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Research Article

Expansion of HIV testing in Eswatini: stakeholder perspectives on reaching the first 90

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Achieving the United Nations' 90-90-90 goals has proven challenging in most settings and the ambitious 95-95-95 goals seem even more elusive. However, in Eswatini – a lower-middle-income country in sub-Saharan Africa with the highest HIV prevalence in the world – an estimated 92% of people living with HIV know their status. We conducted 26 in-depth interviews with stakeholders from policy, implementation, donor, local advocacy and academic sectors to elicit the facilitators and inhibitors to HIV testing uptake in Eswatini. Background data and related reports and policy documents ($n = 57$) were also reviewed. Essential facilitators included good governance via institutional and national budgetary commitments, which often led to swift adoption of globally recommended programs and standards. The integration of HIV testing into all points of care fostered a sense that testing was part of routine care, which reduced stigma. Challenges, however, centred on social norms that disadvantage certain groups with high ongoing HIV risk (such as key populations, adolescent girls and young women), a heavy reliance on external donor funding, and stigma that had subsided but nevertheless persisted. Amid concerns about whether the 90-90-90 targets could be achieved by 2020, the experience of Eswatini provides tangible insights into factors that have successfully influenced HIV testing uptake and may thus prove informative for other countries.

Keywords: AIDS, facilitators, governance, inhibitors, interviews, qualitative research, sub-Saharan Africa, 90-90-90

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Introduction

The Joint United Nations Programme on HIV and AIDS (UNAIDS) launched the 90-90-90 targets in 2014 with the ambitious aim of ending the AIDS epidemic by 2030 (UNAIDS, 2015). The 90-90-90 targets refer to ninety per cent of people living with HIV (PLHIV) knowing their status, ninety per cent of PLHIV being on antiretroviral therapy (ART), and ninety per cent of those on ART virally suppressed (UNAIDS, 2017a). The 90-90-90 targets, however, have proven challenging to attain in many settings (Joulaei et al., 2018). In eastern and southern Africa – the region of the world most affected by the HIV/AIDS pandemic – 85% of PLHIV know their status (UNAIDS, 2019a). While

this marks considerable progress, as of 2019, only eight out of 46 sub-Saharan African (SSA) countries met the first 90 target (UNAIDS, 2019a) and exceptionally high prevalence countries such as Lesotho, Mozambique and Zambia (UNAIDS, 2019a, 2019b) are struggling to achieve this goal.

A lack of progress in advancing toward the first 90 is not, however, uniform throughout SSA (Staveteig, Croft, Kampa, & Head, 2017). Eswatini (formerly Swaziland) is among the leading countries regarding the 90-90-90 target worldwide, reaching 92-93-94 in 2018 (UNAIDS, 2019a). After achieving these global targets, Eswatini was lauded by global leaders and health organisations (UNAIDS, 2017b) for its remarkable progress (Cohen, 2017; Green, 2017; Healio, 2017; Mabuza & Dlamini, 2017; Nkambule et al., 2017; United Nations

Development Programme, 2018). While the success of Eswatini has been publicised, little is known about the underlying factors enabling testing uptake or how approaches used in Eswatini can be applied in other countries. Moreover, studies examining facilitators and challenges to HIV testing uptake have emphasised client experiences (Musheke et al., 2013), but less literature has examined policymaker or general stakeholder perspectives and insights.

To address this gap in the literature, we present research that identifies the socio-structural aspects of testing expansion in Eswatini, focussing on implementer experiences. We draw on national documents and in-depth interviews with key stakeholders to elicit facilitators and inhibitors of HIV testing uptake. The experience from Eswatini provides tangible insights into factors that have successfully influenced HIV testing uptake, and may thus prove informative for other countries, but also for Eswatini itself to sustain and further increase testing.

Methods

Study setting

The Kingdom of Eswatini is a small landlocked country in southern Africa with a population of about 1.3 million (WHO, 2019). The country is governed by an absolute monarch, King Mswati III (Government of Eswatini, 2019a). A majority of the population (63%) lives below the poverty line (PEPFAR, 2017) and life expectancy at birth is 58.3 years (United Nations Development Programme, 2018). National HIV prevalence is 27.3% among those aged 15 and older, which is the highest in the world (UNAIDS, 2019a; WHO, 2017). HIV prevalence peaks at 54.2% for women aged 35 to 39 years, and 48.8% for men aged 45 to 49 years (Nkambule et al., 2017). Despite recent declines, HIV incidence remains high at 1.36 % in the general population aged 15 years and over, but with substantial differences between women and men at 1.7% and 1.0%, respectively (Nkambule et al., 2017). Adolescents aged 10 to 19 years are at a high risk of HIV infection and show very low testing rates. Among adolescents, 55% (females) and 45% (males) have ever tested for HIV (Central Statistical Office & UNICEF, 2016). Young people aged 15 to 24 are at an increased risk of acquiring HIV. In particular, among women aged 15 to 24, the annual HIV incidence is higher than that among women aged 15 years and older or among the general population (Government of Eswatini, 2019b). HIV data on key populations such as female sex workers (FSW) and men who have sex with men (MSM) are limited because solicitation and procurement of sex in public and homosexual relations are illegal (Ngugi et al., 2012; Risher et al., 2013).

Ethical approval

The study received the ethical approval of the institutional and/or national research committee of Heidelberg University (S-650/2017) and the Eswatini Ministry of Health National Health Research Review Board (May 17, 2018). Written informed consent was obtained from all study participants.

Data collection

This qualitative study used a document review ($n = 57$) and in-depth interviews ($n = 26$). The document review entailed detailed reading of national policy reports, government

documents (including guidelines and operational plans) and updates of government reports, either previously known to the study team or identified via a search of the literature to determine a timeline of policy decisions in relation to the epidemic, and to triangulate respondents' insights (Grant & Booth, 2009). The in-depth interviews followed a semi-structured guide (see supplementary information Appendix S1 Interview Guide). We conducted interviews in person ($n = 20$) or via video/voice call ($n = 6$) from 7–28 June 2018. We obtained written informed consent from all study participants prior to beginning interviews, which were conducted one-on-one in English and audio-recorded, transcribed verbatim, and quality controlled for accuracy. One interview was transcribed using notes taken during the interview as the audio quality was too poor for verbatim transcription. We held debriefings during the data collection process to identify emerging findings and new lines of inquiry, which were incorporated into later interviews (McMahon & Winch, 2018). Data collection concluded once saturation was reached (Saunders et al., 2018). Key preliminary findings were compiled into an oral presentation with a slide show and a summary sheet. This was distributed to Ministry of Health officials involved in the HIV field, at the close of data collection on 22 June 2018 to further validate components of the study.

Sample and sampling

The study sample included 26 purposefully selected stakeholders from programmatic, policymaking, research, governmental or clinical spheres who were involved in the conception, design, implementation or continuation of interventions, policies or efforts to address, promote, expand or sustain HIV testing. Sampling was conducted by first devising a list of key informants within the broader study team (which includes representatives from governmental and academic sectors). Key informants or organisations were also identified through the document review. At the conclusion of interviews, respondents were also asked if they could recommend further participants with relevant knowledge (Noy, 2008).

Data analysis

Data analysis was guided by grounded theory (Strauss & Corbin, 2008), where a theory develops through collection and analysis of data during the research process (Harris, 2015). Recurring themes and key points were identified and compared across respondents using NVivo 12 (Castleberry, 2014). Throughout the analysis process, a social-ecological model emerged, facilitating the arrangement of inhibitors and facilitators by levels, from super-structural to individual, as defined by Sweat and Denison (Sweat & Denison, 1995). Our social-ecological model includes facilitators and inhibitors across three levels: the international level, national level and within the health system. Within the national tier, three components of political will, as defined by Fox et al (2011), further refined the social-ecological model. According to Fox et al. (2011), the first component of political will is expressed commitment – how often and how early key government actors expressed a will to halt the HIV epidemic, and whether they repeated such statements. The second component is institutional commitment, which refers to moving from

verbal commitments to an institutional framework. The third component is budgetary commitment, which represents an objective measure of a country's efforts against HIV. Documents included in the document review were reviewed throughout the duration of data collection to inform the interview guide, inform lines of inquiry with respondents, and triangulate a timeline of key events (Table S1).

Results

Demographics

Respondent characteristics are presented in Table 1. Slightly more than half of respondents (14/26) were women, and half of respondents were employed at implementing partner agencies. Over half of respondents (15/26) had more than 15 years of experience in the HIV field and about 40 per cent had been employed outside of Eswatini previously. Respondents in government worked mainly in the health sector as well as at an intergovernmental agency tasked with coordinating the HIV response across ministries.

Overview

Across stakeholder groups, respondents were "proud of" and "encouraged by" the national-level commitment that sparked and facilitated health system interventions. Across respondent categories, stakeholders described how active partnerships between governmental organisations and international programmers and donors allowed for timely testing, uptake and scale-up of novel HIV testing strategies, which were often adopted as national guidelines. Respondents across sectors also described the government's firm financial commitment to the HIV response. Data from our document review reflected the timely uptake of internationally recommended policies and programmes (Table S2); the document review also triangulated statements regarding significant budgetary commitments.

While facilitators outweighed inhibitors, respondents nevertheless highlighted setbacks to testing uptake. For

example, they described how the country was late to initiate national conversations about HIV and HIV testing, and how hurdles such as stigma and long-term funding persist. Social norms inhibit progress particularly in engaging with key populations and empowering women. Looking to the future, respondents described feeling "nervous" and "hesitant" about sustaining progress if donor funding declines sharply or ceases.

In Figure 1, we show an overview of facilitators and inhibitors to testing uptake. Themes below are organized into facilitators and inhibitors structured into levels of the social-ecological model with Fox's subcategories (Fox et al., 2011) inserted into the national level facilitators.

Facilitators of HIV testing uptake

Respondents described the following as key facilitators to reaching the first 90: ensuring good governance (defined in our paper as the actions and means adopted by a society to promote and protect the health of its population and political support [Kirton, 2009]); maintaining extensive openness to and coordination with international organizations and experts; and pursuing interventions with an eye toward de-stigmatization of HIV testing and care. A comprehensive list of facilitators mentioned by respondents is presented in Table 2.

International funding

Respondents across stakeholder groups underscored the historical consistency and reliability of funding from external donors. Respondents described how extensive, multi-year funding from donors such as PEPFAR enabled programme inception, while also serving as an incentive to perform well and achieve results.

National-level political commitment

National-level political commitment (Fox et al., 2011) extends across three dimensions (expressed, institutional and budgetary), described in detail below.

Expressed commitment

In terms of expressed commitment, stakeholders spoke extensively about the national political commitment to eradicate HIV and the relatively early recognition of HIV/AIDS as a national priority. In 1999 (Mabuza & Dlamini, 2017), King Mswati III declared HIV an emergency and respondents quoted him saying "HIV yindzaba yetfu sonkhe," which translates to "HIV is an issue for everyone" which respondents said holds the connotation that every person in the Kingdom needs to take responsibility. Reasons for this drive by the government included the dwindling workforce, the catastrophic reach of HIV (several respondents described how "everyone was affected"), and the economic impact of HIV/AIDS, which was reflected in research documents (International Labour Office, 2018). Often the will and commitment of the King was named as a driving force behind the national response, although government personnel were more likely to state this than respondents from other sectors who instead lauded international partners.

Table 1: Selected respondent characteristics

Variable	n (%)
Employment	
Implementing partner agency*	13 (50.0)
National government	6 (23.1)
Multinational organisation and donor**	3 (11.5)
Local advocacy organisation	3 (11.5)
Academic	1 (3.8)
Previous employment outside Eswatini	
Yes	10 (38.5)
Gender	
Female	14 (53.8)
Years of experience	
0–10	6 (23.1)
11–15	5 (19.2)
16–20	12 (46.2)
20+	3 (11.5)
Total	26

*Defined as non-governmental body involved in HIV testing and treatment in Eswatini

**Defined as multinational organisation involved in HIV worldwide or as a major donor of global health efforts

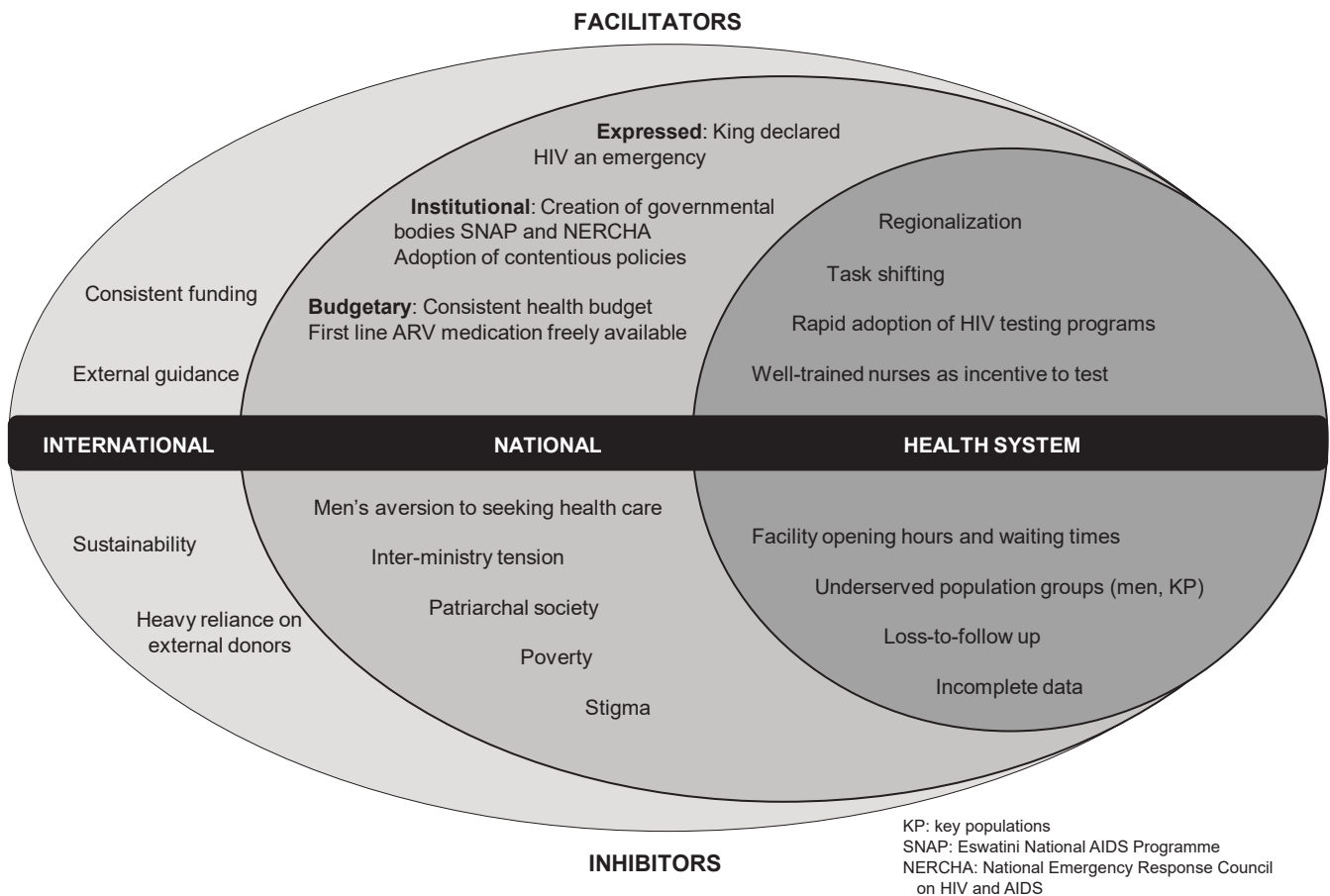


Figure 1: Facilitators and inhibitors of HIV testing uptake in Eswatini

Institutional commitment

Along with government-level commitment in terms of statements, respondents described institutional coordination and administration, and emphasized the roles of two government bodies – the Eswatini National AIDS Programme (SNAP²) and the National Emergency Response Council on HIV and AIDS (NERCHA). The purpose and scope of these groups was reflected in documents and strategic plans. SNAP was established in 1987, one year after the country’s first diagnosed case, when many other governments remained hesitant to discuss or recognize HIV as an emergency. SNAP’s purpose was to promote HIV prevention. NERCHA, which was founded in 2001, was established to coordinate the multi-sectoral response to HIV as treatment availability was gradually expanding. In 2009, as the national HIV response further expanded, national HIV semi-annual review meetings (NaHSAR) were started as a platform to present and compare findings across regions, to evaluate progress toward targets, and to openly discuss shortcomings of all involved. Respondents described NaHSAR meetings as providing focus by identifying regions and populations that need more targeting, and providing competition by recognizing high- and low-performing facilities and regions. Oftentimes, high-performing facilities were rewarded with gifts such as certificates or kitchenware meant to benefit health providers. Low-performing facilities and regions

received advice and support at the meetings to ensure they also reached their targets.

Respondents across sectors described the government’s generally rapid adoption of international guidelines and procedures. Respondents who had worked abroad said that Eswatini’s proactiveness was in stark contrast to other countries. One respondent described Eswatini as “the testing ground for new guidelines” as evidenced by its efforts to test-and-treat that started in 2014 with the “MaxART trial” and that informed the development of comprehensive, international guidelines released in 2015 (WHO, 2015). Respondents across sectors described a sense of urgency and openness within the government; in Eswatini, there was a palpable desire to test and implement new programmes, to draw on experiences from other countries (including Zambia and Uganda) and “to try something new” – from test-and-start, to index testing and self-testing. A breakdown of international policies and their attendant (notably swift) adoption in Eswatini is presented in Table S2.

Respondents also described a general though not universal openness within the government to enacting laws that were contentious albeit recommended by the scientific community. Examples of such policies include the “opt-out” policy implemented in 2009 whereby patients were all routinely offered HIV testing in all clinical settings. Another policy involved a reduction of the age of consent for HIV testing from 16 to 12 years, eliminating the need for parental

Table 2: Social-ecological model of facilitators to HIV testing uptake in Eswatini

	Facilitators	Illuminating quotes
International	Funding <ul style="list-style-type: none"> Funding from external donors 	<p>... and with that funding support, when they give you money, you have to deliver. So if the country signs to receive the funding, they're also signing to achieve in that area (IPA, female, 16–20 years of experience).</p>
	Expressed commitment <ul style="list-style-type: none"> Extensive political commitment to prevent and treat HIV (King declared national emergency; politicians themselves affected by HIV epidemic) Openness to drawing in international perspectives via external guidelines, external implementers Existence of “health hours” and other venues to promote health awareness via media 	<p>The King played a major role, he even came up with a statement that HIV is not a “one man” problem but it's the country's problem (Multinational organisation and donor, female, 16–20 years of experience).</p> <p>Due to the number of deaths that occurred especially in the 80's ... Everybody in their household sort of was affected; everybody knew somebody who had HIV or knew somebody who had died. Even the people at your senior level or prime minister will know somebody – there was probably that push (IPA, female, 6–10 years of experience).</p> <p>You can see that Swaziland [Eswatini] has adopted many of these WHO recommendations, that's because when the technical team advises the Directorate, they are very quick to... adopt the change and it's easy to adopt a change when also the funding is there to make it work (National government, female, 6–10 years of experience).</p> <p>There were a lot of things on the radio, like “get tested, know your status” ..., even social media, radio shows, radio jingles ...in order to promote uptake of testing (IPA, female, 11–15 years of experience)</p>
National-level political commitment	Institutional commitment <ul style="list-style-type: none"> Strong Ministry of Health coordination <ul style="list-style-type: none"> Creation & active engagement of SNAP & NERCHA Strong accountability system (NaHSAR) Bi-annual reviews with rewards for motivation Adoption of policies including those that may incite backlash/pushback (addressing needs of key populations; reduction in the age of testing consent from 16 to 12) 	<p>NaHSAR's semi-annual review of programs and performances,... where all programs, stakeholders, and providers meet to review key indicators and see how are we doing, ...[they then] develop an action plan to address the identified gaps and challenges in providing services (IPA, male, 16–20 years of experience)</p> <p>Something that has worked for the country is motivation; we would have feedback reviews twice a year with facilities and we provide those facilities with rewards certificates or get that facility a microwave or scale. Things to work with (IPA, female, 6–10 years of experience).</p>
	Budgetary commitment <ul style="list-style-type: none"> Government provides first-line ARV medication for free Funding for health and HIV/AIDS 	<p>Health is one of the departments that is taking a larger chunk of the budget. In Swaziland [Eswatini] HIV services are free for everyone. Now the medication is free because the government is buying it so that it can be freely available to anyone (IPA, male, 6–10 years of experience).</p> <p>Money ... committed from the King has really been consistent and accompanied with resources and that is very, very encouraging and ... the nation just knows and appreciates this when you say that its prioritized and an important aspect of the national budget (National government, female, 20+ years of experience).</p>
	Health system coordination <ul style="list-style-type: none"> Regionalisation Client management information system Performance reviews 	<p>Regionalisation helped in a way because it created healthy competition, but sometimes the challenge is that [the NGOs] don't want to share best practices (National Government, female, 6–10 years of experience)</p> <p>The client management information system is nationally linked...so double entries (of HIV testing) will be minimized (IPA, female, 16–20 years of experience).</p>
Health system	Human resources for health <ul style="list-style-type: none"> Task shifting (decentralization) Well-trained nurses and staff Facility openness and readiness to implement new guidelines (e.g. decentralization) 	<p>The availability and the decentralizing of treatment [decreased incidence], that it doesn't become an additional cost to you to be HIV positive, because you have to go to a clinic far away but rather you have access to treatment at your nearest hospital or clinic (IPA, female, 6–10 years of experience).</p> <p>If you don't have buy-in from the nurses it's difficult for it to move no matter how much the doctors may feel strongly about it, if the nurses don't pick it up or support it things don't happen. So the nursing cadre has been very instrumental, our testing was relying on them (National government, female, 6–10 years of experience)</p>
	Treatment availability <ul style="list-style-type: none"> Treatment available immediately after testing Treatment widely available 	<p>There was a fear of being diagnosed positive because it was a death sentence... but now as more people survive...and the government provides ARVs, people see the benefit of testing and it de-stigmatizes HIV (National government, female, 6–10 years of experience)</p>

continued on next page

Table 2 (continued): Social-ecological model of facilitators to HIV testing uptake in Eswatini

Facilitators	Illuminating quotes
Health system <i>HIV testing protocols</i> <ul style="list-style-type: none"> • Rapid adoption of HIV testing programs and innovations (including those that take testing out of facilities) <ul style="list-style-type: none"> ◦ Universal testing, opt-out ◦ HIV self-tests ◦ Index testing ◦ Provider-initiated testing ◦ Rapid testing ◦ HTS as “fifth vital sign” ◦ Testing at work-wellness programs 	<p><i>People had fear of testing so (opt-out testing) sort of gave them a push to access an HIV test; if they were not offered they wouldn't have gone on their own (IPA, female, 6–10 years of experience)</i></p> <p><i>The country introduced (self-testing) because we realized men don't want to come to facilities and (be tested) and also young people. services [in facilities] aren't so friendly (Multinational organisation and donor, female, 11–15 years of experience)</i></p> <p><i>Introduction of test and start gives meaning for people to test: why should I hide when I know that once I test positive I will get something [ART] from the country (IPA, female, 16–20 years of experience)</i></p>

SNAP = Eswatini National AIDS Programme; NERCHA = National Emergency Response Council on HIV and AIDS; NaHSAR = National HIV semi-annual review meeting; IPA = implementing partner agency; HTS = HIV testing services

consent. Finally, one respondent from the government sector said that even when an official policy such as the criminalisation of sex work and homosexuality hindered progress, efforts were nevertheless made to advance knowledge about these groups and their rights.

Budgetary commitment

Respondents noted the stable financial commitment of the government to combat HIV, mentioning the high proportion of the national budget going towards health and HIV/AIDS, which was reflected in the document review. Starting in 2003, the government provided first-line ARV medication for free in all public facilities.

Health system coordination

Most respondents, particularly from the government sector, emphasised “regionalisation”, referring to the 2015 health-related coordination of the country’s four regions (Hhohho, Lubombo, Manzini and Shiselweni) to individual NGOs. The partners were then responsible for every aspect of HIV testing and treatment in their region. This “streamlined approach” contrasted starkly with pre-regionalisation efforts that often led to redundancies (respondents, for instance, described arriving at the same facility on the same day as another NGO, which was providing similar services for the same population).

In terms of factors that enhanced coordination, several respondents noted that Eswatini’s small size makes it comparatively easier to introduce or support programmes, supervise and coordinate partners, and reach the general population. On the other hand, respondents highlighted that the country’s smallness can also pose challenges in terms of privacy and anonymity. Especially key populations but also PLHIV feel a danger of status disclosure in their local communities through community health workers (CHW), which might hinder these populations from accessing HIV testing and other health care services.

Human resources for health

Task shifting, or the delegation of some HIV-related medical tasks such as testing to less specialized health workers like lay counsellors, was mentioned in nearly every interview. Task shifting was done in parallel with decentralization or the provision of care from hospitals to lower levels

of health facilities. Respondents frequently referenced quantitative data or governmental reports that underlined how increases in testing reflected the 2006 task shifting strategy. Respondents described the trickle-down effect of task shifting; not only were more staff available to test, but counselling could be more deliberate and tailored and waiting times were reduced. Remote facilities, which often lacked higher levels of health personnel, could provide HIV testing, reducing clients’ travel and waiting times. In 2012, lay cadres of HIV testing services (HTS) counsellors were expanded across all entry points in the health system, which respondents described as critical to ensuring high numbers of people tested for HIV. Respondents also described the openness that health providers had to implementing new programs and guidelines, and the generally high-level of training available to providers.

Treatment availability and HIV testing protocols

Wide and free availability of ART (from 2003 in the public sector) and implementation of the test-and-start policy (in October 2016) were named as important factors in HTS uptake because the diagnosis of HIV was repositioned.

There was a fear of being diagnosed positive because it was a death sentence...but now as more people survive with the disease and the government provides ART, people see the benefit of testing and it de-stigmatizes HIV (National government, female, 6–10 years of experience).

Respondents across sectors also described how the expansion of testing delivery formats played an essential role in HTS uptake – the switch from client-initiated testing to provider-initiated testing (from 2006 health personnel could actively offer an HIV test); the implementation of rapid testing which often provided testing and diagnosis on the same day (in 2009); and universal testing (in 2014/5). Self-testing (implemented in 2018) was expected to further advance testing expansion. The implementation of universal testing across all entry points of the health system (away from a stand-alone service) was described as lowering the risk of status exposure. Rapid tests were described as sharply reducing waiting times and curbing loss to follow up. The recent change of priority to more focused HIV testing was described as being needed to reach the remaining pockets of untested populations who do not know their status and

Table 3: Social ecological model of challenges to HIV-testing uptake in Eswatini

	Inhibitors	Illuminating quotes
International	Long-run reliance on external funding <ul style="list-style-type: none"> • Sustainability 	<p><i>As a donor we will be reducing the funding because we now want the government to take ownership ... but again we have that fear ... will the government manage? We need to start that [transition] (Multinational organisation and donor, female, 16–20 years of experience).</i></p> <p><i>[Funding] has not been stable, we always feel like we are on our toes all the time, there is no guarantee of what the future holds in as far as sustaining projects is concerned (IPA, male, 6–10 years of experience)</i></p>
	Government <ul style="list-style-type: none"> • Inter-ministry tension • Lacking full political support in the beginning of the HIV epidemic 	<p><i>The Ministry of Education doesn't want the Ministry of Health coming to schools ... if you want to give them an HIV test or condoms it insinuates that you are saying their children are engaging in sexual activity. As a parent, I understand where they are coming from (IPA, female, 6–10 years of experience)</i></p> <p><i>That was a positive political move [back in 1987] ... the establishment of SNAP. Unfortunately the political part, it ended at just establishing SNAP and allocating a budget and allocating officers, it didn't go beyond that, there was no political voice that there is a possibility of an epidemic coming up let's do something today so that we do not face a catastrophe in the coming years ... because of that we live to tell the story today of the high infection rate (IPA, female, 16–20 years of experience)</i></p>
National norms and organisational challenges	Societal <ul style="list-style-type: none"> • Norms that place women and girls as a higher risk • Norms that dissuade men from seeking health care • Stigma • Reduced awareness of HIV causes, treatment and prevention • Unemployment, poverty • Reliance on traditional medicine 	<p><i>The way society is structured [in Eswatini] with polygamy, concurrent multiple partners, it's not easy to break through, but it also has to be part of prevention effort (IPA, male, 16–20 years of experience)</i></p> <p><i>Intergenerational sex [is a problem]. We need to empower, it's about empowering the adolescent to say no to sex (Multinational organisation and donor, female, 16–20 years of experience)</i></p> <p><i>You know, we still have stigma. And one of the documented types of stigma is also self-stigma. I think oftentimes, we worry about how people are going to feel and see us, even though they are not going to be bothered about how we are (National government, male, 16–20 years of experience)</i></p>
	Media <ul style="list-style-type: none"> • Media often disseminates falsehoods or conspiracy theories 	<p><i>The media sensationalises things, likes scandals ... They have not explored their role in the multisectoral approach... It's below acceptable levels (National government, male, 16–20 years of experience)</i></p>
	Health system coverage <ul style="list-style-type: none"> • Incomplete data, needs to be more detailed • Challenges accessing hard-to-reach areas (namely rural locations) and hard to reach populations (men, MSM and FSW) 	<p><i>The services were more centred in the urban than in the rural [areas] so I don't think it's a matter of the rural [population] not taking up the service it's because the services were not as freely or easily available and accessible to the rural folk compared to the urban (IPA, female, 16–20 years of experience)</i></p> <p><i>There were pocket areas in terms of NGOs not going into those pocket areas. It could have been the road to get there. And at times it could have been coordination, sitting down and mapping the community response (IPA, female, 16–20 years of experience).</i></p> <p><i>Maybe it's because I'm a data person: we need to do more, to see a trend, to know where we are. Are we not leaving other people behind? (Multinational organisation and donor, female, 16–20 years of experience)</i></p>
Health system	Health facility <ul style="list-style-type: none"> • Waiting times • Working hours • Not youth or male friendly • Disrespectful staff at health facilities 	<p><i>We have [health facilities] open from 8 to 4 and people are working it's not so easy for them to access our services (IPA, female, 16–20 years of experience).</i></p> <p><i>In general a man will go to a health facility when he is very ill, there are too many crying babies, nurses belittle them, there are many females and babies in the facilities, so they feel it's not their place (IPA, female, 6–10 years of experience).</i></p> <p><i>Nurses aren't nice people; everybody complains about that. It might be caused by burnout or bad pay, yet they studied difficult subjects (IPA, female, 6–10 years of experience)</i></p>
	HIV testing-intervention related <ul style="list-style-type: none"> • Loss to follow-up and linkage challenges (especially for HIV self-testing) • Pragmatic challenges of work-based education and testing • Historic shortages of testing kits 	<p><i>We don't have an issue with (people) remaining in treatment but the biggest challenge is ... getting them into treatment, linking them into treatment (National government, male, 6–10 years of experience).</i></p> <p><i>When a person decided to test and a test is not there, to bring the person back is a tall order. When he overcomes fear and the test is not available, it's a huge blow: to get that person back, to get that mindset to test back (IPA, female, 16–20 years of experience).</i></p> <p><i>Testing kit shortages also reflect budgeting issues. The government isn't buying enough (Multinational organisation and donor, female, 16–20 years of experience).</i></p>

IPA = implementing partner agency; SNAP = Eswatini National AIDS Programme; MSM = men who have sex with men; FSW = female sex workers

are in need of HIV treatment and prevention services, often described as key populations, men, and adolescent girls and young women, as most of the general population has now been tested and those who are living with HIV are on treatment and virally suppressed.

Inhibitors of HIV testing uptake in Eswatini

Key inhibitors to the uptake of HIV testing included overcoming hurdles that have political or social roots such as conflicting views on whether or how to reach key populations and those who do not regularly interact with the health system (here, men and adolescents), and how to contend with social norms that restrict women's ability to address their own health issues. Other pragmatic concerns involved continued efforts to reduce stigma surrounding HIV testing and sustaining progress amid fears of declining international funding. See Table 3 for an overview of inhibitors to the expansion of HIV testing.

Dependence on international funding

While most respondents praised support from international donors and applauded their role in achieving higher testing rates, some government and local advocacy respondents criticized international partners for their focus on targets and not humans, as well as for wholly overlooking or sidestepping the challenge of sustainability. Some critiqued what they viewed as a gap in preparedness. As one respondent said,

The world doesn't owe us much, the last 30 years they've been with us, so for 30 years to be with people and they still cannot stand on their two feet is really an injustice (National government, male, 16–20 years of experience).

Respondents (both government-based and non-governmental) were often adamant to point out that a transition plan is needed for the country to become less reliant on outside donors.

Governmental challenges

In terms of ministerial differences, programming respondents were adamant about challenges to partnering across government actors (e.g., Ministry of Education) and, in particular, school-based efforts at sexual education and HIV testing. Government respondents, on the other hand, mentioned the life skills curriculum that was developed in cooperation with three different ministries (Health, Education and Training, and Sports, Culture and Youth Affairs) and includes education about HIV, but respondents agreed that more could be done within schools such as, for example, having nurses in school or visiting schools regularly to discuss HIV testing and prevention services.

Societal challenges

Another particularly nuanced issue centred on gender norms that systematically restrict or oppress women, thereby making it difficult for women to access testing and treatment due to fears of a partner's reaction, and the potential fall-out of having a positive status (with repercussions including abandonment or physical violence). Most respondents, but especially female respondents, highlighted how Eswatini's "patriarchal society" inhibits women's abilities to engage

in behaviours promoted by health professionals (using condoms, avoiding multiple concurrent partnerships and being tested for HIV).

Men were described by nearly all respondents as "difficult" and "impossible" to draw into the healthcare fold. Respondents expressed exasperation when discussing how men and youth avoid seeking health care. Even though programmes exist that target these groups, getting them to test for HIV remains a huge challenge.

Poverty was mentioned by a few respondents as a barrier to testing, especially in rural areas where access to any healthcare (in the absence of an income to facilitate transport) is impossible. Poverty, several respondents said, further underpins social factors that fuel the spread of HIV such as intergenerational sex between young girls and elder men.

Finally, respondents described stigma as representing the biggest challenge in the early years of the response because

People would rather think they were being bewitched... They would rather die without knowing, before knowing there is no other option (IPA, female, 16–20 years of experience).

Respondents who had been involved in the HIV response for a longer period were especially vocal about stigma, conveying that individuals would flatly reject testing or deny a positive status because this was associated with promiscuous behaviour and sex work. Respondents said that although stigma has subsided, it persists in the form of self-stigma primarily.

Health system coverage

Nearly all respondents mentioned the difficulty of identifying and supporting those who did not want to be found or those uninterested in testing. While respondents often described MSM and FSW as drivers of the epidemic, they also said stigma, fear of discrimination and the criminalisation of sex work and homosexuality made it hard for these populations to disclose this, including to CHW. Police were described as hindering FSW's and MSM's access to condoms and lubricants, and hindering CHWs from testing these groups at night. Respondents from programming and government also highlighted data inadequacies, stating that existing data was insufficient for pinpointing areas of high HIV prevalence or incidence where increased testing could be of particular interest to decision-makers.

Health facility

In order to reach men and youth, respondents emphasized the need to extend opening hours, reduce waiting times, and train staff. Respondents noted that youth-friendly training existed but few staff attend these and it can be difficult to change the broader context of a health facility. Beyond interpersonal dynamics, the physical arrangement of facilities was described as well-intentioned but flawed because discretion was often compromised.

Respondents also described challenges to the patient-provider relationships. Several respondents said an underlying sense of distrust (more prevalent than in other countries due to the smallness of Eswatini) hinders people from accessing healthcare services close to their residence because they fear status disclosure (inadvertent or intentional) to others in the community by a provider.

HIV testing programmes

While respondents lauded Eswatini's proactive approach to implementing testing programmes, they also highlighted operational challenges. In terms of test-and-start, respondents said that few clients initiated treatment early; this was reflected in the document review (MacKellar et al., 2018 June 15). New testing methods such as index testing (where a person with confirmed HIV infection, the index case, is asked to contact family members or sexual partners to see if they will accept an HIV test) and self-testing raised concerns among stakeholders because HIV self-testing has been associated with poor linkage to care; respondents routinely cited published literature and reports (for example, Indravudh et al., 2018 and Wood et al., 2014).

In terms of work wellness programmes, respondents from local advocacy groups that offer them noted that employers were often reluctant to let programmes (including those that counsel and test for HIV) consume much time, and employees were not paid for the time spent on work wellness, which impedes uptake.

Discussion

Previous research on facilitators and barriers to HIV testing has focused on individual-level factors, leaving a gap in the literature for perspectives at the structural and super-structural level. Our study addresses this gap and aims to inform other countries and governmental bodies seeking to attain higher HIV testing coverage. Our study – conducted among those seated in positions of political or economic influence as implementers, donors and policymakers – emphasized factors at the structural or super-structural levels that underpinned progress in HIV testing. These include universal testing, task shifting and regionalisation. We identify that, in Eswatini, the role of governmental bodies propelling the issue forward (more specifically the role of SNAP) and ensuring that the efforts have broad support across ministries (the role of NERCHA), was pivotal in HIV testing advances made in Eswatini.

A systematic review of barriers and facilitators to HIV testing by Musheke et al. (2013) resonates with many of our findings especially concerning the predominant factors that facilitate testing uptake across sub-Saharan Africa: (1) recognition of a deterioration of physical health in oneself and/or the death of sexual partner or child; (2) introduction of HIV testing initiatives that facilitate the routinisation of testing (namely 'opt-out' testing and mobile HIV testing); (3) expansion of treatment availability; and (4) social network influence and support.

However, in this study, likely because of the nature of our respondent group (high-level stakeholders), factors related to the individual-level (recognition of one's own health or the role of social support) emerged as less essential features in the broader narrative of why testing expanded (Musheke et al., 2013). More relevance was given to political will and how commitment across government levels contributed to higher HIV testing uptake.

Although political will and the link between successful interventions and the commitment and motivation of country stakeholders has been recognized in other areas (Brinkerhoff, 1996; Honadle & VanSant, 1985; Johnson &

Wasty, 1993), only recently has this been explored for HIV policies and outcomes (Bor, 2007; Gizelis, 2009; Gore et al., 2012; Lieberman, 2007). Our research adds to this work by highlighting how strong political will supports positive health outcomes. As international institutions move towards encouraging political will in their guidelines (Global Health Initiative, 2012; OECD, 2011; PEPFAR, 2013), standardised criteria for measuring it are missing and uncertainty regarding how to build and promote political will remains (Brinkerhoff, 2016).

In work by Dalglis et al. (2015) the role of governance and political will for the success of a child health intervention found that the government could incur a political gain by engaging in the intervention (in that case, the construction of "health huts" throughout rural regions of the country). Our findings from Eswatini echo the sentiment that the government began redoubling its efforts to bolster HIV awareness (including testing) upon noticing that the epidemic had begun affecting citizens across social and economic strata (a dwindling workforce, deaths among those in prominent posts). This recognition – coupled with fear – compelled exceptional political will and laid the foundation for an openness and eagerness to draw on external technical expertise. Similar to Dalglis et al. (2015), our research shows that framing a health issue as a means to bolster political gain can build political will strongly and could thus be considered when promoting other interventions, or designing policy and implementation.

Highly relevant in Eswatini (and likely elsewhere) was the role of coordination between governmental bodies such as SNAP and NERCHA. Echoing respondents' suggestions for clear, informed, fact-based discussion – which helped generate support for battling the HIV epidemic – a study across five African countries showed the positive role of health policy dialogues to fast-track processes and prioritise agendas (Mwisongo et al., 2016). Our findings suggest that policy dialogues through governmental bodies such as SNAP also help to ensure government support and domestic financing. Our research frames the role of government and governmental bodies as a vital factor to ensure programmes and interventions are successfully implemented in a country, regardless of its field and the positive role that policy dialogues with the government and implementing state institutions plays. This contradicts previous research that national commissions may have even contributed to weakening health sectors (Putzel, 2004). Further research on the effect of national commissions is needed.

In terms of international partners, respondents described how international funding enabled programme inception, while also serving as an incentive to perform and achieve results. The impact of these "global health initiatives" (GHI) – international donors and partners – has been reviewed in Africa (Chima & Homedes, 2015; Mwisongo & Nabyonga-Orem, 2016) and shown to be a positive factor in uptake of ART initiation (Semitala et al., 2017). Mwisongo et al. (2016) recommend following existing guidance to improve GHI's efficacy which emphasizes strengthening the wider health systems (Caines et al., 2004). In the case of Eswatini, the HIV response was seen as essential and as a means to strengthen the domestic health system. Another recommendation by Spicer et al. (2010) was the GHI's role

in promoting better governance, which we see reflected in the Eswatini setting. While the positive aspects of GHIs became clear, they merit further examination in Eswatini and other settings where strong external pressures have led to favourable results but could also undermine a sense of trust and agency, as described in studies from other African countries (Mwisongo & Nabyonga-Orem, 2016).

In line with key inhibitors identified in our work, Musheke et al. (2013) highlight as core barriers to testing: (1) individual level perceptions of a low-risk of HIV infection; (2) providers who appear disrespectful or non-discreet; and (3) concerns about HIV-related stigma generally (Musheke et al., 2013). While elements of this were described by our respondents, our study draws on data from policymakers and general stakeholders; hence, our findings place less emphasis on individual-level inhibitors such as risk perception, financial concerns and emotional burden in favour of structural issues that were mentioned though not emphasized by Musheke et al. (2013). Stigma, identified as barrier by Musheke et al. (2013), was also evident in our findings but tended more towards self-stigma.

As identified in our work, much evidence supports the notion of “self-stigma” as a major influence in an individual’s ability to access HIV testing and treatment services (Katz et al., 2013; Sweeney & Vanable, 2016; UNAIDS, 2007). Self-stigma is defined by Livingston and Boyd (2010, p. 2151) as

... a subjective process, embedded within a socio-cultural context, which may be characterized by negative feelings (about self), maladaptive behaviour, identity transformation, or stereotype endorsement resulting from an individual’s experiences, perceptions, or anticipation of negative social reactions on the basis of their [socially devalued identity or] illness.

Stigma interventions have been reviewed extensively but have focused on enacted stigma (Siegfried & Beanland, 2017; Stangl et al., 2013) rather than self-stigma. Self-stigma or internalised stigma, although defined by Goffman decades ago (1963), remains strikingly understudied (Pantelic et al., 2019). In our research, self-stigma was a rising concern regarding HIV testing uptake and treatment, and was described as an even stronger barrier to HIV testing and treatment than enacted stigma. Our respondents often sought guidance (during interviews) on how to tackle the issue but the scarce literature on interventions to reduce self-stigma show promise only when targeting structural rather than individual stressors (Pantelic et al., 2019). Further research into HIV self-stigma is needed.

Limitations

This study has a few limitations. First, as one study objective was identifying past facilitators and inhibitors as well as key events (Table S1), recall bias may have negatively affected the scope of information recalled from the earliest years of the epidemic. Second, although efforts were made to reduce selection bias, the key respondents were heavily orientated towards implementation and donor partners, while researchers and local advocacy organisations were not equally represented. Third, as the current state of HIV

testing in Eswatini paints a comparatively positive picture to other countries globally, some respondents might have been susceptible to confirmation bias and thus reported more positive facilitators while neglecting inhibitors. Nevertheless, to try to mitigate the risk of confirmation bias, we employed detailed questioning of inhibitors to HIV-testing uptake in Eswatini. In order to address some of these limitations, during data collection we engaged in briefings with the research team to minimise our own biases.

Conclusion

HIV testing is the gateway to HIV treatment and prevention services. Understanding facilitators and inhibitors is vital to reaching the 90-90-90 goals. Our research in Eswatini shows the role of good governance and political will as crucial facilitators to HIV testing, in line with fast adoption of global recommendations and strong institutional bodies. (Self-)Stigma and (socio-)structural barriers continue to inhibit the uptake of testing. Integration of our findings with existing and future research could support other countries in sub-Saharan Africa seeking to reach the first 90 as well as the first 95. These findings also provide clear guidance to other settings for addressing structural health system issues as well as super-structural barriers that hinder further uptake of HIV testing.

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Note

1. Sithembile Dlamini-Nqeketo is a staff member of the World Health Organization. The author alone is responsible for the views expressed in this publication and they do not necessarily represent the views, decisions or policies of the WHO.
2. During the course of this study, the country changed its name from Swaziland to the Kingdom of Eswatini. The National AIDS Programme (SNAP) retained its abbreviation to stay in line with previously published documents and guidelines.

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