



# Establishing Priorities for HIV Prevention and Care Research in Malaysia

Report of Workshop held 4<sup>th</sup> July 2018, Kuala Lumpur



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## Report overview

The Centre of Excellence for Research in AIDS (CERIA) University of Malaya and the Australian Research Centre for Sex, Health & Society at La Trobe University (Melbourne, Australia), in collaboration with the Malaysian AIDS Council organised a research focused workshop on establishing priorities for HIV prevention and care research in early July in Kuala Lumpur. This report provides an account of the rationale, proceedings and outputs from the one-day gathering of stakeholders who were interested in advancing the research agenda to contribute towards the Malaysian response to the HIV and AIDS epidemic.

## Report authors

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## Suggested citation

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# 1. Background & rationale

The HIV epidemic in Malaysia appears to be changing rapidly as more infections are reported among key populations, especially men who have sex with men (MSM). Challenges have been reported by both sexual health service providers and HIV clinicians in terms of adequate resource allocation to meet the needs of key populations, especially in the context of limited evidence to inform a response. UNAIDS has set an ambitious target for HIV testing, linkage and treatment (90-90-90), however concerns have been expressed regarding progress towards these targets for key populations. Malaysia has the means in terms of treatment access, and has been successful in decreasing rates of infection among people who use drugs, however there is still much work to be done in achieving success for other groups.

In the context of an evolving epidemic there is a need for understanding in detail the epidemiology, the patterns of sexual transmission risk and health engagement behaviours, and the social or cultural factors that influence such behaviour to wage an effective response. There is also need for robust evaluation of existing services to understand their public health impact, as well as their quality, efficacy and cost-effectiveness.

## Workshop aims

**Aim:** To establish a short to medium term priority agenda for HIV prevention and care research among key populations in Malaysia.

**Objective:** To bring together stakeholders, e.g. academics/researchers, NGOs/CBOs, policy makers, multi-laterals, funders to review existing evidence and identify gaps.

The focus of this workshop was on sexual transmission of HIV (and not, therefore, on transmission among people who inject drugs). The outputs will be feed into the 4<sup>th</sup> National AIDS Conference in September, i.e. a roundtable to present the priority research areas and call for research collaborators.

A total of 37 participants from academia, clinical and health services, community and peer-based organisations, research centres, government bodies attended the workshop at the University of Malaya, Kuala Lumpur.

# 2. Workshop proceedings

## Setting the scene

The purpose of the first segment of the workshop was to provide participants with an overview of the status of the HIV epidemic vis-à-vis the key populations most affected in Malaysia (i.e. men who have sex with men [MSM], female sex workers and transgender people). The information and data provided within these initial presentations was used to inform the focussed discussion in groups that followed. This, in turn, led to the groups generating research ideas to be taken forward by participants post-workshop.

The programme commenced with Professor Adeeba Kamarulzaman (University of Malaya) welcoming participants and setting-the-scene for the workshop. Professor Adeeba introduced Dr Susan Chong (La Trobe University) as the

workshop facilitator who briefed delegates on the aims and agenda. The substantive part of the programme begun with a presentation on the status of the epidemic, HIV and behavioural trends amongst key populations, and the responses required to mitigate the epidemic. Dr Mazliza Ramly from the Ministry of Health addressed these themes in her presentation 'Challenges in Ending AIDS in Malaysia 2030'.

This was followed by two presentations that focused on recent research on the key populations of MSM, female sex workers and transgenders. Dr Howie Lim's (CERiA) presentation focused on 'HIV Prevalence, Incidence, Risk Behaviours and Current Research on MSM in Malaysia'. The key findings from research to date point to high levels of risky sexual behaviours, low levels of HIV knowledge and testing, perceived stigma and discrimination in healthcare, criminalisation of male-to-male sex impeding prevention interventions, increased vulnerability of MSM subgroups, e.g. young MSM, Malay MSM and MSM who use amphetamine type stimulants (ATS), and technical challenges to testing prevention packages.

Finally, Dr Jeffrey Wickersham (Yale University) delivered a presentation entitled, 'Transgender Women and Female Sex Workers: Engagement in HIV Testing, Treatment, and Prevention'. Similar to that of Dr Lim, this presentation highlighted significant challenges in retention within the HIV care continuum for both populations as well as ongoing stigma and discrimination face by transgender people in Malaysia.

## The process of prioritisation

The presentations described above provided an overview of current knowledge relating to each of the key populations. The focus group discussions that made up the remainder of the day were designed to generate new research ideas, which could inform HIV policy and programming.

To provide a framework for discussion and planning we drew upon the UNAIDS targets of 90:90:90 and principle of the HIV care cascade. This refers to a global goal to ensure 90% of people who have been infected with HIV are diagnosed, 90% of those are accessing anti-retroviral therapy (ART), and 90% of those achieve an undetectable viral load. The 90:90:90 targets have become a commonly used measure in national HIV responses however, as highlighted in the initial presentation by the Ministry of Health, progress towards achieving these has been limited among key populations in Malaysia.

Acknowledging that prior to entry into a HIV care cascade there are a wide range of HIV prevention interventions that can be delivered (and thus HIV prevention need that needs to be understood and accommodated), the first focus group challenged participants to consider research related to HIV prevention. The second focus examined research required to inform or evaluate HIV testing interventions, while the third focus group discussion

tasked participants with identifying research required to inform linkage to care, treatment and ART adherence related interventions. The content of each focus group is described in more detail in Section 3.

Participants were asked to self-select into one of five groups for this focussed discussion, based on their area of interest or expertise. Two groups focussed on generating research ideas relating to men who have sex with men (MSM), with one each group for sex workers, transgenders and 'other' key populations, e.g. incarcerated persons. Each group was assigned a facilitator to guide discussion and a rapporteur to capture the ideas generated.

The many ideas that arose in each group were prioritised and the top three ideas were fed back to the plenary group after each session. A template was provided for the groups to capture their discussions and research ideas (see Appendix 3). Following the third focus group, the top three research ideas from each group in each session (i.e. nine per group) were collated and displayed around the word. All participants were then given three coloured stickers and asked to vote for their top three favourite research ideas, on the understanding that the three highest ranked ideas would be taken forward for more detailed discussion in the final session.

### 3. Generating research ideas

#### Session 1: Research to inform HIV prevention interventions

In this session participants were asked to **identify research that may be required to inform HIV prevention policies, programs and interventions for each key population.**

To guide the group discussions a brief presentation on 'Approaches to HIV prevention amongst Key Populations' was delivered by Professor Rick Altice (Yale University). Professor Altice outlined the main types of prevention strategies, i.e. primary (behavioural and biomedical) and secondary and, proposed frameworks, models and approaches for consideration. These included the Eco-Social Model on the need to address multi-level issues; de-criminalisation; promoting action on research implementation in health services; and the role of social media.

The groups were encouraged to consider the following as part of their discussion:

1. Policy and legal environments that may enable or impede prevention interventions;
2. Epidemiology: how often, or with which specific sub-population problems arise;
3. Structural level barriers and enablers that might require attention;
4. Social, psychological, cultural or technological factors that might influence risk (e.g. online technologies, substance use etc.)
5. A combination of HIV prevention approaches (i.e. not just PrEP or TasP)

**Research questions** generated by each of the groups in Session 1 included the following:

- What are the legal, policy and socio-cultural barriers to delivering and assessing HIV prevention interventions to sex workers?
- What is the social epidemiology of sex workers in Malaysia? E.g. who are they? Where are they located? How do they make transactions with clients? How do they identify clients and vice-versa?
- What are the social circumstances and the HIV prevention need of MSM who migrate from rural to urban areas?
- What is the level of HIV related knowledge among young, rural MSM in Malaysia?
- How can unified online HIV prevention information among all NGOs be designed and delivered? (and how might this improve HIV knowledge among key populations?)
- To what extent does community mobilisation and empowerment contribute towards better health outcomes for female sex workers?
- What is the cost-effectiveness of behavioural/social HIV prevention approaches (compared to solely clinical or biomedical approaches)?
- How do we mainstream access to PrEP in government primary healthcare facilities?

#### Session 2: Research to inform HIV testing and diagnosis interventions

In this session participants were to **identify research required to inform policies, programs or interventions relating to testing and early diagnosis of HIV among key populations.**

To guide the group discussions a brief presentation on 'An overview of the UNAIDS target 90:90:90' was delivered by Dr Adam Bourne (La Trobe University). He outlined some of the key data that informs each phase of the cascade and what conditions are required to ensure that the 90% targets are met at each stage.



The groups were encouraged to consider the following as part of their discussion:

1. Policy and legal environment that are barriers or facilitators to testing;
2. Epidemiology: how often, or with which specific sub-population problems arise;
3. Structural level barriers and enablers to HIV testing;
4. Social, psychological, and cultural factors that might influence health engagement behaviours
5. A combination of HIV testing approaches (i.e. not just self-testing or self-sampling)

**Research questions** generated by each of the groups in Session 2 included the following:

- What attitudes and perceptions exist relating to HIV test kit vending machines?
- What are the barriers and enablers to community-based HIV testing?
- How do social class, religion and other cultural factors influence health seeking behaviours among MSM?
- What are effective stigma reduction interventions for healthcare providers who serve the transgender population? (How can they be sensitised?)
- How can STI/HIV testing be “normalised” at health service provision sites, e.g. GP clinics?
- What are the most effective models of HIV testing for key populations? E.g. self-test, community-based sites, online?
- How to open-up access to HIV testing for minors? I.e. What policy change is required and how can this be supported by evidence of need?

### Session 3: Research to inform linkage, ART uptake and adherence

In this session participants were to **identify research required to inform policies, programs or interventions relating to the access, uptake and adherence to ART among key populations.**

To guide the group discussions a brief presentation on the ‘MAC HIV case management project - Preliminary study findings: Understanding the delay in treatment seeking among people with HIV in Malaysia’ was delivered by Tamayanty Kurusamy (Malaysian AIDS Council). The project aim is to increase testing and retention of care among key populations by applying a continuum of care approach using an innovative client-focused community case management approach. The project collaborators are government primary health clinics, and it is funded by the Global Fund. A summary of data on key populations who have undergone HIV testing, found to be HIV + and on ART was provided. Key lessons from implementation to date was provided. One of the research questions proposed was to understand and examine the factors contributing to the low uptake of treatment among the key populations.

To complement the MAC presentation, Dr Susan Chong presented preliminary findings from the study, “Showing up late: Understanding the delay in treatment seeking among people with HIV in Malaysia”. The study highlighted that many participants were unaware they had been at-risk of being infected. As well, most had limited knowledge of HIV, prevention and treatment options. Participants perceived or experienced stigma and discrimination including with family members, in the workplace and social networks. Importantly, most participants expressed satisfaction with the clinical care they have received; clinicians and nurses were professional, reassuring and emphasised that with treatment quality of life will be improved and viral load suppressed

The groups were encouraged to consider the following as part of their discussion:

1. effective models of ART linkage to care, ART provision and adherence;
2. structural capacity to deliver treatment;
3. human resource (expertise in ART, sensitivity to needs and circumstances of key populations);
4. social, psychological, cultural or technological factors that might influence clinical engagement or willingness to be on ART.

**Research questions** generated by each of the groups in Session 3 included the following:

- What are the policy, structural and cultural conditions that need to be in place to deliver integrated HIV, hormone therapy, substance use and mental health care for transgender people?
- What are the experiences of transgender individuals when navigating healthcare?
- What is the impact of increased media attention to sex workers (which leaves them more exposed) on HIV and other healthcare uptake and continued engagement?
- What are the factors associated with non-retention in established HIV care among newly diagnosed HIV patients through the treatment cascade?
- How can we pilot test and treat programs, including rapid (same day) linkage to care?
- What effective interventions exist that increase ART adherence among MSM who use drugs?
- What does the HIV treatment cascade look like specifically for transgender populations?
- How do social and cultural capital influence the uptake and adherence to ART?
- How do different service delivery models affect uptake of adherence to ART? E.g. public versus private versus community-based
- What is the feasibility of mobile interventions to increase treatment uptake and adherence? (e.g. delivery of medicines and drive-thru pharmacy)
- How can MSM best be supported to use drugs safely and reduce HIV transmission risks?
- Pilot study of microfinancing scheme to support prevention, treatment and care interventions
- How can primary health care be effective models of service delivery for sex workers?
- Does hormone therapy or recreational drug-use behaviourally or pharmacokinetically modify ART adherence among transgenders?
- What is the feasibility and accessibility of peer-based drug delivery among transgenders? (How might this increase retention in care?)
- How might microfinance interventions support increased treatment uptake and adherence among transgender people?

## 4. Prioritising and planning

Taken together, these research questions speak to the very broad research need within the HIV prevention and care sector in Malaysia in 2018. As we seek to ensure key populations do not acquire HIV, and as we strive to ensure that those who do are adequately cared for and supported, there is significant need for research and evidence to guide our actions. While these three sessions provided a rich account of the diverse issues that need to be addressed, it is important to prioritise those issues that are most salient. As such, all participants were asked to vote for the top three research questions they felt were most important to take forwards out of the complete list of those detailed in Section 3 above.

While some of these priority questions are specific to certain populations, others can be asked of all key populations. Perhaps unsurprising given the challenges in ART linkage, uptake and adherence, there was generally most interest in research that examined these issues. A mixture of formative (i.e. establishing the extent of need or attitudinal/perception studies) and evaluative (i.e. studies to determine the effectiveness of interventions) research questions were outlined in each phase of the treatment and care cascade.

### Priority research questions by cascade stage

This process resulted in the following 10 research questions receiving the highest number of votes (which have been clustered according to the 90:90:90 prevention and care framework).

### Priority HIV prevention related research questions:

1. How do we mainstream access to PrEP in government primary healthcare facilities? [7 votes]
2. How do social class, religion and other cultural factors influence health seeking behaviours among men who have sex with men? [7 votes]
3. How can unified online HIV prevention information among all NGOs be designed and delivered? (And how might this improve HIV knowledge among key populations?) [6 votes]

### Priority HIV testing related research questions:

4. How can STI/HIV testing be “normalised” at health service provision sites, e.g. GP clinics? [8 votes]
5. What are the most effective models of HIV testing for key populations? E.g. self-test, community-based sites, online? [14 votes]
6. How to open-up access to HIV testing for minors? I.e. What policy change is required and how can this be supported by evidence of need? [6 votes]

### Priority ART linkage, uptake and adherence related research questions:

7. How might microfinance interventions support increased treatment uptake and adherence among transgender people? (8 votes)
8. What are the factors associated with non-retention in established HIV care among newly diagnosed HIV patients through the treatment cascade? [6 votes]
9. What is the feasibility and accessibility of peer-based drug delivery among transgenders? (How might this increase retention in care?) [5 votes]
10. What are the policy, structural and cultural conditions that need to be in place to deliver integrated HIV, hormone therapy, substance use and mental health care for transgender people? [5 votes]

## Research concept notes

In the final session of the workshop participants were invited to join one of three groups, representing the three research questions that received the highest number of votes in the previous exercise. Within these groups they were tasked with developing a short concept note: a summary of what the research should look like, including the methods and resources that might be required to put it into action. The outcomes of this activity are shown below.

Project	Aims & objectives	Proposed methods	Required resources
How we can mainstream PrEP access in government facilities?	<ol style="list-style-type: none"> <li>1. Identify barriers and facilitators to PrEP provision among physicians?</li> <li>2. Normalise perception of PrEP as an efficacious HIV prevention method among physicians.</li> <li>3. Develop and evaluate pilot PrEP provision program from the Ministry of Health among key populations.</li> </ol>	<p>Focus groups with healthcare physicians to understand barriers and perceptions of offering PrEP.</p> <p>One to one interviews with key populations to examine perception of PrEP access in different settings (including MoH clinics).</p> <p>Development of pilot PrEP intervention. This must include appropriate demand generation activities for key populations and training for physicians.</p>	<p>Partnership between Ministry of Health, local NGOs (e.g. KLASS and MAC), implementation scientists and health system specialists.</p> <p>Funding for the formative research (i.e. focus groups and interviews) and for development and evaluation of pilot.</p>



Models of optimal HIV testing delivery, engagement and linkage study (MODEL)

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|---|---|---|
| <ol style="list-style-type: none"> <li>1. What are the preferred HIV testing models and how do they vary by key population?</li> <li>2. What is the experience of testing at different venues and how does this vary by key population?</li> <li>3. What is the cost-effectiveness of different HIV testing models?</li> <li>4. How does linkage to care vary by HIV testing method and by key population?</li> </ol> | <p>Survey of key populations to assess perceptions and preferences for different HIV testing methods.</p> <p>Qualitative interviews to explore prior HIV testing experiences (what was valued, what could be improved etc?).</p> <p>A randomised controlled trial with three arms: community-based outreach, a self-testing and a standard model of testing. Monitor for positivity rate (primary outcome) and linkage to care (secondary outcome) [self-testing to include testing procedure video, anonymous reporting and seek permission to contact in case of positive reported result].</p> | <p>Partnership between the Ministry of Health, HIV test kit manufacturers as well as those NGOs who are a point of care and support.</p> <p>Pharmaceutical and technology companies who can facilitate diverse testing strategies.</p> <p>Funding from research councils or philanthropic bodies.</p> |
|---|---|---|

How can HIV testing be 'normalised' in general health service provision sites?

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|--|--|--|
| <ol style="list-style-type: none"> <li>1. What are the barriers and facilitators perceived by <u>healthcare professionals</u> to normalising STI/HIV testing among key populations in general health service sites?</li> <li>2. What are the barriers and facilitators perceived by <u>key populations</u> to taking up HIV testing in general health service settings?</li> </ol> | <p>Cross sectional surveys with key populations to establish their interest in testing in general healthcare settings, correlated with their prior HIV testing history.</p> <p>In-depth interviews with key populations to compliment the survey to understand perceived barriers to testing in such settings and how these might be overcome.</p> <p>Focus groups with healthcare professionals to examine perceived barriers to delivering HIV tests and diagnoses in wider healthcare settings (and how these can be overcome).</p> | <p>Partnership between Ministry of Health, researchers, NGOs and generic healthcare providers.</p> <p>Sufficient funding to resource surveys, interviews and focus groups.</p> |
|--|--|--|

How can we minimise harm and improve HIV outcomes among young people who use drugs?

- |   |   |   |
|---|---|---|
| <ol style="list-style-type: none"> <li>1. Identify young people who use drugs through distributors (i.e. establish peer navigators within the drug distribution pipeline).</li> <li>2. Introduce HIV self-testing kits and an education program through the peer navigators.</li> <li>3. Provide linkage to drug treatment, HIV testing and continued care.</li> <li>4. Evaluate the impact of objectives 1-3 according to the HIV treatment cascade</li> </ol> | <p>Interviews with young people to establish acceptability of intervention.</p> <p>Training of peer navigators for delivery and use of HIV self-testing kits.</p> <p>Monitoring of positivity rate (primary outcome) and linkage to care (secondary outcome).</p> | <p>Partnership between Ministry of Health, researchers, HIV and harm reductions NGOs and youth organisations.</p> <p>Sufficient funding to develop intervention and to resource a robust impact evaluation.</p> |
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## 5. Next steps

The principle objective of this meeting was to establish a priority research agenda for HIV prevention and care research among key populations in Malaysia (with a focus on sexual transmission). Through a comprehensive process of reflection and prioritisation, and with the involvement of experts from across the university, government, clinical and community sectors, we have outlined a number of key research questions that this group feel need to be answered. This is the start of what will undoubtedly be a long-term process.

At the end of September 2018 these research ideas and priority agenda will be taken to the 4<sup>th</sup> National Malaysian AIDS Conference in Kuala Lumpur, where delegates will have the opportunity to comment on and develop these research ideas and join teams to take them forwards. These will also be shared with other national and regional HIV networks with the hope that they may have relevance for researchers, communities and policy makers working in other countries. We particularly hope to see multi-country studies address these questions, where appropriate.

Ultimately the success in taking forward these research ideas to fill crucial gaps in evidence to inform the HIV response will be influenced by the availability of sufficient resource and funding. La Trobe University has committed to work with CERiA and other researchers at the meeting to try and identify funding opportunities. We encourage all others reading this report to think creatively about how to advance this agenda. While some studies would require significant investment, others might be realised through the works of Master of Public Health, Masters of Science, or PhD students. Although we encourage collaboration and research networks, the ideas presented here are provided 'open access', freely available for any interested individual or organisation who wish to take them forwards.

## 6. Acknowledgements

This workshop was made possible through a partnership between University of Malaya, CERiA, Malaysian AIDS Council and the Australian Research Centre in Sex, Health, and Society, La Trobe University. It would not have been possible without the invaluable support from Professor Adeeba Kamaralzaman and Dr Rumana Saifi.

We are very grateful to those individuals who gave presentations throughout the day. These include: Dr Anita Suleiman and Dr Mazliza Ramly [Ministry of Health, Government of Malaysia]; Dr Howie Lim [University of Malaysia]; Dr Jeffrey Wickersham [Yale University]; Professor Rick Altice [Yale University]; and Tamayanty Kurusamy [Malaysian AIDS Council].

We also extend our thanks to the following people for kindly facilitating focus groups: Dr Iskandar Azwa [University of Malaya]; Dr Howie Lim [University of Malaya]; Mona Sheik Mohamed [Malaysian AIDS Council]; and to the focus group rapporteurs: Mike Yepes [Yale University]; Libby DiDimizio [Yale University]; Chee Wen [CERiA]; and Noor Annisa Darman [CERiA]. Thanks also go to the following people for their assistance in meeting preparation and administration: Theresa Anthony, Kamariah Idris and Jayanthi Venugopal [CERiA]. Jen Sykes and Ivy McGowan [La Trobe University], William Farley [Melbourne].

Finally, this meeting was made possible by the generous financial support of the La Trobe Asia program. Our thanks go to Diana Hetherich for her interest and commitment to this project.

## 7. Appendices

### Appendix 1. Workshop agenda

Time	Item	Speaker(s)
08.00	Registration	
08.30	Welcome, introductions, and aims for the day	Prof. Adeeba Kamarulzaman Dr Susan Chong
09.00	Epidemiology of HIV in Malaysia – including IBBS results	Dr Anita Suleiman, Ministry of Health
09.30	Key populations overview – prevalence, incidence, risk behaviour, and current research for MSM, transgender people and sex workers	Dr Howie Lim Dr Jeffrey Wickersham
10.30	Tea break	
10.45 11.00	Approaches to HIV prevention amongst Key Populations <b>Group Session 1:</b> What research is required to inform prevention interventions among key populations? Report back of Group Session 1 discussions	Prof. Rick Altice Facilitators: Dr Iskandar Azwa, Mona Sheik Mohamed, Dr Adam Bourne, & Dr Rumana Saifi
12.00 12.10	An overview of the UNAIDS target 90:90:90 <b>Group Session 2:</b> What research is required to determine effective interventions that increase testing and reduce the time between infection and diagnosis?	Dr Adam Bourne Facilitators: Dr Iskandar Azwa, Mona Sheik Mohamed, Dr Adam Bourne, & Dr Rumana Saifi
13.00	Lunch	
13.45	Report back of <b>Group Session 2</b> discussions	Facilitators
14.00 14.15 14.25	Report on the MAC HIV case management project Preliminary study findings: Understanding the delay in treatment seeking among people with HIV in Malaysia <b>Group Session 3:</b> What research is required to better understand and respond to low uptake of – and adherence to – ART among key populations? Report back of Group Session 3 discussions	Tamayanty Kurusamy Dr Susan Chong Facilitators: Dr Iskandar Azwa, Mona Sheik Mohamed, Dr Adam Bourne, & Dr Rumana Saifi
15.15	Summary of research ideas and prioritisation exercise	Dr Susan Chong & Dr Adam Bourne
15.45	Tea break	
16.00	<b>Group Session 4:</b> Drafting of research concept notes	Facilitators
16.50	Plenary discussion and final remarks	Prof. Adeeba Kamarulzaman
17.00	Close	

## Appendix 2. Participant list

	Name	Organisation
1.	Tamayanty Kurusamy	Malaysian AIDS Council
2.	Mona H S Mahmud	Malaysian AIDS Council
3.	Theyveeka Selvy Rajoo	Malaysian AIDS Council & Ministry of Health
4.	Chua Hang Kuen	University Science Malaysia
5.	Teo Kian Hung	Malaysian AIDS Council
6.	Mike Yepes	Yale University & Centre of Excellence for Research in AIDS
7.	Libby DiDomizio	Yale University & Centre of Excellence for Research in AIDS
8.	Suresh Kumar Chitambaran	Hospital Sungai Buloh
9.	Anita Suleiman	Ministry of Health
10.	Raja Iskandar Azwa	University Malaya
11.	Rick Altice	Yale University
12.	Howie Lim	University Malaya
13.	Ching Su Zhen	University Malaya
14.	Wong Li Ping	University Malaya
15.	Herlianna	Centre of Excellence for Research in AIDS
16.	Rusdi Abd. Rashid	Centre of Excellence for Research in AIDS
17.	Sivakumar Thuraijasingam	Monash University (Malaysia)
18.	Vicknasingam Kasinathe	University Science Malaysia
19.	Raymond Tai	PT Foundation
20.	Annisa Darman	Centre of Excellence for Research in AIDS
21.	Kwee Choy Koh	International Medical University
22.	Mazliza Ramly	Ministry of Health
23.	Nurul Aida Salleh	Kuala Lumpur Health Clinic, Ministry of Health
24.	Manimalar Selvi Naicker	University Malaya
25.	Martin Choo	Kuala Lumpur AIDS Support Services
26.	Ezra Abbas	Centre of Excellence for Research in AIDS
27.	Sharifah Faridah	University Malaya
28.	Eng Chee Wen	Centre for Research Excellence in AIDS
29.	Alisan Ahmad	Yale University & Centre of Excellence for Research in AIDS
30.	Siti Rosyati	Kuala Lumpur AIDS Support Services
31.	Andrew Yap	The RED Clinic
32.	Thilaga Sulathireh	Justice for Sisters
33.	Jeffrey Wickersham	Yale University
34.	Adeeba Kamarulzaman	University Malaya & Centre of Excellence for Research in AIDS
35.	Rumana Saifi	Centre of Excellence for Research in AIDS
36.	Adam Bourne	La Trobe University
37.	Susan Chong	La Trobe University

## Appendix 3. Group work templates

### Group work Session 1 – Prevention of HIV among key populations

1. Brainstorm - **What research is required to inform prevention interventions amongst key populations?** Use butcher paper provided.
1. Select up to three ideas from the brainstorm exercise and develop appropriate research questions.
2. Complete the table below.

Research questions	Research focus areas	Methods (tick as appropriate)
Question 1:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 2:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 3:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review

### Group work Session 2 – HIV testing and diagnosis (the first '90')

1. Brainstorm - **What research is required to determine effective interventions that increase testing and reduce the time between infection and diagnosis?** Use butcher paper provided.
  - o What are the structural barriers?
  - o What are the health system related barriers?
  - o What are the psychological and social barriers?
2. Select up to three ideas from the brainstorm exercise and develop appropriate research questions.
3. Complete the table below.

Research questions	Research focus areas	Methods (tick as appropriate)
Question 1:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 2:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 3:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review



## Appendix 3. Group work templates (continued)

### Group work Session 3 – Access, uptake and adherence to ART – the second and third ‘90’

1. Brainstorm - **What research is required to better understand and address low uptake of ART among key populations?** Consider all aspects of clinical and community service provision. Use butcher paper provided.
2. Select up to three ideas from the brainstorm exercise and develop appropriate research questions.
3. Complete the table below.

Research questions	Research focus areas	Methods (tick as appropriate)
Question 1:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 2:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review
Question 3:	<input type="checkbox"/> Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other	<input type="checkbox"/> quantitative <input type="checkbox"/> qualitative <input type="checkbox"/> desk-based or policy review

### Concept note or abstract

<b>Keywords for title</b>	
<b>Research focus area(s)</b>	Social/behavioural <input type="checkbox"/> Policy/structural <input type="checkbox"/> Clinical <input type="checkbox"/> Epidemiology <input type="checkbox"/> Health systems <input type="checkbox"/> Health economics <input type="checkbox"/> Other <input type="checkbox"/>
<b>Aim</b>	
<b>Research questions</b>	
<b>Proposed method</b>	
<b>Collaborators</b>	
<b>Resources, ie. funding</b>	