Additional file 4. Interview topic guide

HATI healthcare provider (HCP) Focus Group Discussion and semi-structured interview topic guide

Overall research questions:

- What factors influence intervention delivery (health system and patient factors)?
- Was each intervention delivered as intended in a real-world setting?
- Was the intervention acceptable to HCP/ patients?
- How might we improve intervention delivery (including acceptability)?

Topic guide (using Normalisation Process Theory framework)

1. Introduction

Introduction to project, objectives of the FGD, consent

Thank you for finding the time to participate in this discussion. This study aims to better understand the different HATI interventions from the perspective of those who were delivering it as well as the 'recipients' of the interventions (patients).

We are conducting focus group discussions and semi-structured interviews at the different HATI sites. We will be interviewing different clinical staff and key opinion leaders for their views. Through these discussions we aim to identify factors that influence implementation of each intervention or several interventions – at the health system level, as well as patient factors. We also aim to understand whether each intervention was delivered as originally intended, or what led to any modifications if they were necessary. Additionally, by understanding what made the intervention(s) acceptable or not to interviewees, we hope to generate ideas for improving the interventions in the future.

Obtain informed consent

2. Questions

Theme	Main research objective addressed	Question	Timing
General			**15 min**
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**Can you tell me, overall, what has your experience been, working as part of the HATI team?** *Allow unprompted response first.* *Probe:* - *If 'good' experience, why?* - *If 'bad' experience, why?*	

	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**What training did you receive before the HATI intervention was implemented in 2018?** *Allow unprompted response first.* *Probe:* - *Training on current MoH guidelines? WHO guidelines?* - *Training on procedures?* - *Who provided training and how often?*	
		How did you find the education and training for HATI? *Allow unprompted response first.* *Probe:* - *Was the training useful? Why?* - *Finding time to attend training?* - *Ongoing support (if any uncertainties, did they know whom to approach for advice)?*	
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**How did you receive feedback from the site coordinator/ field coordinator/ PIs during HATI implementation in 2018?** *Allow unprompted response first.* *Probe:* - *Any feedback received? How often?* - *Who provided feedback?* - *Feedback modality – in person? Via telephone/ WhatsApp/ etc?*	
		How did you find getting feedback [from site coordinator/ field coordinator/ PI] during HATI implementation in 2018? *Allow unprompted response first.* *Probe:* - *Feedback welcome, or not really?* - *Feedback influencing subsequent practice?*	
	• What factors influence intervention delivery?	**Did you get an opportunity to interact with HCP from other HATI sub-sites/ sites during the study? How did you find that?**	
	• What factors influence intervention delivery? •	**Were there any changes to staffing at your facility during the HATI study (phase 1 and phase 2)? How often did the changes occur?**	
Intervention delivery: comparison of intervention with previous ways of working			**10 min**
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**Could you summarise how you initiated ART for patients before HATI interventions started in January 2018?** **Could you summarise what processes were already in place to remind patients to take their medications or attend clinic, before January 2018?** **Could you summarise how patients were able to test for HIV before January 2018 (e.g. mobile**	

		clinics, home-based rapid HIV tests, puskesmas etc etc)? *Allow unprompted response first.* *Probe:* - *What were the key processes before HATI started in 2018? (e.g. with ART initiation – await CD4+ and renal function results)*	
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**Could you summarise how *ART initiation* was conducted during HATI in 2018?** **Could you summarise how patient reminders were provided during HATI in 2018 (including continuation of any previous processes)?** **Could you summarise how OFT was conducted during HATI in 2018, and what happened to people who tested HIV-positive in the community?** *Allow unprompted response first.* *Probe:* - *What were the key differences during HATI implementation in 2018?* - ***SMS**: also check if previously existing processes (e.g. buddy system) continued for HATI SMS participants? i.e. could HATI SMS participants be exposed to multiple sources of reminders?* - *Compare responses with MOOP summaries [take notes and clarify, but do not challenge provider]*	
	• What factors influence intervention sustainability?	**Could you summarise how *ART initiation* is being conducted presently at your facility in 2019?** **Could you summarise how *patient reminders are being provided* presently at your facility in 2019?** *Allow unprompted response first.* *Probe:* - *Any changes to what was done in 2018?* - If yes, describe what they are - *Any patient eligibility criteria changes from 2018?* - If yes, describe what they are	
Acceptability of intervention: acceptability to providers and patients			**10 min**
	• Was the intervention acceptable to HCP/ patients?	**How acceptable was SAI to you/ your colleagues?** **How about SMS reminders?** **How about OFT?** *Allow unprompted response first.* *Probe:* - *If acceptable/ unacceptable, why?* - *How did respondent feel about the intervention overall?* - *Was the intervention helpful or unhelpful?* - *Any anecdotes from colleagues?*	
		How acceptable do you think immediate ART initiation was to your patients?	

		How about SMS reminders? **How about OFT?** *Allow unprompted response first.* *Probe:* - *If acceptable/ unacceptable, why?* - *How might patients have felt about the intervention overall?* - *Any anecdotes from patients?*	
NPT constructs			
Coherence: Work to make sense of the system			**20 min**
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**What is your understanding of what immediate ART initiation aims to achieve?** **What is your understanding of what SMS reminders aims to achieve?** **What is your understanding of what OFT aims to achieve?** *Allow unprompted response first.* *Probe for each intervention:* - *Understands what needs to be done/ how? Please elaborate if answers "yes".*	
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**Does everyone in the team know what they are expected to do to deliver immediate ART initiation? Why/ why not?** **Does everyone in the team know what they are expected to do to deliver SMS reminders? Why/ why not?** **Does everyone in the team know what they are expected to do to deliver OFT? Why/ why not?** *Allow unprompted response first.* *Probe:* - *Level of understanding of other colleagues at the facility? Higher level – who? Lower level – who?* - *Why the difference? (e.g. staff turnover, seniority)* - *Any gaps in clarity? Why? (E.g. they didn't get to attend training)*	
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**To what extent do you and your colleagues think that immediate ART initiation works to improve quality of care? Why/ why not?** **To what extent do you and your colleagues think that SMS reminders work to improve quality of care? Why/ why not?** **To what extent do you and your colleagues think that OFT works to improve quality of care? Why/ why not?**	

		Allow unprompted response first. *Probe for each intervention:* - *If working/ not working, in what way? E.g. reduce/increase workload? Patient waiting times? Patients dropping out of care?* - *How are patients likely to feel about the new system/ method?*	
Cognitive Participation: Work to maintain their own engagement with and delivery of the new system and to involve others			**30 min**
	• What factors influence intervention delivery? • Was each intervention delivered as intended?	**How easy overall was it to get all concerned involved (at the beginning of phase 2) in initiating ART immediately?** **How easy overall was it to get all concerned involved (at the beginning of phase 2) in implementing SMS reminders?** **How easy overall was it to get all concerned involved (at the beginning of phase 2) in implementing OFT?** *Allow unprompted response first.* *Probe for each intervention:* - *Staffing, knowledge etc* - *Buy-in to intervention* - *Other health services factors including resources* - *Social, cultural factors* - *Patient-level factors including needs, behaviours etc*	
	• What factors influence intervention delivery? • Was each intervention delivered as intended? • Acceptability to HCP/ patients	**To what extent were people (yourself, colleagues) willing to invest time and effort in setting up systems for immediate ART initiation?** **To what extent were people (yourself, colleagues) willing to invest time and effort in setting up systems for SMS reminders?** **To what extent were people (yourself, colleagues) willing to invest time and effort in setting up systems for OFT?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Willingness of staff to change existing systems* - *Other health services factors including resources that enabled change* - *Existing information system – paper-based vs digital? How easy was it to incorporate data management for HATI study?* - *Overview of existing staff communication channels (e.g. team meetings) and how HATI may have imposed additional workload?* - *If unwilling, why?* - *HCP perceived benefits of intervention?*	

		- *Perceived additional workload as a result of taking on intervention?* - *Patient beliefs/ behaviours/ anecdotes?*	
	• What factors influence intervention delivery?	**To what extent did people see the new activities as their responsibility?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Ownership of intervention implementation* - *Individual agency (perceived ability to take on the new activity vs needing approval of line manager/ supervisor)?* - *Motivation?* - *Leadership – as a barrier or enabler?*	
Collective Action: The work that has to be carried out ***in practice*** to implement the system			**30 min**
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**How easy was it to complete routine tasks (during phase 2) in immediate ART initiation?** **What factors made it easy or difficult?** **How easy was it to complete routine tasks (during phase 2) in providing SMS reminders?** **What factors made it easy or difficult?** **How easy was it to complete routine tasks (during phase 2) in OFT?** **What factors made it easy or difficult?** **(any intervention) How about entering data?** **(any intervention) Communicating with other team members?** *Actual experience completing tasks in 2018. Allow unprompted response first.* *Probe (for each intervention):* - *Routine = standard tasks per MOOP. Additional tasks include resolving challenges* - *Overall easy or difficult?* - *If easy, why? E.g. good support, team work, streamlined workflow, better resources – include patient factors* - *If difficult, why? Include patient factors and health system factors (including government policies)*	
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**What are your impressions of the team actually having the time to complete required tasks in the SAI intervention?** **What are your impressions of the team actually having the time to complete required tasks in the SMS intervention?** **What are your impressions of the team actually having the time to complete required tasks in the OFT intervention?** *Allow unprompted response first.*	

		Probe: - *Actual time to fit in tasks required for intervention alongside other routine clinic activities (despite initial willingness to engage with the intervention)* - *Flexibility in their schedule* - *Competing priorities?* - *Source of challenges if time not always available? E.g. staffing shortage or turnover; patient-level factors (not answering phone etc)*	
	• What factors influence intervention delivery?	**To what extent did everyone involved have the skills and training to undertake the required tasks in 2018?** **What factors contributed to training and development?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Respondent's perception of skills* - *If not all have the necessary training, why might that be? E.g. did not have time to attend training, no buy-in to the intervention, training methodology not conducive to learning, manuals not easily accessible etc*	
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**SAI only: How confident were you and your colleagues that you could initiate ART immediately in someone newly diagnosed with HIV?** **To what extent did you trust that immediate ART initiation would work?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *If no confidence, why might it not work?* - *Reflect on own practice and the facility – need to have baseline creatinine, or knowledge of baseline CD4 etc?* - *Reflect on patient factors* - *Reflect on other factors – e.g. resources, policies etc*	
	• What factors influence intervention delivery? •	**What did people need to do to continue to make SAI work?** **What did people need to do to continue to make SMS reminders work?** **What did people need to do to continue to make OFT work, particularly with accessing HIV tests?** *Allow unprompted response first.* *Probe:* - *Processes that needed modification in 2018?* - *Ongoing or additional resources needed* - *External reminders (e.g. HATI site coordinator visiting) or incentives?*	

		- *Reflect on own practice and the facility* - *Reflect on patient factors*	
Reflexive Monitoring: The work that has to be done to monitor the system and to assess its effectiveness			**30 min**
	• What factors influence intervention delivery?	**What measures of success of immediate ART initiation (SAI) are relevant or important to you?** **What measures of success of SMS reminders are relevant or important to you?** **What measures of success of OFT are relevant or important to you?** *Allow unprompted response first.* *Probe:* - *Specific methods for ascertaining success – e.g. reduced workload, more patients on ART, reduced patient dropouts, quicker lab results turnaround etc etc*	
		How do you and your colleagues judge the success of SAI? **How do you and your colleagues judge the success of SMS reminders?** **How do you and your colleagues judge the success of OFT?** *Allow unprompted response first.* *Probe:* - *General impressions from perspective of patient care (engagement with health services, adherence to treatment etc)* - *Impressions from the perspective of health service processes (e.g. reduced/ more workload, less/ more cost etc)*	
		To what extent will SAI work beyond HATI? Why/ why not? **To what extent will SMS reminders work beyond HATI? Why/ why not?** **To what extent will OFT work beyond HATI? Why/ why not?** *Allow unprompted response first.* *Probe:* - *General impressions and factors likely to contribute to sustainability – e.g .HCP likely to revert back to previous practice? Or too costly to implement?* - *Patient factors?*	
	• What factors influence intervention delivery? • Acceptability to HCP/ patients	**What impact has SAI had on you and your colleagues' roles?** **What impact has SMS reminders had on you and your colleagues' roles?**	

		What impact has OFT had on you and your colleagues' roles? *Allow unprompted response first.* *Probe:* - *Overall positive or negative impact?* - *Elaborate on why positive vs negative – less/more workload; less/more efficient system; less/more patient satisfaction etc*	
	• What factors influence intervention delivery?	**Based on your experience with immediate ART initiation and following up patients afterwards, to what extent do you think the system can be adapted to different situations?** **Based on your experience with SMS reminders, to what extent do you think the system can be adapted to different situations?** **Based on your experience with OFT and following up patients afterwards, to what extent do you think the system can be adapted to different situations?** *Allow unprompted response first.* *Probe:* - *Strategies to deal with any challenges arising in the system – e.g. patient transfers to and from other sub-sites (HATI or non-HATI), resource limitations, lab machine breakdown etc* - *Referral processes to hospital (and back), referral to other sub-sites*	
		To what extent do you feel able to adapt to different situations within SAI (and patient follow-up), based on your experience? **To what extent do you feel able to adapt to different situations within the SMS reminder system, based on your experience?** **To what extent do you feel able to adapt to different situations within the OFT testing and referral system, based on your experience?** *Allow unprompted response first.* *Probe:* - *Personal strategies for dealing with challenges – e.g. task shifting to different staff cadres on a day when there are major staffing shortages, dealing with delays in lab results etc* - *OFT: any challenges with inconclusive results or upset patients etc etc* - *Strategies to apply skills learned through HATI to other programmes in the clinic (e.g. other chronic diseases)*	
Suggestions for improvement			**30 min**

	• How might we improve intervention delivery (including acceptability)	**How might we improve delivery of immediate ART initiation?** **How might we improve SMS patient reminders?** **How might we improve delivery of the OFT intervention?** *Allow unprompted response first..* *Probe:* - *Reframe problems as opportunities: e.g. [problem] "Too many data collection forms" -> [opportunity] "How might we improve efficiency of data collection?"* - *Generate ideas (without judgement) on improving delivery*	
	• How might we improve intervention delivery (including acceptability)	**Do you have any suggestions for other/ better ways of achieving the same objective?** **E.g. a different method for reminding patients other than SMS)? Or a different method of providing access to HIV testing in the community** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Reframe problems as opportunities as above* - *Generate ideas (non-judgemental) on improving acceptability* - *Generate new ideas (non-judgemental) on different interventions*	

Are there any other issues you would like to discuss? Any comments or suggestions?

Thank you for your time.

HATI patient semi-structured interview topic guide

Overall research questions:

What factors influence intervention delivery (health system and patient factors)?

Was the intervention acceptable to patients?

How might we improve intervention delivery (including acceptability)?

Topic guide (using Theoretical Framework of Acceptability, TFA)

1. Introduction

Introduction to project, objectives of the interview, consent

Thank you for finding the time to participate in this interview. This study aims to better understand the different HATI interventions from the perspective of those who were delivering it as well as the 'recipients' of the interventions (patients).

We are conducting focus group discussions and semi-structured interviews at the different HATI sites. We will be interviewing different patients, clinical staff and key opinion leaders for their views. Through these discussions we aim to identify factors that influence implementation of each intervention or several interventions. We also aim to understand whether each intervention is acceptable or not and thereby generate ideas for improving the interventions in the future.

Obtain participant informed consent

2. Questions

Warm-up discussion

My name is [*insert name*] and I am a [*insert role/ background*] working with the HATI study. I'm part of the research team trying to understand participant experiences of the [*insert intervention(s) this interviewee may have enrolled in*]. We would like to learn more about what could make the [*insert intervention(s)*] successful and if participants' expectations and needs are being met. Please don't worry about offending anyone as we are here to learn about your experiences. If you are uncertain about anything, please feel free to talk about it as we go.

Do you have any questions before we proceed?

I'm going to start by asking you a few background questions before discussing your experiences with the HATI study and [*insert intervention*].

- How old are you?

- Do you live locally, or is your usual home elsewhere? (if moved) How far away is your usual home (e.g. travel time or name of city)?
- Could you tell me what your experience of health services has been in general?
- Could you describe what you like about the health services you access?
- What do you dislike about the health services you access?

Now I'm going to talk about your experiences with health services where you can start ART immediately.

Theme	Main research objective addressed	Question	Time limit
General			**5 min**
	• What factors influence intervention delivery?	**When did you receive information about the HATI study?** **What did you hear?** *Allow unprompted response first.* *Probe:* - *When were they first informed about the HATI study (approximate month & year)?* - *What do they recall being told about the intervention (they are participating in)?*	
	• What factors influence intervention delivery?	**How did you receive information about the HATI study?** **What did you think about the information you received? Was it useful (or not)? Why?** *Allow unprompted response first.* *Probe:* - *How did they find out about HATI (advertisements, HCP information etc)?* - *Was there adqueate information about the intervention? If not, why not?*	
	• What factors influence intervention delivery?	**Which interventions did you enrol in?** **(if enrolled in more than 1 intervention) Could you tell me roughly how long after enrolling in [*first intervention*], you enrolled in [*second intervention*]?** *Allow unprompted response first.* *Probe:* - *When enrolled (observation period, intervention period)?*	
TFA construct **Questions about the HATI** *[insert SAI/ SMS/ OFT]* **intervention**			
Affective attitude: How the participant feels about the intervention			**6 min**

	• Acceptability to patients • What factors influence intervention delivery?	**Can you describe what you expected when you first joined the HATI study?** *Allow unprompted response first. Respondent to clarify which intervention they are discussing.* *Probe:* - *In what way did they expect the intervention to be 'better' than what they knew about current services?* - *Easier access to health services?* - *Simpler patient flow in facility?* - *Any other expectations – e.g. incentives, different HCP attitudes, less out of pocket expenses etc?* - *What motivated them to participate in HATI?*	
Intervention coherence: To what extent the participant understands how the intervention works			**8 min**
	• What factors influence intervention delivery? •	**Could you explain to me what you understand about the [*SAI/ SMS/ OFT*] intervention?** **What do you think the intervention hoped to achieve? Why?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Understands what needs to be done/ how? E.g. start ART on same day as HIV diagnosis; gets SMS reminders for clinic visits/ adherence and what they are supposed to do once an SMS is received.* - *Please elaborate if answers "yes".* - *Any gaps in clarity? Why? (E.g. insufficient information)* - *How would they describe the intervention to a friend?*	
	• What factors influence intervention delivery? • Acceptability to patients	**How might the [*SAI/ SMS/ OFT*] intervention influence people living with HIV's interactions with health services? (expectations of what it might achieve – impressions of actual achievements are discussed later)** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *If likely/ unlikely to work, in what way? E.g. reduce/increase interaction*	

		with health services; reduce/ increase confidentiality concerns?	
	• What factors influence intervention delivery?	**How might the [*SAI/ SMS/ OFT*] intervention influence the health of people living with HIV? (expectations of what it might achieve – impressions of actual achievements are discussed later)** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Would the intervention increase health knowledge?* - *Increase health-seeking behaviour?* - *Improve access to treatment?* - *Adherence to treatment?*	
Ethicality: How the intervention fits with the individual's value system			**6 min**
	• Acceptability to patients • What factors influence intervention delivery?	**To what extent did [*SAI/ SMS/ OFT*] influence your beliefs about your health?** **How did it influence your beliefs about starting antiretroviral therapy?** **How did it influence your beliefs about attending clinic?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - ***If patient exposed to multiple interventions, question on each intervention*** - *Ready to start ART early instead of waiting for CD4 results and/or CD4 decline?* - *Understands role of ART as lifelong in controlling HIV virus?* - *Understands importance of adherence to treatment and monitoring (e.g. VL)?* - *Understands importance of regular attendance at clinic?* - *Does the intervention support the above? If so, in what way?* - *Or are there barriers - e.g. distance to a HATI facility, wait time, confidentiality concerns etc?* - *Any barriers introduced into health services as a result of the intervention (that did not exist prior to HATI)?*	
Burden: The amount of effort that was required to participate in the intervention			**6 min**

	• What factors influence intervention delivery? • Acceptability to patients	**How easy was it for you to participate in the [*SAI/SMS/OFT*] intervention?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Supportive HCP at clinics?* - *Other health services factors including resources* - *Social, cultural factors* - *Individual needs* - *Time travelled etc*	
Opportunity costs: What was given up to engage in the intervention			**6 min**
	• What factors influence intervention delivery? • Acceptability to patients	**Could you describe any challenges you had to overcome in order to start (or enrol in) the [*SAI/ SMS/ OFT*] intervention?** **Any challenges with continuing to participate in the intervention/ attend healthcare services?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Ability to attend clinic visits – e.g. leave from work with/ without pay?* - *Out of pocket expenses?* - *Confidentiality concerns?* - *Sacrifices from personal belief system?*	
Perceived effectiveness: To what extent might the intervention have achieved its purpose			**8 min**
	• Acceptability patients • What factors influence intervention delivery?	**What impact has the [*SAI/ SMS/ OFT]* had on your health? Why?** **On your life in general? Why?** **Your interaction with health services? Why?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Overall positive or negative impact?* - *Elaborate on why positive vs negative – less/more contact with health services; less/more efficient system; etc* - *Less/ more feeling of control over life/ HIV infection*	
Self-efficacy: Confidence to perform the behaviour(s) required to participate in the intervention			**8 min**

	• What factors influence intervention delivery? • Acceptability patients	**How confident are you that you are able to continue doing what is necessary to [*continue ART/ attend clinic etc*]?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *If no confidence, why might it not work?* - *Reflect on individual needs* - *Reflect on other factors – e.g. health services resources, policies etc*	
	• What factors influence intervention delivery?	**Given your experience with the [*insert name*] intervention, is there anything you sometimes need to do differently in order to [stay on ART/ attend clinic etc]?** **(tie in with previously described challenges participating in intervention)** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Strategies to deal with any challenges – e.g. need to transfer to other sub-sites (HATI or non-HATI),* - *Strategies to deal with delays in lab results or problem picking up ART prescriptions etc – e.g. juggling work with opening hours of health facilities*	
	• What factors influence intervention delivery?	**SMS participants only: Given your experience with SMS, how do you prioritise receiving messages from different sources (e.g. WhatsApp)?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *If patient receives multiple messages at the same time, how do they choose to read something first? Do they ignore the HATI SMS because they recognise the number?*	
	•	**OFT participants only: given your experience with OFT, what were your reasons for choosing to have your first HIV test in the community rather than at your local healthcare facility?** **Did you prefer to be supervised or unsupervised? Why?**	

		Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing. *Probe:* - *Trust in test?* - *Already established rapport with outreach workers?* - *Convenience?*	
Suggestions for improvement			**5 min**
	• How might we improve intervention delivery (including acceptability)	**How might we improve the [*SAI/ SMS/ OFT*] intervention?** **Could you explain why you think [proposed strategy] might work better?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - ***SMS**: would they prefer two-way communication?* - ***SMS**: what other HIV-related content would they like to achieve?* - ***SMS**: how friendly is the text in terms of language choice?* - ***OFT**; any other suggestions for improving access to HIV testing services?* - ***SAI**: any suggestions for improving public awareness of ART eligibility criteria or information about HIV in general?* - *Reframe problems as opportunities: e.g. [problem] "Waiting time too long" -> [opportunity] "How might we improve reduce waiting time?"* - *Generate ideas (without judgement) on improving delivery*	
	• How might we improve intervention delivery (including acceptability)	**Do you have any suggestions for other ways of achieving the same objective (e.g. reminding patients to take ART or attend clinic)?** *Allow unprompted response first. Interviewer to clarify with respondent which intervention they are discussing.* *Probe:* - *Reframe problems as opportunities as above* - *Generate ideas (non-judgemental) on improving acceptability* - *Generate new ideas (non-judgemental) on different interventions*	

Do you have any final comments or suggestions?

If there was one thing you'd like to change about [*insert name of intervention*], what would it be?

Many thanks for your time.

District Health Office semi-structured interview topic guide

Overall research questions:

- What factors influence intervention delivery (health system and patient factors)?
- Was the intervention acceptable?
- How might we improve intervention delivery (including acceptability)?

Topic guide (using Tailored Implementation of Chronic Diseases [TICD] framework)

1. Introduction

Introduction to project, objectives of the interview, consent

Thank you for finding the time to participate in this interview. This study aims to better understand the different HATI interventions from the perspective of those who were delivering it including policymakers, as well as the 'recipients' of the interventions (patients).

We are conducting focus group discussions and semi-structured interviews at the different HATI sites. We will be interviewing different patients, clinical staff and key opinion leaders for their views. Through these discussions we aim to identify factors that influence implementation of each intervention or several interventions. We also aim to understand whether each intervention is acceptable or not and thereby generate ideas for improving the interventions in the future.

Obtain informed consent from participant

2. Questions

Warm-up discussion

My name is [*insert name*] and I am a [*insert role/ background*] working with the HATI study. I'm part of the research team trying to understand stakeholder experiences of some of the HATI interventions. We would like to learn more about what could make these interventions successful and if participants' expectations and needs are being met. If you are uncertain about anything, please feel free to clarify as we go.

Do you have any questions before we proceed?

I'm going to start by asking you a few background questions before discussing your experiences with the HATI study.

- How long have you worked at the District Health Office?

- Could you explain to me what your role is (e.g. if Head of Disease Control unit, which areas do they oversee)?

Now I'm going to talk about your experiences overseeing HIV health services and how the HATI study fits within the broader HIV service provision in this region.

Theme	Main research objective addressed	Question	Time limit
General			**5 min**
	• Acceptability to implementers • What factors influence intervention delivery?	**Can you tell me overall, what have you observed about HIV services before 2018 compared with 2018?** *Allow unprompted response first.* *Probe:* - *Have they noticed any differences in services – i.e. see whether they volunteer information on the different HATI interventions in their city* - *What are those differences?*	
	• What factors influence intervention delivery?	**When did you receive information about the HATI study?** **What did you hear?** *Allow unprompted response first.* *Probe:* - *When were they first informed about the HATI study (approximate month & year)?* - *What do they recall being told about the intervention(s)?*	
	• What factors influence intervention delivery? • Acceptability to implementers	**During which year did you become involved with the HATI study?** **(If first involvement before 2018) Were you involved in designing the HATI interventions? Which interventions?** *Allow unprompted response first.* *Probe:* - *How did they find out about HATI? PI approached directly? Official correspondence?* - *When did they find out about HATI?* - *Was the information useful? Why?* - *(if applicable) Which interventions were they involved in developing?* - *Why were those interventions chosen?*	

TICD constructs pertaining to HATI interventions			
Guidelines factors (considering each HATI intervention as a 'guideline'): characteristics of HATI recommendation (e.g. strength or appropriateness), recommended clinical intervention (e.g. feasibility), recommended behaviour (e.g. compatibility with existing practices)			**8 min**
	• Acceptability to implementers • What factors influence intervention delivery?	**What do you think about the recommendation to simplify ART initiation (SAI) by starting ART on the same day of HIV diagnosis?** **What do you think about reminding patients to adhere to treatment or attend clinic via SMS?** **What do you think about encouraging people to test for HIV in the community via salivary HIV tests (oral fluid tests, OFT)?** *Allow unprompted response first.* *Probe for each intervention:* - *In what way did they expect the intervention to be 'better' than standard of practice prior to HATI?* - *Any other expectations – e.g. better patient uptake of services, better HCP satisfaction etc?* - *Was the intervention appropriate?* - *Did they foresee any challenges prior to intervention rollout?*	
	• Acceptability to implementers • What factors influence intervention delivery?	**Are you aware of any challenges implementing SAI compared with standard of practice prior to HATI?** **(if yes) Could you describe them?** **What steps were taken to resolve those challenges?** **Are you aware of any challenges implementing SMS reminders compared with standard of practice (e.g. other systems for reminding patients) prior to HATI?** **(if yes) Could you describe them?** **What steps were taken to resolve those challenges?** **Are you aware of any challenges implementing OFT compared with**	

		standard of practice for HIV testing prior to HATI? **(if yes) could you describe them?** **What steps were taken to resolve those challenges?** *Allow unprompted response first.* *Probe for each intervention:* - *How consistent is the HATI intervention with standard of practice)? Elaborate on the key differences in practice* - *Describe challenges implementing each intervention* - *Why might those challenges have arisen? Due to major differences in practice? Or due to other reasons?* - *Thoughts on level of effort needed to change standard of practice to HATI intervention?*	
Individual health professional factors: HCP knowledge & skills (e.g. domain knowledge, skills needed to adhere); cognitions including attitudes (e.g. agreement with the recommendation, motivation); professional behaviour (e.g. self-monitoring, capacity to plan change)			**6 min**
	• What factors influence intervention delivery?	**Could you comment on the level of training or experience doctors in Puskesmas would need to provide ART?** **What is the ideal way in which they would be supported to monitor patients on ART?** **What do you think about the level of training healthcare providers would need to provide patient reminders via SMS?** *Allow unprompted response first.* *Probe:* - *Minimum level/duration of training Puskesmas doctors would need* - *Do they think the doctors had adequate training/ confidence during 2018? How about now (post 2018)?* - *Who should provide that training?* - *How often and by whom should they be supported (e.g. be able to phone HIV specialist at Level A hospital vs*	

		weekly/ monthly scheduled in-service meetings with HIV specialist etc)?	
	• What factors influence intervention delivery? • Acceptability to implementers	**What do you think would motivate doctors to implement SAI without hesitation?** **Why?** *Allow unprompted response first.* *Probe:* - *Are there barriers to doctors implementing SAI (e.g. desire to have baseline renal function, limited self-efficacy/* ***confidence****)?* - *How might we overcome those barriers?* - *Any other means of supporting doctors to provide SAI? E.g. quicker turnaround of results etc?*	
Patient factors: needs, preferences, behaviours, motivation			**4 min**
	• Acceptability to patients • What factors influence intervention delivery?	**Based on your observations of patient interactions with health services, how might we optimise patient (key populations) initiation of ART?** **Patient (key population) adherence to treatment?** **Uptake of HIV testing amongst key populations?** *Allow unprompted response first.* *Probe:* - *What are the prevailing challenges to patient uptake of HIV testing, ART initiation, adherence?* - *Have any of these issues significantly changed at HATI sites?* - *If somewhat improved through HATI, how might we further improve delivery of the HATI interventions?* - *Other suggestions to improve testing uptake/ ART initiation/ adherence?*	
Professional interactions: communication, team processes, referral processes			**3 min**
	• What factors influence intervention delivery?	**In order to optimise patient follow-up, what are the essential processes for communication between a team of providers within a healthcare facility (e.g. Puskesmas)?**	

		How about referral between facilities (e.g. Puskesmas to hospital and vice versa)? *Allow unprompted response first.* *Probe:* - *Any prevailing challenges in communication within and between facilities?* - *How might we improve communication channels – e.g. from hospital to Puskesmas?*	
Incentives and resources: availability of necessary resources, financial incentives & disincentives,			**10 min**
	• What factors influence intervention delivery (including scale-up)? • Acceptability to implementers	**What are likely to be the minimum human resources needed to provide ART services at Puskesmas?** **Why?** **What are likely to be the minimum human resources needed to provide SMS reminders to patients at a particular healthcare facility?** **Why?** **What are likely to be the minimum human resources needed to provide OFT from a particular facility (e.g. outreach workers)?** *Allow unprompted response first.* *Probe for each intervention:* - *E.g. Minimum number of doctors and nurses to provide SAI at Puskesmas daily?* - *Any additional staff needed? E.g. lab staff (processing tests or blood draws), courier to transport samples, counsellors etc?*	
	• What factors influence intervention delivery (including scale-up)?	**What resources are needed at Puskesmas to provide CD4, HIV viral load and creatinine tests (e.g. reagents, equipment)?** **What resources are needed for timely turnaround of these results?** **What resources are needed to provide SMS reminders (e.g. computers, reliable internet etc)?**	

		Allow unprompted response first. *Probe:* - ***SAI:*** *ascertain capacity for Puskesmas to take on CD4, VL, creatinine testing after HATI* - ***SAI:*** *results turnaround – e.g. electronic results database, or other method of lab reliably communicating results to Puskesmas in a timely manner* - ***SMS:*** *what is the current information system like – reliable? Areas for improvement? Essential resources needed for SMS to be routine?*	
	• What factors influence intervention delivery (including scale-up)?	**Which type of health facilities would be suitable to provide ART, with the aim of improving access to key populations?** **Why?** *Allow unprompted response first.* *Probe:* - *Do they think Puskesmas would be suitable? If not, why not?* - *What can be done to improve availability of ART services for KP?*	
Capacity for organisational change: mandate/ accountability, capable leadership, regulations and policies, monitoring and feedback, assistance for organisational change			**5 min**
	• What factors influence intervention delivery? • Acceptability to implementers	**Could you describe the process of authorising a change in clinical practice to a Puskesmas (e.g. from standard of care to SAI)?** *Allow unprompted response first.* *Probe:* - *Where does the process of authorisation start?* - *How is a mandate communicated to Puskesmas?* - *Approximately how long does the process of authorisation take overall? Are Puskesmas managers allowed to modify certain practices on their own, or do they need authorisation from the DHO?*	
	• What factors influence intervention delivery?	**What are your general impressions of how capable Puskesmas managers are implementing mandated change?**	

		How engaged are they when a new clinical process is implemented (e.g. how engaged were they with SAI)? *Allow unprompted response first.* *Probe:* - *General impressions* - *Are they confident Puskesmas managers can implement a new change when required? If not, why not?* - *What can be done to support Puskesmas managers (if necessary)?* - *Do they feel managers have been engaged with SAI/SMS? If not, why not?* - *What can be done to improve engagement of Puskesmas managers (if not fully engaged)?*	
	• What factors influence intervention delivery? • Acceptability to implementers	**Are there any national regulations or policies that influence (support or hinder) widespread rollout of SAI?** **Are there any national regulations or policies that support or hinder provision of ART services at Puskesmas?** *Allow unprompted response first.* *Probe:* - *What the regulations?* - *In what way do they influence SAI?* - *In what way do they influence scale-up of ART provision through Puskesmas?*	
Social, political and legal factors: budgetary constraints, funder policies, legislation			**6 min**
	• What factors influence intervention delivery? •	**What are your impressions of the feasibility of scaling up ART regardless of CD4 count, in regards to the health budget?** **Feasibility of scale-up in general?** **What about the impact of scaling up HIV viral load testing?** **What are your impressions of scaling up SMS reminders?**	

		What are your impressions of making OFT available through the public health system? *Allow unprompted response first.* *Probe:* - *Can the health budget cope? If not, why not?* - *Any suggestions for alternative funding sources?* - *Strategies for supporting VL tests (rather than making patients pay out of pocket)?* - *Worthwhile spending on SMS? Or are the existing patient reminder systems adequate?* - *Worthwhile scaling up OFT through public services?*	
	• What factors influence intervention delivery?	**Are there any external funder policy changes that may influence the HIV care programme in Indonesia?** **In what way does it influence the programme?** *Allow unprompted response first.* *Probe:* - *Who are the external funders? E.g. Global Fund?* - *What are the policy changes? When did they occur?* - *How will those changes impact the HIV programme in the short-term and longer term?*	
	• What factors influence intervention delivery? •	**Is there any national legislation that may influence the HIV care programme in Indonesia, particularly regarding key populations?** **Could you describe them?** *Allow unprompted response first.* *Probe:* - *What are the laws?* - *How do they impact KP in particular?*	

Do you have any final comments or suggestions?

Many thanks for your time.