Facilitators & Barriers to Implementing Provider-Initiated HIV Counselling and Testing at the Clinic-Level in Ekurhuleni District, South Africa

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Keywords: HIV testing, HIV testing services, provider-initiated counselling & testing; barriers & facilitators, normalization

Posted Date: May 24th, 2021

DOI: https://doi.org/10.21203/rs.3.rs-454182/v2

Version of Record: A version of this preprint was published at Implementation Science Communications on February 15th, 2022. See the published version at https://doi.org/10.1186/s43058-022-00269-3.

Abstract

Background

HIV testing is the entry point into the HIV care continuum, and critical for HIV epidemic control. Facility-based HIV testing services (HTS) reach individuals who are already seeking clinical care and engaging with the medical care system. For this reason, individuals diagnosed with HIV during facility-based HIV testing are more likely to continue into HIV care. Efforts have been increasingly made to increase facility-based HIV testing services (HTS), including introducing provider-initiated counselling & testing (PICT), but this strategy remains under-utilized. We aimed to identify key constraints to normalization of PICT implementation in 10 Ekurhuleni District healthcare facilities in South Africa.

Methods

In-depth interviews were conducted with 40 healthcare workers (28 clinicians and 12 lay counsellors). Health care workers were purposefully selected to participate in the interviews, stratified by health facility and work category. Interviews were audio-recorded, transcribed, and translated for analysis. Thematic analysis was guided by the normalisation process theory (NPT). NPT theory explains how practices are routinely embedded within organisational contexts. We used NVivo 10 software for qualitative data management.

Results

Both clinicians and lay counsellors exhibited clear understanding of the PICT policy – acknowledging its purpose and value. Key barriers to normalisation of PICT among clinicians understanding that HIV testing needs to be offered to all clients yet reporting actual practices of offering HIV testing based on suspicion of HIV. Additionally, clinicians perceived PICT as incongruent with their clinical roles and perceived it to be lay counsellors' responsibility. The main facilitator was participation of all healthcare workers, specifically the presence of lay counsellors, although they also faced barriers such as a lack of workspace and under-appreciation.

Conclusions

Use of NPT helped identify barriers which prevent normalization of PICT and its integration into the routine patient care. These barriers can be modified by low-cost interventions that promotes congruence of PICT to the roles of clinicians and integrate the role of lay counsellors within the patient flow in the facility.

Contributions To The Literature

- Available literature shows that although PICT increases HIV testing, this policy is however not fully implemented in healthcare facilities, especially by clinicians.

- For new interventions to be successfully implemented in a health care setting, they need to be incorporated to existing roles. Several factors affect this process and identifying such factors is a step towards mitigating identified barriers, leverage facilitators, and improve PICT delivery.
- These findings highlight key clinician barriers, role played by lay counsellors, and the potential role of full and collective participation of these healthcare worker categories to improve delivery of PICT at facility level.

Introduction

HIV testing is the entry point into the HIV care continuum, which makes it an essential step for improved health outcomes for people living with HIV (PLHIV) and for epidemic control through antiretroviral treatment (ART) initiation and treatment as prevention. Facility-based HIV testing services (HTS) reach individuals who are already seeking clinical care and engaging with the medical care system (1, 2). For this reason, individuals diagnosed with HIV during facility-based HIV testing are more likely to continue into HIV care compared to those diagnosed during community or mobile outreach(2, 3). Facility-based HTS depends on providers recommending and, in some situations, performing HIV testing. To increase the number of PLHIV who are diagnosed and initiated on ART, in 2015 the South African Department of Health instituted a policy to encourage providers to recommend HIV testing (4, 5). The policy refers to this approach as Provider Initiated Counselling and Testing (PICT) which is described as follows: "*PICT should be offered to all patients attending clinical services in both public and private sector. Health care providers should recommend HCT to all patients in a health facility, regardless of whether they show signs or symptoms of HIV infection*"(6). Despite the policy, HIV testing continues to be offered to a small proportion of eligible patients (1, 7, 8).

Several approaches have been used to increase facility-based HTS (4, 9–11). Several studies assessing facility-based PICT in developing countries found a significant increase in HTS uptake when offered and provided by a healthcare provider compared to voluntary HIV testing or referral to onsite HIV testing(1, 9, 12). Although a larger proportion of patients tested with PICT, the overall delivery of HTS remained low, reaching only a small portion of health facility attendees. Health care provider challenges leading to limited delivery of HTS within clinics include limited work space; healthcare providers' work load and PICT being viewed as adding to the work load, lack of confidence in counseling and HV testing skill, as well as dissatisfaction with salary (13–15).

The normalization of an intervention plays an important role in successful implementation. This process requires that health providers adopt the intervention and incorporate it into their routine work. The ability to do this is affected by patient and health system related factors. These factors need to be clearly identified and characterised to inform development of strategies that address them. Currently there is limited literature describing factors that hinder normalization of PICT amongst healthcare providers. Available literature has mainly examined individual, patients, and resource barriers to successful delivery of HTS. We sought to understand key facilitators and barriers to the implementation of PICT in South

African healthcare facilities using the theoretical framework of the normalization process theory (NPT) (17, 18).

Methods

Study setting & data collection

Ekurhuleni is one of the five districts of Gauteng province of South Africa and the fourth largest Metropolitan municipality in South Africa. It is composed of urban and peri-urban residential areas with a total of 93 public health clinics and 6 public hospitals. The study was conducted in 10 public outpatient health facilities as part of a larger study to understand and increase HTS delivery. All the health facilities provided free HTS and HIV care and treatment services.

Between February and May 2017, we conducted in-depth interviews with 40 healthcare providers (medical doctors, professional nurses, and lay counsellors) who were involved with HIV testing. Table 1 summarises the demographics of the interviewed healthcare providers. Two researchers, TM with PhD and NM-P with MPH developed an interview guide based on literature review, study objectives, and the NPT (17,18) with the aim of understanding processes associated with provider-initiated facility-based HTS including challenges and facilitators to its optimal use and implementation (Additional file). Participants were recruited using purposive sampling, stratified by type of healthcare provider, from the 10 healthcare facilities. Two experienced qualitative researchers, NN and MH were trained on using the interview guide and conducted the interviews (additional file). Both interviewers were females, and NN was a qualified Research Psychologist, and MH had a post graduate diploma in HIV/AIDS management. Both interviewers had experience in qualitative research design and in conducting in-depth interviews. Most of the interviews were conducted in isiXhosa, isiZulu, Sotho and Tswana with subsequent transcription and translation into English. All interviews were conducted at the healthcare facilities, and each lasted about 20 – 35 minutes. Only the researcher and the participant were present during the interview session. Saturation was monitored throughout the data collection process; researchers reviewed audio-recordings of interviews soon after conducting them to identify recurring themes to decide whether to proceed or stop conducting additional interviews. Transcripts were not returned to participants for comments (Additional file).

Data analysis

A qualitative data analysis software program, Nvivo 10, was used for data management. NPT was used to develop the codebook and organize codes. NPT is an explanatory model that describes implementation of new interventions into health care facilities. The theory is organized into four constructs: 1) coherence, which refers to shared and personal beliefs of the purpose, value and demands of the practice; 2) cognitive participation, which refers to the commitment of actors to participate in the practice; 3) collective action, which refers to resources required to successfully perform HIV testing tasks,

including working together in allocating and appropriately performing HTS tasks; and 4) reflexive monitoring, which refers to the level of reflection on, or appraisal of, the intervention by implementers, including whether it is likely to be perceived as advantageous for patients or staff (19). Taken as a whole, these are processes through which interventions are integrated into routine health care practices and become normalised or part of the routine (17). We analysed the transcripts using thematic analysis. All categories constituting NPT constructs were assigned a code domain and specific sub codes were developed for each of the 4 domains. Any themes representing the 4 NPT domains were extracted and assigned to the specific codes. One researcher, NM-P developed a first draft code book and then discussed it with TM and agreed on themes and codes to be included. NM-P and MH then used the codebook to concurrently analyse the transcripts. The two researchers discussed the codes, agreed on final codes and themes, and updated the codebook through the analysis process.

Results

We conducted 40 in-depth interviews with healthcare providers: 26 professional nurses; 2 medical doctors, and 12 lay counsellors (Table 1). The majority (34) were women and the median years of work experience in the current role was 5.5 years (interquartile range, IQR, 2, 7).

Table 1 Participants characteristics (N=40)		
Demographic characteristics	N	%
Gender		
Male	6	15
Female	34	85
Professional status		
Medical doctors	2	5
Nurses	26	65
Lay counsellors	12	30
Experience in current HTS role (years)		
<1 - 5	20	50
5 - 10	16	40
11 - 15	2	5
> 15	2	5

Coherence

Health care workers views of HTS and the universal HTS policy demonstrated their understanding of the purpose of these processes with the broader workplace goals of improving patient health and care outcomes. Healthcare providers correctly described the Department of Health HTS policy (offering HIV testing to all patients): “I think provider initiated testing counselling says that any patient that comes, I offer them HIV [testing] whether they came with headache or having whatever…” (nurse) (Table 2). Many healthcare providers also articulated a justification explaining that you cannot tell whether a person is HIV positive just by looking at them. This highlighted the importance of universal testing as described in national HTS policy. This was described by one provider as follows: “It’s usually each and everybody, we do not say you will see this one thin. You will see this one big, but still they might have HIV. So we offer each and everybody” (nurse).

Table 2

Facilitators and challenges to normalization of HTS

Facilitator	Quotes	Challenge	Quotes
Coherence			
Health care workers' understanding of policy to test all patients.	1-1: My understanding is that every patient who comes into the consulting room, should be provided with HIV counselling, if the patient agrees (PHC nurse)	Targeted testing	1-2a: By their clinical pictures, physical things… another one maybe by the signs/symptoms that they are mentioning … especially when they have STIs, I encourage them to go. (PHC nurse) 1-2b: Well from our wing it's mostly initiated based on symptom, so 99% of patients who come in will have features of something that could possibly be immunodeficiency then we'd like to test you for HIV". (Hospital doctor)
		HTS lower priority compared to patient's reason for visiting clinic	2-2: You keep thinking that now if this patient goes there he's going to spend 15 minutes then maybe I'll also send him to X-ray that's another 15-30…then you say no no….this one[HIV testing] can wait. (Hospital nurse)
Cognitive participation			
All staff categories support HTS	3-1a:I think we are all for it you know, because the doctors even do come here to ask where the counsellors are if a patient goes back to the doctor without being tested. They show concern. To me it looks like we are all for the idea that people should test". (Hospital nurse) 3-1b: As I told you, we do assess patients and the we offer, if the patient agrees we send them to the counsellors and they test and counsel them" (CHC nurse)	Clinicians (doctors & nurses) felt that HTS was not their work.	3-2a: I think doctors & nurses' involvement would be a good thing but due to the workload we are not able to do it personally. We have a lot of patients who are waiting for us and we do have counsellors who are employed to do the HIV testing…" (PHC nurse) 3-2b: We don't keep patients who have come to test to ourselves

			because we have work to do. The counsellors are there for testing and if we take the patients they will have nothing to do". (PHC nurse)
Lay counsellors skilled & confident in providing the service	4-1a: I've been trained to do it, but I didn't go for update" (PHC counsellor). 4-2b: I know how to do my work. Patients sometimes don't want counselling, but I tell them that I have to do everything accordingly…" (CHC counsellor)	Clinicians lack HTS training	4-2a: As I've told you, we have counsellors who are doing that and most of the time now our registered nurses they are not yet trained for doing HTS… (CHC nurse) 4-2b: Like now he was forcing me to do the testing. I told him that we don't do the testing because I never went for even in-service training so I won't do it…and he was so … (Hospital nurse)
Collective action			
Division of roles	5-1: "From my side I explain to the patient about HIV and the reasons why the patient should test…Then we have the counsellors who do the testing for us". (CHC nurse).	Clinicians' resistance to meeting set HTS targets	"… others are talking about PICT [HTS] being time consuming. As for me, I don't have a problem. It is other people because we are told to do PICT [HTS] and then we are short staffed, it's a problem. But we try to meet our targets." "There is resistance because of the work load. It's more work if patient tests positive because now you have to confirm, take baseline bloods and yet you have 60 patients you need to see. So there is resistance, so they gave us targets…"(PHC nurse)
Set HTS targets	6-1: You have 60 patients that you need to consult and then this particular patient takes almost 45 minutes to an hour of your time. SO there is resistance, that's why they gave us targets to say if you don't want to test all of them, test at least 5 per day". (PHC nurse)	Low compensation of counsellors for the work.	"Thing is we counsellors in the hospital we are called "volunteers", so you can't cover a volunteer. We are doing this because … I love what I am doing but I won't stay in this profession for long, I am still looking for greener

			pastures". (Hospital counsellor)
HTS equipment always available	7-1: We always have test kits. Every Monday the nurse orders test kits for us. We have everything except the working space." (Hospital counsellor)	Limited working time of counsellors	7-2: We knock off at 2 and you find that people come to the clinic to test knowing that the clinic closes at 4 pm. When they get here they are told that the counsellors have left…" (CHC counsellor)
		Limited HTS work space	8-2: We don't have enough working spaces. We only have 1 room to test the patients and there is always a queue that side". (Hospital nurse)
		Long queues & huge work load	9-2a: Ja, PICT [HTS] is part of our task, but we are not implementing it. I mean firstly because of the duration of counselling, and because of the volume of the patients in the clinic". (PHC nurse) 9-2b: Remember you can get 5 or 10 patients at a time, isn't it? Now there's 1 counsellor, they can only see 1 patient at a time, then the patients get irritated" (Hospital doctor)
Reflexive monitoring			
Emphasis on need to test all patients to prevent stigma & discrimination	10-1: It is easier to get people to agree when they see that everyone is going, it is not just me who's being picked saying no you must come and also this picking… obviously it's stigmatizing so the person will wonder, why me, (Hospital doctor).		
Need to increase awareness at waiting area	11-1: The discrepancy is that there are various health talks on different days. If we could include PICT [HTS] daily in our health talks and say when you go in there know this…"(PHC nurse)		

Despite understanding of, and stated agreement with, the HTS policy and policy justification there was lack of coherence with implementation. The lack of coherence was illustrated by clinicians reporting actual practices of offering HIV testing based on suspicion of HIV. Specifically, the presence of chronic illness, wasting, or sexually transmitted diseases was what prompted most clinicians to recommend testing.

“By their clinical pictures, physical things…another one maybe by the signs/symptoms that they are mentioning …especially when they have STIs, I encourage them to go [for an HIV test].” (nurse)

“Well from our wing it’s mostly initiated based on symptom, so 99% of patients who come in will have features of something that could possibly be immunodeficiency then we’d like to test you for HIV.” (doctor)

Cognitive participation

The level of commitment to provider-initiated HIV testing differed between clinicians (doctors and nurses) and counsellors. Clinicians stated that they did not see it as their duty and to perform HTS. In addition, several nurses stated that they lacked the counselling skills needed to engage patients with HTS. Clinicians (both doctors & nurses) stated they were comfortable with recommending HIV testing, but not with being involved in providing the actual test. In contrast, HTS counsellors described full participation in the promotion and delivery of HTS.

“I think doctors & nurses’ involvement would be a good thing but due to the workload we are not able to do it personally. We have a lot of patients who are waiting for us and we do have counsellors who are employed to do the HIV testing…” (nurse) (Table 2)

“I know how to do my work [HIV counselling and testing]. Patients sometimes don’t want counselling, but I tell them that I have to do everything accordingly…” (lay counsellor) (Table 2).

Collective Action

There was a common practice of role division among healthcare providers in the provision of HTS. HIV testing was mainly recommended by the clinicians for delivery by lay counsellors. While this approach allowed for a degree of skill specialization, HTS services broke down when counsellors were not available due to the limited working hours of lay counsellors in the facility. When lay counsellors were unavailable, HTS was not provided. Clinicians resisted providing HTS, indicating that they considered it unfair that they should be expected to provide it and stating that the task of HTS should fall on others’ shoulders. This suggested a lack of full engagement in collective action.

“As I told you, we do assess patients and then we offer [HTS], if the patient agrees we send them to the counsellors and they test and counsel them.” (nurse)

“We knock off at 2 and you find that people come to the clinic to test knowing that the clinic closes at 4 pm. When they get here they are told that the counsellors have left…” (counsellor) (Table 2).

An additional barrier to a team-based approach was the substantial difference in status of the nurses and doctors compared to lay counsellors. Lay counsellors received small stipends, limited training, and were not embraced as part of the clinical team, often being left out of facility meetings including those regarding HTS: “If I were to tell you… actually they don’t value us, they don’t count us. We don’t have a say that is why we end up not knowing where we stand, because we don’t have a say” (lay counsellor).

“We counsellors in the hospital we are called “volunteers”, so you can’t cover [no employee benefits] a volunteer. We are doing this because I love what I am doing but I won’t stay in this profession for long, I am still looking for greener pastures”. (lay counsellor)

This further challenged creating a team dedicated to a collective goal.

Lay counsellors also described lacking the needed resources to perform HTS – suggesting lack of full support from clinic management. A major missing resource was private space to provide HTS.

“We always have test kits. Every Monday the nurse orders test kits for us. We have everything except the working space.” (lay counsellor)

“We don’t have enough working spaces. We only have one room to test the patients and there is always a queue that side”. (nurse)

Reflexive Monitoring

Some health workers emphasized the value of offering HIV testing to all clients, suggesting it should be considered similar to checking vital signs. One clinician further mentioned that offering an HIV test to everyone may reduce the stigma of HIV testing.

“It is easier to get people to agree when they see that everyone is going, it is not just me who’s being picked saying no you must come and also this picking…obviously it’s stigmatizing so the person will wonder, why me.” (doctor) (Table 2).

However, when compared to other practises embedded in routine practice, HIV testing was perceived to have challenges that made it a lower priority. A doctor narrated this as follows: “You keep thinking that now if this patient goes there he’s going to spend 15 minutes then maybe I’ll also send him to X-ray that’s another 15-30…then you say no no…. this one [HIV testing] can wait”. This illustrates the gap in reflexive monitoring, that despite identifying gaps in delivery, clinicians were not motivated to change the current approach to HTS.

Discussion

We used the NPT to frame and describe facilitators and barriers to normalization of PICT within the public health care setting in South Africa. Interviews with doctors, nurses, and lay counsellors provided important insight into beliefs that can support wider PICT delivery as well as current constraints. The key barriers to PICT normalisation were related to coherence and collective action. This study showed that while nearly all healthcare providers embraced the concept of universal delivery of PICT, lack of coherence existed between the concept and actual practise. Facilitators to normalization of PICT were related to cognitive participation - availability of trained lay counsellors, staff's awareness of and willingness to support the policy. Clinicians perceived HTS as an additional duty which was incongruent to the rest of their tasks. This led to resistance to providing HTS and contributed to clinicians seeing it as the responsibility of lay counsellors. They acknowledged its importance as long as someone else performed the tasks. Despite the lack of essential components for process normalization, all levels of health care workers viewed PICT has an important service for good patient care. This raises the possibility that cognitive participation and overall congruence may be achieved through adjustments in the PICT implementation strategy.

Lack of coherence meant that clinicians offered HIV testing to clients based on suspicion that they could be HIV positive. This judgement was based on patients' primary reason for visiting the healthcare facility, e.g., sexually transmitted infection. Additionally, clinicians prioritized other work and not incorporated PICT into the existing flow of work. The services patients were seeking in the health facility were viewed as primary to the patient's visit and HTS as an optional extra. Health care workers therefore focused available time and resources to the 'primary service', hence long queues and workload were mentioned as barriers to HTS during the interviews. Other studies have also sought to identify barriers to implementation of PICT but have not used a theory. These studies cited work load, staff shortage, and long queues as barriers to implementing PICT (20–22). Use of NPT helped identify that lack of coherence was underlying challenge to the implementation of PICT as all other services were provided to the same patients. While we note offering PICT based on suspicion as a barrier to optimising PICT, our findings need to be balanced with the current recommendation towards targeted testing due to declining resources for HIV testing(23).

We found that cognitive participation of all health workers, including availability and support for lay counsellors were suggested to facilitate delivery of facility-based PICT. These findings are similar to a PICT process evaluation study conducted in Cape Town, South Africa which found that strong leadership, implementation support, responsive organisational context, and staff participation and collective action were facilitators for HTS delivery (22). Although lay counsellors had workspace constraints, this was not the major barrier to normalization of PICT. Cognitive participation of all stakeholders can increase PICT delivery and overcome such barriers. Support for lay counsellors can include allocating work times for the counsellors, spreading them throughout the day and clinicians to provide HTS when lay counsellors are not around (collective action).

Strengths of the study include the use NPT to frame an evaluation of HTS delivery in a real world setting and conducting the study in multiple public clinics offering routine services. Limitations of this study

include conducting interviews in several languages which may have limited both interviewers' comfort in phrasing and explaining the questions and participants' comfort in expressing their responses. As a qualitative study, we used purposive sampling to select our participants. We however attempted to achieve representation across all 10 health facilities. Generalizability of findings may be limited to Ekurhuleni and similar contexts.

Conclusions

Use of NPT helped identify wide understanding of the purpose of PITC and articulation of the value of PITC, but lack of coherence and collective action with implementation. Basically, PICT has not been normalised and incorporated to routine care, especially by clinicians. This likely contributes to the challenges with increasing clinic-based HIV testing. Implementation research strategies can be used to explore context specific barriers to normalization and adapt existing interventions to address such barriers. These can include low-cost interventions that integrate PICT to existing clinic flow, e.g., offer and provide HTS at waiting area; strengthening skills and motivation of clinicians to offer and provide HTS.

Declarations

Ethics approval and consent to participate

The study was approved by the University of the Witwatersrand Human Research Ethics Committee, the Johns Hopkins University School of Medicine Institutional Review Board, and research committees of Ekurhuleni District, South Africa: approval number 160101. All eligible individuals underwent a structured informed consent procedure; signed informed consent was required for participation.

Consent for publication

Not applicable

Availability of data and material

The datasets used and/analysed for this study are available from the corresponding author on reasonable request

Competing interests

The authors declare that they have no competing interests.

Funding

The study was funded by United States Agency for International Development (USAID).

Authors' contribution

CH & TM designed the study and developed the protocol. NM-P & TM developed the data collection tool; NN & MH conducted the interviews; NM-P, TM & MH worked on codebook; NM-P & MH analysed the transcripts with guidance from KD, TM, CH. NM-P developed the first draft of the manuscript. GK and all the authors reviewed and approved the final draft of the manuscript.

Acknowledgements

The authors would like to acknowledge the Ekurhuleni department of health and City of Ekurhuleni health managers for assisting in identifying health facilities, and health workers for participating in the study interviews.

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References

1. Dalal S, Lee C won, Farirai T, Schilsky A, Goldman T, Moore J, et al. Provider-initiated HIV testing and counseling: Increased uptake in two public community health centers in south africa and implications for scale-up. PLoS One. 2011;6(11).
2. Ingrid V. Bassett1, 2, 3, 4, 5, Susan Regan1, 3, Philisiwe Luthuli6, Hlengiwe Mbonambi6, Benjamin Bearnot7, Anna Pendleton4, Marion Robine1, 3, Duvai Mukuvisi6, Hilary Thulare6, Rochelle P. Walensky1, 2, 3, 4, 5, 8, Kenneth A. Freedberg1, 2, 3, 4, 5, 9, 1 and BM. Linkage to care following community-based mobile HIV testing compared to clinic-based testing in Umlazi Township, Durban, South Africa. HIV Med. 2014;15(6):367–72.
3. Sharma Monisha, Ying Roger, Tarr Gillian and BR. A systematic review and meta-analysis of community and facility-based approaches to address gaps in HIV testing and linkage in sub-Saharan Africa– HHS Public Access. 2016;5(6):1–8.
4. DEPARTMENT: HEALTH, REPUBLIC OF SOUTH AFRICA. National Hiv Counselling and Testing Policy Guidelines. 2015;(May):1–52. Available from: https://www.health-e.org.za/wp-content/uploads/2015/07/HCT-Guidelines-2015.pdf
5. Hensen B, Baggaley R, Wong VJ, Grabbe KL, Shaffer N, Lo YRJ, et al. Universal voluntary HIV testing in antenatal care settings: A review of the contribution of provider-initiated testing & counselling. Trop Med Int Heal. 2012;17(1):59–70.

6. National Department of Health South Africa. National Hiv Testing Services : Policy and Guidelines. 2015;1–46.
7. Mabuto T, Hansoti B, Kerrigan D, Mshweshwe-Pakela N, Kubeka G, Charalambous S, et al. HIV testing services in healthcare facilities in South Africa: a missed opportunity. J Int AIDS Soc. 2019;22(10):1–6.
8. Bagchi AD, Davis T. Clinician Barriers and Facilitators to Routine HIV Testing: A Systematic Review of the Literature. J Int Assoc Provid AIDS Care [Internet]. 2020;19:1–9. Available from: https://doi.org/10.1177/2325958220936014
9. Kennedy CE, Fonner VA, Sweat MD, Okero FA BR, KR. O. Provider-initiated HIV testing and counseling in low- and middle-income countries: a systematic review. AIDS Behav. 2013;17(5):1571–90.
10. Kharsany, Ayesha B M, Quarraisha Abdool Karim and SSAK. Uptake of Provider Initiated HIV testing and counselling among women attending an urban Sexually Transmitted Disease Clinic in South Africa-missed opportunities for early diagnosis of HIV enfection. AIDS Care. 2010;22(5):533–7.
11. Lehmann U, Van Damme W, Barten F, Sanders D. Task shifting: The answer to the human resources crisis in Africa? Hum Resour Health. 2009;7:1–4.
12. Ogbo FA, Mogaji A, Ogeleka P, Agho KE, Idoko J, Tule TZ, et al. Assessment of provider-initiated HIV screening in Nigeria with sub-Saharan African comparison. BMC Health Serv Res. 2017;17(1):1–8.
13. Bagchi AD, Davis T. Clinician Barriers and Facilitators to Routine HIV Testing: A Systematic Review of the Literature. J Int Assoc Provid AIDS Care [Internet]. 2020;19:1–9. Available from: https://doi.org/10.1177/2325958220936014
14. Wise JM, Ott C, Azuero A, Lanzi RG, Davies S, Gardner A, et al. Barriers to HIV Testing: Patient and Provider Perspectives in the Deep South. AIDS Behav. 2019;23(4):1062–72.
15. Ahmed S, Bärnighausen T, Daniels N, Marlink R, Roberts MJ. How providers influence the implementation of provider-initiated HIV testing and counseling in Botswana: A qualitative study. Implement Sci [Internet]. 2016;11(1):1–13. Available from: http://dx.doi.org/10.1186/s13012-015-0361-7
16. Ahmed S, Bärnighausen T, Daniels N, Marlink R, Roberts MJ. How providers influence the implementation of provider-initiated HIV testing and counseling in Botswana: A qualitative study. Implement Sci. 2016;11(1):1–13.
17. Murray E, Treweek S, Pope C, MacFarlane A, Ballini L, Dowrick C, et al. Normalisation process theory: a framework for developing, evaluating and implementing complex interventions. BMC Med [Internet]. 2010;8(1):63. Available from: http://bmcmedicine.biomedcentral.com/articles/10.1186/1741-7015-8-63
18. May C, Finch T, Mair F, Ballini L, Dowrick C, Eccles M, et al. Understanding the implementation of complex interventions in health care: the normalization process model. BMC Health Serv Res [Internet]. 2007;7(1):148. Available from: http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-7-148

19. May C, Finch T. Implementing, Embedding, and Integrating Practices: An Outline of Normalization Process Theory. Sociology [Internet]. 2009;43(3):535–54. Available from: http://journals.sagepub.com/doi/10.1177/0038038509103208
20. Bassett I V, Coleman SM, Giddy J, Bogart LM, Chaisson CE, Ross D, et al. Sizanani : A Randomized Trial of Health System Navigators to Improve Linkage to HIV and TB Care in South Africa. 2016;73(2):154–60.
21. Ahmed S, Schwarz M, Flick RJ, Rees CA, Harawa M, Simon K, et al. Lost opportunities to identify and treat HIV-positive patients: Results from a baseline assessment of provider-initiated HIV testing and counselling (PITC) in Malawi. Trop Med Int Heal. 2016;21(4):479–85.
22. Leon N, Lewin S, Mathews C. Implementing a provider-initiated testing and counselling (PITC) intervention in Cape town, South Africa: a process evaluation using the normalisation process model. Implement Sci [Internet]. 2013;8(1):97. Available from: http://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-8-97
23. Pepfar report. PEPFAR 2021 Country and Regional Operational Plan (COP / ROP) Guidance for all PEPFAR Countries. 2020;1–487. Available from: https://www.state.gov/wp-content/uploads/2020/12/PEPFAR-COP21-Guidance-Final.pdf

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