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1 **Key Populations and Power: People-Centered Social Innovation in Asian HIV Services**

2

3 **Authors:** Fan Yang<sup>1§</sup>, PhD, Rena Janamnuaysook<sup>2§</sup>, MBA, Mark Boyd<sup>3,4</sup>, MD, Nittaya Phanuphak<sup>2</sup>,  
4 PhD, Joseph D. Tucker<sup>1,5</sup>✉, MD

5 **Affiliations:**

6 1 University of North Carolina at Chapel Hill, School of Medicine, Project-China, Guangzhou,  
7 China

8 2 The Thai Red Cross AIDS Research Centre, Bangkok, Thailand

9 3 Faculty of Health and Medical Sciences, University of Adelaide, Adelaide, SA, Australia

10 4 Kirby Institute, University of New South Wales, Kensington, NSW, Australia

11 5 Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine,  
12 London, UK

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20

21 ✉ Corresponding author: Joseph D. Tucker, MD

22 Email: jdtucker@med.unc.edu

23 Telephone: +44 7407 736786

24

25 § The two authors contributed equally.

## 26 **Key Populations and Power: People-Centered Social Innovation in HIV Services**

27

### 28 **Abstract**

29 Key populations increasingly lead the design, implementation, and evaluation of HIV services. This  
30 increased power provides an opportunity to make HIV services more people-centered. Despite many  
31 challenges, there is a strong argument that key populations must play a greater role in HIV service  
32 planning, development, and delivery across the world. This viewpoint focuses on Asia where key  
33 populations have advocated for legal reform, engaged vulnerable groups to decrease stigma, co-  
34 created innovative HIV services, and developed new key population-led health services. We use a  
35 framework of people-centered social innovation to consider the increased power of key populations  
36 to control HIV service delivery. Greater power to key populations in HIV services is demonstrated in  
37 evidence from engagement programs, co-creation activities using crowdsourcing, and key  
38 population-led health services. Further research on key populations and their roles in HIV  
39 implementation and sustainable scale-up is needed in Asia and beyond.

## 40 **Introduction**

41 In contrast to an overall decline in HIV incidence among many groups, key populations still have a  
42 high HIV incidence and unmet HIV prevention needs.<sup>1</sup> Key populations include men who have sex  
43 with men (MSM), transgender people (TG), sex workers and their sexual partners, people who inject  
44 drugs, and incarcerated persons. Key populations are often marginalized in HIV responses in many  
45 Asian countries because of discriminatory laws, human rights violations, enduring stigma, and lack  
46 of appropriate care available in traditional service delivery approaches.

47

48 MSM accounted for 29% of new HIV infections in Asia in 2017.<sup>2</sup> HIV prevalence among MSM in  
49 Southeast Asia was the highest in Thailand (26.2%), Indonesia (25.8%), Malaysia (21.6%) and  
50 Vietnam (12.2%).<sup>3</sup> In China, 26% of new HIV infections occurred among MSM in 2014.<sup>4</sup>  
51 Additionally, a few countries in Asia still criminalized same-sex sexual behaviors between  
52 consenting male adults. Punitive laws and related health communication problems have contributed  
53 to a less than 60% consistent condom use among MSM in Pakistan, Laos, Sri Lanka, and  
54 Bangladesh.<sup>5</sup> Transgender people refer to all people whose gender identity differs from the sex they  
55 were assigned at birth. Among TG, available data indicate high HIV prevalence in many areas,  
56 including Jakarta, Indonesia (34%), Kuala Lumpur, Malaysia (23.9%), Cebu City, Philippines  
57 (11.8%)<sup>6</sup> and Bangkok, Thailand (13.8%).<sup>7</sup> At the community level, health communication materials  
58 frequently share insensitive messages which assume TG are a subset of MSM without recognizing  
59 the specific needs of people who identify as TG,<sup>8</sup> in health systems, healthcare providers can be  
60 insensitive to sexual orientation, gender identity and gender expression.<sup>8</sup> All of these problems can  
61 translate into poor access to health services and low levels of satisfaction from clients. The HIV  
62 testing uptake rate is low among TG in many Asian countries, including the Philippines (15%),

63 Pakistan (29%), Bangladesh (35%), China (34%) and Malaysia (43%).<sup>7</sup> Sex work is criminalized in  
64 18 countries in Asia.<sup>9</sup> Due to legal constraints, it remains difficult for service providers to reach sex  
65 workers and their clients. This may translate into a missed opportunity for incorporating insights  
66 from sex workers into service delivery. A low proportion of consistent condom use was found  
67 among female sex workers (FSW) in Sri Lanka, Pakistan, and Vietnam, highlighting the unmet  
68 needs for HIV prevention among FSW.<sup>10</sup> Exacerbating the epidemic is the lack of attention given to  
69 male sex workers, among whom HIV prevalence is even higher than their female counterparts in  
70 many Asian countries.<sup>11</sup>

71

72 Despite these challenges, key populations increasingly lead the design, implementation, and  
73 evaluation of HIV services in some settings. This increased power provides an opportunity to make  
74 HIV services more people-centered. While participation can contribute to the empowerment,<sup>12,13</sup>  
75 tokenistic engagement may inadvertently decrease power.<sup>14</sup> This viewpoint focuses on Asia where  
76 key populations have advocated for legal reform, engaged vulnerable groups to decrease stigma, co-  
77 created innovative health services, and developed novel key population-led health services. We  
78 selected and reviewed successful cases, consulted regional experts, and then developed a framework  
79 of people-centered social innovation to consider engagement programs, co-creation activities, and  
80 key population-led health services.

81

## 82 **People-Centered Social Innovation in HIV Services**

83 A people-centered approach respects peoples' dignity and the need to be respectfully treated and  
84 empowered to pursue good health and well-being.<sup>15,16</sup> Derived from those principles, we further  
85 define a people-centered approach in HIV services as encompassing three fundamental elements.

86 First, adopting a view to see persons as a whole, rather than mere bearers of disease or as a threat to  
87 public health. This calls for a holistic examination of key populations' needs, including not only HIV  
88 and STI care and services, but also mental health, general health, and social support in the context of  
89 their dynamic interaction with the broad legal, cultural and socio-political environments.<sup>17</sup> Second, a  
90 people-centered approach acknowledges key populations' perspectives, experience and knowledge.  
91 Individuals with a lived personal experience of the barriers in traditional HIV programs and the  
92 facilitators of new HIV programs have a unique opportunity to take ownership of these new HIV  
93 programs.<sup>15,16,18</sup> Thus, shifting from a disease-focused to a people-centered approach values the  
94 human experience alongside clinical evidence.<sup>16</sup> Last, in a people-centered approach, key  
95 populations are empowered through the collaborative effort, where key populations, healthcare  
96 workers, and caregivers all contribute to the process of prevention, diagnosis and treatment.<sup>16</sup> This  
97 contrasts the current practices in many settings where healthcare providers are the sole hegemonic  
98 authority of medical knowledge. Although people-centered approach in HIV programming shares  
99 similarities with community-based participatory research (CBPR) in its emphasis on partnership,  
100 collaboration and capacity building, the two also differ.<sup>19</sup> A people-centered approach applies to  
101 increasing HIV-related service access and uptake among communities, without necessarily bringing  
102 in outsider researchers.

103

104 Social innovation refers to innovative activities and services carried out by organizations or groups  
105 motivated by the goal of addressing the identified needs of a community or population.<sup>20</sup> Evidence is  
106 beginning to accumulate in the Asia where key population-centered social innovation has occurred  
107 and has already triggered promising changes in HIV programming. Extending from previous

108 frameworks and discussions around community participation,<sup>21-23</sup> this evidence in Asia suggests the  
109 need to systematically examine these phenomena and how they alter local power relationships.

110

111 We searched peer-reviewed literature and program reports related to key populations and their power  
112 in the design, development, and evaluation of HIV services in Asia. We then summarized our  
113 findings and presented typical cases to illustrate key populations' increased power through people-  
114 centered social innovation.

115

### 116 **Key Populations and Power in HIV Response in Asia**

117 The term power has been thoroughly studied across different domains of knowledge and using  
118 various theoretical lenses.<sup>24-26</sup> Power is operationally defined as the ability to exert control over  
119 personal or community matters, in this case, the design, development, and delivery of HIV services.  
120 Increasing participation within the framework of decision making (e.g., higher levels on Arnstein's  
121 ladder of citizen participation) may give way to greater control over HIV service delivery.<sup>14</sup>  
122 However, this is not always the case, as demonstrated in tokenistic participation inadvertently  
123 decreasing overall power in the control of HIV interventions.<sup>27</sup>

124

125 Greater power transferred to key populations in HIV services is demonstrated in evidence from  
126 engagement programs, co-creation activities, and key population-led health services. Engagement is  
127 defined as having key populations involved in health outreach or dissemination, but not developing  
128 the messages or leading health services. Co-creation moves one step beyond engagement and has  
129 key populations developing messages and intervention materials. Key population-led services move  
130 farther than co-creation because key populations themselves lead the HIV service. In the following



131 sections, we draw on successful examples from Asian settings to demonstrate those three ascending  
132 levels of involvement from key populations in the HIV response.

133

#### 134 *Engaging key populations in HIV response*

135 Meaningful engagement of key populations in HIV services, research and programming has been  
136 pivotal and effective in many Asian settings. Key populations play important roles in outreach and  
137 mobilization among their community members who are at risk of HIV. In Thailand, the Tangerine  
138 Community Health Clinic works closely with TG social media influencers through online platforms  
139 to increase community literacy, to generate demand for HIV and related services, and to reduce  
140 internalized stigma among TG communities (See Box 1 for more details).

141

142 Cambodia, China, Malaysia, and Indonesia all have HIV testing programs that draw on key  
143 population staff, an acknowledgement of the potential power of key population engagement in  
144 attracting the most at-risk groups and delivering the most-needed services. In Cambodia, HIV testing  
145 services for people who inject drugs has been delivered partly through peer-led outreach.<sup>28</sup> In China,  
146 community based organizations(CBO)-clinic hybrid service delivery is supported by MSM CBOs in  
147 collaboration with local clinical service organizations to provide HIV and syphilis testing to MSM.<sup>29</sup>  
148 In Malaysia where same-sex relationships are illegal, a non-government organization (NGO) offered  
149 community-based voluntary HIV counseling and testing and has served more than 700 clients,  
150 among whom more than 58% disclosed same-sex sexual behaviors.<sup>30</sup> Similarly in Indonesia,  
151 community screening sites provided a complementary entry point to HIV services among MSM  
152 reluctant to seek HIV testing at government-run health facilities.<sup>31</sup> In summary, engaging key

153 populations in HIV interventions is able to bring services to the community and its members who are  
154 otherwise marginalized by discriminatory laws and norms. With accessible HIV services and  
155 resources at the community, individuals can exert increased control over their health.

156

157 In addition, engagement of key populations contributes to advocacy and policy formulation in Asia.  
158 Together with academia, healthcare providers, multi-lateral agencies and governmental sectors,  
159 representatives from TG communities and organizations in Asia participated in the development of a  
160 blueprint document aiming to improve TG clinical services in this region.<sup>32</sup> The blueprint document  
161 has served as a guide for trans health and human rights in the region and was endorsed for  
162 publication by the core partners, including the Asia Pacific Transgender Network, the World Health  
163 Organization, the United Nations Development Programme, and the United States Agency for  
164 International Development.<sup>32</sup> In developing the blueprint document, members from the TG  
165 communities representing sub-regions of Asia actively engaged in various workshops throughout a  
166 year and advocated for human rights-based services for TG in HIV services. With technical  
167 assistance from healthcare providers inside and outside Asia, TG community members spearheaded  
168 the write-up of the blueprint document in 2015, which was unique for a regional policy statement.  
169 Key population's engagement in policy formulation demonstrated control over the delivery of HIV  
170 services.

**Box 1. Transgender Communities' Engagement in HIV Response: A Case from Thailand**

The "Tangerine" Community Health Clinic, established in November 2015 at the Thai Red Cross AIDS Research Centre, is the first transgender health and well-being clinic in Asia, where gender-affirming hormone treatment, HIV and sexual health services are integrated as part of the comprehensive service package. Tangerine is primarily run by a trained and gender-sensitive healthcare team, where nine of the total ten staff members are transgender women (TGW). (see supplement 1 for more information on Tangerine clinic and its services).

Key population staff at the Tangerine community were all paid, full-time workers, who were empowered throughout the processes of job application, training, delivering services, and appraisal. They were formally hired and expected to delivery high-quality work.

Tangerine has monthly engaged transgender social media influencers to increase its HIV service uptake through the Tangerine Facebook page as the main online client recruitment platform. Transgender social media influencers who engaged in sex work conducted Facebook live sessions to educate their sex work communities on HIV testing and PrEP and successfully reached and recruited TGW sex workers. In addition, TGW beauty icons were able to reach out and identify young TGW and HIV first-time testers via Facebook live sessions about safe hormone use.

By the end of April 2019, there were 2,623 transgender clients receiving clinical services. Of those, 1,586 (60%) were reached by TGW social media influencers and 1,502 (95%) of those who were reached received HIV testing. Among this group, 390 (26%) were first-time testers. A total of 93 (6%) TGW had a positive HIV test result. Tangerine also harnesses the power of online TGW communities to enhance offline healthcare services. It indicates that engaging TGW in HIV responses is effective in reaching marginalized groups, improving the uptake of HIV testing, and facilitating linkage to HIV prevention and care.

171

172

173 *Co-creation of innovative HIV programs through crowdsourcing*

174 Co-creation solicits innovative ideas form the 'bottom-up', as contrasted with traditional HIV  
175 services which are designed 'top-down' by policymakers. Co-creation not only facilitates that the  
176 content of social innovation reflects the lived, contextualized needs of key populations, but also  
177 empowers them to take ownership.<sup>33</sup>

178

179 Co-creation refers to a diverse group of individuals jointly producing a program for a mutually  
180 beneficial outcome (e.g., crowdsourcing). Crowdsourcing is one example of co-creation and is  
181 herein defined as having a group collectively solve a problem, either online or offline, and then

182 sharing the solution with the public.<sup>34</sup> Compared to traditional top-down approaches in creating  
183 HIV-related communication messages, crowdsourced approaches have been shown effective in  
184 generating culturally sensitive intervention messages.<sup>34-36</sup> In China, crowdsourcing has been used to  
185 co-create interventions to promote HIV testing among MSM communities and demonstrated a 40%  
186 increase in the probability of HIV testing over three months.<sup>35</sup> To co-create an HIV testing  
187 intervention, a 6-week nationwide open contest and a 3-day regional designathon (a hackathon-like  
188 event focusing on strategy development and material design) were organized to solicit images and  
189 intervention strategies around HIV testing tailored for MSM communities.<sup>35</sup> This crowdsourced  
190 intervention was appraised in comparison to traditional social marketing intervention through a  
191 stepped wedge cluster randomized controlled trial in eight cities in China (see Box 2 and  
192 Supplement 2 for examples of HIV intervention content created from crowdsourcing). The  
193 effectiveness of the crowdsourced intervention suggests the potential of crowdsourcing to co-create  
194 innovative and attractive HIV interventions. The co-creation process allowed key populations greater  
195 control in the development and design of HIV services.

196

197 In addition to its use in promoting HIV testing, crowdsourcing has also been employed to solicit  
198 ideas in creating condom promotion interventions and has demonstrated similar effectiveness in  
199 reducing condomless sex when compared to social marketing messages.<sup>36</sup> Crowdsourcing has been  
200 used to invite inputs from key populations about HIV cure research through an open contest  
201 soliciting ideas about what an HIV cure would mean to them as a person. This crowdsourcing  
202 activity provided an important voice about HIV cure research to key populations with lived  
203 experiences of HIV and HIV risk. Co-creating the meaning of HIV cure took the conversation  
204 beyond biomedical markers, viral loads, and reservoirs. Instead, it underscored the people-centered

205 approach to deepen the scientists' understanding of what it means to live with HIV.<sup>37</sup> A practical  
206 guide on crowdsourcing in health and health research has been publicized by the  
207 UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical  
208 Diseases to provide a guidance for using crowdsourcing in the context of health programs.<sup>38</sup>

209

210

211 **Box 2. Crowdsourced HIV testing promotion messages created by MSM and for MSM in China**

212 Crowdsourcing has been used in China and Thailand to solicit innovative ideas for designing culturally sensitive and  
213 effective health messages for HIV prevention and testing among MSM communities. Over the past five years, several  
214 crowdsourcing projects have been implemented by the SESH (Social Entrepreneurship to Spur Health) group in the forms  
215 of a designathon (where members from MSM communities design health messages and images for health promotion),  
216 an open contest (where contests were organized to elicit ideas openly from the public) and a hackathon (where diverse  
217 individuals create innovative technology platforms for MSM to better seek high-quality health care). One key lesson  
218 learned from the use of crowdsourcing in co-creating key population programs is to ensure that the results and the  
219 service product are shared with the community, thus closing the loop. Sharing the results could include the following  
220 activities: wide dissemination of messages through in-person and social media network; implementation of a program;  
221 organization of a pilot to evaluate efficacy; or other ways to share the finalist ideas with a broader community. Sharing  
222 typically includes both sending out these messages and telling the community how they were derived (i.e., through an  
223 iterative, community-led process).

224 Through co-creation, the vision of key population communities is translated into HIV services and their components. HIV  
225 related services co-created from crowdsourcing emerge from the community and demonstrate community's power to  
226 exert control over HIV service content and design.

227

228 *Key population-led health services*

229 Key populations also lead HIV-related health services in several Asian countries, including India,  
230 Thailand, and Vietnam. This approach has a key population responsible for managing, funding,  
231 designing, delivering, evaluating, and sustaining HIV services. Despite the complexity of  
232 implementing key population-led health services in certain aspects due to sociopolitical  
233 constraints,<sup>39-41</sup> population-led health services proved to be trusted and of high quality in several  
234 studies in Asia.<sup>42,43</sup>

235

236 In Thailand, trained lay providers who were members of MSM and TGW communities demonstrated  
237 their capacity to perform finger-prick blood collection and HIV rapid diagnostic testing with  
238 excellent accuracy compared to testing conducted by medical technologists. In 2016, 42% of all HIV  
239 tests among MSM and TGW in Thailand were implemented at CBOs.<sup>43</sup> HIV testing services  
240 provided by key population lay providers contributed to the diagnosis of 35% new HIV cases among  
241 MSM and TGW in the same year.<sup>43</sup> In addition, trained key population lay providers at these CBOs  
242 have dispensed pre-exposure prophylaxis (PrEP) to at least a quarter of all PrEP users in Thailand by  
243 the end of 2017.<sup>44</sup> Key population-led services in Thailand were largely driven by key populations  
244 who took control over types of services provided to their community and how those services were  
245 made available for the community. Services were focused on the comprehensive needs of key  
246 populations and decided by those who shared the lived experience. For example, services for male  
247 sex workers also included legal consultation and non-formal education sessions; services for  
248 transgender women included integrated feminizing hormone therapy; services were available in  
249 hotspot areas and during flexible service hours to suit living and working lifestyles; harm reduction  
250 services were added to the design based on lay providers' finding of increasing drug use among their  
251 clients. These are all bottom-up examples for key population-led health services.

252

253 In Vietnam, HIV testing led by key population lay providers increased the coverage and facilitated  
254 the effective diagnosis of HIV positive cases.<sup>45</sup> HIV testing interventions led by key population lay  
255 providers reached a large number of clients with an overall HIV positivity rate of 4.1%, almost three  
256 times higher than the estimated HIV positivity rate from facility-based testing during the same  
257 period (1.6% in 2016 and 1.5% in 2017).<sup>45</sup> Among the clients tested by the key population lay  
258 providers, most were first-timers; half of those who tested before had not tested in the last 12  
259 months.<sup>45</sup> This suggests that key populations and others can play a larger role in directly delivering  
260 HIV-related services.

261

262 Similarly in India, HIV-related health services led by key populations including FSW, proved  
263 successful as shown in the Avahan project (see Box 3 for more details);<sup>46,47</sup> Sonagachi Project, led  
264 by FSW communities, demonstrated the collective power of key populations in the HIV response  
265 and stigma reduction through unionization and governance.<sup>48,49</sup>

**Box 3. Key Population-Led Health Services and Key population Governance: Avahan in India**

Avahan serves as a flagship program for key population-led health services in Asia focusing on HIV prevention for key populations including sex workers, MSM, transgender individuals, and people who inject drugs. Avahan exemplifies a comprehensive and complex large-scale project that expands across geographic areas (characterized by its coverage over six states). The projects were sustained for two terms of five years each, delivered combined interventions (ranging from community outreach, to clinical services) and were led and implemented by key population communities.

Within Avahan, the community mobilization was characterized by key population leadership. In 2004, social change agents including FSWs were identified as leaders. The social change agents led a series of services among their peers, such as advocating sex work as work, encouraging the organizing of CBOs striving for sex workers' well-being, and connecting sex workers to NGO-operated STI clinics. Avahan increased female sex worker collective identity, agency, and efficacy through enhancing the collective power of FSWs' leadership.

266

267



## 268 **Challenges and Opportunities**

269 The increased power of key populations was reflected in their engagement in, co-creation of, and  
270 leadership for effective HIV services across Asian countries (Table 1). The three levels of  
271 involvement may build upon one another. However, the capacity of key populations to champion  
272 HIV services relies on a pre-requisite enabling environment.<sup>39</sup> Decriminalization and protective laws  
273 to ensure key populations' human rights have been introduced in Thailand and some other Asian  
274 countries. Same-sex sexual relationships were decriminalized in India and same sex marriage was  
275 enshrined in legislation in Taiwan in 2019. Power is difficult to measure and can take various forms  
276 in different settings. A supportive legal and policy environment is essential for giving key  
277 populations greater power in organizing HIV services. This article draws on cases from settings  
278 where local governments and policies confer a certain level of support to allow demonstrable  
279 feasibility and effectiveness of key populations taking more control over the planning and delivery  
280 of HIV services. These trends cannot be generalized to settings with severe legal constraints,  
281 conservative cultural norms, oppression of civil society, and violation of the basic human rights of  
282 key populations. At the same time, the gradual expansion of enabling environments across Asia  
283 suggests that there will be more opportunities for key populations to co-create and lead health  
284 services in the future.

285

286 Second, sustainable financing is critically important for key population HIV services and  
287 participation. Increasingly, funding for HIV services in Asia is shifting from foreign aid to domestic  
288 funding.<sup>50</sup> To ensure sustained services and active participation of key populations, innovative  
289 financing schemes are needed to remove the persistent financial barriers to HIV service delivery.<sup>51</sup>  
290 Several different financial models for supporting key population HIV services have been developed,

291 including government, private, public-private, and social enterprise.<sup>51,52</sup> These and other innovative  
292 mechanisms can help ensure that these models are sustainable.

293

294 While empowering key populations is critical, advocacy and research should not be confined to key  
295 populations alone. Altering power relationships is often slow. The fact that in certain countries key  
296 population-led services have and are continuing to be accepted gives hope that further incremental  
297 change is possible. As illustrated in the three levels of this people-centered social innovation  
298 framework, key populations in selected settings of Asia are gaining increasing levels of control over  
299 time.

300

301 In this viewpoint, we used the term ‘key populations’ based on the World Health Organization  
302 definition. The definition is based on public health priorities and not necessarily the needs, desires,  
303 and experiences of people themselves. The successful delivery of people-centered social innovation  
304 in HIV care requires allies from across sectors, e.g. politicians, advocacy groups, the health system  
305 as well as families, friends, and supporters of key populations. Governments should review the laws  
306 and regulations to recognize the human rights of key populations and allow key populations to be at  
307 the forefront of the HIV responses. Commitment is needed to provide support and invest resources in  
308 the capacity building of key population leaders and service providers, in order to expand and support  
309 rapid scale up of the key population-led health services and promote sustainable community-driven  
310 HIV responses.

311 **Table 1. People-centered social innovation in HIV services driven by giving power to key**  
 312 **populations**

<b>Conventional challenges</b>	<b>Solutions</b>	<b>Actions addressed by giving power to key populations</b>
Service delivery	Engagement, co-creation and key population-led health services	<ul style="list-style-type: none"> <li>• Utilize key population-led social media influencers to identify hard-to-reach populations at high risk</li> <li>• Apply a crowdsourcing strategy to co-create HIV preventive messages to increase condom use and HIV testing uptake</li> <li>• Train key population lay providers to perform certain clinical HIV services such as HIV counseling and testing, STI screening, PrEP and PEP dispensing, along with other demand-driven services such as gender affirming hormone services, legal services, and harm reduction</li> </ul>
Policy and regulations	Engagement	<ul style="list-style-type: none"> <li>• Review policy to support financial investment for and capacity building of key population-led health services across the HIV cascade</li> <li>• Advocate and participate equally with health professional institutions in revising regulations to allow key population to perform certain clinical HIV services according to task sharing strategies</li> </ul>

Laws on stigma and discrimination	Engagement and co-creation	<ul style="list-style-type: none"> <li>• Repeal laws criminalizing same-sex relationship, transgender identity and sex work</li> <li>• Organize public awareness raising campaigns to reduce stigma and discrimination towards key populations and HIV status</li> <li>• Introduce anti-discrimination laws for key populations and provide gender sensitization for health care providers to encourage an enabling environment in healthcare settings.</li> </ul>
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314 **Table 2. Indicators for power demonstrated in the three components**

Component	Relation to power <sup>§</sup>	Public Health Indicators		Explanation
		Process-focused	Outcome-focused	
Engagement	Perceived personal control; Learned hopefulness	Content analysis that demonstrates that HIV-related messages and campaigns were effectively conveyed in social media	Testing and preventive services accessed, service coverage	Engaging in HIV response includes knowing status, increasing awareness, learning skills to protect oneself from diseases and illness which are manifestations of power as it demonstrates one's exerting control over one's own matters, in this case health.
Co-creation	Perceived community control; perceived efficacy for influencing the larger system	Key populations actively design HIV services, construct meanings, and create solutions	Control over the HIV intervention content and its implementation	Co-creation suggests power as it demonstrates the community's exerting control over the HIV program design and its content. Key population communities through co-creation are able to influence the larger system.
Governance/ KPLHS	Holding leadership positions at community organizations and activities	Key populations have opportunities and priority to lead HIV services and grow through capacity building and mentorship	HIV services are led by key populations themselves, who take control over the hiring process, finances, training, and service operation.	Key population have control over decision making and assume leadership roles, which demonstrates their control.

315 <sup>§</sup> Concepts adapted from the literature on control, power, and authority in public health.<sup>27,53-55</sup>

316

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323

324 **Author Contributions**

325 JDT conceptualized this manuscript. FY and RJ carried out literature review, acquired the data, and  
326 co-wrote the first draft of the manuscript with inputs from JDT, MB and NP. JDT, MB and NP  
327 provided critical revisions and essential references. All authors read and approved the final version  
328 that was submitted.

329

330 **Declarations of Interest**

331 Dr. Boyd reports grants and personal fees from Gilead, personal fees from ViiV Healthcare, grants  
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333 other interests.

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484

485 **Supplement 1.** Tangerine community health clinic:

486 <https://www.youtube.com/watch?v=8KjCjLGau18>

487 **Supplement 2.** HIV testing promotion video developed through a co-creation approach:

488 <https://youtu.be/WbDpNrV3avg>