

## HIV TESTING IN PRIMARY CARE: FEASIBILITY AND ACCEPTABILITY OF PROVIDER INITIATED HIV TESTING AND COUNSELING FOR SUB-SAHARAN AFRICAN MIGRANTS

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Provider-initiated HIV testing and counseling (PITC) is recommended to reduce late HIV diagnoses, common among Sub-Saharan African migrants (SAM) residing in Europe. Primary care represents an ideal entry point for PITC. To support Flemish general practitioners (GPs), we developed a culturally sensitive PITC tool. Over a 12-week period, 65 GPs implemented PITC to assess acceptability and feasibility of PITC. The qualitative evaluation showed high acceptability among physicians. Routine PITC was challenged by physicians' personal discomfort, assumptions of patients' sexual risk, perceived incoherence with reasons for consultation, and time pressure. The best opportunity for PITC was an indicated blood analysis for other medical reasons. Counseling skills improved during the implementation, but participants still advocated for reduced counseling requirements. PITC proved to be feasible in primary care settings, but the up-scaling requires a reformulation of counseling guidelines, a policy stipulating the role of GPs in the prevention-care continuum, and an investment in (continuous) training.

Sub-Saharan African migrants (SAM) residing in Europe are the second largest group affected by HIV in this region (European Centre for Disease Prevention and Control, 2012) and more likely to be diagnosed late (Boyd et al., 2005; Chee et al., 2005).

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Although the SAM communities in Belgium are small (1.6% of the total population), they accounted for 34.6% of newly diagnosed HIV patients in 2011 (Sasse, Verbrugge, & Van Beckhoven, 2012). Half of them (51%) were diagnosed with a CD4 count below 350 cells/mm<sup>3</sup> or an AIDS-defining illness. The consequences of late diagnoses are threefold. First, the individual patient is limited to access specialized care and treatment timely. Second, lack of awareness of one's HIV status and elevated viral load will increase the risk of onward transmission, and thus foster the epidemic. Finally, late diagnoses translate into significantly higher health care costs (Krentz, Auld, & Gill, 2004). The promotion of HIV testing and counseling therefore remains a public health priority (European Centre for Disease Prevention and Control/ World Health Organization Regional Office for Europe, 2012).

To reduce the public health burden of late diagnoses, a mix of service delivery models should be offered. The World Health Organization (WHO) recommends client-initiated HIV testing to be complemented with provider-initiated HIV testing and counseling (PITC), in particular for concentrated HIV epidemics among SAMs in Europe (World Health Organization Europe, 2010). In Flanders (the Dutch-speaking part of Belgium), efforts have been traditionally focused on client-initiated approaches, such as campaigns promoting HIV testing in the SAM communities, low-threshold and free HIV counseling and testing (VCT) offers, and VCT outreach projects (HIV-SAM Project, 2011). While late diagnoses among SAM decreased, from 71% in 2004, to 60% in 2008, and 51% in 2011, cultural barriers towards client-initiated HIV testing remain high. SAMs often feel "it's better not to know," and prefer to remain ignorant about their HIV status rather than facing the consequences of a positive diagnosis. To many, HIV continues to stand for early death, deteriorating illness, stigma, social exclusion, and potentially, deportation. SAM often underestimate their personal HIV risk, lack a preventive medical culture, and expect their physician to proactively propose an HIV test (Manirankunda, Loos, Alou, Colebunders, & Nöstlinger, 2009).

The majority (66%) of SAMs in Belgium are diagnosed on their physicians' initiative, following clinical indications, in a prenatal or preoperative check-up, or for administrative reasons (Sasse, 2012). Hospital-based clinicians identify about half (53%) of all new HIV diagnoses in Belgium (A. Sasse, personal communication, April 2013). Subsequently, many diagnostic opportunities may be missed by the primary health care system, as shown in the UK (Burns et al., 2008). While, as the first point of contact, primary care constitute great opportunities for the up-scaling of HIV testing (Van der Veken, 2012), there is evidence to suggest that primary care clinicians often fail to recognize the clinical signs of an HIV infection (Burns et al. 2012; Sudarshi et al., 2008). Flemish physicians lack appropriate knowledge on the medical relevance of HIV testing of SAMs, they also lack time, are concerned about stigmatizing attitudes and harming the doctor-patient relationship and feel unequipped to provide culturally sensitive sexual health counseling (Manirankunda, Loos, Debackere, & Nöstlinger, 2012). Similar barriers have also been observed among physicians in other countries, such as the United States (Burke et al., 2007). In order to expand GPs' potential role in up-scaling of HIV testing among SAM, these barriers need to be addressed. To this end, the HIV-SAM project<sup>1</sup> developed "Provider-Initiated HIV testing and Counseling Guidelines for Sub-Saharan African Migrants in Flanders" as a supportive tool to help guide GPs in conducting PITC

1. The HIV-SAM Project of the Institute of Tropical Medicine (ITM) is mandated by the Flemish government to develop and implement HIV prevention and promotion of sexual health in the SAM communities residing in Flanders.

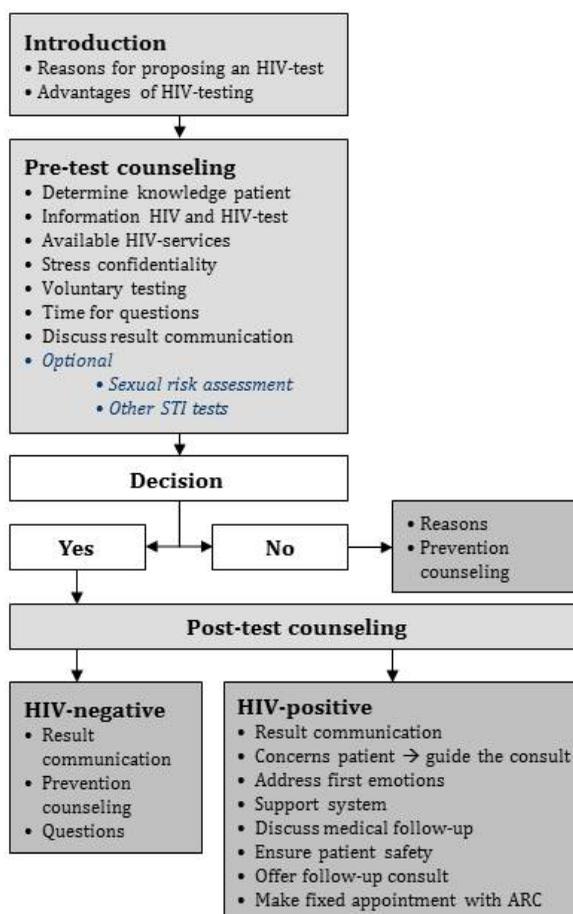


FIGURE 1. HIV-counseling steps as summarized in the PITC tool.

in primary care.<sup>2</sup> consists of an epidemiological fact sheet underpinning the medical relevance of PITC and specific counseling guidelines. A detailed description of the WHO counseling steps (see Figure 1) is included in the latter, accompanied by information on the cultural context of PITC with SAMs along with practical communication tips. The guidelines were developed in line with HIV exceptionalism standards, e.g., stressing voluntarism, confidentiality, and the importance of counseling (Deblonde et al., 2011), to meet SAMs' request for counseling (Burns et al., 2008; Kroner, 2007; Manirankunda et al., 2009) and to safeguard the preventive aspect of HIV testing,

Prior to scaling-up the PITC promotion interventions and to inform PITC policy development, this observational study was set up. It aimed to qualitatively evaluate the acceptability and feasibility of GPs to implement PITC on a routine basis.

2. These PITC guidelines were developed in collaboration with the low-threshold HIV testing center, Helpcenter-ITM, the Scientific Institute of Public Health, and the unit for general medicine of the University of Antwerp.

## METHODS

This study consisted of two phases: implementation of the PITC tool, and the qualitative assessment of GPs' experiences in using this tool. The study obtained ethical approval from the Institutional Review Board of the Institute of Tropical Medicine (Antwerp) and the University of Antwerp.

We contacted key persons from professional GP organizations in cities with large SAM communities (i.e., in Brussels, Antwerp, and Ghent). In total, we invited 252 GPs from 40 settings to participate. Ninety GPs showed interest to participate, however, only 65 met the inclusion criteria (i.e., seeing patients from sub-Saharan Africa and being willing to implement PITC in their practice as well as to participate in the qualitative assessment). Before inclusion, GPs signed the informed consent forms and filled in a brief socio-demographic questionnaire.

### PHASE 1: IMPLEMENTATION PERIOD

During the 12-week implementation period (November 2011 to January 2012), we asked participants to proactively propose an HIV test and provide counseling to all their patients from sub-Saharan Africa following all PITC steps as described in the tool provided (see Figure 1).

### PHASE 2: QUALITATIVE EVALUATION OF PITC FOR SAM

We chose a qualitative evaluation approach to be able to explore the issues emerging in relation to PITC in general practice in depth. Because this study was the first to evaluate PITC for SAM in GPs' practices, the multidisciplinary study team, including two GPs, assumed the experiences to be diverse and dependent on many factors.

We invited all 65 participants either to a focus group discussion (FGD) or in-depth interview (IDI). To ease time constraints, group practices were given the option to have only one GP report back on the collective experiences of their colleagues. Not all practices chose this option. We conducted both IDIs and FGDs in Dutch and employed similar open-ended topic guides for both: to assess acceptance, we asked GPs about their motivations and barriers regarding PITC, as well as patients' responses. To evaluate the feasibility we asked about GPs' overall experiences with PITC, whether they implemented PITC in every consultation with a patient originating from sub-Saharan Africa, and if they followed all PITC steps provided in the tool (see Figure 1). We also asked the participants' for their input regarding the future promotion of PITC in primary care.

FGDs lasted about 1 hour, IDIs between 30 and 75 minutes. All were audiotaped, transcribed, and analyzed using N-VIVO 10 software. The transcripts and the extensive debriefing notes from the interviews were coded using a data-driven codebook established by two independent researchers. Following inductive analysis principles (Patton, 1990) emerging themes and their relationships were identified. In a second-order analysis we aimed to identify respondent clusters based on gender, age, professional experience, training background, and type of practice.

TABLE 1. Characteristics of the Participants and their Practices

	Phase 1 (N = 65)	Phase 2 (N = 25)
Gender		
Male	22	13
Female	43	12
Average age (range)	39 (25–65 years)	40 (25–64 years)
Experience		
Average (range)	10.9 years (2 months–40 years)	11.3 years (1 year–40 years)
< 5 years	24	10
≥ 5 years	39	15
Missing data	2	
Setting GP practice		
Antwerpen region	26	9
Ghent	21	4
Brussels region	18	12
Type of GP practice		
Health center, capitation fee	47	19
Group practice, fee for service	15	4
Solo practice, fee for service	2	2
Missing data	1	0
Average number of patients per week	70	73
Average number of SAM patients per week	6.4	6.6
Estimated number of HIV tests performed among SAM patients	Before the study (in one month)	During the study (12 weeks implementation period)
None	18	2
1–4	44	7
5–10	1	8
11–15	0	4
16 or more	0	2
Missing data	2	2

## FINDINGS

### CHARACTERISTICS OF THE PARTICIPANTS

Of the 65 GPs who implemented PITC across 20 different settings, 25 (from 16 practices) participated in the qualitative evaluation. Sixteen GPs participated in three FGDs, eight in an IDI (six of the latter presented their personal as well as the collective experiences of their colleagues), and one elected to send feedback by e-mail due to time constraints. All GPs, with the exception of two, completed the full implementation period.

Table 1 shows that in both study phases, the female participants were typically younger and had less professional experience than their male counterparts. In the implementation phase, both genders had seen about the same number of SAM

patients (average of 6.4) and had performed about the same number of HIV tests among SAMs. In the evaluation phase, male participants saw more patients and performed more HIV tests in the target group. Six HIV diagnoses were reported, although not all of these tests were provider-initiated. Patients had requested some of these tests.

## ACCEPTANCE OF PITC

### General Practitioners' Motivations and Barriers Regarding PITC

The numbers speak for themselves. (male, health center)

Almost all participants mentioned medical relevance as their main motivation to implement PITC. According to them, the HIV problem among SAMs in Belgium is not known enough among physicians. Many of the participants attributed their personal awareness to previous training in tropical medicine and/or (work) experience in Africa:

Most doctors don't have the reflex to think of SAM as people at risk. With gay men they automatically think of the risk.... Endemic HIV in sub-Sahara Africa is not perceived as a risk.... if you haven't been to Africa, you don't realize this risk. (male, group practice)

Participants who already had some HIV-positive SAMs among their patients showed an increased awareness, as well as those who reported having already diagnosed persons considered low-HIV-risk cases in the past. Three participants mentioned that the PITC tool, distributed for the study, had sensitized their colleagues to the need for HIV testing. They found not only the epidemiology, but also the cultural background information, to offer convincing arguments for proposing PITC with this population. In two health centers, participants reported beginning to worry about missed opportunities:

I would find it awful, if there were to be an African, who had been a patient here for three years and we would have 'missed' him all this time.... I checked the patient files, about half of the SAM in our practice have never been tested. Although there might be a bias, some women will probably have been tested at their gynecologist. (female, health center)

We interviewed the two GPs who stopped their participation during the implementation period and asked them about their barriers to implement PITC. They were in line with some of the initial barriers of other participants. Most mentioned the sensitivity of HIV, their own personal discomfort regarding discussing HIV, and worries about stigmatizing their patients. They feared that patients would accuse them of xenophobia and would perceive the proposition to test as an accusation of sexual promiscuity:

You are African, you must have HIV. There is a prejudice there.... Many African patients have a wife and children. There is the suggestion of adultery. (female, health center, stopped during the implementation period)

Others were afraid that proactively proposing an HIV test might negatively affect the patient-physician relationship:

Why is this test for this patient I have been treating for years, suddenly an issue?... Does my doctor estimate my individual risk higher? (male, health center, stopped during the implementation period)

Furthermore, this particular participant felt that SAMs were unaware of the effect of the elevated HIV prevalence on their individual risk. Awareness campaigns, promoting, and contextualizing HIV tests as a public health measure were noted as lacking, while he believed them to be a necessary prerequisite for GP involvement. This participant also argued that barriers towards HIV testing were too complex for a GP to address in his consultation room. The other interviewee who stopped during the implementation phase mentioned that although she was in favor of PITC, she and her colleagues feared negative patient reactions, which could potentially jeopardize the success of their recently established health center. In addition, being overloaded with many other preventive measures, as well as having a chronic lack of time, were noted by many GPs as additional barriers to PITC.

### **Patients' Reactions**

In half of the interviews, participants reported that they had experienced no refusals from SAM patients when proposing a test. Patients were largely receptive and convinced that testing was beneficial. Some patients acknowledged they had run risks and did not test enough. The other half of participants, however, reported at least one patient refusal. Patients had declined mostly because of perceived lack of necessity. We also received three reports of patients being offended by the offer. Refusals were more common when PITC was not linked to a blood analysis conducted for other reasons. Two participants mentioned that they believed their patients' resistance might have been a reflection of their own unease with the topic.

## **FEASIBILITY OF PITC**

### **General Practitioners' Overall Experiences**

It was hard to start because of fear. You have to force yourself but when you manage to start, you feel confident and encouraged to go ahead. (FGD, health center)

Half of the participants mentioned experiencing some initial discomfort in adopting PITC, related mainly to the barriers mentioned above. Despite this, receiving positive responses from patients and identifying risk behavior during counseling encouraged them to proceed. Others suggested the PITC guidelines helped to ease their initial discomfort. The other half, mainly participants with many years of professional experience, reported experiencing no discomfort at all. This group felt encouraged by the medical relevance of testing for HIV in this population and had confidence in their patient-physician relationships.

It [PITC] is a case of trust, if you are a physician with 30 years' experience, you have that trust already upfront. (IDI, male, group practice)

### **PITC in Every Routine Consultation?**

You need an entry to start [PITC]. Screening out of the blue is difficult for the doctor, not so much for the patient. (FGD, mixed group)

The majority of participants believed that it was not feasible or desirable to adopt PITC during all types of consultations. However, ten participants reported that a blood analysis conducted for other medical reasons offered the best opportunity to suggest an HIV test. Some participants even reported that they had only proposed an HIV test in consultations in which a blood analysis was already recommended. In fact, two participants mentioned they had proposed blood analyses faster than usual, just to create this opportunity. A female participant reported that her SAM patients expected HIV to be part of a blood analysis anyway:

SAM often say: check it all, doctor. Probably they don't dare to ask [for an HIV test] themselves. When they afterwards call for the results, they ask for their HIV results. (female, health center)

Sexual and reproductive health consultations, including discussions regarding a desire to have children, contraceptive advice, and requests for testing for other sexually transmitted diseases also provided good entry points for PITC. Other opportunities included medical indications, prevention counseling, traveling back home, or risk behavior.

In 4 of the 16 general practice settings included in the research, participants reported that they did think PITC was possible in every type of consultation, and they implemented it as such. This group of participants attributed their ease and willingness to be involved in PITC to their years of professional experience, understanding of the medical necessity, and viewing PITC as a routine dimension of preventive medicine:

I have always had this aspect of prevention [in a consult]. I change easily between a twisted ankle and, for example, a vaccination or a blood group card. HIV is one of those [prevention] things to me. (male, group practice)

One health center strategically opted for PITC in every consultation, because they had experienced patients not returning when invited for a preventive consultation.

Participants reported that specific types of consultations did not lend themselves to PITC. This included: when patients needed comforting, when children were brought along to the consultation or when the patient was not seeing his or her regular GP. Time constraints and GPs' assessment of the individual patients' risk influenced whether or not a test was proposed. When the family situation was known and risk estimated to be low, no test was proposed. After a recent pregnancy or HIV test, PITC was not performed. Some participants, however, questioned their own risk assessments based on intuitive assumptions:

I make an assessment of the risk myself. For example, a young African patient who has been living here for many years and works for the city. I think he is not really at risk.... while I know it is not true. ... We make a wrong link, using the Flemish reference. (female, health center)

#### PITC STEPS: PRE- AND POST-TEST HIV COUNSELING

The PITC steps are too many. You need to choose between exaggeration that won't happen anyway or a few essential aspects. (male, group practice)

According to the study participants, proposing an HIV test to patients of Sub-Saharan African origin, who came to see the doctor with other medical complaints, clear-

ly had an impact on the counseling provided. Because the GPs' priority was always to address their patients' questions, they were typically left with limited time for HIV counseling. Most participants, therefore, only addressed the steps prescribed in the PITC tool rudimentarily. Two of them said they had conducted no counseling at all, and had only asked for patient consent to include HIV in the blood analysis.

When introducing the test, most stressed to patients the relationship between HIV and country of origin and the benefits of an early diagnosis. The explanation of the test itself and assessment of the patients' knowledge was minimal. Most participants believed that SAMs already knew this; according to some they were even better informed than Belgian patients. Some stressed confidentiality, others did not talk about it, assuming that patients were aware of this. Interestingly, although the PITC tool described sexual risk assessment as optional, most GPs addressed it.

You can learn a lot from the nonverbal language. Not really exactly how many partners there were, but that there were more than one. It is the same for men and women. They consider it normal you ask about this. You also notice that many traveled back home and have partners there. (male, health center)

Most respondents described their SAM patients as open, although communication could be nonverbal and indirect. They mentioned that the gender of the doctor and the level of trust in the doctor-patient relationship were key to this. Some GPs reported that during the sexual counseling, patients would talk about having multiple partners in Belgium, and/or partners from the country of origin when traveling. Two participants also mentioned the distinction that SAMs can make between high-risk and low-risk partners. Informed consent for testing was always obtained.

Post-test counseling was often linked with the practices' existing policy on communicating lab results. Six participants, mostly from health centers, mentioned they invited all patients to collect their test results personally, independent of its outcome. They wanted to avoid potential language problems and talked about prevention during this consultation. The content of this post-test counseling consultation depended on the GP's assessment of the individual patient, other lab results to be communicated, and time available. Although invited for a follow-up consultation, not all SAM patients returned. Some physicians communicated results over the phone contingent on risk assessment and the patient-doctor relationship. In two group practices, all results were provided over the phone, since this was the general policy. These participants stressed that the preventive counseling took place during the pre-test counseling.

### PROMOTION OF PITC

Finally, participants were asked about their recommendations regarding how to promote the PITC guidelines. Participants preferred direct promotion strategies, such as training and presentations, over indirect distribution of the PITC guidelines:

GPs are not well trained about HIV, they fear it. Ai ai, this patient has HIV, how do I have to treat him? There is a great need for additional training of GPs. They didn't come across it during their general training, especially not if that was a long time ago. (female, health center)

Participants recommended HIV and PITC be included in the academic curriculum of GPs in training. Practicing GPs could be trained via continuing medical education sessions. The participants recommended short, tailored training sessions combin-

ing key messages with practical experience. Participants believed such key messages should include epidemiological evidence; i.e., elevated HIV prevalence among SAM, prevalence of late diagnoses and both the prevention and treatment benefits of early diagnoses. They recommended training in intercultural communication to address potential discomfort. This should be supported by practical experiences of GPs who have been implementing PITC successfully:

You need to address the discomfort among the doctors. Be clear that the SAM themselves have less problems with this. (FGD, mixed group)

Participants also suggested that a supportive tool be provided to GPs in the form of a brief guideline, in a user-friendly format for ease of use during consultations. A few of the participants recommended taking an integrative approach by broadening the scope to TB, hepatitis B and C, and other diseases, particularly those affecting SAMs.

The participants identified some pending questions that needed to be addressed prior to up-scaling PITC, in particular, how the extensive PITC steps could be adapted to the structural and time limitations of a busy GP practice. In addition, the time interval in which the test is meant to be repeated raised some concerns:

Many have been screened before. When is it necessary to repeat [the test] and when not? (female, health center)

Participants also recommended that a supportive professional framework be set up. Most suggested that PITC for SAMs needed to be officially recommended by the professional associations that represent GPs. Some suggested that PITC should become part of a GP's official preventive tasks. Others questioned this, however, believing that it would be the first time that such recommendation was made based on ethnic criteria.

Participants also advocated for more awareness-raising campaigns in the SAM communities. Also posters in the waiting room could support PITC efforts. These should encourage SAM to ask for an HIV test themselves. Others noted that specialized HIV care could help to facilitate PITC. For example, many of the participants complained about the limited communication of the AIDS reference centers (ARC) regarding individual patients. They feel that currently they are "losing their patients to the ARC" if they test HIV positive and believed that improved collaboration between primary and specialized care could increase GP awareness of the importance of an early diagnosis. Finally, some practical recommendations were given, such as engagement of the group practice to include reminders in the practices' medical software program and sending out invitation letters to eligible patients.

## DISCUSSION

This observational study provides preliminary evidence that adopting PITC in primary care settings tailored to the needs of SAM is both acceptable and feasible, when specific conditions are met. In line with European literature (Dukers-Muijers, Niekamp, Vergoossen & Hoebe, 2009; Price et al., 2009; Prost, Griffiths, Anderson, Wight, & Hart, 2009), our study showed that GPs accepted PITC as a beneficial measure to be offered to patients of Sub-Saharan African origin. The majority of GPs found PITC acceptable because of public health arguments. Initial discomfort

and worries about stigmatization, held by some, decreased in response to positive experiences gathered during the implementation phase.

Routine implementation of PITC, however, posed some problems. Discomfort introducing an HIV test when there is no link with the patients' request, as well as concerns about making assumptions about patients' sexual risk and persistent time pressures in general practices posed barriers to GPs proposing an HIV test to every SAM patient. Blood tests for other medical indications and sexual and reproductive health consultations were identified as the best opportunities for PITC. In line with other studies, we found that confidence and counseling skills were gained through practice (Hansen, Barnett, Wong, Spencer, & Rekart, 2005) and personal comfort was linked to the quality of counseling (Kahn, Plummer, Hussain & Minichiello, 2008). Still, most participants felt the pre- and post-test counseling steps described in the tool were too extensive for use in routine consultations. Many simplified, or even skipped, steps according to their personal assessment of patients' needs. This implies that no standardized approach was taken. This finding can be linked to the debate between HIV exceptionalism versus normalization (Deblonde et al., 2011). Our PITC tool recommended pre- and post-test counseling because of the evidence of patients' needs (Manirankunda et al., 2009), which is in line with HIV exceptionalism, but this proved unsuitable to GPs' practical reality. The GPs in our study reduced their counseling, using a selective approach. This is in line with normalization arguments: up-scaling of HIV testing can only be achieved if HIV testing is considered standard in care with reduced pre-test counseling. Counseling resources should be focused in first place on people receiving an HIV-positive diagnosis (Delpierre, Cuzin, & Lert, 2007; Hamill et al., 2007).

To promote PITC, our study participants stressed the need for investment in training, both for medical students and qualified GPs. This training was proposed to include epidemiological evidence, benefits of early testing, counseling skills, and training in intercultural competences. Training should also broaden GPs' understanding on what constitutes vulnerability to HIV. In analogy with other key populations affected by the HIV epidemic in Belgium; i.e., men who have sex with men (MSM), most GPs focus solely on sexual risk behavior and thereby underestimate the need for an HIV test for SAMs. Yet the elevated HIV prevalence in their countries of origin and structural factors related to migration (e.g., social exclusion, discrimination, poverty, unemployment, and immigration status difficulties) are also increasing migrants vulnerability to an HIV-infection (European Centre for Disease Prevention and Control, 2010). Failing to identify sexual risk behavior in counseling, therefore, should not exclude proposing an HIV test. Sexual risk assessment is complex: when sexual risk is assessed, attention should be paid to sexual history before and during migration. Estimations of CD4 cell decline among black Africans (Health Protection Agency Center for Infections, 2012) indicate that more than half of SAMs in Belgium were diagnosed at least 4 years after their infection. This implies that assessments of HIV risk should cover past sexual history. Although the number of SAMs who acquired HIV in their host country was long underestimated, three in four African migrants in the UK had acquired their HIV infection before migration (Burns et al., 2009).

Our study showed that personal motivation represented an important success factor for GPs in implementing PITC. To increase ownership of PITC, efforts need to be made to better involve GPs in the broader HIV-prevention strategies targeting SAM. In Belgium, HIV-prevention interventions are highly tailored to the key populations of SAM and MSM. As targeted prevention interventions are implemented in

SAM community settings, GPs may not always be aware of them. This may explain why some GPs felt that PITC was seen to be a stand-alone intervention with limited effectiveness. Efforts would be better coming not solely from the primary prevention field, but also from specialized HIV care. Thus, better integration between primary care and specialized HIV care could support implementation of PITC.

We acknowledge that there are limitations to this study. Self-selection bias and an oversampling of GPs with previous HIV training and work experience in Africa might have led to more positive views of PITC. However, this qualitative study did not aim to produce generalizable results, as it aimed to instead explore the acceptability and feasibility of routine PITC in real life primary care settings.

We conclude that the PITC tool offers a promising way forward to increase the role of primary care physicians in PITC among SAMs. GPs felt supported by the tool, which helped them to—at least in part—overcome some of the barriers they faced in initiating HIV testing. Adopting PITC in primary care settings on a larger scale, however, needs to be complemented by relevant policy measures, such as increased investment in (continuing) training and the formulation of general HIV testing policies that better define and support the role of primary care in the HIV prevention-care continuum.

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