



PLANNING,
IMPLEMENTING, AND
MONITORING,
HOME-BASED
HIV TESTING AND
COUNSELLING

A PRACTICAL HANDBOOK
FOR SUB-SAHARAN AFRICA



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Abbreviations and acronyms

AMPATH	Academic Model Providing Access to Healthcare
ANC	antenatal care
ART	antiretroviral therapy
CDC	US Centers for Disease Control and Prevention
CHWs	community health workers
DOTS	directly observed treatment short course
DTS	dried tube specimen
EQA	external quality assurance
GBV	gender-based violence
GPS	global positioning system
HBHTC	home-based HIV testing and counselling
HTC	HIV testing and counselling
MCH	maternal and child health
MSM	men who have sex with men
M&E	monitoring and evaluation
NAT	nucleic acid testing
PCR	polymerase chain reaction
PEP	post-exposure prophylaxis
PEPFAR	US President's Emergency Plan for AIDS Relief
PITC	provider-initiated testing and counselling
PMTCT	prevention of mother-to-child transmission
PT	proficiency testing
PWID	people who inject drugs
QA	quality assurance
QC	quality control
STI	Sexually transmitted infection
SW	Sex worker
TB	tuberculosis
TWG	technical working group
USAID	United States Agency for International Development
VCT	voluntary counselling and testing
WHO	World Health Organization

Home-based HIV testing and counselling (HBHTC) refers to HIV testing and counselling (HTC) services conducted by trained HTC service providers in someone's home. The main purpose of HBHTC is to bring HTC services to households, overcoming some of the barriers of access to testing services and providing testing to individuals who might not otherwise seek services. It has been used successfully in rural and urban populations of sub-Saharan Africa with a high HIV prevalence and low coverage of HTC services. HBHTC provides services to individuals, couples, and family groups, and may be used to address specific populations (e.g. family members of known HIV-positive patients) and contribute to a family-based approach to HIV prevention and support. Using this approach can lead to decreased stigma in communities, help to diagnose individuals who are HIV-positive earlier, and potentially reach more couples than other HTC models. HBHTC has also led to increased follow-up for HIV-exposed infants.

1.1 Purpose of this practical handbook

Like other HTC services, HBHTC should follow national HTC guidelines and standard operating procedures. The minimum standards of informed consent, confidentiality, counselling, correct HIV test results, and linkage to prevention, care, and treatment services must be ensured. This handbook does not set out new guidelines. Rather, because programming for HBHTC services poses a series of practical challenges with design, cost, human resource, and logistical implications, the purpose of this handbook is to provide practical guidance on ways to address these challenges and to outline some of the key considerations when planning,

implementing, and monitoring HBHTC. By using this handbook, HTC implementing partners will be able to support HBHTC activities in a consistent and systematic manner, streamlining processes and preventing an unnecessary duplication of effort.

1.2 Development of this handbook

This handbook was first conceived of at a 2009 PEPFAR technical consultation on HBHTC¹. Shortly thereafter, a survey, sent to PEPFAR HTC focal persons in 33 countries, identified 39 partners implementing HBHTC

¹ *Home-based counseling and testing: program components and approaches. Technical consultation report.* Washington, DC, AIDSTAR-One/USAID, 2010.

programmes in 10 sub-Saharan African countries in early 2011. Research revealed that the majority of countries surveyed lacked specific guidance for HBHTC. Although some country programmes had developed local operational manuals and guidance documents, there were no unified guidelines in place and no standard quality of implementation. As a result, HTC service providers were often left to develop their own solutions for challenging situations. This practical handbook was developed by WHO in collaboration with the PEPFAR HIV testing and counselling Technical Working Group (HTC TWG) in 2011, as a response to that problem. This handbook draws on existing guidelines, training and operational manuals, key informant interviews, observed

practices, and site visits to HBHTC programmes. The authors specifically sought inputs and experiences of HTC service providers, supervisors, and programme managers using different community-based models, particularly focusing on offering testing in the home in different epidemic settings across Africa, for the development of these materials.

1.3 Target audience

This handbook is intended for HBHTC service providers and their supervisors, managers of HBHTC programmes in resource-poor settings, as well as national policy makers and programme planners.

Home-based HIV testing and counselling (HBHTC) programmes are usually developed with a specific target population, cultural context, geographical location, and political and funding environment in mind. Delivery models broadly fall into two types: the door-to-door model and the index-patient model, defined below. Additionally, an integrated approach can be used with either model to deliver multiple health services to the home, including HBHTC. There are a number of practical and implementation issues that are common with HBHTC conducted by trained HTC service providers. National planners should consider their own context and select the approach most appropriate for their setting, type of epidemic, available resources, and programme objectives. For example, in densely populated areas with high HIV prevalence or with substantially low numbers of people accessing HTC services (urban or rural), a door-to-door model may be the most effective approach. However, well-established HIV treatment and care providers may find the index-patient model works best for reaching the partners and families of their patients. In addition to these two models, a home-based self-testing model is being piloted in community settings in high prevalence areas. However, while there are clear advantages for using self-testing in some settings, further research is required before we are able to recommend this approach.

2.1 Door-to-door

The door-to-door model refers to an approach to HBHTC that aims for high coverage of services within a specific community or geographic location. The primary objective of a door-to-door model is to offer HTC to every eligible resident of every homestead or household. Because of the nature of the process, multiple

visits to the community or location may be necessary to contact every resident. Several innovative and cost-effective variations of this model have been piloted successfully in different contexts, including combining it with outreach HTC activities in the community – for example, pitching a tent and providing HTC services available within the community for a few days or weeks. Some programs

use ‘community camping’ to attract people who do not want to be tested at home, or as an alternative to repeated home visits. The advantages of the door-to-door model include that it:

- does not single out specific households
- does not rely on people making a self-assessment of whether they need an HIV test
- has high uptake and coverage
- reduces stigma and/or fear of stigma
- allows an opportunity for partners or couples to test together
- provides access to young people
- enhances disclosure among couples and families
- leads to earlier diagnosis and linkage to care
- has potential to reach more men, children, and couples compared to VCT and PITC
- helps to reach marginalized groups, such as disabled people.

Some programmes provide HTC as part of door-to-door integrated health packages, including services like TB screening with a cough questionnaire and/or sputum collection, family planning and reproductive health services, de-worming tablets, provision of water purification devices, insecticide treated bed nets, and health education.

2.2 Index-patient

The index-patient model (sometimes referred to as ‘targeted testing’) refers to HTC service providers visiting the homes of people diagnosed with HIV or TB and offering HBHTC to their sexual partner(s) and other family members. Index patients often welcome testing of family (and household) members. The consent of the index patient should always be obtained before home

visits are made. This should include a discussion of how and when the patient would like to be visited, as well as by whom. Care should be taken to ensure that this approach does not result in stigma/discrimination for a household or violate the confidentiality of people living in that home.

The index-patient model is often incorporated in home-based care programmes. With this approach, health workers who traditionally visit the homes of the very sick to provide palliative care (primarily to AIDS patients) have begun to introduce HBHTC to family members. This model can be easily extended to include home-visits to TB patients given the high rates of HIV in TB patients, and vice versa. Index patients, and potentially their family members, may be linked to a community health worker who is providing services such as adherence follow-up, social services, or DOTS for TB patients.

The index-patient model offers a number of potential advantages.

- It may facilitate home entry. The ongoing, trusting relationship with the community health worker often means that a formal community entry process is not necessary.
- It can provide an opportunity for assisted disclosure.
- It can target testing of people at high risk for HIV.
- It may facilitate detection of high numbers of HIV-positive individuals, linking them to treatment and care.
- It can provide a prevention opportunity that includes risk reduction education, family planning and safer pregnancy counselling, STI management, and condom distribution.
- It may facilitate identification of persons living in discordant couples.

This allows for early treatment of the HIV-positive partner, for their own health as well as preventing onward transmission to the negative partner. It also allows for annual re-testing of HIV-negative partners and linkage to male circumcision for the HIV-negative partner of an HIV-positive woman.

A number of other health care interventions may take place in the home or require home visits. Home deliveries may provide opportunity for HBHTC, PMTCT for the mother, and onward referral of the infant for antiretrovirals. While the advantages of this approach include facilitation of linkages, it may require additional training, extended roles and time, and, in some cases, may be hard to sustain without external funding.

2.3 Self-testing

Home-based self-testing may increase universal access to HTC, addressing the desire for convenience and confidentiality. At present, three

main approaches are being explored: self-testing programmes specifically targeting health workers and their partners, marketing of self-testing kits through registered vendors (such as pharmacists), and supervised distribution of self-test kits through community-based programmes. There is little experience with community-based self-testing, and as such, scale-up of this model – from research to broader community access – will require an evidence-base both to optimize delivery and referral systems and to design strategies to minimize adverse effects and maximize positive social impacts. The greatest concerns with home-based self-testing are: the potential absence of pre- and post-test counselling and follow-up mechanisms, the potential for adverse consequences particularly following a positive result, and the lack of quality assurance systems to ensure tests are not misused, that results are accurate, and that appropriate linkage to care takes place. Pilot programmes are underway that will assess these concerns and the potential for future scale-up.

3.1 Setting a national strategy for HBHTC

A country's overall HBHTC strategy should be agreed upon at a national level, as it has the potential to contribute to universal access to HIV testing. Through HBHTC, providers are able to detect new cases of HIV and to increase testing among people who may otherwise not choose to test. Setting national targets within the framework of a national strategy allows geographic and population areas to be appropriately prioritized for HBHTC and available data to be used to inform service delivery.

3.2 Coordination of partners conducting HBHTC

HBHTC may be incorporated as a programmatic strategy by organizations and agencies with sufficient capacity, appropriately trained staff, and high quality control standards, provided their plans fit in with the national HIV/AIDS strategy and the country priorities for HBHTC. Each programme may have an overall target for testing that they contribute to the national plan.

The person responsible for HIV services at the regional or district level should have a complete understanding of what is currently happening in the region or district in terms of the location and capacity of HTC sites, availability of referral points, and partners delivering HBHTC services. Partner mapping at the regional or district level allows for appropriate prioritisation of underserved areas and prevents overlap of services between partners.

3.3 How organizations are authorized to conduct HBHTC

Organizations conducting HBHTC should work within the national strategic framework for HIV/AIDS. Many countries require that implementing organizations first obtain written authorization from the Ministry of Health (MOH). In order to obtain this authorization, most MOH's require organizations demonstrate how they plan to meet the standards set out in the national HTC guidelines – outlining any existing experience in home-based or community work, HTC, and the provision of quality-assured services.

Additionally, organizations may be required to demonstrate evidence that three conditions are in place.

1. Their personnel levels are adequate (see section 4).
2. The infrastructural requirements are met as per the national guidelines.
3. Laboratory supervision mechanisms are in place, including a named laboratory technologist responsible for on-site support, consultation and technical support supervision, and training for and implementation of external quality assurance (EQA) by staff conducting HIV testing (see section 11.1).

It may be advantageous to authorize implementers with prior experience and expertise in HTC service delivery, logistics, and quality assurance, as these aspects are important for successful HBHTC programmes. For index-patient programmes, preference should be given to experienced HTC service providers that are well known and respected in the communities in which they work. Candidate

programmes should be able to ensure successful linkage to prevention, treatment, care, and other services following testing, as appropriate.

3.4 Human resources for HBHTC

HBHTC service providers should be trained and certified in HTC according to the official Ministry of Health HTC curriculum or equivalent. (Section 4.3 provides suggestions for interviewing HTC service providers and assessing their level of skill.)

Organizations will benefit from employing experienced HTC service providers (i.e. with at least one year's experience). Additional training for conducting HBHTC is highly recommended as these providers are likely to deal with challenging home and counselling situations more often than other HTC providers, and will encounter additional planning considerations not part of typical HTC training. HBHTC training may be included as part of the basic training before service provision begins, or provided later in the form of additional modules during refresher trainings or supervision meetings (some suggestions are outlined below). HBHTC service providers will likely face more challenges than traditional voluntary counselling and testing (VCT) and provider-initiated

testing and counselling (PITC) service providers; because of this, HBHTC services must address the need to counsel a range of clients – families, couples and partners, children, and adolescents – with a particular focus on negotiating gender dynamics and other challenging domestic circumstances. Because HIV rapid testing may occur under less than favourable conditions, training and prior experience will also benefit HBHTC service providers. Service providers doing HBHTC should be healthy, as the work is physically, logistically and mentally demanding, and willing to work flexible hours. Working hours may include early mornings, late evenings, holidays, and weekends. A working knowledge of both the local language and culture (including dress codes and beliefs) will benefit the programme.

3.5 Test kits to be used for HBHTC

HIV rapid tests should be used for HBHTC. Testing algorithms should follow the national-validated algorithm for HIV diagnosis. Oral fluid testing may also lend itself well to HBHTC, as there is a reduced need for sharps disposal measures (see section 5.9). Programmes may wish to use oral fluid tests for HBHTC, where they are nationally approved or licensed, and accompanied by quality assurance methods for testing (see section 11.1).

A wide range of individuals may be involved in providing home-based HIV testing and counselling (HBHTC) services. This includes programme managers, field coordinators, data managers, supervisors, HBHTC service providers, community health workers (CHWs), and/or mobilizers and community leaders. The structure of the programme, clarity of roles and responsibilities, as well as the process by which staff are recruited and retained, are contributing factors to the success of the programme. Some areas of consideration are discussed below.

4.1 Programme structure and composition of a HBHTC team

HBHTC programmes will vary in terms of their structure and staff composition depending on national resources and context. Many programmes will have a similar basic structure – an example of which is laid out in figure 1 below – however, titles and roles within programmes will vary slightly from place to place, as will the ratio of supervisors to HBHTC service providers. In countries where CHWs provide HBHTC, technical supervision and support may be provided by HTC staff at a nearby health centre. Before starting a HBHTC program it is helpful to have minimum staffing in place, for example:

- At least four certified HTC service providers who were trained according to the approved national curricula in counselling and in HIV rapid testing and have a minimum of one year of experience.
- A minimum of one team leader or counsellor supervisor who is available at the site or in the area where HTC is being conducted. For larger programmes there should be

one counsellor supervisor for every 10 HBHTC service providers.

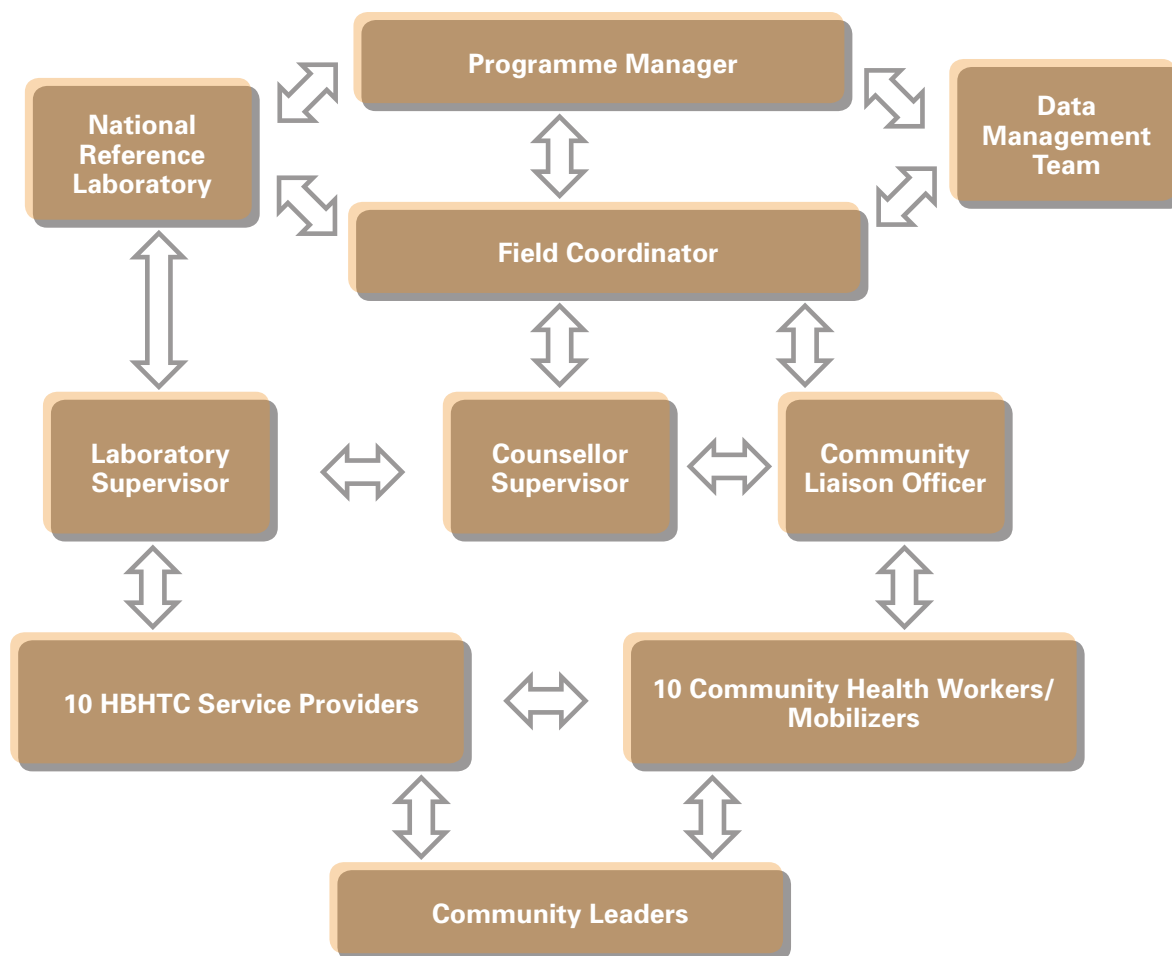
- Two CHWs or mobilizers, ideally one male and one female, per 200 households.

4.2 Roles and responsibilities of different personnel in HBHTC

Roles and responsibilities should be clearly explained in job descriptions and person specifications (qualifications, skills, and experience needed) to ensure clarity of the HBHTC team members' roles. For certain positions – e.g. laboratory supervisors or national reference laboratory staff – existing job descriptions may need to be amended, as HBHTC would be only one of the duties required of that person. Well-written job descriptions and person specifications, based on national standards, will help with recruitment, selection, training, appraisal, and supervision of new team members.

- **Programme manager:** is responsible for overall management and leadership of the programme, including programme design, support

Figure 1: Example organogram for HBHTC



for all levels of the programme, problem solving, and financial oversight. The programme manager liaises with the National Reference Laboratory and data management team, and the Ministry of Health, the latter having oversight of programme monitoring and evaluation.

- Field coordinator:** has oversight of the various teams in the field, including HBHTC service providers, CHWs, and/or mobilizers; develops job descriptions and oversees recruitment; line manages supervisors and community liaison officers; has overall responsibility for mapping the location; ensures supervision takes place in coordination with district MOH, as well as within the programme; provides logistical and programme

direction; collates and reviews data; provides supervision support; and plans for external quality assurance with the National Reference Laboratory (see section 11.1).

- Data manager:** manages the IT specialists and data entry technicians, oversees GPS systems, and is responsible for data security and quality.
- Community liaison officer:** arranges meetings with local administration and community leaders; recruits and supervises CHWs; and coordinates mapping of the location, including local service delivery points; and understands barriers to uptake of services. It is recommended that each community liaison officer be responsible for approximately 10-20 CHWs.

- **Counsellor supervisor:** supervises and supports HBHTC service providers. The role of HBHTC service provider supervisor includes supportive supervision, administrative supervision, and refresher training. Some organizations divide the role – choosing a senior HBHTC service provider to handle the administrative issues and a trained support supervisor to provide supportive supervision. Ideally, there should be a one-to-ten ratio of supervisors to HBHTC service providers.
- **Laboratory supervisor:** ensures conditions are met for accurate test results to be given in all settings where testing is done. Depending on the size of the programme and the strengths of the host organization, laboratory supervision may be conducted by the programme and/or by an external entity. A systematic approach to laboratory supervision and quality assurance is required in any HTC programme, and particular attention should be given to HBHTC, given the adverse environments under which testing may be undertaken. Wherever possible, the national reference laboratory and its decentralized systems should be involved in order to ensure regular supervisory visits.
- **HBHTC service provider:** conducts family-centred HBHTC and HIV rapid testing; adheres to standard operating procedures for testing and counselling; collects data using standardized forms; and visits local clinics and referral points.
- **Community health worker and/or mobilizer:** undertakes mapping of households, plays a role in community and household entry, provides HIV education and information, schedules appointments for HBHTC service providers to visit homes, ensures

security of the HBHTC service providers, and tracks service linkages. In some settings, CHWs are also trained in HBHTC service provision, in which case they will require support from their mobilizer.

4.3 Recruitment and training of HBHTC service providers

It is important to attract, train, and retain people with the right skills and attitudes not only to support programme quality, but also the efficient use of resources in recruitment and training. Providing a clear job description and preview can help make people aware of what the job will entail.

HBHTC service providers may be recruited locally or nationally, provided they meet the standards set out in the national guidelines. The advantages of local recruitment are that HBHTC service providers may have a better understanding of local customs and language. However, as HBHTC programmes benefit from the selection of experienced HTC service providers (see section 3.4), overreliance on recruitment of HBHTC service providers from one area risks depleting local well-established HTC services of their most experienced staff and thus straining working relationships with other colleagues. Selection of HBHTC service providers should be based on the job descriptions and person specifications, and include a written and skills-based interview, or other process that assesses skills and experience, particularly in couples and family counselling.

All HBHTC service providers should receive training based on programme needs (guided by the job descriptions) and be equipped to address the various problems they are likely to face

in the field. Additional training may be received through pre-service training or as a modular package delivered in-service through ongoing refresher trainings or support supervision. The types of topics to be included should be drawn from the following:

- **Programme needs:** Methods for mapping: use of physical maps or lists of residents, use of global positioning systems (GPS), use of landmarks to locate homes; data handling and use; home and community entry; referral directory and linkage tracking; and quality assurance
- **Clinical updates:** Methods for explaining serodiscordance, TB screening, STI screening, PMTCT, family planning needs assessments, voluntary medical male circumcision, early infant diagnosis (including practical aspects of the collection of dried blood spots from infants), and the importance and benefits of HIV care and treatment
- **Counselling skills:** Methods for understanding and explaining the social context of HIV risk, including couple serodiscordance, multiple-concurrent partnerships, gender-based violence, and child sexual abuse; and the need for family education and disclosure (including between partners and to children), child and adolescent counselling, home-based marital and relationship counselling, and specific counselling for alcohol abuse and psychological and emotional abuse. Working with key populations, including high-risk negatives, at higher risk of HIV exposure¹. The counsellor will also need to be able to define 'window period', explain when and why

¹ This refers to those most likely to be exposed to HIV or to transmit it. Key populations include men who have sex with men, transgender persons, people who inject drugs, sex workers and their clients, and seronegative partners in serodiscordant couples.

retesting is required, and provide brief motivational interviewing

- **Self-care:** Burnout prevention strategies, self-awareness, transference, stress management, and support to clients on managing actual stigma and self-stigma.

4.4 Recruitment and training of community health workers/mobilizers

Community health workers (CHW) or mobilizers should be respected members recruited from the local community. Recruitment is generally restricted to individuals who are over 18 years of age. Local chiefs or leaders may select a pool of individuals who are then interviewed to ensure they meet programme criteria (being literate in order to book appointments, understanding confidentiality etc. – as described in the person specifications). Where CHWs are expected to perform testing and counselling, the recruited individuals should meet the national standards for HTC service providers. In countries where CHWs provide HBHTC, an outreach model may be employed. HBHTC service providers are technically supervised and supported by HTC staff at the nearby health centre. A number of characteristics of the CHWs may be taken into account in recruitment to better meet programme needs, including:

- recruiting similar numbers of men and women so they can work in pairs if possible;
- taking religion into account and recruiting from a range of religious persuasions;
- preferentially selecting people living openly with HIV in the community;
- recruiting CHWs from among the

target population where possible; for example, for programmes working with key populations at higher risk of HIV exposure.

While CHWs and/or mobilizers are often volunteers, they may have a formally recognized role in the Ministry of Health. In such cases they should be provided with a daily stipend to cover food and transportation; T-shirts, caps, and bags with the programme and Ministry of Health logos; and formal ID cards. CHWs should undergo training (at least/approximately three days) that includes basic information about HIV infection, issues specific to serodiscordant couples, and details of the programme and referral sites. Training should also include approaches to be used to engage a family (as opposed to individuals) in support of HIV testing and counselling, and to support newly diagnosed HIV-positive individuals to take up linkage to care. Community health workers and mobilizers are often encouraged to undergo a full HTC session during the training period, giving them an accurate picture of what household members can expect during HBHTC and increasing community confidence in the CHWs' knowledge of HIV and the testing and counselling process.

4.5 Staff retention

Staff retention is an important part of programme quality. Some retention problems are caused by people entering jobs for which they are ill-suited – due to either a lack of interest or inadequate training – and the job preview can help with this. Programmes that invest in the training of staff (see section 3.4) should also consider

the systems they have in place to encourage the retention of trained and experienced programme staff. Ongoing support and capacity development, through refresher training and other means of professional development, are especially important elements for both paid and volunteer staff retention. However, working with a volunteer workforce can be particularly challenging in HBHTC and may require innovative methods to retain or remunerate service providers.

Administrative and logistical assistance is a significant source of support for HBHTC service providers and community health workers/mobilizers alike. What is needed will vary between sites and programmes, but may include such things as transport between locations or the provision of boots, umbrellas, hats, airtime, and drinking water dispensers at satellite offices. With some programmes, HBHTC service providers may come from all over the country. They are away from their families, and have a strenuous schedule, which often includes working weekends. Allowing HBHTC service providers to take compensation days for overtime will help to sustain their family and personal relationships, and allow for rest and rejuvenation. Programmes also need to ensure the health and wellbeing of providers who face a number of health and other risks (see section 5.9). This includes providing proper medical coverage, access to post-exposure prophylaxis for HIV and rabies, Hepatitis B vaccinations, and, where necessary, TB diagnosis and treatment. A supportive attitude to occupational health can ensure that providers feel well taken care of and are retained within the programme.

Since home-based HIV testing and counselling (HBHTC) may be conducted in remote areas – far from an HTC facility or organization’s headquarters – careful planning is required to ensure a successful programme. The sensitisation of community leaders and mobilization of community members is essential to planning for HBHTC (see section 6.1), and should be started in parallel with the logistical planning that is covered in this section. An important initial activity is to create a detailed action plan that shows activities, timeframe, responsible individuals or partners, budget, and measurable indicators.

5.1 Choosing the location

When considering geographical areas, organizations authorized to conduct door-to-door HBHTC should liaise with the regional, provincial, or district health management teams (see section 3.2) to ensure that the area chosen meets national objectives for HTC (based on prevalence, access to services, etc.), to allow for better planning, and to avoid overlap with other home-based, mobile, or outreach HTC activities. Additionally, organizations should work closely with both the provincial administration team and the local community (see section 5.2) to define priority areas. Recipients of HBHTC should be linked with follow-up HIV prevention, care, treatment, and support services (see section 9), and for this reason a geographical location should be chosen that has at least one accessible ART delivery point (whether facility-based or mobile) with the capacity to enrol new patients.

5.2 Consulting stakeholders

Stakeholder involvement is critical and should occur early in the planning process. Important stakeholders to involve outset of the project include:

- provincial or regional health teams
- district health teams
- provincial administration (includes commissioners, district officers and chiefs)
- religious and community leaders (including village elders)
- partner/community organizations working in the area.

The objective of the meeting is to explain the rationale behind the choice of a particular area, provide an opportunity to address questions and correct any misconceptions about the programme, and involve the community in the planning process. Engaging stakeholders early in the process helps to ensure “buy-in” for the project at many levels. The meeting

also provides community leaders with the correct information they can then communicate with the public.

5.3 Mapping of location

Prior to implementation in a given area, HBHTC programmes should first develop a detailed map displaying and/or listing the location and inhabitants of individual households. This may be done by accessing maps administrative units developed by the government bureau of statistics, or as a participatory mapping exercise with the local community. The map used by the program may be hand-drawn or digital, depending on resources and the accuracy and detail of the method. In many cases, hand-drawn maps may be more up-to-date than other options. If images of the planned area are available at high resolution, Google Earth, a free resource available to download, would be a useful tool for this exercise¹. Mapping allows for HBHTC services to be provided in a systematic manner, for exact coverage to be determined, and workload and travel time to be estimated. Social mapping conducted with community leaders can identify both gatekeepers for particular religious or ethnic groups and community- and faith-based organizations for follow-up support.

For door-to-door programmes, mapping should indicate individual homes or structures within a village or homestead (or cluster of buildings in an urban area), whether or not they are occupied, and details of the individuals living there. While a GPS system may

work well in some areas², others may require specific locator information, e.g. landmarks, if necessary. In dense urban settings, mapping may include physical numbering of the houses within a given cluster and individual doors within a given structure. Additionally, populations in urban settings are often highly mobile and HBHTC service providers may find properties vacant or occupied by new tenants, and thus requiring service providers to update their records. Once the mapping for door-to-door programs has been completed, programmes should provide feedback to the relevant administrative authorities. In contrast, organizing for home-based testing using the index-patient model requires the timing and location of testing to be planned around the existing cohort of HIV-positive or TB patients enrolled in care.

The end result of the mapping process is that programmes know who is living where, what populations they are serving, and how to access them.

5.4 Determining availability of follow-up services

It is of critical importance that any HBHTC programme provide linkages to follow-up care, treatment, and prevention services. HBHTC service providers, their supervisors, and managers should have a detailed knowledge of the local health facilities and other service delivery points for HIV care and prevention, including the capacity of these services to enrol or accommodate newly diagnosed

¹ Free download available at <http://www.google.com/earth/download/ge/agree.html>

² GPS systems have been known to fail and all data can be lost. A backup system should be considered.

individuals. A strategic meeting with representatives of the district health management team, or equivalent, can identify services for the target community. This final product of this meeting could take the form of a contact list or directory of services. Programme staff should visit the following service delivery points to confirm opening times, services offered, waiting times, and cost:

- nearest ART clinic(s) and/or provider(s)
- nearest PMTCT services
- local primary health care centres
- voluntary medical male circumcision points
- TB screening points
- STI screening and treatment
- family planning and reproductive health services
- support groups for people living with HIV
- other prevention services and groups.

Support groups for discordant couples, post-test clubs, youth groups, nutrition programs, post-rape care services, and legal assistance (see section 12.3) should also be included as important resources. A good working knowledge of the referral points will allow HBHTC service providers to inform clients of what to expect and will make it easier to collect data that tracks whether individuals have successfully taken up the services offered (see section 9).

5.5 Planning return visits

HBHTC offers a unique opportunity for HBHTC service providers and community health workers to provide follow-up or return visits, allowing them to:

- meet household members not available at the first visit

- return to households that have requested a return visit
- provide re-testing based on recent risk behaviour or exposure³
- follow-up with clients/patients who have tested positive for HIV, and offer support, including support with disclosure
- track referrals and linkages to follow-up services (see section 9)
- work out what barriers might need to be addressed to facilitate linkage to follow-up services
- educate household members on the importance of early care and treatment
- check access to male/female condoms
- be aware of any adverse events in the household such as gender-based violence, stigma, or coercion.

The programme should establish a policy on when and how often return visits will be made to make efficient use of HBHTC providers' time and programme resources. For example, in a particular area, the programme may set a maximum of three return visits within a given time period. It is helpful to have at least one weekend day available when HBHTC providers are able to make appointments and find families together in the home. It is important for HBHTC service providers to adhere to the specific dates and appointment times suggested by the clients, as most failed appointments are the due to HBHTC service providers missing appointments. Reminders (phone calls, SMS, etc.) are an effective ways of confirming follow-up visits.

³ *Delivering HIV test results and messages for re-testing and counselling in adults*. Geneva, World Health Organization, 2010. http://whqlibdoc.who.int/publications/2010/9789241599115_eng.pdf

5.6 Planning for data collection, protection, and storage

The national HTC register should be used in HBHTC. Data collected for programme planning purposes may include: the street address, GPS coordinates or description of the location using landmarks (locator information), and the named referral points. Additional information required for monitoring and evaluation (see section 10) will vary by setting, epidemic type, and nature of the programme. HBHTC service providers should also record the information of

anyone who declines to test in order to plan for future visits and more accurately calculate HTC uptake. It is important that data-collection forms should not take too much time to complete.

Data security is very important in HBHTC. In order to facilitate the uptake and follow-up of linkages, clearly identifiable data are required. HBHTC service providers may therefore be walking around the community with data that include names, locator information, and HIV test results. Programmes must plan for how HBHTC service providers will safely

Table 1: Suggested supplies for HBHTC

	HBHTC service provider	Coordinator/Field Office
General	Rucksacks or bags with multiple compartments	Cool boxes
Testing Supplies	Test kits, lancets, capillary tubes, buffer, small plastic testing surface (e.g. cutting board) Supplies for dried blood spot sampling, if used Cotton wool, alcohol wipes, tissues Laminated sheets with visual rapid test results display; timers Portable sharps container; biohazard waste bag Male (and female) condoms; penile model	Thermometers Spare stock sufficient for 1-2 weeks before central re-stocking Rack for drying dried blood spots
Data Supplies	Electronic or paper-based Plastic wallets so papers/PDAs do not get soaked in the rain	Spare stock sufficient for 1-2 weeks before central re-stocking Lockable cupboard for data security
Transport	Walking, public or arranged transport, or bicycles in rural areas	Motorbike or access to vehicle
Safety	Mobile phones with network used in the area being tested, airtime sufficient for work in the field, identity cards	Mobile phones with network used in the area being tested, airtime sufficient for work in the field, identity cards First aid kits Snake anti-venom PEP for HIV and rabies (or referral points for ART and rabies vaccine identified at health facilities)
Personal	Rain gear, water bottles, hand sanitizer, torches, safari boots/gum boots, umbrellas/caps	Rain gear, water bottles, hand sanitizer, torches, safari boots/gum boots, umbrellas/caps



move around with data, and how and where data will be stored securely in the field. Electronic records and handheld electronic data-entry devices must be password protected on a secure system and downloaded data stored according to the legal requirements of the data protection act of the country concerned. Paper copies should be returned to supervisors and kept in a secure space in a field office on a daily basis. HBHTC service providers should not be walking around with more data than they need on any particular day.

5.7 Supplies

In HBHTC, the supply of kits, consumables, and reagents should be the same as for any HTC setting, as set out in the national HTC guidelines. Adequate planning and forecasting will help minimize stockouts. Supervisors need to ensure that providers have

adequate supplies available at their testing point, or at a common point (satellite office), when HBHTC service providers need to re-stock. Providers should pay careful attention to ensure test kits do not exceed stated temperature recommendations during storage and transport. All supplies should be easily portable, and as with any HTC the testing area must be a clean and flat surface. Additional items are listed in table 1. The list is not comprehensive but all carried items should be easily portable in a rucksack or on a bicycle as illustrated in the photos. The total weight that HBHTC service providers carry should be kept to a minimum.

5.8 Security and transport

The involvement of the provincial and local administration, local police, and community leaders in planning for

HBHTC will ensure that security issues are rare, and if present, will be handled efficiently and effectively. Additionally, community health workers (CHWs), drawn from the same community being offered HBHTC, have local knowledge that can help non-local HBHTC service providers avoid dangers or difficulties. With this in mind, most programmes choose to have the CHW or mobilizer or arrive at the household before or with the HBHTC service provider to provide the introduction.

It is advisable for HBHTC service providers to work in pairs (as far as possible this should be one male and one female HBHTC service provider) – each carrying a mobile phone and ID badge at all times. In some instances, HBHTC service providers have been vulnerable to sexual abuse and allegations of sexual abuse against them – working in male-female pairs helps reduce these issues. Another advantage of working in pairs is that it gives HBHTC service providers the opportunity to strategize and problem solve when facing challenging counselling issues, home environments, or other difficult situations.

HBHTC service providers may also be exposed to a range of adverse weather and environmental conditions that should be considered in the planning phase when discussing how to best equip HBHTC service providers. For example, walking in the heat and dust between homesteads would require durable walking shoes and

extra drinking water. Depending on the distance and the terrain, a bicycle may be needed to reduce travel time. In urban and informal settlement areas, thugs and groups gathered around drinking establishments also pose threats to HBHTC service provider safety. HBHTC service providers and supervisors should plan for services to finish before sunset and for secure means of transport to where they will be spending the night.

5.9 Biosafety and waste disposal

HBHTC should meet the standards for biosafety and waste disposal set out in the national HTC guidelines. Portable puncture-proof sharps containers should have a lid that can be resealed and must always be closed whilst the HBHTC service provider is moving between locations. These may include formal containers or makeshift containers such as old medicine bottles or thick plastic water bottles. Sharps containers should be disposed of entirely, not simply emptied out, as this increases the risk of needle stick injury. Proper disposal of sharps containers includes incineration at the appropriate facility. Waste bags should be tied and put in a separate section of the rucksack between sessions. Both should be returned to the central office for appropriate disposal. Oral fluid HIV testing (see section 3.5) may lend itself well to HBHTC as it decreases the need for sharps disposal.

Once the location has been agreed, stakeholders have been consulted, staff have been recruited, and logistical planning has been completed, the programme is ready to begin implementation – in short, service providers need to enter homes to conduct home-based HIV testing and counselling (HBHTC). However, before they can do this, the programme needs to closely plan with the local community leaders and prepare the households for door-to-door services. A summary of the steps is laid out in Figure 2.

Figure 2: Steps in planning community entry for HBHTC

Section	Steps	Rationale
3.2	Alignment with national strategy	Allows areas to be appropriately prioritized for HBHTC and helps avoid duplication of efforts.
5.2	Involve stakeholders	Involvement of a wide range of stakeholders at regional level ensures buy-in and correct communication. It is an opportunity to clarify programme objectives and methods.
5.2	Involve district administration	Support from district officials facilitates buy-in from local chiefs/community leaders. Obtaining information or maps of other organizations providing services in the testing area creates comprehensive referral directories for each area.
6.1	Involve local area administration	Programme managers meet with local chiefs/community leaders to explain their purpose and obtain approval to move forward.
6.1	Attend community meetings	Community meetings organized by local chiefs/ community leaders help sensitize the community to HBHTC, allow people to ask questions, and may identify potential community mobilizers.
6.3	Community sensitization and mobilization	Door-to-door sensitization increases awareness. Community health workers/ mobilizers set up appointments with households. Strategies such as radio and public announcements, fliers, and t-shirts supplement door-to-door sensitization.

6.1 Community entry

Gaining the support of the gatekeepers and opinion leaders in the community is the first step for any HBHTC programme to gain entry into the area chosen for door-to-door testing. Organizations are wise to contact community elders, religious leaders, traditional chiefs, and other local authorities and community leaders well in advance of any programme starting in their area. Finding leaders that will champion HBHTC can make a strong impact and help boost the uptake of services. A supportive community leader can make the difference between no one accepting testing and almost everyone accepting it, and with few, if any, security issues.

6.2 Working with community health workers and/or mobilizers

Community health workers (CHWs) and/or mobilizers play a key role in mapping, community entry, household entry, security of the HBHTC service providers, and in the tracking and follow-up of linkages (see section 4.4). In most settings, the CHWs/mobilizers introduce the HBHTC service providers into the homes, but are not involved in the HTC process itself and generally do not learn the status of an individual. These mobilizers will leave the premises while the HBHTC service provider conducts the HTC process. This should be communicated clearly to clients from the outset.

Some programmes choose to use CHWs to assist with linking clients to follow-up services. In these cases, verbal consent must be obtained from the client as to whom his or her

status will be disclosed and for what purpose. In some situations, where the client has consented, HIV-positive clients may be introduced to an HIV-positive CHW who not only supports them through their own disclosure, but also helps them to enrol in HIV care and treatment. If the client does not consent, HBHTC service providers should not discuss client issues with the CHW after the session, nor disclose results to them.

6.3 Preparing the community

If the HBHTC programme team has held inclusive and successful meetings with stakeholders and community leaders, some of the community preparation may occur by word-of-mouth through their networks. Other ways of raising awareness in the community about HBHTC are: radio messages or church announcements, community theatre/performances, and community events. However, these methods should be used to supplement, rather than replace, meetings with individuals, couples, and family groups to prepare them for testing.

6.4 Home entry

The primary role of CHWs is to visit households approximately one week before the HBHTC service providers are due to arrive. Settings where stigma is high may require more preparation before HTC services can be delivered, in order to improve acceptability and uptake. During the preparatory visit, CHWs describe the HBHTC process to household members, and help to ensure uptake of testing by answering questions and addressing concerns

about HTC. While there, CHWs should make note of convenient times most, if not all, family members will be available for HBHTC visits.

As part of HBHTC, service providers need to enter homes and it is important that they do this in a way respectful of community norms. In most communities, providers enter the home or compound using the main gate, follow the demarcated route to the house, knock on the house door, and wait to be welcomed. In some homesteads, permission is required to enter the compound by calling from the gate. For example in Botswana one has to ask permission from the gate to enter the yard by calling 'koo koo' and only when one receives a positive reply (*ee, tsena*), can one enter the compound. Once in the home, the HBHTC service providers introduce themselves and start the HTC process. In some settings the CHWs or mobilizers may accompany the provider to the household and introduce them, but leave before an HTC session begins.

HBHTC service providers need to be sensitive to cultural and religious issues in a community or household, as these are central to the acceptance of the HBHTC service providers in the

home and to the uptake of testing. This includes how greetings are done, how homes are entered, who is addressed first, and what religious beliefs (e.g. regarding the taking of blood or the ability to heal HIV infection) are held in the household. HBHTC service providers should exercise discretion when accepting hospitality in homes. In some areas it may be easier for the programme to have a policy that the HBHTC service providers politely decline offers of hospitality such as cups of tea, water, etc. unless such refusals might be considered rude and unacceptable.

HBHTC service providers encounter a number of situations in homes, including medical emergencies, bedridden individuals, and the lack of food and basic necessities. These are usually a much higher priority to the family than HTC. While HBHTC service providers should be sensitive to the immediate needs of the family and try to support the family to access help, HBHTC service providers also need to be clear about why they are there. They must also be aware of the limit of their role and involvement, and may not be able to help the family with all their immediate needs. Clear guidance from the programme can be helpful.

There are a number of ways in which to conduct home-based HIV testing and counselling (HBHTC), depending on who resides in the household. HBHTC service providers should be familiar with and feel comfortable providing HTC to any or all populations, and be aware of circumstances that may affect a household (see section 12). In the index-patient model, the patient's partner(s) and children may be offered testing, as in the door-to-door model. Neighbours may come around and ask to be tested, and therefore programmes providing targeted testing (index-patient testing model) need to have policies on whether or not this is allowed.

7.1 Families

It is suggested that the household receive general information about HTC as a group. This includes couples, polygamous groups, youth, children, disabled family members, and the elderly. It is not always clear who qualifies as a family and a broad view defined as 'those who eat from the same pot' might include extended family members and neighbours. The programme should clearly define who should be offered testing – some may decide to offer testing to anyone who is present at the home when the HBHTC service provider arrives. Other programmes may choose to only offer testing to individuals who have resided in that home for a certain number of months or are immediate family members. Planning and decision-making at programme level will help HBHTC service providers to efficiently determine to whom they should offer testing when entering homes. The testing plan may need to be somewhat flexible, allowing for instances where the head of the household may have strong feelings about who should be

offered testing in their home, and these feelings should be respected. It is important for counsellors to remember that although the general information can be presented to groups, the consent process should be individualized (see section 8.2). Cultural norms should be respected and adjustments made accordingly. For example, it may be inappropriate for adults and children to be in the same informational session when sexual matters are discussed, and counsellors should be sensitive to this.

While a major aim of HBHTC is couples and family testing and counselling, the whole family is not tested simultaneously. Rather the family may be given information about testing as a group, and then individuals or couples should be offered testing. If both partners of the couple agree to accept HTC, they should be offered the opportunity to be counselled and tested together and receive their results together. After individuals or couples are tested, children and young people may be offered HIV testing. The HIV status of the mother, the ages of

children and young people, and their prior testing history will determine if and how counselling will take place.

Family disclosure has the potential to reduce stigma, increase the uptake of care and treatment, and improve adherence, but it may take both time and negotiation in order to achieve these goals. Young children and adolescents who may have acquired HIV from their mother should be tested, and therefore the mother's status should be disclosed to them with her consent so that they can understand why they are being tested. Child and adolescent testing and disclosure issues are described in further detail in section 7.5. Although family disclosure is supported in any HTC setting, the principles of confidentiality and informed consent should be upheld and forced disclosure is not supported.

7.2 Couples and partners

One of the primary advantages of HBHTC is the opportunity to increase the uptake of couples HTC. In the index-patient model, where one partner has already been tested and is in care, appointments are arranged so that the partner of the HIV-positive index patient can be offered testing. The index patient may choose to receive testing again with their partner as a couple. Alternatively, the partner may test as an individual depending whether disclosure has already taken place. The index-patient model offers assisted disclosure (see section 8.5), for couples and families. Assisted disclosure is also offered to the children of HIV-positive parents. With the door-to-door model, the couple may not both be found at home together on the first visit and an appointment to

return at a more convenient time may be necessary.

The couple may be the first to test in the family. Couples that test together are able to read and share each other's results, often through facilitated disclosure, and are able to come up with a joint risk reduction plan. This process, while part of the routine HTC protocol, may be more challenging in a HBHTC setting. For example, couples who voluntarily attended a VCT site or outreach have time to prepare for testing together. In contrast, couples participating in HBHTC may not have had adequate preparation time together and may need additional time and assistance to understand and accept the process. HBHTC service providers should also be aware of the possibility of partner coercion and be sensitive to the dynamics of familial relationships. Once tested, the couple should have the choice of how and when to disclose to their children (if applicable), including the option of doing so immediately with the help of the HBHTC service provider.

Individuals in the couple being tested by the HBHTC service provider may have other sexual relationships outside of the couple. If the couple brings this up, HBHTC service providers can discuss the importance of testing the other partner(s), and arrange for testing to be extended to include them. However, if the couple does not mention additional partners, HBHTC service providers should still give general information about the importance of testing other partners and make note that the couple's HIV test results do not indicate the HIV status of any outside partners. HBHTC service providers can arrange to see individuals with other partners at an

alternative time and/or location if it is requested. HBHTC service providers should not assume that questions regarding risk reveal the entire picture of a person's sexual network – particularly if a partner is present – nor should they assume that single people are not sexually active. Testing should be offered to all sexual partners of individual adults.

7.3 Polygamous groups

Counselling polygamous groups is very different from the group and couple HTC sessions with which HBHTC service providers may be most familiar. Polygamous groups have a shared HIV risk and may wish to be tested together; consequently, HBHTC service providers may find that they need to allow more time for pre-test and post-test discussions. Testing as a group facilitates disclosure within the whole group and should be encouraged for this reason. While many issues are the same as for couple counselling, trust within the wider family group is essential. It is particularly important to assess the risk of gender-based violence¹ before testing polygamous groups. This is an area where experienced HTC or HBHTC counsellors can mentor others.

How HBHTC is undertaken among polygamous groups will differ according to their preferences. Some may prefer to be tested in the individual households with each wife testing in her own home in the presence of the husband. In this case pre-test education (see section 8.3), contracting (see section 8.1), and

discussion should be conducted, if possible, with all spouses present so that the possible outcomes of testing can be discussed openly. While there may be several households, they are still one family. Wherever possible, the same HBHTC service provider should visit the houses of each wife. As with other HTC processes, HBHTC service providers can support disclosure with consent. The children of the HIV-positive wives or other HIV-exposed children (including any non-biological children that they may have breastfed) should be offered testing.

7.4 Individuals

While the intended focus of HBHTC is testing of couples and families, in the door-to-door model the majority are still tested as individuals. This may happen when individuals request testing to prepare themselves for disclosure to their partners, or when the partner is absent due to their work patterns (e.g. migrant workers) or refuses to test after multiple attempts. Individual testing may also be requested by single and young people not in long-term relationships. Whenever possible, HBHTC service providers will try to make appointments to return when individuals may be found at home with their partners, whether this is early in the morning, late in the evening (with providers' safety taken into consideration), on weekends or during public holidays.

7.5 Child and adolescent testing

The guiding principles when providing HIV testing for children are that any testing should be done in the

¹ *Gender-based violence and HIV: a program guide for integrating gender-based violence prevention and response in PEPFAR programs.* Washington, DC, AIDSTAR-One, 2011. http://www.aidstar-one.com/focus_areas/gender/resources/pepfar_gbv_program_guide

best interests of the child, and any counselling should be conducted in an age-appropriate manner. One of the primary goals of HBHTC is the early identification of HIV infection and appropriate enrolment of HIV-positive children in treatment and care. Since legal definitions of age of consent and age of mature minors vary from country to country, programmes may need to provide clear uniform guidance to their HBHTC service providers. In countries where there is no clearly defined age of consent programmes should adhere to the individual country's legal stance on the age of consent for testing or medical procedures, if applicable. HBHTC service providers may feel they need support and should feel able to ask for help from peers in a supervision group or from a senior HBHTC service provider or supervisor on an individual basis.

The main aim for HBHTC is the early identification of HIV infection and appropriate enrolment of HIV-positive children in treatment and care. Since legal definitions of the age of consent and the age of mature minors vary from country to country, many programmes have found the need to make their own judgement of what this means in a household situation. Local policies taking into account the individual country's legal stance on the age of consent for testing or medical procedures may be useful to guide HBHTC service providers. HBHTC service providers may feel they need support and should feel able to ask for help from peers in a supervision group or from a senior HBHTC service provider or supervisor on an individual basis.

This section is based on WHO guidance^{2,3} for testing of children and adolescents, and gives practical tips on what this means for HBHTC providers in the field. It divides children and adolescents in the household into four groups based on their different testing, consent (Table 2), and disclosure needs. These are:

1. *Infants and young children*

HBHTC service providers are encouraged to test infants and young children if they are the biological children of an HIV-positive mother, or orphans whose mothers' HIV status is unknown. HBHTC service providers need to follow a standard child-testing algorithm⁴ and be trained in the collection of dried blood spots.

- a. Under the age of 9 months, dried blood spots are drawn for early infant diagnosis using nucleic acid testing (NAT) by polymerase chain reaction (PCR) that detects viral particles. Breastfeeding infants who are PCR negative will require a follow-up test.
- b. Between 9 and 18 months, an HIV antibody rapid test is done first to exclude HIV exposure. If this is negative, the infant is considered negative. If this is positive, then a PCR test is done. Breastfeeding infants who are antibody rapid test negative

2 *Policy requirements for HIV testing and counselling of infants and young children in health facilities.* Geneva, World Health Organization, 2010. http://www.who.int/hiv/pub/paediatric/testing_counselling/en/index.html

3 Guidance to health workers on disclosure of HIV status to children and their caregivers. <http://www.who.int/hiv/topics/vct/en/index.html>

4 *WHO recommendations on the diagnosis of HIV infection in infants and children.* Geneva, World Health Organization, 2010. <http://www.who.int/hiv/pub/paediatric/diagnosis/en/index.html>

and/or PCR negative will require follow-up testing.

- c. Between 18 months and 5 years, HIV antibody rapid testing only is done. Breastfeeding infants who are antibody negative will require a follow-up test.

Consent is required from parents or guardians for HIV testing of infants and young children. Disclosure of test results to the consenting parents and guardians is part of the HTC process.

2. Children and young adolescents

The testing of children aged 6 to 14 is more complex. All biological children of an HIV-positive mother and all orphans and separated children of mothers whose HIV status is unknown should be offered testing. Additionally, children who are unwell or have symptoms compatible with HIV infection should be offered testing. If the HBHTC service provider becomes aware that a child may have been sexually exposed to HIV, they may also wish to offer testing. Testing should be done with both the consent of the parent or guardian and the assent of the child. The results are disclosed to the parent or guardian. Disclosure of results to HIV-positive children of school age (whether or not they are on treatment) is highly recommended and should start as early as possible. The process of disclosure may be gradual and an age-appropriate process is often best undertaken by the parents with the support of the clinical team involved in the regular care of the child.

3. Adolescents and mature minors

HIV in adolescence may be sexually or vertically acquired. Up to a third

of HIV-infected infants survive to adolescence, even in the absence of early diagnosis and HIV care. The potential for long-term survival with undiagnosed HIV infection from infancy should be explained to the family before testing older children and adolescents, as the assumption will otherwise be that infection has been acquired sexually. Support for the parents may be required, especially for those that are themselves HIV-positive and may have passed the infection on to the adolescent at birth.

Adolescents may be counselled individually or together with their sexual partners. Living situations and relationship dynamics between adolescents and their parents or guardians need to be taken into account when determining if home-based testing is the most appropriate option. The WHO *Adolescent job aid* outlines an adolescent appropriate pre-test discussion.⁵ Assessment of HIV risk factors and information regarding modes of transmission is important within this age group as confusion around the possible source of infection may lead to negative consequences.

Adolescents can consent for themselves if they are either of legal age of consent – as defined by their country – or are considered mature minors. If they are not considered mature minors, or are under the age of consent and would like to be tested, a parent or guardian's consent is required. During counselling, adolescents should be asked to whom they would tell the results and

⁵ *Adolescent job aid. A handy desk reference tool for primary level health workers.* Geneva, World Health Organization, 2010. http://www.who.int/maternal_child_adolescent/documents/9789241599962/en/index.html

Table 2: Example age ranges to consider when testing children and adolescents for HIV and getting consent

	Infants and young children	Children and young adolescents	Adolescents and mature minors	Older adolescents
Example age range	Under 6 years	Between 6 and 14 ¹ years	Between 15 and 18 years	Between 18 ² and 21 years
Who to test	Biological children of HIV-positive mothers Children with HIV symptoms Orphans whose mothers' status were not known	Biological children of HIV-positive mothers Children who have had sexual exposure Children with HIV symptoms Children whose parents request testing Young adolescents who request testing	Biological children of HIV-positive mothers ³ Adolescents who agree to be tested Adolescents with HIV symptoms	Biological children of HIV-positive mothers Adolescents who agree to be tested Adolescents with HIV symptoms
Who consents for testing	Parents or guardians	Parents' consent and children assent after the process and implications have been explained to them	Adolescents consent for themselves if they are mature minors or above the age of	Adolescents

1 Some programs use 12 years as the cut off

2 Ten countries in sub-Saharan Africa have 16 as the age of consent for HIV testing

3 Late presentations into early adulthood are possible

encouraged to seek out someone they trust to support them. They can be supported to disclose in a manner with which they are comfortable. Disclosure to family and friends should be encouraged, not forced, by the HBHTC service provider, then supported when the young person is ready. Too much emphasis on disclosing HIV status, especially to parents or sexual partners, could discourage adolescents from engaging with HTC services. This situation needs to be handled sensitively, with the adolescent's wishes ultimately being respected. Counsellor-supported disclosure will be helpful for the young person who is ready, or wants to disclose but lacks the skills or resources. If the HBHTC service provider judges that disclosure of the adolescent's result to the parents is truly not in the best interest of the adolescent, they may choose not to test that individual or may offer assisted

disclosure. It is helpful if the HBHTC service providers negotiate consent for disclosure before testing is conducted.

4. Older adolescents living at home

This group should be treated the same as adults, if they are over the age of consent for that country. They may be counselled individually or together with their sexual partners. This should be explained to the adolescent along with information on the benefits of family disclosure. The explicit consent of the adolescent is always required.⁶

7.6 Disabled family members

When visiting families at home HBHTC service providers may encounter

⁶ *Orientation programme on adolescent health for health-care providers*. Geneva, World Health Organization, 2006. http://www.who.int/maternal_child_adolescent/documents/9241591269/en/index.html

disabled family members who have never been tested. Since disabled family members may be hidden within the home, the community health workers (who have a good knowledge of the local community) may need to alert the HBHTC service provider to their presence. If the prevalence of deaf household members is found to be high in a community or for a certain HBHTC programme, then it may be useful if at least some HTC service providers have skills in sign language. Alternatively, follow-up visits can be arranged with a HBHTC service provider who is able to sign. Disabled children and young adults should be offered testing in the same manner as anyone else in the family who has been at risk of HIV exposure.

Disability may involve learning disability (e.g. conditions such as Down's syndrome, cerebral palsy) that compromises the individual's ability to

give informed consent. This will need to be taken into consideration and parental consent sought.

7.7 Mental health disorders in the family

HBHTC service providers may also encounter mental health problems, including schizophrenia, drug or alcohol dependence, and dementia among adults in the home. Whenever possible the family members should be supported and linked to appropriate care and support services. HBHTC service providers may need to discuss the situation with their supervisor or another senior HBHTC service provider, particularly if it impacts other household members, including vulnerable children and adolescents. When testing is indicated, the person should be referred to a nearby facility for PITC.

As with any HTC session, the guiding principles (or five 'C's) of informed consent, counselling, confidentiality, correct HIV testing procedures, and linkage to care, are to be followed.

8.1 Introducing the session

Before starting the HTC session, the home-based HIV testing and counselling (HBHTC) service provider will explain to the client(s) what to expect from a session, including how long it will take, and what they can and cannot offer. This process is sometimes referred to as a verbal 'contract'. During contracting, HBHTC service providers also explain confidentiality and how this will be maintained in the house when others are around, or if testing is in an open area how privacy is ensured. In sessions with children who are too young to consent, but are old enough to assent, the HBHTC service provider should explain that the results will be disclosed to the parents. HBHTC service providers may find that they are asked to do a lot of things in the household, such as diagnose medical conditions, provide transport, and give money or food. The programme and supervisors' policy should clearly outline what HBHTC service providers can and cannot do so that they are empowered to deal with these requests when they arise.

8.2 Informed consent

The same consent procedures apply for HTC in the home as in any other setting. All the HIV tests done in households must be done with the client's knowledge and informed

consent, and all the clients offered tested and counselled should be free to consent or decline.

- The consent should be verbal and documented in the client's notes.
- For adults who are unable to consent, due to acute confusion or mental health conditions, family members should be advised to take them to a clinical setting for PITC.
- People who are visibly intoxicated from alcohol or other substances are not able to give consent for HTC. They should be asked if they wish to arrange a return visit.
- For children, the considerations discussed in section 7.5 apply. The parent or guardian may need to be supported in making the decision to test their children. If consent is withheld, and testing is considered to be in the best interests of the child, then linkage to a centre experienced in HIV testing and management may be discussed.

HBHTC service providers may come across the following situations:

1. Household member feels uncomfortable consenting to testing in the absence of the head of household.

Suggested action: HBHTC service provider arranges another time for testing.

2. Woman declines testing just because the head of household is absent.

Suggested action: HBHTC service provider explains that women can consent without the permission of

head of household. Alternatively, the provider may arrange another time for testing when both partners are at home.

3. Head of the household consents on behalf of partner, but partner does not want to be tested.

Suggested action: HBHTC service provider informs both partners that testing is voluntary and explains the benefits of HTC to the couple.

4. Individual wants to test, but feels unable to accept because the head of the household has refused.

Suggested action: HBHTC service provider emphasises the benefits of HTC and reasons why it is offered in the community, gives general information about nearby testing options, and offers a routine return visit. If the HBHTC service provider is concerned about violence in the home they may seek advice from senior supervisors or make appropriate linkages.

5. HBHTC service provider is aware of peer pressure and coercion by neighbours or other family members.

Suggested action: HBHTC service providers should make their own assessment about whether the consent is genuine and testing is appropriate.

8.3 Pre-test

In addition to the pre-test session conducted as part of any HTC encounter, the HBHTC service provider should explain the purpose of the HBHTC programme, and the benefits of knowing one's own HIV status, as well as that of the couple or family. HBHTC service providers should reassure the household of confidentiality, taking into account family groups, couples, and other partnerships. This should include an

explanation that confidentiality will not be broken, unless they perceive the client to be a danger to themselves or others.¹ When discussing disclosure, the household and HBHTC service provider may make a joint plan together for how this will be done (see sections 7.1, 7.5, and 8.5).

Risk-reduction planning is an important part of HTC and is usually carried out during the post-test session when HIV status is known and risk-reduction messages can be tailored. When discussing risk reduction it is important for HBHTC service providers to ensure that clients know how to use condoms correctly and consistently. This may involve doing a condom demonstration if appropriate. Additionally, a number of health screening tools are available and may be incorporated into the pre-test discussion, including cough questionnaires for TB screening, alcohol risk screening questionnaires, and family planning needs assessments (see section 10).

8.4 Testing

The same conditions and algorithms apply to testing as in all HTC settings and testing must follow the national algorithm(s). This includes following the standard operating procedures for testing to ensure accurate test results. Particular attention should be paid to adequate lighting, appropriate timing (see section 11.1), testing areas/surfaces (plastic clip boards may be used as testing surface), and safe waste disposal (see section 5.9), which can sometimes be challenging in the HBHTC session and environment.

¹ *HIV/AIDS and human rights. International guidelines.* Geneva, Joint United Nations Programmes on HIV/AIDS, 1996. http://data.unaids.org/publications/irc-pub02/jc520-humanrights_en.pdf

8.5 Post-test and disclosure

Test results should always be given, regardless of the result. In the introduction session the HBHTC service provider will have clarified to whom they are given and how. In general, results are given to:

- both members of the couple in couples that agreed to receive their test results together;
- all members of the group in polygamous groups that agreed to receive their results together;
- the individual for adults and adolescents testing alone;
- the parents/guardians of infants, children, and young adolescents (see section 7.5).

Everyone must be given correct information and offered counselling after their test results have been delivered. The content of post-test counselling follows the HTC protocols for HIV-negative and positive results.

Confidential linkage to appropriate services should be made (see section 9). Disclosure is easiest if the importance of disclosure is clearly explained during the pre-test session. This minimizes the risk of negative outcomes from disclosure. While disclosure within the family is encouraged (see section 7.1), it requires consent and should be done after results are given to individuals, couples, and groups. In the index-patient model, each ‘assisted’ or ‘supported’ disclosure of the index patient is a disclosure of a known positive result. Some patients/clients may find it difficult to disclose their positive status and the fact they have been accessing care without telling the family. They may ask the HBHTC service provider to come to the house at a given time to meet their partner and/or family and to help explain/disclose their positive HIV status. The HBHTC service provider may offer testing to the partner and family at this time.

A home-based HIV testing and counselling (HBHTC) programme that identifies HIV-positive individuals in their home, but then does not successfully link them to care and treatment services is considered to be failing in its primary aim. All referral sites, including treatment, prevention, care, and support services, should be mapped out and visited (see section 3.2) prior to starting HBHTC services.

Early care and treatment for individuals who test positive saves lives both by improving the health of the individual and by reducing onward transmission of the virus. For individuals who test negative, knowing their status can allow them to be linked to prevention services and can help them to change their behaviour. Some integrated programs offer basic care and prevention services immediately, e.g. cotrimoxazole prophylaxis, safe water facilities, bed nets, TB screening, as well as condoms. Linkages may be improved through this approach.

9.1 Linkages to other services

HBHTC should only be conducted in areas where linkage to an HIV care or ART clinic is possible. The following individuals should be referred:

- ask clinicians from a home-based care programme to visit as soon as possible;
- use a programme vehicle to ensure logistical support.

Other HIV-related situations that are urgent, even though the individual is not necessarily bedridden are:

- the first 72 hours after rape or non-consenting sexual exposure;
- pregnant women who are HIV-positive and not enrolled in PMTCT.

9.2 Urgent referrals

Although not common, HBHTC service providers may come across bedridden and severely ill individuals. Programmes must be prepared for this and have a policy in place on how this is handled. Some options are:

- explain to the relatives and neighbours that they need to arrange for transport to hospital;

9.3 Capacity at service-delivery points

Successful linkage from testing to care is critical in any HBHTC programme.

Table 3: Indications for linkage, recommended referral points and rationale

Who to refer	Where to refer to	Rationale
Serodiscordant couples	ART clinics, specific support groups where available	For repeat retesting of negative partner, early treatment of positive partner, risk reduction counselling
HIV-positive adults and children	ART clinics, specific support groups where available, adolescent friendly services	For assessment of clinical and immune status, measurement of CD4 count, pre-ART care or starting on ART
HIV-positive adolescents		
HIV-positive adults with TB on TB treatment, but not on ART		
HIV-positive pregnant women	PMTCT clinics, ART clinics, antenatal care	To prevent vertical transmission and pass messages about infant feeding, considerations for partner testing
HIV-positive individuals that are TB suspects or patients	TB clinics (as per national guidelines), ART clinics	For confirmation of TB diagnosis and where confirmed, early TB treatment
HIV-positive patients with no symptoms of TB that may be suitable for preventive therapy ¹	ART clinics, clinics providing isoniazid preventive therapy	To reduce the incidence of TB disease
HIV-negative TB suspects or patients	TB clinics or outpatients clinics	For confirmation of TB diagnosis and where confirmed, early TB treatment
Those who report rape within last 72 hours	Post rape care services, one stop centres where available, ART clinics, casualty department, the police	For post-exposure prophylaxis (PEP) and other post-rape services
Cases of sexual abuse or partner violence	Casualty departments, social services, counselling services, police, local leaders	For additional counselling and support that are beyond the scope of and HBHTC service provider
HIV-negative men who are not circumcised	Voluntary medical male circumcision	To reduce the risk of HIV-negative men acquiring HIV
HIV-negative individuals at risk of HIV	Additional prevention service, alcohol services	For risk reduction counselling, access to condoms and messages about retesting
Those with a family planning need	Family planning services	To meet family planning needs
Those identified with a drinking problem	Alcohol services or support where available	Alcohol can lead to increased HIV risk behaviour

¹ *Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings.* Geneva, World Health Organization, 2011. <http://www.who.int/hiv/pub/tb/9789241500708/en/index.html>

Good communication between the HBHTC service providers and clinics can facilitate this process. HBHTC implementing organizations should be aware of the capacity of referral services when first planning the programme; therefore, HBHTC service providers should be aware of the capacity of local ART and/or HIV care services when referring HIV-positive individuals for treatment and care. It may be useful for HBHTC service providers to visit HIV care and ART

service delivery points, meet providers, and confirm services offered, clinic hours available, and new patient capacity. Through this process HBHTC service providers will become familiar with facilities and the services offered, identify problems such as long waiting times and new patient waiting lists, and verify the accuracy of information to be provided to HTC clients. Prior knowledge of capacity issues may help HBHTC service providers to inform or warn clients what to expect, provide

them with other service options, and alleviate any stress or anxiety related to newly diagnosed patients being put on long waiting lists.

9.4 Following up linkages and referrals

HTC service providers in HBHTC services have a unique opportunity to revisit clients, thus enabling providers to assess and track linkages to other services. As part of the linkage process, providers should obtain consent to return to the home and follow-up with clients. Because follow-up may be conducted by community health workers (CHWs), mobilizers, or peer educators, client consent also needs to be obtained for sharing information with the cadre of workers who will be conducting follow-up. Through this process, newly diagnosed HIV-positive individuals may be linked to trained CHWs (who may themselves be HIV-positive) or peer educators to support them in seeking referral services in the first few weeks after the diagnosis. In order to facilitate the uptake and follow-up of linkages, HBHTC providers may also need to capture more detailed locator information. It is advisable that data forms use client names and have clearly identifiable data, such as the client's address and telephone number so providers may follow-up with them, as appropriate. This allows for a return visit to the home after an interval of time and for the HBHTC service provider or CHWs to call or text message the individual.

New technologies, such as portable CD4 count testing, have the potential to further enhance linkages for HIV care and treatment. A timeframe

should be set by the programme to determine a recommended number of return visits for tracking of referrals and linkages to follow-up services. For example, a program may wish to follow-up with clients within one month of the initial visit, and may plan up to three visits before moving on to a new community. The team conducting follow-ups to newly diagnosed HIV-positive individuals should maintain confidentiality.

9.5 Understanding barriers to successful linkages

Simply referring individuals for additional services is no guarantee that the services will be taken up. It is important to understand the proportion of individuals that do take up services, and those who do not link to follow-up service delivery points, and the reasons why. Common barriers may be individual, facility-related, or geographical in nature.

- **Individual:** Concerns over stigma and discrimination; poor communication by the HTC service provider; denial, fear, avoidance of disclosure and consequences of HIV diagnosis; cultural beliefs and the existence of alternative therapies that are available or popular locally
- **Facility:** Long waiting times, limited opening times, crowded clinics, confidentiality concerns, perceived poor quality services, negative perception of staff attitudes, inconvenience if child and adult services are separate
- **Geographical accessibility:** Local ART clinic far away, transport not available, transport costs prohibitive.

9.6 Strategies for improving successful linkages

In designing a response, efforts should be made to find out what barriers exist for a given client, or in a given setting. At the individual level, the HBHTC service provider can listen in a non-judgmental manner and explore the reasons for not accessing care. A strategy they might use is to promote and support disclosure of HIV status as this often improves willingness to attend treatment and care services. It is also useful to tell asymptomatic people the value of early care. The ways in which counsellors communicate the information to newly diagnosed people are sometimes even more important than the information itself. The support given to these individuals by the HBHTC provider or community health workers during follow-up visits may help to overcome fears of discrimination and stigma. HBHTC service providers may benefit from training that builds communication skills around linkage so they are able to use the most appropriate supportive language. Once individuals have enrolled in care, strategies may be used to prompt them about appointments – such as personal visits, appointment cards, telephone calls, and mobile phone text messaging. Family members, including children who have been disclosed to, can also remind individuals of their appointments.

In order to reassure individuals about the services they will receive, the HBHTC

service provider should give accurate information about services offered, opening times, the public perception of the service and individuals who work there. Concerns over service quality and discrimination should be discussed openly. Other HIV-positive people who have used the services – for example, peer educators or CHWs – can provide encouragement and share experiences. Community and programme feedback may be offered to the service delivery points as part of an ongoing quality improvement cycle.

Strategies to improve access to and convenience of follow-up services include: family clinics that provide adult and child ART services at the same time, buddy systems or patient groups that reduce the frequency of attending the health facility, and links with mobile outreach or other decentralized services. Many services are offered close to communities, particularly by integrated home-based programmes. These include point-of-care CD4 count testing, immunization for children, and TB screening and/or collection of sputum samples where appropriate. Nevertheless, at some point the patient is required to physically attend the service delivery points. Escorting patients to referral centres may improve uptake. Community health workers may be asked to escort community members to follow-up services, with the consent of the individual, provided this job expectation is made clear to them from the beginning (see sections 4.4 and 4.5).

Using data well can help guide programming decisions and thus benefit the community as well as the individuals who were tested. The national HTC register should be the minimum data collection tool used in home-based HIV testing and counselling (HBHTC). What additional information is required will vary by setting, epidemic type, and the nature of the programme, and should not take too much time to fill out. HBHTC data should be segregated from other HTC data at the district and national level, clearly distinguishing its contribution to the national HIV strategy. Some suggestions of useful data variables are made here and further programme-specific tools can be accessed on the AIDSTAR-One website (see section 14). These are included as guides only. Data collection is not intended to take the place of counselling or to guide the format of the HBHTC session. HBHTC data are confidential (but not anonymous) and, therefore, data storage and transport need to be planned carefully to ensure personal details are kept safe (see section 5.6).

10.1 Types of data to collect

What data and indicators are collected will be determined by the objectives of the HBHTC programme.¹ Individual programmes will need to develop and adapt their own data collection tools that best suit the national and/or community context.

1. *Data collected for planning purposes* is targeted at the community level and may include:

- a. *Basic information*: such as date and community health worker ID code/name;

- b. *Locator and household information*: district, village, street address, GPS coordinates or description of the household using landmarks (locator information), the number of households in a given area, the number of adults and children in each household irrespective of HIV or testing status;
- c. *Referral directory*: all possible named referral points for that district/village/community, the services they offer, provider names, and service delivery hours;
- d. *Uptake information*: Whether the head of household agrees to be visited. All refusals, either from individual household members

¹ *Guide for monitoring and evaluating national HIV testing and counselling (HTC) programmes. Field-test version.* Geneva, World Health Organization, 2011. <http://www.who.int/hiv/pub/vct/9789241501347/en/>

or entire households who decline to test, should also be recorded to enable future visits if requested and the coverage to be calculated. There are various reasons for initial refusal including: already knowing HIV status, wanting to test later, waiting for spouse to test, fear of knowing status, and low perception of HIV risks. Those who are waiting for spouses or wanting to have time to think about it should be offered testing on a second (or third visit) before being recorded as a 'refusal'. Programmes should consider collecting data on reason for refusal. This can help guide programme managers and may identify local customs and beliefs contributing to refusal. Refusal might be due to previous testing experiences and therefore programs may also want to capture data on those who already know their status. For those who previously tested positive, HBHTC service providers should record whether or not clients are receiving any service such as pre-ART care or ART.

2. *Data collected for national reporting* of demographics and serostatus is individual level data and is collected routinely as part of the HTC programme data. It usually includes:

- a. *Basic information*: serial number, date, area and coverage, client name/code, area/location, and HTC approach;
- b. *Demographic data*: age, sex, and marital status;
- c. *Testing information*: HBHTC service providers should record lot numbers, expiry dates, first and second test results, as well

as details of the final result and any external quality assurance. This may be part of the national HTC data collection form or as a separate HIV rapid test register. A sample rapid testing register may be found on the WHO website;²

- d. *Other information*: client tested as individual/couple/group, couple discordance, previous HIV tests, and previous results. Consent and provider signature are a routine part of this form in most settings.

3. *Data collected for screening* of individuals should be relevant to the local context and needs. Some variables are listed below, but additional brief (approximately four questions each) screening tools can be piloted and validated as appropriate (e.g. screening for drug use, sex work, violence etc., see section 12). Screening should only be undertaken if there is an intended action or referral point, and should include:

- a. *Screening for TB*: cough, night sweats, weight loss, and fever;³
- b. *Screening for alcohol problems*: frequency of alcohol consumption, number of drinks on a typical day, frequency of more than 6 drinks on one occasion,⁴ and effect on aggressive behaviour;

2 *Handbook for improving HIV testing and counselling services. Field-test version*. Geneva, World Health Organization, 2010. <http://www.who.int/hiv/pub/vct/9789241500463/en/index.html>

3 For HIV-negative individuals, use national screening questions. For HIV-positive individuals, see the four-symptom screening tool in *Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings*. Geneva, World Health Organization, 2011. <http://www.who.int/hiv/pub/tb/9789241500708/en/index.html>

4 *AUDIT - The Alcohol Use Disorders Identification Test: guidelines for use in primary care. Second edition*. Geneva, World Health Organization, 2001. http://www.who.int/substance_abuse/publications/alcohol/en/; and CAGE questionnaire <http://pubs.niaaa.nih.gov/publications/inscage.htm>

- c. *Screening for family planning needs*: pregnancy status, whether last or current pregnancy was planned, currently used family planning method, or desired family planning method;
- d. *Screening child health*: Immunization coverage for children under 5, and orphan status;
- e. *Screening for high risk negatives*: unprotected sex in the last 12 months, knowledge of HIV status of sexual partners, transactional sex, drug use including injecting drug use, or alcohol problems as determined by alcohol screening.

4. *Data collected on successful linkage* is an indicator of a successful programme. Obtaining these data requires follow-up visits and documentation that records confidential details such as names and contacts. Some examples of variables to collect are:

- a. *Referrals made*: to a range of services including ART clinics, TB clinics, family planning, male circumcision centres, alcohol services, groups for serodiscordant couples, post-test clubs, ANC, and MCH;
- b. *Successful uptake of referral or linkage to care*: may be most easily measured for HIV-positive individuals enrolled in pre-ART or ART care and for confirmed TB cases who started TB treatment. Tracking linkages requires monitoring of clinical registers at the facility level and is more straightforward when there are fewer service delivery points. It requires data on those referred to be physically matched with a list of those who accessed care in a given

facility. Programmes use client names and options such as referral slips, register reviews, and patient reports. In some cases information on successful uptake of referral or linkage may be obtained in discussions with clients through repeat visits to the home. Linkages of HIV-negative individuals to prevention programmes is harder to measure, although similar systems may be used to track linkages to voluntary medical male circumcision. Follow-up of individuals and communities may be required to better understand barriers (see section 9.6). Although this is may be a difficult field in which to collect data, it is a critical area where one can demonstrate impact – as linking people who test positive to care in a timely fashion is a critical outcome of home-based HTC.

5. *Data collected for quality improvement* may be taken from the routine data already outlined. Data on follow-up and linkages are considered a particularly important quality indicator. The proportion of people visited and accepting HBHTC services is also helpful, as a low proportion of uptake by people who do not know their status may be a sign that there is a problem with the perceived service quality. Additionally, regular cycles of quality improvement using data from follow-up or client exit interviews and from laboratory external quality assurance (EQA) (see section 11.1) may be undertaken. The data from follow-up or client exit interviews are generally analysed and acted on by the local quality improvement team or HBHTC programme and as such are not reported upwards.

Instead programmes share data collected for quality improvement with HTC providers as a mechanism for identifying achievements and gaps. More information on quality assurance can be found in section 11 and specific tools can be found in the WHO handbook referenced in the resources section of this handbook.

10.2 Programme indicators

The data and indicators collected will be determined by the objectives of the programme. In addition to simple uptake data – disaggregated by age, sex, and HIV status – programmes should collect data on:

1. Coverage

The number of eligible individuals and households accepting testing out of the total number of eligible individuals and households offered HTC services in a given area. In HBHTC programmes, all households are eligible households. Eligible individuals are those in categories defined by the programme⁵ who do not already know that they are HIV-positive or who have had a recent HIV-negative test (e.g. within the past 12 months). This indicator is a measure of how well the programme is doing at reaching people and helps programme managers to plan length of stay in a particular area. The quality of the data will depend on how well the mapping exercise was done in the planning stages of the programme (see section 3).

2. Refusal

The number of households who declined entry or the number of clients who were seen and offered HTC services by a community health

worker or HTC service provider, but declined testing services.

3. Testing uptake

As individuals, couples, and family groups are important in ensuring the programme is meeting its objectives in testing couples and families. Capturing accurate data on sexual networks can be challenging (see couples and sexual networks in section 7.2). However, programme data should indicate what percentage of individuals tested were being tested as couples and programmes should set targets for couple testing in both the index-patient and door-to-door models.

4. Successful linkage

May be monitored by calculating the proportion of newly diagnosed HIV-positive individuals getting a CD4 count within a month of diagnosis, the proportion of newly diagnosed HIV-positive individuals enrolling in care and treatment services within three months, the proportion of uncircumcised HIV-negative men being circumcised within three months, the rate of annual retesting among high risk negatives, and/or the proportion of TB patients identified that start treatment. Programme indicators should define the period within which enrolment has occurred – for example, the proportion of newly diagnosed HIV-positive individuals enrolled in care and treatment within three months of testing.

10.3 Research data

HBHTC provides an opportunity for additional information to be collected to better understand individual and community knowledge, attitudes, practices and beliefs, and to design programmes based on these data.

⁵ For children eligibility may not be determined until maternal HIV status is known.

Additional information collected for research purposes should be approved by national and local ethical review boards according to national protocol and is often collected during a defined timeframe or until the required sample size is reached.

10.4 Data collection methods

Data may be collected using handheld electronic devices⁶ or through paper-based data collection. Both systems have advantages and disadvantages – such as data security, data accuracy, weight of paperwork or the availability of skilled IT support and backup systems – that must be considered (see section 5.6).

⁶ More information on electronic data collection may be available by contacting Partners in Health. The OpenMRS free electronic medical record system can be downloaded from <http://openmrs.org>

The quality of home-based HIV testing and counselling (HBHTC) services is critical to the success of the programme. A systematic approach to assure and improve the quality of both the testing and the counselling aspects that takes into account the specific needs of an HBHTC programme is required.

11.1 Quality assurance for rapid HIV testing in HBHTC

The quality assurance (QA) measures for rapid HIV testing in HBHTC should be designed in collaboration with the National Reference Laboratory, monitored by the HBHTC programme officer, and overseen by the laboratory supervisor for the programme.

Consideration should be given to how test kits are stored, transported, and used as the challenging home environments may impact testing quality and adherence to standard operating procedures. All kits have a temperature range in which they are stable. Storage and transport conditions must ensure that kits are kept within the stated range. In order to ensure this is not exceeded in home-based testing, programmes should consider the use of cool boxes for transportation and HBHTC service providers should use a thermometer to check the temperature of the storage area at the hottest time of day. Rucksacks, bags, or boxes used for transport to the homes may require insulated pockets or sections where a more even temperature can be maintained. Additional challenges are posed in homes with no clocks or timers and/or little natural daylight (when it becomes difficult to distinguish a faint reactive

test or control line). HBHTC service providers should carry personal timers and torches (flashlights) to address these quality challenges.

WHO recommends a systematic approach to quality of HTC testing services through a quality management system. This can be achieved through a number of measures including:

1. Quality control (QC)

It is of great importance to have a robust quality control system in place to minimize the possibility of giving someone an incorrect result. In-process quality control (QC) includes validation of test device performance through built-in controls (i.e. the control line of the rapid test) and through use of known negative and positive controls provided separately. The performance must be monitored and verified according to the manufacturer's instructions for use. It is important to make sure that home-based testing programmes follow the same quality control procedures as facility-based testing. The frequency of test kit controls, and external QC specimens if they are used, is outlined in the national guidelines and should be followed by home-based programmes and reviewed with the local laboratory staff designated to support quality control of rapid testing.

2. External quality assessment (EQA)

EQA refers to the comparison of testing results between testing facilities. EQA measures the ability of a testing service to provide correct testing results and is more encompassing than QC alone. Together, QC and EQA will give an assurance that: a) the test device is working and b) that the correct test result is given. A majority of errors are due to transcription errors or due to lack of traceability of specimens to individuals. EQA is achieved through proficiency testing and on-site supervisory visits. A number of proficiency testing (PT) programmes are available, or the National Reference Laboratory can prepare PT panels using the robust, heat stable, dried tube specimen (DTS) approach or serum/plasma panels. The testing programme receives the panel and individual HTC service providers are selected in rotation to process the specimens as usual and then return the results for data analysis. Each service provider must conduct such a panel at least annually and show concordance with results from the National Reference Laboratory. Programme visits should be arranged through the National Reference Laboratory on at least an annual basis.

3. Proper documentation and record keeping

Since large numbers of people are tested daily by HTC service providers, a traceable system of recording of lot numbers and expiry dates is required as part of the portable 'laboratory register' or specimen log book where results of home-based tests are recorded for HTC.

4. Supervisory visits and observed practice¹

One of the biggest threats to testing accuracy in HBHTC is the reading of tests in a shorter or longer timeframe than that recommended by the manufacturer's instructions. This may be best assessed by on-site supervisory visits by the laboratory supervisor as mentioned above.

11.2 Quality assurance for counselling

The discussions between the HBHTC service provider and client that take place before, during, and after an HIV test are critical to HBHTC. The standard protocols for HTC outline the appropriate information to be provided during the testing and counselling process, but it is the use of counselling skills and a client-centred approach that impacts the client's experience of HTC. Counselling should increase knowledge of HIV prevention and help the client to focus on solutions and risk reduction. High-quality counselling also results in appropriate, timely, and acceptable linkages, follow-up, and treatment adherence. Many programmes have targets, and HBHTC service providers are told how many clients (including couples) they should counsel and test per day. When setting and agreeing to these targets, both HBHTC service providers and programme managers need to be aware that targets set too low or too high can compromise quality. Targets can range from 10-12 per day in most door-to-door programmes. Programmes should

¹ *Laboratory quality management system: handbook*. Geneva, World Health Organization, 2011. <http://www.who.int/ihr/publications/lqms/en/index.html>

explain to counsellors that refusal of a household or individual to test does not mean the counsellor has failed. Programmes should avoid pressuring counsellors, as this may create potential for coercion.

A number of quality assurance measures designed for the counselling aspects of HTC can be adapted for HBHTC. Tools and examples may be found in WHO's *Handbook for improving HIV testing and counselling services*.²

- **Administrative support:** Supervisors should ensure that HBHTC service providers have a regular opportunity to share experiences, challenges, and feelings as this may diminish burnout. A brief session every morning will make sure HBHTC service providers are set for the day and any urgent and logistical issues are sorted out. This will enable HBHTC service providers to feel more comfortable in their work and provide better quality service. A daily meeting also enables reports to be given, test kits collected, etc.
- **Support supervision:** Distinct from administrative support, regular individual or peer group sessions allow HTC service providers to raise difficult interpersonal and counselling issues for discussion and professional development.
- **Observed practice:** This can be essential to assisting HBHTC service providers to strengthen their skills and should be done in a supportive way to encourage growth. The purpose of observed practice is to allow mentors to observe the family and household situations that

HBHTC service providers encounter and to give immediate supportive feedback.

- **Client follow-up interviews:** May be adapted from standard HBHTC exit interviews. Rather than focusing on waiting times and clinical areas, questions may be adapted to include information on household and community entry, confidentiality, the manner in which family testing was approached and counselling was provided.
- **HTC service provider self-assessment:** This may be used for quality assurance with few adaptations to existing tools. Self-assessment is most useful if used in conjunction with supervision.

11.3 Involving the community in quality assurance

Through choosing and involving health workers from the local community, the community already has a vested interest in the quality of home-based testing services. The community health workers and their families are generally the first families to be tested in a particular region. Proactive steps to talk about quality may also be needed. In HBHTC, quality can be introduced as a concept in the early stages of planning with stakeholders and community members. This allows the community to know what quality to expect and builds their confidence in the service. Some programmes encourage the establishment of community committees in places where home-based testing is being conducted. These groups can then act as an avenue for receiving positive feedback or concerns about the

² *Handbook for improving HIV testing and counselling services. Field-test version.* Geneva, World Health Organization, 2010. <http://www.who.int/hiv/pub/vct/9789241500463/en/index.html>

quality of services, such as testing and disclosure without consent.

Service providers may form a quality assurance team charged with the overall responsibility of ensuring and maintaining the quality of services offered. They may then recruit community volunteers who are orientated on the 'dos and don'ts' of conducting follow-up interviews. The QA team determines when to start follow-up interviews, when

to end, the number of clients to be interviewed per day, and the target number of clients to be interviewed during the implementation period. They also meet to decide on when to start analysing data, who does it, and when and how to disseminate findings to the relevant authorities and the community. Community feedback is a critical component of quality and allows problems to be identified and worked on early (see section 13).

12.1 Alcohol

It is the home-based HIV testing and counselling (HBHTC) service providers' responsibility to assess whether a client who has been drinking alcohol is able to provide informed consent and receive the results. Individuals who are drunk are not fit to give informed consent and should therefore not be offered HBHTC. HTC service providers should explain this and, if possible, make an appointment to see them at another time. Some clients may deliberately drink some alcohol before HBHTC in order to calm their nerves; because of this, providers should be aware that it might not be possible to completely avoid the intoxicated. Similarly, clients may be stressed or have heightened emotions that affect their thinking. Attempting to restrict testing to those who are free from factors that may interfere with their thinking is likely to negatively impact a home-based programme. The guiding principle is to consider the best interests of the individual. In some cases this means programmes have devised HBHTC protocols that acknowledge intoxication whilst minimizing potential harm to participants. HBHTC service providers should be aware of the signs of acute intoxication (being drunk) that include smelling alcohol, staggering walk, confusion, and slurred speech.

HBHTC service providers and community health workers (CHWs) should be aware that drunken household members could become combative, particularly when discussing sexual risk behaviour. In practice, CHWs know where in the community HBHTC service providers

are likely to come across people who are often drunk and are able to help service providers avoid violent situations. CHWs can also help engage alcoholics who wish to be tested, suggesting that they cut back drinking and arrange an early morning appointment.

Both alcohol and drugs increase risk-taking behaviours and have been associated with increased rates of HIV transmission. Drinking alcohol is a common social behaviour and may be used to overcome natural inhibitions when meeting people. Alcohol use precedes a large proportion of unprotected sexual encounters with casual partners. HBHTC service providers should therefore be aware of the impact of alcohol and able to assess problem drinking and its potential to undermine risk reduction planning. Section 10 explains how to screen for problem drinking; however, the interpretation of screening questions and findings and the availability of local referral services will vary in different contexts and should be worked out on a programme-by-programme basis. HBHTC service providers can learn practical counselling skills to assist clients in decreasing alcohol intake over time and may also consider referring clients to support groups for alcoholics if appropriate and available.

12.2 Violence in the home

HBHTC service providers may come across violence in the home and are responsible for ensuring their own safety and that of their clients. While rates of violence may be particularly high in slum areas, service providers

should not assume they are safe in a rural or middle-class area. If HBHTC service providers feel they are at risk, they should leave and contact their supervisor immediately about the next steps to take. HBHTC service providers should evaluate the risk of intimate partner violence or domestic violence before testing, and not test if they feel the test results could worsen the situation for anyone in the household or connected households. Often community leaders and/or CHWs will be aware of family dynamics, HBHTC service providers may wish to ask if there are any households that warrant extra sensitivity. Appropriate counselling strategies should be adopted which take into account possible violent responses to test results at the pre-test stage. Experienced HBHTC service providers should be able to identify possible adverse events as one component of a targeted counselling approach. Despite such strategies, it may be impossible to pre-empt or prevent negative responses within the household. If possible and with consent, linkage to organizations dealing with violence, including gender-based violence, should be made.¹ Organizations providing support services and traditional community structures that respond to domestic violence, for example “marriage counsellors” in Malawi should have been identified during social mapping to facilitate prompt response, when necessary. In certain circumstances, where the HBHTC service provider feels an individual may be a risk to others, they may need to break confidentiality in order to address the violence in

the home. This is already a routine part of ‘contracting’ with the clients as outlined in section 8.1.

12.3 Sexual abuse

HBHTC service providers may become aware of sexual abuse (of children or adults) in the home and many find this a very difficult subject to address, particularly as the HBHTC programme usually offers short-term counselling services. Families may be aware of abuse but would rather it was not reported or discussed and without their consent HBHTC service providers may find referral difficult. HBHTC service providers should be aware of specific referral points for post-rape care, trauma counselling, post-exposure prophylaxis, and other community support mechanisms. They should also be aware of any local or national reporting requirements regarding the abuse of children. General information on gender-based violence services can be given to household members in a neutral manner. The HBHTC service provider may feel they need support and should feel able to ask for help from a more senior HBHTC service provider, ideally one of their supervisors.

12.4 Key populations at higher risk of HIV exposure

Many key populations at higher risk of HIV exposure remain hidden in communities and HBHTC services are a way of reaching them since they are also members of the community being offered services. Key populations refer to those persons most likely to be exposed to or transmit HIV. They

¹ *Gender-based violence and HIV: a program guide for integrating gender-based violence prevention and response in PEPFAR programs*. Washington, DC, AIDSTAR-One, 2011. http://www.aidstar-one.com/focus_areas/gender/resources/pepfar_gbv_program_guide

are often in marginalized groups and are vulnerable to HIV for a number of reasons. In most settings men who have sex with men, transgender persons, people who inject drugs, sex workers and their clients, and seronegative partners in serodiscordant couples are at higher risk of HIV exposure to HIV than other people. Social attitudes and laws against the behaviours of some key populations, mean that service providers will require support and additional training in recognising the particular vulnerabilities key populations face. Working hand-in-hand with a few members from the key population through a 'snowball' technique can help to identify hidden communities for community-based outreach testing. This technique involves asking one individual who has received services to pass on information or distribute contact cards to peers who are then referred for HTC. Such approaches maintain confidentiality and facilitate access to the community.

Due to issues around stigma and discrimination against key populations at higher risk of HIV exposure, HBHTC providers should reassure individuals of the data protection measures in place. They may find it easier to offer referrals for testing or arrange for a

safe testing location at one person's home in the community. Individuals from at-risk populations should be offered follow-up to ensure they are linked to prevention and/or care and treatment services, regardless of HIV status. Programmes that have recruited community health workers from diverse groups in key populations, including MSM and sex workers, may have more success in arranging supportive follow-up and linkage to referral points for these key populations.

Prevention efforts with key populations may need special skills and referral points in urban areas. Mapping of service delivery points is important in both urban and rural areas. In rural areas, sensitisation of health care workers at local service delivery points may be required and this can be achieved in part by using client feedback about the services. Because not every clinician or health provider is comfortable serving key populations, many clients prefer to access health services where they will be treated without judgement. Community-based support groups for individuals who test HIV-positive may provide additional support and be a way of reducing stigma.

13.1 Determining when to move on

Programmes that are not integrated into a local service will need to plan how long to remain in a particular area based on their objectives and coverage. Programme managers need to balance maximizing resources with coverage. The number of return visits (see section 5.5) may be set at three per household, and once each household has either been tested or received three visits, that programme moves on. The key to determining the right time to move on is to ensure that everyone who has been offered testing has actually had a chance to be tested, whether as an individual, a couple, or as a family. In programmes also offering services through ‘community camping’ (see section 2.1), the demand for services should decrease significantly before leaving the area.

13.2 Returning results and following up linkages

Before leaving an area, home-based HIV testing and counselling (HBHTC) service providers and community health workers should make efforts to trace all of the clients that were linked to services order to determine whether the linkage was successful. This ensures both the best outcome for the clients and the accuracy of the programme data (see section 9 on referral and linkages; section 10 on uptake).

All results of tests that have been sent for further analysis (for example to a TB lab or to a reference lab) should be returned before the programme moves on. This includes the results

of PCR for early infant diagnosis (see section 7.5) that may take up to two weeks to be processed. Similarly programmes that offer sputum testing for TB need to ensure that all results of sputum microscopy are returned to the individuals concerned. Appropriate linkage for any positive results of these tests should be made. Involvement of community health workers can help to ensure follow-up and linkage to needed services. Parents of infants with ongoing HIV exposure through breastfeeding will need to be made aware that the child will need to be retested six weeks after they have stopped breastfeeding.

13.3 Community feedback meetings

Depending on the length of time a programme is in a particular area, there may be a need for periodic evaluation of service uptake, household coverage, security, and confidentiality. Programme managers should plan to meet with stakeholders and community leaders quarterly to discuss programme progress and issues. Before leaving an area, community leaders and members should be formally presented with the feedback of the programme’s achievements, lessons learned, best practices, and constraints. This meeting should include an opportunity for community members to present data from follow-up interviews on community satisfaction and raise any concerns or issues about the HBHTC process. By involving and empowering the community, they are more likely to take responsibility for requesting HBHTC services to return to the area in years to come.

The general WHO website: www.who.int is a good starting point. For WHO normative and practical guidance documents, the following links may be useful:

WHO documents on HIV testing and counselling for children and adolescents

1. *Policy requirements for HIV testing and counselling of infants and young children in health facilities.* http://www.who.int/hiv/pub/paediatric/testing_counselling/en/index.html
2. *Guidance to health workers on disclosure of HIV status to children and their caregivers.* <http://www.who.int/hiv/topics/vct/en/index.html>
3. *WHO recommendations on the diagnosis of HIV infection in infants and children.* <http://www.who.int/hiv/pub/paediatric/diagnosis/en/index.html>
4. *HIV testing for young children. Technical brief.* http://www.who.int/hiv/pub/vct/WHO_HIV_11_02/en/index.html
5. *Adolescent job aid. A handy desk reference tool for primary level health workers.* http://www.who.int/maternal_child_adolescent/documents/9789241599962/en/index.html
6. *Orientation programme on adolescent health for health-care providers.* http://www.who.int/maternal_child_adolescent/documents/9241591269/en/index.html

WHO documents on HTC quality and M&E

1. *Handbook for improving HIV testing and counselling services.* <http://www.who.int/hiv/pub/vct/9789241500463/en/index.html>
2. *Laboratory quality management system: handbook.* <http://www.who.int/ihr/publications/lqms/en/index.html>
3. *Guide for monitoring and evaluating national HIV testing and counselling (HTC) programmes.* <http://www.who.int/hiv/pub/vct/9789241501347/en>
4. *Delivering HIV test results and messages for re-testing and counselling in adults.* http://whqlibdoc.who.int/publications/2010/9789241599115_eng.pdf

For practical documents on home-based and couples HTC, and useful checklists, tools and job aids specifically for HBHTC that have been developed by established programmes:

1. AIDSTAR-One website: www.aidstar-one.com and within this website: Home-based counseling and testing: program components and approaches: http://www.aidstar-one.com/focus_areas/hiv_testing_and_counseling/resources/technical_consultation_materials/HBHTC
2. Couples HIV counseling and testing intervention and training curriculum available from <http://www.cdc.gov/globalaids/resources/prevention/chct-training.html>

The following are free online tools and software that have been adapted by HBHTC programmes:

1. For electronic data capture: Partners in Health: <http://www.pih.org/pages/electronic-medical-records>
2. For mapping some programmes have used Google Earth where the resolution of the particular area they are mapping is high enough for programme needs: Google Earth: <http://www.google.com/earth/download/ge/agree.html>
3. For human resource management useful tools and checklists may be found at: Positive Practice Environment campaign: <http://www.ppecampaign.org> and the WHO Health Workforce Resource Centre: <http://www.who.int/hrh/resources/en>
4. For gender-based violence and HIV see: *Gender-based violence and HIV: a program guide for integrating gender-based violence prevention and response in PEPFAR programs*. Washington, DC, AIDSTAR-One, 2011. http://www.aidstar-one.com/focus_areas/gender/resources/pepfar_gbv_program_guide

The following screening tools can be adapted to local circumstances:

1. The four-symptom TB screening tool for HIV-positive individuals is available in *Guidelines for intensified tuberculosis case-finding and isoniazid preventive therapy for people living with HIV in resource-constrained settings*. Geneva, World Health Organization, 2011. <http://www.who.int/hiv/pub/tb/9789241500708/en/index.html>
2. Alcohol screening can be guided by *AUDIT - The Alcohol Use Disorders Identification Test: guidelines for use in primary care. Second edition*. Geneva, World Health Organization, 2001. at: http://www.who.int/substance_abuse/publications/alcohol/en/ and
3. An additional alcohol screening tool is the CAGE questionnaire available at: <http://pubs.niaaa.nih.gov/publications/inscage.htm>



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