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HIGHLIGHTS

Ministry of Health

Rwanda Biomedical Centre
Healthy People, Wealthy Nation

Rwanda
Public Health Bulletin

General Information

Rwanda Public Health Bulletin (RPHB) is an open access source and peer reviewed journal published by Rwanda Health Communication center (RHCC)

Its mission is to serve as a knowledge sharing platform for national and international public health scientific information. Content published under RPHB will be used to control and address potential public health outbreak threats and strengthen health systems through real time availability of information.

This will allow better and effective communication between policy makers, researchers and health practitioners.

A new issue is published quarterly with supplements and special reports. Publication materials are submitted online at https://www.rwandapublichealthbulletin.org/manuscripts/submission and should fulfil the RPHB's instructions.

Go to https://www.rwandapublichealthbulletin.org/about/instructions for instructions to authors.

Scientific scholars who would like to join RPHB and become peer-reviewers are welcome. They can find more details at https://www.rwandapublichealthbulletin.org/about/reviewers

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CONTENT

Dear Readers,

Just a few weeks ago, Rwanda successfully hosted the International Conference on AIDS and STIs in Africa (ICASA). This was a gathering of global/international/local scientists, leaders and activists working to address AIDS and STIs as global health challenges and assess progress made towards creating a free AIDS generation in Africa.

Among other targets, Rwanda reported to having achieved the 90-90-90 target one year before UNAIDS timeline, originally in 2020. This means that we were able to test 90% of all eligible Rwandans, put 90% of positive cases on HIV antiretroviral (ARVs) drugs and finally achieved viral load suppression in 90% of patients on ARVs before 2020. Rwanda is thus able to control new HIV infections and stabilize its prevalence for some years now as well as reduce HIV/AIDS caused morbidities and mortalities.

Rwanda attributes these accelerated achievements to strong political will and leadership as well as the decentralization of health services. With the support of our partners, Rwanda was able to ensure that health systems are generally strengthened, but has put a strong emphasis on HIV services, particularly those partnering the prevention of new infections. Decentralizing health services closer to communities has helped us to test and treat Rwandan communities in even remote areas of the country.

To date, Rwandans are serviced through condom kiosks, community level advocacy and investments were made to increase male circumcision rates and considerable efforts were also put in place to reduce mother to child infections. In addition, every Rwandan regardless of his/her sexual orientation has access to medications as prescribed.

As readers of the Rwanda public health bulletin, I would like to bring to your attention that regardless of all these strategies in place and achievements, unacceptable new infections are still being reported in some populations at high risks. I hope that all together as public health professionals, we can use this platform to share knowledge on potential innovative cost-effective and nationally applicable interventions to further reach these key populations and fully attain HIV/AIDS global targets.

I hope you enjoy reading the RPHB 3rd Issue.

Dr. Diane GASHUMBA
Minister of Health, Rwanda

Dear Colleagues,

I take this opportunity to thank you all for your outstanding engagement in preparing for the 20th International Conference on AIDS and STIs in Africa (ICASA2019) organized in Kigali from 2-7 December 2019. Discussions and resolutions that concluded the conference reflected a successful event.

Participants from all over the world gathered and discussed goals and long-term objectives in the fight against HIV/AIDS and other sexually transmitted infections (STIs). Africa, as a continent showed current progress towards the decrease of the HIV/AIDS epidemic on the continent. In this line, different countries presented evaluation data partnering to their status on the WHO 90-90-90 targets.

Rwanda has always made commitments to fight against HIV since the early 80's when first HIV cases were identified at the University Teaching Hospital of Kigali. A National AIDS Control Program was established to serve as an institution mandated to help the country address HIV as a public health concern and development threat.

During ICASA 2019, among other success stories, Rwanda discussed national priorities and strategies put in place to integrate HIV prevention across different developmental sectors.

In addition, the government of Rwanda developed a national plan for universal access to HIV/AIDS prevention and treatment through the decentralization of services and their use by the population. Consequently, the number of health facilities offering voluntary counseling and testing for HIV rose.

This contributed directly to increased numbers of people screened/tested, considerable decreases of mother to child transmission of HIV were registered. The population also had increased access to antiretroviral treatment (ART) drugs. Consequently, Rwanda was able to reduce HIV incidences/ new infections, stabilizing the prevalence at 3% for many years now. Rwanda's great achievement from HIV programs and strategies is the attainment of the WHO 90-90-90 target before 2030.

This global target and other successes in addressing HIV as well as STIs were met due to strong political will and good leadership: the government was and is still committed to establishing strong multi-sectoral approaches involving developmental partners, civil society organizations, and private NGOs. This approach allowed Rwanda to resource mobilize both at the national and international level, implement evidence-based strategies, to effectively decentralize national responses, to build capacities and to encourage community participation.

Despite these strides, however, much is still needed for Rwanda to sustain these achievements and register even more improved records towards an Africa with zero new infections and other universal goals. The country's current focus is on generating local research findings, cost-effective interventions and innovations on HIV preventive activities, for better well-informed decision-making processes. Health education for behavior change targeting at high-risk populations is as well at the core mission of our strategies.

As I commend all efforts behind the organization and success of ICASA2019, I would like to further call upon RPHB readers (particularly Rwandan public health professionals) to continuously put in your efforts toward the country and global anti-HIV/AIDS resolutions. I hope that by 2030, Rwanda will stand proud as it did during this conference.

Enjoy your reading of the RPHB 3rd Issue.

Dr. Sabin Nsanzimana
Director General
Rwanda Biomedical Center

Dear Readers,

It is my honor to present to you the 3rd Issue of the Rwanda Public Health Bulletin and I would like to express my appreciation to you for the continuous support.

This issue has come after Rwanda successfully hosted the 20th International Conference on HIV/AIDS and STIs in Africa (ICASA2019) on 2-7 December 2019. At the Conference, 20 key sessions, engaging policymakers and implementers from across Africa and beyond and over 10 000 health professionals and 250 media and journalists gathered together to address AIDS and STIs as global health challenges.

The World AIDS Day 2019 occurred on the eve of ICASA2019, and Rwanda was hailed to have reached the UNAIDS 90-90-90 targets. Proud of these achievements, Rwanda is also grateful to have successfully hosted the ICASA2019 and appreciate lessons learned from different kinds of expertise shared during the conference.

In order to achieve an AIDS free Africa and an AIDS free world, the focus of efforts in the fight against AIDS and STIs should be on vulnerable groups through inclusive programs and decentralized programs that involve communities where vulnerable people live.

In this issue, there are articles that cover ICASA2019 conference and updates on the fight against AIDS and STIs.

This issue is available on www.rwandapublichealthbulletin.org and the Rwanda Public Health Bulletin is open for submission of manuscripts any time. A new issue is published quarterly. Authors instructions and submission guidelines are available on the website. Therefore, I urge our readers, public health experts, and all healthcare professionals to keep supporting the publication of health data by submitting to the bulletin and disseminating its publications to make public health information accessible to all.

I wish you a very pleasant reading

Prof. Leon Mutesa, MD, PhD
Editor-in-Chief

Community participation in the fight to end HIV/AIDS in Africa

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KEY MESSAGES

Communities must be at the center of every aspect in the fight against HIV/AIDS: They must be involved in all aspects of partnering to prevention, treatment, and care service. Advocacy begins with the community in order to mobilize resources and to engage and involve key populations in the process toward an AIDS free Africa.

HIV testing and treatment services need to be more inclusive of the "treat-all" concept, with increased responsiveness to the needs of people living with HIV (PLHIV).

Communities must also be at the forefront of research to identify barriers to accessing services.

INTRODUCTION

Community engagement is imperative for linking those who are in need of receiving HIV prevention methods as well as treatment services. Adolescent girls and young women, for example, remain one of the most vulnerable groups. Not only do they bear a higher rate of HIV infections, but they also bear a disproportionate global disease burden, and often face intersecting health, social, cultural, and economic challenges.

Discrimination and stigma can be diminished if communities-aid in ensuring vulnerable groups are able to freely access prevention, testing, and treatment services.

The 20th International Conference for AIDS and STIs in Africa (ICASA 2019), a Community Engagement Village, was offered a space for conversations and experience sharing, among conference participnts.

The Village served as an opportunity for different to introduce, implement, and advocate for effective evidence-informed HIV/AIDS and STI interventions in their communities, countries, and regions. Key populations, including sex workers, transgender people, people who inject drugs, and incarcerated people, were able to utilize the forum to also discuss related important issues, advocacy strategies, and their desired responses toward the end of AIDS.

COMMUNITY MOBILIZATION

Various communities must then be fully involved in the planning, implementation, and ownership of interventions to support health programs and to enact an effective response. Community strengths must be recognized as an asset in order to target the needs of key populations as well as to showcase the importance of such populations in awareness and prevention materials. Incorporating key populations' needs into a setting, health programs and policies are essential to recognizing gaps in

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the delivery of health services and measuring outcomes.

COMMUNITY EMPOWERMENT

Creating an environment in which communities lead responses and have their opinions considered in HIV implementation, strategies could be one effective approach to address cultural and social norms which promote stigma and myths. Addressing community needs is therefore important to mobilizing resources and to encouraging strong participation and collaboration. It is then paramount to empower community members and involve them in decision making processes.

CONCLUSION

Despite achievements made in the fight against HIV/AIDS, focus on vulnerable groups in achieving national and global targets in the fight against the epidemic is still missing.

From conversations held at the Community Engagement Village, the need for better-coordinated approaches to strengthen community engagement and participation, and to leverage collaboration between community members, governments, and the private sector was strongly emphasized.

Providing key populations health services in an open environment is essential for those who abstain from care (due to stigma) and treatment over fear to feel safe and accepted.

Investing in innovative technology to foster HIV voluntary testing

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KEY MESSAGES

Investing in innovative technology to foster HIV voluntary testing is key to achieving the UNAIDS 90-90-90 targets by 2020 which are 90% of people living with HIV will know their HIV status, 90% of people with diagnosed HIV infection will receive antiretroviral treatment, and 90% of people receiving antiretroviral treatment will have viral load suppression.

It is important to invest in youth-driven solutions and community-driven innovations toward ending HIV/AIDS. Placing these populations at the center of the fight address risks and vulnerabilities.

It is important to invest in innovative strategies to fight cervical cancer as a comorbidity of HIV/AIDS.

There is a need to invest in community-based health education to address stigma and discrimination related to HIV/AIDS.

INTRODUCTION

The 20th International Conference for AIDS and STIs in Africa (ICASA 2019), brought Africa together to discuss different innovations and ways forward in fighting sexually-related epidemics. Innovations in addressing HIV risks and vulnerabilities, new HIV infections, new treatments, and the development of a globally effective HIV vaccine were explored, as well as responses to other STIs.

It takes innovation to continue making advances in the fight against HIV/AIDS, as well as other epidemics. New innovations have made HIV testing, treatment, and care more accessible and achievable. In Rwanda, advancements in HIV include point of care testing, particularly for early infant diagnosis; pre-exposure prophylaxis; and treat all HIV positive regardless of CD4 count.

ADVANCEMENT IN HIV TESTING AND PREVENTION SERVICES

With the introduction of point of care tests, including the rapid test and a saliva swab kit, wait time for laboratory results have decreased from 14 days to a mere 15 minutes. Thus, rapidly enhancing the identification of new HIV infections.

Other recent innovations in Rwanda include the initiation of HIV self-testing to reach those particularly in rural areas, case-based surveillance and partner notification, the implementation of a referral system to improve the linkage between HIV testing and treatment services, e-based training for healthcare providers, the initiation of free condom kiosks in selected hot spots, and the promotion of voluntary medical male circumcision through campaigns to meet demand.

INNOVATION TO ADDRESS CHALLENGES

It is imperative to continue developing mechanisms and strategies to improve access to treatment and services. The challenge of stigma and discrimination remains for those affected and infected by HIV. Sensitization is key, in addition to protecting the rights of those in the workplace, school, and community. Women and adolescents remain among the most vulnerable groups, therefore gender-specific services to targets needs and vulnerabilities must be strengthened.

Building the capacity of healthcare professionals is also key to innovation. Services and trainings must be integrated into education and the scale-up of basic task shifting will enable a stronger workforce to quickly test and treat.

Challenges also remain in addressing co-morbidities. Active screening must be improved to increase diagnosis and reduce morbidity and mortality for conditions such as tuberculosis, hepatitis, and cancer. A focus on women's health and investment in interventions aimed at eliminating diseases, particularly cervical cancer. In Rwanda, a new cervical cancer programme will focus on screening and treating over 70,000 adult women living with HIV/AIDS using HPV-DNA testing, and visual inspection with acetic acid while treating cervical precancerous lesions with thermoablation devices.

CONCLUSION

Innovative interventions are key to continue making progress in the HIV/AIDS epidemic. In addition to scientific innovations, community-driven solutions and community-led innovation are imperative to advancements made in testing and treatment services. Through the decentralization of services, the scale-up of testing interventions, and building the capacity of the healthcare workforce, more people are able to know their status and start on life-saving treatment. Innovations in addressing co-morbidities and other epidemics are also essential to fighting global disease burden.

Visionary leadership for the achievement of the UNAIDS 90-90-90 targets

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KEY MESSAGES

Enhanced action is needed to increase domestic investment in health from the public and private sectors.

It is important to establish the interconnection between HIV/AIDS and the broader health and development agenda in order to equip the entire population with the resources needed to live safe and healthy lives.

Health should be viewed as an investment for driving economic growth and creating sustainable de-velopment.

INTRODUCTION

The 20th International Conference for AIDS and STIs in Africa (ICASA 2019), was an avenue to engage governments, non-governmental organizations, civil society, and key partners to hatch strategies and grow commitment in the fight against the AIDS epidemic.

Visionary leadership has proved to be effective in ensuring health for all and nurturing the HIV/AIDS response in line with achieving the UNAIDS 90-90-90 targets aimed at testing, treating, and ensuring viral load suppression among people living with HIV (PLHIV) on the continent and globally.

Leaders play a pivotal role in reducing the number of new HIV infections and protecting vulnerable groups, including women and adolescents. At the February 2019 African Union Summit, African leaders made a commitment to invest domestic resources in health.

At ICASA, leaders and partners reconvened to reinforce these commitments and provided an opportunity to enhance domestic funding from the public and private sectors. On this aspect, the Organization of African First Ladies for Development (OAFLAD) championed by First Lady of the Republic of Rwanda, Jeannette KAGAME, met to assess the progress made in combating HIV/AIDS in Africa.

LEADERSHIP INVOLVEMENT: MEASURABLE IMPACTS

Key achievements include the-free-to-shine campaign that reduced mother to child HIV transmission (MTCT) immensely in Botswana, Rwanda, Democratic Republic of Congo and Chad; and sensitization of adolescent girls on reproductive health, which helped to reduce new infections.

Leadership comes at the forefront of decision making and funding sound policies that impact the health agenda and response towards ending HIV/AIDS. For instance, the government of Rwanda championed the fight against HIV/AIDS. As a result, Rwanda lists among one of the first countries to achieve the UNAIDS 90-90-90 targets to end AIDS by 2030. The country achieved this through decentralization of services, increased

geographic and financial accessibility to health services, and the universal access to preventative and curative measures.

HIV testing has been simplified through the implementation of oral self-testing, early initiation of Antiretroviral Treatment through the "test and treat initiative". Unique patient identification for people living with HIV has been put in place to allow proper cross-health facility follow-up across the country.

CONCLUSION

Despite progress made in achieving HIV epidemic control, there is still work to be done for political leadership to drive and mobilize domestic resources to ensure economic funding for HIV–STIs programs. At the center on the HIV/ STIs response strategies remains the importance of community-led leadership, youth leadership, and promoting the inclusivity of vulnerable populations in the fight to end AIDS.

Rwanda Population-based HIV Impact Assessment (RPHIA) - Key findings

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INTRODUCTION

The Rwanda Population-Based HIV Impact Assessment (RPHIA), a national household-based survey, was conducted between October 2018 and March 2019 in order to measure the status of Rwanda's national HIV response. RPHIA offered HIV counseling and testing with return of results and collected information about uptake of HIV care and treatment services. This survey was first in Rwanda to measure both national HIV incidence and viral load suppression (VLS). The results provided information on national and subnational progress toward control of the HIV epidemic.

RPHIA was led by the Government of Rwanda (GoR) through the Rwanda Biomedical Centre (RBC) and National Institute of Statistics of Rwanda (NISR). The survey was conducted with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and technical assistance through the U.S. Centers for Disease Control and Prevention (CDC). RPHIA was implemented by ICAP at Columbia University in collaboration with GoR entities, including RBC, NISR, National Reference Laboratory (NRL), district, provincial and referral hospitals, and local government authorities. GoR, local civil society organizations and international development partners participated in the steering committees and technical working group during survey implementation.

Key Findings

HIV Indicator	Female	95% CI	Male	95% CI	Total	95% CI
Annual Incidence (%)						
Ages 15-49 years	0.06‡	0.00-0.13	0.10‡	0.00-0.20	0.08	0.02-0.14
Ages 15-64 years	0.07‡	0.00-0.15	0.09‡	0.00-0.17	0.08	0.02-0.14
Prevalence (%)						
Ages 10-14 years	0.5	0.2-0.7	0.3	0.1-0.5	0.4	0.2-0.5
Ages 15-49 years	3.3	2.9-3.8	1.8	1.5-2.1	2.6	2.3-2.9
Ages 15-64 years	3.7	3.3-4.1	2.2	1.9-2.6	3.0	2.7-3.3
Viral Load Suppression (%)						
Ages 10-14 years	*	*	*	*	(72.5)	56.1-89.0
Ages 15-49 years	78.6	74.2-83.0	65.7	57.2-74.2	74.3	69.7-78.8
Ages 15-64 years	79.1	74.9-83.2	70.5	63.8-77.2	76.0	72.0-80.0

95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.
‡ Incidence estimates are based on a small number of recent infections. The survey was powered to estimate national incidence and not for sex-disaggregated estimates; therefore, these estimates and CIs should be interpreted with caution.
Viral load suppression is defined as HIV ribonucleic acid (RNA) <1,000 copies per milliliter (mL) of plasma among HIV-positive individuals.
*An asterisk indicates the point estimates have been suppressed due to observations less than 25.
() Estimates based on 25-49 observations are included in parentheses and should be interpreted with caution.

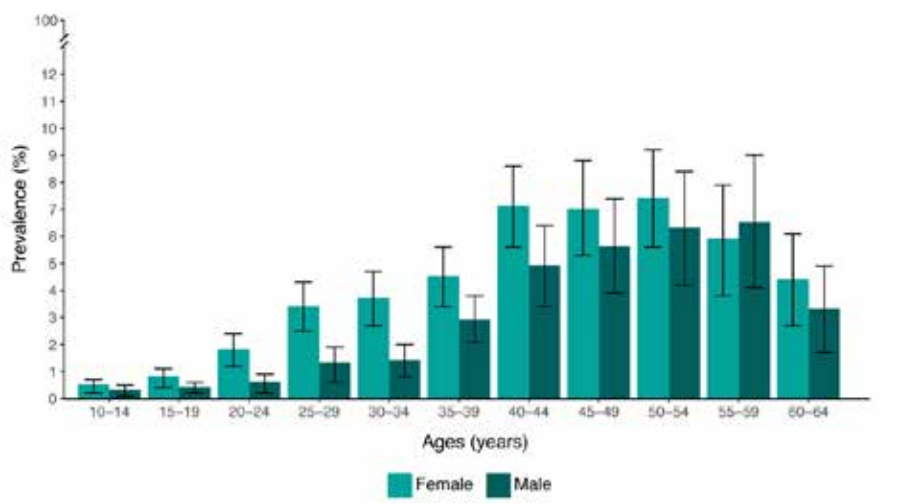
Annual incidence of HIV among adults (defined as those aged 15-64 years) in Rwanda was 0.08%. This corresponds to approximately 5,400 new cases of HIV annually among adults in Rwanda.

Prevalence of HIV among adults in Rwanda was 3.0%. This corresponds to approximately 210,200 adults living with HIV in Rwanda with more women (3.7%) than men (2.2%) living with HIV. Prevalence of HIV among young adolescents

(those aged 10-14 years) was 0.4%, corresponding to approximately 5,900 young adolescents living with HIV in Rwanda, for a total of 216,000 people living with HIV among those aged 10-64 years.

Prevalence of viral load suppression (VLS) among all HIV-positive adults was 76.0%: 79.1% among women and 70.5% among men. Note, findings of VLS among people living with HIV were regardless of knowledge of HIV status or use of antiretroviral (ARV) therapy antiretroviral (ARV) therapy(ART)

HIV prevalence peaked at 6.5% among men aged 55-59 years and 7.4% among women aged 50-54 years. Among young women aged 20-24 years, HIV prevalence was three times higher (1.8%) than among men in the same age group (0.6%), the most pronounced disparity by sex

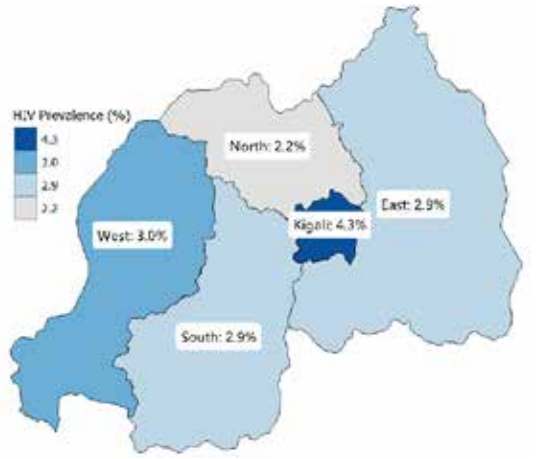


Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time.

HIV PREVALENCE AMONG ADULTS, BY PROVINCE AND RESIDENCE

Among adults (those aged 15-64 years), the prevalence of HIV varied geographically across Rwanda, ranging from 2.2% in the North to 4.3% in the City of Kigali. HIV prevalence was 1.9 times higher in urban areas compared to rural areas.

Province	HIV Prevalence (%)	95% CI
City of Kigali	4.3	3.5-5.1
South	2.9	2.2-3.6
West	3.0	2.2-3.9
North	2.2	1.8-2.6
East	2.9	2.2-3.7
Residence		
Urban	4.8	4.0-5.7
Rural	2.5	2.2-2.8
Overall	3.0	2.7-3.3

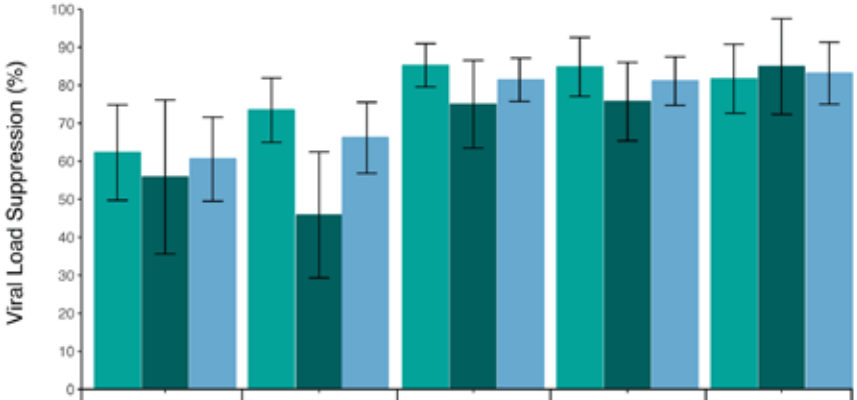


95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.

VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE ADULTS, BY AGE AND SEX

For HIV-positive women in Rwanda, prevalence of VLS was highest among those aged 35-44 years (85.2%) and lowest in those aged 15-24 years (62.3%). The highest prevalence of VLS in HIV-positive men was found among those aged 55-64 years (84.9%) and the lowest in those aged 25-34 years (45.9%), however, these estimates are based on a small number of observations and should be interpreted with caution.

Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time. () Estimates based on 25-49 observations are included in parentheses and should be interpreted with caution.



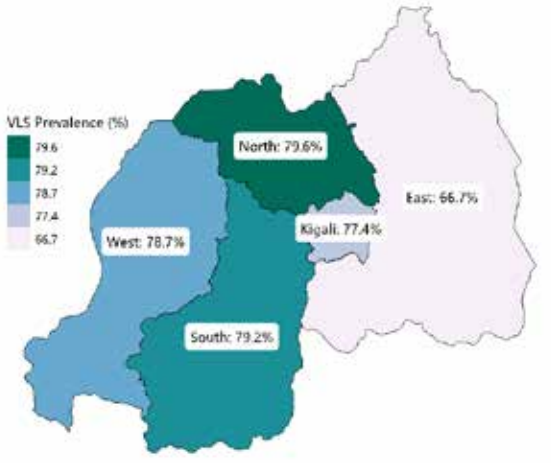
Ages (years)	15–24	25–34	35–44	45–54	55–64
Female	62.3	73.5	85.2	84.8	81.7
Male	(55.9)	(45.9)	75.0	75.7	(84.9)
Total	60.6	66.2	81.4	81.1	83.1

VIRAL LOAD SUPPRESSION AMONG HIV-POSITIVE ADULTS, BY PROVINCE

Among HIV-positive adults (those aged 15-64 years), prevalence of VLS varied geographically across Rwanda, ranging from 66.7% in the East to 79.6% in the North.

Province	VLS Prevalence (%)	95% CI
City of Kigali	77.4	72.2-82.6
South	79.2	70.6-87.8
West	78.7	71.6-85.8
North	79.6	70.7-88.5
East	66.7	56.6-76.9
Overall	76.0	72.0-80.0

VLS: Viral load suppression.95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.



ACHIEVEMENT OF THE 90-90-90 GOALS AMONG HIV-POSITIVE ADULTS, BY SEX

90–90–90: an ambitious treatment target to help end the AIDS epidemic

The Joint United Nations (UN) Program on HIV/AIDS (UNAIDS) and HIV-affected countries have set the 90-90-90 targets that by 2020, 90% of all people living with HIV will know their HIV status; 90% of all people with diagnosed HIV infection will receive sustained ART; and 90% of all people receiving ART will have VLS.

Diagnosed

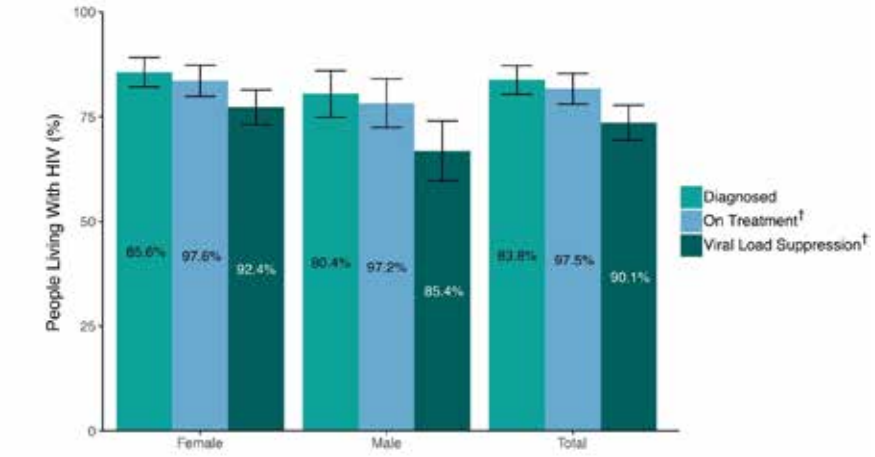
In Rwanda, 83.8% of HIV-positive adults (those aged 15-64 years) were aware of their HIV-positive status (based upon self-report or the detection of ARVs): 85.6% of HIV-positive women and 80.4% of HIV-positive men.

On Treatment

Among diagnosed1 adults living with HIV, 97.5% were on ART (based upon self-report or the detection of ARVs): 97.6% of HIV-positive women and 97.2% of HIV-positive men.

Viral Load Suppression Achieved

Among adults currently on ART,2 90.1% achieved VLS: 92.4% of HIV-positive women and 85.4% of HIV-positive men.



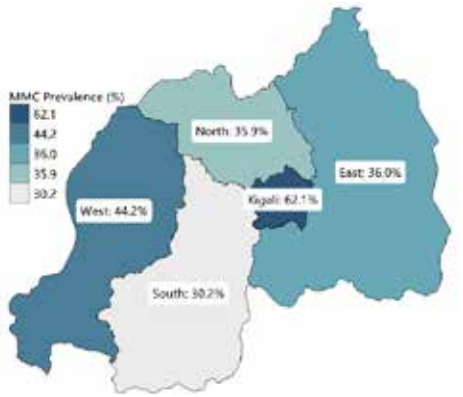
Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time.
The height of the bars represents population-level coverage of each indicator, among all people living with HIV.
† Inset numbers are the proportions shown in the text above. See text above.
1 Diagnosed: self-reported as HIV-positive or with detectable ARVs.
2 Currently on ART: self-reported current ARVs usage or with detectable ARVs.

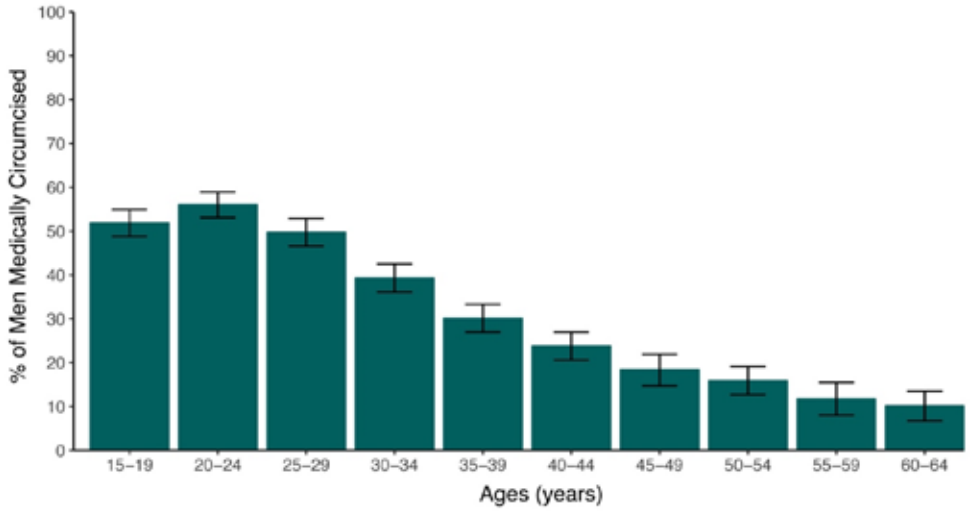
PREVALENCE OF MEDICAL MALE CIRCUMCISION AMONG ADULTS, BY PROVINCE

Overall, the prevalence of self-reported medical male circumcision (MMC) among men aged 15-64 years was 39.9%. Prevalence of MMC ranged from 30.2% in the South to 62.1% in the City of Kigali. Prevalence of self-reported MMC was highest among young men aged 20-24 years, at 56.6%, and lowest among older men aged 60-64 years (10.2%).

Province	MMC Prevalence (%)	95% CI
City of Kigali	62.1	59.5-64.6
South	30.2	26.6-33.8
West	44.2	40.1-48.3
North	35.9	31.9-39.9
East	36.0	31.7-40.3
Overall	**39.9**	**38.1-41.6**

MMC: Medical male circumcision
95% CI (confidence interval) indicates the interval within which the true population parameter is expected to fall 95% of the time.





Error bars represent 95% confidence intervals, which indicate the interval within which the true population parameter is expected to fall 95% of the time.

CONCLUSIONS

Annual HIV incidence among adults 15-64 years in Rwanda is 0.08%. The very low incidence measured through RPHIA is reflective of a successful national HIV program. Prevalence of HIV among adults was 3.0%.

Prevalence of community VLS among the overall population of HIV-positive adults in Rwanda is 76%. These results indicate that Rwanda has achieved the UNAIDS 90-90-90 target for VLS of 73% (the product of 90*90*90) among adults living with HIV.

Rwanda's national HIV program efforts have resulted in remarkable progress towards the UNAIDS 90-90-90 goals. The largest gap to achieving epidemic control is in HIV diagnosis. RPHIA results indicate high levels of linkage to treatment and VLS.

The relatively low proportions of VLS in the East and in men particularly men in the younger age groups are actionable results for tailoring interventions to close the gaps in epidemic control in Rwanda.

The first national prevalence estimates for viral hepatitis among adults 15-64 years were 2.3% for acute or chronic hepatitis B and 1.2% for past or current hepatitis C. These are the first national estimates of the prevalence of acute or chronic hepatitis B and past or current hepatitis C in Rwanda and will be foundational for developing the national hepatitis response.

RESPONSE RATES AND HIV TESTING METHODS

Of 11,339 eligible households, 98.9% completed a household interview. Of 17,003 eligible women and 14,025 eligible men aged 15-64 years, 99.1% of women and 98.3% of men were interviewed and tested for HIV. Of 8,655 eligible young adolescents aged 10-14 years, 99.4% were tested for HIV.

HIV prevalence testing was conducted in each household using a rapid diagnostic testing algorithm based on Rwanda's national guidelines, with laboratory confirmation of seropositive samples using a supplemental assay. A laboratory-based incidence testing algorithm (HIV-1 LAg avidity plus viral load and ARV detection) was used to distinguish recent (within the last year) from long-term infection, and incidence estimates were obtained using the formula recommended by the WHO Incidence Working Group and Consortium for Evaluation and Performance of Incidence Assays, and were calculated using the following parameters: mean duration of recent infection (MDRI) of 130 days with a time cutoff (T)=1.0 year and residual proportion false recent (PFR)=0.00. Survey weights are utilized for all estimates.

The PHIA Project is a multi-country project funded by PEPFAR to conduct national HIV-focused surveys that describe the status of the HIV epidemic. Results will measure important national and regional HIV-related parameters, including progress toward UNAIDS 90-90-90 goals, and will guide policy and funding priorities. ICAP at Columbia University is implementing the PHIA Project in close collaboration with GoR, CDC and other partners.

See phia.icap.columbia.edu for more details.

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Recognition for reviewers

Peer review may seem like a thankless task, but without it research would be unreliable. Rwanda Public Health Bulletin values reviewers and wants to encourage good standards of review.

We would like to appreciate outstanding contributions of the following 2019 reviewers

Dr. Egide Abahuje

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About the Rwanda Public Health Bulletin (RPHB)

The Rwanda Public Health Bulletin (RPHB) is a printed and open access, peer-reviewed journal, published as the flagship scientific and technical periodical publication. RPHB is a public health bulletin launched in March 2019 by the Rwandan Ministry of Health, through the Rwanda Biomedical Center (RBC) in collaboration with the Centers for Disease Control and Prevention Foundation and with support from Bloomberg Philanthropies Data for Health Initiative.

Mission

To serve as a scientific information dissemination platform of national and international significance, mainly in areas related to the Rwanda Ministry of Health's essential mission to strengthen national and local health systems and improve the health of the people of Rwanda. The Rwanda Public Health Bulletin publishes disease surveillance summaries, public health response guidelines, public health notices, case reports, outbreak reports, original research papers, and policy briefs among others. It generally features issues of importance to its targeted audience which is health professionals, academic researchers, policymakers and anybody interested in health issues. Articles for publication are received from doctors, nurses, allied health professionals, students, policymakers, government bodies, non-governmental bodies and others.

Aim

To bridge the gap in public health information sharing between policy-makers, researchers, health professionals and practitioners.

Publisher

RPHB is a publication of the Rwanda Health Communication Center (RHCC) which is the communication arm of the Rwanda Ministry of Health's Rwanda Biomedical Center (RBC).

Registration

Online ISSN: 2663 - 4651, Print ISSN: 2663 - 4643

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INSTRUCTIONS TO AUTHORS

All works submitted to this bulletin will have to belong to the types of articles stated below:

1. ORIGINAL RESEARCH

Referred to as "Primary Research" pioneer in a determined domain. It can be from various aspects: Clinical features, pathophysiology, biochemistry, molecular biology, etc...

THE TITLE

The title of the article should be concise and informative. It should contain enough thoughts on the subject.

ABSTRACT

Abstract of 250 words maximum must accompany each manuscript and s divided into 4 paragraphs with the following headings and MeSH keywords:

1. Introduction: stating the purposes/aims of the work; the research undergone, the hypothesis tested or the procedure evaluated.

2. Materials and methods: briefly stating what was done and what materials were used, including the number of subjects, the methods to assess the data and to control bias.

3. Results: Providing key findings of the study, including indicators of statistical significance, actual numbers, as well as percentages.

4. Conclusion: Summarizing in 1 or 2 sentences the work on the basis of the findings. It emphasizes new and important aspects of the study or observations.

5. Keywords: Following the abstract. They are 3 to 10 words or short phrases that assist indexers in cross-indexing the article. They should be MeSH terms, and are published with the article.

THE MAIN TEXT

The text of observational and experimental articles is divided into sections with the following headings: Introduction: should always begin the text, and requires brevity and focuses. It conveys the nature and purpose of the work, and quotes the relevant literature. Only strictly pertinent background information is necessary for understanding why the topic is important. We suggest the final paragraph clearly states the hypothesis or purpose of the study.

METHODS

Details of clinical and technical procedures should follow the introduction. A clear description of the selection of the observational or experimental subjects should be given. The identification of all aspects of the study, its reasoning, and the related relevance should be explicitly justified. In case, the study was done in a particular way, the guiding principles should all be clarified. Exclusion and inclusion criteria or partial inclusion, the reliability index, the confidentiality index, the analysis step, and the data collection processes should be also carefully specified. This section should provide sufficient details on the methods, instrumentation, procedures, all drugs and chemicals used (including generic names, doses, routes of administration). It should allow other workers to reproduce the study if necessary.

This section should also state the self-evaluation of the study by: independent/consensus readings blinded or unblended to other information and estimate the fluctuation of recall biases by random ordering of studies.

Be clear about the retrospective or prospective nature of the study. Finally, provide references to established methods, including statistical methods that have been published, forthcoming, or that may not be well known. New description or substantially modified methods may be used however, give reasons for the use of these techniques, and evaluate their limitations. Statistical methods should be described with enough details to enable a knowledgeable reader

with access to the original data to verify the reported results. A general description of methods would be defined in the methods section, whereas a specific statistical method used into analysis would be summarized in the results section. Any general-use of the computer program should be specified, and more details have to be clarified about any randomization issues.

RESULTS:

Logical sequence of presentation of results is required in the text; along with tables, and illustrations. Repetition of data from illustrations into the text should be avoided; however, emphasize or summary of only important observations would be helpful. Avoid the ''non-technical use'' of technical terms in statistics which should be defined and reserved for the right purpose. Moreover, define all those statistical terms aside with or including abbreviations and/or most used symbols. Any complication and/or unexpected finding should be reported and the more possibly explained and the author should report lost to follow up and dropouts from a clinical trial.

DISCUSSION:

Use ample subheadings. Emphasize the new and important aspects of the study and the conclusions that follow from them. Avoid repetition of details included in other parts. This section requires the mention of the implication of the findings, and their limitations for future research, involving relating the observations to other relevant studies.

Finally, the conclusions should be linked to the goals of the study; though mostly avoiding:

Unqualified statement not completely supported by the data

Statement on economic benefits and costs unless the report includes economic data and analyses

Claim of priority and alluding to work that has not been completed.

Whereas new hypotheses could be suggested when warranted, but they should be clearly labeled as such and recommendations, when appropriate and needed, may be given.

Acknowledgments:

List all contributors who do not meet the criteria of authorship, such as those who provided purely technical help, writing assistance, or a department chair who provided only general support; and their respective contribution will be headed as provided. Everybody must have given written permission to be acknowledged. References: References should be numbered consecutively in the order in which they were first mentioned in the text. They will be identified in the text, tables, and legends by arabic numbers. This bulletin uses the IEEE style (Institute of Electrical and Electronics Engineers) for referencing the citations. It is advised to avoid citations or personal communication unless they provide essential and pertinent information. In all case, the name of the person and date of communication should be cited in parentheses in the text.

2. CHECKLIST FOR SURVEILLANCE REPORTS

Disease surveillance summaries are reported following the checklist below:

Title:

Compose a title that includes the name of the health condition, population, time and place.

Abstract

Provide a structured abstract including the following sub- headings: Background; Objectives; Methods; Results; and Conclusion. Introduction

Context:
Summarize the current situation regarding the health condition under surveillance and identify why it is important. Objectives: State the objective of the surveillance report.

Method

Setting

Describe the setting, locations and dates of the surveillance period.

Population

Describe the population under surveillance. Definitions: Provide definitions for each health event under surveillance, including case definitions and any public health interventions.

Information sources

Describe all data sources, including the objective of any surveillance systems, what data were collected and how data were gathered, transferred and stored. Supplementary data: If appropriate, note where to access supplemental material (e.g., www.opendata.gc.ca).

Data quality, missing data and reporting delays

Describe how the data quality was assessed. Explain how missing data were addressed. If data is reported by date of diagnosis or symptom onset, include a statement about whether the data for the most recent periods may be revised.

DATA ANALYSIS

Describe any analytical methods used providing sufficient detail to enable a knowledgeable reader with access to the original data to judge its appropriateness and to assess the reported results.

Results

Descriptive

Provide a summary of the descriptive data, including demographics.

Data Quality:

Report on data quality (e.g., completeness, missing data, under reporting)

Analytic data

Provide a summary of the analysis including (when indicated) estimates of trends. When applicable, point estimates should include appropriate indicators of measurement error such as 95% confidence intervals (e.g., average annual percentage change used to describe trends or odds ratios used to describe subgroup differences).

Figures

Create the minimum number of figures to highlight key results. Create a title that includes person, time and place.

Discussion

Key results

Summarize key results with reference to study objectives

Comparison

Consider these findings in relation to the current literature. Strengths and weaknesses: Discuss the strengths and weaknesses of the study (data quality, completeness, sources of potential bias). Interpretation and generalizability: Provide a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies and other relevant evidence.

Conclusion: Ensure conclusions address objective and follow from the results.

3. PUBLIC HEALTH NOTICES / OUTBREAK REPORTS

Following the Center for Disease Control recommendations, for PH notices and outbreak reports to be published they need to cover all four components as stated below:

INTRODUCTION:

Generally, the introductory paragraph should begin with 1 to 3 sentences establishing the existence of the outbreak or underlying public

health problem (e.g., "On January 2, 2008, the Nevada State Health Division contacted CDC concerning surveillance reports received regarding two persons recently diagnosed with acute hepatitis C."). The introductory paragraph also usually contains: a) a statement that an investigation was conducted, when and by whom; b) the most important finding(s); c) the actions taken to stem the outbreak; and d) a statement of the public health implications and actions that should be taken in response to the investigation. Investigation and results: First, present the initial investigation and its findings. This might include: 1) a description of the setting and a statement of how the outbreak came to the attention of health authorities; 2) a clinical description of the index case or initial cases; 3) initial key test results; and 4) hypothesis generation activities and results. Next, summarize the full investigation, including: case definition, case-finding activities, method of investigation, and results. Cases should be counted and described by clinical characteristics, treatment, and outcome, as well as time, place, and person descriptive results. Next, present the methods and results of any analytic epidemiologic studies (e.g., cohort or case-control studies). Finally, provide the results of any relevant microbiologic, genetic, or toxicologic results, followed by the results of any testing of environmental samples. Public health response: When appropriate, a brief description summarizing any public health interventions taken and the results of the interventions follows.

DISCUSSION

Same as for a Full Report, except that a Limitations paragraph might not be required for an Outbreak Report.

4. POLICY BRIEFS

This bulletin will use guidelines on reporting/ publishing policy notes as they are suggested by the Center for Disease Control (CDC). As the CDC defines them; Policy Notes are intended to announce new official policies or recommendations (e.g., from ACIP or CDC). These reports can be thought of as briefs. Maximum word count at submission is 1,400 words. Up to three tables, figures, or boxes may be included. Policy Notes contain no Discussion or Limitations, and a summary box is not required. Although policy notes or brief might vary, following is a rough guide of what basic notes should have: Introduction: The introductory paragraph should be limited to 150–200 words. It might contain all or some of the following components: a brief introductory statement orienting the reader to the topic and placing it in context, a brief description of the public health problem, a brief statement of the rationale for the policy or recommendation, mention of the most important parts of the policy or recommendations, and one or two sentences stating the conclusions and the public health implications of the new policy or recommendations.

BACKGROUND

The Policy Note should include a paragraph after the introduction that summarizes background information relevant to the policy or recommendation that can help the reader understand the context and need for the policy or recommendation.

Methods

Should include a summary of the methods used to establish the policy or recommendation, including answers to some or all of these questions: Who was involved in the production of the guidelines or recommendations, and how? What evidence base was considered? What was the rationale for considering this evidence base? Was other evidence excluded from consideration and, if so, why? Rationale and evidence: The Policy Note should provide a concise review of the rationale for the policy or recommendation and a descriptive review of the scientific evidence used to establish it. It should include an explanation of how the policy or recommendation adds to, or differs from, relevant policies or recommendations established previously. Presentation of the policy or recommendation: The policy or recommendation should state clearly when it takes effect and to

whom and under what circumstances it applies.

DISCUSSION OR COMMENT

The Policy Note should comment on the likely impact of the new policy or recommendation and plans for assessment of the policy or recommendation

5. CASE REPORTS

These are reports of an individual patient on their symptoms, treatment reactions on a disease or condition of interest. These reports normally focus on unusual reactions or occurrences. Similar to other research reports, case reports might include a literature review of previous similar. Case reports might also address positive patient outcome on particular treatment guidelines or individual impact of a particular intervention. These are mainly used for educational and decision-making purposes. Case reports are normally reported following a checklist found at the CARE Guidelines

6. CASE STUDIES

We recommend authors to follow the "EQUATOR Network" for ample explanations and guidelines in the writing of such articles. They have to be well-described case studies on health care interventions of public health concern. These could be:

Rigorous assessments of processes and program interventions.

Recommendations on possible health interventions. Never on individual patient (= case report)

7. COMMENTARIES / OPINION / METHODOLOGY ARTICLES

We recommend authors to follow the "EQUATOR Network" for ample explanations and guidelines in the writing of such articles. Though these articles are moderated, they should be:

Short, focused, opinionated to previous articles or any subject related to the journal entirely.

Contemporary and focusing on specific issues.

Franc critics to the journal are bravely motivated and would be as much as possible published.
Are normally up to 800 words.

8. FORMATTING THE MANUSCRIPT

Please note that Articles which are not correctly formatted will be returned to the authors

Format text

Style: No Spacing, Single column, Single Spacing
Font: Single Spacing, Times New Roman - size 12
Titles: Capitals and bold, size 14

Format tables

Times New Roman, Font size 9 No vertical lines.
Horizontal lines in the table can be removed
No table should be larger than a single A4 page.
Footnote should be size 9 and italic

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THE EDITORIAL TEAM
WISHES YOU
MERRY
CHRISTMAS!
AND
HAPPY NEW YEAR!