AGENCE DE LA SANTÉ
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en santé

Second Generation HIV Surveillance in Montréal Communities from Sub-Saharan Africa and the English-Speaking Caribbean

Québec

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Agence de la santé
et des services sociaux
de Montréal
Québec

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Direction de santé publique de Montréal
1301 rue Sherbrooke est
Montréal, Québec H2L 1M3
514-528-2400
www.dsp.santeMontréal.qc.ca

Authors

Aïssatou Fall
Alix Adrien
Pascale Leclerc
Joseph Cox

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We would like to thank everyone involved in the project:

Research team

Alix Adrien, Principal Investigator, Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal (DSP de l'ASSSM)
Pascale Leclerc, Co-investigator, DSP de l'ASSSM
Joseph Cox, Co-investigator, DSP de l'ASSSM
Aïssatou Fall, Research Coordinator, DSP de l'ASSSM
Jérémie Butoyi, Field Coordinator, DSP de l'ASSSM
Susanna Ogunnaike-Cooke, Public Health Agency of Canada (PHAC)
Jill Tarasuk, PHAC
Erin Rutherford, PHAC
Robert Remis, University of Toronto
Raphael Bitéra, Institut national de santé publique du Québec (INSPQ)
Marie Niyongere, Sub-Saharan African community representative
Janice Dayle, English-speaking Caribbean community representative
Aurélie Hot, Coalition des organismes communautaires québécois de lutte contre le sida (COCQ-SIDA)

Community advisory committee

Alix Adrien, DSP de l'ASSSM
Aïssatou Fall, DSP de l'ASSSM
Jérémie Butoyi, DSP de l'ASSSM
Marie Niyongere, Centre for AIDS Services of Montreal–Women
Janice Dayle
Joseph Jean-Gilles, GAP-VIES
Adina Ungureanu, Alliance des communautés culturelles pour l'égalité dans la santé et services sociaux
Geneviève Némouthé, COCQ-SIDA
Aurélie Hot, COCQ-SIDA
Cora-Lee Conway
Michael Farkas
Marcel Rachid
Dorothy Williams, Black Community Resource Centre

Interviewers
Mamadou Bady Balde
Mamvula Dada Bakombo
Camille Kouessi Dagbo
Gorgui Diouf
Elhadji Mamadou Dioukhane
Samira Edwards
Irénikatché M. Hazoumé
Mawudjro Johnson-Zigbe
Samuels Keithus
Janice Dayle
Liliane Mefanche
Yannick André Tala Talom
Marion Tétégan

Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada
Chris Archibald
Susanna Ogunnaike-Cooke
Jill Tarasuk
Erin Rutherford
Stephen Cule
Tory Atwood

National Microbiology Laboratory, Public Health Agency of Canada
Laurie Malloch

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Report writing team
Aïssatou Fall, data analysis and drafting officer
Alix Adrien, author
Pascale Leclerc, author
Joseph Cox, author

DIRECTOR'S MESSAGE

Monitoring health and its determinants has been at the heart of public health practice in Québec for decades. People from HIV-endemic countries are particularly vulnerable to sexually transmitted and blood-borne infections (STBBIs). However, little information is available to develop appropriate measures to combat these infections.

This surveillance project, conducted on the Island of Montréal between June 2013 and February 2014, is an anonymous and voluntary cross-sectional behavioural and biological survey. The main objectives of the Second Generation HIV Surveillance in Montréal Communities from Sub-Saharan Africa and the English-Speaking Caribbean survey (SGS-AFCAR survey) were to describe the prevalence of HIV and other STBBIs in these communities, and identify associated risk behaviours. The survey was the first to characterize the HIV epidemic in these communities. There was a high level of participation in the survey, which involved 1,602 participants.

The public health department of Montréal's health and social services agency is pleased to present this report, outlining the main findings of the SGS-AFCAR survey. It provides important information for the development of policies, programs and interventions to prevent and control HIV infection and other STBBIs among Montrealers from Sub-Saharan Africa and the English-speaking Caribbean.

I would like to thank everyone from Sub-Saharan Africa and the English-speaking Caribbean living on the Island of Montréal who took the time to participate in the survey. I also want to thank the community organizations, churches, and associations of Quebecers of African and English-speaking Caribbean descent for their support throughout the project. Community involvement makes it likely that the data will soon be used to implement preventive measures. Promotion, prevention and protection help us fulfill our mission to keep our world healthy.

Richard Massé
Director, Montréal public health department

ABSTRACT

Human immunodeficiency virus (HIV) infections are an ongoing public health issue in Québec. In 2013, the Montréal area alone accounted for 61.5% of all new HIV diagnoses, and most cases occurred among people from HIV-endemic countries. According to the Public Health Agency of Canada (PHAC), people born in these countries continue to be overrepresented among those infected with HIV in Canada. Although there is a legal requirement to collect epidemiological information on HIV infection and AIDS to monitor public health, these data do not document risk behaviours in the most exposed populations. Therefore, strengthened systems—or second generation surveillance systems—are needed to collect data linking behavioural data with biological data on HIV infection and other related infections (hepatitis C, syphilis, etc.).

This report outlines the findings of the Second Generation HIV Surveillance in Montréal Communities from Sub-Saharan Africa and the English-Speaking Caribbean survey (SGS-AFCAR survey) conducted on the Island of Montréal from June 2013 to February 2014. This project involved an anonymous and voluntary cross-sectional behavioural and biological survey carried out by the public health department of Montréal's health and social services agency (DSP de l'ASSSM) in conjunction with the Public Health Agency of Canada.

During the study period, 1,602 participants, including 1,105 Montréalers from Sub-Saharan Africa and 497 from the English-speaking Caribbean meeting the selection criteria were recruited on the Island of Montréal. Recruitment sites were locations used by both communities for social interactions. These could be fixed or temporary sites at events or in specific locations. Just over half the participants (51.7%) in the two target communities were recruited using a vehicle to meet them in their neighbourhoods at grocery stores, ethnic product stores, hairdressing shops, shopping malls, subway stations, supermarkets, restaurants and parks.

Of the Montréalers from Sub-Saharan Africa who were recruited, 60.5% (668/1,105) were men, while 53.5% (266/497) of Montréalers from the English-speaking Caribbean were women.

HIV prevalence for all participants was 1.4% (95% CI: 0.9–2.1); the Sub-Saharan African women had the highest prevalence at 2.4% (95% CI: 1.2–4.2). A total of 22 HIV-positive tests (18 among Sub-Saharan Africans and 4 among English-speaking Caribbeans) were identified; 68.2% (15/22) of those individuals were unaware they were HIV positive. Age was significantly associated with HIV ($p<0.0001$), with most HIV-positive tests detected in 30- to 49-year-olds (86.4%, or 19/22).

Seroprevalence of hepatitis C virus (HCV) among all participants was 0.5% (95% CI: 0.2–1.01), for a total of 8 positive HCV tests. In addition, one case of HIV and HCV coinfection was identified in a Sub-Saharan African woman. Syphilis results will be available at a later date.

In total, 80.4% (866/1,077) of Sub-Saharan Africans vs. 61.3% (302/493) of English-speaking Caribbeans had undergone HIV testing before, and just over half had been tested in the previous two years.

Frequency of high-risk sexual behaviour was significant in both target communities, including multiple partners (with regular or casual partners) and low condom use during high-risk sex, especially among women. The survey revealed a significant incidence of unprotected vaginal or anal intercourse among some participants during recent trips to HIV-endemic countries; incidence was greater among women. Those risk behaviours have a major impact on the spread of the HIV epidemic, as people affected by these practices are at greater risk of acquiring or transmitting HIV.

Participants from Sub-Saharan Africa were more aware of modes of HIV transmission than English-speaking Caribbeans. Certain misconceptions remain, such as the belief that a healthy-looking person cannot have HIV or that HIV is transmitted through mosquito bites. Correcting major misconceptions about HIV transmission is as important as providing accurate information on real modes of HIV transmission.

Moreover, 60.7% (963/1,587) of participants recruited in both communities did not have a family doctor. Among all participants who required medical care in the 12 previous months, 15.1% (223/1,473) reported having difficulty accessing health care services during this period (15.7% of Sub-Saharan Africans and 10.1% of English-speaking Caribbeans).

The surveillance survey revealed that some subgroups in both target communities differed in attitudes and sexual risk behaviours, as well as knowledge of modes of HIV transmission, and were therefore more vulnerable to HIV/AIDS: women, the 30–49 year age group, less educated people and socially vulnerable individuals. These subgroups should be priority targets for measures promoting HIV/AIDS prevention and protection.

In Québec and elsewhere in Canada, heterosexual transmission of HIV infection as the main mode of transmission among people from Sub-Saharan Africa and the Caribbean and the preponderance of infection among women are constants. In the SGS-AFCAR survey, all HIV-positive cases (n=22) were heterosexuals, and just over half the cases (54.5%, or 12/22) were women.

These findings could be used as a benchmark for monitoring trends in HIV and HCV prevalence, as well as for screening habits and behaviours associated with the acquisition and transmission of those infections among people from HIV-endemic countries, in general, but more specifically in the Sub-Saharan African and English-speaking Caribbean communities. The findings should also help guide development of policies, programs and interventions to prevent and control HIV infection and other STBBIs by targeting the needs of ethnocultural communities on the Island of Montréal.

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LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
CCDIC	Centre for Communicable Diseases and Infection Control
CLSC	Centre local de services communautaires – Local Community Service Centre
CSSS	Health and Social Services Centre
DBS	Dried blood spot
DSP de l'ASSSM	Direction de santé publique de l'Agence de la santé et des services sociaux de Montréal
EIA	Enzyme immunoassay
GAP-VIES	Groupe d'action pour la prévention de la transmission du VIH et l'éradication du SIDA
HCV	Hepatitis C virus
Het-endemic	Heterosexuals from HIV endemic areas
HIV	Human immunodeficiency virus
IDU	Injection drug user
INSPQ	Institut national de santé publique du Québec
LSPQ	Laboratoire de santé publique du Québec
MSM	Men who have sex with men
NHRL	National HIV and Retrovirology Laboratories
NML	National Microbiology Laboratory
PHA	People living with HIV/AIDS
PHAC	Public Health Agency of Canada
SGS-AFCAR	Second Generation Surveillance in Montréal Communities from Sub-Saharan Africa and the English-Speaking Caribbean
STBBI	Sexually transmitted and blood-borne infections
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

INTRODUCTION

According to the Public Health Agency of Canada (PHAC), people born in countries where the human immunodeficiency virus (HIV) is endemic continue to be overrepresented among those infected with HIV in Canada.[1] [2] According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), these countries are located mainly in the Caribbean and Sub-Saharan Africa, which is still severely affected by the epidemic, and accounted for 70% of all new HIV infections in 2013.[3]

In Canada in 2011, the estimated rate of new infections among people from HIV-endemic countries was nine times higher than in other Canadians, [4] and heterosexual transmission was a major characteristic of HIV/AIDS in this population. Men who have sex with men (MSM) still formed the main exposure category in Canada in 2012, followed by heterosexual contact and injection drug users (IDU).[1] An increasing percentage of new HIV infections is attributed to the heterosexuals from HIV-endemic areas (Het-Endemic) exposure category, that is, 13.2% of the 32.6% reported cases involving heterosexual contacts.[1]

In Québec in 2013, two thirds of cases of HIV infection through heterosexual contact were from the Caribbean (essentially Haiti) or Sub-Saharan Africa.[5] The Montréal area alone accounted for 61.5% of all new HIV diagnoses, and most cases were among immigrants from HIV-endemic countries.[5]

Routine monitoring provides information on persons recently diagnosed with HIV[5] and on AIDS cases.[6] These data are used to analyze trends in people infected with HIV, but are not designed to document risk behaviours among populations most at risk. Therefore, additional data collection systems are necessary. The Second Generation HIV Surveillance in Montréal Communities from Sub-Saharan Africa and the English-Speaking Caribbean survey (SGS-AFCAR survey) is an anonymous and voluntary cross-sectional behavioural and biological survey implemented to fill this gap. It is part of the E-Track[7] second generation surveillance system, a national public health surveillance system for monitoring HIV and related infections in populations from HIV-endemic countries, implemented in collaboration with PHAC in various sentinel sites including Montréal (SGS-AFCAR survey), Ottawa and Toronto.

The SGS-AFCAR survey helps the public health department of Montréal's health and social services agency (DSP de l'ASSSM) fulfills its mandate. The DSP's responsibility within the regional STBBI prevention program is to monitor health risk factors, and introduce effective intervention measures to improve strategies for preventing HIV/AIDS and protecting the most vulnerable populations.

This report discusses the findings of the survey conducted on the Island of Montréal from June 2013 to February 2014 in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean. Having participated in two previous epidemiological studies, [8] [9] [10] Montréal's Haitian community was not targeted in this study.

The report provides an overview of the epidemiological context of HIV/AIDS describes the methodology and presents the main findings of the behavioural and biological surveillance system run by Montréal's public health department in collaboration with PHAC. It concludes with a discussion and recommendations for the various stakeholders and partners.

1. BACKGROUND

1.1. Epidemiological background of HIV/AIDS

UNAIDS estimates that in 2013 the total number of people living with HIV/AIDS worldwide was 35.0 million (range: 33.2 to 37.2 million), an increase from 2001 (29.8 million, range: 28.1 to 31.9).[3] There are significant geographic variations in HIV prevalence, incidence and modes of transmission. However, Sub-Saharan Africa remains the most affected region. It is estimated that nearly 1.5 million people (range: 1.3 to 1.6 million) were infected in 2013. HIV prevalence among people aged 15 to 49 was 4.7% (4.4%–4.9%).[3] In the Caribbean, an estimated 12,000 people (range: 9,400 to 14,000) were infected in 2013. HIV prevalence among people aged 15 to 49 was 1.1% (0.9%–1.2%).[3]

HIV is considered endemic in a country (see list in Appendix 1)[2] when HIV prevalence among adults (15 to 49 years) is greater than 1%, and when one of the following criteria are met:

- At least 50% of HIV cases are attributed to heterosexual transmission.
- The male/female ratio is 2:1 for prevalent infections.
- HIV prevalence is greater than or equal to 2% among women receiving prenatal care.

HIV/AIDS remains a concern in **Canada**. Between 2008 and 2011, the estimated number of people with HIV/AIDS rose from 64,000 (range: 53,000 to 75,000) to 71,300 (range: 58,600 to 84,000), an 11.4% increase.[4] The estimated prevalence rate in Canada in 2011 was 208.0 per 100,000 inhabitants (range: 171.0 to 245.1).[11] National estimates produced by PHAC suggest that about 535 (range: 370 to 700) new infections in 2011 could be attributed to the Het-endemic exposure category. This subcategory is growing (see Figure 1) and accounted for 16.9% of new infections in Canada in 2011,[4 11] though according to the 2006 Census, only about 2.2% of Canada's population were born in HIV-endemic countries.[11] When taking into account second-generation Canadians with at least one parent born in an HIV-endemic country, the proportion of the total population of people from these countries increases to 2.7%.[2]

Figure 1: Estimated number of incident HIV infections in Canada over time, by exposure category

Source: Public Health Agency of Canada[4]

In **Québec**, an estimated 19,300 people (range: 15,600 to 23,000) were infected with HIV in 2011 (including those who developed AIDS).[12] Epidemiological data on HIV infection has been collected in Québec to monitor public health since April 2002. Program data do not consider the prevalence or incidence of infection in the province; they are based on cases confirmed by the Laboratoire de santé publique du

Québec (LSPQ). From April 2002 to December 2013, 4,316 new diagnoses[5] [a] of HIV infection were recorded in Québec, 63.8% (2,752/4,316) of them in Montréal.[5] The proportion of specimens tested in the public system whose results were confirmed positive by LSPQ was stable at less than 1%.[5] In 2013, the 358 new diagnoses recorded in Québec were grouped in the following major exposure categories: 63.1% were MSM; 15.9% were heterosexuals from HIV-endemic countries; 12.0% were other heterosexual men and women from those countries; 4.7% were injection drug users (IDU); and 2.0% were in the "Other" category.[5]

Cases were concentrated in the **Montréal** area, where 25% of Québec's population live but which accounted for 61.5% (220/358) of new diagnoses in 2013, 18.6% (41/220) of them in the Het-endemic category.[5] In Montréal, of the new diagnoses made in 2013, 65.7% (23/35) of the women and 9.7% (18/185) of the men were from the Caribbean (mostly from Haiti) or from Sub-Saharan Africa.[5] In addition, 78% of the Het-endemic cases had never undergone HIV testing.[5] A relatively high percentage of newly diagnosed cases were in late stages of the disease (less than 200 CD4 lymphocytes/µL).[13] A significant percentage of cases of HIV infection were attributable to recently infected people in the primary infection period.[13 14]

Much progress has been made in reducing the number of new cases of HIV infection and AIDS-related deaths in **Sub-Saharan Africa**. The number of new HIV infections in adults (15–49 years) decreased by 33% between 2005 and 2013.[15] However, alarming trends persist in many areas.[16] In 2013, Sub-Saharan Africa accounted for 70% of all new HIV infections (1.5 million, range: 1.3–1.6), 71% of people with HIV (24.7 million, range: 23.5 to 26.1, 58% women), and 72% of AIDS-related deaths (1.1 million, range: 1.0–1.3).[15] However, prevalence varies considerably between sub-regions (West, Central, East and Southern) (see Figure 2)[16] and countries, and sometimes within a same country.[16] Southern and East Africa, which together represented 6% of the total population, accounted for 52% of all people living with HIV in 2012 (18.5 million, range: 7.5–19.5) and almost half of newly infected people worldwide. In West Africa, prevalence rates were between 1.5% and 3%. Compared to the rest of Africa, West and Central African countries have seemingly been less affected by the epidemic, but prevalence can be relatively high in some of those countries.[15 16]

The **Caribbean** remains the region with the highest prevalence outside Africa (1.1%, range 0.9–1.2%).[15] However, the epidemic has slowed considerably since the mid-1990s and new HIV infections have dropped by 40% since 2005.[15] In 2013, there were 12,000 new HIV infections (range: 9,400–14,000), 250,000 people living with HIV (PHA) (range: 230,000–280,000), and 11,000 AIDS-related deaths (range: 8,300–14,000).[15] In total, 57% of new infections in the Caribbean occurred in Haiti (in 2012: 8,500 new infections [range: 6,900–11,000]; 150,000 PHA [range: 130,000–160,000]; 2.1% prevalence [range: 1.9–2.3%]) and 12% in Jamaica (in 2012: 1,400 new infections [range: <1,000–2,000]; 28,000 PHA [range: 23,000–34,000]; 1.7% prevalence [range: 1.4–2.0%]).[15 16]

[a] A "new diagnosis" is a case where no prior HIV testing was done or previous tests were negative.

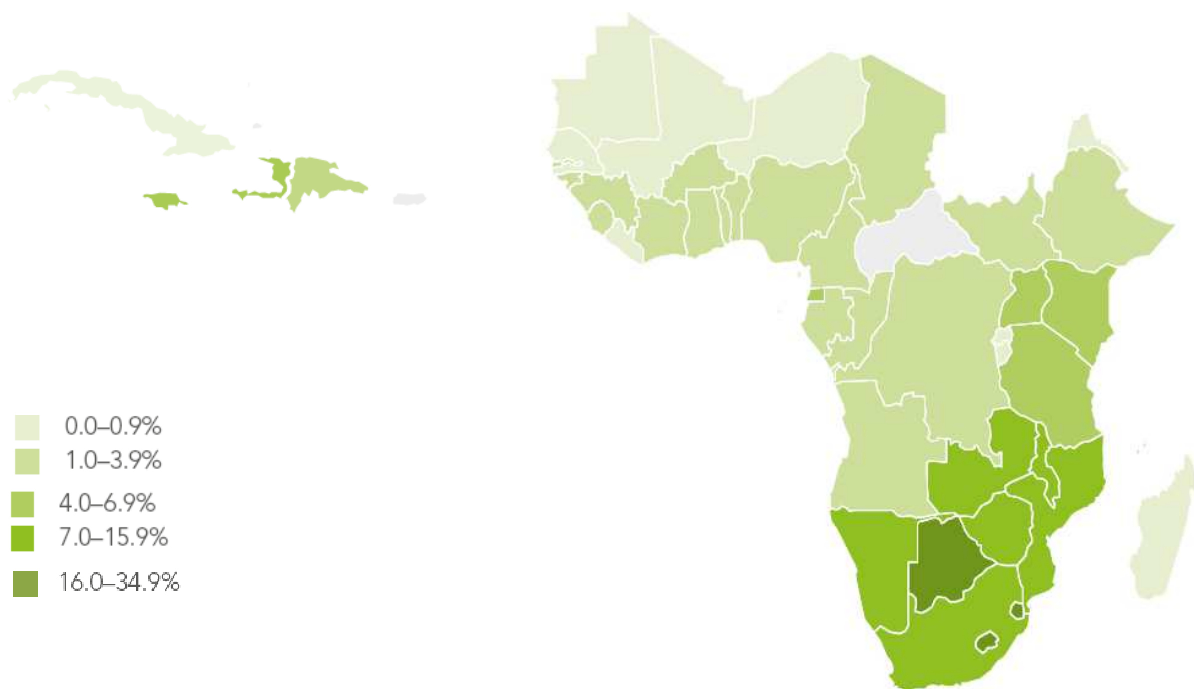


Figure 2: HIV prevalence in Sub-Saharan Africa and the Caribbean among adults (15–49 years)

1.2. HIV epidemiological surveillance system

In Québec, monitoring health status is a fundamental aspect of public health practice. The importance of continuously assessing public health makes this activity a core mandate of regional public health departments. Implementing public health activities involves regularly developing profiles of public health and related factors, monitoring temporal and spatial trends, and identifying priority problems.

AIDS and HIV infection epidemiology in Québec can be described as follows:

- Number of reported AIDS cases: passive surveillance data from the Québec AIDS surveillance program[6 17]
- Incidence of AIDS-related mortality: data from the Institut de la statistique du Québec
- Number of cases of HIV infection: data collected by the Québec HIV infection surveillance program.[5]

In Québec, HIV and AIDS are notifiable diseases only if the individual with HIV or AIDS has donated blood, organs or tissue, or has received blood, blood products, organs or tissue.[18] However, there is a legal requirement to collect epidemiological information on HIV infection and AIDS to monitor public health, under sections 10 to 14 of the *Minister's Regulation under the Public Health Act*.[18] Furthermore, HIV and AIDS reports do not include names or identify anyone. Public and private laboratories have been operating under this framework since April 2002. They perform HIV infection tests and send all specimens with positive, indeterminate or inconclusive results to the LSPQ for final confirmation. Following positive HIV test results, a public health worker at LSPQ starts collecting the necessary epidemiological information. This involves only a telephone conversation between the public health worker and the doctor or health professional who requested the HIV test. The doctor who diagnosed a disease indicative of AIDS must collect the epidemiological information using form SP-100, "AIDS surveillance for ongoing monitoring of public health."[18 19]

Data from the HIV infection/AIDS surveillance program is used to estimate the number of people living with HIV (PHA) who contact health services for HIV testing; identify the percentage of people screened at an advanced stage of the disease (late detection); and describe the case distribution among vulnerable populations.

Routine case surveillance provides information on people recently diagnosed with HIV and reflects the increased risk of HIV infection in certain subgroups. However, HIV case monitoring systems are not designed to provide information on risk behaviours among the most vulnerable subgroups or certain high-risk populations with little access to health care, which means additional data collection systems are required.

According to UNAIDS and World Health Organization (WHO) (2001) recommendations,[20] second generation HIV surveillance systematically integrates information from multiple sources to provide a more complete picture of HIV epidemiology and trends in a given area or region. Also known as "strengthened systems,"[20] they supplement STBBI epidemiological data by linking behavioural data with biological data on HIV infection and other related infections (e.g. hepatitis C, syphilis). They help focus data collection on populations most at risk of being recently infected with HIV (populations with high levels of risk behaviour or young people who are becoming sexually active), [20] and provide a better understanding of epidemic trends and underlying behaviours. This information is then used to plan and improve HIV transmission prevention programs, early screening and case management while targeting the most vulnerable populations.

In Canada, the core principles of second-generation HIV surveillance are established by developing, implementing and disseminating biological and behavioural surveillance data. To date, systems that have been designed and implemented include the I-Track system, which focused on injection drug users, the M-Track system, on men who have sex with men, and the P-Track system on PHA. A pilot survey for the A-Track surveillance system focusing on Aboriginal people was conducted in Regina, Saskatchewan in the winter of 2011 and spring of 2012.[7] In addition, PHAC is conducting second generation STBBI surveillance among various other populations at risk: youth aged 15 to 24 (Enhanced Surveillance of Canadian Street Youth), and women at risk, two key populations identified in the Federal Initiative to Address HIV/AIDS in Canada.

E-Track is a second-generation HIV surveillance system established by developing, implementing and disseminating data provided by biological and behavioural surveillance of populations from HIV-endemic countries. Various sentinel sites, including Montréal, Ottawa and Toronto, were selected as part of a national public health surveillance system designed to monitor HIV and related infections.[7] The SGS-AFCAR survey is the first E-Track survey in Canada. Each surveillance system is implemented in collaboration with a wide range of stakeholders, partners and participants, including provincial health departments, local health services, research scientists, national and provincial committees, and community associations.

Aside from two behavioural and biological studies involving Quebecers of Haitian descent in 1994–1996[8] and 2007–2008[9] [10] carried out by researchers from DSP de l'ASSSM, GAP-VIES and PHAC, no surveillance studies have been conducted in other ethnocultural communities in Québec. The 1994–1996 study revealed that HIV prevalence among Quebecers of Haitian descent was 1.3%.[8]

In Montréal, the first phase of E-Track, the SGS-AFCAR survey, focused on communities from Sub-Saharan Africa and the English-speaking Caribbean. Methodologies used to implement the survey are described in Section 2.

1.3. Objectives

As a behavioural and biological surveillance system, the **overall objective** of the SGS-AFCAR survey is to better understand trends in the HIV epidemic, related infections (hepatitis C and syphilis) and their determinants in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean. The goals are to improve HIV transmission prevention and screening programs, and provide appropriate services to affected populations.

The **main objectives** of the survey are to describe

- prevalence of HIV and other sexually transmitted and blood-borne infections (STBBI);
- sexual behaviours, drug use and other risk behaviours for HIV and other STBBIs;
- behaviours in terms of testing for HIV and related STBBIs;
- knowledge of HIV status and use of HIV treatment options;
- basic knowledge of HIV transmission modes; and
- access to and use of the health system and services.

The **secondary objectives** are to describe

- the factors associated with HIV and other STBBIs; and
- the factors associated with risk behaviours for HIV and other STBBIs.

This report presents the descriptive results of the survey, with the Results section focusing on the main objectives (see Section 3).

Prior to implementing the survey in Montréal, an exploratory phase was conducted to assess the feasibility and implementation of this type of second generation surveillance project. This study is described in the following section.

1.4. SGS-AFCAR survey feasibility study

PHAC funded a feasibility study, conducted by the Coalition des organismes communautaires québécois de lutte contre le sida (COCQ-SIDA) in collaboration with the DSP de l'ASSSM. The goal was to identify factors that could facilitate or hinder implementation of a second-generation HIV surveillance survey in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean.[21]

A participatory approach helped foster community involvement in the decision-making stages of planning and implementing the survey in Montréal, through meetings, interviews and a community consultation workshop.

A community advisory committee with representatives from target communities, community organizations, and (local, regional and provincial) public health stakeholders was created in 2010.

The committee comprised the following resource persons, representatives and organizations:

- Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada (CCDIC, PHAC)
- DSP de l'ASSSM
- Coalition des organismes communautaires québécois de lutte contre le sida (COCQ-SIDA)
- Institut national de santé publique du Québec (INSPQ)

- Groupe d’action pour la prévention de la transmission du VIH et l’éradication du SIDA (GAP-VIES)
- Centre for AIDS Services of Montréal
- Alliance des communautés culturelles pour l’égalité dans la santé et services sociaux
- Round Table on Black History Month
- Black Community Resource Centre
- Source de vie pour les nations (SVN)
- DESTA Lion Wolf School
- Dr. Robert Remis, Professor of Epidemiology, University of Toronto Dalla Lana School of Public Health

The committee’s mandate was to advise the research team on the following:

- Items to be included in the base protocol
- Key activities to be conducted (literature reviews, consultations, etc.) to explore whether the cultural communities found the proposed surveillance system acceptable
- Preferred channels for community participation
- Sampling strategies, questionnaire themes and obtaining preliminary community support
- Mobilization of community organizations to promote the survey, identify recruitment sites, and the like
- Criteria and process for selecting local survey teams (research scientists, contributors, research coordinator(s), interviewers and community advisory groups)
- Developing strategies to overcome data collection issues during the survey
- Analysis of preliminary data results, key research questions to be answered during data analysis, data distribution strategies and messages for communities

Based on the data collected (through individual interviews, advisory committee meetings and the community consultation workshop), the feasibility study found that the proposed second-generation HIV surveillance in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean was acceptable and feasible. It also identified meeting places and the distribution of the various communities concerned on the Island of Montréal, while noting potential challenges and obstacles to be overcome, as well the strengths supporting effective implementation of the survey.[21]

These strengths included the fact that the communities have representative community and religious meeting places, as well as support of some influential community and religious leaders. However, the risk of stigmatization was a challenge to be overcome by conducting awareness and promotion activities in the target communities, while mobilizing and involving community leaders.[21]

Therefore implementing the survey promoted community involvement at all stages of the process (planning, development, assessment). It built capacity to reach the target ethnocultural communities and integrate the information acquired through consultations and collaboration with resource persons throughout the survey design and implementation process, as well as through the knowledge transfer process.

2 METHODOLOGY

The SGS-AFCAR survey is an anonymous and voluntary cross-sectional behavioural and biological survey. Participants were recruited mainly using “time-space sampling” (TSS) or “time-location sampling” (TLS) methods. Recruitment was performed based on the target populations’ meeting locations, days and times. Participation was voluntary, questionnaires were anonymous, and participants were required to provide informed consent.

The survey included a behavioural component and an optional biological component. The behavioural component documented sociodemographic characteristics; sexual behaviour; travel history; psychoactive substance use; access to and use of health systems and services; screening tests performed; care and treatment received for HIV; as well as knowledge and beliefs about HIV. Responses were collected using a questionnaire completed by the participant and/or by an interviewer.

The biological component involved a finger-prick dried blood sample (DBS) collected by an interviewer to screen for HIV, hepatitis C virus (HCV) and syphilis infections.

2.1 Target populations and inclusion criteria

As mentioned earlier, in Québec in 2013, two thirds of cases of HIV infection through heterosexual contact were from the Caribbean (essentially Haiti) or Sub-Saharan Africa. Having participated in two previous studies, the Haitian community was excluded from the survey. People from Sub-Saharan Africa and the English-speaking Caribbean living on the Island of Montréal were the target populations for this study.

Research funds were limited, which precluded conducting separate studies for these two populations. Funding constraints also prevented us from recruiting enough people from the English-speaking Caribbean community for a robust estimate of HIV prevalence, given the limited number of HIV cases expected in this community. We chose to conduct the study with these two groups because it was important to document sexual risk behaviours and other risk factors associated with HIV infection in these communities. We also wanted to avoid the negative impact generated by a misunderstanding that populations included in the feasibility study but not in the survey were excluded because they were less exposed to HIV infection. The purpose of the study was not to compare the two populations to one another, but to describe each one.

The inclusion criteria were as follows:

- Reside on the Island of Montréal
- Be between 15 and 49 years of age
- Belong to the first generation, i.e. born in Sub-Saharan Africa or the English-speaking Caribbean
- Be able to speak and understand English or French
- Be able to give informed consent

2.2 Sample size for the Island of Montréal

The sample size of the SGS-AFCAR survey was estimated taking into account the following:

- Estimated prevalence of the main behavioural factors of interest and HIV prevalence in Sub-Saharan African (West, East, Central and Southern) and English-speaking Caribbean countries
    - Sample size needed to detect expected HIV prevalence with a "reasonable" degree of accuracy, based on known HIV prevalence in the country and geographical area of origin
    - Sample size needed to detect an expected 50% prevalence rate for the main behavioural factors of interest with a "reasonable" degree of accuracy
- Target populations aged 15 to 49 and identification of priority countries of origin based on 2006 Census data
- Availability of financial resources

Based on the above criteria, the sample had to comprise 1,100 people from Sub-Saharan Africa and 500 people from the English-speaking Caribbean, for a total of 1,600 people to be recruited for the survey (Table 1).

Based on the 2006 Census,[22] this sample of 15- to 49-year-olds included 5% (1,100/24,300) of immigrants from Sub-Saharan Africa and 3% (500/16,040) of immigrants from the English-speaking Caribbean; these communities represented 4.3% (24,300/560,380) and 2.9% (16,040/560,380) of all first-generation immigrants residing on the Island of Montréal.

Table 1: Distribution of target populations (15–49 years) on the Island of Montréal by geographical area of origin

	Target populations based on the 2006 Census	Sample to be recruited for the survey	
	N	n	%
Central Africa	8,655	392	35.6
West Africa	7,645	346	31.5
East Africa	7,515	340	30.9
Southern Africa	485	22	2.0
Total Sub-Saharan Africa	**24,300**	**1,100**	
Total English-Speaking Caribbean	**16,040**	**500**	
Total population		**1,600**	

Due to the diversity of the target populations and the practical difficulties involved in obtaining representative samples of the two target groups, recruitment focused on people form countries whose nationals numbered over 1000 on the Island of Montréal, according to the 2006 Census; however, people from countries in the target areas whose communities included fewer than 1000 individuals but who met the inclusion criteria were also eligible for the survey. In addition, to make it easier to generalize our results, we considered distribution by sex, age group, and health and social services centre (CSSS).

Demographic (2006 Census)[22] and epidemiological data indicated that

- 82.4% of people of African descent lived in the census metropolitan area of Montréal. Two thirds (66.3%) resided in the administrative region of Montréal and the three districts of the City of Montréal where the population of African descent was most concentrated, namely Côte-des-Neiges/Notre-Dame-de-Grâce, Ahuntsic-Cartierville and Villeray-Saint-Michel-Parc-Extension. Most members of the African community aged 15 and over were first generation (82.9%);
- the vast majority of Caribbeans (93.3%) lived in the census metropolitan area of Montréal. Over two thirds (68.9%) resided in the administrative region of Montréal and the three districts of the City of Montréal where the English-speaking Caribbean population was most concentrated, namely Côte-des-Neiges/Notre-Dame-de-Grâce, followed by the boroughs of LaSalle and Pierrefonds-Senneville. Over two thirds (68.6%) of the members of the Caribbean community aged 15 and over were first generation; and
- the majority of people from HIV-endemic countries lived in Montréal.

A map of all target Sub-Saharan African and English-speaking Caribbean countries is presented in Figure 3.

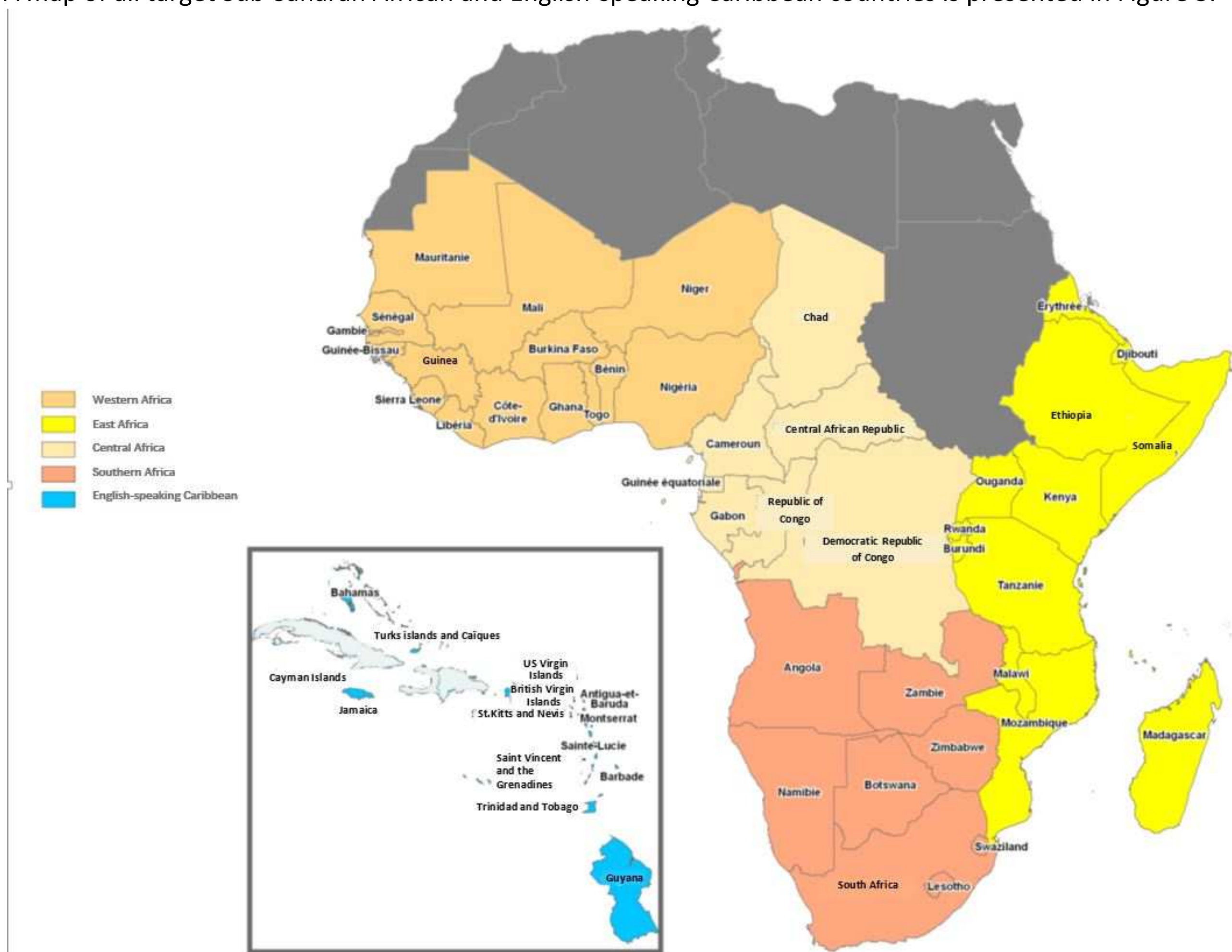


Figure 3: Sub-Saharan African and English-speaking Caribbean areas and countries

2.5. Recruitment strategies and sites

Recruitment strategies were dependent on time, budget, restricted access to target communities, and prioritized suitable locations or activities for recruiting people from countries belonging to the two communities.
Different strategies were used to select recruitment sites in the target communities:

- Reviewing newspapers, magazines, local online media or any other sources of relevant information
- Networking, interviewing and maintaining regular contact with community leaders, representatives of community organizations, business owners and other resource persons
- Consulting with members of both communities at every opportunity

Recruitment sites were locations used by each community for social interactions. These could be fixed or temporary locations at events or in specific locations.
The various recruitment sites used by the target populations were as follows:

- Fixed locations: community organizations (e.g., Black Community Resource Centre located in the Côte-des-Neiges Community resource centre)
- Mobile strategies (vehicle): grocery stores, ethnic product stores, hairdressing shops, shopping malls, subway stations, supermarkets, restaurants and parks
- Churches
- Associations/Groups: groups of nationals from the same countries
- Adult schools/Universities
- Social events: cultural, sport, festivals

The recruitment period was June 2013 to February 2014. Sessions promoting the survey were held before and during the recruitment period for the target populations, leaders, community organizations and various groups of nationals from a same country. Also, information slips and business cards listing the inclusion criteria and a phone number for scheduling an appointment to participate in the study were made available in various popular locations and distributed to the target populations.

2.6. Data collection

2.6.1. Questionnaire

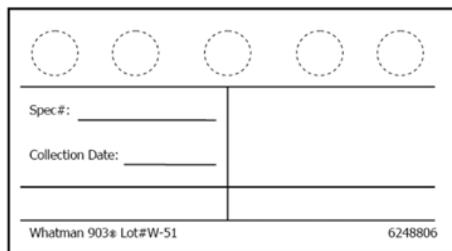
The E-Track survey questionnaire was created by a working group of experts from various regions of Canada (Ottawa, Montréal, Toronto), and modeled on a questionnaire developed for Montréal surveys of Quebecers of Haitian descent carried out in 2007 and 2008.[9] [10] It contained questions regarding sociodemographic characteristics, sexual behaviour, drug use, screening practices for HIV, HCV and other STBBIs, knowledge and attitudes related to HIV infection and other STBBIs, and use of and access to health care and services.

Data for the SGS-AFCAR survey were collected using an electronic English- or French-language questionnaire, which was either self-administered, completed by an interviewer, or filled out the interviewer's help. Each participant was assigned an anonymous serial identification code. This code was entered on the DBS sample collection form and the informed consent form for each participant, which was signed by the interviewer after obtaining the participant's verbal consent. To identify duplicates, a unique encrypted 12-digit alphanumeric identification code was generated (based on the participant's initials, date of birth and sex) for each participant, using unidirectional software at the recruitment site.

2.6.2. Biological sample collection and analysis

Interviewers were required to obtain informed consent from participants for collecting finger-prick DBS samples to screen for HIV, HCV and syphilis. The samples were to be stored for future analysis, except where consent was explicitly refused at the time of the survey. Participants could also choose not to provide a DBS.

The biological sample was collected on a cotton fibre filter paper (Whatman 903® Protein Saver Card) designed to collect organic fluids (Figure 4). The fingertip to be punctured was cleaned with an alcohol swab, and a micro-lancet used to collect a finger-prick blood sample from the cleaned area (Figure 5). Drops of blood were collected on the sample card (Figure 6) and the puncture site was covered with a band-aid.



Spec# = Serial code

Figure 4: Cotton fibre filter paper for collecting organic fluids

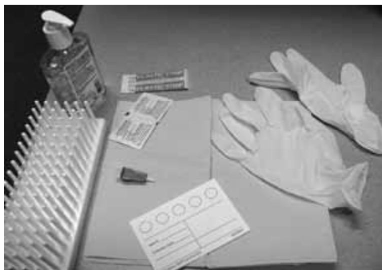


Figure 5: Dried blood spot collection kit

Figure 6: Dried blood spot samples on drying rack

Biological samples were labelled at the sampling point with an anonymous serial identification code matching the code on the participant's questionnaire. The coded samples were sent to the National HIV and Retrovirology Laboratories (NHRL) in Ottawa for HIV and HCV testing, and subsequently to the National Microbiology Laboratory (NML) in Winnipeg for syphilis testing.

HIV testing of DBS specimens was performed using the Bio-Rad GS rLAV HIV-1 EIA assay. Confirmatory testing was subsequently performed using the Bio-Rad GS HIV-1 Western Blot assay. A positive result indicated a current HIV infection. Both the EIA and Western Blot assays used are approved by Health Canada as diagnostic assays for use with DBS specimens.

Hepatitis C testing of DBS specimens was performed using the Ortho® HCV version 3.0 EIA. Confirmatory testing was not performed for samples that tested positive. A positive result indicated past or present hepatitis C infection and did not discriminate acute from chronic or resolved infections.

Syphilis testing was performed using the Serodia® *Treponema pallidum* particle agglutination assay (TP-PA). As with HCV, confirmatory testing was not performed for samples that tested positive. A positive result indicated the presence of antibodies against past or present syphilis infection. Syphilis testing results will be presented later in an addendum.

Because the surveillance system is anonymous, participants did not receive their test results. However, they were encouraged to undergo testing for HIV and other STBBIs at the various screening centres. Interviewers gave participants leaflets with contact information for health care providers and local screening centres.

2.6.3. Data management

Data entry and cleanup processes

CCDIC was responsible for managing all data, including lab results. Lab results were managed by NHRL, NML and CCDIC, and sent to the DSP de l'ASSSM as soon as they were available. Standardized methods were used to record all data.

Survey and training staff

The **principle investigator in Montréal** was responsible for overseeing and managing the study within the sentinel site. This included finalizing the questionnaire, hiring staff for the local study team, supervising implementation of the survey, liaising with community stakeholders and PHAC, ensuring data security and quality, directing implementation of analysis plans, and writing a report.

A **coordinator** was assigned to supervise the survey's daily operations, and to plan and coordinate the **field team's (field coordinator and interviewers)** work. The coordinator provided the principal investigator, co-investigators and PHAC team with regular progress reports on the survey.

Interviewers were responsible for recruiting all survey participants and obtaining informed consent. They were also responsible for collecting DBS samples, answering participants' questions and providing contact information for related services. All interviewers (n=13) were from Sub-Saharan Africa and the English-speaking Caribbean. Questionnaires were administered at the selected recruitment sites and, to the extent possible, a gender approach was adopted where necessary, i.e. interviewers worked in pairs of one woman/one man, and questioned participants of their own sex.

All team members received one week of training on the protocol and procedure prior to survey implementation. Training sessions were conducted at the DSP de l'ASSSM. The following topics were covered during training: ethics, recruitment, sampling methods, questionnaire administration, universal precautions, DBS sampling techniques, and report content. Employee safety issues were also discussed with the Montréal study team.

The **E-Track National Coordinator**, a PHAC epidemiologist, helped the Montréal team implement the survey, train the local survey team, manage daily needs of the entire surveillance system, and answer any questions.

2.7. Ethical considerations

The surveillance project protocol, questionnaire, consent forms and information, as well as procedures were approved by Health Canada and PHAC's Research Ethics Board.

Québec differs from some other provinces with respect to the need to have surveillance projects approved by a research ethics committee (we prefer the term "surveillance project" rather than "surveillance study"). Among other things, because ". . . it is the purpose of these projects (to monitor changes in specific public health issues and their determinants), apart from the potentially similar methods they employ, that differentiates these activities from those that require ethics review."[23] In light of these considerations, the McGill University Health Centre Research Ethics Board (MUHC-REB) found that the SGS-AFCAR survey did not meet all the criteria for review by a research ethics board.

This interpretation is consistent with statements made by Québec's ministry of health and social services' research ethics unit in the document entitled "Note de clarification relative aux compétences matérielles et territoriales des comités d'éthique de la recherche" (Note of clarification on the material and territorial jurisdiction of research ethics committees) published in 2007.[24] The ethics unit document distinguishes between research and other activities parallel or closely related to research, and projects related to research requiring review by a research ethics committee, but not projects related to other activities.

However, some indicators measured as part of this project are included in the Plan régional de surveillance de Montréal (Montréal regional monitoring plan) 2011–2015. In its assessment of the Plan, the public health ethics committee emphasized the need to avoid stigmatizing the population targeted by the survey.[25] To reflect the committee's concern about avoiding any negative impact on the target populations in connection with dissemination of project results, close collaboration was maintained with members of the Sub-Saharan African and English-speaking Caribbean communities, as well as organizations working with them.

Participation in the survey was voluntary and anonymous. The questionnaires were administered and DBS collected only after informed consent was obtained. To protect participants' anonymity, the interviewers signed the consent forms.

Each participant had an anonymous serial identification code to link the questionnaire to their biological results. To avoid duplicates, an encrypted identification code (based on the participant's initials, date of birth and sex) was generated for each participant using unidirectional software at the recruitment site.
Participants received a fact sheet summarizing the information in the consent form, contact details for the research ethics committees and survey coordinator, and a small stipend ($20) to cover time and travel expenses.

Participants did not receive their test results. Interviewers provided counselling to participants and contact information for health care providers and local screening centres. They also encouraged participants -to undergo testing for HIV and other STBBIs at the various screening locations.

Interviewer training focused on the importance of maintaining data confidentiality, a point reinforced throughout the survey.

The surveillance project database is password-protected, and all documents will be kept under lock and key for a maximum period of five years.

2.8. Data analysis

Analyses carried out in this report are mainly descriptive. They provide a simple, comprehensive overview of data collected for the survey. Refusal rate among eligible people contacted and number of completed surveys (behavioural and/or biological component) were quantified.

Univariate descriptive analyses were performed to characterize participants recruited in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean. Frequency tables were used for categorical variables, and central tendency and dispersion measurements for continuous variables. The variables included sociodemographic characteristics, sexual behaviours, history of travel to HIV-endemic countries, history of testing for HIV and other STBBIs, access to HIV-related treatments, knowledge of HIV transmission modes, and access to health care.

HIV and HCV seroprevalence was assessed for the study population, each target community and other subgroups. Syphilis seroprevalence results will be available later.

Bivariate analyses were performed to assess risk factors associated with HIV seroprevalence, and to look for associations between sociodemographic characteristics and risk behaviours. The Chi-square test was used to compare percentages, and Student's t-test to compare means. Unadjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated to measure the strength of associations. Statistical significance was set at 5% for all analyses, based on alternative hypotheses. All analyses were performed using IBM® SPSS® Statistics 22 software for Windows.

2.8.1 Presentation of results

Data are presented in tables based on the two target communities (where numbers are sufficient for analysis).Response categories are presented in order of decreasing frequency except for ordinal variables; the “Other” category always comes last. No statistical techniques were used to account for missing data in this report because most analyses involved only cross-tabulations. Missing data are shown in a separate row in each table, where possible. Denominators used to calculate percentages do not include questions where values are missing, unless otherwise indicated. To ensure data are interpreted correctly, each table mentions the specific subgroup of respondents to whom the analysis applies, which is referred to as the “Eligible” subgroup in the report. The “Total” row in each table shows the total size of the “eligible” sample.

Results presented in the report reflect the broad outlines of the survey questionnaire (Appendix 2).

3. RESULTS

3.1. Summary of data collection results

Between June 28, 2013, and February 8, 2014, 1,958 eligible persons were approached, and 1,602 actually participated in the SGS-AFCAR survey, an 81.8% (1,602/1,958) participation rate.
A total of 341 people refused to take part in the survey, and 15 either dropped out or were duplicates.

Some recruitment sites (street, church, etc.) and the context in which the survey was being promoted made it impossible to establish the total number of ineligible people (nature and eligibility criteria) approached throughout the survey.

Sex, age group and main reasons for refusal were recorded for most people who refused to participate (76.7%, or 241/314) (Table 2).

Table 2: Breakdown of refusals and main reasons for refusal

(ELIGIBLE: All cases of refusal)

Refusals	n (%)
Communities	
Sub-Saharan Africa	167 (69.3)
English-Speaking Caribbean	74 (30.7)
(n)	**241**
Sex	
Men	124 (51.5)
Women	117 (48.5)
(n)	**241**
Age group	
<15 years	2 (0.8)
20–29 years	82 (34.0)
30–39 years	122 (50.6)
40–49 years	35 (14.5)
(n)	**241**
Reasons for refusal (not mutually exclusive)	
Did not want to provide a blood sample	120 (35.2)
Sub-Saharan Africa	73 (60.8)
Caribbean	47 (39.2)
Lack of time	79 (23.2)
Will make an appointment	51 (15.0)
Sceptical/Lack of trust	36 (10.6)
Did not want to answer questions	26 (7.6)
Afraid of being identified	13 (3.8)
Needs to ask for permission	4 (1.2)

The main reason for refusal was unwillingness to provide a dried blood spot sample (35.2%, or 120/241).

Those eligible were invited to participate in both parts of the survey: the behavioural questionnaire and dried blood spot sample collection (Table 3). All participants (N=1,602) completed an electronic questionnaire in French or English, in the presence of an interviewer. They either completed the questionnaire on their own (15.2%, or 244/1,602) or with the help of the interviewer [32.3%, or 518/1,602), or the questionnaire was administered entirely by the interviewer (52.4%, or 840/1,602). It took an average of 24.2 minutes to complete the questionnaire (n=1,577) (range: 10 to 98 minutes; median= 22 minutes).

Table 3: Data collection period, sample size and percentage of dried blood spot (DBS) samples provided

SGS-AFCAR Survey Implementation Period	Total Number of Participants n	Completed Questionnaires n (%)	DBS Provided n (%)
June 28, 2013 to February 8, 2014	**1,602**	**1,602 (100.0)**	**1,546 (96.5%)**

In all, 96.5% (1,546/1,602) of participants provided DBS samples for biological testing (Table 3).

In total, 69.0% (1,105/1,602) of participants were from Sub-Saharan Africa, and 31.0% (497/1,602) from the English-speaking Caribbean.

Table 4 provides a comparison of participants recruited using 2006 Census data, broken down by geographical area of birth, sex and age group.

Table 4: Sample compared to 2006 Census data

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan African		English-Speaking Caribbean	
	SGS-AFCAR Survey N=1105 % (95% CI)	2006 Census N=24,300 % [Difference]	SGS-AFCAR Survey N=497 % (95% CI)	2006 Census N=16,400 % [Difference]
Breakdown by region				
Central Africa	39.5 (37.2-42.4)	35.6 (+3.9)	—	—
West Africa	37.1 (34.8-40.0)	31.5 (+5.6)	—	—
East Africa	20.8 (18.9-23.2)	30.9 (-10.1)	—	—
Southern Africa	2.5 (1.8-3.5)	2.0 (+0.5)	—	—
Sex				
Percentage of men	60.5 (58.1-63.3)	52.9 (+7.6)	46.5 (42.9-50.9)	42.6 (+3.9)
Age group				
15–24 years	29.2 (27.0-31.9)	16.8 (+12.4)	33.2 (29.8-37.3)	15.3 (+17.9)
25–34 years	35.5 (33.2-38.3)	28.1 (+7.4)	26.6 (23.4-30.4)	24.9 (+1.7)
35–44 years	27.2 (25.1-29.9)	30.8 (-3.6)	27.4 (24.2-31.3)	31.2 (-3.8)
45–49 years	8.1 (6.7-9.7)	—	12.9 (10.5-15.8)	—

Based on 2006 Census data, fewer people from East Africa were recruited than from the other regions. The distribution of participants from other African sub-regions did not differ greatly from Census data.

Because of certain recruitment strategies (mobile recruitment sites), slightly more men than women and individuals aged 15–24 and 25–34 were recruited in both target communities.

Note that according to the 2006 Census, there were slightly more men (52.9%) than women (47.1%) in the Sub-Saharan African community (15–49 years), whereas the opposite was true in the English-speaking Caribbean community (57.4% women vs. 42.6% men).

Figure 7 shows the number and percentage of participants recruited through the different recruitment strategies.

Figure 7: Distribution of recruitment sites in both target communities

Just over half of participants (51.7%) in the two target communities were recruited using a vehicle to meet them in their neighbourhoods at grocery stores, ethnic product stores, hairdressing shops, shopping malls, subway stations, supermarkets, restaurants and parks.

The distribution of different participant recruitment methods is described in Table 5.

Table 5: Distribution of different recruitment methods

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa N=1105 n (%)	English-Speaking Caribbean N=497 n (%)	Total N=1,602 n (%)
At recruitment site	610 (55.2)	231 (46.5)	841 (52.5)
Word of mouth	457 (41.4)	244 (49.1)	701(43.8)
On recommendation	86 (7.8)	46 (9.3)	132 (8.2)
Community organizations	56 (5.1)	3 (0.6)	59 (3.7)
Other	11 (1.0)	2 (0.4)	13 (0.8)

Participants could also choose other methods. The “Other” category included scheduling a telephone appointment and/or information obtained by reading flyers that had been distributed.

3.2. Sociodemographic characteristics

Of the Montréalers from Sub-Saharan Africa recruited, 60.5% (668/1,105) were men, while 53.5% (266/497) of Montréalers from the English-speaking Caribbean were women.

Age group

The average age of all participants (N=1,602) was 30.75 years (±9.5); range: 15 to 49; median = 31. The average age of male participants from Sub-Saharan Africa was higher than of female participants (31.09 vs. 29.49 years; p=0.004) (Table 6).

Distribution of age groups differed when comparing the two target communities (p<0.0001), as was distribution by sex. A third of participants were in the 15–24 age group (30.5%, or 488/1,602), that is, 29.2% (323/1,105) of Sub-Saharan Africans and 33.2% (165/497) of English-speaking Caribbeans. The 25–29 and 30–34 age groups were larger in Sub-Saharan Africans, while the 40–44 and 45–49 age groups were larger in English-speaking Caribbeans (Table 6).

Table 6: Breakdown of participants by sex and age group

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Age						
Average (SD)	30.46 (±9.11)	31.09 (±9.15) **	29.49 (±8.90)	31.39 (±10.31)	30.91 (±10.68)	31.80 (±9.97)
Age group						
15–19	182 (16.5) ***	107 (16.0) *	75 (17.2)	89 (17.9)	46 (19.9) *	43 (16.2)
20–24	141 (12.8)	77 (11.5)	64 (14.6)	76 (15.3)	41 (17.7)	35 (13.2)
25–29	179 (16.2)	91 (13.6)	88 (20.1)	45 (9.1)	18 (7.8)	27 (10.2)
30–34	213 (19.3)	135 (20.2)	78 (17.8)	87 (17.5)	32 (13.9)	55 (20.7)
35–39	195 (17.6)	130 (19.5)	65 (14.9)	68 (13.7)	38 (16.5)	30 (11.3)
40–44	106 (9.6)	71 (10.6)	35 (8.0)	68 (13.7)	24 (10.4)	44 (16.5)
45–49	89 (8.1)	57 (8.5)	32 (7.3)	64 (12.9)	32 (13.9)	32 (12.0)
(n)	**1105**	**668**	**437**	**497**	**231**	**266**

In each table, the percentages in the "Total Sub-Saharan Africa" column are compared to those in the "Total English-speaking Caribbean" column. Also, in each community, the percentages in the "Men" column are compared with those in the "Women" column.
* p<0.05 ** p<0.01 *** p<0.001

Area and country of origin

The geographical areas of birth of Sub-Saharan Africans are presented in Table 7.

Table 7: Distribution of participants by geographical area of birth

(ELIGIBLE: All respondents surveyed)

	Men n (%)	Women n (%)	Total n (%)
Sub-Saharan Africa			
Central Africa	268 (40.1)	169 (38.7)	437 (39.5)
West Africa	252 (37.7)	158 (36.2)	410 (37.1)
East Africa	130 (19.5)	100 (22.9)	230 (20.8)
Southern Africa	18 (2.7)	10 (2.3)	28 (2.5)
(n)	**668**	**437**	**1105**
English-Speaking Caribbean			
(n)	**231**	**266**	**497**

In all, 497 English-speaking Caribbean participants from 12 countries were recruited to the survey, as were 1,105 people from 36 Sub-Saharan African countries, broken down as follows: 6 Central African countries (39.5%, or 437/1,105); 13 West African countries (37.1%, or 410/1,105); 10 East African countries (20.8%, or 230/1,105) and 7 Southern African countries (2.5%, or 28/1,105) (Figure 8).

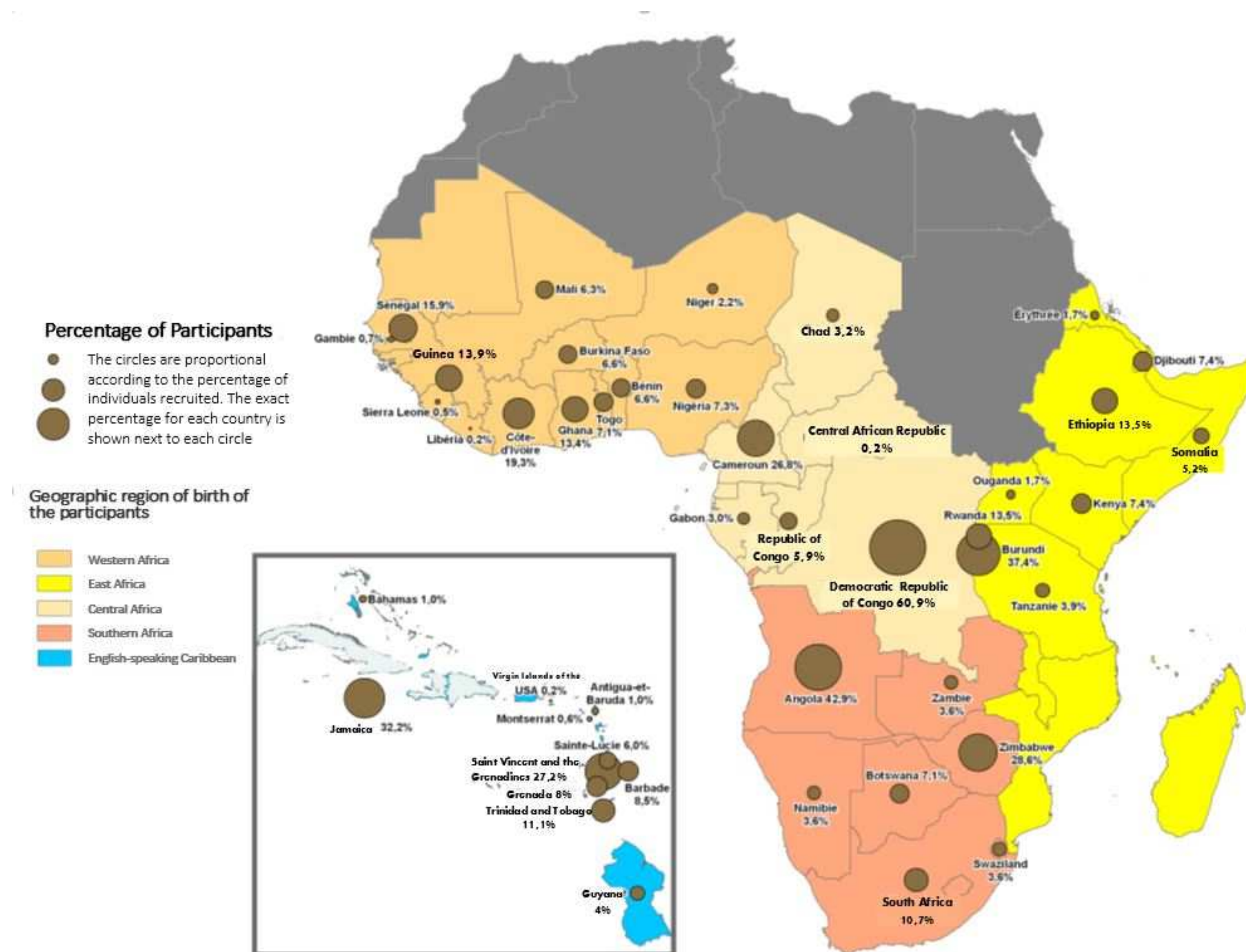


Figure 8: Distribution of participants by area and country of origin

Immigration period and status

Sub-Saharan Africans had immigrated to Canada (range: 1969 to 2013; median=2009; mode=2013) more recently (p<0.0001) than people from the English-speaking Caribbean (range: 1966 to 2013; median=2000; mode=2000), with 86.3% (951/1,102) vs. 50.2% respectively immigrating after 2000 (Table 8 and Figure 9). Also, Caribbean women had immigrated more recently than men (p=0.034) (Table 8).

Compared to people from Sub-Saharan Africa, most English-speaking Caribbeans were Canadian citizens (91.7% vs. 85.0%; p=0.0001) (Table 8).

The percentage of people with refugee status was almost identical in both communities: (2.4%, or 26/1,105 of Sub-Saharan Africans [19 men and 7 women] vs 2.0%, or 10/492 of English-speaking Caribbeans [7 men and 3 women]).

The majority of people recruited from both communities had spent most of their childhoods (0 to 18 years) in their countries of birth. This was truer for Sub-Saharan Africans than English-speaking Caribbeans (86.5%, or 953/1,102 vs. 73.2%, or 364/497; p<0.0001).

Table 8: Distribution of participants by immigration period and status

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Wome**	**Total**	**Men**	**Women**
Immigration period						
<1990	19 (1.7) ***	13 (2.0)	6 (1.4)	114 (23.2)	65 (28.3) *	49 (18.7)
1990–1999	132 (12.0)	68 (10.2)	64 (14.7)	131 (26.6)	54 (23.5)	77 (29.4)
≥2000	951 (86.3)	585 (87.8)	366 (83.9)	247 (50.2)	111 (48.3)	136 (51.9)
(n)	**1102**	**666**	**436**	**492**	**230**	**262**
Missing	3 (0.3)	2 (0.3)	1 (0.2)	5 (1.0)	1 (0.4)	4 (1.5)
Total	1105	668	437	497	231	266
Immigration status						
Canadian citizen/ Permanent resident	939 (85.0) ***	564 (84.4)	375 (85.8)	451 (91.7)	209 (90.9)	242 (92.4)
Work permit/Temporary or student visa	103 (9.3)	59 (8.8)	44 (10.1)	13 (2.6)	6 (2.6)	7 (2.7)
Refugee/Other	63 (5.7)	45 (6.7)	18 (4.1)	28 (5.7)	15 (6.4)	13 (5.0)
(n)	**1105**	**668**	**437**	**492**	**230**	**262**
Missing	0 (0.0)	0 (0.0)	0 (0.0)	5 (1.0)	1 (0.4)	4 (1.5)
Total	1105	668	437	497	231	266

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Figure 9: Distribution of participants by immigration period

Ethnicity and religion

In total, 97.9% (1,568/1,602) of participants from both communities identified themselves as black.

Most English-speaking Caribbeans were Protestant (38.0%, or 189/497), Christian (19.9%, or 99/497) or Catholic (17.7%, or 88/497) or did not belong to a religion (11.5%, or 57/497). Sub-Saharan Africans were Catholic (31.0%, or 343/1,105), Protestant (26.3%, or 291/1,105), Muslim (22.4%, or 248/1,105) or Christian (13.1%, or 145/1,105). Participants in both communities who called themselves Christian did not identify as Catholic.

Sexual orientation and marital status

Nearly all participants from both communities 96.8% or 1,551/1,602) reported being heterosexual: 97.6% of Sub-Saharan Africans vs. 95.0% of English-speaking Caribbeans (Table 9). The other participants defined themselves as bisexual 1.9%, or 30/1,602), homosexual (0.6%, or 9/1,602) or "Other" orientation (0.7%, or 12/1,602). The distribution of these subgroups differed in the two target communities (p=0.017), and also by sex among English-speaking Caribbeans (p=0.049) (Table 9).

With respect to marital status, 36.8% (1,551/1,101) of persons from Sub-Saharan Africa and 10.9% (54/496) of English-speaking Caribbeans were married. The spouses of 6.4% (70/1,101) of Sub-Saharan Africans and 0.6% (3/496) of English-speaking Caribbeans lived outside Canada.

The percentage of singles (unmarried), couples living together or couples living apart differed significantly between the two communities (p=0.0001) (Table 9).

Table 9: Distribution of participants by sexual orientation and marital status

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Wome**	**Total**	**Men**	**Women**
Sexual orientation						
Heterosexuals	1079 (97.6) *	651 (97.5)	428 (97.9)	472 (95.0)	225 (97.4) *	247 (92.8)
Bisexuals	13 (1.2)	8 (1.2)	5 (1.1)	17 (3.4)	3 (1.3)	14 (5.3)
Homosexuals	6 (0.5)	4 (0.6)	2 (0.5)	3 (0.6)	2 (0.9)	1 (0.4)
Other[a]	7 (0.6)	5 (0.7)	2 (0.5)	5 (1.0)	1 (0.4)	4 (1.5)
(n)	**1105**	**668**	**437**	**497**	**231**	**266**
Missing	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	1105	668	437	497	231	266
Marital status						
Single	564 (51.2) ***	351 (52.8)	213 (48.9)	301 (60.7)	136 (58.9)	165 (62.3)
Living together as a couple	370 (33.6)	211 (31.7)	159 (36.5)	105 (21.2)	50 (21.6)	55 (20.8)
Couple not living together	167 (15.2)	103 (15.5)	64 (14.7)	90 (18.1)	45 (19.5)	45 (17.0)
(n)	**1101**	**665**	**436**	**496**	**231**	**265**
Missing	4 (0.4)	3 (0.4)	1 (0.2)	1 (0.2)	0 (0.0)	1 (0.4)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

[a] "Other" sexual orientation: asexual, pansexual, questioning

Level of education

People from Sub-Saharan Africa had higher levels of education than English-speaking Caribbeans: 70.1% (771/1,100) vs. 37.9% (188/496) had completed high school or a higher level of education (p=0.0001). This applied much more to African men than women (73.2% or 485/663 of men vs. 65.4% or 286/437 of women; p=0.006], while the opposite was true for English-speaking Caribbeans (29.9% or 69/231 of men vs. 44.9% or 119/265 of women; p=0.001) (Table 10).

Table 10: Distribution of participants by the highest level of education

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Wome	Total	Men	Women
Elementary/primary education	329 (29.9) ***	178 (26.8) ***	151 (34.6)	308 (62.1)	162 (70.1) **	146 (55.1)
High school	301 (27.4)	163 (24.6)	138 (31.6)	160 (32.3)	62 (26.8)	98 (37.0)
College/university	279 (25.4)	179 (27.0)	100 (22.9)	23 (4.6)	7 (3.0)	16 (6.0)
Higher education	191 (17.4)	143 (21.6)	48 (11.0)	5 (1.0)	0 (0.0)	5 (1.9)
(n)	**1100**	**663**	**437**	**496**	**231**	**265**
Missing	5 (0.5)	5 (0.8)	0 (0.0)	1 (0.2)	0(0.0)	1 (0.4)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

Employment status and household income

The distribution of employment status was significantly different (p=0.0001) between both communities and by sex among Sub-Saharan Africans. At the time of the survey, more Sub-Saharan African were students: 43% vs. 29.3%, and more English-speaking Caribbeans were unemployed: 22.2% vs. 12.2% (Table 11).

Table 11: Distribution of participants by employment status

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Wome	Total	Men	Women
Employed full time or part time	490 (44.8) ***	320 (48.3) *	170 (39.4)	239 (48.6)	122 (52.8)	117 (44.8)
Students	470 (43.0)	268 (40.4)	202 (46.9)	144 (29.3)	58 (25.1)	86 (33.0)
Unemployed	134 (12.2)	75 (11.3)	59 (13.7)	109 (22.2)	51 (22.1)	58 (22.2)
(n)	**1094**	**663**	**431**	**492**	**231**	**261**
Missing	11 (1.0)	5 (0.8)	6 (1.4)	5 (1.0)	0(0.0)	5 (1.9)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

Of participants who reported their family income, just over half (51.7%, or 710/1,374) had annual incomes <$15,000, that is, 53.1% (530/998) of people from Sub-Saharan Africa and 47.9% (180/376) of those from

the English-speaking Caribbean. However, the latter had higher incomes than Sub-Saharan Africans (p=0.001) (Table 12).

In all, 41.3% (561/1,357) of participants reported that based on their household income over the past 12 months, they had found it "somewhat difficult/very difficult" to meet their housing and food needs. This was the case for 40.0% (394/987) of Sub-Saharan Africans vs. 45.1% (167/370) of English-speaking Caribbeans (p=0.084, not significant).

Table 12: Distribution of participants by annual household income

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Less than $5,000	279 (28.0) **	160 (26.2)	119 (30.7)	67 (17.8)	35 (20.2)	32 (15.8)
$5,000 to $14,999	251 (25.2)	157 (25.7)	94 (24.3)	113 (30.1)	53 (30.6)	60 (29.6)
$15,000 to $29,999	228 (22.8)	142 (23.2)	86 (22.2)	83 (22.1)	41 (23.7)	42 (20.7)
$30,000 to $49,999	143 (14.3)	98 (16.0)	45 (11.6)	79 (21.0)	34 (19.7)	45 (22.2)
$50,000 to $69,999	52 (5.2)	26 (4.3)	26 (6.7)	20 (5.3)	6 (3.5)	14 (6.9)
$70,000 or more	45 (4.5)	28 (4.6)	17 (4.4)	14 (3.7)	4 (2.3)	10 (4.9)
(n)	**998**	**611**	**387**	**376**	**173**	**203**
Missing	1 (0.1)	0 (0.0)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
Don't know	89 (8.1)	43 (6.4)	46 (10.5)	115 (23.1)	56 (24.2)	59 (22.2)
Refusal	17 (1.5)	13 (1.9)	4 (0.9)	6 (1.2)	2 (0.9)	4 (1.5)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

Housing, family environment

The main CSSS area in which both communities resided was La Montagne (21.8%, or 332/1,520), where 19.7% (211/1,072) of Sub-Saharan Africans and 27.1% (121/447) English-speaking Caribbeans were recruited. The main CSSS areas where English-speaking Caribbeans resided (e.g. 22.8% in Dorval-Lachine-Lasalle and 20.6% in Cavendish) were different (p<0.0001) from where Sub-Saharan Africans lived (e.g. 18.5% in Bordeaux-Cartierville-Saint-Laurent and 10.2% in Lucille-Teasdale) (Table 13).

Table 13: Distribution of participants by CCSS area of residence

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
CSSS de la Montagne	211 (19.7) ***	124 (19.0)	87 (20.7)	121 (27.1)	48 (23.1)	73 (30.5)
CSSS de Dorval-Lachine-LaSalle	96 (8.9)	53 (8.1)	43 (10.2)	102 (22.8)	52 (25.0)	50 (20.9)
CSSS Cavendish	71 (6.6)	43 (6.6)	28 (6.7)	92 (20.6)	41 (19.7)	51 (21.3)
CSSS de Bordeaux-Cartierville-Saint-Laurent	199 (18.5)	128 (19.6)	71 (16.9)	15 (3.4)	5 (2.4)	10 (4.2)
CSSS du Sud-Ouest-Verdun	96 (8.9)	63 (9.6)	33 (7.9)	66 (14.8)	36 (17.3)	30 (12.6)
CSSS Lucille-Teasdale	109 (10.2)	67 (10.3)	42 (10.0)	4 (0.9)	2 (1.0)	2 (0.8)
CSSS de l'Ouest-de-l'Île	94 (8.8)	56 (8.6)	38 (9.0)	29 (6.5)	16 (7.7)	13 (5.4)
CSSS d'Ahuntsic et Montréal-Nord	62 (5.8)	40 (6.1)	22 (5.2)	2 (0.4)	1 (0.5)	1 (0.4)
CSSS de Saint-Léonard et Saint-Michel	54 (5.0)	31 (4.7)	23 (5.5)	4 (0.9)	3 (1.4)	1 (0.4)
CSSS Jeanne-Mance	31 (2.9)	21 (3.2)	10 (2.4)	9 (2.0)	2 (1.0)	7 (2.9)
CSSS de la Pointe-de-l'Île	30 (2.8)	15 (2.3)	15 (3.6)	3 (0.7)	2 (1.0)	1 (0.4)
CSSS du Cœur-de-l'Île	20 (1.9)	12 (1.8)	8 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)
(n)	**1073**	**653**	**420**	**447**	**208**	**239**
Missing	32 (2.9)	15 (2.2)	17 (3.9)	50 (10.1)	23 (10.2)	27 (10.2)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

In both communities, 8 in 10 participants were renting houses, apartments or condos (80.6%, or 1,287/1,596). More Sub-Saharan Africans (81.6%, or 898/1,101) were tenants than English-speaking Caribbeans (78.6%, or 389/495), who were more often owners (8.5% vs. 4.1%) than Sub-Saharan Africans (p=0.009) (Table 14).

A total of 87.8% (1,394/1,588) of participants from both communities had stable housing in the previous 12 months (≤ 01 move). A greater percentage of English-speaking Caribbeans than Sub-Saharan Africans (16.3% vs. 10.4%; p=0.001) reported that they had moved in the past year.

Table 14: Distribution of participants by type of housing/living arrangement

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Type of housing/living arrangement						
Tenant	898 (81.6) **	546 (82.2)	352 (80.5)	389 (78.6)	172 (74.8)	217 (81.9)
Living with parents, family members or friends	149 (13.5)	89 (13.4)	60 (13.7)	60 (12.1)	36 (15.7)	24 (9.1)
Owner	45 (4.1)	22 (3.3)	23 (5.3)	42 (8.5)	21 (9.1)	21 (7.9)
At a hotel/motel/transition home	8 (0.7)	6 (0.9)	2 (0.5)	3 (0.6)	0 (0.0)	3 (1.1)
No fixed address	1 (0.1)	1 (0.2)	0 (0.0)	1 (0.2)	1 (0.4)	0 (0.0)
(n)	**1101**	**664**	**437**	**495**	**230**	**265**
Missing	4 (0.4)	4 (0.6)	0 (0.0)	2 (0.4)	1 (0.4)	1 (0.4)
Total	1105	668	437	497	231	266
Number of moves (last 12 months)						
≤1	983 (89.6) **	584 (88.5)	399 (91.3)	411 (83.7)	183 (80.3)	228 (86.7)
≥2	114 (10.4)	76 (11.5)	38 (8.7)	80 (16.3)	45 (19.7)	35 (13.3)
(n)	**1097**	**660**	**437**	**491**	**228**	**263**
Missing	8 (0.7)	8 (1.2)	0 (0.0)	6 (1.2)	3 (1.3)	3 (1.1)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

Summary of sociodemographic characteristics

A total of 1,602 participants meeting the selection criteria—1,105 Montréalers from 36 Sub-Saharan African countries and 497 English-speaking Caribbeans from 12 countries—were recruited on the Island of Montréal from June 28, 2013 to February 8, 2014. A few more Sub-Saharan African that Caribbean men were recruited (60.5%) and 53.5% of the English-speaking Caribbeans were women.

Almost all participants (98%) in both communities identified themselves as black. Although there are commonalities between black communities in general, there is diversity in terms of ethnic, cultural, linguistic, religious[2] and sociodemographic characteristics within the Sub-Saharan African communities themselves, and within the English- or French-speaking Caribbean communities. Presenting the results for the two target communities separately enabled the project to adapt intervention measures to the communities' specific characteristics.

The sociodemographic profile of participants in the survey is consistent with 2006 Census data, whose statistics for the Québec population originating from these countries are similar in terms of age, level of education, employment status and income.[22]

Average age of all participants was 30.7 years and the median age was 31.0. Distribution of age groups differed in the two target communities (p<0.0001), as did distribution by sex. A third of participants were in the 15–24 age group (30.5%, or 488/1,602).

Most participants were heterosexual: 97.6% of Sub-Saharan Africans vs. 95.0% of English-speaking Caribbeans. A significantly greater percentage of English-speaking Caribbeans than Sub-Saharan Africans were single (60.7% vs. 51.2%) or in couples not living together (18.1% vs 15.2%).

People from Sub-Saharan Africa had higher levels of education than English-speaking Caribbeans: 70.1% vs. 37.9% had finished high school or higher ($p<0.0001$).

Of the participants who reported family income, over half (51.7%, or 710/1,374) had annual incomes <$15,000. English-speaking Caribbeans had higher incomes than Sub-Saharan Africans ($p=0.001$). In addition, just over a third of participants (41.3%, or 561/1,357) reported they had found it “somewhat difficult/very difficult” to meet their housing and food needs in the previous 12 months.

A greater percentage of Sub-Saharan Africans had immigrated to Canada more recently (after 2000) than English-speaking Caribbeans (86.3% vs. 50.2%) ($p<0.0001$). Recent immigrant status often results in greater social and economic insecurity, which has to be considered when developing prevention programs.

3.3. Sexual behaviours

3.3.1. Overall sex life

Table 15 shows the number of lifetime sexual partners of men and women who had engaged in vaginal or anal penetration, for each of the two target communities. Overall, 11.1% (167/1,498) of participants reported never having had sex in their lives (12.9%, or 133/1,031 of Sub-Saharan Africans vs. 7.3%, or 34/467 of English-speaking Caribbeans).

English-speaking Caribbeans had had more sexual partners (p<0.0001) than Sub-Saharan Africans, and men had had more sexual partners than women did in both communities (p<0.0001).

Although 13.1% (196/1,498) of all participants reported having had only one sexual partner in their lives, more than half (53.3%, or 798/1,498) reported having had four or more sexual partners (47.4%, or 489/1,031 of Sub-Saharan Africans vs. 66.2%, or 309/467 of English-speaking Caribbeans).

Table 15: Distribution of participants by number of lifetime sexual partners, men and women with vaginal or anal penetration

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
None	133 (12.9) ***	58 (9.4) ***	75 (18.0)	34 (7.3)	12 (5.5) ***	22 (8.8)
One	165 (16.0)	71 (11.6)	94 (22.5)	31 (6.6)	8 (3.7)	23 (9.2)
2 to 3	244 (23.7)	107 (17.4)	137 (32.9)	93 (19.9)	14 (6.5)	79 (31.6)
4 to 10	335 (32.5)	232 (37.8)	103 (24.7)	156 (33.4)	64 (29.5)	92 (36.8)
11	154 (14.9)	146 (23.8)	8 (1.9)	153 (32.8)	119 (54.8)	34 (13.6)
(n)	**1031**	**614**	**417**	**467**	**217**	**250**
Don't know	43 (3.9)	35 (5.2)	8 (1.8)	16 (3.2)	10 (4.3)	6 (2.3)
Refusal	31 (2.8)	19 (2.8)	12 (2.7)	14 (2.8)	4 (1.7)	10 (3.8)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

The average age at first sexual intercourse with vaginal or anal penetration was higher among Sub-Saharan Africans (18.4 years, range: 7 to 40) than English-speaking Caribbeans (15.8 years, range: 6 to 40); p<0.0001]. Men had started having sexual relations earlier than women in both communities (p<0.0001) (Table 16).

About 70% (69.9%, or 341/488) of young women and men aged 15 to 24 had had sexual intercourse with vaginal or anal penetration, a third of them (30.5%, or 104/325) before age 15.

Table 16: Distribution of participants by age at first sexual intercourse with vaginal or anal penetration

(ELIGIBLE: Respondents who had had a lifetime sexual relationship with vaginal or anal penetration)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Age at first sexual intercourse						
Average (SD)	18.4 (±3.9) ***	18.0 (±4.1) ***	19.1 (±3.6)	15.8 (±3.8)	14.4 (±3.5) ***	17.0 (±3.7)
Median	18	17	18	16	14	16
Range	7 - 40	7 - 40	9 - 35	6- 40	6- 40	8 - 36
(n)	**918**	**572**	**346**	**444**	**208**	**236**
Don't know	27 (2.8)	22 (3.6)	5 (1.4)	10 (2.2)	8 (3.7)	2 (0.8)
Refusal	27 (2.8)	16 (2.6)	11 (3.0)	9 (1.9)	3 (1.4)	6 (2.5)
Total	972	610	362	463	219	244

* p<0.05 ** p<0.01 *** p<0.001

More than half (57.7%) of Sub-Saharan Africans and just under a third (32.2%) of English-speaking Caribbeans had had sexual partners from Sub-Saharan Africa or the Caribbean (Table 17).

Table 17: Number of lifetime sexual partners from Sub-Saharan Africa, the Caribbean or Central/South Asia

(ELIGIBLE: Respondents who had had a lifetime sexual relationship with vaginal or anal penetration)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
None	60 (6.6) ***	41 (7.2) ***	19 (5.5)	43 (9.8)	22 (10.8) ***	21 (8.9)
Some partners	326 (35.7)	274 (48.3)	52 (15.0)	254 (58.0)	155 (76.4)	99 (42.1)
All partners	527 (57.7)	252 (44.4)	275 (79.5)	141 (32.2)	26 (12.8)	115 (48.9)
(n)	**913**	**567**	**346**	**438**	**203**	**235**
Missing	59 (6.1)	43 (7.0)	16 (4.4)	25 (5.4)	16 (7.3)	9 (3.7)
Total	972	610	362	463	219	244

* p<0.05 ** p<0.01 *** p<0.001

Most sexually active participants (84.5%, or 1,146/1,357) reported having had vaginal or anal intercourse in the past year. The difference was significant between Sub-Saharan African men and women (86.1% vs. 80.1%; p= 0.016) and English-speaking Caribbean men and women (91.8% vs. 80.3%; p= 0.001). However, 16.2% of Sub-Saharan Africans and 14.3% of English-speaking Caribbeans reported not having had intercourse in the last 12 months (Table 18).

Table 18: Sexual intercourse (vaginal or anal) in the past year

(ELIGIBLE: Respondents who had had a lifetime sexual relationship with vaginal or anal penetration)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Yes	767 (83.8)	490 (86.1) *	277 (80.1)	379 (85.7)	191 (91.8) **	188 (80.3)
No	148 (16.2)	79 (13.9)	69 (19.9)	63 (14.3)	17 (8.2)	46 (19.7)
(n)	**915**	**569**	**346**	**442**	**208**	**234**
Missing	57 (5.9)	41 (6.7)	16 (4.4)	21 (4.5)	11 (5.0)	10 (4.1)
Total	972	610	362	463	219	244

* p<0.05 ** p<0.01 *** p<0.001

Of the participants who had had sexual intercourse with vaginal or anal penetration in the past year, 55.3% (634/1,146) did not use a condom (male or female) during their most recent sexual encounter, regardless of the type of sexual partner. More women than men from Sub-Saharan Africa were in this situation (64.6% vs. 52.9%; p=0.002) (Table 19).

Table 19: Condom use (male or female) during the most recent sexual encounter, regardless of the type of sexual partner

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with a partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Yes	329 (42.9)	231 (47.1) **	98 (35.4)	183 (48.3)	96 (50.3)	87 (46.3)
No	438 (57.1)	259 (52.9)	179 (64.6)	196 (51.7)	95 (49.7)	101 (53.7)
(n)	**767**	**490**	**277**	**379**	**191**	**188**
Missing	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	767	490	277	379	191	188

* p<0.05 ** p<0.01 *** p<0.001

Just over a third (36.7%, or 416/1,132) of participants had had multiple sexual partners (≥ 2 partners) in the past year. There was a significant difference between the two target communities: English-speaking Caribbeans had had more sexual partners than Sub-Saharan Africans ($p<0.0001$) and, in both communities, men had had more sexual partners than women ($p<0.0001$) (Table 20).

Table 20: Number of sexual partners with vaginal or anal penetration in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with a partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
One	516 (68.1) ***	275 (57.2) ***	241 (87.0)	200 (53.5)	65 (34.8) ***	135 (72.2)
2 to 3	164 (21.6)	133 (27.7)	31 (11.2)	100 (26.7)	63 (33.7)	37 (19.8)
4 to 10	71 (9.4)	66 (13.7)	5 (1.8)	55 (14.7)	41 (21.9)	14 (7.5)
≥ 11	**7 (0.9)**	**7 (1.5)**	**0 (0.0)**	**19 (5.1)**	**18 (9.6)**	**1 (0.5)**
(n)	**758**	**481**	**277**	**374**	**187**	**187**
Missing	9 (1.2)	9 (1.8)	0 (0.0)	5 (1.3)	4 (2.1)	1 (0.5)
Total	767	490	277	379	191	188

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

3.3.2. Regular sexual partners

In the past year, 81.6% (620/760) of Sub-Saharan Africans vs. 72.8% (273/375) of English-speaking Caribbeans had had vaginal or anal penetration with only one regular sexual partner, while 13.7% (104/760) of Sub-Saharan Africans vs. 22.7% (85/375) of English-speaking Caribbeans had done so with several partners ($p=0.001$). In both target communities, men had had more sexual partners than women ($p<0.0001$) (Table 21).

Table 21: Number of sexual partners with vaginal or anal penetration in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with a partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
None	36 (4.7) **	32 (6.6) ***	4 (1.4)	17 (4.5)	9 (4.8) ***	8 (4.3)
One	620 (81.6)	357 (73.9)	263 (94.9)	273 (72.8)	115 (61.2)	158 (84.5)
Several	104 (13.7)	94 (19.5)	10 (3.6)	85 (22.7)	64 (34.0)	21 (11.2)
(n)	**760**	**483**	**277**	**375**	**188**	**187**
Missing	7 (0.9)	7 (1.4)	0 (0.0)	4 (1.1)	3 (1.6)	1 (0.5)
Total	767	490	277	379	191	188

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Nearly 80% (577/722) of Sub-Saharan Africans and 78.5% (281/358) of English-speaking Caribbeans reported not always using condoms with their regular sexual partners (non-significant difference) (Table 22).

A higher percentage of Sub-Saharan African women (86.0%, or 233/271) than men (76.3%, or 344/451) had not always used condoms with their regular sexual partners (p=0.002). More Sub-Saharan African women in relationships (whether cohabiting or not) were in this situation at 73.4% (171/233) (data not shown).

Table 22: Condom use with regular sexual partners in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Always[a]	145 (20.1)	107 (23.7) **	38 (14.0)	77 (21.5)	39 (21.8)	38 (21.2)
Not always[b]	577 (79.9)	344 (76.3)	233 (86.0)	281 (78.5)	140 (78.2)	141 (78.8)
(n)	**722**	**451**	**271**	**358**	**179**	**179**
Missing	2 (0.3)	0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)
Total	724	451	273	358	179	179

- Always: Condom was "Always" used
- Not always: Participants answered "Never," "Seldom," "Most of the time" or "Almost all the time."

* p<0.05 ** p<0.01 *** p<0.001

3.3.3. Casual sex partners

Of those who had had intercourse with vaginal or anal penetration in the past year, more than a third had had at least one casual sex partner, that is, 32.5% (247/759) of Sub-Saharan Africans vs. 46.0% (177/374) of English-speaking Caribbeans. Also, men in general had had more casual sex partners and a greater proportion of English-speaking Caribbean men than women had more casual sex partners (p<0.0001) (Table 23).

Table 23: Number of casual sex partners with vaginal or anal penetration in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with a partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
None	512 (67.5) ***	278 (57.7) ***	234 (84.5)	202 (54.0)	69 (36.9) ***	133 (71.1)
One	125 (16.5)	91 (18.9)	34 (12.3)	71 (19.0)	41 (21.9)	30 (16.0)
Several	122 (16.1)	113 (23.4)	9 (3.2)	101 (27.0)	77 (41.2)	24 (12.8)
(n)	**759**	**482**	**277**	**374**	**187**	**187**
Missing	5 (0.7)	5 (1.0)	0 (0.0)	5 (1.3)	4 (2.1)	1 (0.5)
Total	764	487	277	379	191	188

* p<0.05 ** p<0.01 *** p<0.001

Just over half of English-speaking Caribbeans (51.4%, or 90/175) vs. a third (37.8%, or 95/251) of Sub-Saharan Africans did not always use a condom in the last 12 months during vaginal or anal intercourse with their casual sex partners (p=0.005). This applied to significantly more Sub-Saharan African women than men (51.2% vs. 35.1%; p=0.048) (Table 24).

Table 24: Condom use with casual sex partners in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one casual partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Always	156 (62.2) **	135 (64.9) *	21 (48.8)	85 (48.6)	63 (52.1)	22 (40.7)
Not always	95 (37.8)	73 (35.1)	22 (51.2)	90 (51.4)	58 (47.9)	32 (59.3)
(n)	251	208	43	175	121	54
Missing	1 (0.4)	1 (0.5)	0 (0.0)	2 (1.1)	1 (0.8)	1 (1.8)
Total	252	209	43	177	122	55

* p<0.05 ** p<0.01 *** p<0.001

Of the participants who had had casual sex partners in the last year, 40.0% (14/35) of Sub-Saharan African women vs. 19.1% (40/209) of men (p=0.006), as well as 45.3% (24/53) of English-speaking Caribbean women vs. 23.1% (28/121) of men (p=0.003) did not use condoms during the most recent sexual encounter involving vaginal or anal penetration with a casual partner (Table 25).

Table 25: Condom use during the most recent sexual encounter with a casual sex partner

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one casual partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Yes	190 (77.9)	169 (80.9) **	21 (60.0)	122 (70.1)	93 (76.9) **	29 (54.7)
No	54 (22.1)	40 (19.1)	14 (40.0)	52 (29.9)	28 (23.1)	24 (45.3)
(n)	244	209	35	174	121	53
Missing	8 (3.2)	0 (0.0)	8 (18.6)	3 (1.7)	1 (0.8)	2 (3.6)
Total	252	209	43	177	122	55

* p<0.05 ** p<0.01 *** p<0.001

3.3.4. HIV status of most recent sexual partner

In all, 1.4% (13/938) of participants reported that their most recent regular or casual sex partner was HIV positive (Table 26).

Table 26: HIV status of most recent regular or casual sex partner

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with a regular or casual sex partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
HIV-negative	622 (98.3)	387 (97.7)	235 (99.2)	303 (99.3)	149 (99.3)	154 (99.4)
HIV-positive	11 (1.7)	9 (2.3)	2 (0.8)	2 (0.7)	1 (0.7)	1 (0.6)
(n)	**633**	**396**	**237**	**305**	**150**	**155**
Don't know	127 (16.6)	89 (18.3)	38 (13.7)	73 (19.3)	40 (20.9)	33 (17.6)
Missing	4 (0.5)	2 (0.4)	2 (0.7)	1 (0.3)	1 (0.5)	0 (0.0)
Total	764	487	277	379	191	188

* p<0.05 ** p<0.01 *** p<0.001

3.3.5. Sex in exchange for money, drugs or other goods and services

In total, 4.5% (52/1,145) of participants reported having given money, drugs or other goods or services in exchange for sex involving vaginal or anal penetration in the last year. In both target communities, more men had given money in exchange for sex than women, that is, 6.3% of men vs. 0.4% of women ($p<0.0001$) among Sub-Saharan Africans, and 8.4% of men vs. 2.1% of women among English-speaking Caribbeans ($p=0.007$) (Table 27).

Also, 2.0% (23/1,142) of participants reported having received money, drugs or other goods or services in exchange for sex involving vaginal or anal penetration in the last year. A higher percentage of English-speaking Caribbeans were in this situation than Sub-Saharan Africans—4.2% vs. 0.9% ($p<0.0001$). More Caribbean men than women reported this situation (6.8% vs. 1.6%; $p=0.012$) (Table 27).

Table 27: Sex in exchange for goods or services in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Gave money, drugs or other goods in exchange for sex	**32 (4.2)**	**31 (6.3) *** **	**1 (0.4)**	**20 (5.3)**	**16 (8.4) ** **	**4 (2.1)**
(n)	**766**	**489**	**277**	**379**	**191**	**188**
Missing	1 (0.1)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	767	490	277	379	191	188
Received money, drugs or other goods in exchange for sex	**7 (0.9) *** **	**6 (1.2)**	**1 (0.4)**	**16 (4.2)**	**13 (6.8) * **	**3 (1.6)**
(n)	**763**	**487**	**276**	**379**	**191**	**188**
Missing	4 (0.5)	3 (0.6)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)
Total	767	490	277	379	191	188

* p<0.05 ** p<0.01 *** p<0.001

3.3.6. Recreational alcohol or drug use

A third of participants had used alcohol while having sex in the last 12 months (30.3%, or 345/1,140, that is, 19.7%, or 150/762 of Sub-Saharan Africans vs. 51.6%, or 195/378 of English-speaking Caribbeans; p<0.0001) (Table 28).

Higher percentages of English-speaking Caribbeans than Sub-Saharan Africans and significantly more men than women in the two communities had used alcohol, marijuana or other drugs during vaginal or anal intercourse in the last 12 months (Table 28).

Table 28: Use of alcohol or drugs during vaginal or anal intercourse in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Alcohol	**150 (19.7) *****	**123 (25.2) *****	**27 (9.9)**	**195 (51.6)**	**120 (62.8) *****	**75 (40.1)**
(n)	**762**	**488**	**274**	**378**	**191**	**187**
Missing	5 (0.7)	2 (0.4)	3 (1.1)	1 (0.3)	0 (0.0)	1 (0.5)
Total	767	490	277	379	191	188
Marijuana/hashish	**60 (7.9) *****	**53 (10.9) *****	**7 (2.6)**	**158 (41.8)**	**104 (54.5) *****	**54 (28.9)**
(n)	**762**	**488**	**274**	**378**	**191**	**187**
Missing	5 (0.7)	2 (0.4)	3 (1.1)	1 (0.3)	0 (0.0)	1 (0.5)
Total	767	490	277	379	191	188
Cocaine/crack/freebase	**1 (0.1) *****	**1 (0.2) *****	**0 (0.0)**	**10 (2.7)**	**6 (3.2) ****	**4 (2.1)**
(n)	**762**	**488**	**274**	**377**	**190**	**187**
Missing	5 (0.7)	2 (0.4)	3 (1.1)	2 (0.5)	1 (0.5)	1 (0.5)
Total	767	490	277	379	191	188
Other recreational drugs[a]	**3 (0.4) *****	**2 (0.4)**	**1 (0.4)**	**30 (8.0)**	**16 (8.4)**	**14 (7.5)**
(n)	**762**	**488**	**274**	**377**	**190**	**187**
Missing	5 (0.7)	2 (0.4)	3 (1.1)	2 (0.5)	1 (0.5)	1 (0.5)
Total	767	490	277	379	191	188

[a] Poppers; Viagra; ecstasy; crystal meth; GHB; psychedelic drugs and other amphetamines

* p<0.05 ** p<0.01 *** p<0.001

Four survey participants had histories of injection drug use (three Sub-Saharan Africans and one English-speaking Caribbean); only one had used in the last six months (a Sub-Saharan African) (Table 29).

Table 29: Injection drug use history

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Injection of any type of drug						
Never	1098 (99.7)	662 (99.7)	436 (99.8)	494 (99.8)	229 (99.6)	265 (100.0)
Yes						
Over 6 months ago	2 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.4)	0 (0.0)
Within the last 6 months	1 (0.1)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
(n)	**1101**	**664**	**437**	**495**	**230**	**265**
Missing	4 (0.4)	4 (0.6)	0 (0.0)	2 (0.4)	1 (0.4)	1 (0.4)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

3.3.7. Other sexual practices

Very few sexually active women (2.6%, or 12/461) practised vaginal drying in the last year (Table 30).

Table 30: Vaginal drying in women during intercourse in the last 12 months

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one partner in the last 12 months)

	Sub-Saharan Africa n=1105 n (%)	English-Speaking Caribbean n=497 n (%)
	Total	Total
Yes	5 (1.8)	7 (3.8)
No	270 (98.2)	179 (96.2)
(n)	275	186
Missing	2 (0.7)	2 (1.1)
Total	277	188

Overall, 6.3% (44/702) of African and Caribbean women were excised. The practice of excision was more common among Sub-Saharan African women than English-speaking Caribbean women participants (9.2% vs. 1.5%, p<0.0001) (Table 31).

Table 31: Practice of excision in women

(ELIGIBLE: All women)

	Sub-Saharan Africa n=1105 n (%)	English-Speaking Caribbean n=497 n (%)
	Total	Total
Yes	40 (9.2) ***	4 (1.5)
No	397 (90.8)	261 (98.5)
(n)	437	265
Missing	0 (0.0)	1 (0.4)
Total	437	266

* p<0.05 ** p<0.01 *** p<0.001

The vast majority (90.6%) of Sub-Saharan African men were circumcised, compared to 35.4% of English-speaking Caribbeans (p<0.0001) (Table 32).

Table 32: Practice of circumcision in men

(ELIGIBLE: All men)

	Sub-Saharan Africa n=1105 n (%)	English-Speaking Caribbean n=497 n (%)
	Total	**Total**
Yes	599 (90.6) ***	81 (35.4)
No	62 (9.4)	148 (64.6)
(n)	**661**	**229**
Missing	7 (1.0)	2 (0.9)
Total	668	231

* p<0.05 ** p<0.01 *** p<0.001

3.4. Travel history

3.4.1. Travel over the past five years to countries where HIV is highly endemic

Over the past five years, 36.5% (583/1,597) of participants had travelled to a country where HIV is highly endemic, i.e. 38.3% of Sub-Saharan Africans vs. 32.5% of English-speaking Caribbeans (p=0.024) (Table 33).

Table 33: Travel over the past five years to a country where HIV is highly endemic

(ELIGIBLE: All respondents)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Yes	422 (38.3) *	256 (38.6)	166 (38.0)	161 (32.5)	69 (29.9)	92 (34.7)
No	679 (61.7)	408 (61.4)	271 (62.0)	335 (67.5)	162 (70.1)	173 (65.3)
(n)	**1101**	**664**	**437**	**496**	**231**	**265**
Missing	4 (3.2)	4 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)	1 (0.4)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

Among participants who had travelled to a country where HIV is highly endemic over the past five years, 33.7% (136/404) of Sub-Saharan Africans vs. 27.2% (43/158) of English-speaking Caribbeans had engaged in sexual intercourse with a partner living in one of these countries. This applied more to Sub-Saharan African (p<0.0001) and English-speaking Caribbean (p=0.026) men than women (Table 34).

Table 34: Vaginal or anal intercourse during a trip to a country where HIV is highly endemic, with a partner living in one of these countries

(ELIGIBLE: All respondents who travelled in the past five years)

	Sub-Saharan Africa n=1105 n (%)			English-speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Yes	136 (33.7)	104 (42.8) ***	32 (19.9)	43 (27.2)	26 (38.2) *	17 (18.9)
No	233 (57.7)	129 (53.1)	104 (64.6)	104 (65.8)	38 (55.9)	66 (73.3)
Never had sexual intercourse	35 (8.7)	10 (4.1)	25 (15.5)	11 (7.0)	4 (5.9)	7 (7.8)
(n)	**404**	**243**	**161**	**158**	**68**	**90**
Missing	18 (4.3)	13 (5.1)	5 (3.0)	3 (1.9)	1 (1.4)	2 (2.2)
Total	422	256	166	161	69	92

* p<0.05 ** p<0.01 *** p<0.001

Among participants who travelled to a country where HIV is highly endemic and who engaged in vaginal or anal intercourse with a sexual partner living there, slightly more than half (56.4%, or 101/179) did not always use condoms during sex (Table 35).

A greater percentage of women from both communities were in this situation:
- 84.4% (27/32) of Sub-Saharan African women vs. 52.9% (55/104) of men (p=0.001);
- 64.7% (11/17) of English-speaking Caribbean women vs. 30.8% (8/26) of men (p=0.028).

Table 35: Condom use during intercourse while in a country where HIV is highly endemic

(ELIGIBLE: Respondents who reported having had vaginal or anal intercourse with at least one partner while travelling in an endemic country)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Always	54 (39.7)	49 (47.1) **	5 (15.6)	24 (55.8)	18 (69.2) *	6 (35.3)
Not always	82 (60.3)	55 (52.9)	27 (84.4)	19 (44.2)	8 (30.8)	11 (64.7)
(n)	**136**	**104**	**32**	**43**	**26**	**17**
Missing	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	136	104	32	43	26	17

* p<0.05 ** p<0.01 *** p<0.001

3.5. History of testing for HIV or other STBBIs

3.5.1. HIV test history

A greater percentage of Sub-Saharan Africans than English-speaking Caribbeans had undergone HIV testing (80.4%, or 866/1,077 vs. 61.3%, or 302/493; p<0.0001).
This applied to significantly more Caribbean women than men (68.9% vs. 52.4%; p=0.0001) (Table 36).

Also, just over half of those who had already had HIV tests had been tested in the past two years (67.8% of Sub-Saharan Africans and 68.8% of English-speaking Caribbeans).

Table 36: HIV test history

(ELIGIBLE: All respondents)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Had already been tested for HIV						
Yes	866 (80.4) ***	513 (78.7)	353 (83.1)	302 (61.3)	120 (52.4) ***	182 (68.9)
No	211 (19.6)	139 (21.3)	72 (16.9)	191 (38.7)	109 (47.6)	82 (31.1)
(n)	**1077**	**652**	**425**	**493**	**229**	**264**
Missing	28 (2.5)	16 (2.4)	12 (2.7)	4 (0.8)	2 (0.9)	2 (0.8)
Total	1105	668	437	497	231	266
Had been tested for HIV in the last 2 years (ELIGIBLE: Respondents who have been tested)						
Yes	579 (67.8)	353 (66.3)	244 (69.9)	205 (68.8)	81 (68.6)	124 (68.9)
No	275 (32.2)	170 (33.7)	105 (30.1)	93 (31.2)	37 (31.4)	56 (31.1)
(n)	**854**	**505**	**349**	**298**	**118**	**180**
Missing	12 (1.4)	8 (1.6)	4 (1.1)	4 (1.3)	2 (1.7)	2 (1.1)
Total	866	513	353	302	120	182

* p<0.05 ** p<0.01 *** p<0.001

At the time of the survey, 91.4% (202/221) of Sub-Saharan African women participants had been tested for HIV during their last pregnancy compared to 83.5% (111/133) of English-speaking Caribbean women (p=0.024). Overall, 70.9% (222/313) of all women tested during their most recent pregnancy were tested in Canada (Table 37).

Table 37: HIV test history during most recent pregnancy

(ELIGIBLE: Women)

	Sub-Saharan Africa n=1105 n (%)	English-Speaking Caribbean n=497 n (%)
	Total	Total
HIV testing during most recent pregnancy		
Yes	202 (91.4) *	111 (83.5)
No	19 (8.6)	22 (16.5)
(n)	**221**	**133**
Never been pregnant	98 (22.4)	45 (16.9)
No sexual intercourse	75 (17.2)	22 (8.3)
Missing	43 (9.8)	66 (24.8)
Total	437	266

* p<0.05 ** p<0.01 *** p<0.001

Table 38: Reasons for not having had an HIV test in the last two years

(ELIGIBLE: Respondents who reported never having had an HIV test)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Total	Men	Total	Women
You never thought about it	111 (40.4)	66 (38.8)	45 (42.9)	31 (33.3)	10 (27.0)	21 (37.5)
You're healthy, so you think you don't need to take the test	96 (34.9)	69 (40.6)	27 (25.7)	15 (16.1)	9 (24.3)	6 (10.7)
You think your risk of HIV infection is low	72 (26.2)	42 (24.7)	30 (28.6)	26 (28.0)	11 (29.7)	15 (26.8)
You think you know your HIV status	54 (19.6)	33 (19.4)	21 (20.0)	19 (20.4)	12 (32.4)	7 (12.5)
You think you can't get HIV	34 (12.4)	23 (13.5)	11 (10.5)	3 (3.2)	1 (2.7)	2 (3.2)
You're afraid to get tested	18 (6.5)	11 (6.5)	7 (6.7)	1 (1.1)	0 (0.0)	1 (1.8)
You think being HIV positive would affect your personal or professional life	6 (2.2)	4 (2.4)	2 (1.9)	2 (2.2)	0 (0.0)	2 (3.6)
You were tested during your immigration medical examination in Canada	13 (4.7)	7 (4.1)	6 (5.7)	13 (14.0)	3 (8.1)	10 (17.9)
You think nothing can be done if the test indicates you have HIV	3 (1.1)	2 (1.2)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)
You had trouble getting tested	2 (0.7)	2 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
You think the test is not reliable	4 (1.5)	3 (1.8)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)
(n)	**275**	**170**	**105**	**93**	**37**	**56**

3.5.2. Self-reported HIV status and monitoring

Most participants who had already had an HIV test and knew their results reported that their most recent HIV test results were negative (97.9% or 1,132/1,156) (Table 39).
However, **seven Sub-Saharan Africans** (two men and five women) **reported that the results of their most recent HIV test were positive**. There were no self-reported HIV cases among English-speaking Caribbeans.

Table 39: Self-reported HIV status

(ELIGIBLE: Respondents who have already had an HIV test)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Seropositive	**7 (0.8)**	**2 (0.4)**	**5 (1.4)**	**0 (0.0)**	**0 (0.0)**	**0 (0.0)**
Seronegative	838 (97.9)	496 (98.0)	342 (97.7)	294 (98.0)	117 (98.3)	177 (97.8)
Unknown status [a]	11 (1.3)	8 (1.6)	3 (0.9)	6 (2.0)	2 (1.7)	4 (2.2)
(n)	**856**	**506**	**350**	**300**	**119**	**181**
Missing	10 (1.2)	7 (1.4)	3 (0.8)	2 (0.7)	1 (0.8)	1 (0.5)
Total	866	513	353	302	120	182

[a] Includes respondents who reported they did not know the result of their last test, and respondents who had not received the results of their most recent test.

Six of the seven Sub-Saharan Africans who reported they were HIV positive had known their status for over four years, and the circumstances of infection were specified for four of these seven individuals. Six of the seven individuals were infected outside Canada (Table 40).

Table 40: Length of time since self-reported HIV positive status, circumstances and place of infection

(ELIGIBLE: Self-reported HIV-positive respondents)

	Sub-Saharan Africa n=1105 n (%)		
	Total	Men	Women
Length of time since self-reported HIV-positive status			
<1 year	0 (0.0)	0 (0.0)	0 (0.0)
≥1 year but <4 years	1 (14.3)	0 (0.0)	1 (20.0)
≥ 4 years	6 (85.7)	2 (100.0)	4 (80.0)
(n)	**7**	**2**	**5**
Circumstances of infection			
Sexual intercourse with an HIV-positive man	2 (28.6)	0(0.0)	2 (40.0)
Sexual intercourse with an HIV-positive woman	2 (28.6)	2 (100.0)	0(0.0)
Not specified	3 (42.9)	0 (0.0)	3 (60.0)
(n)	**7**	**2**	**5**
Place of infection			
Canada	1 (14.3)	0 (0.0)	1 (20.0)
Another country	6 (85.7)	2 (100.0)	4 (80.0)
(n)	**7**	**2**	**5**

Only one of the seven self-reported HIV-positive Sub-Saharan Africans had stopped treatment for medical reasons. The other six were receiving antiretroviral therapy (Table 40). Two out of five women had tried alternative or conventional treatments for HIV infection (Table 41).

Two self-reported HIV-positive participants—one male and one female (28.6%, or 2/7)—had regular HIV serodiscordant or seroconcordant sexual partners with whom they did not always use condoms. (Results not shown)

Table 41: HIV monitoring and treatment

(ELIGIBLE: Self-reported HIV-positive respondents)

	Sub-Saharan Africa n=1105 n (%)		
	Total	Men	Women
Time between confirmation of diagnosis and medical consultation			
Within 3 months of diagnosis	3 (42.9)	0 (0.0)	3 (60.0)
Between 4 and 6 months after diagnosis	1 (14.3)	0 (0.0)	1 (20.0)
Between 7 and 12 months after diagnosis	1 (14.3)	1 (50.0)	0 (0.0)
More than a year after diagnosis	2 (28.6)	1 (50.0)	1 (20.0)
(n)	7	2	5
Currently receiving treatment for HIV			
Yes	7 (100.0)	2 (100.0)	5 (100.0)
No	0 (0.0)	0 (0.0)	0 (0.0)
(n)	7	2	5
Has already taken HIV medications			
Yes	6 (85.7)	2 (100.0)	4 (80.0)
No	1 (14.3)	0 (0.0)	1 (20.0)
(n)	7	2	5
Currently taking HIV medications			
Yes	6 (85.7)	2 (100.0)	4 (80.0)
No	1 (14.3)	0 (0.0)	1 (20.0)
(n)	7	2	5
Initial treatment location			
Canada	5 (71.4)	1 (50.0)	4 (80.0)
Another country	1 (14.3)	1 (50.0)	0 (0.0)
(n)	6	2	4
Missing	1	0	1 (14.3)
Total	7	2	5

3.5.3. History of other reported STBBIs and tuberculosis

Table 38 provides details of STBBI history. The percentages of participants who reported having had various STBBIs depended on the type of infection: 11.9% (59/497) of English-speaking Caribbeans vs. 3.4% (38/1,105) of Sub-Saharan Africans reported a history of chlamydia, gonorrhea or syphilis (p<0.0001); this was the case for 5.3% (26/488) of individuals aged 15–24 (Table 42).

Table 42: Reported history of diagnosed STBBIs and tuberculosis

(ELIGIBLE: All respondents)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Hepatitis C						
No	1078 (98.7)	649 (98.8)	429 (98.6)	485 (98.8)	223 (98.2)	262 (99.2)
Yes, in the last six months	7 (0.6)	2 (0.3)	5 (1.1)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	7 (0.6)	6 (0.9)	1 (0.2)	5 (1.0)	4 (1.8)	1 (0.4)
(n)	**1092**	**657**	**435**	**491**	**227**	**264**
Missing	13 (1.2)	11 (1.6)	2 (0.5)	6 (1.2)	4 (1.7)	2 (0.8)
Total	1105	668	437	497	231	266
Hepatitis B						
No	1067 (97.4)	642 (97.3)	425 (97.7)	486 (99.0)	224 (98.7)	262 (99.2)
Yes, in the last six months	7 (0.6)	3 (0.5)	4 (0.9)	2 (0.4)	0 (0.0)	2 (0.8)
Yes, over six months ago	21 (1.9)	15 (2.3)	6 (1.4)	3 (0.6)	3 (1.3)	0 (0.0)
(n)	**1095**	**660**	**435**	**491**	**227**	**264**
Missing	10 (0.9)	8 (1.2)	2 (0.5)	6 (1.2)	4 (1.7)	2 (0.8)
Total	1105	668	437	497	231	266
Syphilis						
No	1084 (98.8)	652 (98.6)	432 (99.1)	486 (98.8)	225 (98.7)	261 (98.9)
Yes, in the last six months	5 (0.5)	3 (0.5)	2 (0.5)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	8 (0.7)	6 (0.9)	2 (0.5)	5 (1.0)	3 (1.3)	2 (0.8)
(n)	**1097**	**661**	**436**	**492**	**228**	**264**
Missing	8 (0.7)	7 (1.0)	1 (0.2)	5 (1.0)	3 (1.3)	2 (0.8)
Total	1105	668	437	497	231	266
Gonorrhea						
No	1077 (98.3) ***	648 (98.2)	429 (98.4)	467 (95.1)	215 (94.3)	252 (95.8)
Yes, in the last six months	4 (0.4)	2 (0.3)	2 (0.5)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	15 (1.4)	10 (1.5)	5 (1.1)	23 (4.7)	13 (5.7)	10 (3.8)
(n)	**1096**	**660**	**436**	**491**	**228**	**263**
Missing	9 (0.8)	8 (1.2)	1 (0.2)	6 (1.2)	3 (1.3)	3 (1.1)
Total	1105	668	437	497	231	266

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Genital or anal warts						
No	1088 (99.2) *	657 (99.4)	431 (98.9)	484 (98.4)	222 (97.4)	262 (99.2)
Yes, in the last six months	5 (0.5)	1 (0.2)	4 (0.9)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	4 (0.4)	3 (0.5)	1 (0.2)	7 (1.4)	6 (2.6)	1 (0.4)
(n)	**1097**	**661**	**436**	**492**	**228**	**264**
Missing	8 (0.7)	7 (1.0)	1 (0.2)	5 (1.0)	3 (1.3)	2 (0.8)
Total	1105	668	437	497	231	266
Chlamydia trachomatis infection						
No	1065 (97.2) ***	645 (97.7)	420 (96.3)	444 (90.4)	214 (93.9)	230 (87.5)
Yes, in the last six months	8 (0.7)	4 (0.6)	4 (0.9)	4 (0.8)	1 (0.4)	3 (1.1)
Yes, over six months ago	23 (2.1)	11 (1.7)	12 (2.8)	43 (8.8)	13 (5.7)	30 (11.4)
(n)	**1096**	**660**	**436**	**491**	**228**	**263**
Missing	9 (0.8)	8 (1.2)	1 (0.2)	6 (1.2)	3 (1.3)	3 (1.1)
Total	1105	668	437	497	231	266
Genital herpes						
No	1084 (98.9)	654 (99.1)	430 (98.6)	483 (98.4)	223 (98.2)	260 (98.5)
Yes, in the last six months	4 (0.4)	2 (0.3)	2 (0.5)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	8 (0.7)	4 (0.6)	4 (0.9)	7 (1.4)	4 (1.8)	3 (1.1)
(n)	**1096**	**660**	**436**	**491**	**227**	**264**
Missing	9 (0.8)	8 (1.2)	1 (0.2)	6 (1.2)	4 (1.7)	2 (1.2)
Total	1105	668	437	497	231	266
Human papilloma virus						
No	1088 (99.3)	657 (99.4)	431 (99.1)	485 (98.6)	225 (98.7)	260 (98.5)
Yes, in the last six months	3 (0.3)	1 (0.2)	2 (0.5)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	5 (0.5)	3 (0.5)	2 (0.5)	6 (1.2)	3 (1.3)	3 (1.1)
(n)	**1096**	**661**	**435**	**492**	**228**	**264**
Missing	9 (0.8)	7 (1.0)	2 (0.5)	5 (1.0)	3 (1.3)	2 (0.8)
Total	1105	668	437	497	231	266
Lymphogranuloma venereum (LGV)						
No	1090 (99.5)	656 (99.4)	434 (99.5)	487 (99.0)	225 (98.7)	262 (99.2)
Yes, in the last six months	2 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)	0 (0.0)	1 (0.4)
Yes, over six months ago	4 (0.4)	3 (0.5)	1 (0.2)	4 (0.8)	3 (1.3)	1 (0.4)
(n)	**1096**	**660**	**436**	**492**	**228**	**264**
Missing	9 (0.8)	8 (1.2)	1 (0.2)	5 (1.0)	3 (1.3)	2 (0.8)
Total	1105	668	437	497	231	266
Tuberculosis						
No	1069 (97.6)	644 (97.6)	425 (97.7)	483 (98.4)	222 (98.2)	261 (98.5)
Yes, in the last six months	6 (0.5)	3 (0.5)	3 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)
Yes, over six months ago	20 (1.8)	13 (2.0)	7 (1.6)	8 (1.6)	4 (1.8)	4 (1.5)
(n)	**1095**	**660**	**435**	**491**	**226**	**265**
Missing	10 (0.9)	8 (1.2)	2 (0.5)	6 (1.2)	5 (2.2)	1 (0.4)
Total	1105	668	437	497	231	266

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

3.6. HIV prevalence in the SGS-AFCAR survey

Of the 1,602 participants recruited, 96.5% (1,546/1,602) provided DBS samples for biological analysis, and only one sample was insufficient for HIV testing (Table 43).

Overall, HIV prevalence among participants in the survey who provided an adequate biological sample for laboratory tests was **1.4% (95% CI: 0.9–2.1%), for a total of 22 HIV-positive samples.**
For participants recruited from the **Sub-Saharan African community**, HIV prevalence was **1.7% (95% CI: 1.1–2.6%), for a total of 18 HIV-positive tests.** HIV prevalence rates by sex were as follows:

- In men: **1.2% (95% CI: 0.6–2.4%), for a total of 8 HIV-positive tests.**
- In women: **2.4% (95% CI: 1.2–4.2%), for a total of 10 HIV-positive tests.**
- Just over a third of HIV-positive participants **(38.9%, or 7/18)** were aware of their HIV status (Table 43).

For participants recruited from the **English-speaking Caribbean community**, prevalence was **0.8% (95% CI: 0.3–2.1%), for a total of 4 HIV-positive tests.** HIV prevalence rates by sex were as follows:

- In men: **0.9% (95% CI: 0.2–3.2%), for a total of 2 HIV-positive tests.**
- In women: **0.8% (95% CI: 0.2–2.8%), for a total of 2 HIV-positive tests.**
- There were no self-reported HIV-positive participants (Table 43).

Table 43: HIV seroprevalence and awareness of HIV status

(ELIGIBLE WITH RESPECT TO SEROPREVALENCE: Respondents who provided an adequate biological sample for a laboratory test)
(ELIGIBLE WITH RESPECT TO KNOWLEDGE OF STATUS: Respondents who provided an adequate biological sample for a laboratory test and indicated their HIV status)

	Total SGS-AFCAR	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
		Total	Men	Women	Total	Men	Women
HIV seroprevalence[a]							
Seropositivity	**22 (1.4)**	**18 (1.7)**	**8 (1.2)**	**10 (2.4)**	**4 (0.8)**	**2 (0.9)**	**2 (0.8)**
(95% CI)	**(0.9-2.1)**	**(1.1-2.6)**	**(0.6-2.4)**	**(1.2-4.2)**	**(0.3-2.1)**	**(0.2-3.2)**	**(0.2-2.8)**
Seronegativity	1523 (98.6)	1055 (98.3)	642 (98.8)	413 (97.6)	468 (99.2)	215 (99.1)	253 (99.2)
(n)	**1545**	**1073**	**650**	**423**	**472**	**217**	**255**
No DBS	56 (3.5)	31 (2.8)	18 (2.7)	13 (3.0)	25 (5.0)	14 (6.1)	11 (4.1)
Insufficient quantity	1 (0.1)	1 (0.1)	0 (0.0)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
Total	1602	1105	668	437	497	231	266
Awareness of positive HIV status[b]							
Knew	**7 (31.8)**	**7 (38.9)**	**2 (25.0)**	**5 (50.0)**	**0 (0.0)**	**0 (0.0)**	**0 (0.0)**
Didn't know	**15 (68.2)**	**11 (61.1)**	**6 (75.0)**	**5 (50.0)**	**4 (100.0)**	**2 (100.0)**	**2 (100.0)**
(n)	**22**	**18**	**8**	**10**	**4**	**2**	**2**

[a] A positive result indicated current HIV infection (based on DBS test results).
[B] Respondents who had positive DBS (biological sample) lab test results and reported that their most recent test was positive were included in the "Knew" their HIV status category. Respondents who had never undergone testing or had not received the results of their most recent test, and respondents who did not know the result of their latest test or reported that their latest test was negative, but had positive DBS (biological sample) test results were included in the "Didn't know" category.

For Sub-Saharan Africa, the distribution of percentages of HIV-positive tests (n=18) (Figure 10) and HIV prevalence based on geographic area of birth was as follows

- **Central Africa** (n=427): **44.4% (8/18)** of HIV-positive tests; HIV prevalence: **1.9% (95% CI: 0.8–3.6)**
- **West Africa** (n=398): **22.2% (4/18)** of HIV-positive tests; HIV prevalence: **1.0% (95% CI: 0.4–2.6)**
- **East Africa** (n=222): **22.2% (4/18)** of HIV-positive tests; HIV prevalence: **1.9% (95% CI: 0.7–4.6)**
- **Southern Africa** (n=26): **11.1% (2/18)** of HIV-positive tests; HIV prevalence: **7.7% (95% CI: 2.1–24.1)**

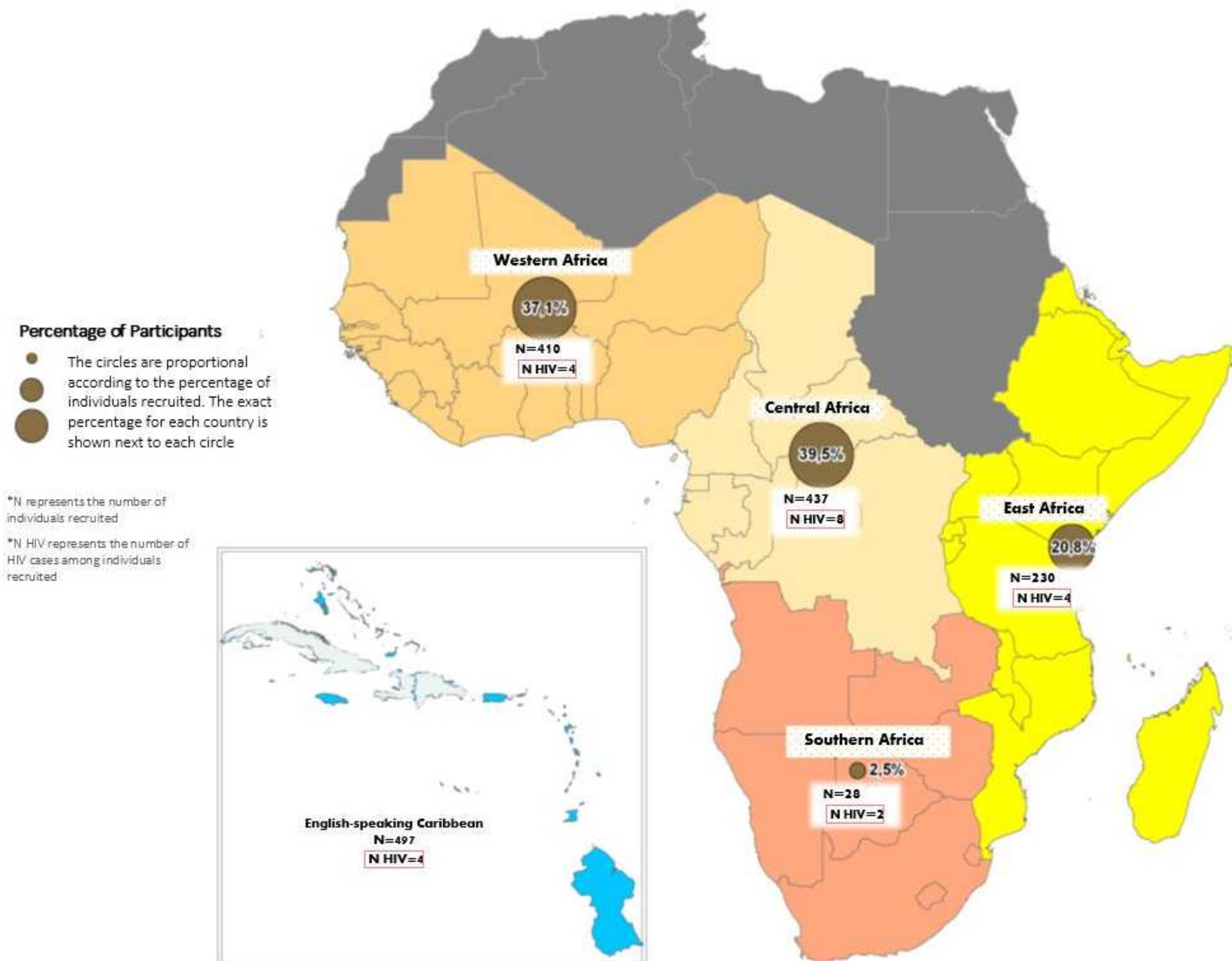


Figure 10: Distribution of the number of HIV-positive cases by geographical area of birth

The majority of HIV-positive test results were among the 40–49 age group (34.9%, or 12/22), followed by the 30–39 age group (31.8%, or 7/22). All HIV-positive women were in these two age groups.
Age was significantly associated with HIV (OR=1.10; 95% CI: 1.05–1.16; p<0.0001). Compared to the 15–29 reference age group, the 40–49 age group was most at risk for HIV (Figure 11).

In the two target communities, single women accounted for 58.3% (7/12) of HIV-positive tests.

Sub-Saharan Africa **English-Speaking Caribbean**

Figure 11: Percentage of HIV-positive test results by sex, age group and marital status

3.7. Seroprevalence of HCV infection

Among SGS-AFCAR survey participants who provided adequate biological samples for laboratory tests, prevalence of HCV infection was **0.5% (95% CI: 0.2–1.01), for a total of 8 positive HCV tests** (Table 44).

For participants recruited from the **Sub-Saharan African community**, HCV prevalence was **0.6% (95% CI: 0.2–1.2), for a total of 6 positive HCV tests,** including 4 in women (Table 44).

For participants recruited from the **English-speaking Caribbean community**, prevalence was **0.4% (95% CI: 0.1–1.5), for a total of 2 positive HCV tests.**

One case of HIV and HCV coinfection was identified in a Sub-Saharan African woman.

Table 44: HCV seroprevalence, HIV and HCV coinfection

(ELIGIBLE: Respondents who provided adequate biological samples for testing)

	Total SGS-AFCAR	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
		Total	Men	Women	Total	Men	Women
HCV seroprevalence[a]							
Seropositivity[a]	**8 (0.5)**	**6 (0.6)**	**2 (0.3)**	**4 (0.9)**	**2 (0.4)**	**1 (0.5)**	**1 (0.4)**
(95% CI)	**(0.2-1.01)**	**(0.2-1.2)**	**(0.08-1.1)**	**(0.3-2.4)**	**(0.1-1.5)**	**(0.08-2.5)**	**(0.06-2.1)**
Seronegativity	1538 (99.5)	1068 (99.4)	648 (99.7)	420 (99.1)	470 (99.6)	216 (99.5)	254 (99.6)
(n)	**1545**	**1073**	**650**	**423**	**472**	**217**	**255**
No DBS	56 (3.5)	31 (2.8)	18 (2.7)	13 (3.0)	25 (5.0)	14 (6.1)	11 (4.1)
Insufficient quantity	1 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1602	1105	668	437	497	231	266
HIV and HCV coinfection							
Yes	**1 (12.5)**	1 (**16.7)**	0 (0.0)	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)
(n)	**8**	**6**	**2**	**4**	**2**	**1**	**1**

[a] A positive result indicates past or present HCV infection and does not distinguish acute from chronic or resolved infections.

3.8. Sources of information, knowledge and beliefs about HIV infection

Participants tended to get information on HIV/AIDS from the mass media (television, newspapers, radio, etc.) rather than the medical and public health community (Table 45).

Table 45: Sources of information on HIV/AIDS

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	Men	Women	Total	Men	Women
Television	802 (73.2) ***	494 (74.8)	308 (70.6)	320 (64.5)	154 (67.0)	166 (62.4)
Newspapers	579 (52.8) ***	360 (54.5)	219 (50.2)	202 (40.7)	99 (43.0)	103 (38.7)
Radio	527 (51.9) ***	357 (54.1)	212 (48.6)	192 (38.7)	97 (42.2)	95 (35.7)
Friends	565 (51.6) *	357 (54.1) *	208 (47.7)	226 (45.6)	111 (48.3)	115 (43.2)
School	520 (47.4) ***	309 (46.8)	211 (48.4)	156 (31.5)	76 (33.0)	80 (30.1)
Social media	480 (43.8)	300 (45.5)	180 (41.3)	205 (41.3)	95 (41.3)	110 (41.4)
Advertising	466 (42.5) ***	281 (42.6)	185 (42.4)	137 (27.6)	61 (26.5)	76 (28.6)
Family	463 (42.2)	282 (42.7)	181 (41.5)	196 (39.5)	101 (43.9)	95 (35.7)
Website	457 (41.7) *	276 (41.8)	181 (41.5)	178 (35.9)	81 (35.2)	97 (36.5)
Doctors/Other health professionals	439 (40.1)	251 (38.0)	188 (43.1)	141 (28.4)	56 (24.3)	85 (32.0)
Clinic/Hospital/CLSC	344 (31.4) ***	210 (31.8)	134 (30.7)	104 (21.0)	46 (20.0)	58 (21.8)
Work	325 (29.7) ***	203 (30.8)	122 (28.0)	95 (19.2)	42 (18.3)	53 (19.9)
Conference/Seminars	243 (22.2) ***	158 (23.9)	85 (19.5)	43 (8.7)	19 (8.3)	24 (9.0)
Local or provincial public health services	210 (19.2) ***	136 (20.6)	74 (17.0)	43 (8.7)	20 (8.7)	23 (8.6)
Community organizations	200 (18.2) ***	128 (19.4)	72 (16.5)	43 (8.7)	19 (8.3)	24 (9.0)
Churches	190 (17.3) **	111 (16.8)	79 (18.1)	54 (10.9)	27 (11.7)	27 (10.2)
Public Health Agency of Canada	147 (13.4)	96 (14.5)	51 (11.7)	54 (10.9)	27 (11.7)	27 (10.2)
No information	38 (3.5)	21 (3.2)	17 (3.9)	24 (4.8)	11 (4.8)	13 (4.9)

* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Most participants correctly answered questions on HIV prevention and transmission. Participants from Sub-Saharan Africa had a higher level of knowledge about HIV transmission modes than people from English-speaking Caribbeans (Table 46 and Figure 12).

However, 31.1% (496/1,595) of participants (25.0% of Sub-Saharan Africans vs. 44.6% of English-speaking Caribbeans) answered incorrectly or did not know the answer to the question on the risk of HIV infection from mosquito bites. The same applied to 17.7% (282/1,596) of participants (10.4% of Sub-Saharan Africans vs. 33.9% of English-speaking Caribbeans) for the question on risk of HIV infection by sharing a meal with an infected person. While almost all respondents understood that people with HIV could appear healthy, 6% (96/1,596) (5.1% of Sub-Saharan Africans vs. 8.1% of English-speaking Caribbeans) did not answer the question or did not know the answer (Table 46).

Table 46: Knowledge and beliefs about HIV

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Having sex with one faithful, uninfected partner can reduce the risk of HIV transmission						
Yes[a]	**957 (87.0)** ***	**584 (88.0)**	**373 (85.6)**	**375 (75.6)**	**171 (74.3)** **	**204 (76.7)**
No	105 (9.5)	64 (9.6)	41 (9.4)	90 (18.1)	36 (15.7)	54 (20.3)
Don't know	38 (3.5)	16 (2.4)	22 (5.0)	31 (6.3)	23 (10.0)	8 (3.0)
(n)	**1100**	**664**	**436**	**496**	**230**	**266**
Missing	5 (0.5)	4 (0.6)	1 (0.2)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1105	668	437	497	231	266
Condom use reduces the risk of HIV transmission						
Yes[a]	**1001 (91.2)** ***	**623 (94.1)** ***	**378 (86.9)**	**416 (83.9)**	**191 (83.0)**	**225 (84.6)**
No	66 (6.0)	25 (3.8)	41 (9.4)	56 (11.3)	23 (10.0)	33 (12.4)
Don't know	30 (2.7)	14 (2.1)	16 (3.7)	24 (4.8)	16 (7.0)	8 (3.0)
(n)	**1097**	**662**	**435**	**496**	**230**	**266**
Missing	8 (0.7)	6 (0.9)	2 (0.5)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1105	668	437	497	231	266
A person who looks healthy can have HIV						
Yes[a]	**1044 (94.9)** *	**632 (95.2)**	**412 (94.5)**	**456 (91.9)**	**210 (91.3)**	**246 (92.5)**
No	37 (3.4)	21 (3.2)	16 (3.7)	31 (6.3)	13 (5.7)	18 (6.8)
Don't know	19 (1.7)	11 (1.7)	8 (1.8)	9 (1.8)	7 (3.0)	2 (0.8)
(n)	**1100**	**664**	**436**	**496**	**230**	**266**
Missing	5 (0.5)	4 (0.6)	1 (0.2)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1105	668	437	497	231	266

	Sub-Saharan Africa n=1105 n (%)			English-Speaking Caribbean n=497 n (%)		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
A person can become infected with HIV from mosquito bites						
Yes	156 (14.2) ***	99 (14.9)	57 (13.1)	124 (25.1)	70 (30.6)*	54 (20.3)
No[a]	**825 (75.0)**	**500 (75.3)**	**325 (74.5)**	**274 (55.4)**	**113 (49.3)**	**161 (60.5)**
Don't know[b]	119 (10.8)	65 (9.8)	54 (12.4)	97 (19.6)	46 (20.1)	51 (19.2)
(n)	**1100**	**664**	**436**	**495**	**229**	**266**
Missing	5 (0.5)	4 (0.6)	1 (0.2)	2 (0.4)	2 (0.9)	0 (0.0)
Total	1105	668	437	497	231	266
A person can become infected with HIV by sharing a meal with someone who is infected						
Yes	60 (5.5) ***	45 (6.8)	15 (3.4)	112 (22.6)	48 (20.9)	64 (24.1)
No[a]	**986 (89.6)**	**585 (88.1)**	**401 (92.0)**	**328 (66.1)**	**153 (66.5)**	**175 (65.8)**
Don't know[b]	54 (4.9)	34 (5.1)	20 (4.6)	56 (11.3)	29 (12.6)	27 (10.2)
(n)	**1100**	**664**	**436**	**496**	**230**	**266**
Missing	5 (0.5)	4 (0.6)	1 (0.2)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1105	668	437	497	231	266
Currently there is a cure for HIV, meaning a treatment that can completely eliminate it						
Yes	47 (4.3) ***	30 (4.5)	17 (3.9)	61 (12.3)	36 (15.7) **	25 (9.4)
No[a]	**943 (85.7)**	**572 (86.1)**	**371 (85.1)**	**350 (70.6)**	**145 (63.0)**	**205 (77.1)**
Don't know[b]	110 (10.0)	62 (9.3)	48 (11.0)	85 (17.1)	49 (21.3)	36 (13.5)
(n)	**1100**	**664**	**436**	**496**	**230**	**266**
Missing	5 (0.5)	4 (0.6)	1 (0.2)	1 (0.2)	1 (0.4)	0 (0.0)
Total	1105	668	437	497	231	266

[a]:Correct answers
[b] The answer "Don't know" (DK) was recorded as an incorrect answer.
* $p<0.05$ ** $p<0.01$ *** $p<0.001$

Distribution of knowledge and assumptions regarding HIV transmission, by age group and highest level of education in both communities, are presented in Figures 12 and 13.

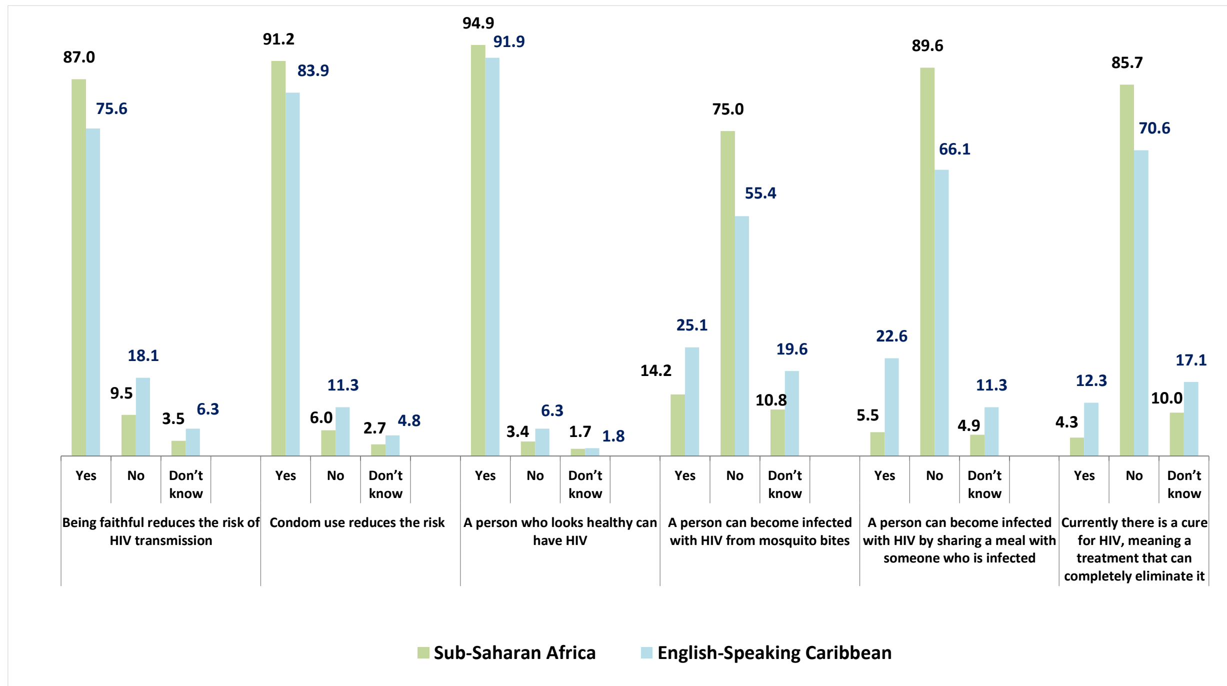


Figure 12: Percentage of knowledge and assumptions about HIV transmission in both communities

Figure 13: Percentage of knowledge and assumptions about HIV transmission in both communities, by age group

Level of education appears to correlate with level of knowledge about modes of HIV transmission. This highlights knowledge gaps that must be addressed, taking into account the social and cultural diversity of the target populations (Figure 14).

Figure 14: Percentage of knowledge and assumptions regarding HIV transmission in both communities, by highest level of education

3.9. Access to and use of health systems and services

In total, 60.7% (963/1,587) of participants recruited in the two communities did not have a family doctor, i.e. 67.1% of Sub-Saharan Africans vs. 46.5% of English-speaking Caribbeans (p<0.0001). However, women in both communities had greater access to a family doctor than men did (p<0.0001).

There was a discrepancy in results regarding the question about accessing needle exchange or harm reduction service locations. Participants may have misunderstood the question. However, it seems that some people go to those sites to get condoms. Particular attention will be paid to this question in future next second generation HIV surveillance surveys (Table 47).

Table 47: Type of access to health care systems

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n (%) N=1105			English-Speaking Caribbean n (%) N=497		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Do you have a family doctor or primary health care provider?						
Yes	360 (32.9) ***	180 (27.3) ***	180 (41.5)	264 (53.5)	102 (44.3) ***	162 (61.6)
No	734 (67.1)	480 (72.7)	254 (58.5)	229 (46.5)	128 (55.7)	101 (38.4)
(n)	**1094**	**660**	**434**	**493**	**230**	**263**
Missing	11 (1.0)	8 (1.2)	3 (0.7)	4 (0.8)	1 (0.4)	3 (1.1)
Total	1105	668	437	497	231	266
Medical care or consultations in the last 12 months						
Yes	743 (67.4)	404 (60.8) ***	339 (77.6)	323 (65.5)	128 (55.7) ***	195 (74.1)
No	359 (32.6)	261 (39.2)	98 (22.4)	170 (34.5)	102 (44.3)	68 (25.9)
(n)	**1102**	**665**	**437**	**493**	**230**	**263**
Missing	3 (0.3)	3 (0.4)	0 (0.0)	4 (0.8)	1 (0.4)	3 (1.1)
Total	1105	668	437	497	231	266
Location of consultations in the last 12 months						
Family doctor or care provider	223 (30.2) ***	113 (28.3)	110 (32.5)	155 (48.4)	48 (37.8) **	107 (55.4)
Hospital	414 (55.9)	212 (52.7)	202 (59.8)	178 (55.6)	79 (62.2)	99 (51.3)
Medical clinic or walk-in clinic	377 (51.1)	197 (49.3)	180 (53.3)	157 (49.1)	56 (44.1)	101 (52.3)
CLSC	247 (33.5)	107 (26.7) ***	140 (41.5)	123 (38.6)	50 (39.4)	73 (38.0)
Community organization	34 (4.6)	16 (4.0)	18 (5.3)	13 (4.1)	7 (5.5)	6 (3.1)
Alternative or traditional medicine	14 (1.9)	6 (1.5)	8 (2.4)	2 (0.6)	1 (0.8)	1 (0.5)
Needle exchange or harm reduction program	139 (18.8)	71 (17.7)	68 (20.1)	45 (14.0)	17 (13.4)	28 (14.4)
Detox centre	2 (0.3)	2 (0.5)	0 (0.0)	2 (0.6)	1 (0.8)	1 (0.5)
Mental health or addiction treatment centre	7 (0.9)	4 (1.0)	3 (0.9)	7 (2.2)	4 (3.1)	3 (1.5)
Sexual health centre or facility	3 (0.4)	3 (0.7)	0 (0.0)	1 (0.3)	0 (0.0)	1 (0.5)
Prison/Corrections system	3 (0.4) *	3 (0.7)	0 (0.0)	5 (1.6)	3 (2.4)	2 (1.0)
Other	3 (0.4)	3 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

* p<0.05 ** p<0.01 *** p<0.001

In all, 66.8% (1,066/1,595) of survey participants had received medical treatment or consulted a health professional in the last 12 months; more women than men in both communities were in this group (p<0.0001) (Table 48). Of those requiring medical care in the previous 12 months, 15.1% (223/1,473) reported having difficulty accessing necessary health care services during this period (15.7% of Sub-Saharan Africans and 10.1% of English-speaking Caribbeans). The main difficulties encountered are presented in Table 48.

Table 48: Lack of access to health care systems

(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n (%) N=1105			English-Speaking Caribbean n (%) N=497		
	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Have you had difficulties accessing the health care you needed in the last 12 months?						
Yes	173 (15.7) *	87 (13.1) **	86 (19.7)	50 (10.1)	23 (10.0)	27 (10.2)
No	842 (76.5)	515 (77.7)	327 (74.8)	408 (82.4)	189 (82.2)	219 (82.4)
No need	85 (7.7)	61 (9.2)	24 (5.5)	37 (7.5)	18 (7.8)	19 (7.2)
(n)	**1100**	**663**	**437**	**495**	**230**	**265**
Missing	5 (0.5)	5 (0.7)	0 (0.0)	2 (0.4)	1 (0.4)	1 (0.4)
Total	1105	668	437	497	231	266
Type of difficulties encountered						
Long wait times	120 (69.4) *	57 (65.5)	63 (73.3)	25 (50.0)	11 (47.8)	14 (51.9)
Difficulty getting an appointment, diagnosis or referral	86 (49.7)	37 (42.5)	49 (57.0)	19 (38.0)	5 (21.7) *	14 (51.9)
Service not covered by insurance, lack of financial means	31 (17.9)	17 (19.5)	14 (16.3)	12 (24.0)	4 (17.4)	8 (29.6)
No health care provider available in the area	15 (8.7) *	6 (6.6)	9 (10.5)	10 (20.0)	2 (8.7)	8 (29.6)
Don't know how to find health care	11 (6.4)	4 (4.6)	7 (8.1)	5 (10.0)	2 (8.7)	3 (11.1)
Specific service not available in the area	10 (5.8)	6 (6.9)	4 (4.7)	7 (14.0)	2 (8.7)	5 (18.5)
Transportation problem	4 (2.3)	4 (4.6) *	0 (0.0)	2 (4.0)	1 (4.3)	1 (3.7)
Inability to leave home because of a health problem	4 (2.3)	2 (2.3)	2 (2.3)	1 (2.0)	1 (4.3)	0 (0.0)
No health insurance card	4 (2.3)	2 (2.3)	2 (2.3)	1 (2.0)	1 (4.3)	0 (0.0)
Personal or family responsibilities preventing access to health care	3 (1.7)	2 (2.3)	1 (1.2)	3 (6.0)	0 (0.0)	3 (11.1)
Health care provider racist ornot culturally sensitive	3 (1.7) **	2 (2.3)	1 (1.2)	6 (12.0)	2 (8.7)	4 (14.8)
Health care provider of the opposite sex	2 (1.2)	0 (0.0)	2 (2.3)	1 (2.0)	0 (0.0)	1 (3.7)
Language barrier	1 (0.6)	1 (1.1)	0 (0.0)	2 (4.0)	0 (0.0)	2 (7.4)
Other	13 (7.5)	7 (8.0)	6 (7.0)	4 (8.0)	3 (13.0)	1 (3.7)

* p<0.05 ** p<0.01 *** p<0.001

Table 49: History of immunization against diseases and TB testing
(ELIGIBLE: All respondents surveyed)

	Sub-Saharan Africa n (%) N=1105			English-Speaking Caribbean n (%) N=497		
	Total	Men	Women	Total	Men	Women
Hepatitis B immunization						
No	414 (43.8) ***	276 (49.1) ***	138 (35.9)	252 (57.7)	126 (63.6)	126 (52.7)
Yes, in the last six months	68 (7.2)	31 (5.5)	37 (9.6)	24 (5.5)	9 (4.5)	15 (6.3)
Yes, over six months ago	464 (49.0)	255 (45.4)	209 (54.4)	161 (36.8)	63 (31.8)	98 (41.0)
(n)	**946**	**562**	**384**	**437**	**198**	**239**
Missing	156 (14.4)	106 (15.9)	53 (12.1)	60 (12.1)	33 (14.3)	27 (10.2)
Total	1105	668	437	497	231	266
Immunization against human papillomavirus						
No	835 (87.6)	541 (92.5) ***	294 (79.9)	376 (85.3)	181 (90.5) *	195 (80.9)
Yes, in the last six months	20 (2.1)	6 (1.0)	14 (3.8)	10 (2.3)	3 (1.5)	7 (2.9)
Yes, over six months ago	98 (10.3)	38 (6.5)	60 (16.3)	55 (12.5)	16 (8.0)	39 (16.2)
(n)	**953**	**585**	**368**	**441**	**200**	**241**
Missing	152 (13.8)	83 (12.4)	69 (15.8)	56 (11.3)	31 (13.4)	25 (9.4)
Total	1105	668	437	497	231	266
Have you been tested for tuberculosis?						
No	534 (52.2) ***	326 (52.6)	208 (51.6)	327 (72.0)	169 (80.9) ***	158 (64.5)
Yes	489 (47.8)	294 (47.4)	195 (48.4)	127 (28.0)	40 (19.1)	87 (35.5)
(n)	**1023**	**620**	**403**	**454**	**209**	**245**
Missing	82 (7.4)	48 (7.2)	34 (7.8)	43 (8.7)	22 (9.5)	21 (7.9)
Total	1105	668	437	497	231	266

* p<0.05 ** p<0.01 *** p<0.001

3.10. HIV prevalence based on certain characteristics and behaviours

Table 50: HIV prevalence based on certain characteristics and behaviours

(ELIGIBLE: Respondents who provided an adequate biological sample for a laboratory test)

	Sub-Saharan Africa						English-Speaking Caribbean					
	Total n=1073		Men n=650		Women n=423		Total n=472		Men n=217		Women n=255	
	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])
HIV (positive)	1073	18 (1.7 [1.1-2.6])	650	8 (1.2 [0.6-2.4])	423	10 (2.4 [1.2-4.2])	472	4 (0.8 [0.3-2.1])	217	2 (0.9 [0.2-3.2])	255	2 (0.8 [0.2-2.8])
Sexual orientation												
Heterosexual	1048 (97.7)	18 (1.7 [1.1-2.6])	634 (97.5)	8 (1.2 [0.6-2.4])	414 (97.9)	10 (2.4 [1.3-4.3])	450 (95.3)	4 (0.9 [0.3-2.2])	212 (97.7)	2 (0.9 [0.2-3.2])	238 (93.3)	2 (0.8 [0.2-3.01])
Other	25 (2.3)	0	16 (2.5)	0	9 (2.1)	0	22 (4.7)	0	5 (2.3)	0	17 (6.7)	0
Age in years		**				***		**				*
Average (±STD)	30.4 (9.1)	37.5 (9.5)	31.09 (9.2)	32.8 (11.8)	29.4 (8.9)	41.2 (5.3)	31.3 (10.2)	44.7 (4.7)	30.9 (10.6)	41.5 (4.9)	31.5 (9.9)	48 (0.0)
(min-max)	(15-49)	(19-49)	(15-49)	(19-47)	(15-49)	(33-49)	(15-49)	(38-48)	(15-49)	(38-45)	(15-49)	(48)
Age group		**				***						
15–19 years	178 (16.6)	2 (1.1 [0.3-4.0])	106 (16.3)	2 (1.9 [0.5-6.6])	72 (17.0)	0	85 (18.0)	0	42 (19.4)	0	43 (16.9)	0
20–29 years	308 (28.7)	1 (0.3 [0.05-1.8])	161 (24.8)	1 (0.6 [0.1-3.4])	147 (34.8)	0	116 (24.6)	0	57 (26.3)	0	59 (23.1)	0
30–39 years	399 (37.2)	6 (1.5 [0.7-3.2])	258 (39.7)	2 (0.7 [0.2-2.7])	141 (33.3)	4 (2.8 [1.1-7.06])	148 (31.4)	1 (0.7 [0.1-3.8])	65 (30.0)	1 (1.5 [0.2-8.2])	83 (32.5)	0
40–49 years	188 (17.5)	9 (4.7 [2.5-8.8])	125 (19.2)	3 (2.4 [0.8-6.8])	63 (14.9)	6 (9.5 [4.4-19.2])	123 (26.1)	3 (2.4 [0.8-7.2])	53 (24.4)	1 (1.9 [0.3-9.9])	70 (27.5)	2 (2.8 [0.7-9.8])
Region												
Central Africa	427 (39.8)	8 (1.9 [0.8-3.6])	261 (40.2)	2 (0.8 [0.2-2.7])	166 (39.2)	6 (3.6 [1.6-7.6])	—	—	—	—	—	—
West Africa	398 (37.1)	4 (1.04 [0.4-2.6])	246 (37.8)	3 (1.2 [0.4-3.5])	152 (35.9)	1 (0.7 [0.1-3.6])	—	—	—	—	—	—
East Africa	222 (20.7)	4 (1.9 [0.7-4.6])	126 (19.4)	2 (1.6 [0.4-5.6])	96 (22.7)	2 (2.1 [0.5-7.2])	—	—	—	—	—	—
Southern Africa	26 (2.4)	2 (7.7 [2.1-24.1])	17 (2.6)	1 (5.9 [1.04-26.9])	9 (2.1)	1 (11.1 [1.9-43.5])	—	—	—	—	—	—
Level of education												
≤ High school education	322 (30.1)	6 (1.9 [0.8-4.1])	175 (27.1)	2 (1.1 [0.3-4.0])	147 (34.8)	4 (2.7 [1.06-6.7])	294 (62.4)	2 (0.7 [0.1-2.5])	154 (71.0)	1 (0.6 [0.1-3.5])	140 (55.1)	1 (0.7 [0.1-3.9])
> High school education	746 (69.9)	12 (1.6 [0.9-2.8])	470 (72.9)	6 (1.3 [0.5-2.7])	276 (65.2)	6 (2.2 [1-4.6])	177 (37.6)	2 (1.1 [0.3-4.2])	63 (29.0)	1 (1.6 [0.2-8.4])	114 (44.9)	1 (0.9 [0.1-4.8])
Annual family income							*					
<$15,000	514 (47.9)	9 (1.7 [0.9-3.3])	308 (47.4)	6 (1.9 [0.8-4.1])	206 (48.7)	4 (1.9 [0.7-4.8])	173 (36.6)	0	85 (39.2)	0	88 (34.5)	0
≥$15,000	452 (42.1)	9 (2.0 [1.06-3.7])	285 (43.8)	3 (1.1 [0.3-3.04])	167 (39.5)	6 (3.6 [1.6-7.6]	184 (39.0)	4 (2.2 [0.8-5.6])	78 (35.9)	2 (2.6 [0.7-8.8])	106 (41.6)	2 (1.9 [0.5-6.6])
Not reported	107 (10.0)	0	57 (8.8)	0	50 (11.8)	0	115 (24.4)	0	54 (24.9)	0	61 (23.9)	0
Residency status					*							
Citizen/Permanent resident	910 (84.8)	14 (1.5 [0.9-2.6])	546 (84.0)	6 (1.1 [0.5-2.3])	364 (86.1)	8 (2.2 [1.1-4.2])	428 (91.6)	4 (0.9 [0.3-2.3])	195 (90.3)	2 (1.0 [0.2-3.6])	233 (92.8)	2 (0.9 [0.2-3.07])
Visa/Work permit	100 (9.3)	1 (1.0 [0.1-5.5])	59 (9.1)	1 (1.7 [0.2-8.9])	41 (9.7)	0	12 (2.6)	0	6 (2.8)	0	6 (2.4)	0
Refugee/Other	63 (5.9)	3 (4.8 [1.8-14.6])	45 (6.9)	1 (2.2 [0.3-11.5])	18 (4.3)	2 (11.1 [3.1-32.8])	27 (5.8)	0	15 (6.9)	0	12 (4.8)	0
Immigration date												
<1990	18 (1.7)	1 (5.6 [0.9-25.7])	12 (1.9)	0	6 (1.4)	1 (16.7 [3.0-56.3])	107 (23.0)	1 (1.0 [0.1-5.2])	60 (27.8)	1 (1.7 [0.2-8.8])	47 (18.7)	0
1990–1999	125 (11.7)	3 (2.4 [0.8-6.8])	64 (9.9)	1 (1.6 [0.2-8.3])	61 (14.5)	2 (3.3 [0.9-11.2])	123 (26.3)	0	51 (23.6)	0	72 (28.7)	0
≥2000	927 (86.6)	14 (1.5 [0.9-2.5])	572 (88.3)	7 (1.2 [0.6-2.5])	355 (84.1)	7 (2.0 [0.9-4.0])	237 (50.7)	3 (1.3 [0.4-3.8])	105 (48.6)	1 (1.0 [0.1-5.1])	132 (52.6)	2 (1.5 [0.4-5.3])
Marital status												
Single	551 (51.5)	8 (1.5 [0.7-2.9])	343 (53.0)	3 (0.9 [0.2-2.5])	208 (49.3)	5 (2.4 [1.03-5.5])	281 (59.7)	3 (1.1 [0.3-3.2])	126 (58.1)	1 (0.8 [0.1-4.3])	155 (61.0)	2 (1.3 [0.3-4.5])
Living together as a couple	358 (33.5)	9 (2.5 [1.3-4.7])	204 (31.5)	4 (2.0 [0.7-4.9])	154 (36.5)	5 (3.2 [1.3-7.3])	104 (22.1)	0	49 (22.6)	0	55 (21.7)	0
Couple not living together	160 (15.0)	1 (0.6 [0.1-3.5])	100 (15.5)	1 (1.0 [0.1-5.4])	60 (14.2)	0	86 (18.3)	1 (1.2 [0.2-6.6])	42 (19.4)	1 (2.4 [0.4-12.3])	44 (17.3)	0
Employment status	*		**									
Unemployed	132 (12.4)	6 (4.5 [2.1-9.5])	74 (11.5)	4 (5.4 [2.1-13.09])	58 (13.9)	2 (3.4 [0.9-11.7])	103 (22.0)	0	47 (21.6)	0	56 (22.3)	0
Student	460 (43.3)	4 (0.9 [0.3-2.2])	265 (41.1)	2 (0.8 [0.2-2.7])	195 (46.8)	2 (1.0 [0.2-3.6])	138 (29.5)	1 (0.7 [0.1-4.1])	54 (24.9)	1 (1.9 [0.3-9.7])	84 (33.5)	0
Full-time or part-time employee	470 (44.3)	8 (1.7 [0.8-3.3])	306 (47.4)	2 (0.7 [0.1-2.3])	164 (39.3)	6 (3.7 [1.6-7.7])	227 (48.5)	3 (1.3 [0.4-4.0])	116 (53.5)	1 (0.9 [0.1-4.7])	111 (44.2)	2 (1.8 [0.5-6.3])

[a]STBBI history: Chlamydia, gonorrhea and syphilis * $p<0.05$ ** $p<0.01$ *** $p<0.001$

	Sub-Saharan Africa						English-Speaking Caribbean					
	Total n=1073		Men n=650		Women n=423		Total n=472		Men n=217		Women n=255	
	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])	n (%)	HIV positive n (% [95% CI])
Number of sexual partners (last 12 months)									**			
None	126 (12.6)	1 (0.8 [0.1-4.9])	55 (9.2)	1 (1.8 [0.3-9.6])	71 (17.5)	0	33 (7.4)	0	11 (5.4)	0	22 (9.1)	0
1 partner	160 (16.0)	1 (0.6 [0.1-3.4])	69 (11.6)	0	91 (22.5)	1 (1.1 [0.1-5.9])	31 (7.0)	1 (3.2 [0.6-16.1])	8 (3.9)	1 (12.5 [2.2-47.09])	23 (9.5)	0
2–3 partners	237 (23.7)	4 (1.7 [0.6-4.2])	104 (17.4)	1 (1.0 [0.1-5.2[)	133 (32.8)	3 (2.2 [0.7-6.4])	89 (20.0)	0	13 (6.3)	0	76 (31.5)	0
≥4 partners	479 (47.8)	12 (2.5 [1.3-4.3])	369 (61.8)	6 (1.6 [0.7-3.5])	110 (27.2)	6 (5.4 [2.5-11.4])	293 (65.7)	3 (1.0 [0.3-2.9])	173 (84.4)	1 (0.6 [0.1-3.2])	120 (49.8)	2 (1.6 [0.4-6.4])
Condom use during last sexual encounter (No)	425 (57.0)	10 (2.4 [1.2 -4.2])	250 (52.4)	4 (1.6 [0.6-4.04])	175 (64.8)	6 (3.4 [1.5-7.2])	191 (52.6)	2 (1.0 [0.3-3.9])	93 (51.7)	1 (1.1 [0.2-5.8])	99 (53.6)	1 (1.0 [0.1-5.5])
≥2 sexual partners (last 12 months) (Yes) and condom use during last sexual encounter (No)	335 (54.3)	10 (3.0 [1.6-5.4])	209 (50.0)	4 (1.9 [0.7-4.8])	126 (63.3)	6 (4.8 [2.2-10])	175 (53.0)	2 (1.1 [0.3-4.0])	91 (53.5)	1 (1.1 [0.1-5.9])	84 (52.5)	1 (1.2 [0.2-6.4])
Casual partner (last 12 months) (Yes)	247 (33.2)	3 (1.2 [0.4-3.6])	205 (43.2)	2 (1.0 [0.2-3.4])	42 (15.6)	1 (2.4 [0.4-12.3])	168 (46.3)	2 (1.2 [0.3-4.5])	114 (63.3)	1 (0.9 [0.1-4.8])	54 (29.5)	1 (1.9 [0.3-9.7])
Condom use during last sexual encounter with a casual partner (last 12 months) (No)	52 (21.8)	1 (1.9 [0.3-10.1])	38 (18.5)	1 (2.6 [0.4-13.4])	14 (41.2)	0	49 (29.7)	1 (2.0 [0.3-10.7])	26 (23.0)	0	23 (44.2)	1 (4.3 [0.7-20.9])
Casual partner (last 12 months) (Yes) and condom use during last sexual encounter with a casual partner (No)	52 (7.0)	1 (1.9 [0.3-10.1])	38 (8.0)	1 (2.6 [0.4-13.5])	14 (5.2)	0	49 (13.5)	1 (2.0 [0.3-10.7])	26 (14.4)	0	23 (12.6)	1 (4.3 [0.7-20.9])
Sexual intercourse while travelling in an endemic country (Yes)	135 (34.3)	2 (1.5 [0.4-5.3])	103 (43.3)	1 (1.0 [0.1-5.3])	32 (20.5)	1 (3.1 [0.5-15.7])	41 (27.0)	1 (2.4 [0.4-12.6])	24 (37.5)	1 (4.2 [0.7-20.2])	17 (19.3	0
Condom use (Not always) while travelling in an endemic country, with a sexual partner living there	81 (60.0)	2 (2.5 [0.6-8.5])	54 (52.4)	1 (1.9 [0.3-9.7])	27 (84.4)	1 (3.7 [0.6-18.2])	19 (46.3)	1 (5.3 [0.9-24.6])	8 (33.3)	1 (12.5 [2.2-47.09])	11 (64.7)	0
Last regular or casual HIV-positive sex partner (Yes)	*** 11 (1.8)	2 (18.2 [5.1-47.7])	** 9 (2.3)	1 (11.1 [1.9-43.5])	*** 2 (0.9)	1 (50 [9.4-90.5])	1 (0.3)	0	0	0	1(0.7)	0
Sex in exchange for money, drugs or other goods (Yes)	33 (4.4)	0	31 (6.5)	0	2 (0.7)	0	25 (6.9)	0	21 (11.7)	0	4 (2.2)	0
Lifetime IDU	3 (0.3)	0	2 (0.3)	0	1 (0.2)	0	1 (0.2)	0	1 (0.5)	0	0	0
Circumcision (Men)												
No	—	—	61 (9.5)	1 (1.6 [0.3-8.7])	—	—	—	—	140 (64.8)	2 (1.4 [0.3-5.05])	—	—
Yes	—	—	583 (90.5)	7 (1.2 [0.5-2.4])	—	—	—	—	76 (35.2)	0	—	—
History of STBBI[§] (Yes)	38 (3.5)	0	21 (3.2)	0	17 (4.0)	0	*** 59 (12.5)	3 (5.1 [1.7-13.9])	23 (10.6)	1 (4.3 [0.7-20.9])	*** 36 (14.1)	2 (5.6 [1.5-18.1])
HIV test history												
≤2 years	565 (68.0)	7 (1.2 [0.6-2.5])	327 (66.3)	2 (0.6 [0.16-2.2])	238 (70.4)	5 (2.1 [0.9-4.8])	198 (69.5)	0	77 (68.8)	0	121 (69.9)	0
>2 years	266 (32.0)	6 (2.2 [1.03-4.8])	166 (33.7)	2 (1.2 [0.3-4.2])	100 (29.6)	4 (4.0 [1.5-9.8])	87 (30.5)	1 (1.1 [0.2-6.2])	35 (31.3)	0	52 (30.1)	1 (1.9 [0.3-10.1])
Level of knowledge about HIV transmission							*					
No incorrect answers	752 (70.1)	11 (1.5 [0.8-2.6])	458 (70.5)	4 (0.9 [0.3-2.2])	294 (69.5)	7 (2.4 [1.1-4.8])	201 (42.6)	0	88 (40.6)	0	113 (44.3)	0
1 to 2 incorrect answers	294 (27.4)	7 (2.4 [1.1-4.8])	178 (27.4)	4 (2.2 [0.8-5.6])	116 (27.4)	3 (2.6 [0.8-7.3])	226 (47.9)	2 (0.9 [0.2-3.1])	106 (48.8)	2 (1.9 [0.5-6.6])	120 (47.1)	0
3 to 5 incorrect answers	27 (2.5)	0	14 (2.2)	0	13 (3.1)	0	45 (9.5)	2 (4.4 [1.2-14.8])	23(10.6)	0	22 (8.6)	2 (9.1 [2.5-27.8])
Difficulty accessing care (Yes)	169 (15.8)	3 (1.8 [0.6-5.1])	87 (13.5)	0	82 (19.4)	3 (3.7 [1.2-10.2])	47 (10.0)	1 (2.1 [0.3-11.1])	22 (10.2)	1 (4.5 [0.8-21.8])	25 (9.8)	0

In Table 50, sociodemographic and economic profiles, as well as sexual risk behaviours, history of STBBI and testing, and level of knowledge about HIV transmission are presented based on HIV-positive status, sex and target community.

All results are presented, despite the small number of HIV-positive participants in certain categories and wide confidence intervals.

In both target communities, the 22 HIV-positive cases were heterosexuals. Most HIV-positive tests were detected in 30- to 49-year-olds (86.4%, or 19/22). In Sub-Saharan Africans, the average age of HIV-positive individuals was 32.8 years (range 19–47) for men vs. 41.2 years (range 33–49) for women. The average age among Caribbeans was 41.5 years (range 38–45) for men vs. 48 years for women (n=2). Age was significantly associated with HIV (p<0.0001) (OR=1.10; 95% CI: 1.05–1.16).

HIV prevalence was higher in certain subgroups based on the following factors:

- **Area of origin**: People from Southern Africa (7.7% [2.1–24.1%]), for all Sub-Saharan Africans, followed by East Africa for men (1.6% [0.4–5.6%]) and Central Africa for women (3.6% [1.6–7.6%]).
- **Level of education**: In Sub-Saharan African women with a high school education or less (2.7% [1.06–6.7%]); in the other three subgroups, among those who had more than a high school education (African men: 1.3% [0.5–2.7%]; Caribbean men: 1.6% [0.2–8.4%]; Caribbean women: 0.9% [0.1–4.8%]).
- **Income**: African men whose income was <$15,000 (1.9% [0.8–4.1%]), while prevalence was higher in the other three subgroups whose income was ≥$15,000 (African women: 3.6% [1.6–7.6%]; Caribbean men: 2.6% [0.7–8.8%]; Caribbean women: 1.9% [0.5–6.6%]).
- **Residency status**: Africans who had refugee status/other (men: 2.2% [0.3–11.5%]; women: 11.1% [3.1–32.8%]).
- **Immigration year**: ≥2000 for English-speaking Caribbean women (1.5% [0.4–5.3%]) and ≤1999 for the other three subgroups (Caribbean men: 1.7% [0.2–8.8%]; African men: 1.6% [0.2–8.3%]; African women: 16.7% [3.0–56.3%]).
- **Marital status**: Africans living together as a couple (men: 2.0% [0.7–4.9%]; women: 3.2% [1.3–7.3%]); English-speaking Caribbean men in relationships but not living with their partners (1.0% [0.1–5.4%]) and single English-speaking Caribbean women (1.3% [0.3–4.5%]).
- **Employment status**: Unemployed Sub-Saharan Africans (men: 5.4% [2.1–13.0%]; women: 3.4% [0.9–11.7%]).
- **High-risk sexual behaviours**:
  - Women who had had four or more sexual partners in the last 12 months (Sub-Saharan African women: 5.4% [2.5–11.4%]; English-speaking Caribbean women: 1.6% [0.4–6.4%]).
  - Female participants who had not always used a condom during the last sexual encounter (Sub-Saharan African women: 3.4% [1.5–7.2%]; English-speaking Caribbean women: 1.0% [0.1–5.5%]).
  - Despite the small numbers, those who had casual sex partners in the last 12 months and had not used a condom during the last sexual encounter, those who did not always use a condom when travelling in an endemic country with a sexual partner living there; and those whose last regular or casual sex partner was HIV positive.
- **History of STBBIs:** All English-speaking Caribbeans (5.1% [1.7–13.9%]).
- **HIV test history >2 years:** Sub-Saharan Africans (men: 1.2% [0.3–4.2%]; women: 4.0% [1.5–9.8%]).
- **HIV transmission modes:** Those who had one or two incorrect answers among Sub-Saharan Africans (2.4% [1.1–4.8%]) and English-speaking Caribbean men (1.9% [0.5–6.6%]); English-speaking Caribbean women who had three or four incorrect answers (9.1% [2.5–27.8%]).
- **Difficulty accessing health care services:** Sub-Saharan African women (3.7% [1.2–10.2%]).

4. STRENGTHS AND LIMITATIONS

These findings could be used as a benchmark for monitoring trends in HIV and HCV prevalence, screening habits and behaviours associated with acquisition and transmission of these infections among people from HIV-endemic countries in general, but more specifically in Sub-Saharan African and English-speaking Caribbean communities. The findings should help guide development of policies, programs and interventions to prevent and control HIV infection and other STBBIs by targeting the needs of ethnocultural communities on the Island of Montréal.

The survey is a voluntary anonymous cross-sectional survey; participants are recruited mainly using "time-location sampling" methods. One of the challenges of this surveillance project was related to sampling and recruitment strategies to obtain representative samples of members of the Sub-Saharan African and English-speaking Caribbean communities living on the Island of Montréal. While recognizing that there are commonalities between Sub-Saharan African and Caribbean communities, the results highlighted differences in demographics, lifestyle and sexual behaviours.

Compared to 2006 Census data, there were more men than women in the two target communities among the 1,602 individuals recruited; as well as more people aged 15 to 24 and 25 to 34, two age groups that are generally hard to recruit. Also, there were fewer individuals in Montréal from certain countries in East and Southern Africa, whereas there were greater numbers of them in the other two sentinel sites (Ottawa, Toronto) selected for the E-Track national surveillance system.

The target populations were difficult to access. However, the field teams from the two target communities were competent and unwavering in their commitment. Through careful planning, networking and active searches, the team found the social gathering places of the various associations grouped by countries of origin and community organizations, which contributed to the success of the survey. The recruitment strategy, which involved using a vehicle to find recruits, was the most effective and enabled the team to recruit 51.7% of participants in various social gathering places on the Island of Montréal. However, this strategy required appropriate financial and logistical resources.

As shown by the 81.8% participation rate, the team was able to access people from both communities during promotion and recruitment activities. The main reasons for refusal were related to DBS sampling, mistrust and a feeling of stigmatization experienced by some participants, especially in the English-speaking Caribbean community. Also, a connection was established between the screening tests involved in the process of immigrating to Canada and the need to get retested.

Compared to Sub-Saharan African communities, English-speaking Caribbean communities consisted of newcomers and people who had been in Canada for many generations. As a result, the first generation of some subgroups is aging (>49 years), a situation that needs to be taken into account in subsequent phases of the second generation E-Track surveillance system in Montréal. It should also be noted that, since the HIV infection surveillance program was introduced in Québec, that is, from April 2002 to December 2013, approximately 23% (111/484) of newly diagnosed cases of HIV were individuals from endemic countries aged 50 and older.[5] Future research should compare HIV risk factors between first and second generations of people from HIV-endemic countries to better target at-risk subgroups and prevent acquisition and transmission of new infections.

In terms of the methodological limitations of the survey, we believe that the data collected through the voluntary participation of members of both communities living on the Island of Montréal are no different than for those who decided not to participate. The sample was constructed based on rational choice, so it would reflect the target populations (non-probability sampling). Surveillance results are therefore not representative of the entire target populations in Québec. In addition, results presented in the report are based on self-reported data, which are subject to memory and social desirability biases. Socially undesirable behaviours may therefore have been underreported, and socially desirable behaviours overreported. However, compliance with recruitment and questionnaire administration guidelines (self-administered or not), and monitoring of the quality of the interviewers' work allowed us to minimize certain biases. Lastly, the methods chosen, which are reproducible and easy to implement, produced high-quality data.

The data collected should serve as a benchmark for making comparisons over time and performing more complex analyses in the future, which will focus on risk factors associated with HIV, screening, sexual risk behaviours in each community and the vulnerability of women. Those results will provide a better understanding of target STBBIs and factors that make people from HIV-endemic countries vulnerable. Other research initiatives (qualitative and quantitative) could focus on the way these individuals perceive the risk of infection and how they adapt to it. Therefore questionnaires should better characterize sexual risk behaviours (anal, vaginal, and oral) with or without condom use, based on the type of sexual partner.

5. SUMMARY OF RESULTS, RISK PROFILES AND POTENTIAL INTERVENTIONS

Based on the results, this chapter outlines an HIV-infection risk profile for each of the two target communities.

5.1. Vulnerabilities common to both communities

Based on this second generation HIV surveillance survey, certain subgroups in both communities were more vulnerable to HIV/AIDS. These subgroups should be priority targets for measures promoting HIV/AIDS prevention and protection.

5.1.1. Level of knowledge of HIV status

It is disturbing to note that 68.2% (15/22) of participants infected with HIV did not know they were HIV positive. This percentage is about 25% in Canada.[4] In total, 80.4% (866/1,077) of Sub-Saharan Africans vs. 61.3% (302/493) of English-speaking Caribbeans had already undergone HIV testing, with just over half having done so in the previous two years (67.8% of Sub-Saharan Africans and 68.8% of English-speaking Caribbeans). The results suggest that screening programs do not reach individuals most likely to be infected with HIV. This hypothesis is supported by INSPQ's HIV infection surveillance program, which reported that in 2013, 18.6% (41/220) of new cases diagnosed among heterosexuals from HIV-endemic countries had never before been tested for HIV.[5]

5.1.2. Sexual risk behaviours

In the past year, the majority of sexually active 15- to 49-year-olds (84.5%, or 1,146/1,357) reported having had vaginal or anal sex with penetration, and over a third of them (36.7%, or 416/1,132) had had multiple sexual partners (≥2). During the same period, 33.0% (252/764) of Sub-Saharan Africans vs. 46.7% (177/379) of English-speaking Caribbeans had had vaginal or anal sex with penetration with at least one sexual partner, and overall 43.4% (185/426) had not always used a condom (male or female) with those partners. This applied to significantly more Sub-Saharan African women than men (51.2% vs. 35.1%; $p=0.048$).

In addition, 40.0% (14/35) of Sub-Saharan African women vs. 19.1% (49/209) of men ($p=0.006$), as well as 45.3% (24/53) of English-speaking Caribbean women vs. 23.1% (28/121) of men ($p=0.003$) had not used a condom the last time they had vaginal or anal sex with penetration with their casual sex partners. Some of them had regular concomitant sexual partners and lived either as a couple with their partner or separately.
The frequency of high-risk vaginal or anal sex with penetration was therefore significant in both communities. These risk behaviours have a significant impact on the spread of the HIV epidemic, as people affected by those practices are at greater risk of acquiring or transmitting HIV sexually.[27]

5.1.3. Vulnerability of women

The survey results highlight women's vulnerability to HIV infection. A greater number of women in the two communities did not use a condom (male or female) the last time they had vaginal or anal sex with penetration with a casual sex partner, nor did they use a condom during sexual encounters when travelling to countries where HIV is highly endemic. It has been shown in other contexts that women's greater vulnerability to HIV is, among other things, due to social, cultural and economic pressures that do not allow them to take preventive measures.[28] Vulnerability was more pronounced in the Sub-Saharan African community.

5.1.4. 30–49 age group

Most HIV-positive tests occurred in the 40–49 age group (34.9%, or 12/22), followed by the 30–39 age group (31.8%, or 7/22). All HIV-positive women were in these two age groups. Age was significantly associated with HIV (OR=1.10; 95% CI: 1.05–1.16; p<0.0001). Compared to the 15–29 reference age group, the 40–49 age group was most at risk for HIV.

5.1.5. Risk taking while travelling to countries where HIV is highly endemic

Slightly more than half (56.4% (101/179) of participants who had travelled to a country where HIV is highly endemic, and had vaginal or anal sex with penetration with a sexual partner living there, did not always use a condom (male or female) during sex. A greater percentage of women from both communities were in this situation. This result had previously been observed in members of the Haitian community living in Montréal.[8-10] The surveillance data do not explain the reasons for this type of risk-taking while travelling. But the fact that it occurs in countries where HIV is highly endemic clearly indicates that preventive measures must be taken to protect travellers.

5.1.6. More limited access to primary care

In total, 60.7% (963/1,587) of participants recruited in the two communities did not have a family doctor (67.1% of Sub-Saharan Africans vs. 46.5% of English-speaking Caribbeans; p<0.0001), whereas the 2012 TOPO survey reported that 35% of all Montréalers did not have a family doctor.[29] Among all participants who required medical care in the 12 previous months, 15.1% (223/1,473) reported having difficulty accessing the health care services they needed during this period (15.7% of Sub-Saharan Africans and 10.1% of English-speaking Caribbeans). Significant differences observed between the living conditions of Montréalers and survey participants—particularly in terms of income, housing, employment, education, nutrition and access to health care—have direct effects on the latter's health and life expectancy.[29] Factors associated with social inequalities in health should be countered by effective preventive measures to ensure living conditions that promote the health and development of target communities.

5.2. Communities from Sub-Saharan Africa

5.2.1. High prevalence of HIV infection

HIV prevalence in the community was 1.7% (1.0–2.6%). It is comparable to that among Quebecers of Haitian origin in 1994: 1.3% (1.0–1.6%).[8] In Canada, estimated HIV prevalence was 0.21% (0.17–0.24%) in 2011.[4]

The high prevalence of HIV infection among Montréalers from Sub-Saharan Africa clearly highlights the need for thorough, effective programs. This includes measures to encourage more sexually active individuals to get tested for HIV when they change or meet new sexual partners, or return to previous sexual partners.[30]

5.2.2. African women and heterosexual transmission of HIV

In Québec and elsewhere in Canada, heterosexual transmission of HIV infection mostly occurs in people from Sub-Saharan Africa and the Caribbean, and the preponderance of infection among women are constants. In the survey, all HIV-positive cases (n=22) were heterosexuals, and just over half the cases (54.5%, or 12/22) were women.

According to the survey, Sub-Saharan African women had the highest HIV prevalence at 2.4% (1.2–4.2%), compared to men in the same community (1.2% [0.6–2.4%]). In contrast, among Quebecers of Haitian origin, HIV prevalence was higher in men than women: 1.6% (1.1–2.2%) vs. 1.1% (0.7–1.5%).[10]

Sub-Saharan African (and Caribbean) women are at high risk for HIV/AIDS because of their socioeconomic status and attitudes about condom use, and because some of them and of their partners have multiple partners.[10] Other studies have highlighted the biological susceptibility to HIV/AIDS[2] and an inability to require that their partners use condoms.

A better understanding of the decision-making dynamics between men and women, specifically the role of African women in deciding to use or obliging their sexual partners (especially casual) to use condoms, is required to counter heterosexual transmission of HIV in this high-risk subgroup.

Concrete steps must be taken to empower African women and reinforce their preventive behaviours by emphasizing the meaning of risk taking, and promoting condom use and routine screening for STBBIs.

5.3. Communities from the English-speaking Caribbean

5.3.1. Sexual risk behaviours for HIV infection

A higher frequency of sexual risk behaviours was observed among members of this community. They had more casual sex partners and did not always use condoms (male or female) while having vaginal or anal sex with penetration when travelling to HIV-endemic countries. These are areas on which stakeholders working with this community should focus.

The average age at first intercourse was earlier among English-speaking Caribbeans (15.8 years; SD: ±3.8) compared to Sub-Saharan Africans (18.4 years; SD: ±3.9); the latter were closer to the Québec average which appears stable at around age 18, according to population survey results,.[26] A third of young women and men aged 15 to 24 had engaged in sexual intercourse before age 15. This highlights the need to increase prevention and educate young people very early. Some evidence suggests that when first sexual encounter occurs at a later age, the risk of infection through sexual intercourse is reduced, at least among women.[27] To promote healthy sexual attitudes and prevent STBBIs, preventive measures should be developed to facilitate dialogue and communication between young people and their parents or guardians.[30]

5.3.2. Level of education

The percentage of English-speaking Caribbean men who had a high school education or higher was lower than among women from the same community. In total, 37.9% (188/496) of English-speaking Caribbeans (29.9%, or 69/231 of men vs. 44.9%, or 119/265 of women; p=0.001) compared to 70.1% (771/1,100) of Sub-Saharan Africans (73.2%, or 485/663 of men vs. 65.4%, or 286/437 of women; p=0.006) involved in the survey had a high school education or higher. Among other things, level of education influences health because it enhances people's ability to learn and understand information that can improve their health.[2] This underscores the need to focus on subgroups with low levels of literacy through adapted community programs.

5.3.3. Knowledge about modes of HIV transmission

Compared to Sub-Saharan Africans, English-speaking Caribbeans knew less about HIV transmission modes and prevention factors. Also, 8.1% of English-speaking Caribbeans vs. 5.1% of Sub-Saharan Africans believed that someone who looked healthy could not be HIV positive. This is a common misconception that can lead to unprotected sex with infected sexual partners.[27] In addition, 44.6% of English-speaking Caribbeans vs. 25.0% of Sub-Saharan Africans believed that HIV is transmitted through mosquito bites or did not know the answer to that question. Such a belief could reduce a person's willingness to adopt risk-free sexual behaviours.[27] Lastly, 33.9% of English-speaking Caribbeans vs. 10.4% of Sub-Saharan Africans believed that the virus can be transmitted by sharing a meal with an infected person or did not know the answer to that question. This belief could further stigmatize people living with AIDS.[27]

Level of education appears to correlate with level of knowledge about modes of HIV transmission. It is as important to correct major misconceptions about HIV transmission as it is to provide accurate information on actual modes of HIV transmission.[27] Gaps identified in knowledge about HIV transmission modes need to be addressed, taking into account the social and cultural diversity of target populations.

5.3.4. Prenatal screening

Only 83.5% (111/133) of English-speaking Caribbean women were tested for HIV during their last pregnancy. All kinds of barriers can hinder this population's access to screening. The benefits of early detection for mother and child are becoming increasingly evident. This makes it all the more important to identify barriers and create partnerships in the community to promote the development of measures to eliminate them.

5.3.5. Substance use during sexual intercourse

Higher percentages of English-speaking Caribbeans than Sub-Saharan Africans and significantly more men than women in the two communities had used alcohol (51.6%, or 195/378 of English-speaking Caribbeans vs. 19.7%, or 150/762 of Sub-Saharan Africans), marijuana or other drugs while having vaginal or anal sex with penetration in the last 12 months. Holistic, non-stigmatizing and non-judgemental steps should be taken to prevent HIV among these individuals.[30]

6. OTHER INTERVENTIONS AND RECOMMENDATIONS

Possible approaches have been previously identified to help improve or develop HIV/AIDS prevention and protection strategies for the most vulnerable subgroups. As part of the regional STBBI prevention program, professionals and decision-makers involved at various levels should take into account the main findings of the survey and implement these potential approaches, based on the target communities' specific contexts and environments.

A feasibility study[21] was conducted to identify factors that facilitated or hindered implementation of a second generation HIV surveillance survey in Montréal communities from Sub-Saharan Africa and the English-speaking Caribbean, and effective implementation of the survey. The study provided a better understanding of the situation in these communities and their STBBI prevention needs. The following potential approaches were not based on the quantitative results of the survey. They were developed through discussions, consultations and interactions with the community advisory committee, organizations and some community and religious leaders, and members of both communities before the start of the survey, and through observations made while recruiting participants.

6.1. Realities and needs of the communities involved

Compared to Montréal's Haitian community, there are very few African and English-speaking Caribbean community organizations working on preventing STBBIs and other health issues in the city. The community participation approach that helped target communities to become involved in all stages of development and implementation of the survey should be bolstered. This would encourage target communities to use the survey results to mount a timely, effective HIV/AIDS prevention campaign. These communities would have to get organized to create opportunities and develop mechanisms to facilitate contacts and cooperation between members in response to HIV/AIDS-related issues. They will have to work with not only community leaders, religious institutions such as churches and mosques, and groups of nationals from the same country, but also with PHA from these communities to develop a community response that recognizes diversity within the African and English-speaking Caribbean communities. Emerging Montréal community leaders could identify channels for promoting HIV/AIDS awareness to minimize further stigmatization, improve communications and cooperation (community media, bilingual brochures, etc.), and follow up on the recommendations in this report.

6.2. Commitment and awareness of health professionals and managers

Our colleagues in the community highlighted the need to make health professionals and managers aware of the specific issues involved in providing medical attention for members of ethnocultural communities (different beliefs regarding HIV and other STBBIs, etc.), and of the difficulties ethnocultural populations have accessing the health care system. Potential solutions they recommend include promoting local services so that everyone has access to quality health care, and involving ethnocultural communities in response program development, implementation and delivery. They also suggest establishing partnerships and collaborating with community organizations working in the field of HIV/AIDS (COCQSIDA, etc.) and other partners (e.g. community organizations that help new immigrant and refugee families, agencies such as food banks that provide support in times of crisis, organizations that offer French-language and literacy courses). To improve ethnocultural awareness and competence, and ensure continuity of STBBI care and programs, these stakeholders should use approaches that take into account broader social contexts that influence the health of individuals and communities, such as culture, gender, socioeconomic status, social support networks, and social environments.[30]

6.3. Political responsibility

Concrete steps must be taken in Montréal because people from HIV-endemic countries are over-represented in the heterosexual HIV transmission category, the survey has indicated that the prevalence rate in both target communities is high, and certain subgroups including Sub-Saharan African women are vulnerable. HIV/AIDS response should therefore be a funding priority in ethnocultural communities. Funding is needed to increase the number of programs, services and service providers, and to enhance the availability, accessibility and quality of HIV/AIDS programs and services.[31] The response should include the prevention of HIV and other STBBIs, as well as other issues affecting ethnocultural communities, such as immigration, poverty and housing.[31] It could also adapt the ministerial guidelines outlined in the document entitled “Une passerelle vers un avenir en santé” [Path to a healthy future][32] to Montréal realities.

CONCLUSION

People from Sub-Saharan Africa and the Caribbean are more vulnerable to HIV/AIDS and should receive special attention in the fight against HIV/AIDS. In Québec and elsewhere in Canada, these subgroups have seldom been the focus of HIV/AIDS research programs and prevention policies. In the past, little information was available to develop appropriate measures to assist them. The SGS-AFCAR survey helped meet this need.

Second generation HIV surveillance surveys can therefore be implemented for people from HIV-endemic countries. The SGS-AFCAR survey should be resumed to analyze trends and improve the targets of culturally appropriate strategies to enhance the level of HIV/AIDS knowledge, reduce risk behaviours and improve access to screening for people from HIV-endemic countries. These data will also be used to evaluate response programs.

The SGS-AFCAR survey results confirmed that HIV prevalence remains high among people from HIV-endemic countries living on the Island of Montréal. High-risk sexual practices and the risk of transmitting HIV and other STBBIs persist in the most vulnerable subgroups, namely women. Swift action on these results needs to be taken to develop and improve policies, programs, interventions and services at the community, local, provincial and national levels for English- or French-speaking Sub-Saharan African and Caribbean populations in Québec and elsewhere in Canada.

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APPENDICES

Appendix 1: List of HIV-endemic countries

Africa		Caribbean, Bermuda and Central America/South America
▪ Angola ▪ Benin ▪ Botswana ▪ Burkina Faso ▪ Burundi ▪ Cameroon ▪ Cape Verde ▪ Central African Republic ▪ Chad ▪ Democratic Republic of the Congo (formerly Zaire)–Kinshasa ▪ Republic of the Congo–Brazzaville ▪ Djibouti ▪ Equatorial Guinea ▪ Eritrea ▪ Ethiopia ▪ Gabon ▪ Gambia ▪ Ghana ▪ Guinea ▪ Guinea-Bissau ▪ Côte-d'Ivoire ▪ Kenya	▪ Lesotho ▪ Liberia ▪ Malawi ▪ Mali ▪ Mozambique ▪ Namibia ▪ Niger ▪ Nigeria ▪ Rwanda ▪ Senegal ▪ Sierra Leone ▪ Somalia ▪ South Africa ▪ Sudan ▪ South Sudan ▪ Swaziland ▪ Tanzania ▪ Togo ▪ Uganda ▪ Zambia ▪ Zimbabwe	▪ Anguilla ▪ Antigua and Barbuda ▪ Bahamas ▪ Barbados ▪ Bermuda ▪ British Virgin Islands ▪ Cayman Islands ▪ Dominica ▪ Dominican Republic ▪ French Guiana ▪ Grenada ▪ Guadeloupe ▪ Guyana ▪ Haiti[§] ▪ Honduras ▪ Jamaica ▪ Martinique ▪ Montserrat ▪ Netherlands Antilles ▪ St. Lucia ▪ Saint Kitts and Nevis ▪ Saint Vincent and the Grenadines ▪ Surinam ▪ Trinidad and Tobago ▪ Turks and Caicos Islands ▪ US Virgin Islands

[§] Montréalers of Haitian descent were excluded from the SGS-AFCAR survey.

Appendix 2: E-Track Questionnaire

Agence de la santé
et des services sociaux
de Montréal
Québec

Agence de la santé publique du Canada | Public Health Agency of Canada

E-Track Effectuer le suivi des tendances en matière de prévalence du VIH et des facteurs comportementaux et sociodémographiques connexes chez les Canadiens nés dans des pays où le VIH est endémique

PHASE 1 – Montréal
2013

CONFIDENTIAL QUESTIONNAIRE

v. 25/06/2013

Administrative questions (to be completed by the interviewer)

Eligibility screening

Assess and check: (both statements must be checked to continue)

Have you checked whether the candidate is eligible?

☐ Participant is eligible

Did the participant give consent to participate?

☐ Yes

Did the participant consent to the storage and additional testing of their finger-prick blood sample in the future?

☐ Yes

☐ No, DBS sample to be destroyed after testing

MTL(1). Recruitment organization: ____

1. Write in the last four digits of the Site ID Code:

E-13-MTL-__________

This survey is confidential and anonymous. Your name will not be put on the questionnaire. I will ask you to enter your initials and date of birth into a special computer program which will make up a unique scrambled code. After the scrambled code is generated and recorded on the questionnaire, your date of birth and initials will be deleted immediately from the computer program.

2. Enter the Encrypt ID code (always 10 characters long):

Enter the encrypted code here

3. Select the name of the city:

☐ Montréal

4. Please enter the site code of the location where the interview took place::

Site code: _____

5. Enter today's date using the format: DD/MM/YYYY (e.g., 15/04/2013):

_______/_________/________

DD **MM** **YYYY**

6. Enter your initials (from2 to 5 letters):_____________________

7. Enter the interview start time. Please indicate in 24-hour time. For example, enter 16:15 for 4:15 p.m.

____

We are now ready to start the questionnaire portion of this interview.

)

How did you hear about the E-Track survey? *(Check ALL that apply*

- ☐ Word of mouth
- ☐ Poster/flyer
- ☐ Recommendation
- ☐ When you arrived
- ☐ Media/event
- ☐ Social media (e.g., Facebook, Twitter) (specify): ____________________
- ☐ Community organizations (specify): ____________________
- ☐ Other (specify): ____________________

Your answers will now be put into the questionnaire. Would you like to complete the questionnaire yourself, or would you like me to read the questions and fill in the answers that you provide? Either way, I will stay in the room with you until the questionnaire is completed and I am happy to help you with any questions that you may have.

Are you ready to start?

SECTION ONE: Socio-demographics

Some of the questions in this survey are very personal. Please remember that the answers that you give are completely confidential. We are asking everyone who participates in this survey the same questions.

1.1 How old are you now?

Number of years (specify): ________________________________

If the participant is less than 15 years of age, end interview here.

For age below eligibility: **You said you are under 15 of age and this survey can include only those over the age of 15 and 49. Unfortunately you cannot be included in this year's survey. Thank you for taking the time to come in today.**

If the participant is over 15 years of age, end interview here.

For age above eligibility: **You said you are over 49 years of age and this survey can include only those under the age of 49. Unfortunately you cannot be included in this year's survey. Thank you for taking the time to come in today.**

Please return the questionnaire to the interviewer.

1.2 Do you live in Montréal right now?

- ☐ Yes
- ☐ No
- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the answer is No, Don't know, or the person Prefer not to answer, end the interview.

If the participant does not live in Montréal *end interview here.*

For city of residence ineligibility: **You indicated that you do not live in Montréal, however this survey can only include people who live in Montréal. As such, you cannot be included in this survey. Thank you for taking the time to come in today.**

For Don't know or Prefer not to answer: **You have not provided information on the city where you live. As we need to know this information in order to know if you are eligible for the survey, you unfortunately cannot be included in this survey. Thank you for taking the time to come in today.**

Please return the questionnaire to the interviewer.

MTL1 (1.2) What are the first three characters of your postal code? If you live in a shelter, enter the first three characters of the shelter's postal code. Please note that the three characters of your postal code cannot be used to identify your residence.

☐ ☐ ☐

☐ *Don't know*
☐ *Prefer not to answer*

MTL2 (1.2) What is your CLSC (local community service centre)? *(See the list of CLSCs to enter your CLSC's code)*

☐ ☐ ☐ ☐

☐ *Don't know*
☐ *Prefer not to answer*

1.3 What is your country of birth? (*Select only ONE*)

Africa		Caribbean, Bermuda and Central America/South America
☐Angola ☐Benin ☐Botswana ☐Burkina Faso ☐Burundi ☐Cameroon ☐Cape Verde ☐Central African Republic ☐Chad ☐Democratic Republic of the Congo (formerly Zaire)–Kinshasa ☐Republic of the Congo–Brazzaville ☐Djibouti ☐Equatorial Guinea ☐Eritrea ☐Ethiopia ☐Gabon ☐Gambia ☐Ghana ☐Guinea ☐Guinea-Bissau ☐Côte-d'Ivoire ☐Kenya	☐Lesotho ☐Liberia ☐Malawi ☐Mali ☐Mozambique ☐Namibia ☐Niger ☐Nigeria ☐Rwanda ☐Senegal ☐Sierra Leone ☐Somalia ☐South Africa ☐Sudan ☐South Sudan ☐Swaziland ☐Tanzania ☐Togo ☐Uganda ☐Zambia ☐Zimbabwe	☐ Anguilla ☐ Antigua and Barbuda ☐ Bahamas ☐ Barbados ☐ Bermuda ☐ British Virgin Islands ☐ Cayman Islands ☐ Dominica ☐ Dominican Republic ☐ French Guiana ☐ Grenada ☐ Guadeloupe ☐ Guyana ☐ Honduras ☐ Jamaica ☐ Martinique ☐ Montserrat ☐ Netherlands Antilles ☐ St. Lucia ☐ Saint Kitts and Nevis ☐ Saint Vincent and the Grenadines ☐ Surinam ☐ Trinidad and Tobago ☐ Turks and Caicos Islands ☐ US Virgin Islands

☐ Other (specify): ______________________

☐ *Don't know*
☐ *Prefer not to answer*

If the answer is Other, Don't know, or the person Prefer not to answer, end the interview.

If the participant was NOT born in a country on the list of countries considered endemic, end the interview.

Eligibility of the country of birth: **You indicated that you were born in a country not listed above. However, this survey is only for persons born in a country on the list (show the list to the participant). Unfortunately, you cannot participate in this survey. Thank you for having taken the time to come here.**

If the person does not know or refuses to answer: **You cannot tell me what country you were born in. We need that information to know whether this survey applies to you. Unfortunately, you cannot participate in this survey. Thank you for having taken the time to come here.**

Please return the questionnaire to the interviewer.

1.4 What year did you come to live in Canada?

Year (specify): ___________________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.5 What is your residency status in Canada? *(Check ALL answers that apply)*

☐ Canadian citizen
☐ Landed immigrant/permanent resident
☐ Refugee/protected person (means you have been officially accepted as a refugee)
☐ Refugee claimant/person in need of protection (means you have applied for refugee protection status, and are waiting for a decision on your claim)
☐ Temporary work permit (temporary foreign worker)
☐ Temporary resident visa (visitor)
☐ Study permit (international student)
☐ Parent and grandparent super visa
☐ Other (specify):__________________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.6 In which country did you spend most of your childhood (0 to 18 years old)?

☐ Your country of birth
☐ Other country (specify): ____________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.7 People living in Canada are of very diverse cultural and racial backgrounds. Do you think you belong to one of the following groups? *(Check ALL answers that apply up to a MAXIMUM of four)*

- ☐ Black
- ☐ White
- ☐ South Asian
- ☐ Far East Asian
- ☐ Southeast Asian
- ☐ Arab or West Asian
- ☐ Latin American/Hispanic
- ☐ Aboriginal
- ☐ Other (specify): ______________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

1.8 What was your sex at birth? *(Check ONE answer only)*

- ☐ Man
- ☐ Woman
- ☐ Other (specify): ______________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

1.9 Today you consider yourself a? *(Check ONE answer only)*

- ☐ Man
- ☐ Woman
- ☐ Transsexual or transgender
- ☐ Other (specify): ____________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

NOTE!

- **A ‘Heterosexual or Straight’ person is a person who is sexually attracted to people of a different or opposite biological sex.**
- **A ‘Homosexual or Gay or Lesbian’ person is a person who is sexually attracted to people of the same sex.**
- **A ‘Bisexual’ person is a person who is sexually attracted to people of both sexes. ▪ A ‘Questioning’ person is a person who is uncertain of their sexual orientation.**

1.10 1.10 Which of the following best describes your sexual orientation? *(Check ONE only)*

- ☐ Heterosexual or Straight
- ☐ Homosexual or Gay or Lesbian
- ☐ Bisexual
- ☐ Questioning
- ☐ Other (specify): ____________________________

- ☐ *Don’t know*
- ☐ *Prefer not to answer*

1.11 What is your CURRENT relationship or marital status? *(Check all that apply to current relationship or marital status)*

- ☐ Single (you are not in a relationship and have never been married)
- ☐ In a relationship with a man, but you are not living together and are not married.
- ☐ In a relationship with a woman, but you are not living together and are not married.
- ☐ In a relationship with a man; you are living together as a couple, but are not legally married.
- ☐ In a relationship with a woman; you are living together as a couple, but are not legally married.
- ☐ Married and living with my husband.
- ☐ Married and living with my wife.
- ☐ Married, but my husband does not live in Canada.
- ☐ Married, but my wife does not live in Canada.
- ☐ Married, but separated from my husband.
- ☐ Married, but separated from my wife.
- ☐ Divorced.
- ☐ Widower/Widow
- ☐ Other (specify): ____________________________

- ☐ *Don’t know*
- ☐ *Prefer not to answer*

1.12 What are your beliefs or religion, if any? ***(Check ONE answer only)***

- ☐ Sunni Muslim
- ☐ Shiite Muslim
- ☐ Catholic
- ☐ Anglican
- ☐ Lutheran
- ☐ Baptist
- ☐ Seventh-day Adventist
- ☐ Jehovah's Witness
- ☐ Member of the Evangelical Church
- ☐ Member of a traditional African religion
- ☐ Hindu
- ☐ None or Atheist or Atheist
- ☐ Other (specify): ______________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

1.13 What is the highest level of education or training that you have completed? *(Check ONE only)*

- ☐ None
- ☐ Some elementary school
- ☐ Completed elementary school
- ☐ Some high school
- ☐ Completed high school
- ☐ Some college, CEGEP, vocational school, trade school, or apprenticeship training
- ☐ Completed college, CEGEP, vocational school, trade school, or apprenticeship training
- ☐ Some university
- ☐ Completed university certificate or diploma
- ☐ Completed undergraduate university degree (for example B.A., B.Sc., B.Ed.)
- ☐ Completed graduate university degree (for example M.A., M.Sc., PhD, D.Sc., M.D., J.D)
- ☐ Other (specify):__________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

Factors such as culture, gender, education, income, employment, and social and physical environments play an important role in a person's health. Therefore, the following questions in this health questionnaire are important. Like all other information you provide, your answers to the following questions will be strictly confidential.

1.14 What was your employment status in the last 12 months? *(Check ALL answers that apply)*

- ☐ Employed full time (including self-employment)
- ☐ Employed part time (including self-employment)
- ☐ Full-time student
- ☐ Part-time student
- ☐ Unpaid work at home (doing housework or caring for family members)
- ☐ Volunteering or providing care (for people other than members of your family)
- ☐ Retired
- ☐ Received disability benefits
- ☐ Received social security benefits
- ☐ Unemployed
- ☐ Other (specify): ______________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

1.15 In the last 12 months, what was your approximate total household income? That is to say, what was the total income of all household members, from all sources before taxes and other deductions? (Check ONE answer only)

- ☐ Less than $5,000
- ☐ $5,000 or more but less than $10,000
- ☐ $10,000 or more but less than $15,000
- ☐ $15,000 or more but less than $20,000
- ☐ $20,000 or more but less than $30,000
- ☐ $30,000 or more but less than $40,000
- ☐ $40,000 or more but less than $50,000
- ☐ $50,000 or more but less than $60,000
- ☐ $60,000 or more but less than $70,000
- ☐ $70,000 or more but less than $80,000
- ☐ $80,000 or more but less than $90,000
- ☐ $90,000 or more but less than $100,000
- ☐ $100,000 or more but less than $150,000
- ☐ $150,000 and over

- ☐ *Don't know*
- ☐ *Prefer not to answer*

} *If the person replied Don't know or Prefer not to answer, go to question 1.19.*

1.16 How many people people living in Canada (including yourself) depend on your household income?

Number of individuals in Canada: Specify: ______________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.17 How many people living outside Canada depend on your household income?

Number of individuals outside of Canada: Specify: _________________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.18 In the past 12 months, considering your household income, how easy or difficult was it for you to meet basic food and shelter costs? *(Check ONE only)*

☐ Very easy
☐ Somewhat easy
☐ Somewhat difficult
☐ Very difficult

☐ *Don't know*
☐ *Prefer not to answer*

1.19 What type of place do you currently live in? *(Check ONE only)*

☐ Your house, your apartment, your condo (owner)
☐ Your house, your apartment, your condo (rented)
☐ Your parents' house
☐ Another family member's house
☐ Friend's house
☐ Hotel or motel room
☐ Shelter or hostel
☐ Transition house or halfway house
☐ Rooming or boarding house
☐ Public place (street, park, squats, subway, underpass, washroom, stairwell, etc.)

☐ Refugee camp or immigration detention facility
☐ Other (specify): __________________________

☐ *Don't know*
☐ *Prefer not to answer*

1.20 How many times have you moved in the last 12 months?

Number of times: ______________________________

☐ *Don't know*
☐ *Prefer not to answer*

SECTION TWO: Sexual behaviours

The next questions are about your sex life and are asked because sexual behaviours can have very important and long-lasting effects on your health. These questions are very personal and some questions may be sensitive; please be assured that your answers will remain confidential.

For the purpose of this survey, '<u>sex</u>' includes vaginal and anal penetrative sex, and includes instances where you may not have been willing to have sex.

Questions about condoms refer to both male and female condoms.

2.1 How old were you the first time you had vaginal or anal sex?

__________ (Age in years)

- ☐ Never had sex → If you are a man and have never had sex, go to question *2.27.*
- ☐ *Don't know* → *If you are a woman and have never had sex, go to question 2.28.*
- ☐ *Prefer not to answer*

2.2 How many people in your lifetime, including men and women, have you had vaginal or anal sex with? This includes people you have had sex with only one time. *(Check ONE only)*

- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.3 How many of these sex partners were born in Sub-Saharan Africa, the Caribbean, Central/South America or Asia? *(See countries highlighted on map above for reference. Check ONE only)*

☐ None of them
☐ Some of them
☐ All of them

☐ *Don't know*
☐ *Prefer not to answer*

2.4 Have you had vaginal or anal sex in the last 12 months?

☐ Yes
☐ No

☐ Don't know
☐ *Prefer not to answer*

If the answer is No, Don't know, or Prefer not to answer go to question 2.27 if it's a man or to question 2.28 if it's a woman.

2.4 a Did you or your partner use a condom the last time you had sex? Including male and female condoms.

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

The following questions are about sex with MALE PARTNERS in the last 12 months. This includes giving and receiving vaginal and anal penetrative sex.

2.5 In the last 12 months, with how many MALE partners have you had vaginal or anal sex with? *(Check ONE answer only)*

- ☐ None → *If the answer is None, go to question 2.13.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The terms "regular sexual partner" and "casual sex partner" and "sex in exchange for money, drugs, goods or services" will be used.

- **A "regular sexual partner" is a person with whom you have or had an ongoing sexual relations and with whom you may or may not have an emotional relationship.**
- **A "casual sex partner" is someone with whom you have had sexual relations once or a few times. For example a one-night stand.**
- **"Sex in exchange for money, drugs, goods or services" refers to instances when you have GIVEN or RECEIVED money, drugs, or other goods or services in exchange for sex.**

For the purposes of this survey, please note that a sex partner may not belong to more than one group. For example, a sex partner cannot be both a "regular" and "casual" sex partner.

The following questions are about your REGULAR MALE sexual partners, who are men with whom you are having or have had sex on a regular basis, and for whom you may or may not have feelings.

2.6 In the last 12 months, how many REGULAR MALE sex partners have you had vaginal or anal sex with? *(Check ONE only)*

- ☐ None → *If the answer is None, go to question 2.10.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.7 In the last 12 months, how often did you use condoms with your REGULAR MALE sex partners? (Check ONE answer only)

- ☐ Wanted to but never had a condoms
- ☐ Never (0%)

} *If Wanted to or Never, go to question 2.8.*

- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.7a The last time you had sex with your REGULAR MALE sex partner, was a condom used?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.8 In the last 12 months, months, did any of your REGULAR MALE sex partners have any other sexual partners while in a sexual relationship with you?

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

2.9 What is the HIV status of your most recent REGULAR MALE sex partner? *(Check ONE only)*

☐ Seropositive
☐ Seronegative

☐ You don't know the HIV status of your last REGULAR MALE sexual partner.

☐ *Prefer not to answer*

The next few questions are about your CASUAL MALE sex partners, that is a male with whom you've had sexual relations once or a few times, for example, a one-night stand.

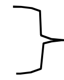
2.10 In the past 12 months, with how many MALE CASUAL sex partners have you had vaginal or anal sex with penetration? *(Check ONE answer only)*

☐ None → *If the answer is None, go to question 2.13.*
☐ 1 partner
☐ 2 partners
☐ 3 partners
☐ 4 to 5 partners
☐ 6 to 10 partners
☐ 11 to 19 partners
☐ 20 or more partners

☐ *Don't know*
☐ *Prefer not to answer*

2.11 In the past 12 months, , how often did you use condoms with your CASUAL MALE sex partner(s)? *(Check ONE only)*

☐ Wanted to but never had
☐ Never (0%)
☐ Rarely (less than 25% of the time)
☐ Sometimes (25 to 49% of the time)
☐ Most of the time (50 to 74% of the time)
☐ Almost every time (75 to 99% of the time)
☐ All the time (100% of the time)



Condoms *If Wanted to or Never, go to question 2.12.*

☐ *Don't know*
☐ *Prefer not to answer*

2.11a The last time you had sex with your CASUAL MALE sex partner, was a condom used?

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

2.12 What is the HIV status of your most recent CASUAL MALE sex partner? *(Check ONE only)*

☐ Seropositive
☐ Seronegative

☐ You don't know the HIV status of your most recent CASUAL MALE sex partner.

☐ *Prefer not to answer*

The following questions are about sex with FEMALE PARTNERS in the last 12 months. This includes giving and receiving vaginal and anal sex.

2.13 In the last 12 months, how many FEMALE sex partners have you had vaginal or anal sex with? *(Check ONE only)*

- ☐ None → *If the answer is None, go to question 2.21.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The next few questions are about your REGULAR FEMALE sex partners, that is, a female with whom you have or had an ongoing sexual relationship and with whom you may or may not have an emotional relationship.

2.14 In the last 12 months, how many REGULAR FEMALE sex partners have you had vaginal or anal sex with? *(Check ONE only)*

- ☐ None → *If the answer is None, go to question 2.18.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.15 In the last 12 months, how often did you use condoms with your REGULAR FEMALE sex partner(s)? *(Check ONE only)*

If Wanted to or Never, go to question 2.16.

- ☐ Wanted to but never had
- ☐ Never (0%)
- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.15a The last time you had sex with your REGULAR FEMALE sex partner, was a condom used?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.16 In the past 12 months, did any of your REGULAR FEMALE sexual partners have any other sexual partners while in a sexual relationship with you?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.17 What is the HIV status of your most recent REGULAR FEMALE sex partner? *(Check ONE only)*

- ☐ Seropositive
- ☐ Seronegative

- ☐ You don't know the HIV status of your most recent REGULAR FEMALE sex partner.

- ☐ *Prefer not to answer*

The next few questions are about your CASUAL FEMALE sex partners, that is, females with whom you've had sexual relations once or a few times. For example, a one-night stand. This does not include females whom you have given or received money, drugs, or other goods or services to in exchange for sex.

2.18 In the past 12 months, with how many FEMALE CASUAL sex partners have you had vaginal or anal sex with penetration? *(Check ONE answer only)*

- ☐ None → *If the answer is None, go to question 2.21.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.19 In the last 12 months, how many CASUAL FEMALE sex partners have you had vaginal or anal sex with? *(Check ONE only)*

- ☐ Wanted to but never had
- ☐ Never (0%)

} If the answer is Planned to or Never, go to question *2.20.*

- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.19 In the last 12 months, how often did you use condoms with your CASUAL FEMALE sex partner(s)? *(Check ONE only)*

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.20 What is the HIV status of your last FEMALE CASUAL sex partner? *(Check ONE answer only)*

- ☐ Seropositive
- ☐ Seronegative

- ☐ You don't know the HIV status of your most recent CASUAL FEMALE sex partner.

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The next few questions are about sex partners you have GIVEN money, drugs, or other goods or services

2.21 In the last 12 months, to how many sexual partners have you GIVEN money, drugs, goods or services in exchange for vaginal or anal sex with penetration? *(Check ONE answer only)*

- ☐ None → *If the answer is None, go to question 2.23.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.22 In the last 12 months, how often did you use condoms with sex partners who you GAVE money, drugs, or other goods or services in exchange for vaginal or anal sex? *(Check ONE only)*

- ☐ Wanted to but never had
- ☐ Never (0%)

} *If wanted to or Never, go to question 2.23.*

- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.22 a The last time you had vaginal or anal sex with penetration with a sexual partner to whom you GAVE money, drugs, goods or services in exchange for sex, did you or your partner use a condom?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The next few questions are about sex partners from whom you RECEIVED money, drugs, or other goods or services in exchange for sex.

2.23 In the last 12 months, from how many sexual partners have you RECEIVED money, drugs, goods or services in exchange for vaginal or anal sex with penetration? *(Check ONE answer only)*

- ☐ None → *If the answer is None, go to question 2.25.*
- ☐ 1 partner
- ☐ 2 partners
- ☐ 3 partners
- ☐ 4 to 5 partners
- ☐ 6 to 10 partners
- ☐ 11 to 19 partners
- ☐ 20 or more partners

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.24 In the last 12 months, how often did you use condoms with sex partners from whom you RECEIVED money, drugs, or other goods or services in exchange for vaginal or anal sex? *(Check ONE only)*

- ☐ Wanted to but never had
- ☐ Never (0%)

} *If wanted to or Never, go to question 2.25.*

- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.24 a last time you had vaginal or anal sex with a partner from whom you RECEIVED money, drugs or other goods or services in exchange for vaginal or anal sex, did you or your partner use a condom?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

2.25 In the past 12 months, have you been drunk, high or buzzed on any of the following substances while you were having vaginal or anal sex? *(Check ONE response for each item)*

	Yes	No	*Don't know*	*Prefer not to answer*
Alcohol	☐	☐	☐	☐
Marijuana or hash or pot or grass	☐	☐	☐	☐
Poppers	☐	☐	☐	☐
Special K or ketamine	☐	☐	☐	☐
Ecstasy or MDMA	☐	☐	☐	☐
Other amphetamines or stimulants	☐	☐	☐	☐
Cocaine or crack or free base	☐	☐	☐	☐
Heroin (smack)	☐	☐	☐	☐
Other opioids (percocet, dilaudid, oxycontin or oxyneo)	☐	☐	☐	☐
Crystal meth	☐	☐	☐	☐
GHB ("G")	☐	☐	☐	☐
Tranquilizers or benzodiazepine (benzos)	☐	☐	☐	☐
Psychedelics (LSD, acid, mescaline or mushrooms)	☐	☐	☐	☐
Other (specify): ________________________________	☐	☐	☐	☐

The following questions are about dry sex, circumcision and female excision.

Dry sex is defined as women who use substances or herbs to reduce wetness in their vagina before having sexual intercourse.

If participant is male: **Circumcision is a procedure where some or the entire foreskin of the penis has been removed.**

If participant is female: **Female excision is a procedure where some or all of the external female genitalia has been removed.**

2.26 In the past 12 months, have you engaged in dry sex?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The following question is for MALE participants only. If you are a FEMALE, please go to Question 2.28.

2.27 Have you been circumcised (cut)?

- ☐ Yes
- ☐ No

- ☐ Does not apply

- ☐ *Don't know*
- ☐ *Prefer not to answer*

(No, Does not apply, Don't know, Prefer not to answer:) Go to question 3.1.

2.28 Have you had any kind of female excision?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

Section THREE: Travel History

The next few questions are about your travel history to specific countries in Sub-Saharan Africa, the Caribbean, Central/South America and Asia. The countries we are referring to are highlighted on the map below.

3.1 In the past five years, have you travelled to any of the highlighted countries in Sub-Saharan Africa, the Caribbean, Central/South America or Asia? *(See countries highlighted on map above for reference)*

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

Prefer not to answer, go to question 4.1.

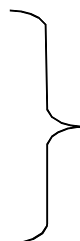
MTL3 (3.1) Specify the country or countries that you have travelled to in the past five years and the number of times that you have travelled there during that period.

Country:________________________ Frequency: ____________
Country:________________________ Frequency: ____________
Country:________________________ Frequency: ____________
Country:________________________ Frequency: ____________
Country:________________________ Frequency: ____________

☐ *Don't know*
☐ *Prefer not to answer*

3.1 a During these trips, did did you have vaginal or anal sex with anyone who lives in the specified countries in Sub-Saharan Africa, the Caribbean, Central/South America or Asia?

- ☐ Yes
- ☐ No
- ☐ Never had sex
- ☐ *Don't know*
- ☐ *Prefer not to answer*



If the answer is No, Never had sex, Don't know, or Prefer not to answer, go to question 4.1.

3.1 b How often did you use condoms with these sex partners? *(Check ONE answer only)*

- ☐ Wanted to but never had
- ☐ Never (0%)
- ☐ Rarely (less than 25% of the time)
- ☐ Sometimes (25 to 49% of the time)
- ☐ Most of the time (50 to 74% of the time)
- ☐ Almost every time (75 to 99% of the time)
- ☐ All the time (100% of the time)

- ☐ *Don't know*
- ☐ *Prefer not to answer*

Section FOUR: Drug Use

The following two questions are about the recreational use of drugs including steroids that were NOT prescribed to you for injection. These questions are not about drugs injected for medical reasons, for example, insulin injections for diabetes. Please be assured that all information you provide will remain strictly confidential.

4.1 Have you ever injected drugs (shot up) for non-medical reasons? This includes self-injection or injection by someone else. *(Check ONE only)*

- ☐ Never
- ☐ Yes, but not in the past six months
- ☐ Yes, in the past six months

If the answer is Never or Yes, but not in the last six months, go to question 5.1.

- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the person replied Don't know or Prefer not to answer, go to question 5.1.

4.1 a In the past 6 months, have you used needles and/or syringes that had already been used by someone else? This includes all used needles and syringes, whether they had been cleaned or not.

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

Section FIVE: Access to and Use of Health Systems and Services

The following section is about access to and use of health care services. This includes your experiences getting health care from a doctor, nurse, or other health care provider.

NOTE!

A primary health care provider' is a health care practitioner who provides care to people that have common medical problems. This person is usually a doctor, but may be a physician assistant or a nurse practitioner.

5.1 Do you have a family doctor or a primary health care provider?

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

5.2 In the past 12 months, did you visit a health care provider or a health facility for medical attention, consultation, health information or to take part in a program?

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

If the answer is No, Don't know, or Prefer not to answer, go to question 5.4.

5.3 In the past 12 months which of the following health providers, facilities or services have you used or visited for medical attention, health information or to take part in a program? (*Check ONE response for each item)*

	Yes	No	*Don't know*	*Prefer not to answer*
Family doctor or primary health care provider	☐	☐	☐	☐
Hospital	☐	☐	☐	☐
Medical specialist	☐	☐	☐	☐
Medical clinic or walk-in clinic	☐	☐	☐	☐
CLSC (local community service centre)	☐	☐	☐	☐
Community organization (Community day centre)	☐	☐	☐	☐
Practitioner of alternative or traditional medicine	☐	☐	☐	☐
Needle exchange or harm reduction program:				
In a fixed location in a community organization like Cactus, Spectre de rue, Dopamine, etc.	☐	☐	☐	☐
In a CLSC	☐	☐	☐	☐
In a drug store	☐	☐	☐	☐
Other (specify): ___________________	☐	☐	☐	☐
Detox or drug treatment facility	☐	☐	☐	☐
Mental health or addiction centre	☐	☐	☐	☐
Sexual health centre or facility				
Prison/Corrections facility	☐	☐	☐	☐
Refugee detention centre	☐	☐	☐	☐
Other (specify):	☐	☐	☐	☐

5.4 In the past 12 months, have you experienced any difficulties getting the health care you needed? *(Check ONE only)*

- ☐ Yes
- ☐ No
- ☐ You have not required any health care in the past 12
- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the answer is Yes, go to question 5.5.

5.4a What type of difficulties did you experience? *(Check ALL answers that apply)*

- ☐ No health care providers were available in your area.
- ☐ The specific service you needed was not available in your area.
- ☐ You didn't know how to find the health care you needed.
- ☐ You found it difficult to get an appointment, diagnosis or referral.
- ☐ The wait time was too long.
- ☐ You had problems getting there.
- ☐ There was a language barrier (i.e. you weren't able to communicate with the health care service provider).
- ☐ You couldn't pay for the health care service or the service wasn't covered by your insurance.
- ☐ Personal or family responsibilities prevented you from receiving the health care you needed.
- ☐ You weren't able to leave home because of a health problem.
- ☐ The health care provider was not culturally sensitive or was racist.
- ☐ The health care provider was of the opposite sex.
- ☐ Other (specify): ________________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The following questions are about vaccinations and other infections that you have or have had in the past.

5.5 Have you ever had a vaccine against the following? (*Check ONE response for each item)*

	Yes, in the past 6 months	Yes, more than 6 months ago	No	*Don't know*	*Prefer not to answer*
Hepatitis B (e.g. Engerix-B, Pediatrix, Recombivax HB)	☐	☐	☐	☐	☐
Human papillomavirus (HPV) (e.g, Gardesil, Cervarix)	☐	☐	☐	☐	☐

5.6 Have you ever been tested for tuberculosis?

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

5.7 Have you ever been told by a health professional (e.g. doctor or nurse) that you have or had any of the following infections? (*Check ONE response for each item)*

	Yes, in the **In the past 6 months**	Yes, than **6 months**	No	*Don't know*	*Prefer* **not to answer**
Tuberculosis (Tb)	☐	☐	☐	☐	☐
Hepatitis B	☐	☐	☐	☐	☐
Hepatitis C	☐	☐	☐	☐	☐
Chlamydia	☐	☐	☐	☐	☐
Gonorrhoea	☐	☐	☐	☐	☐
Syphilis	☐	☐	☐	☐	☐
Genital or anal warts	☐	☐	☐	☐	☐
Human Papillomavirus	☐	☐	☐	☐	☐
Genital Herpes	☐	☐	☐	☐	☐
Lymphogranuloma venereum	☐	☐	☐	☐	☐

Section SIX: HIV Testing, Care and Treatment

This section is about HIV testing. These questions are about diagnostic tests, which do not include follow-up tests such as those used to monitor CD4 cell counts or viral loads. Again, please be assured that all information you provide will remain strictly confidential.

6.1 Have you ever been tested for HIV?

- ☐ Yes
- ☐ No
- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the answer is No, Don't know, or Prefer not to answer, go to question 6.17.

6.2 Why did you take your last HIV test? *(Check ALL answers that apply)*

- ☐ You were tested during your immigration medical examination.
- ☐ You get tested routinely for HIV and this was a routine test
- ☐ You took the test after starting a new relationship.
- ☐ You were (or are) pregnant or plan to have a child.
- ☐ Your friends, family or partner encouraged you to take the test.
- ☐ You t got tested after an event that might have put you at risk for HIV
- ☐ You had symptoms or illness that you thought might be related to HIV
- ☐ You found out that a sex partner was or might be HIV positive
- ☐ A health worker recommended that you get tested for HIV
- ☐ You were being tested for another sexually transmitted infection
- ☐ You saw an ad, poster, or article about HIV
- ☐ A Public Health Branch told you that you may have been exposed to HIV.
- ☐ You were notified by a public health unit that you could have been exposed to HIV
- ☐ Other reason (specify): ___________________________
- ☐ No particular reason
- ☐ *Don't know*
- ☐ *Prefer not to answer*

The following questions are for FEMALE participants only. If you are MALE, please go to Question 6.4

6.3 Were you tested for HIV during your last pregnancy? *(Check ONE only)*

- ☐ You have never been pregnant → *If the person has never been pregnant, go to question 6.4.*
- ☐ Yes, you were tested for HIV during your last pregnancy
- ☐ No, you were not tested for HIV during your last pregnancy
- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the person replied Don't know or Prefer not to answer, go to question 6.4.

6.3 a Were you living in Canada during your last pregnancy?

- ☐ Yes
- ☐ No
- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.4 When was your most recent HIV test? *(Check ONE only)*

- ☐ Within the past month
- ☐ 1 to 6 months ago
- ☐ 7 to 12 months ago
- ☐ More than 1 year ago, but less than 2 years ago

Go to question 6.5.

- ☐ More than 2 years ago, but less than 4 years ago.
- ☐ More than 4 years ago
- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the person replied Don't know or Prefer not to answer, go to question 6.5.

The following question is only for participants who have not been tested for HIV in the past 2 years. If you have been tested for HIV in the past 2 years, please go to question 6.5.

6.4 a The following following are some of the reasons people give for not getting an HIV test. Have you not been tested for HIV in the past 2 years because: *(Check ALL that apply)*

- ☐ You've never thought of it.
- ☐ You're afraid to get tested.
- ☐ You think your risk of HIV infection is low.
- ☐ You had trouble getting tested.
- ☐ You're healthy, so you think you don't need to take the test.
- ☐ You think the test is not always reliable.
- ☐ You think you can't get HIV.
- ☐ You think nothing can be done if the test indicates you have HIV.
- ☐ You think being HIV positive would affect your personal or professional life.
- ☐ You think you know your HIV status.
- ☐ You were tested during your immigration medical examination in Canada.
- ☐ Other (specify): ____________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.5 What was the result of your most recent HIV test? *(Check ONE answer only)*

- ☐ HIV positive: you have the virus

- ☐ HIV negative: you do NOT have the virus
- ☐ Indeterminate result: the result was inconclusive.
- ☐ You didn't understand the result.
- ☐ You are still waiting for the result.
- ☐ The result is known, but you haven't received it yet.

} *If the answer is HIV negative or indeterminate, or if the result was not understood, could not be accessed or was not received, go to question 7.1.*

- ☐ *Don't know*
- ☐ *Prefer not to answer*

} *If the person replied Don't know or Prefer not to answer, go to question 7.1.*

6.6 When did you get your first HIV positive result? *(Check ONE answer only)*

- ☐ Within the last month
- ☐ 1 to 6 months ago
- ☐ 7 to 12 months ago
- ☐ More than 1 year ago, but less than 2 years ago
- ☐ More than 2 years ago, but and less than 4 years ago
- ☐ 4 years ago or more

- ☐ *Don't know*
- ☐ *Prefer not to answer*

} *If the person replied Don't know or Prefer not to answer, go to question 6.8.*

6.7 Before your first HIV positive test, when was the last time you had a negative HIV test result? *(Check ONE answer only)*

☐ 1 to 6 months before the first positive test
☐ 7 to 12 months before the first positive test
☐ More than 12 months before the first positive test
☐ I was never tested for HIV before the first positive test

☐ *Don't know*
☐ *Prefer not to answer*

6.8 Do you know how you got infected?

☐ Yes
☐ No
☐ *Prefer not to answer*

If the answer is No or Prefer not to answer, go to question 6.9.

6.8 To the best of your knowledge, how did you become infected with HIV? *(Check ONE only)*

☐ Sex with an HIV-positive man
☐ Sex with an HIV-positive woman
☐ Blood transfusion
☐ Occupational exposure, e.g., accidental puncture with a syringe
☐ Drug injections with used syringes
☐ Mother-to-child transmission during birth or breastfeeding
☐ Razors or syringes that were not disinfected, e.g., scarification or traditional healing technique
☐ Other (specify): ________________________________

☐ *Don't know*
☐ *Prefer not to answer*

6.9 To the best of your knowledge, were you infected with HIV in Canada or in another country? *(Check ONE only)*

☐ In Canada
☐ In another country

☐ *Don't know*
☐ *Prefer not to answer*

6.10 How long after your first HIV diagnosis did you start seeing a doctor for your HIV infection? *(Check ONE only)*

- ☐ You have never seen a doctor for your HIV infection →
- ☐ 3 months or less after your diagnosis
- ☐ 4 months to 6 months after your
- ☐ 7 months to one year after your
- ☐ More than a year after your diagnosis

If the answer is you have never seen a doctor for your HIV infection, go to question 7.1.

- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.11 Are you currently under the care of a doctor or other health care professional for your HIV infection? This means a single visit or more to a doctor or other health professional in the past six months for HIV monitoring (e.g., viral load, CD4 cell count), treatment, counselling, etc.

- ☐ Yes
- ☐ No

- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.12 Have you EVER taken prescription drugs to treat your HIV infection?

- ☐ Yes
- ☐ No → *If the answer is No, go to question 6.15.*

- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the person replied Don't know or Prefer not to answer, go to question 6.16.

NOTE!

HIV medications:

Nucleoside reverse transcriptase inhibitors: Retrovir (AZT), Videx, Videx EC, Epivir (3TC), Zerit, Emtriva, Ziagen, Combivir, Trizivir, Kivexa, Turvada, Viread, Hivid
Non-nucleoside reverse transcriptase inhibitors: Viramune, Rescriptor, Sustiva
Protease inhibitors: Invirase, Crixivan, Norvir, Agenerase, Kaletra, Reyataz, Aptivus, Telzir, Fortovase, Viracept, Atazanavir
Fusion inhibitors: T-20 (Enfuvirtide)

6.13 Where did you start taking prescription drugs to treat your HIV infection? *(Check ONE answer only)*

- ☐ In Canada
- ☐ In another country
- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.14 Are you CURRENTLY taking prescription drugs to treat your HIV infection?

- ☐ Yes
- ☐ No

→ *If the answer is Yes, go to question 6.16.*

- ☐ *Don't know*
- ☐ *Prefer not to answer*

If the person replied Don't know or Prefer not to answer, go to question 6.16.

6.14 a When did you stop taking prescription drugs to treat your HIV infection? *(Check ONE answer only)*

- ☐ Within the last month
- ☐ 1 to 6 months ago
- ☐ 7 to 12 months ago
- ☐ More than 1 year ago, but less than 2 years ago
- ☐ More than 2 years ago, but and less than 4 years ago
- ☐ 4 years ago or more than

- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.14 b Why are you <u>not</u> taking prescription drugs to treat your HIV infection? *(Check ALL answers that apply)*

- ☐ You don't have a doctor.
- ☐ You had far too many logistical challenges to get your HIV medications, e.g., transportation, distance between home and the drug store, opening hours of the clinic or pharmacy.
- ☐ You tried taking them and stopped because you couldn't afford them.
- ☐ You tried taking them and stopped because you had side effects.
- ☐ You tried taking them and stopped because the prescription was too complicated or it was too difficult to take the medications.
- ☐ Your doctor told you that you didn't need them yet for medical reasons.
- ☐ Your doctor told you that you were not ready to take them, for non-medical reasons.
- ☐ You were never prescribed any.
- ☐ They are not covered by your insurance policy.
- ☐ Your doctor recommended that you stop treatment because of side effects, another illness, travel restrictions or surgery.
- ☐ Other (specify):____________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

The following question is only for participants who have <u>never</u> taken prescribed medication to treat HIV infection. If you have taken prescribed medication, please go to question 6.16.

6.15 Why have you <u>never</u> taken prescription drugs to treat your HIV infection? *(Check ALL answers that apply)*

- ☐ You never started taking them because you couldn't afford them.
- ☐ Your doctor never discussed treatment with you or didn't offer you the medications.
- ☐ Your doctor told you that you didn't need them yet, for medical reasons.
- ☐ Your doctor told you that you were not ready to take them, for non-medical reasons.
- ☐ They are not covered by your insurance policy.
- ☐ Other (specify):________________________

- ☐ *Don't know*
- ☐ *Prefer not to answer*

6.16 Have you ever used an alternative or traditional medical treatment for your HIV infection?

☐ Yes
☐ No

☐ *Don't know*
☐ *Prefer not to answer*

The following question is only for participants who have NEVER been tested for HIV. If you have ever been tested for HIV, please go to question 7.1.

6.17 The following statements provide some reasons people give for never having taken an HIV test. You have never taken an HIV test because: *(Check ALL answers that apply)*

☐ You never thought about it
☐ You're afraid to get tested
☐ You think your risk of HIV infection is low
☐ You had trouble getting tested
☐ You're healthy, so you think you don't need to take the test
☐ You think the test is not always reliable
☐ You think you can't get an HIV infection
☐ You think nothing can be done if the test indicates you have HIV
☐ You think being HIV positive would affect your personal or professional life
☐ You think you know your HIV status
☐ Other (specify): ________________________________

☐ *Don't know*
☐ *Prefer not to answer*

Section SEVEN: Knowledge and Beliefs about HIV

The last two questions are about your knowledge of HIV, how it is transmitted and how people can protect themselves against infection.

7.1 In the last 12 months, apart from this survey, where have you heard about, seen or read about HIV or AIDS?
(Check ALL answers that apply)

- ☐ Friends
- ☐ Family
- ☐ Television
- ☐ Radio
- ☐ Newspapers or magazines
- ☐ Social media (Twitter, Facebook, etc.)
- ☐ Websites or the Internet (Google, Wikipedia, etc.)
- ☐ Advertising (flyers, posters, etc.)
- ☐ Doctors, nurses, social workers, pharmacists and other health professionals
- ☐ At school
- ☐ At work
- ☐ At seminars, conferences or workshops
- ☐ At a medical clinic or hospital
- ☐ At local or provincial public health service locations
- ☐ Through Health Canada or the Public Health Agency of Canada
- ☐ Through an HIV/AIDS service organization for community organizations
- ☐ Through churches or other religious institutions
- ☐ Other (specify): ____________________

- ☐ You haven't seen or heard anything about HIV or AIDS
- ☐ *Don't know*
- ☐ *Prefer not to answer*

7.2 Based on what you know, answer Yes or No to the following questions. There is nothing wrong with saying you don't know. This is not a test. *(Check ONLY ONE box for each option)*

	Yes	No	*Don't know*	*Prefer not to answer*
Can having sex with only one, faithful, uninfected partner reduces the risk of HIV transmission?	☐			
Can using condoms reduce the risk of HIV transmission?	☐			
Can a healthy-looking person have HIV?	☐			
Can a person get HIV from mosquito bites?	☐			
Can a person get HIV by sharing a meal with someone who infected	☐			
Is there currently a cure for HIV?	☐		☐	☐

You have finished answering the questionnaire.

If you are completing it on your own, please inform the research assistant that you are ready to have your blood sample taken.

Enter the interview end time. Please indicate in 24-hour time. For example, 5:45pm is recorded as 17:45. .

____

Do you have any comments about the questionnaire? For example: Were any of the questions confusing? Did you object to answering any of the questions? How did you find the length of the questionnaire?

____

____

____

____

DBS collection

Before I collect the finger-prick blood sample, do you have any questions?

Provide risk reduction counselling as appropriate. Give referrals for HIV and/or hepatitis C counselling, treatment or testing if appropriate. Provide information on local health and social agencies if appropriate.

Now I will collect the finger-prick blood sample.

Was the DBS collected?

- ☐ Yes
- ☐ No (indicate the reason): ____

Record time taken for DBS collection: _________________________ (minutes)

Do you have any general comments about the survey?

____

____

____

____

The survey ends. Thank you for taking the time to participate in this survey.

Please return the questionnaire to the interviewer.