

OPTIONS CONSORTIUM: Optimizing Prevention Technology Introduction On Schedule

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Knowledge, Attitudes and Practices of PrEP Providers Working with Adolescent Girls and Young Women

A review of completed, ongoing and planned studies

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OPTIMIZING PREVENTION TECHNOLOGY INTRODUCTION ON SCHEDULE

Summary of Findings

A review of completed and ongoing studies that include knowledge, attitude and practice (KAP) surveys in sub-Saharan Africa of providers and potential providers of oral pre-exposure prophylaxis (PrEP) to adolescent girls and young women (AGYW) shows a dearth of inquiry into this area. Based on this review, it is recommended that OPTIONS undertake PrEP provider KAP surveys in Kenya, South Africa, and Zimbabwe with minimal overlap of completed and ongoing work in the area. Specific overlaps and gaps are examined throughout the review.

Topline recommendations include:

What is known about KAP in Kenya, South Africa, and Zimbabwe:

Almost nothing is known about KAP of PrEP providers in OPTIONS' three focus countries, thus implementation of a KAP survey will be greatly additive to the field. These surveys will assist in development of training tools and other guidance documents that will facilitate more seamless implementation of PrEP for AGYW.

Overlapping KAP work:

The POWER project is conducting interviews with key informants to assist PrEP implementation in Kenya and South Africa. An analysis of the overlap between OPTIONS' draft survey* and that used by POWER has been conducted (see document *KAP Literature and Draft Survey Analysis*, tab 3) to ensure no duplication of efforts. This analysis found minimal instances of conceptual overlap, and the overall focus of OPTIONS' survey differs from that undertaken by POWER. Additionally, the Population Council is conducting KAP surveys in Tanzania on PrEP and AGYW to inform a study of PrEP acceptability, but that survey will not be available until 2017. Neither the results nor the survey itself can be added to the literature currently.

Specific questions for providers of PrEP to AGYW:

Questions that probe multiple aspects of provider stigma should be included. This will assist in developing training tools. In addition, querying provider sensitivity to barriers that AGYW may face in accessing PrEP can greatly facilitate implementation (see section *Additional Considerations*). Finally, questions regarding what providers need to feel comfortable prescribing PrEP are critically important.

Areas of inquiry needing more research than others:

There is limited research on PrEP providers working with AGYW; thus a determination of specific areas of inquiry requiring more research than others is difficult. However, it is well documented that provider stigma remains a barrier to PrEP accessibility for a range of populations. Beyond this, little is known about providers in the three focus countries.

Type(s) of providers to survey:

While this will cause some overlap with POWER and Population Council in KAP surveys, OPTIONS should survey a range of types of providers. General KAP, including stigma, at each level of provider should be assessed in order to address opportunities and gaps in creating a welcoming and effective experience for PrEP and PrEP follow-up.

* A draft survey was developed by Wits RHI in September 2016. It was determined the KAP review should proceed prior to further survey development. AVAC analyzed KAP completed, ongoing and planned work both comparing to this draft survey and independent of the draft survey.

Literature Review and Analysis

In support of PrEP introduction and scale up, OPTIONS will develop and conduct a general KAP survey for providers around oral PrEP[†]. This survey will be designed to guide development of training, mentorship and support tools for providers who are charged with delivering PrEP to AGYW, or those who will be.

In offering technical support to the governments of Kenya, South Africa and Zimbabwe for PrEP rollout, OPTIONS is seeking a clear understanding of self-reported provider perceptions of PrEP, and of barriers and facilitators to its implementation. Providers function as either a gateway or blockade to AGYW accessing PrEP. Providers and staff often hold the same attitudes and practice the same behaviors as the broader community, which affect how and to whom they provide services. To ensure the KAP survey is not duplicative and to inform its development it is crucial to catalogue and review existing work in this space. The following literature review intends to discern what is already known about provider KAP across different populations, country/clinic settings and provider types in regard to oral PrEP provision. A gap analysis also aims to determine what needs remain, both in the literature around provider KAP as well as within providers' own KAP with regard to PrEP provision.

Methodology

OPTIONS collected a total of 46 studies, abstracts, reports, and community consultation summaries focused on knowledge, attitudes and practices of healthcare providers with regard to PrEP. Peer-reviewed literature (journals and abstracts) was searched for key terms, the snowball method was used, and outreach to, and mining of, data collected by ongoing projects and studies was conducted. PrEP demonstration project and other study protocols were also reviewed and original surveys were collected where possible.

Dates of search ranged from 2011[‡]-2016. Reviews of KAP surveys of PrEP providers/potential providers as well as studies and sub-studies generating new surveys aimed at such providers were included. Informal provider surveys and interviews were also included, as were reports generated from community consultations with providers in regard to ARV-based prevention and its implementation. KAP surveys not related to providers and PrEP (exceptions noted below), or only tangentially related were not included nor were studies that simply mention KAP without involvement of a survey or interview in some form.

Surveys and interviews were considered for inclusion if they were conducted with HIV/AIDS specialists, physicians from other specialties including generalists, lower-lever healthcare workers such as nurses and physicians' assistants, and other workers within the healthcare system including pharmacists and administrators. Surveys that asked questions only of PrEP end users were not included.

[†] N.B.: While the OPTIONS workplan utilizes "Knowledge, attitudes, practices and behaviors (KAPB)", "knowledge, attitudes and *practiced behaviors* (KAP)" is more common in the literature. Further, the qualitative and quantitative survey that Wits Reproductive Health Institute (RHI) has begun to develop for OPTIONS focuses on KAP. Hence this review utilizes the acronym "KAP" rather than KAPB".

[‡] 2011 was determined as the cutoff date in order to focus results on data with the most potential for relevance given the timeline of PrEP trials and approvals: www.avac.org/infographic/research-rollout-timeline-pre-exposure-prophylaxis prep.

In order to generate as rich a picture of provider KAP who work with AGYW as possible, literature relating to KAP of healthcare practitioners who provide family planning services to AGYW and women in sub-Saharan Africa was also included, given the parallels between the introduction of oral PrEP and contraception^{1,2}.

A very basic assessment of work quality was attempted to the extent that studies with obviously poor design were not included; however, no deeper quality analysis was conducted.

Scope:

There is limited KAP work covering the geographic and population scope OPTIONS is looking to survey. Of the 46 study manuscripts reviewed, only 10 included a KAP survey of providers in any country in Africa. Of those 10, five contained a focus in the countries of interest – Kenya, South Africa, and Zimbabwe. Three of the five aimed to assess the KAP of PrEP providers, or potential providers, to AGYW. One of these three documents was a Population Council³ guidance document[§] for in-country PrEP introduction, and drew its KAP survey development component heavily from a seminal study by Mimiaga et al.⁴ regarding KAP of providers in the US. Another informed the development of the Population Council KAP survey, but did not contain a strict focus on AGYW or PrEP and was in fact a report from a provider consultation surrounding the implementation of ARV-based prevention more broadly (1% tenofovir gel specifically) in Zimbabwe.⁵ Thus, with the landscape proving as narrow as it did, the majority of findings are focused on provider KAP in locations and populations outside of the three focus countries, highlighting the need for expanded research in this area.

Studies rarely differentiated KAP by respondent characteristics beyond provider type. For example, type and location of practice were not analyzed with regard to differing KAP. Few studies differentiated KAP by urban vs. rural, or public vs. private setting. Similarly, surveys often did not ask disaggregating questions by population. [Tables have been included below on review search parameters and the number of studies that fell under each]. Not all studies specified their interviewee characteristics according to these exact parameters so because of this, it is possible that the count for each is underestimated.

A separate document has been developed which analyzes the specific questions in the OPTIONS survey draft under development against those already present in the literature (*KAP Literature and Draft Survey Analysis*, tab 3). This document analyzes the draft questions against those used in the POWER study and finds that while there is some overlap it is not substantial.

[§] The KAP survey under development by OPTIONS drew from many of the questions in the Population Council's guidance document.

This study collected literature according to the following parameters (where specified by the study manuscript):

KAP Element	Number
Knowledge	40
Attitudes	40
Practices	25

Country	Number
Kenya	2
South Africa	2
Zimbabwe	2
Other sub-Saharan Africa	6
Non-African country	37

Setting	Number
Urban	17
Rural	8
Other	5

Provider Type	Number
HIV/ID specialist	32
Other MD	34
Lower-level HCW	23
Other	20

Clinic Type	Number
Public	18
Private	11

Knowledge

Knowledge and awareness of PrEP

Surveys differed in their handling of basic awareness of PrEP, with several including a variant of the question “have you heard of PrEP”? However this was audience-dependent with many seeming to assume their interviewees had heard of PrEP given their practice level, type, or location, and foregoing this gateway query. Knowledge was also assessed through questions about the efficacy results of specific trials, such as iPrEx,⁶ and familiarity with aspects of official guidelines such as those issued by the CDC. Generally, knowledge appears to have risen over time^{6,7} and, where assessed, physicians,⁸ especially HIV specialists or physicians with relatively high volumes of specific client populations such as MSM or HIV-positive individuals⁹, were more aware of and knowledgeable about PrEP than other levels of specialty or provider.

Knowledge and awareness of country guidelines

Similarly, knowledge questions about country guidelines differed depending on the intended audience, and year of query. Some studies merely asked if participants were aware

of or had read official recommendations,¹⁰ while others probed more detailed aspects of those recommendations such as risk-reduction counseling and testing specifications¹¹. In some countries or years, a lack of guidelines was cited as a barrier to PrEP prescription or its implementation potential.^{12,13} Conversely, having formal guidance in place was deemed a facilitator in almost all relevant studies, even in those studies taking place in the absence of such guidance.¹⁴ That is, providers saw the advent of formalized direction as a boon to future prescribing intentions and practices. It was further suggested by one study that reasons for deviations from existing guidelines in practice, or persistent failure to prescribe PrEP despite guidelines, should be studied further to aid practice improvement efforts and optimize official recommendations.¹¹

Knowledge and awareness of eligibility guidelines

Very few surveys asked specific questions regarding eligibility for PrEP, for example the use of HIV nucleic acid testing to assess eligibility.¹⁵ Instead, the term “high-risk” was often used as a proxy for understanding of eligibility. Surveys tended to describe certain populations or behaviors considered high-risk in order to assess provider knowledge of eligibility. Or surveys would simply ask provider questions about “high-risk individuals” and ask if they considered them eligible for PrEP.¹⁶ Knowledge of guidelines dovetailed with eligibility knowledge in many cases.¹⁷ Some studies reported providers deviating from guidelines in order to “meet people where they’re at”,¹⁸ i.e., prescribing PrEP to those who did not meet strict eligibility guidelines based on perceived future risk, or individualizing eligibility for each potential PrEP user.¹⁹ This extended to willingness to prescribe PrEP to the “worried well” in the absence of medical contraindications, or to those for which the benefits are primarily psychological.¹⁸

Legal and ethical concerns

Only two surveys directly addressed ethical and/or legal knowledge or concerns surrounding PrEP, and one was the Population Council PrEP introduction guidance document,³ presumably given that its focus population involves minors. The second was Mullins et al.,²⁰ who found concerns from providers about the legality of minors consenting to PrEP use without parental involvement. Outside of these reports, Krakower et al.²¹ documented providers citing ethical reasons for prescription hesitancy, “you’re also dealing with an ethical situation: that of giving a potentially toxic medication to a patient who does not have an active disease” and in this vein it can perhaps be assumed that attitudes towards PrEP risks documented in other surveys include a consideration of ethics. Finally, Sharma et al.²² asked provider opinion on whether policymakers have an ethical obligation to make effective preventive options available to those at risk, taking a slightly different approach than others in the literature. A greater evidence base for provider KAP around these issues is clearly needed.

Source of knowledge

Few surveys attempted to question specific sources of provider knowledge. Of those that did, one failed to provide findings in their study report,²³ and another reported majority self-education by providers.¹⁸ This latter review was amongst early adopters, so a degree of provider proactivity to seek out PrEP knowledge may be expected. Other surveys used questions about guidelines such as CDC guidance or Department of Health and Human Services (DHHS) to serve as a proxy for more explicit queries about knowledge sources.²⁴

Comfort and willingness to prescribe PrEP

Questions about provider comfort in prescribing PrEP were more common. Inexperience with prescribing PrEP was cited as an initial barrier to being comfortable with or willing to prescribe PrEP in the future, and vice-versa.^{9,25} Lack of clear guidance and timely information also made providers uncomfortable with prescription,²⁶ as did a lack of knowledge (of PrEP or certain populations e.g., PWID) overall.^{15,17,22} Reliability of supply also factored into providers' requirements,²³ as did concerns over efficacy and real-world effectiveness.¹⁵ Comfort discussing sexual activity with patients of different populations, MSM, transgender women, sex workers, and serodiscordant couples in particular,^{9,27} and ability to provide the needed monitoring was deemed critically important to PrEP implementation.^{28,29} Willingness to or comfort with prescribing PrEP varied by patient type, with providers being most comfortable prescribing to MSM, transgender women, sex workers, and serodiscordant couples, as opposed to PWID and other risk groups with which providers had less experience.^{15,29,30} Providers interviewed by Arnold et al. posited that primary care settings may be the most appropriate for PrEP given familiarity with a schedule of regular check-ins,²⁸ a suggestion that runs counter to other studies wherein specialists feel themselves more capable of spending the requisite length of time needed consulting with patients.¹⁸ Clinicians surveyed by Mullins et al. reported being more comfortable prescribing to adults over minors.¹⁹ Finally, Puro et al.¹⁴ discovered that among clinicians likely to prescribe PrEP, a majority would prefer to do so within the context of a multicenter trial.

Needed information

Needed information for providers to feel comfortable prescribing PrEP followed the themes expressed in those surveys that asked about provider comfort. Providers reported requiring more evidence of efficacy⁹ and/or evidence of increased efficacy (up to 100% in one study²²) patient and/or community requests for PrEP,⁷ and awareness of peer norms and prescribing practices.²¹ Further, there was a preponderance of requests for formalized guidelines, protocols and recommendations, with two studies finding an explicit request for PrEP for youth guidance.^{7,9,19,20,31} Training on various aspects of PrEP implementation was desired, such as training on new models of care, counseling and administrative issues required by PrEP and PrEP follow-up,^{29,32} and training for lower-level staff to promote task-shifting.³³ One study noted that the need for these increased trainings would "amplify current disparities between the public and private health systems",²⁹ while others cited provider concerns about funding for PrEP diverting monies for other prevention options.⁷ Only one study sought PrEP-experienced providers' recommendations for training those with less familiarity, and the biggest priorities revealed by those recommendations were competency with taking sexual history and sensitivity to sexual minorities.⁶ This was echoed by another group of clinicians who expressed an interest in participating in online continuing medical education (CME) courses for PrEP, with screening and eligibility training being the most highly requested topic.⁶ These aspects of provider training needs parallel findings from a consultation of MSM when discussing barriers to PrEP access.²³

Attitudes

Attitudes regarding minimal acceptable efficacy

While the findings from several surveys revealed that providers would prefer greater PrEP efficacy when considering prescription, few surveys asked what the minimal acceptable level would be. One survey found a range of 1-100% efficacy, with a median of 75% and a strong inverse correlation between minimum acceptable efficacy and support for official

approval of PrEP.³⁴ A later survey demonstrated similar results, with providers willing to accept a median of 66% efficacy, and those providers who felt more positive towards PrEP approval being more willing to accept lower efficacy.²² Another showed that lower intentions to prescribe PrEP were correlated with provider requirements of data showing greater than 80% efficacy.⁴

Knowledge of and attitudes regarding risks and benefits

Attitudes and knowledge of the risks and benefits of PrEP were assessed in a similar manner, with knowledge of such affecting provider attitudes about prescription. Another factor associated with positive or negative attitudes towards PrEP and its potential benefits and risks included experience with HIV in some regard: positive attitudes were correlated with participating in relevant educational courses, experience prescribing post-exposure prophylaxis (PEP), and having prescribed ARVs for prevention in the past.^{14, 31,35,36} Again, perceived attitudinal barriers included lack of clear guidelines or guidelines relevant to provider-specific practices,¹⁹ but also included concerns over drug resistance,²⁷ risk compensation and its health effects,²⁶ moral issues, such as encouraging “bad behaviors”,¹⁵ and beliefs that behavioral interventions would be more effective.¹⁴ Cost also affected attitudes towards prescription, with equity and continuity considerations factoring into some provider responses.^{13,31}

Attitudes regarding sexual activity

Assessment of attitudes about certain populations engaging in sexual activity was rare. Two studies amongst family planning providers in Nigeria discovered that concerns about promoting promiscuity amongst adolescents and the belief that unmarried adolescents should not be sexually active were fairly prominent.^{37 38} As in the item above, among providers who stated they would not provide PrEP, moralistic views about sex often came into play but the study authors did not determine if a particular population was under scrutiny by the provider that noted, “medicine should not attempt to reverse bad behaviors artificially”.¹⁵

Attitudes regarding population-specific prescription

Similarly, attitudes about prescribing PrEP to certain populations, especially youth, were not deeply explored. In a study amongst adolescent providers, the predominant concern was the need to adapt guidelines to better fit the provider’s practice and the individual patient at hand, indicating positive attitudes overall, although this same study did find physicians to be more willing to prescribe to individuals over 18 years of age rather than under.¹⁹ The main target populations for prescription were serodiscordant couples (with an increasing favorability when conception is desired, and in cases of suboptimal or non-adherence to ART) and MSM.^{14,17,31} Multiple studies found reluctance to prescribe to PWID, perhaps due to a lack of perceived experience with this population.^{17,30} More commonly, risk factors were discussed in assessing attitudes towards prescription overall, rather than specific populations.¹⁵

Gender sensitivity and power imbalances

Very few studies sought to discern provider KAP with an eye to gender and associated power imbalances. The Population Council guidance document and microbicide consultation report both included questions to ask in implementation planning,^{3,5} while a few other studies noted that PrEP could provide empowerment to women and key populations in an acknowledgement that such power dynamics do exist in HIV preventive care.⁸

Attitudes regarding care seeking

Discussion of provider treatment of those seeking sexual and reproductive health services more broadly was limited, and confined to adolescents and MSM, if population was defined at all. Provider stigma is still a barrier to patient comfort in seeking services²³ and training was frequently suggested as a need in addressing stigma towards high-risk populations.^{29,33} Capacity-building specific to providers who see youth within their general services practices was noted as an additional need within this arena.³²

Attitudes regarding disclosure

No studies included in this review requested information about provider attitudes toward PrEP users being obligated to disclose their PrEP use to sexual partners. Only the Population Council guidance document suggested this as a question for surveys assisting in implementation preparation.³

Attitudes regarding adherence

Provider confidence in patient abilities to adhere to PrEP was more widely queried. In a survey of provider preferences of an oral pill versus a gel, more HIV specialists considered users to be more adherent to a daily oral pill rather than an episodic gel, while generalists felt the opposite. Interestingly, in the same study, after the release of iPrex results both sets of providers considered the gel easier in terms of adherence.⁷ Confidence around adherence was low for the most part. Providers expressed this through concern surrounding implementation of additional counseling needs, the risks of non-adherence, as well as 'real-world' constraints on efficacy outside the supportive environment of clinical trials.^{21,22,28,39} One study documented an increase in the likelihood of provider willingness to provide PrEP amongst those who expressed a concern for the need for daily dosing.⁹ This was perhaps reflective of increased knowledge about PrEP efficacy parameters. Only a few studies, predominantly amongst clinicians highly familiar with PrEP prescription, documented high perceptions of patient adherence.¹¹ Self-referred patients were generally considered to be the most adherent.¹⁸ Younger clients or those with other health issues inclusive of mental health concerns were perceived to be preoccupied with other matters in their lives, and thus were believed to be less adherent.^{18,29} The paradox of those who most stand to benefit from PrEP being potentially the least adherent was pointed out in at least one study.^{19,21}

Attitudes regarding risk

Questions about which populations were considered most at risk varied. Providers interviewed by Krakower et al. discussed risk in terms of sexual behaviors, highlighting that it may be hard to discern who exactly is most at risk given reluctance to discuss these behaviors with patients.²¹ This finding was echoed by several studies that found it difficult to find consensus on an exact target population for PrEP.^{14,29} Serodiscordant HIV status in a relationship was highly cited as a reason to prescribe PrEP, indicating perceptions of the negative partner as being at greatest risk.^{14,29,34,40} Perhaps expectedly, individuals who engage in high amounts of unprotected sex and with multiple partners, who exchange sex for money or other benefits, and PWID were also cited as high risk populations in multiple studies.^{15,34} Lack of guideline clarity also played into provider perceptions of who is most at risk, and therefore most likely to benefit from PrEP.¹⁹ Finally, one study discussed the need to individualize risk perceptions to the patient and their personal situation, and not waiting for them to technically be at risk according to the guidelines that do exist.¹⁸

Attitudes regarding access barriers

Few surveys aimed to assess provider impressions about population-specific barriers to accessing PrEP. Stigma, from both providers and the wider community, was cited as a barrier to potential provision of a topical gel to specific groups including sex workers in Zimbabwe.⁵ One group of providers suggested that sex workers and other consumer groups may be best served by peer educators rather than clinicians given the greater potential for empathetic care and assistance in overcoming accessibility issues.³³ Community education was noted as a tool to decrease stigma about accessing HIV services, and thus PrEP, in Arnold et al.²⁹ Impressions of PrEP as a “gay man’s prevention tool”¹⁸, or “just a party drug”³¹ as well as a lack of information targeted to populations other than gay men was also cited as a potential barrier to access in addition to basic issues of cost. Concerns about PrEP being limited to the “well-resourced”¹⁸ were echoed in several other studies.^{14,21,22} Additionally, the issue of provider reluctance to discuss sexual activity and other risk behaviors such as drug use with patients, or perceived lack of time to discuss thoroughly, was raised multiple times.^{21,31} Only one study queried providers specifically about barriers youth may experience.²⁰ Concerns cited included issues of confidentiality, issues surrounding informed consent and legality of consent without parental involvement, concerns about the impact of PrEP on bone density, issues of off-label use of PrEP, and cost restrictions. No surveys attempted to discern whether clinics provided or were equipped to provide confidential spaces for counseling, though the Population Council guidance document did suggest asking this for future implementation planning.

Attitudes regarding prescription

Finally, no surveys attempted to probe more acutely why negative feelings may exist about prescribing PrEP to specific populations, beyond the Population Council guidance document.³ That being said, one study that specifically probed race did discover that providers perceive a Black MSM patient as more likely to increase his sexually risky behaviors if given PrEP than a White MSM, impacting their likelihood to prescribe it.⁴¹

Practices

Prescription practices and HIV treatment

A preponderance of studies asked if providers had either prescribed PrEP in the past, have experience treating HIV positive patients, or both. On the whole, those with past experience had more favorable attitudes towards future prescription, but did also express concerns on the basis of their familiarity with HIV treatment and prevention.^{6,9} Knowledge was also greater among those with past experience.^{28,39}

Counseling practices

Counseling practices were probed in a few studies, usually as an assessment of guideline adherence. Adherence to guidelines was high but many studies found clinicians adjusting their counseling and testing schedules to suit the needs of their patients rather than remaining strictly adherent to recommended schedules and themes.^{11,19} One study mentioned the value of support staff in assisting in the additional time burden imposed by counseling needs, indicating an element of task shifting in PrEP implementation.¹⁸

Workflow and workload management

Workload management and integration of PrEP into existing flow of services were addressed in a number of studies. Many potential and existing providers expressed concern about making adjustments to current models of care in order to incorporate PrEP for

various reasons, inclusive of more intensive counseling and follow-up.^{29,31} Adherence counseling and associated time investments were consistently discussed as concerns, regardless of setting, with one provider noting, ““I can’t think up any other [preventive strategy] on the top of my head..that needs quite the amount of necessary monitoring””.^{21,22,33}

Site readiness

Several studies did express provider willingness to incorporate these additional needs into their practice, however, especially with additional supports such as guidance, training, social work assistance, and reimbursement.^{6,22,32,39} The one study evaluating PrEP implementation in sub-Saharan Africa found concerns about further burdening already overworked staff with additional duties and clients.³³ Task-shifting and appropriate, facility-based training were seen as a necessity.³³ Infrastructural issues and questions about site readiness also arose, with PrEP requiring additional space for storage, dispensing, and completion of required laboratory tests, and for the increased number of clients visiting clinics.³³ In discussing broader ARV-based prevention, a consultation of providers in Zimbabwe suggested youth service centers would be well-equipped to handle distribution efforts given existing commodity streams.⁵ Many studies found that providers felt PrEP could be incorporated into a number of settings, from primary care to specialized HIV or PrEP provision clinics.^{10,22} HIV specialists, however, did express skepticism that they would actually see any demand from potential HIV negative clients given that they generally only treat HIV-positive individuals.¹⁵ One study interviewed HIV specialists who coordinated with primary care settings and across disciplines in order to meet the needs of patients as thoroughly as possible.¹⁸

Adherence measurement

Few studies delved into the specifics of adherence measurement, beyond tests of knowledge, discussion of challenges it presented and its critical importance.^{4,6,29} Mullins et al.¹⁹ did delve further into content of follow-up visits after PrEP initiation, and found that providers valued flexibility in adapting guidelines to best suit their patients and circumstances.

Adherence support

Studies that sought provider opinion on how to support and increase patient adherence were more common, with counseling being highly cited, along with community education, behavioral interventions and self-esteem building.^{19,34} Creative interventions included text alerts for pills or appointments, while online booking systems, and shorter waiting times were among suggestions to improve retention in care.³² A few studies noted that supports may need to go beyond PrEP adherence, as clients may be dealing with issues such as homelessness that preclude the ability to maintain strict adherence schedules.^{18,29}

Policies and actions needed

Other policies and actions that were deemed supportive of PrEP implementation included, as noted previously, formal guidance from official bodies and professional associations, training for all levels of provider, accessibility and cost coverage policies.^{6,7,14,21,22,28,29,31} Educational interventions and trainings for communities were also deemed supportive of implementation, to work towards stigma reduction and increase patient demand, which providers noted would increase their likelihood of prescription.¹⁸

Conclusion

This review highlights that, even though PrEP has existed as an HIV prevention option for several years, the knowledge, attitudes, and practices of the providers that serve as a gateway to PrEP have been incompletely studied. The critical need for further research is especially relevant for providers in sub-Saharan Africa who work with adolescent girls and young women given the paucity of inquiry into this area. AGYW continue to be that region's most vulnerable, and the high barriers to their reaping the full benefits of PrEP endure. Maintaining the dearth of insight into KAP surrounding PrEP and AGYW will do nothing to ameliorate these problems.

This review serves to stress that a PrEP provider KAP study in Kenya, South Africa and Zimbabwe is very much needed. The Population Council is conducting important research in this area to inform a study of PrEP acceptability in Tanzania, but that survey will not be available until 2017 as it is still in the pretesting phase. Neither the results nor the survey itself can be added to the literature at this point. Further, this survey has been developed using the PrEP implementation guidance document. That document was mostly adapted from a KAP survey of US-based providers, which is not directly relevant to OPTIONS' focus countries.

It has been noted above that another Mpii project, POWER, is conducting interviews with key informants, inclusive of healthcare providers, to assist in PrEP implementation in Kenya and South Africa. An analysis of the overlap between OPTIONS' working survey and that used in the POWER study has been conducted (see *KAP Literature and Draft Survey Analysis*, tab 3) to ensure there is not duplication of efforts. This analysis found that, while there may be a few instances of conceptual overlap such as attitudes towards AGYW being sexually active and basic awareness of PrEP, the items in the two projects' surveys remain quite distinct. It may be concluded that findings from each may have significant relevance for the research literature.

With such limited research on PrEP providers working with AGYW a determination of specific questions to include in a KAP survey is difficult. Indeed we are unable to even discuss which aspects of KAP may be more necessary to research than others given that so little is known about providers in the three focus countries. However, what the literature does show is that provider stigma remains a barrier to PrEP accessibility for a range of populations. Questions that probe provider attitudes towards the use of PrEP by AGYW, about AGYW being sexually active, and provider treatment of AGYW who may benefit from PrEP for a variety of reasons should certainly be included to assist in developing training tools. In addition, provider sensitivity to the barriers that AGYW may face in accessing PrEP, and how this may also affect adherence and subsequent counseling needs can greatly facilitate PrEP implementation. The OPTIONS draft survey currently does assess aspects of stigma with far more specificity than the majority of other surveys (see *KAP Literature and Draft Survey Analysis*, tab 3). The section on additional considerations below includes a discussion of gender -and youth-sensitive lines of inquiry that could be informative to further development of the survey.

Next, it will be important to survey a range of providers. Doing so is quite pervasive in the literature, inclusive of the Population Council guidance and the POWER informant survey. The POWER survey includes health outreach workers and traditional healers in its list of key informants, while the Population Council document includes peer educators and lab technicians. This is because it is important to consider the total client clinic experience: patients often encounter multiple healthcare providers along the interaction chain in

seeking care – from receptionists to community healthcare workers to nurses to doctors. General KAP, including stigma, at each level of provider should be assessed in order to address opportunities and gaps in creating a welcoming and effective experience for PrEP and PrEP follow-up.

Additionally, the literature has also shown that the more knowledgeable about PrEP that providers are, the more responsive they are to its prescription. This is again why a range of providers must be surveyed given that opportunities for education – be they through textbooks, courses, public health campaigns, or direct experience with HIV treatment and prevention – differ according to a variety of provider factors. OPTIONS' KAP survey can help identify how best to improve provider knowledge of PrEP in each of the three focus countries and in various settings, which is currently a huge gap in the research.

This review also serves to stress the importance of normative guidance to all aspects of provider KAP. For providers to be both inclined and able to support the careful implementation of PrEP, official guidelines and the funding, training, and other supportive mechanisms that often accompany them have been deemed critical in almost the entirety of the literature. The shape of such guidelines will vary by country, population and clinic/provider type. KAP studies can help inform the needs that providers along the interaction chain have in regards to the type of guidance that will be most helpful to them. To this end, questions regarding what providers need to feel comfortable prescribing PrEP is critically important. This is included in the OPTIONS draft survey already and is a crucial addition. The fact that the OPTIONS survey spends considerable time on this issue has the possibility of being extremely enlightening.

Normative guidance needs also encompass questions of workload management, which has appeared as a concern in much of the literature that is actually Africa-based. Providers at different levels and in different clinic settings tend to feel strongly about having their usual flow of work interrupted by the perceived and actual additional burden of PrEP implementation. This is especially so in less resourced locations. The OPTIONS draft asks providers their opinion about managing workload but further probing about what would be helpful to providers in doing so may be warranted. Including elements of the desirability and feasibility of task-shifting may also prove enlightening and further inform training tool and guidance development.

On the whole, the draft OPTIONS survey appears to be a comprehensive and evidence-based document, on par with and in many cases more detailed than surveys that have been implemented elsewhere. Given that it will be probing an area of inquiry that has thus far seen scant attention (at least in published literature), and doing so in countries that have not seen much of this type of research at all, it is safe to conclude that it will be extremely additive.

Additional Considerations

Gender

To ensure the success of PrEP implementation programming, it is essential to understand how gender norms and associated inequalities affect AGYW access and use of PrEP products. Often, the same gender-related factors that make these groups more vulnerable to HIV also raise barriers to their effective use of PrEP.⁴² The survey currently under

development by OPTIONS** asks several questions with the intent of assessing provider attitudes towards AGYW being sexually active, under different marital circumstances and at different ages. It also contains one query into provider gender-sensitivity and attention to power imbalances. Such questions will be instrumental in identifying potentially harmful ideologies and inequalities that may bar girls and women from correct and consistent use of PrEP, at least in the health care domain.

Further questions or areas of inquiry may also be suggested in order to acquire a well-rounded awareness of potential barriers. FHI360 gender expert, Robyn Dayton provided recommendations that could be incorporated into the qualitative or quantitative portion of the survey:

1. Obtain a sense of how providers are discussing PrEP with their clients. Are they conveying stigmatizing attitudes about PrEP or those who use it or do they perceive it as a viable HIV prevention options for a range of people and circumstances? For example, do they frame PrEP as something only “bad” women take or as an option only for those who sell sex? Or, do they see those who stand to benefit as innocent and naïve victims of unscrupulous actors?
 - a. **Example question** (*adapted from FHI360 manual*):
Do you think PrEP should be available to all women or to specific groups of women? For what reasons?
 - i. What about young women ages 15-24?
 - ii. [If specific groups] Some people have raised the concern that if PrEP is made available only to specific groups of women, such as sex workers or women in serodiscordant couples, then PrEP could become stigmatized and difficult to use by women in steady relationships who are unable to use condoms and are at risk of HIV. What do you think about this?
 - b. **Example question** (*adapted from FHI360 manual*): Do you think PrEP should be promoted as something all adolescent girls and young women should/could use to prevent HIV? Why?
2. What are provider attitudes in regard to many realities in AGYW’s lives, such as conducting transactional sex or having a sugar daddy (“Blesser”)?
 - a. **Example question** (*adapted from LINKAGES draft gender analysis toolkit*):
Evidence shows that gender-related beliefs for how men and women should behave can harm AGYW’s well-being and keep them from accessing HIV-related services. **Gender-related beliefs are not factual statements, but rather common beliefs held in a specific culture. I will now read some of the beliefs that were found in the literature. Please comment on whether you think each of these beliefs is widely held in [Country]. You can also say “I don’t know” or change the statement to be more accurate.**
 - i. A girl or woman’s sexual behavior reflects her morals
 - ii. AGYW who engage in sex work or transactional sex are bad mothers
 - iii. AGYW who engage in sex work deserve to experience violence
 - iv. It is okay for AGYW to be beaten once in a while by their partners
 - v. A girl or woman should take care of those around her (husband, children) even if it means forgoing care for herself

** Draft survey developed September 2016 by Wits as part of KAPB workstream

- vi. Men degrade themselves when they behave in a feminine way
3. How are providers assessing risk?
 - a. **Example question** (*adapted from POWER key informant guide*):
What types of sexual relationships are the young women you see in your clinic involved in? (for example: are they married? Involved with multiple sex partners? Are they having sex with other women? Are they doing sex work or transactional sex?)
 - i. How many sex partners do they have?
 4. What is knowledge around age of consent laws? Does knowledge or lack thereof preclude providers from discussing patients' sexual activity and/or prevent them from testing for HIV and other STIs?
 - a. **Example question:**
What are the age of consent laws in your country (for sexual activity/HIV testing/contraception provision without parental consent)?
 - i. Please explain how these laws affect sexual health counseling/PrEP provision in your clinic.
 5. What are provider attitudes surrounding violence? Are they comfortable assessing a patient's risk for violence and how this may affect her adherence, and do they understand how it may do so?
 - a. **Example question** (*adapted from LINKAGES draft gender analysis toolkit*):
Do health care workers offering HIV-related services to AGYW ask them if they have experienced violence? Why or why not? *[If YES]* How?
 - i. What services or organizations do they refer AGYW to?
 - ii. How is this different for **older women, FSW, men and boys**? Why?
 - b. **Example question** (*adapted from LINKAGES draft gender analysis toolkit*):
How do experiences of violence affect whether AGYW access HIV-related services?
 - i. How is this different for **older women, FSW, men and boys**? Why?
 6. Are providers able to provide an assessment of AGYW's potential or actual barriers to access and adherence, and are they able to provide empathy regarding these barriers? Where do their implicit biases lay? More broadly, what role do providers see for themselves in counseling on factors not immediately related to medication such as poverty? Are they able to provide an assessment of their clients' personal situations and do they feel comfortable working with patients to create an adherence plan that addresses individualized barriers to medication continuity? Providers with a sense of personal responsibility and empowerment to ensure barriers are addressed and follow-up is achieved are great facilitators of impactful PrEP implementation.
 - a. **Example question** (*adapted from FHI360 manual*):
We know from clinical trials that women may have difficulty using the daily oral PrEP as directed because of gender inequalities. Barriers to adherence include women lacking control over the privacy to take their pills or visit the clinic, being in a violent relationship, or lack of food with which to take medication. How can providers support women in overcoming these gender-related challenges to PrEP use? Do providers feel it is their job to provide support that is not directly related to a patient's health?
 - b. **Example question** (*adapted from FHI360 manual*):
Can you think of any legal or policy barriers to PrEP successfully reaching AGYW?

- i. What are some ways to overcome these barriers?

Helpful resources include:

FHI360 - Manual for conducting a gender analysis for microbicide introduction.

See appendix for stakeholder questions

http://www.fhi360.org/sites/default/files/media/documents/GenderAnalysisGuidance_WithHyperlinks_0805.pdf

C-Change – Gender Equitable Men (GEM) Scale

<https://www.c-changeprogram.org/content/gender-scales-compendium/pdfs/4.%20GEM%20Scale.%20Gender%20Scales%20Compendium.pdf>

Youth-friendly services

The need for youth-friendly services has been identified in the literature. Failure to take the unique circumstances under which youth live their lives into consideration can pose a huge barrier to their engagement in care. In a 2013 review,⁴³ eight domains were deemed critical to young persons' positive experiences of care: "accessibility of health care; staff attitude; communication; medical competency; guideline-driven care; age appropriate environments; youth involvement in health care; and health outcomes."⁴³ It may be useful to consider including an assessment of site-readiness to provide PrEP in a manner welcoming to youth, considering factors outside of the clinic that may affect their ability to benefit from the services within.

Helpful resources include:

PSI – Making your services youth-friendly

See appendix for assessment tools

https://www.k4health.org/sites/default/files/making_health_services_youth_friendly.pdf

IAWG – Adolescent-friendly sexual and reproductive health services checklist

<http://iawg.net/wp-content/uploads/2016/08/18.-Adolescent-friendly-Sexual-and-Reproductive-Health-Service-checklist.pdf>

IYWG – Youth friendly services

Collection of resources and assessment tools

<https://www.iywg.org/topics/youth-friendly-services-0>

ICAP – Adolescent HIV care and treatment trainer manual

See session 2.3 on training and assessment of youth-friendly service provision

http://files.icap.columbia.edu/files/uploads/1423_ZM_Trainer_Manual_renamed.pdf

¹ Pebody, R. (2016). Lessons learnt from the history of contraception are relevant for the Implementation of PrEP. *Aidsmap*. Retrieved from <http://www.aidsmap.com/Lessons-learnt-from-the-history-of-contraception-are-relevant-for-the-implementation-of-PrEP/page/3025233/>

² Delany-Moretlwe, S., Mullick, S., Eakle, R., & Rees, H. (2016). Planning for HIV preexposure prophylaxis introduction. *Current Opinion In HIV And AIDS*, 11(1), 87-93. <http://dx.doi.org/10.1097/coh.0000000000000221>

³ Pilgrim, N., Mathur, S., Gottert, A., Rutenberg, N., & Pulerwitz, J. (2016). *Building evidence to guide PrEP introduction for adolescent girls and young women*. Washington, DC: Population Council.

⁴ Mimiaga, M., White, J., Krakower, D., Biello, K., & Mayer, K. (2013). Suboptimal awareness and comprehension of published preexposure prophylaxis efficacy results among physicians in Massachusetts. *AIDS Care*, 26(6), 684-693. <http://dx.doi.org/10.1080/09540121.2013.845289>

-
- 5 Population Council. (2015). *ARV-based HIV prevention for women: State of the science and considerations for implementation in Zimbabwe*. Report from a provider workshop. Retrieved from http://www.popcouncil.org/uploads/pdfs/2015HIV_ZimbabweProviderWorkshop.pdf
- 6 Smith, D., Mendoza, M., Stryker, J., & Rose, C. (2016). PrEP Awareness and Attitudes in a National Survey of Primary Care Clinicians in the United States, 2009–2015. *PLOS ONE*, *11*(6), e0156592. <http://dx.doi.org/10.1371/journal.pone.0156592>
- 7 White, J., Mimiaga, M., Krakower, D., & Mayer, K. (2012). Evolution of Massachusetts Physician Attitudes, Knowledge, and Experience Regarding the Use of Antiretrovirals for HIV Prevention. *AIDS Patient Care And Stds*, *120613073450003*. <http://dx.doi.org/10.1089/apc.2012.0030>
- 8 Tripathi, A., Ogbuanu, C., Monger, M., Gibson, J., & Duffus, W. (2012). Preexposure Prophylaxis for HIV Infection. *Southern Medical Journal*, *105*(4), 199-206. <http://dx.doi.org/10.1097/smj.0b013e31824f1a1b>
- 9 Tang, E., Sobieszczyk, M., Shu, E., Gonzales, P., Sanchez, J., & Lama, J. (2014). Provider Attitudes Toward Oral Preexposure Prophylaxis for HIV Prevention Among High-Risk Men Who Have Sex with Men in Lima, Peru. *AIDS Research And Human Retroviruses*, *30*(5), 416-424. <http://dx.doi.org/10.1089/aid.2013.0212>
- 10 Krakower, D., Oldenburg, C., Mitty, J., Wilson, I., Kurth, A., & Maloney, K. et al. (2015). Knowledge, Beliefs and Practices Regarding Antiretroviral Medications for HIV Prevention: Results from a Survey of Healthcare Providers in New England. *PLOS ONE*, *10*(7), e0132398. <http://dx.doi.org/10.1371/journal.pone.0132398>
- 11 Krakower, D., Maloney, K., Grasso, C., Melbourne, K., & Mayer, K. (2016). Primary care clinicians' experiences prescribing HIV pre-exposure prophylaxis at a specialized community health centre in Boston: lessons from early adopters. *Journal Of The International AIDS Society*, *19*(1). <http://dx.doi.org/10.7448/ias.19.1.21165>
- 12 Seidman, D., Carlson, K., Weber, S., Witt, J., & Kelly, P. (2016). United States family planning providers' knowledge of and attitudes towards preexposure prophylaxis for HIV prevention: a national survey. *Contraception*, *93*(5), 463-469. <http://dx.doi.org/10.1016/j.contraception.2015.12.018>
- 13 Shaeer, K., Sherman, E., Shafiq, S., & Hardigan, P. (2014). Exploratory survey of Florida pharmacists' experience, knowledge, and perception of HIV pre-exposure prophylaxis. *Journal Of The American Pharmacists Association*, *54*(6), 610-617. <http://dx.doi.org/10.1331/japha.2014.14014>
- 14 Puro, V., Palummieri, A., De Carli, G., Piselli, P., & Ippolito, G. (2013). Attitude towards antiretroviral pre-exposure prophylaxis (PrEP) prescription among HIV specialists. *BMC Infect Dis*, *13*(1). <http://dx.doi.org/10.1186/1471-2334-13-217>
- 15 Karris, M., Beekmann, S., Mehta, S., Anderson, C., & Polgreen, P. (2013). Are We Prepped for Preexposure Prophylaxis (PrEP)? Provider Opinions on the Real-World Use of PrEP in the United States and Canada. *Clinical Infectious Diseases*, *58*(5), 704-712. <http://dx.doi.org/10.1093/cid/cit796>
- 16 Hoffman, S., Guidry, J., Collier, K., Mantell, J., Boccher-Lattimore, D., Kaighobadi, F., & Sandfort, T. (2015). A Clinical Home for Preexposure Prophylaxis: Diverse Health Care Providers Perspectives on the "Purview Paradox". *Journal Of The International Association Of Providers Of AIDS Care (JIAPAC)*, *15*(1), 59-65. <http://dx.doi.org/10.1177/2325957415600798>
- 17 Krakower, D., Beekmann, S., Polgreen, P., & Mayer, K. (2015). Diffusion of Newer HIV Prevention Innovations: Variable Practices of Frontline Infectious Diseases Physicians. *Clin Infect Dis*, *62*(1), 99-105. <http://dx.doi.org/10.1093/cid/civ736>
- 18 Calabrese, S., Magnus, M., Mayer, K., Krakower, D., Eldahan, A., & Gaston Hawkins, L. et al. (2016). Putting PrEP into Practice: Lessons Learned from Early-Adopting U.S. Providers' Firsthand Experiences Providing HIV Pre-Exposure Prophylaxis and Associated Care. *PLOS ONE*, *11*(6), e0157324. <http://dx.doi.org/10.1371/journal.pone.0157324>
- 19 Mullins, T., Lally, M., Zimet, G., & Kahn, J. (2015). Clinician Attitudes Toward CDC Interim Pre-Exposure Prophylaxis (PrEP) Guidance and Operationalizing PrEP for Adolescents. *AIDS Patient Care And Stds*, *29*(4), 193-203. <http://dx.doi.org/10.1089/apc.2014.0273>
- 20 Mullins, T., Zimet, G., Lally, M., & Kahn, J. (2016). Adolescent Human Immunodeficiency Virus Care Providers' Attitudes Toward the Use of Oral Pre-Exposure Prophylaxis in Youth. *AIDS Patient Care And Stds*, *30*(7), 339-348. <http://dx.doi.org/10.1089/apc.2016.0048>
- 21 Krakower, D., Ware, N., Mitty, J., Maloney, K., & Mayer, K. (2014). HIV Providers' Perceived Barriers and Facilitators to Implementing Pre-exposure Prophylaxis in Care Settings: A Qualitative Study. *AIDS Behav*, *18*(9), 1712-1721. <http://dx.doi.org/10.1007/s10461-014-0839-3>

-
- 22 Sharma, M., Wilton, J., Senn, H., Fowler, S., & Tan, D. (2014). Preparing for PrEP: Perceptions and Readiness of Canadian Physicians for the Implementation of HIV Pre-Exposure Prophylaxis. *Plos ONE*, 9(8), e105283. <http://dx.doi.org/10.1371/journal.pone.0105283>
- 23 Arreola, S., Makofane, K., & Ayala, G. (2014). *Values & preferences of MSM: the Use of Antiretroviral Therapy as Prevention*. MSMGF. Retrieved from http://msmgf.org/files/msmgf/documents/WHO_MSMGF_ValuesPreferences.pdf
- 24 Grossman, L., Kline, M., Scherer, M., Churnet, B., Yin, M., Olender, S., Sauer, M., and Douglas, N. (2014). Survey of Obstetrics and Gynecology Providers on Management of HIV Serodiscordant Couples: Assessment of Attitudes, Practices, and Knowledge. *Andrology & Gynecology: Current Research*, 2(3).
- 25 Bacon, O., Gonzalez, R., Andrew, E., Potter, M., Iñiguez, J., & Cohen, S. et al. (2016). Informing Strategies to Build PrEP Capacity among San Francisco Bay Area Clinicians. *JAIDS Journal Of Acquired Immune Deficiency Syndromes*, 1. <http://dx.doi.org/10.1097/qai.0000000000001182>
- 26 Desai, M., Gafos, M., Dolling, D., McCormack, S., & Nardone, A. (2015). Healthcare providers' knowledge of attitudes to and practice of pre-exposure prophylaxis for HIV infection. *HIV Medicine*, 17(2), 133-142. <http://dx.doi.org/10.1111/hiv.12285>
- 27 Ross, I., Melendez, J., Goodenberger, K., Mejia, C., Powderly, W., & Chan, P. et al. (2016). Awareness and attitudes of prescribing pre-exposure prophylaxis for HIV prevention among medical providers in Guatemala: Implications for country-wide implementation. *Annals Of Global Health*, 82(3), 554-555. <http://dx.doi.org/10.1016/j.aogh.2016.04.493>
- 28 Blumenthal, J., Jain, S., Krakower, D., Sun, X., Young, J., Mayer, K., & Haubrich, R. (2015). Knowledge is Power! Increased Provider Knowledge Scores Regarding Pre-exposure Prophylaxis (PrEP) are Associated with Higher Rates of PrEP Prescription and Future Intent to Prescribe PrEP. *AIDS Behav*, 19(5), 802-810. <http://dx.doi.org/10.1007/s10461-015-0996-z>
- 29 Arnold, E., Hazelton, P., Lane, T., Christopoulos, K., Galindo, G., Steward, W., & Morin, S. (2012). A Qualitative Study of Provider Thoughts on Implementing Pre-Exposure Prophylaxis (PrEP) in Clinical Settings to Prevent HIV Infection. *Plos ONE*, 7(7), e40603. <http://dx.doi.org/10.1371/journal.pone.0040603>
- 30 Adams, L. & Balderson, B. (2016). HIV providers' likelihood to prescribe pre-exposure prophylaxis (PrEP) for HIV prevention differs by patient type: a short report. *AIDS Care*, 28(9), 1154-1158. <http://dx.doi.org/10.1080/09540121.2016.1153595>.
- 31 Rajae, L. (2016). PrEP Advocacy Project: Increasing the Adoption of Pre-Exposure Prophylaxis (PrEP) in San Luis Obispo County. *Senior Project, The Faculty of the Journalism Department California Polytechnic State University, San Luis Obispo*. <http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1117&context=joursp>
- 32 apcom. (2015). *PrEParing Asia: A new direction for HIV prevention among MSM in Asia*. apcom.org. Retrieved from <http://www.apcom.org/wp-content/uploads/2015/07/PrEParing-Asia-Meeting-Report-2015-27042016-Low-Res.pdf>
- 33 Mack, N., Wong, C., McKenna, K., Lemons, A., Odhiambo, J., and Agot, K. (2015). Human Resource Challenges to Integrating HIV Pre-Exposure Prophylaxis (PrEP) into the Public Health System in Kenya: A Qualitative Study. *African Journal of Reproductive Health*, 19(1).
- 34 Senn, H., Wilton, J., Sharma, M., Fowler, S., & Tan, D. (2013). Knowledge of and Opinions on HIV Preexposure Prophylaxis Among Front-Line Service Providers at Canadian AIDS Service Organizations. *AIDS Research And Human Retroviruses*, 130622051337000. <http://dx.doi.org/10.1089/aid.2013.0090>
- 35 Castel, A., Feaster, D., Tang, W., Willis, S., Jordan, H., & Villamizar, K. et al. (2015). Understanding HIV Care Provider Attitudes Regarding Intentions to Prescribe PrEP. *JAIDS Journal Of Acquired Immune Deficiency Syndromes*, 70(5), 520-528. <http://dx.doi.org/10.1097/qai.0000000000000780>
- 36 Blackstock, O., Moore, B., Berkenblit, G., Calabrese, S., Cunningham, C., & Fiellin, D. et al. (2016). A Cross-Sectional Online Survey of HIV Pre-Exposure Prophylaxis Adoption Among Primary Care Physicians. *Journal Of General Internal Medicine*. <http://dx.doi.org/10.1007/s11606-016-3903-z>
- 37 Ahanonu, E. (2014). Attitudes of Healthcare Providers towards Providing Contraceptives for Unmarried Adolescents in Ibadan, Nigeria. *Journal of Family and Reproductive Health*, 8(1).

-
- ³⁸ Ajah, L., Obi, V., Ozumba, B., Umeora, O., Onwe, O., Ezeonu C. and Onu F. (2015). Attitude of Healthcare Providers to adolescent contraception in Abakaliki, South East Nigeria. *International Journal of Medicine and Health Development*, 20(1).
- ³⁹ Hakre, S., Blaylock, J., Dawson, P., Beckett, C., Garges, E., & Michael, N. et al. (2016). Knowledge, attitudes, and beliefs about HIV pre-exposure prophylaxis among US Air Force Health Care Providers. *Medicine*, 95(32), e4511. <http://dx.doi.org/10.1097/md.00000000000004511>
- ⁴⁰ Tellalian, D., Maznavi, K., Bredeek, U., & Hardy, W. (2013). Pre-Exposure Prophylaxis (PrEP) for HIV Infection: Results of a Survey of HIV Healthcare Providers Evaluating Their Knowledge, Attitudes, and Prescribing Practices. *AIDS Patient Care And Stds*, 27(10), 553-559. <http://dx.doi.org/10.1089/apc.2013.0173>
- ⁴¹ Calabrese, S., Earnshaw, V., Underhill, K., Hansen, N., & Dovidio, J. (2013). The Impact of Patient Race on Clinical Decisions Related to Prescribing HIV Pre-Exposure Prophylaxis (PrEP): Assumptions About Sexual Risk Compensation and Implications for Access. *AIDS And Behavior*, 18(2), 226-240. <http://dx.doi.org/10.1007/s10461-013-0675-x>
- ⁴² Lanham, M., , Doggett, E., Wilcher, R., and Dayton, R. (2014). Manual for conducting a gender analysis for microbicide introduction. http://www.fhi360.org/sites/default/files/media/documents/GenderAnalysisGuidance_WithHyperlinks_0805.pdf
- ⁴³ Ambresin, A., Bennett, K, Patton, G., Sanci, L. and Sawyer, S. (2013). Assessment of youth-friendly health care: a systematic review of indicators drawn from young people's perspectives. *Journal of Adolescent Health*; 52(6).