style="list-style-type: none"> <li>• Optimal approach to HIV testing by sub populations</li> <li>• Evaluate implementation of self-testing and identify optimum testing algorithms mix between self and provider testing</li> <li>• Determine country's capacity to implement new guidelines and early ART initiation.</li> <li>• Determine effective models for integration of HTC testing among in SRH/HIV</li> <li>• Determine acceptability and uptake of new prevention technologies by sub-populations</li> <li>• Determine the impact of policy and legal environment on HIV prevention interventions amongst key populations.</li> <li>• Determine acceptability of integrated versus non-integrated services (disaggregated by age, gender, type of facility and point of care.</li> <li>• Preparedness for Multi- purpose Technologies(MTP) in SRH service delivery system</li> <li>• Determine models that improve efficiencies in screening for HIV among those with TB and for TB among those with HIV.</li> <li>• Evaluate effectiveness of strategies of involving PLHIV in prevention</li> <li>• Determine strategies to promote and enhance partner testing and disclosure</li> </ul>
<b>Strategic Direction 2</b>	<ul style="list-style-type: none"> <li>• Impact of co-infections and co-morbidities on response to treatment and care</li> <li>• Effectiveness of various care and support interventions on morbidity and mortality among PLHIV</li> <li>• Determine socio-behavioral, cultural, structural and gender related factors as determinants of health outcomes and adherence to treatment</li> <li>• Determine treatment retention in care and outcomes by sub-populations including mobile populations , key populations , elderly etc.</li> <li>• Studies on prevalence of HIV drug resistance (acquired and transmitted)</li> </ul>

Strategic direction	Priorities Identified
Strategic Direction 3	<ul style="list-style-type: none"> <li>• Demonstrate populations impact of TasP and PrEP in at risk young adolescents, discordant couples and Key Populations in at least 3 high cluster counties</li> <li>• Conduct research on AIDS related mortality among key populations in Kenya</li> <li>• Determine factors affecting service providers' stigma and effective mechanisms for stigma reduction in at least the 9 priority counties</li> <li>• Review existing programs on effective mechanisms of reducing alcohol and substance abuse and impact on HIV prevention and health seeking behavior</li> </ul>
Strategic Direction 4	<ul style="list-style-type: none"> <li>• Assess the effect of devolution on effectiveness of HIV response</li> <li>• Identify strategies for advancing political, and administrative leadership role in HIV e.g. Stewardship and evidence champions</li> <li>• Determine factors associated with community ownership for the HIV response</li> </ul>
Strategic Direction 7	<ul style="list-style-type: none"> <li>• Determine the Impact of Kenya's middle-income country status on sustainability of the AIDS response</li> <li>• Economic evaluation of scale-up of combination prevention</li> </ul>
Strategic Direction 8	<ul style="list-style-type: none"> <li>• Cost Analysis for implementation of the new treatment guidelines</li> <li>• Propose innovative models for increasing public-private partnerships for HIV responses</li> </ul>

## ANNEX 3: LIST OF PEOPLE WHO PARTICIPATED IN DEVELOPMENT OF THE RESEARCH AGENDA

1.	Nduku Kilonzo	NACC
2.	John Kamigwi	NACC
3.	Patrick Mureithi	NACC
4.	Fridah Muinde	NACC
5.	Mercy Khasiani	NACC
6.	Joshua Gitonga	NACC
7.	Tom Oneko	NACC
8.	Bryan Okiya	NACC
9.	Irene Mukui	NASCOP
10.	Shobha Vakil	NASCOP
11.	Prince N. Bahati	IAVI
12.	Nelly Mugo	KEMRI
13.	Elizabeth Bukusi	KEMRI
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16.	Ann Kioko	I Choose life -Africa
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18.	Orina Samwel	DOD
19.	Caroline Kithinji	KEMRI/ ERC
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21.	Jeffery Wambaya	ISHTAR
22.	Madand Njagi	ISHTAR
23.	Joseph Mbutia K.	Gertrude's Children's Hospital
24.	Esther A.A. Ogara	MOH
25.	Gaudensia Mutua	KAVI-UoN
26.	Boniface Kitungulu	FHI 360
27.	Ruth Nduati	UoN (Consultant)
28.	Henry Tabifor	UNAIDS
29.	Ernest Makokha	CDC
30.	Jordan Kyongo	LVCT Health
31.	Davies kimanga	EGPAF
32.	Martin Atela	AFIDEP
33.	Conrad Mudibo	ECOMEDIA
34.	Erick Sakwa	LVCT Health
35.	Caroline Kinoti	University Of Maryland
36.	Collins Odhiambo	Pathfinder International
37.	Doris Naitore Odera	ICAP
38.	Nzisa Kaloki	NACC (Support Consultant )
39.	Lilian Odawa	NACC (Support Consultant )
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