

7.11.1.4 The Family

People living with HIV will to a large extent be cared for in their homes. Since hospital-based staff will not be available to provide care to such patients on a full-time basis, family members are expected to take over the responsibility of providing care at home. It is envisaged that family members will be the main actors in providing high quality HB-ART services.

When PLHIV are enrolled into the HB-ART programme, they are asked to identify a family member or friend as their daily treatment supporter to help with the daily intake of the drugs.

PLHIV and their treatment supporters are counselled together on important aspects of treatment including lifelong duration of treatment, possible adverse reactions of the drugs and the need for high adherence to the medication. During these 30-40-minute counselling sessions, PLHIV are introduced to their volunteers. Treatment supporters are asked to remind PLHIV to take their medications and document using treatment registers, that the person took their tablets as prescribed. In addition, they are asked to generally support PLHIV in adhering to the treatment. Treatment supporters are also trained and supervised by the volunteers on their weekly home visits.

The family will need to:

- Provide the PLWHIV with adequate balanced diet.
- Prevent transmission of infections e.g. HIV, TB.
- Link with the volunteer for support and referrals.

- Make sure that the PLWHIV takes his/her medication according to prescription.
- Make sure that the PLWHIV keeps his/her clinic appointments and observes appropriate medical advice appropriate.
- Support the PLWHIV in order to avoid risk situations for infections and complications.
- Provide emotional support and spiritual care to the PLWHIV.
- Provide care and support for orphans and vulnerable children

7.11.1.5 The Community

The community plays a supportive role in all aspect of care, treatment and support for PLWHIV and their families. It is the responsibility of the District Health Management Team (DHMT) and relevant health facility leadership to introduce the concept of HB-ART to communities, after which each community should identify their HB-ART needs and develop appropriate plans to address them. However, communities should be guided in the planning by DHMT members or relevant personnel from nearby health care facilities. All along due emphasis should be made to enhance community ownership and effective support for HB-ART services.

For the implementation of HB-ART services, communities should be assisted to:

- Identify specific needs for HB-ART services.
- Identify resource for HB-ART services.
- Make appropriate decisions on health issues.

- Look for local solutions for the prevailing health problems.
- Identify the community HB-ART volunteers to be trained by the clinic nurse at the health center or pharmacy. The number of volunteers to be trained will vary from community to community, depending on the needs and available resources.
- Determine sustainable and appropriate ways to motivate the volunteers.
- Play a role in the identification of PLWHIV to be reached by the service and a system of registering new ones.
- Plan for home visits, community awareness meetings and support for referrals (e.g. transport)
- Plan for on-going community involvement in the improvement and sustainability of services.
- Work towards the reduction and elimination of stigma and discrimination at the community level.



7.11.1.6 Health Care System

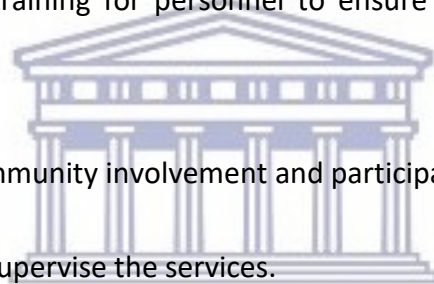
7.11.1.6.1 District Health System

As part of the health sector reform, HB-ART services will be planned to be integrated in the Primary Health Care (PHC) programme.

Therefore, the District Health Management Team (DHMT) will be responsible to:

- Implement the HB-ART policy guidelines.

- Integrate HB-ART activities in the council comprehensive health plans.
- Create awareness in the community of the need for and importance of HB-ART, aiming at their involvement.
- Conduct a needs assessment and plan for HB-ART to be integrated in their health care delivery system.
- Establish an effective networking and referral system for the patients to benefit from a functional continuum of care at facility, community and household level.
- Conduct the required training for personnel to ensure provision of effective HB-ART services in the district.
- Support and ensure community involvement and participation.
- Regularly monitor and supervise the services.
- Provide the necessary equipment, supplies, drugs and transport for HB-ART
- Identify the clinic nurse and pharmacist contact persons for HB-ART and monitor/supervise their work.
- Evaluate the service every two years aiming at its improvements.
- Allocate resources needed for HB-ART delivery in the district.
- Compile and analyse HB-ART data quarterly and annually, submit reports to the region, and give feedback to the CHC and pharmacy.



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- Support activities directed at improving nutritional care and support of PLHIV as explained in 7.10.2.4 below.

7.11.1.6.2 Community Health Centre (CHC)

For the HB-ART programme to be functional, it is vital that good lines of communication are established and maintained between the different levels of patient care. The CHC will be required to make proper diagnoses, initiate the right treatment and provide appropriate counselling services. At the time of leaving the health facility, PLWHIV will be given adequate information to enable the community and volunteers to take over efficiently. PLHIV will take such information to the volunteer. This will ensure the continuum of quality health care from the health care facility to the household. The CHC must have at any one time at least one staff member trained in HB-ART services.

The responsibilities of the CHC will be to:

- Implement the HB-ART policy guidelines.
- Train the community volunteers in their catchment areas.
- Follow up patients referred from other CHC or from other hospitals residing in their catchment areas.
- Supervise the volunteers, at least on one home-visit per week.
- Raise community awareness among leaders on HB-ART programme and mobilise the same to get involved in provision of quality HB-ART in their community and stigma reduction.

- Provide horizontal supervision for the dispensary contact persons.
- Mobilise resources for HB-ART programme
- Keep records for the HB-ART programme.

7.11.2 THE PROCESS OF THE HB-ART MODEL

When setting up a HB-ART programme it is important to ensure that the following, which constitute the processes to implement the HB-ART model are in place.

7.11.2.1 Medication Adherence

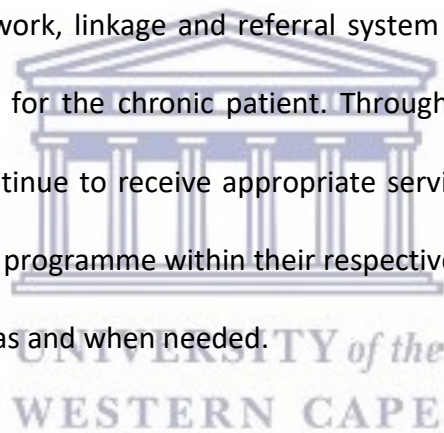
People living with HIV and on life-long medication need support in ensuring that they abide by drug schedules and clinic appointments. A treatment supporter will be required to know the person's prescriptions and clinic visit schedules and constantly remind him/her to adhere to the same. The treatment supporter should also know and be known by members of the ART team at the CHC and the HB-ART volunteers.

7.11.2.2 HB-ART Eligibility and Functional Referral System

PLWHIV classified as stable on ART are recruited from the community health centre for down-referral to the HB-ART delivery programme. They are eligible to join the programme if they fulfil the following criteria: are considered stable, meaning that they have been adherent on the same ART regimen for >12 months, had two consecutive undetectable (<400 copies/mL) viral loads and did not have any other medical conditions requiring more frequent follow-up, are

resident in the local area, aged 18 years and older, willing to accept daily treatment support by family or friends and willing to be visited by a trained community volunteer once a week. PLHIV will be identified through the local clinic where they are enrolled in an ART programme. Individual PLHIV counselling at the time of referral will describe the benefits of HB-ART model, the visit schedule and how to access clinical care outside of HB-ART visits as necessary.

In terms of the referral system, HB-ART services are to be perceived as part of the continuum of care, which involves the provision of support at different levels. An effective continuum of care requires that a functional network, linkage and referral system is always in place to improve access of appropriate services for the chronic patient. Through an effective and functioning referral system, PLHIV will continue to receive appropriate services from health care facilities after registering to the HB-ART programme within their respective communities and homes and can revert back to facility care as and when needed.



The proposed referral mechanism for PLWHIV will be developed and implemented within the district health care referral system. The health referral system in districts has four levels that can be fully utilised. These include (i) the Community (ii) the Pharmacy, (iii) the Health Centre, and (iv) the District hospital. PLHIV will be referred through these levels in an ascending order and vice versa. However, the referral system will provide for a bypassing of these levels to higher levels in emergency conditions and accidents. The model should aim to assist the districts to set up a functional cost-effective referral flow within the existing health care

delivery system for PLHIV. Referral of HB-ART persons will depend on their needs and the support system existing in a particular community. All other support services that are available for PLWHIV should be known at all levels and be part of the referral system. These may include spiritual, legal, income generating activities, nutritional, and socio-economic support.

7.11.2.3 Emotional and Psychological Support

PLWHIV suffer from chronic illness and usually have a lot of fear and worries. Volunteers therefore provide emotional and psychological support and help them to ventilate and deal with their condition. The volunteer will refer the PLHIV if necessary.

7.11.2.4 Nutrition Guidance and Food Support

Nutrition Care and Support for PLHIV is one of the crucial components of the comprehensive care package of the HB-ART care programme. HIV and Aids affects nutrition by decreasing food consumption, impairing nutrient absorption, and causing changes in metabolism. Improving and maintaining good nutrition may prolong life and delay HIV disease progression. In order to improve nutrition for PLHIV, the Department of Health should play a role in facilitating discussions with partners and other stakeholders at all levels for developing mechanisms to address issues of food security and food acquisition for the most needy. The government and particularly the Department of Health in collaboration with district councils, partners and stakeholders at various levels have the responsibility of carrying out measures aimed at improving the nutritional wellbeing of PLHIV. These measures among other things include:

- Training of volunteers and other care providers on nutritional issues related to HIV and Aids. These include food, water safety and hygiene; dietary management of HIV and AIDS related complications, and food and drug interactions.
- Provision of nutrition education and counselling for PLHIV and families including nutrition for special groups such as children born to HIV positive mothers, orphans and vulnerable children.
- Monitoring of nutritional status of PLHIV and needs for their households.
- Mobilisation of communities and partners for food provision for PLHIV and their families.
- Mobilisation of resources for improving household food security for PLHIV.
- Integration of actions aimed at improving household food security into development plans.
- Making food an essential element in care and support for PLHIV on ART.
- Insuring that food security for households with PLHIV and their families is a permanent agenda for the local Ward Development Committee meeting.

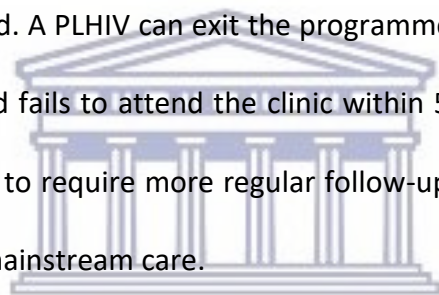


7.11.2.5 Participation of People living with HIV (PLHIV)

Active involvement of people living with HIV (PLHIV) is essential in disease management at all levels. PLHIV will develop knowledge and self-care and treatment skills that will optimize their role and benefit treatment outcomes over their lifespan. The involvement of one or more significant people in their lives e.g. spouse, life partner, family member is important to assist

the volunteers and observe timely drug intake, maintain appointment schedules, and identify side effects early. Every PLHIV should be encouraged to identify a treatment supporter from within the household to whom they can disclose their HIV status. The volunteer would then counsel the PLHIV along with the treatment supporter whom would serve as support for treatment adherence and/or monitor therapy.

PLHIV must attend blood investigation and clinical consultation sessions as scheduled. A PLHIV can be removed from HB-ART and returned to mainstream care when more intensive clinical or adherence follow-up is required. A PLHIV can exit the programme when he/she not available at home on consecutive visits and fails to attend the clinic within 5 days of each visit. A PLHIV is determined by the clinic nurse to require more regular follow-up and those with elevated viral loads will also be returned to mainstream care.



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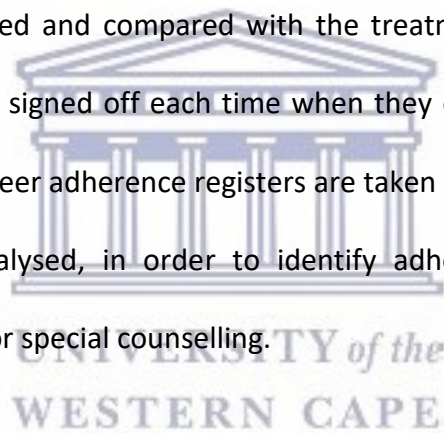
The PLHIV and the providers of HB-ART must work as a team to foster the person's development of self-management skills, to transfer knowledge, and assist in counselling and social services.

7.11.2.6 Record and Reporting System

Home-based (HB) ART data are recorded in a paper register. At each home visit, the weight of each patient and results of the brief symptom screen are recorded. A summary of the HB data aggregated at the level of the HB-ART is completed by the volunteer following each home visit

and monthly reports are compiled for the CHC. Standard individual patient files at the CHC of HB-ART members are only used at the clinical visit. When a patient is down-referred to a HB-ART, a HB-ART number is placed on the CHC patient file so that clinicians could determine where the patient was receiving ART.

Monthly meetings of all volunteers and the clinic nurse will be held where problems are discussed, solutions sought and where the report forms are delivered and checked. The volunteer adherence registers, based on weekly pill counts by the volunteers in the PLHIV homes, are thoroughly reviewed and compared with the treatment information sheets from the treatment supporters who signed off each time when they observed their patients taking the drugs. The reviewed volunteer adherence registers are taken to the health center for record keeping and continuously analysed, in order to identify adherence problems as early as possible, and to target PLHIV for special counselling.



7.11.2.7 Prevention Interventions (e.g. EMTCT, Condom Distribution)

The HB-ART team supported the by the District Health System and Community Health Centre must include collaboration among communities, public health and clinical sectors to rapidly address new HIV diagnoses. Mass media campaigns, behavioural interventions, medication reminders, and other strategies will be implemented to encourage people to adopt and maintain risk reduction behaviours including condom use and adherence to HIV treatment. The HB-ART programme will use partner notification services as a component of early intervention

services, as well as other effective HIV prevention programmes, including condom dispensing and community-based HIV testing. Education, training, and capacity building for HB-ART team members are also important activities that can improve the ability of team and systems and community-based organisations to provide high quality HIV prevention, care, and treatment services efficiently and effectively. Volunteers will encourage pregnant women to seek antenatal care early in their pregnancies.

7.11.3 THE OUTCOMES OF THE HB-ART MODEL

Patient's outcomes are assessed at 3-6 monthly intervals depending on their immunological status and general condition. The outcome measures that are used to monitor PLWHIV on HB-ART are:

7.11.3.1 Viral (Load) Rebound

The management of PLWHIV has changed substantially with the availability of newer, more potent, and less toxic ARV drugs. In SA, ART is now recommended for everyone with HIV regardless of their viral load or CD4 count (Adult antiretroviral therapy guidelines, 2017).

Viral load is a marker of response to ART. A person's pre-ART viral load level and the magnitude of viral load decline after initiation of ART provide prognostic information about the probability of disease progression (Murray et al., 1999). The key goal of ART is to achieve and maintain viral suppression. Thus, the most important use of the viral load is to monitor the effectiveness of therapy after initiation of ART.

In PLWHIV on ART, viral load is measured every 6 months. However, for adherent patients with consistently suppressed viral load and stable immunologic status for more than 2 years, monitoring can be extended to 12-monthly intervals.

For this study, viral rebound is defined as having a single viral load measure of >1000 copies/ml after suppression, six months after enrolling on the HB-ART programme.

7.11.3.2 CD4 Count Monitoring

The CD4 count is used to assess a person's immunological response to ART. For most persons on therapy, an adequate response is defined as an increase in CD4 count in the range of 50 to 150 cells/mm³ during the first year of ART, generally with an accelerated response in the first 3 months of treatment. Subsequent increases average approximately 50 to 100 cells/mm³ per year until a steady state level is reached (Kaufmann, et al. 2003).

CD4 cell count is measured:

- Every 3-6 months during first 2 years of ART, or if viremia develops while the person is on ART, or if CD4 count is <300 cells/ mm³.
- Every 12 months after 2 Years on ART with consistently suppressed viral load or CD4 count of 300–500 cells/mm³ or CD4 monitoring (optional).

The CD4 count response to ART varies widely, but a poor CD4 response in a patient with viral suppression is rarely an indication for modifying an ARV regimen. For this study, an increase in CD4 cell count six months after enrolling on the HB-ART programme with viral rebound will indicate the need for clinical consultation with the clinic.

7.10.3.4 Loss to Follow Up (LTFU)

Loss to follow up (LTFU) is defined as having no contact with the HB-ART programme or the CHC in the first 4 weeks of enrolling in the HB-ART programme. For PLWHIV to be defined as LTFU, the date is the last home visit date or scheduled appointment with CHC.

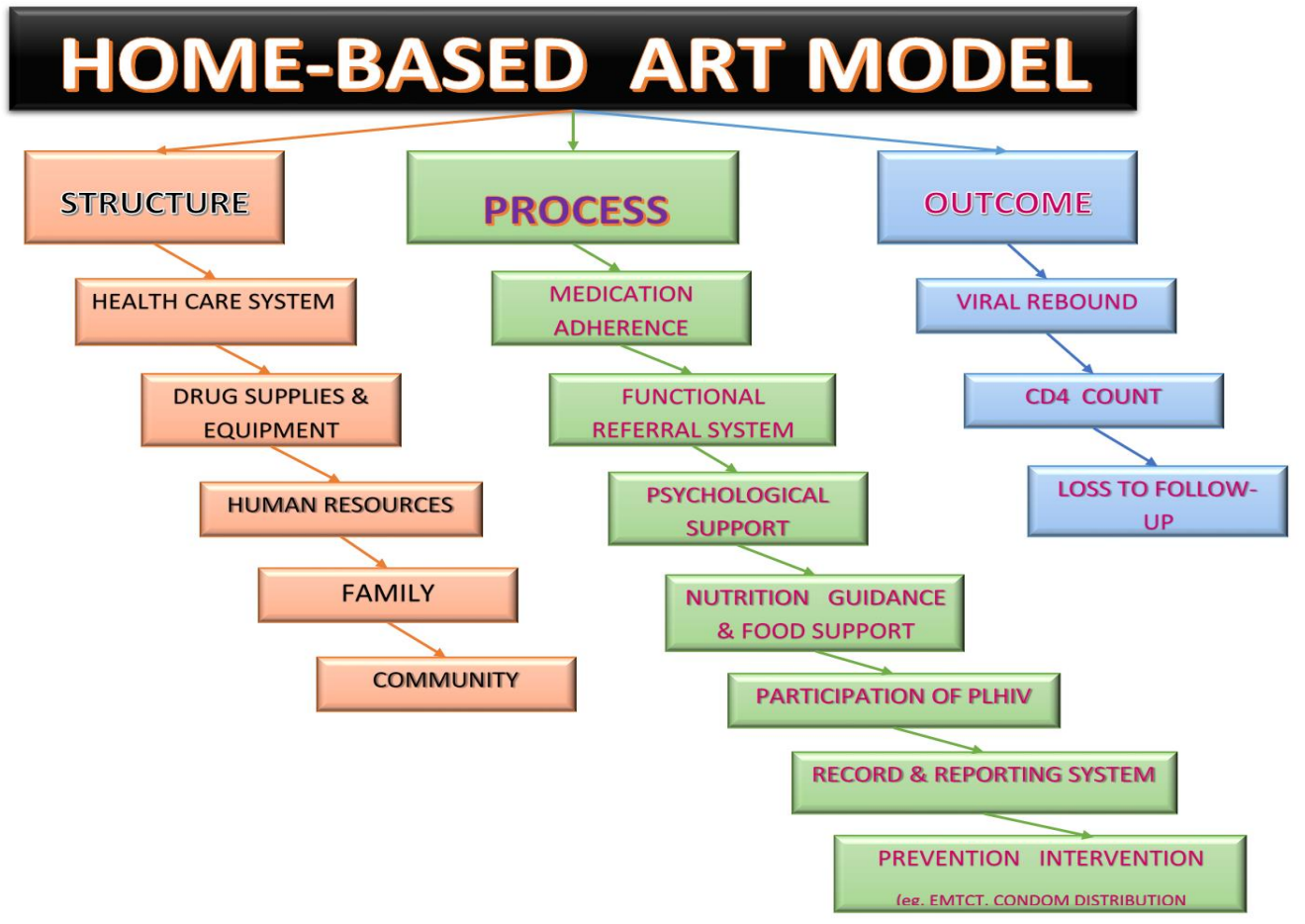


Figure 7-2: Home-Based ART Model

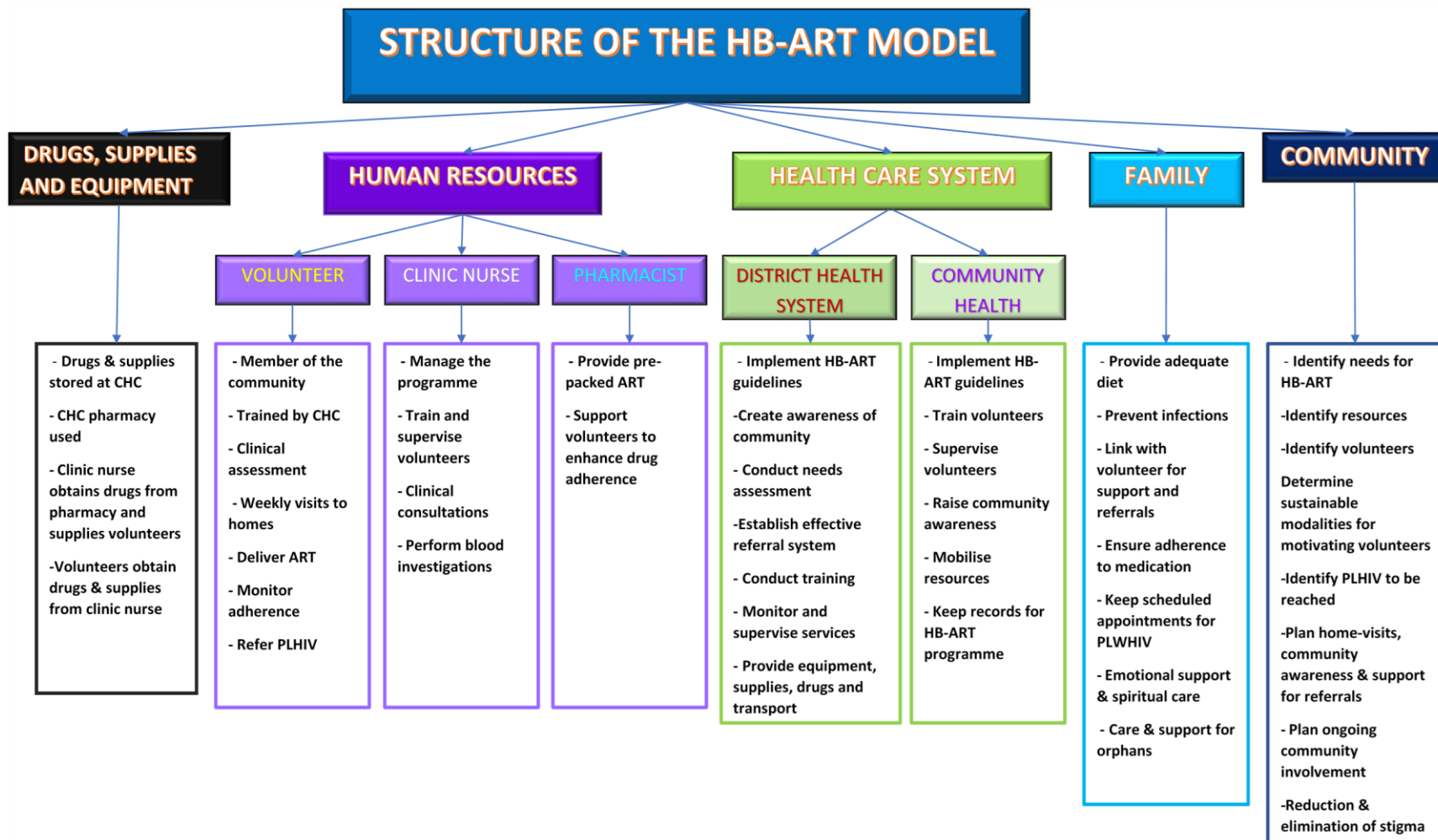


Figure 7-3: Structure of the Home-Based ART Model

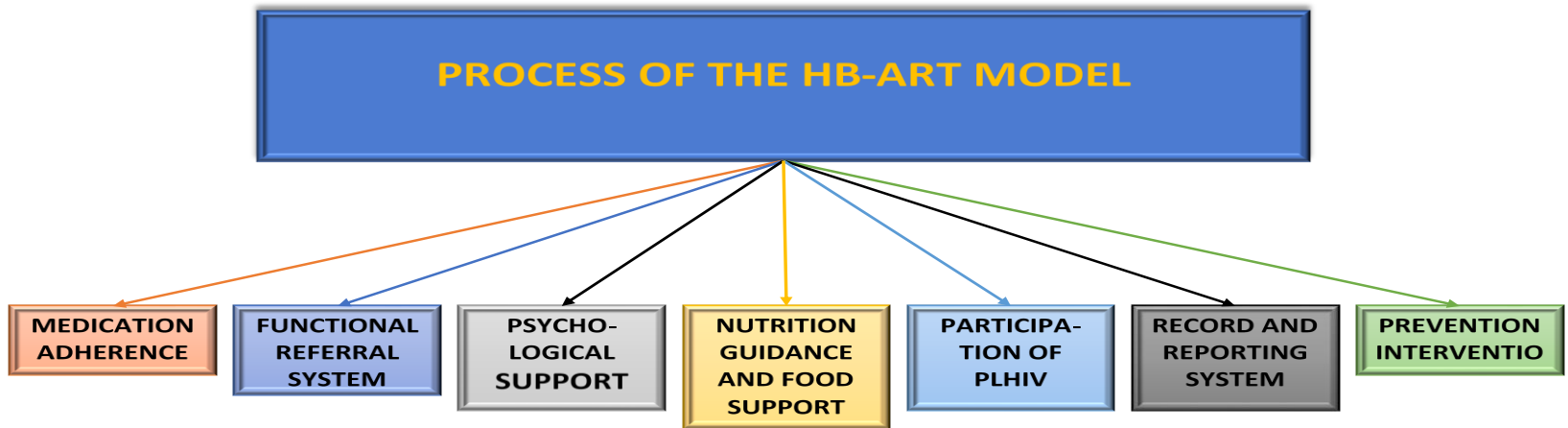


Figure 7-4 Processes of the HB-ART Model

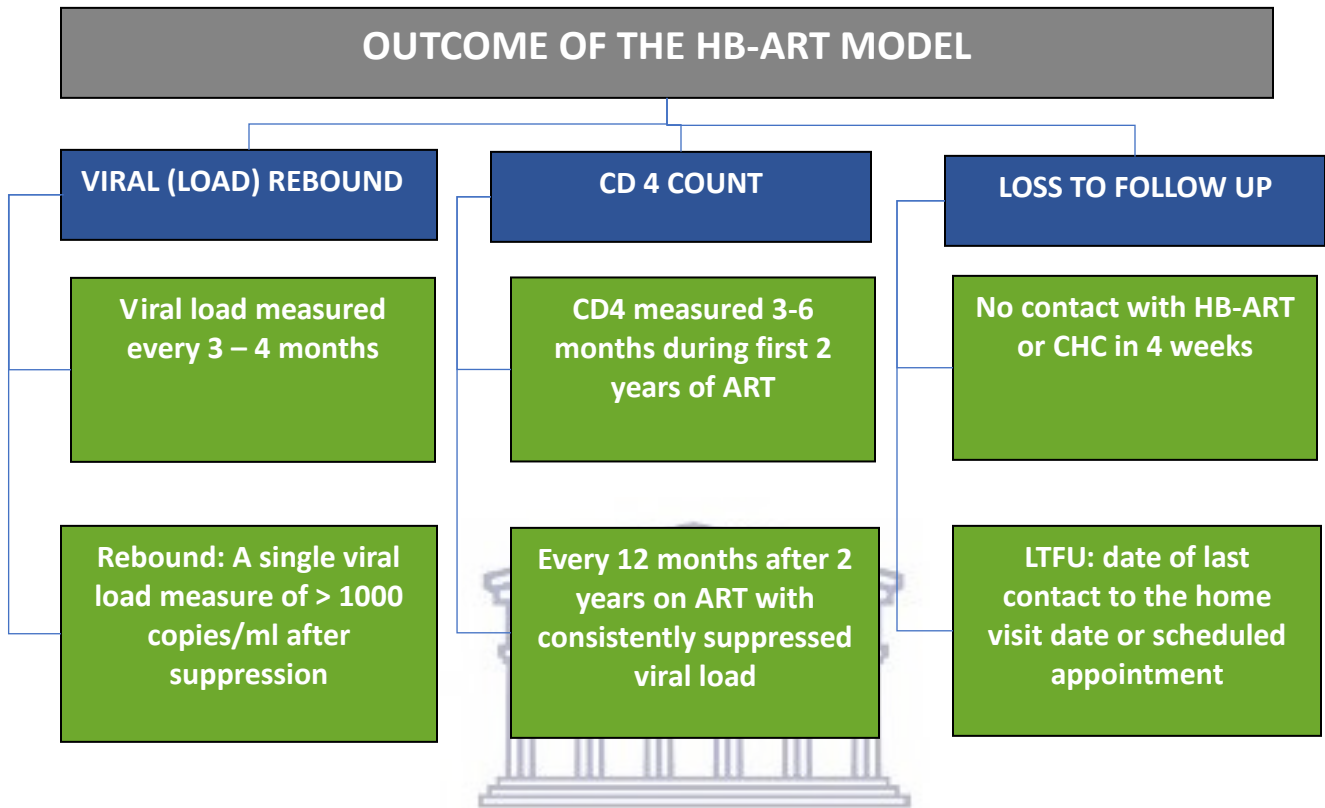


Figure 7-5 Outcome of the HB-ART Model

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Figure 7-5 below illustrates the components of the HB-ART model. The basic aim of the HB-ART service is to provide a continuum of care for PLHIV from health facilities to their homes using existing resources within the current delivery system and communities. The HB-ART programme includes the following components:

Physical Care: Volunteers ensure that PLWHIV receive adequate attention in the following areas:

- Treatment of opportunistic infections.
- Identification and monitoring of ART side effects and adherence.
- Nutritional care and support.
- Hygiene – the patient and family members should be educated on the practice of basic hygiene e.g. oral, skin, hair and environmental care.
- Exercise – patients need to exercise regularly. If they are too weak, family members should assist patients to do passive exercises for body movement and to enhance blood circulation.

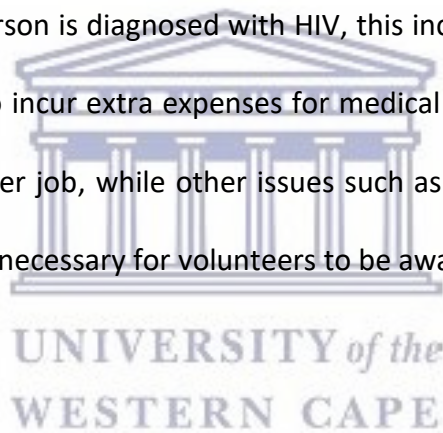
Social support: PLWHIV usually suffer from loneliness and neglect. It is therefore important for volunteers to interact and provide support when necessary. PLHIV should be included in decisions regarding their care. PLHIV should also be involved in recreational activities as appropriate and support or self-help groups in the community should be identified for PLHIV to interact with.

Emotional support: Patients suffering from chronic illness usually have a lot of fear and worries. Volunteers will therefore provide emotional support and help them to ventilate and deal with their concerns.

Spiritual support: Addressing spiritual needs is an important aspect in any type of care. PLHIV often lose hope and the desire to continue living. This can be relieved through reassurance and spiritual care. Spiritual needs of PLHIV must be determined and attended to appropriately.

Legal support: PLHIV will should be informed about how to get legal aid that they need especially in areas such as inheritance and human rights issues.

Economic support: When a person is diagnosed with HIV, this increases the financial burden to the family, as the family has to incur extra expenses for medical care. An HIV positive infected breadwinner may lose his or her job, while other issues such as children's education and rent require money. Therefore, it is necessary for volunteers to be aware of support networks where such issues may be addressed.



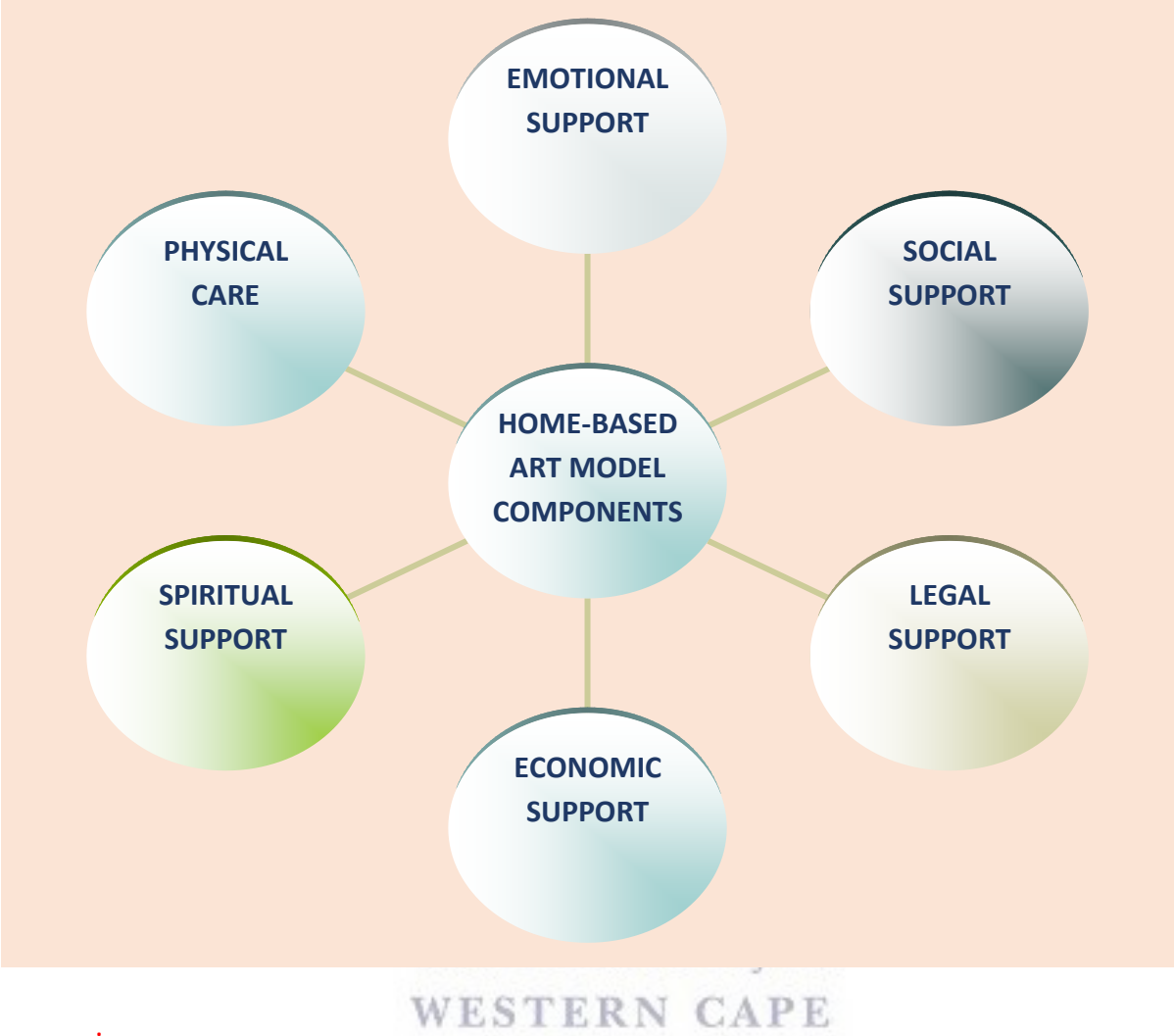


Figure 7-6: Components of Home-based ART Model

7.12 EVALUATION OF THE MODEL

The criteria described by Chinn and Kramer (2008:246) were used to evaluate the model. The questions for consideration under the specific criteria for evaluation are listed below:

7.12.1 CLARITY

Clarity has to do with the transparency of meaning of ideas used in the model.

7.12.1.1 Semantic Clarity

The definition of concepts in this model was an important aspect of semantic clarity because it helped to establish the empirical meaning of concepts in this model. The concepts in this study were clearly defined. Definitions reflected both general and specific traits. This means that concepts were not defined too specifically but generally in the sense that they provided clear and accurate guidance for the intended empiric indicators for a concept. No words with similar meanings were used to present the central concepts of the model. Tables and diagrams were used to make the model clearer.

7.12.1.2 Semantic Consistency

Semantic consistency means that the concepts of this model were used in ways that were consistent with their definition. No other meanings for definitions within this model were implied. There was a consistent use of basic assumptions within this model. The model's

purpose, definitions of concepts and relationships were consistent with the stated assumptions of the model. The purpose of this model was consistent with all other components.

7.12.1.3 Structural Clarity

Structural clarity refers to how understandable the connections and reasoning within the model are. In this model concepts were interconnected and organised into a coherent whole. The model flows; in other words, there are no structural elements that are not related.

7.12.1.4 Structural Consistency

Structural consistency is related to the use of different structural forms within the model. Consistency throughout the model concerning structure was reflected in the relationships. From the above and from the discussion the researcher concluded that this model was clear. Definitions in this model have been defined and linked in such a way that their relationships were understandable. Definitions and their structural forms were used consistently and there was a consistent evaluation of semantic as well as structural clarity.

7.12.2 SIMPLICITY

The simplicity of the model becomes evident through the minimum elements in each category. The researcher concludes from discussion that this model is not complex. Complexity implies that there are many theoretical relationships between and among numerous concepts. The

core concepts support the purpose of this model and are self-evident. The meanings of the concepts have been retained by not introducing irrelevant concepts.

7.12.3. GENERALITY

The generality of a theory refers to its breadth of scope. A general model can be applied to a broad array of situations. The scope of concepts and purposes within this model provided clues to its generality. The model was intended for the home-based ART provision for HIV patients. The model has the capacity for broader generalisation. It can be used in the application of ART provision in general.



7.12.4. ACCESSIBILITY

Accessibility refers to how attainable the projected outcomes of the model are. Concepts can be made empirically accessible through generating and testing relationships, deliberative application of the model and clarifying conceptual meaning. The model that had been developed through this research is useful and should promote home-based ART provision for HIV patients who have limited access to clinic-based HIV care. It was the researcher's belief and it became clear from the discussions that the model will definitely advance ART delivery at patients' homes.

7.12.5. PARSIMONIOUSNESS

The importance of this model is closely tied to the idea of its clinical significance or practical value. The importance of the model has to do with its applicability and practical value. This model is future directed as previously mentioned and it is also practical so that it can be evaluated. The researcher concludes from discussions that this model is needed and will be of great value in practice in order to assist HIV patients to receive ART from their homes as well as empowering them through self-management of HIV infection as a chronic condition.

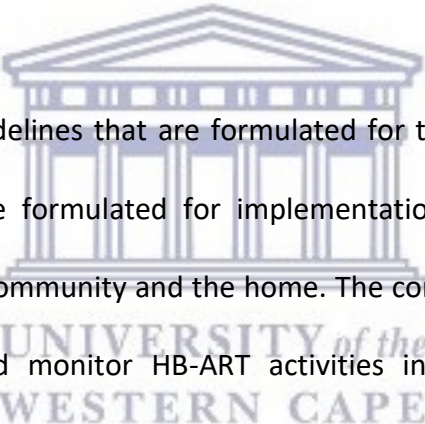


Table 7-5 below shows the guidelines that are formulated for the implementation of the HB-ART model. The guidelines are formulated for implementation at different levels; i.e. the community health center, the community and the home. The community health center has the responsibility to supervise and monitor HB-ART activities in their catchment areas. The community is assisted by the community health center to perform HB-ART activities and give feedback to community leadership and volunteers. Before assuming the responsibility, the family must be counselled about the patient's illness and informed about the cause, signs and symptoms, treatment, possible complications and prevention. This should be done at the health facility where the diagnosis is made before referral for HB-ART.

Table 7-8 Guidelines for operationalisation of the model

THE FOLLOWING GUIDELINES ARE FORMULATED FOR THE IMPLEMENTATION OF THE HB-ART MODEL:

COMMUNITY HEALTH CENTRE

(CLINIC) LEVEL

Supervise and monitor HB-ART activities in their catchment areas:

- Supervise visits to all HB-ART providers in their catchment areas.
- Monitor adherence to services standards and policies.
- Compile monitoring and evaluation reports for DoH.
- Supervise HB-ART providers weekly.
- Compile reports monthly.
- Maintain contact with PLHIV at health center regularly (3-6 months).
- Give feedback to HB-ART providers and community leaders.

COMMUNITY LEVEL

For performance-based implementation of HB-ART services, communities should be assisted to:

- Identify specific needs for HB-ART services.
- Identify resource for HB-ART services.
- Identify the community HB-ART provider(s) to be trained by the contact persons at the health centre or dispensary. The number of HB-ART providers to be trained will vary from community to community, depending on the needs and available resources.

- Determine sustainable and appropriate modalities to motivate the community HB-ART providers.
- Plan for home visits, community awareness meetings and support for referrals.
- Plan for on-going community involvement in the improvement and sustainability of the service.
- Work towards the reduction and/or elimination of stigma and discrimination at the community level.

With the person's consent their family should be counselled about the patient's illness and informed about the cause, signs and symptoms, treatment, possible complications and prevention. This should be done at the health facility where the diagnosis is made before referral for HB-ART.

The family needs to:

- Provide the patient with an adequate balanced diet.
- Prevent complications.
- Prevent transmission of infections e.g. HIV, TB.
- Link with the community HB-ART provider for support and referrals.
- Make sure that the PLHIV takes his/her medication according to the prescription.
- Make sure that the patient keeps his/her clinic appointments and observes medical advice appropriate for his/her condition.
- Support the PLHIV in order to avoid risk situations for infections and complications.

- Provide emotional support and spiritual care to the PLHIV.

HOME LEVEL

The family needs to:

- Strengthen family ties/attachments.
- Help the family to accept the person's condition.
- Provide opportunity to learn about chronic illnesses.
- Make it easier for family members who provide care to PLWHIV to attend to other responsibilities.

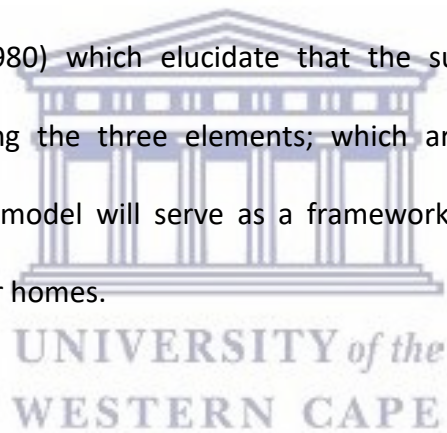
THE TREATMENT SUPPORTER

- The family will be required to choose among themselves at least one person who will be trained on specific elements of care for the PLHIV.
- A close family member will be required to know the person's prescriptions and clinic visit schedules and constantly remind him/her to adhere to the same.
- The treatment supporter should also know and be known by members of the clinical care team.

7.13 CHAPTER SUMMARY

In this Section 1 of this chapter, the researcher identified the main concepts using the Delphi technique. The concepts were identified from the conclusion statements derived from Chapter 5 (empirical data) and Chapter 6 (systematic literature review). The identified concepts which form the building blocks of the model for the ART programme were classified and defined using the survey list of Dickoff, et al. (1968).

In Section 2, the researcher developed the Home-Based ART (HB-ART) model using the Donabedian model (1980) which elucidate that the success of any programmes is dependent on exploring the three elements; which are the structure, process and outcome. The HB-ART model will serve as a framework for ART delivery to care and support PLWHIV in their homes.



CHAPTER 8: EVALUATION, LIMITATIONS, RECOMMENDATIONS AND CONCLUSIONS OF THE STUDY

8.1 INTRODUCTION

The chapter provides a reflective evaluation of the research process, after which the recommendations, limitations and conclusion of the study are provided. The evaluation will focus on lessons learned from conducting the study. The areas that form part of this evaluation include: the research approach, design, methods and procedures.

8.2 THE RATIONALE FOR EVALUATING STUDY

It is the responsibility of every researcher to ensure that the research findings are credible and acceptable. This evaluation of the study is intended to provide critical reflection on the research process as undertaken both as researcher and particularly on the model development process. The evaluation is reflective with the intention to review the challenges, problems, and potential treats to the empirical process and to provide alerts on issues to be avoided in future studies.

8.3 EVALUATION OF THE STUDY

The five standards of evaluation of the empirical studies according to Burns and Grove (2009) were used. The evaluation tool is methodological and systematic arranged in a manner that allowed the researcher to objectively examine the study. The five standards of the tool include the following criteria: (i) descriptive vividness, (ii) methodological congruence, (iii) analytic and interpretive congruence, (iv) philosophical or theoretical connectedness, and lastly, (v) heuristic relevance.

Table 8.1 below is provided to show how the five standards of Burns and Grove (2009) were used in this evaluation.

Table 8.1 A synopsis of the evaluation of the study according to Burns & Grove (2009)

CRITERIA AND GUIDELINES FOR EVALUATION AND EVALUATOR COMMENTS:
<p>STANDARD #1: DESCRIPTIVE VIVIDNESS:</p> <p>(a). The significance of the study was clearly described, giving a wholistic perspective on how the ART programme was implemented as presented in Chapter 1 under Section 1.5.</p> <p>(b). The purpose and objectives of the study was described in detail and supporting arguments provided to support the need and the aim of the study. These arguments were provided under 'Problem statement' in Chapter 1 under Section 1.3 of the study to show how they form basis on which the research question was founded.</p> <p>(c). The feedback from the promotor the study assisted in improving these arguments at proposal stage which was continued through-out the different phases and stages of the research process, including interpretation of the analysed data and report writing. The arguments were refined</p>

accordingly to attain vividness to the researcher and readers with the aim of ensuring the credibility of the study process.

STANDARD #2: METHODOLOGICAL CONGRUENCE

Substandard #2.1 Adequate Documentation of the Participants

(a). The participants were described in Chapter 7 under 7.2.1. The experience of participant in the ART programme was required to give the information that was intended to respond to the study question. This has contributed to the rich description of the data and provided the evidence base for the model development.

(b). Purposive sampling was used as a scientific criterion to select the district and facilities with ART programmes for Phase 1 of this study. This meant that all the participating districts and ART facilities were selected on the similar basis which was the provision of HIV services to people living with HIV.

(c). The challenge is whether the findings from this research can be generalised to other settings. The detailed description of the setting was provided in Chapter 3 under Section 3.3 Study setting of Phase 1. The review of studies which implemented ART models in SA in Phase 2 found that in general the ART delivery models could be replicated in other settings with similar characteristics in SA. The readers, researchers and anyone who wants to use the Delphi technique to develop a model should take the risk and work out the generalisability to their context.

Substandard #2.2 Careful Attention to the Procedural Approach

(d). The assumptions of Phase 3 of the study were identified by the researcher as presented in Chapter 7 under Section 7.7 which addressed ART delivery assumptions.

(e). The relationship between the participants and the researcher was positive as this was confirmed by the turnover of participants for the Delphi process in Chapter 7.

(f). The research questions and statement questions were asked in a manner that enhanced the

inquiry by obtaining the required answers for Phase 3 the research question. The nature of the phenomenon under inquiry encouraged participants to express their knowledge and understanding regarding the delivery of ART.

(g). Data collection process and methods were described sufficiently as discussed in Chapters 3, 6 and 7 i.e. Phases 1, 2 and 3 respectively

Substandard #2.3 Adherence to Ethical Standards

This standard address ethical requirements to be met in scientific studies.

(h). The participants were informed that they could withdraw from participation at any time if they felt like doing so. The participants were protected from potential emotional and psychological harm by not calling them with their real names. Electronic files were encrypted with password to protect data and confidentiality of the participants. Hard copy data-files were locked up of in a cupboard. These records will be kept for five (5) years after the study was published then they will be destroyed or discarded.

(i). Participants signed informed consents before data was collected as an ethical measure and principle to avoid coercion to participation. Permission to conduct the study was sought by obtaining institutional consents from the Faculty and Senate Research Committees prior to data collection.

(j). Scientific honesty was discussed in depth tin Chapter One under Section 1.7.6 to show how the study and researcher's integrity were maintained. The Code of Ethics by Beauchamp and Childress (2009) was used the researcher conducted that study in an ethically sound manner. Furthermore, ethical principles guided the researcher's activities and interventions as safe guarding participants were informed verbally and in writing about the interest of the participants telling them about their rights for participate and to withdraw without providing justification.

Substandard #2.4 Auditability

(k). The referencing system was used to acknowledge the sources and to avoid plagiarism. This was also to ensure that the arguments were with acceptable standard of scientific research and nature of the phenomenon under inquiry. The empirical excerpts provided a rich in support of the findings of the study as the transcripts were handy in yielding thick descriptive data that showed how the participants perceived the phenomenon of ART delivery and HIV services to people living with HIV.

(l). The processes that guided decisions in identifying, describing, and analysing the core concepts and conclusion and relational statements provide an audit trail used in the process of developing the home-based ART delivery model for people living with HIV. Appendices which are provided at the back of this report are guarantees of traceable research process, hence they can be used to affirm existence of specific research activities.

STANDARD #3: ANALYTICAL AND INTERPRETATIVE PRECISENESS

(a) The inductive and deductive processes were used to develop the categories and study findings on which the bigger picture of the implementation of the ART programme. Thereby, giving clarity on abstraction and inferred notions on the phenomenon under study.

(b). Member checking was used to validate the results from the empirical data before the findings could be used to inform the developed model.

(c). The independent reviewer analysed the data concurrent with the primary researcher in Chapter 6. The differences were reconciled successfully as these were minimal and insignificant.

STANDARD #4: PHILOSOPHICAL OR THEORETICAL CONNECTEDNESS

(a). The connectedness between philosophical and theoretical aspects of the study was established as early as in the proposal stage where assumptions of the researcher were presented

and the Donabedian Model of programme evaluation was adopted. Furthermore, these models also relate to the developed model of home-based ART delivery.

(b). The conclusion statements and related statement are connected to the phenomenon of ART delivery as known to the participants. Which showed the importance of ART provision and the conditions under which HIV services are provided.

(c). The philosophical and theoretical standpoints adopted in this study described and affirmed in Chapter 7 Sections 7.10 the context of the model and 7.12 evaluation of the model using the Donabedian Model (1980) and Chinn and Kramer (2011) criteria respectively

STANDARD #5: HEURISTIC RELEVANCE

Substandard #5.1 Intuitive Recognition

The use of the qualitative approach for the Delphi study promoted implementation of the emic view principle when collecting the data. This view was accepted based on its relevant perspective to collect and obtain rich from participants own voice. The emic view in data collection did not only ensure that the findings of the study were a true reflection of the participants and thus acceptable, but more importantly the participant identify with the phenomenon being reported; because the participants' experiences were used to develop and describe the model for teaching-learning of spiritual care in nursing which specify the goal activity with the context of SA in relation to nursing education, practice, and research.

Substandard #5.2 Relationship to the Existing Body of Knowledge

This section provide evaluation on the following: (i) examination of existing body of knowledge and differences of conducted studies, (ii) the contribution made by this study to existing body of knowledge.

(i) EXAMINATION OF EXISTING BODY OF KNOWLEDGE:

The dearth of contextual-based scientific studies in analysing the implementation of the ART programme in KwaZulu-Natal, SA, provided an opportunity to conduct the current study.

The unique knowledge of the study presented new insights as stated below. The problem statement presented the comprehensive gap, omissions and inconsistencies that exist in the implementation of ART programme and existing models of ART delivery.

(ii) CONTRIBUTION OF THE STUDY TO EXISTING BODY OF KNOWLEDGE:

The ultimate aim of a doctorate is to contribute to the body of science of the discipline. Throughout the study, the researcher was intensely aware of this. It was accomplished by creating new knowledge through in depth analysis, emerging new knowledge, new thoughts and new insights obtained from the empirical data, systematic review of existing ART models and the Delphi technique. The empiric data was used to analyse the ART programme using the Donabedian framework (Donabedian, 1980).

Substandard #5.3 Applicability to ART delivery and Research

(a). The findings of the current study have immediate relevance to the understanding of the implementation of the ART programme in KwaZulu-Natal and existing ART models in SA.

The discussion that is provided on the limitations and recommendation thereof, of the study connects the findings of the current study with the ART provision and research (current and future).

(b). The findings of the current study are valid as long as they are acceptable to the participants who contributed to its generation, however, on the other hand it is equally acceptable that this developed model may not hold the truth to the future generations who may consider the developed model as futile.

(c). Suggestions towards this evaluation standard is provided later in this chapter under the recommendation section.

8.4 LIMITATIONS OF THE STUDY

The limitations that relate to technical aspects were insignificant and managed successfully as the study progressed. The technical limitations that were experienced related to time factor and sample size. Each of these factors are discussed below.

8.4.1 Limitations Related to Time Factor:

Time factor affected phase 3 of the study process. The Delphi participants were expected to return their responses in 2 weeks for each of the 3 rounds. The 3 rounds proved to be time consuming for some participants and there were delays which halted the study process to a certain extent.



8.4.2 Limitations Related to the Sample Size

The study did not include sample size determination as this was not appropriate for the research questions for this study. The limitation of the review of existing ART models to South Africa only reduced the ability of this study to review other studies outside SA and increase the knowledge base. For the Delphi study, the response was positive however few participants did not respond to the researcher's request which could have increased the reliability of the study had more participants agreed to take part in the study. However, with the number of ten participants, the reliability was achieved as stated in the literature.

8.5 RECOMMENDATIONS OF THE STUDY

The recommendations draw from the results of the study.

Phase 1:

Recommendations to policy-makers:

1. The physical outline of ART facilities needs to be designed to allow adequate seating for PLHIV and receiving HIV services.
2. The ART facilities need to address structural, administrative, and procurement problems which hinder the availability of essential drugs to treat PLHIV.

Recommendations for further research:

3. Further research is needed to analyse the implementation and use of guidelines, policies and strategies that were developed for the multiple areas of care and support for HIV services.
4. Further research is needed into the use of laboratory services by the ART programme.
5. Further investigation into the accuracy of routine monitoring data is needed to ensure that interventions to address the HIV epidemic are well planned, targeted and appropriately funded based on the availability of accurate and reliable information.

Phase 2:

1. Adherence clubs' model of care should be considered for wide-scale implementation in SA.
2. Additional data and shared experiences from innovative community-based models of care are needed in SA to support long-term ART retention as ART cohorts in resource-limited settings continue to expand and mature.
3. Health system research examining the process issues related to establishing, extending and maintaining the ART delivery models would be beneficial to health policy makers.



Phase 3:

For the Home-based ART model to be accepted as valid, it needs to be tested in practical terms to generate evidence that will support it. Policy makers and programme implementers will only have confidence in this model only if it is supported by evidence.

8.6 CONCLUSIONS OF THE STUDY

This study was motivated by the observation that despite the fact that SA has successfully implemented the largest ART programme in the world in an attempt to meet the needs of PLHIV, the gap still exists in rendering HIV services that truly address the holistic need of PLHIV. Shifting the provision of ART from clinic and hospital-based to the homes of PLHIV can be one way to promote and optimise health, particularly in response to HIV. In view

of the study findings a need for the home-based ART delivery model in SA and KZN in particular is acknowledged. Policy makers and ART programme implementers should acknowledge that providing HIV services in the immediate environment of PLHIV has benefits as proven by other implemented community-based ART models. The findings of this research therefore make a unique contribution to the existing body of ART programme implementation and the provision of HIV services to PLHIV.

8.7 SUMMARY OF THE CHAPTER

This chapter addressed the evaluation, limitation and recommendation of the study. As laid out in the Table 8.1 the standard of research study evaluation tool by Burns and Grove (2009) was used.



REFERENCES

- Abdool Karim, Q., Abdool Karim, S.S., Frohlich, J.A., et al. (2010). Effectiveness and safety of tenofovir gel, an antiretroviral microbicide, for the prevention of HIV infection in women. *Science*. 2010; 329(5996):1168–1174.
- Abouyannis, M., Menten, J., Kiragga, A., et al. (2011). Development and validation of systems for rational use of viral load testing in adults receiving first-line ART in sub-Saharan Africa. *AIDS*. 2011; 25 (13): 1627-1635.
- Adeniyi, A.L., Oyekamni, A.O. & Tijani, M. O. (2011). *Essentials of business research methods*. Lagos: CSS Bookshop Limited.
- Akinade, E. A. and Owolabi, T. (2009). *Research Methods: A pragmatic approach to social sciences, behavioural sciences and education*. Lagos. Connel Publications.
- Altschuld, J.W. (1993). Delphi Technique. Lecture, evaluation methods: Principles of needs assessment II. The Ohio State University, Columbus.
- Alamo, S.T., Wagner, G.J., Sunday, P., et al. (2012). Electronic medical records and same day patient tracing improves clinic efficiency and adherence to appointments in a community-based HIV/AIDS care program, in Uganda. *AIDS Behav*. 2012; 16(2):368–374.
- Alsallaq, R., Baete, J., Hughes, J., Abu-Raddad, L., Celum, C. & Hallett, T. (2011). Modelling the effectiveness of combination prevention from a house-to-house HIV testing platform in KwaZulu Natal, South Africa. *Sexually Transmitted Infections*. 2011; 87(Suppl 1): A36–A.

Anderson, D.A. & Crowe, S.M. (2011). Garcia M. Point-of-care testing. *Curr HIV/AIDS Rep.* 2011; 8(1):31–37.

Babigumira, J.B., Castelnuovo, B., Stergachis, A., Kiragga, A., Shaefer, P., Lamorde, M., et al. (2011). Cost effectiveness of a pharmacy-only refill program in a large urban HIV/AIDS clinic in Uganda. *PLoS One.* 2011;6(3): e18193.

Baird, S.J., Garfein, R.S., McIntosh, C.T. & Özler, B. (2012). Effect of a cash transfer programme for schooling on prevalence of HIV and herpes simplex type 2 in Malawi: a cluster randomised trial. *The Lancet.* 2012.

Bango, F., Ashmore, J., Wilkinson, L., Cutsem, G. & Cleary, S. (2016). Adherence clubs for long-term provision of anti-retroviral therapy: Cost-effectiveness and access analysis from Khayelitsha, South Africa. *Tropical Medicine & International Health.* 2016.

Banteyerga, H., Kidanu, A & Stillman, K. (2006). The Systemwide Effects of the Global Fund in Ethiopia: Final Study Report. The Partners for Health Reformplus Project, Abt Associates Inc; 2006.

Baral, S., Sifakis, F., Cleghorn, F. & Beyrer, C. (2007). Elevated risk for HIV infection among men who have sex with men in low- and middle-income countries 2000–2006: a systematic review. *PLoS Med.* 2007; 4(12): e339.

Barnighausen, T., Chaiyachati, K., Chimbindi, N., Peoples, A., Haberer, J. & Newell, M.L. (2001). Interventions to increase antiretroviral adherence in sub-Saharan Africa: a systematic review of evaluation studies. *Lancet Infect Dis.* 2011; 11(12):942–951.

Bassett, I.V., Wang, B., Chetty, S., et al. (2009). Loss to care and death before antiretroviral therapy in Durban, South Africa. *J Acquir Immune Defic Syndr.* 2009; 51(2):135–139.

Bastos, J.L., Duquia, R.P., González-Chica, D.A., Mesa, J.M. & Bonamigo, R.R. (2014). Field work I: selecting the instrument for data collection. *An Bras Dermatol.* 2014 Nov-Dec; 89(6): 918–923.

Beauchamp, T.L. & Childress, J.F. (2009). *Principles of biomedical ethics* (6th ed.) New York, NY: Oxford University Press: 38 – 39.

Bemelmans, M., Baert, S., Goemaere, E., Wilkinson, L., Vandendyck, M., Cutsem, G., et al. (2014). Community-supported models of care for people on HIV treatment in sub-Saharan Africa. *Tropical Medicine & International Health.* 2014;19(8):968-77.

Bertrand, J.T., Njeuhmeli, E., Forsythe, S., Mattison, S.K., Mahler, H. & Hankins, C.A. (2011). Voluntary Medical Male Circumcision: A Qualitative Study Exploring the Challenges of Costing Demand Creation in Eastern and Southern Africa. *PLoS One.* 2011; 6(11): e27562.

Beyrer, C., Wirtz, A.L., Baral, S., Peryskina, A. & Sifakis, F. (2010). Epidemiologic links between drug use and HIV epidemics: an international perspective. *J Acquir Immune Defic Syndr.* 2010; (55 Suppl 1): S10–S16.

Beyrer, C., Baral, S., Kerrigan, D., El-Bassel, N., Bekker, L.G. & Celentano, D.D. (2011). Expanding the space: inclusion of most-at-risk populations in HIV prevention, treatment, and care services. *J Acquir Immune Defic Syndr.* 2011; (57 Suppl 2): S96–S99.

Blaizot, S., Huerga, H., Riche, B., Ellman, T., Shroufi, A., Etard, J.F. & Ecochard, R., (2017). Combined interventions to reduce HIV incidence in KwaZulu-Natal: a modelling study. *BMC Infectious Diseases*, 17:522.

Bolarinwa, O.A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*; Volume: 22 Issue: 4; 195-201.

Bowen, G.A. (2009) "Document Analysis as a Qualitative Research Method", *Qualitative Research Journal*, Vol. 9 Issue: 2, pp.27-40, <https://doi.org/10.3316/QRJ0902027>.

Brennan, A.T., Long, L., Maskew, M., et al. (2011). Outcomes of stable HIV-positive patients down-referred from a doctor-managed antiretroviral therapy clinic to a nurse-managed primary health clinic for monitoring and treatment. *Aids*. 2011; 25(16):2027–2036.

Brentlinger, P., Assan, A., Mudender, F., et al. (2010). Task shifting in Mozambique: cross-sectional evaluation of non-physician clinicians' performance in HIV/AIDS care. *Human Resources for Health*. 2010; 8(1):23.

Brink, H.I. (2006). *Fundamentals of research methodology for health care professionals*. 2nd ed. Cape Town: Juta.

Brink, H.I. (2001). *Fundamentals of research methodology for health care professionals*. 4th edition. Cape Town: Juta & Co, Ltd.

Brooks, K. W. (1979). Delphi technique: Expanding applications. *North Central Association Quarterly*, 54 (3), 377-385.

Burns, N. & Grove, S.K. (2009). *The practice of nursing research: conduct, critique and utilization*. 6th ed. St. Louis, Missouri: Saunders Company Elsevier. ISBN no 978-1-4160-61083:

Burtle, D., Welfare, W., Elden, S., et al. (2012). Introduction and evaluation of a 'pre-ART care' service in Swaziland: an operational research study. *BMJ open*. 2012; 2(2).

Burton, J., Darbes, L. & Operario, D. (2010). Couples-Focused Behavioral Interventions for Prevention of HIV: Systematic Review of the State of Evidence. *AIDS and Behavior*. 2010; 14(1):1–10.

Callaghan, M., Ford, N. & Schneider, H. (2010). A systematic review of task- shifting for HIV treatment and care in Africa. *Hum Resour Health*. 2010; 8:8.

Cantrell, R.A., Sinkala, M., Megazinni, K., et al. (2008). A pilot study of food supplementation to improve adherence to antiretroviral therapy among food-insecure adults in Lusaka, Zambia. *J Acquir Immune Defic Syndr*. 2008; 49(2):190–195.

Celum, C. & Baeten, J.M. (2012). Tenofovir-based pre-exposure prophylaxis for HIV prevention: evolving evidence. *Current Opinion in Infectious Diseases*. 2012; 25(1).

Chang L.W., Serwadda, D., Quinn, T.Q., Wawer, M.J., Gray, R.H. and Reynolds S.J. (2013). *Lancet Infect Dis*. 2013 January; 13(1): 65–76.

Chang, L.W., Alamo, S., Guma, S., et al. (2009). Two-year virologic outcomes of an alternative AIDS care model: evaluation of a peer health worker and nurse-staffed community-based program in Uganda. *J Acquir Immune Defic Syndr*. 2009; 50(3):276–282.

Chang, L.W., Kagaayi, J., Nakigozi, G., et al. (2010). Effect of peer health workers on AIDS care in Rakai, Uganda: a cluster-randomized trial. *PLoS One*. 2010; 5(6): e10923.

Chang, L.W. Serwadda, D., Quin, T.C., Wawer, M.J. et al. (2013). Combination implementation for HIV prevention: moving from evidence to population-level impact. *Lancet Infect Dis*. 2013 January; 13(1): 65–76.

Chetty, et al. (2012). A retrospective study of Human Immunodeficiency Virus transmission, mortality and loss to follow-up among infants in the first 18 months of life in a prevention of mother-to-child transmission programme in an urban hospital in KwaZulu-Natal, South Africa. *BMC Pediatrics* 2012, 12:146.

Chinn, P.L. & Kramer, M.K. (2008). *Integrated theory and knowledge development in Nursing* (7th ed). St Louis Missouri 63146: Mosby Elsevier.

Coates, T.J., Richter, L. & Caceres, C. (2008). Behavioural strategies to reduce HIV transmission: how to make them work better. *The Lancet*. 2008; 372(9639):669–684.

Corbett, E.L., Dauya, E., Matambo, R., et al. (2006). Uptake of Workplace HIV Counselling and Testing: A Cluster-Randomised Trial in Zimbabwe.

Cornell, M., Technau, K., Fairall, L., Wood, R., Moultrie, H., van Cutsem, G., Giddy, J., Mohap, L., Eley, B., MacPhail, P., Prozesky, H., Rabie, H., Davies, MA., Maxwell, N. & Boulle, A. (2009). Monitoring the South African National Antiretroviral Treatment Programme, 2003 - 2007: The IeDEA Southern Africa collaboration. *SAMJ*; September 2009, Vol. 99, No. 9.

CRD - Centre for Reviews and Dissemination (2009). *Systematic review; guidance for undertaking reviews in health care [Brochure]*. University of York, 2009.

Creswell, J.W. (2004). Research design, qualitative and quantitative and mixed methods approaches. Thousand Oaks: Sage.

Cyphert, F.R. & Gant, W.L. (1971). The Delphi Technique: A Case Study. Phi Delta Kappan, 52, 272-273.

Custer, R. L., Scarcella, J. A. & Stewart, B. R. (1999). The modified Delphi technique: A rotational modification. Journal of Vocational and Technical Education, 15 (2), 1-10.

Dalkey, N.C., Rourke, D.L., Lewis, R. & Snyder, D. (1972). Studies in the quality of life. Lexington, MA: Lexington Books.



Danel, et al. (2015). A Trial of early antiretrovirals and isoniazid preventive therapy in Africa. The TEMPRANO ANRS 12136 Study Group. N Engl J Med 2015; 373:808-822.

de Bruyn, G., Smith, M.D., Gray, G.E., et al. (2007). Circumcision for prevention against HIV: marked seasonal variation in demand and potential public sector readiness in Soweto, South Africa. Implement Sci. 2007; 2:2.

De Villiers, M., de Villiers, P.J.T. & Kent, A.P. (2005). The Delphi Technique in Health Sciences Education Research. Medical Teacher, 27, 639-643.

De Vos, A.S., Strydom, H., Fouche, C.B. & Delport, C. (2011). Research at a Grassroots for Social Sciences and Human Service profession. (4th ed.). Van Schaick Publishers. Pretoria.

Decroo, T., Telfer, B., Biot, M., et al. (2011). Distribution of antiretroviral treatment through self-forming groups of patients in Tete province, Mozambique. J Acquir Immune Defic Syndr. 2011.

Decroo, T., Rasschaert, F., Telfer, B., Remartinez, D., Laga, M. & Ford, N. (2013). Community-based antiretroviral therapy programs can overcome barriers to retention of patients and decongest health services in sub-Saharan Africa: a systematic review. *Int Health* 2013; 5(3): 169-79.

Deeks, S.G., Lewin, S.R. & Havir, D.V. (2013). The End of AIDS: HIV Infection as a Chronic Disease. *Lancet*. 2013 Nov 2; 382 (9903): 1525 – 1533.

Delbecq, A. L., Van de Ven, A.H. & Gustafson, D.H. (1975). *Group Techniques for Program Planning*. New York: Scott, Foresman and Company.

Denison, J.A., O'Reilly, K.R., Schmid, G.P., Kennedy, C.E. & Sweat, M.D. (2008). HIV voluntary counseling and testing and behavioral risk reduction in developing countries: a meta-analysis, 1990--2005. *AIDS Behav*. 2008; 12(3):363–373.

Department of Health (2003). *Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa*. Pretoria, South Africa.

Department of Health (2004). *National Antiretroviral Treatment Guidelines*. South Africa 2004. Pretoria.

Department of Health (2008). *Progress Report on Declaration of Commitment on HIV and AIDS: Republic of South Africa: Reporting Period: January 2006 - December 2007*.

Department of Health (2011). *National Core Standards – A framework for the assessment of health establishment*. Department of Health, 2011. South Africa.

[URL:<https://www.sancda.org.za/product/national-core-standards-for-health-establishments-in-south-africa-ndoh-2011/>]

Department of Health (2015). Clinical guidelines for the management of HIV and AIDS in Adults and Adolescents. National Department of Health. Pretoria, South Africa.

[URL: www.health.gov.za/index.php/...guidelines/.../230-2015p?...guidelines-2015final]

Department of Health (2016). National strategic plan on HIV, STIs and TB – 2017-2022. National Department of Health. Pretoria, South Africa.

[URL: <https://sanac.org.za/the-national-strategic-plan/>]

Department of Health (2017). Ideal Clinic Manual Version17. Department of Health, April 2017, South Africa. [URL: <https://www.idealhealthfacility.org.za/>]

Dickoff, J., James, P. & Wiedenbach, E. (1968). Theory in a Practice Discipline. American Journal of Nursing, vol. 17(5), 415–435.

Donabedian, A. (1980). The definition of quality and approaches to its assessment. Ann Arbor: Health Administration Press.

Duncombe, C., Rosenblum, S., Hellmann, N., Holmes, C., Wilkinson, L., Biot, M., et al. (2015). Reframing HIV care: putting people at the centre of antiretroviral delivery. Trop Med Int Health. 2015;20(4):430–47.

Dudhia, R. & Kagee, A. (2015). Experiences of participating in an antiretroviral treatment adherence club. Psychology, Health & Medicine, 20(4), 488–494.

Erlingsson, C. & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. African Journal of Emergency Medicine. Afr J Emerg Med (2017).

Eyawo, O., de Walque, D., Ford, N., Gakii, G., Lester, R.T. & Mills, E.J. (2010). HIV status in discordant couples in sub-Saharan Africa: a systematic review and meta-analysis. *The Lancet Infectious Diseases*. 2010; 10(11):770–777.

Faal, M., Naidoo, N., Glencross, D.K., Venter, W.D. & Osih, R. (2011). Providing immediate CD4 count results at HIV testing improves ART initiation. *J Acquir Immune Defic Syndr*. 2011; 58(3): e54–e59.

Fairall, L., Bachmann, M., Lombard, C., et al. (2011). The effect of task-shifting antiretroviral care in South Africa: a pragmatic cluster randomised trial (STRETCH - streamlining tasks and roles to expand treatment and care for HIV); 6th International Conference on AIDS Pathogenesis and Treatment; 2011.

Fay, H., Baral, S., Trapence, G., et al. (2011). Stigma, Health Care Access, and HIV Knowledge Among Men Who Have Sex with Men in Malawi, Namibia, and Botswana. *AIDS and Behavior*. 2011; 15(6):

Ferguson, L., Grant, A.D., Watson-Jones, D., Kahawita, T., Ong'ech, J.O. & Ross, D.A. (2012). Linking women who test HIV-positive in pregnancy-related services to long-term HIV care and treatment services: a systematic review. *Trop Med Int Health*. 2012.

Ford, N., Chu, K. & Mills, E.J. (2012). Safety of task-shifting for male medical circumcision: a systematic review and meta-analysis. *AIDS*. 2012; 26(5).

Ford, N. & Mills, E.J. (2011). Simplified ART delivery models are needed for the next phase of scale up. *PLoS Med*. 2011; 8: e1001060.

Gardner, EM., McLees, M.P., Steiner, J.F., Del Rio, C. & Burman, W.J. (2010). The spectrum of engagement in HIV care and its relevance to test-and-treat strategies for prevention of HIV infection. *Clin Infect Dis*. 2010; 52(6):793–800.

Gbrich, C. (2007). *Qualitative Data Analysis: An Introduction* (1st ed.). London: Sage Publications, 2007.

Geng, E.H., Nash, D., Kambugu, A., et al. (2010). Retention in care among HIV-infected patients in resource limited settings: emerging insights and new directions. *Curr HIV/AIDS Rep*. 2010; 7(4):234–244.

George, G., Strauss, M., Chirawu, P., Rhodes, B., Frohlich, J., Montague, C. & Govender, K., (2014). Barriers and facilitators to the uptake of voluntary medical male circumcision (VMMC) among adolescent boys in KwaZulu–Natal, South Africa, *African Journal of AIDS Research*, 13:2, 179-187.

Gerrish, K. & Lacey, A. (2006). *The research process in nursing*. 5th edition. Oxford: Blackwell Publishing, Ltd.

Gilks, C. (2001). *Antiretroviral therapy in resource-poor settings: technical guidance note*. London: JSI (UK) Centre for Sexual and Reproductive Health.

Gills, A. & Jackson, W. (2002). *Research for nurses: methods and interpretation*. Philadelphia: FA Davis Company.

Ginsburg, A.S., Hoblitzelle, C.W., Sripipatana, T.L. & Wilfert, C.M. (2007). Provision of care following prevention of mother-to-child HIV transmission services in resource-limited settings. *Aids*. 2007; 21(18)

Given, L.M. (2008). The SAGE Encyclopedia of qualitative research methods. Volume 2. A SAGE Reference Publication.

Goddard, W. & Melville, S. (2005). Research Methodology: An introduction. 2nd edition. Lansdowne: Jura & Co, Ltd.

Gould, D. (2011). Delphi study methodology. Fifth Generation Work - Virtual Organization, Leadership in Virtual Teams, Chapter 3, 76-83.

Granich, R., Gupta, S., Suthar, A.B., et al. (2011). Antiretroviral therapy in prevention of HIV and TB: update on current research efforts. Current HIV research. 2011; 9(6):446–469.

Gray, R.H., Kigozi, G., Serwadda, D., et al. (2007). Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. Lancet. 2007; 369(9562):657–666.

Grimsrud, A., Kaplan, R., Bekker, L.G. & Myer, L. (2014). Outcomes of a nurse-managed service for stable HIV-positive patients in a large South African public sector antiretroviral therapy programme. Trop Med Int Health. 2014;19(9):1029_39.

Grimsrud, A., Sharp, J., Kalombo, C., Bekker, L-G. & Myer L. (2015). Implementation of community-based adherence clubs for stable antiretroviral therapy patients in Cape Town, South Africa. Journal of the International AIDS Society. 2015;18(1).

Grimsrud, A., Lesosky, M., Kalombo, C., Bekker, L-G. & Myer, L. (2016). Community-Based Adherence Clubs for the Management of Stable Antiretroviral Therapy Patients in Cape Town, South Africa: A Cohort Study. Journal of Acquired Immune Deficiency Syndromes. 2016;71(1).

Group NCHSPT (2010). Results of the NIMH collaborative HIV/sexually transmitted disease prevention trial of a community popular opinion leader intervention. *J Acquir Immune Defic Syndr.* 2010; 54(2):204–214.

Gupta, G.R., Parkhurst, J.O., Ogden, J.A., Aggleton, P. & Mahal, A. (2008). Structural approaches to HIV prevention. *Lancet.* 2008; 372(9640):764–775.

Halcomb, E. & Hickman, L. (2015). Mixed methods research. *Nursing Standard: promoting excellence in nursing care*, 29 (32), 41-47.

Hardon, A.P., Akurut, D., Comoro, C, et al. (2007). Hunger, waiting time and transport costs: time to confront challenges to ART adherence in Africa. *AIDS Care.* 2007; 19(5):658–665.

Harries, A.D., Zachariah, R., Lawn, S.D. and Rosen, S. (2010). Strategies to improve patient retention on antiretroviral therapy in sub-Saharan Africa. *Trop Med Int Health.* 2010; (15 Suppl 1):70–75.

Health Services Group of the HIV Group on HIV Infection/AIDS (2003). *Quality Assessment of HIV/AIDS Provider Training.*

Available from URL:<http://www.medepi.net/meta/forms.html>.

Health Systems Trust (2016). *District Health Barometer – 2016/2017.*

[URL: <https://www.hst.org.za/publications/Pages/District-Health-Barometer-201617.aspx>]

Hempel, S., Xenakis, L. & Danz, M. (2016). Systematic Reviews for Occupational Safety and Health Questions Resources for Evidence Synthesis. Published by the RAND Corporation, Santa Monica.

Herbst, A.J., Cooke, G.S., Barnighausen, T., KanyKany, A., Tanser, F. & Newell, ML. (2009). Adult mortality and antiretroviral treatment roll-out in rural KwaZulu-Natal, South Africa. *Bull World Health Organ* 2009; 87:754–762.

Hermans, S.M., Castelnuovo, B., Katabira, C., et al. (2012). Integration of HIV and TB services results in improved TB treatment outcomes and earlier prioritized ART initiation in a large urban HIV clinic in Uganda. *J Acquir Immune Defic Syndr*. 2012; 60(2): e29–e35.

Higgins, J.P.T. & Green, S. (2013). *Cochrane handbook for systematic reviews of interventions*. Cochrane Training. The Cochrane Collaboration.

Horwood, et al. (2010). Prevention of mother to child transmission of HIV (PMTCT) programme in KwaZulu-Natal, South Africa: an evaluation of PMTCT implementation and integration into routine maternal, child and women's health services. *Tropical Medicine and International Health* Volume 15, Issue 9.

Horwood, et al. (2012). Elimination of paediatric HIV in KwaZulu-Natal, South Africa: large-scale assessment of interventions for the prevention of mother-to-child transmission. *Bull World Organ* 2012; 90-175.

Hsu, C. & Sandford, B. (2007). The Delphi Technique: Making Sense of Consensus. *Practical Assessment, Research & Evaluation*, 12, 1-8.

Hughes, M. (1993). Career-oriented program activities and learning experiences that promote achievement of middle-grade education goals. Unpublished doctoral dissertation, The Ohio State University, Columbus.

Hulley, S.B., Cummings, S.R., Bowner, M.S. et al. (2007). Designing clinical research. 3rd ed. Lippincott Williams & Wilkins. Philadelphia, USA.

International AIDS Society (2016). Differentiated Care For HIV: It's Time to Deliver Differently. A Decision Framework for Antiretroviral Therapy Delivery. IAS, 2016.

Jaffar, S., Govender, T., Garrib, A., We1z, T., Grosskurth, H., Smith, P.G., Whittle, H. & Bennish, M.L. (2005). Antiretroviral treatment in resource-poor settings: public health research priorities. *Tropical Medicine and International Health* 10 (4):295-299.



Jaffar, S., Amuron, B., Foster, S., Birungi, J., Levin, J., Namara, G., et al. (2009). Rates of virological failure in patients treated in a home-based versus a facility-based HIV-care model in Jinja, southeast Uganda: a cluster-randomised equivalence trial. *Lancet*. 2009; 374:2080–2089.

Jamison, D.T., Breman, J.G., Measham, A.R., Alleyne, G., Claeson, M., Evans, D.B., Jha, P., Mills, A., Musgrove, P., editors (2006). *Disease Control Priorities in Developing Countries*. 2nd edition. Washington (DC): World Bank; 2006. Chapter 18.

Jani, I.V., Siteo, N.E., Alfai, E.R., et al. (2011). Effect of point-of-care CD4 cell count tests on retention of patients and rates of antiretroviral therapy initiation in primary health clinics: an observational cohort study. *Lancet*. 378(9802):1572–1579.

Johnson, D. E., Meiller, L.R., Miller, L.C. & Summers, G.F. (eds.), 1987, *Needs Assessment: Theory and Methods*, Ames, Iowa: Iowa State University Press.

Kagaayi, J., Dreyfuss, M.L., Kigozi, G., et al. (2005). Maternal self-medication and provision of nevirapine to newborns by women in Rakai, Uganda. *J Acquir Immune Defic Syndr.* 2005; 39(1):121–124.

Kairania, R., Gray, R.H, Kiwanuka, N., et al. (2010). Disclosure of HIV results among discordant couples in Rakai, Uganda: a facilitated couple counselling approach. *AIDS Care.* 2010; 22(9):1041–1051.

Kasper, T., Coetzee, D., Louis, F., Boulle, A. & Hilderbrand, K. (2003). Demystifying antiretroviral therapy in resource-poor settings. *Essential Drugs Monitor* (32):20-21.

Katzenellenbogen, J.M., Joubert, G. & Abdool Karim, S.S. (2001). *Epidemiology: a manual for South Africa*. Cape Town: Oxford University Press.

Kennedy, C.E., Fonner, V.A., Sweat, M.D., Okero, F.A., Baggaley, R. & O'Reilly, K.R. (2012). Provider-Initiated HIV Testing and Counseling in Low- and Middle-Income Countries: A Systematic Review. *AIDS Behav.* 2012.

Khan, S.K., Kunz, R., Kleijnen, J. & Antes, G. (2011). *Systematic review to support evidence based medicine how to review and apply findings of health care research*. This second edition published in 2011 by Hodder Arnold, an imprint of Hodder Education, a division of Hachette UK 338 Euston Road, London NW1 3BH.

Kharsany, A.B.M., Hancock, N., Frohlich, J.A., Humphries, H.R., Abdool Karim, S.S. & Abdool Karim, Q. (2010). Screening for 'window-period' acute HIV infection among pregnant women in rural South Africa. *HIV Medicine.* 2010; 11(10):661–665.

Kim, J.Y. (2003). Tackling HN in resource poor countries. *BMJ* 327: 11 04-11 06. National AIDS Control Committee Cameroon (2004). Cameroon's Response to the HIV/AIDS Pandemic: Experiences in clinical management with ARV.

Kipp, W., Konde-Lule, J., Rubaale, T., Okech-Ojony, J., Alibhai, A. & Saunders, D.L. (2011). Comparing antiretroviral treatment outcomes between a prospective community-based and hospital-based cohort of HIV patients in rural Uganda. *BMC Int Health Hum Rights*. 2011;11(Suppl 2): S12.

Kohler, P.K., Chung, M.H., McGrath, C.J., Benki-Nugent, S.F., Thiga, J.W. & John-Stewart, G.C. (2011). Implementation of free cotrimoxazole prophylaxis improves clinic retention among antiretroviral therapy-ineligible clients in Kenya. *Aids*. 2011; 25(13):1657–1661.

Kranzer, K., Govindasamy, D., van Schaik, N., et al. (2012). Incentivized recruitment of a population sample to a mobile HIV testing service increases the yield of newly diagnosed cases, including those in need of antiretroviral therapy. *HIV Med*. 2012; 13(2):132–137.

Kredo, T., Ford, N., Adeniyi, F.B. & Garner, P. (2013). Decentralising HIV treatment in lower- and middle-income countries. *Cochrane Datab Syst Rev*. 2013;6:CD009987.

Ku Fan, C. & Cheng, C. (2006). A study to identify the training needs of life insurance sales representatives in Taiwan using the Delphi approach. *International Journal of Training and Development*, 10(3), 212-226.

KwaZulu-Natal Department of Health (2012). Provincial strategic plan on HIV, STIs and TB -- 2012-2016. Department of Health. Province of KwaZulu-Natal.

[URL: www.kznonline.gov.za/hivaids/strategic-plans/index.htm]

KwaZulu-Natal Department of Health (2016). Multi-sectoral provincial strategic plan for HIV and AIDS, STIs and TB 2012-2016 for KwaZulu-Natal. Department of Health. Province of KwaZulu-Natal. [URL: <http://www.kznonline.gov.za/hiv aids/strategic-plans/index.htm>]

KwaZulu-Natal Department of Health (2017). District AIDS Councils Multi-sectoral response to HIV & AIDS, STIs and TB 2016/2017. Department of Health. Province of KwaZulu-Natal. [URL: <http://www.kznonline.gov.za/hiv aids/councils/index.htm>]

KwaZulu-Natal Provincial AIDS Council (2017). Annual progress report 2015/2016. South African National AIDS Council.

KwaZulu-Natal Department of Health (2017). District Health Plans 2015/2016. Department of Health. Province of KwaZulu-Natal. [URL: www.kznhealth.gov.za/Strategic/DHP/2015-16]

Laga, M., Rugg, D. & Peersman, G. (2012). Ainsworth, M. Evaluating HIV prevention effectiveness: the perfect as the enemy of the good. *Aids*. 2012; 26(7):779–783.

Laurent, C., Kouanfack, C., Laborde-Balen, G., et al. (2011). Monitoring of HIV viral loads, CD4 cell counts, and clinical assessments versus clinical monitoring alone for antiretroviral therapy in rural district hospitals in Cameroon (Stratall ANRS 12110/ESTHER): a randomised non-inferiority trial. *Lancet Infect Dis*. 2011; 11(11):825–833.

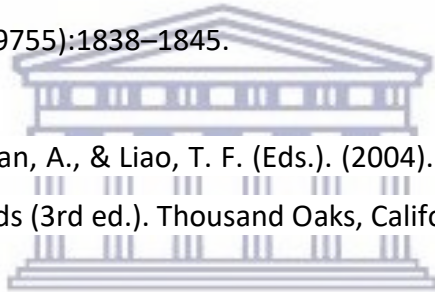
Lawn, S.D., Kaplan, R., Wood, R. & Bekker, L.G. (2007). Promoting retention in care: an effective model in an antiretroviral treatment service in South Africa. *Clin Infect Dis*. 2007; 45(6):803.

Leedy, P.D. & Ormrod, J.E. (2013). *Practical Research: Planning and Design*, 10th Edition. ISBN-13: 9780132693240.

Leon, A.C., Davis, L.L. & Kraemer, H.C. (2011). The role and interpretation of pilot studies in clinical research. *J Psychiatr Res.* 2011 May;45(5):626-9.

Lester, R. & Karanja, S. (2008). Mobile phones: exceptional tools for HIV/AIDS, health, and crisis management. *Lancet Infect Dis.* 2008; 8(12):738–739.

Lester, R.T., Ritvo, P., Mills, E.J., et al. (2010). Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WelTel Kenya1): a randomised trial. *Lancet.* 2010; 376(9755):1838–1845.



Lewis-Beck, M. S., Bryman, A., & Liao, T. F. (Eds.). (2004). *The Sage encyclopedia of social science research methods* (3rd ed.). Thousand Oaks, California: Sage Publications Inc.

Li,T.S., Tubiana, R., Katlama C., Calvez, V. Ait Mohand, Autran, B. (1998). Long-lasting recovery in CD4 T-cell function and viral-load reduction after highly active antiretroviral therapy in advanced HIV-1 disease. *The Lancet.* Volume 351, Issue 9117, 6 June 1998, Pages 1682-1686.

Lissouba, P., Taljaard, D., Rech, D., et al. (2010). A model for the roll-out of comprehensive adult male circumcision services in African low-income settings of high HIV incidence: the ANRS 12126 Bophelo Pele Project. *PLoS Med.* 2010; 7(7): e1000309.

Long, L., Brennan, A., Fox, M.P., et al. (2011). Treatment outcomes and cost-effectiveness of shifting management of stable ART patients to nurses in South Africa: an observational cohort. *PLoS Med.* 2011; 8(7): e1001055.

Losina, E., Bassett, I.V., Giddy, J., et al. (2010). The “ART” of linkage: pre-treatment loss to care after HIV diagnosis at two PEPFAR sites in Durban, South Africa. *PLoS One*. 2010; 5(3): e9538.

Ludwig, B. (1997). Predicting the future: Have you considered using the Delphi methodology? *Journal of Extension*, 35 (5), 1-4.

Lundgren, J.D., Babiker, A.G., et al. (INSIGHT START Study Group) (2015). Initiation of Antiretroviral Therapy in Early Asymptomatic HIV Infection. *New England Journal of Medicine*. July 20, 2015.

Luque-Fernandez, G., Goemaere, E.; Hilderbrand, K., Schomaker, M., Mantangana, N., Mathee, S., Dubula, V., Ford, N., Hernan, M. A. & Boulle, A. (2013). Effectiveness of patient adherence groups as a model of care for stable patients on antiretroviral therapy in Khayelitsha, Cape Town, South Africa. *PLoS One*. 2013;8(2).

Macharia, D.K., Chang, L.W., Lule, G., Owili, D.M., Tesfaledet, G., Patel, S., Silverstein, D.M., Ng'ang'la, L., Bush, T., DeCock, K.M. & Weldle, P.J. (2003). Antiretroviral therapy in the private sector of Nairobi, Kenya: a review of the experience of five physicians. *AIDS* 17:938-939.

Mahler, H.R., Kileo, B., Curran, K., et al. (2011). Voluntary medical male circumcision: matching demand and supply with quality and efficiency in a high-volume campaign in Iringa Region, Tanzania. *PLoS Med*. 2011; 8(11):

Marchal, B., De Brouwere, V. & Kegels, G. (2005). Viewpoint: HIV/AIDS and the health workforce crisis: What are the next steps? *Tropical Medicine and International Health* 10 (4):300-304.

Mathers, B.M., Degenhardt, L., Ali, H., et al. (2010). HIV prevention, treatment, and care services for people who inject drugs: a systematic review of global, regional, and national coverage. *Lancet*. 2010; 375(9719):1014–1028.

Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research [Online Journal]*, 1(2), Art. 20.

Marins, J.R.P., Jamal, L.F., Chen, S.Y., Barros, M.B., Hudes, E.S., Barbosa, A.A., Chequer, P., Teixeira, P. & Hearst, N. (2003). Dramatic improvement in survival among adult Brazilian AIDS patients. *AIDS* 17:1675-1682.

McCoy, S., Kangwende, R. & Padian, N. (2010). Behavior Change Interventions to Prevent HIV Infection among Women Living in Low and Middle-Income Countries: A Systematic Review. *AIDS and Behavior*. 2010; 14(3):469–482.

McIntyre, J.A. (2011). Can devices for adult male circumcision help bridge the implementation gap for HIV prevention services? *J Acquir Immune Defic Syndr*. 2011; 58(5):506–508.

McNairy, M.L., Melaku, Z., Barker, P.M. & Abrams, E.J. (2011). Leveraging Progress in Prevention of Mother-to-Child Transmission of HIV for Improved Maternal, Neonatal, and Child Health Services. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2011:57.

Mdege, N.D., Chindove, S. & Ali, S. (2012). The effectiveness and cost implications of task-shifting in the delivery of antiretroviral therapy to HIV-infected patients: a systematic review. *Health Policy Plan*. 2012.

Medecins Sans Frontieres - MSF (2013). Ethics Review Board Standard Operating Procedures. Geneva; 2013.

Medley, A., Kennedy, C., O'Reilly, K. & Sweat, M. (2009). Effectiveness of peer education interventions for HIV prevention in developing countries: a systematic review and meta-analysis. *AIDS education and prevention: official publication of the International Society for AIDS Education*. 2009; 21(3):181–206.

Menzies, N., Abang, B., Wanyenze, R., et al. The costs and effectiveness of four HIV counseling and testing strategies in Uganda. *Aids*. 2009; 23(3):395–401.

Mermin, J., Ekwaru, J.P., Were, W., et al. (2011). Utility of routine viral load, CD4 cell count, and clinical monitoring among adults with HIV receiving antiretroviral therapy in Uganda: randomised trial. *Bmj*. 2011; 343 d6792.

Michielsen, K., Chersich, M.F., Luchters, S., De Koker, P., Van Rossem, R. & Temmerman, M. (2010). Effectiveness of HIV prevention for youth in sub-Saharan Africa: systematic review and metaanalysis of randomized and nonrandomized trials. *Aids*. 2010; 24(8).

Mills, E.J., Lester, R. & Ford, N. (2012). Adherence to antiretroviral therapy: supervision or support? *Lancet Infect Dis*. 2012; 12(2):97–98.

Motsoaledi, Aron. South Africa's Minister of Health. 10 May 2016 Budget Speech in Parliament. 2016, South Africa.

Mouton, J. & Marais, H.C. (2012.). *Basic Concepts in the Methodology of the Social Sciences*. Pretoria: South Africa: Human Sciences Research Council.

Mouton, J. (2002). *Understanding social research*. Pretoria: Van Schaik Publishers.

Mtapuri-Zinyowera, S., Chideme, M., Mangwanya, D., et al. (2010). Evaluation of the PIMA point-of-care CD4 analyzer in VCT clinics in Zimbabwe. *J Acquir Immune Defic Syndr*. 2010; 55(1):1–7.

Mtonya B & Chizimbi S. (2006). *Systemwide Effects of the Global Fund in Malawi: Final Report*. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc; 2006.

Mugenyi, P. (2004). Highly active antiretroviral therapy: We need to scale up its use and reach with existing facilities in poor countries. *BMJ* 329: 1118-1119.

Mukherjee, J.S., Farmer, P., Niyizonkiza, D., McCorkle, L., Vanderwarker, C., Teixeira, P. & Muula, A. (2004). Ethical and Programmatic Challenges in Antiretroviral Scaling-up in Malawi: Challenges in Meeting the World Health Organization's "Treating 3 Million by 2005" Initiative Goals. *Croatian Medical Journal* 45 (4):415-421.

Mukolo, A., Villegas, R., Aliyu, M. & Wallston, K. (2012). Predictors of Late Presentation for HIV Diagnosis: A Literature Review and Suggested Way Forward. *AIDS and Behavior*. 2012:1–26..

Mundy, J. (2003). *Supporting the Scale up of Anti-retroviral Therapy - A Systems Perspective: IHSD Experience in Kenya*. London: Institute for Health Sector Development.

Mutevedzi, P.C., Lessells, R.J., Heller, Tom., Bärnighausen, T., Cooke, G. et al. (2010). Scale-up of a decentralized HIV treatment programme in rural KwaZulu-Natal, South Africa: does rapid expansion affect patient outcomes? *Bull World Health Organ*, 88: 593-600.

Mwandi, Z., Murphy, A., Reed, J., et al. (2011). Voluntary medical male circumcision: translating research into the rapid expansion of services in Kenya, 2008–2011. *PLoS Med.* 2011; 8(11): e1001130.

Napierala Mavedzenge, S.M., Doyle, A.M. & Ross DA. (2011). HIV prevention in young people in sub-Saharan Africa: a systematic review. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine.* 2011; 49(6):568–586.

National Department of Health (2016). Implementation of the universal test and treat strategy for HIV positive patients and differentiated care for stable patients. Pretoria, South Africa.

Nevo, D. & Chan, Y. E. (2007). A Delphi Study of Knowledge Management Systems: Scope and Requirements. *Information & Management*, Vol. 44, No. 6, 2007, pp. 583-597.

Nglazi, M.D., van Schaik, N., Kranzer, K., Lawn S.D., Wood, R. & Bekker, L.G. (2011). An incentivized HIV counseling and testing program targeting hard-to-reach unemployed men in Cape Town, South Africa. *J Acquir Immune Defic Syndr.* 2011.

Noar, S.M., Palmgreen, P., Chabot, M., Dobransky, N. & Zimmerman, R.S. (2009). A 10-Year Systematic Review of HIV/AIDS Mass Communication Campaigns: Have We Made Progress? *Journal of Health Communication.* 2009; 14(1):15–42.

Obua, C., Kayiwa, J., Waako, P., Tomson, G., Balidawa, H., Chalker, J., et al. (2014). Improving adherence to antiretroviral treatment in Uganda with a low-resource facility-based intervention. *Global Health Action.* 2014;7.

Okoboi, S., Ding, E., Persuad, S., Wangisi, J., Birungi, J., Shurgold, S., Kato, D., Nyonyintono, M., Egessa, A., Bakanda, C. & Munderi, P. (2015). Community-based ART

distribution system can effectively facilitate long-term program retention and low-rates of death and virologic failure in rural Uganda. *AIDS research and therapy*. 2015 Nov 12;12(1):1.

O'Leary, Z. (2004). *The essential guide to doing research*. London: Sage publication.

Okoli, C. (2004). The Delphi method as a research tool: an example, design considerations and applications. *Information and management* Vol 42, 15-29.

Oliveira-Cruz, V., Kowalski, J. & McPake, B. (2004). Viewpoint: the Brazilian HIV/AIDS "success story" – can others do it? *Trop Med Int Health*. 2004; 9:292–297. doi: 10.1046/j.1365-3156.2003.01188.x.

Padian, N.S., McCoy, S.I., Manian, S., Wilson, D., Schwartlander, B. & Bertozzi, S.M. (2011). Evaluation of largescale combination HIV prevention programs: essential issues. *J Acquir Immune Defic Syndr*. 2011; 58(2): e23–e28.

Pasick, R.J., Burke, N.J., Barker, J.C., Galen, J., Bird, J.A. & Otero-Sabogal, R. (2009). Behavioral theory in a diverse society: Like a compass on Mars. *Health Education Behavior*; 36(5), 115-35S.

Patella, F.J. Jr, Delaney, K.M., Moorman, A.C., Loveless, M.O., Fuhrer, J. & Satten, G.A. (1998). Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. HIV Outpatient Study Investigators. *N Engl J Med*. 338: 853-60.

Pearson, C.R., Micek, M.A., Simoni, J.M., et al. (2007). Randomized control trial of peer-delivered, modified directly observed therapy for HAART in Mozambique. *J Acquir Immune Defic Syndr.* 2007; 46(2):238–244.

Peltzer, K., Ramlagan, S., Khan, M.S. Gaede, B. et al. (2011). The social and clinical characteristics of patients on antiretroviral therapy who are 'lost to follow up' in KwaZulu-Natal, South Africa: a prospective study. *Journal of Social Aspects of HIV/AIDS*, Vol. 8 No. 4, December 2011.

Penslar, R.L. (1995). *Research Ethics: Cases and Materials*. Bloomington: Indiana University Press.

Pettifor, A., MacPhail, C., Corneli, A., et al. (2011). Continued High Risk Sexual Behavior Following Diagnosis with Acute HIV Infection in South Africa and Malawi: Implications for Prevention. *AIDS and Behavior.* 2011; 15(6):1243–1250.

Plazy, M., Dray-Spira, R., Orne-Gliemann, J., Francois Dabis, F. & Newell, M. (2014). Continuum in HIV care from entry to ART initiation in rural KwaZulu-Natal, South Africa. *Tropical Medicine and International Health*, Volume 19 No. 6 pp 680–689 June 2014.

Polgar, S. & Thomas, S.A. (1996). *Introduction to research in the health sciences*. 3rd edition. London: Longman Group UK Limited.

Polit, D.E. & Beck, C. (2011). *Nursing Research: Generation and Assessing Evidence for Nursing Practice*. (8th ed.). The Point.: Wolters Kluwer/ Lippincott Williams & Wilkins.

Polit, D.F. & Beck, C.T. (2004). *Nursing research: principles and methods*. 7th edition. Philadelphia: Lippincott William & Wilkins.

Polit, D.F. & Hungler, B.P. (1997). *Nursing research: Principles and methods*. 6th edition. Philadelphia: Lippincott Williams & Wilkins.

Polit, D.F., & Beck, C.T. (2008). *Nursing Research - Generating and Assessing Evidence for Nursing Practice* (8th ed.). Lippincott Williams & Wilkins.

Pope, C., Ziebland S., Mays, N. (2006). Analysing qualitative data. In: Pope C, Mays N (eds). *Qualitative Research in Health Care* (3rd edn). Oxford: Blackwell Publishing, 2006; 63–81.

Pop-Eleches, C., Thirumurthy, H., Habyarimana, J.P., et al. (2011). Mobile phone technologies improve adherence to antiretroviral treatment in a resource-limited setting: a randomized controlled trial of text message reminders. *Aids*. 2011; 25(6):825–834.

Popoola, S.O. (2011, September). *Research Methodologies in Library and Information Science*. A paper presented at a training workshop on building research capacity for Library and Information Science professionals. Organized by the Nigerian Library Association, Ogun State Chapter, held at Covenant University, Ota, Nigeria on 18th – 22nd September 2011.

Powers, B. and Knapp, T. (2006). *Dictionary of Nursing Theory and Research* (3rd ed.). New York: Springer Publishing Company.

Pretorius, C., Stover, J., Bollinger, L., Bacaër, N. & Williams, B. (2010). Evaluating the Cost-Effectiveness of Pre-Exposure Prophylaxis (PrEP) and Its Impact on HIV-1 Transmission in South Africa. *PLoS One*. 2010; 5(11): e13646.

Rasschaert, F., Telfer, B., Lessitala, F., Decroo, T., Remartinez, D., et al. (2014). A Qualitative Assessment of a Community Antiretroviral Therapy Group Model in Tete, Mozambique. *PLoS ONE* 9 (3): e91544.

Rich, M., Miller, A.C., Niyigena, P., et al. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. Publish Ahead of Print; 2011. Excellent clinical outcomes and high retention in care among adults in a community-based HIV treatment program in rural Rwanda. 10.1097/QAI.0b013e31824476c4.

Rich, M.L., Miller, A.C., Niyigena, P., et al. (2012). Excellent Clinical Outcomes and High Retention in Care Among Adults in a Community-Based HIV Treatment Program in Rural Rwanda. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2012; 59(3).

Ridley, A. (1998). *Beginning bioethics*. New York: St. Martin's Press.

Rivera, J.A., Sotres-Alvarez, D., Habicht, J.P., Shamah, T. & Villalpando, S. (2004). Impact of the Mexican program for education, health, and nutrition (Progresa) on rates of growth and anemia in infants and young children: a randomized effectiveness study. *Jama*. 2004; 291(21):2563–2570.

Rosen, S. & Fox, M.P. (2011). Retention in HIV care between testing and treatment in sub-Saharan Africa: a systematic review. *PLoS Med*. 2011; 8(7): e1001056.

Rosen, S. & Ketlhapile, M. (2010). Cost of using a patient tracer to reduce loss to follow-up and ascertain patient status in a large antiretroviral therapy program in Johannesburg, South Africa. *Trop Med Int Health*. 2010; (15 Suppl 1):98–104.

Rosen, S., Fox, M.P. & Gill, C.J. (2007). Patient retention in antiretroviral therapy programs in sub-Saharan Africa: a systematic review. *PLoS Med*. 2007; 4(10): e298.

Russel, R. (2009). Systematic review methods – issues and challenges in conducting systematic reviews to support development of nutrient reference values: Workshop summary: Nutrition.

Ruxin, J., Paluzzi, J.E., Wilson, P.A., Tozan, Y., Kruk, M. & Teklehaimanot, A. (2005). Emerging consensus in HIV/AIDS, malaria, tuberculosis, and access to essential medicines. *Lancet* 365:618-621.

Sabin, C.A. (2002). The changing clinical epidemiology of AIDS in the highly active antiretroviral therapy era. *AIDS* 16 (suppl4): S61-S68.

SABSSM V - South African National HIV Prevalence, Incidence and Behaviour Survey (2017). Human Science Research Council. Pretoria, South Africa.

SANAC - South African National AIDS Council (2015). Global AIDS Response Progress Report. South Africa.

SANAC - South African National AIDS Council (2017). Annual progress report 2015/2016 – KZN Provincial AIDS Council.

[URL: <https://sanac.org.za/provincial-progress-reports/>]

Sanders, E.J., Wahome, E., Mwangome, M., et al. (2011). Most adults seek urgent healthcare when acquiring HIV-1 and are frequently treated for malaria in coastal Kenya. *Aids*. 2011; 25(9).

Sanne, I., Orrell, C., Fox, M.P., et al. (2010). Nurse versus doctor management of HIV-infected patients receiving antiretroviral therapy (CIPRA-SA): a randomised non-inferiority trial. *The Lancet*. 2010; 376(9734):33–40.

Sano, P. (2005). Rapid scale-up of the Continuum of Care for People Living with HIV/AIDS: Cambodia. In *ASEAN's Fight Against HIV/AIDS: Success Stories & Future Challenges*. Jakarta: The Association of South East Asian Nations Secretariat.

Sarna, A., Luchters, S, Geibel, S., et al. (2008). Short- and long-term efficacy of modified directly observed antiretroviral treatment in Mombasa, Kenya: a randomized trial. *J Acquir Immune Defic Syndr*. 2008; 48(5):611–619.



Selke, H.M., Kimaiyo, S., Sidle, J.E., Vedanthan, R., Tierney, W.M., Shen, C., et al. (2010). Task-shifting of antiretroviral delivery from health care workers to persons living with HIV/AIDS: clinical outcomes of a community-based program in Kenya. *Journal of Acquired Immune Deficiency Syndromes*. 2010;55(4): 483-90.



Shisana, O., Rehle, T., Simbayi, L.C., Zuma, K., Jooste, S., Zungu, N., Labadarios, D., Onoya, D., Davids, A., Ramlagan, S., Mbelle, N., Van Zyl, J. & Wabiri, N. (2014). *South African National HIV Prevalence, Incidence and Behaviour Survey, 2012*. Cape Town, HSRC Press.

Scott-Sheldon, L.A.J., Huedo-Medina, T.B., Warren, M.R, Johnson, B.T. & Carey, M.P. (2011). Efficacy of Behavioral Interventions to Increase Condom Use and Reduce Sexually Transmitted Infections: A Meta-Analysis, 1991 to 2010. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2011; 58(5).

Shahmanesh, M., Patel, V., Mabey, D. & Cowan F. (2008). Effectiveness of interventions for the prevention of HIV and other sexually transmitted infections in female sex workers in resource poor setting: a systematic review. *Tropical Medicine & International Health*. 2008; 13(5):659–679.

Sherr, K.H., Micek, M.A., Gimbel, S.O., et al. (2010). Quality of HIV care provided by non-physician clinicians and physicians in Mozambique: a retrospective cohort study. *AIDS*. 2010:24.

Shott, J.P., Galiwango, R.M. & Reynolds, S.J. (2012). A Quality Management Approach to Implementing Point-of-Care Technologies for HIV Diagnosis and Monitoring in Sub-Saharan Africa. *J Trop Med*. 2012:651927.

Sigaloff, K.C., Hamers, R.L., Wallis, C.L., et al. (2011). Unnecessary antiretroviral treatment switches and accumulation of HIV resistance mutations; two arguments for viral load monitoring in Africa. *J Acquir Immune Defic Syndr*. 2011; 58(1):23–31.

Smith, A.D., Tapsoba, P., Peshu, N., Sanders, E.J. & Jaffe, H.W. (2009). Men who have sex with men and HIV/ AIDS in sub-Saharan Africa. *The Lancet*. 2009; 374(9687):416–422.

South African National AIDS Council (2014). South Africa's New Highly Effective PMTCT Guidelines. SANAC, South Africa.

South African National AIDS Council (2015). Global AIDS Response Progress Report. SANAC, South Africa.

South African National AIDS Council (2015). Annual Performance Plan 2017/18. SANAC Trust, South Africa.

Squires, E.J., Valentine, C.J. & Grimsham, M.J. (2013). Systematic reviews of complex interventions: Framing the review question. *Journal of clinical Epidemiology* 2013; 66; 1215 – 1222 DOI: 10.1016/j.jclinepi2013.05013.

SSRU - Social Science Research Unit (2010). Practice information and coordinating centre.

Statistics South Africa (2003). Mid-year population estimates. 2003. South Africa.

Statistics South Africa (2009). Mid-year population estimates. 27 July 2009. South Africa.

Statistics South Africa (2015). Annual Report 2014/15. Pretoria, South Africa.

Statistics South Africa (2017). Annual Report 2014/15. Pretoria, South Africa.

Statistics South Africa (2018). Midyear population estimates. 23 July 2018. South Africa.

Stewart, R., Padarath, A. & Bamford, L. (2004). Providing Antiretroviral Treatment in Southern Africa: A Literature Review. Durban: Health Systems Trust.

Sullivan, P.S., Carballo-Dieguez, A., Coates, T., et al. (2012). Successes and challenges of HIV prevention in men who have sex with men. *Lancet*. 2012; 380(9839):388–399.

Shuttleworth, M. (2009). Types of Validity. Downloaded from Explorable.com: <https://explorable.com/types-of-validity>

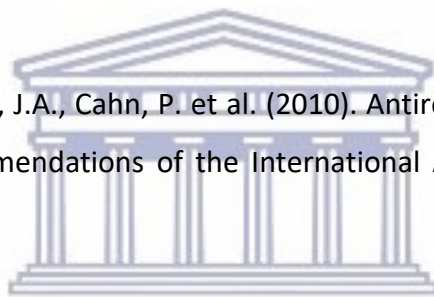
Sweat, M.D., Denison, J.A., Kennedy, C., Tedrow, V. & O'Reilly, K. (2012). Effects of condom social marketing on condom use in developing countries: a systematic review and meta-analysis, 1990–2010. *Bulletin of the World Health Organization*. 2012; 90:613–622A.

Tavakol, M. & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53–55.

Teddlie, C. & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. SAGE Publications. Inc.

Thigpen, M.C., Kebaabetswe, P.M., Paxton, L.A., et al. (2012). Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana. *The New England journal of medicine*. 2012.

Thompson, M.A., Aberg, J.A., Cahn, P. et al. (2010). Antiretroviral Treatment of Adult HIV Infection: 2010 Recommendations of the International AIDS Society USA Panel. *JAMA*. 2010;304(3):321-333.



Thompson, M.A., Aberg, J.A., Cahn, P., Montaner, J.S.G., Rizzardini, G., Telenti, A., Gatell, J.M., Günthard, H.F., Hammer, S.M., Hirsch, M.S., Jacobsen, D.M., Reiss, P., Richman, D.D., Volberding, P.A., Yeni, P. & Schooley, R.T. (2010). Antiretroviral treatment of adult HIV infection: 2010 recommendations of the International AIDS Society—USA Panel. *JAMA* 2010; 304:321-33.

Thompson, M.A., Mugavero, M.J., Amico, K.R., et al. (2012). Guidelines for Improving Entry into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations from an International Association of Physicians in AIDS Care Panel. *Annals of*

Topp, S.M., Chipukuma, J.M., Chiko, M.M., Matongo, E., Bolton-Moore, C. & Reid, S.E. (2012). Integrating HIV treatment with primary care outpatient services: opportunities and challenges from a scaled-up model in Zambia. *Health Policy Plan.* 2012.

Toure, H., Audibert, M. & Dabis, F. (2010). To what extent could performance-based schemes help increase the effectiveness of prevention of mother-to-child transmission of HIV (PMTCT) programs in resource-limited settings? a summary of the published evidence. *BMC Public Health.* 2010; 10(1):702.

Tsondai, P., Wilkinson, L., Grimsrud, A., Mdlalo, P., Ullauri, A. & Boulle, A. (2017). High rates of retention and viral suppression in the scale-up of anti-retroviral therapy adherence clubs in Cape Town, South Africa. *Journal of International AIDS Society.* 2017;20 (Suppl 4):21649.



Tsui, S., Denison, J.A., Kennedy, C.E. Chang, L.W. et al. (2017). Identifying models of HIV care and treatment service delivery in Tanzania, Uganda, and Zambia using cluster analysis and Delphi survey. *BMC Health Serv Res.* 2017; 17: 811.

WESTERN CAPE

Tuller, D.M., Bangsberg, D.R., Senkungu, J. & Ware, N.C., Emenyonu, N. and Weiser, S.D. (2010). Transportation costs impede sustained adherence and access to HAART in a clinic population in southwestern Uganda: a qualitative study. *AIDS Behav.* 2010; 14(4):778–784.

Tumwesigye, E., Baeten, J., Tumwebaze, H., et al. (2011). Potential of household-based HIV counseling and testing as a platform for targeted referral to HIV prevention and care in Uganda. 6th IAS Conference on HIV Pathogenesis, Treatment and Prevention 17–20 July 2011.

Turoff, M. & Linstone, H. A. (2002). The Delphi method: Techniques and applications. Edited by Harold A. Linstone. Portland State University. Addison Wesley Publishing.

Ulschak, F.L. (1983). Human resource development: The theory and practice of need assessment. Reston, VA: Reston Publishing company, Inc. pp. 111-131.

UNAIDS (2013). Epidemiology Fact Sheet on HIV and AIDS. UNAIDS, Geneva.

UNAIDS (2014). 90–90–90: An ambitious treatment target to help end the AIDS epidemic. Joint United Nations Programme on HIV/AIDS, 2014.

UNAIDS (2016). Prevention gap report. Joint United Nations Programme on HIV/AIDS, 2016. UNAIDS, Geneva.

UNAIDS (2018). Global HIV & AIDS statistics — 2018 fact sheet. Joint United Nations Programme on HIV/AIDS, 2018.

Underhill, K., Operario, D., Mimiaga, M., Skeer, M. & Mayer, K. (2010). Implementation Science of Preexposure Prophylaxis: Preparing for Public Use. *Current HIV/AIDS Reports*. 2010; 7(4):210– 219.

United Nations. 2004. The impact of AIDS. New York: Department of Economic and Social Affairs, United Nations.

Uwimana, J., Zarowsky, C., Hausler, H. & Jackson, D. (2012). Training community care workers to provide comprehensive TB/HIV/PMTCT integrated care in KwaZulu-Natal: lessons learnt. *Tropical Medicine & International Health*. 2012.

Van Damme, L., Corneli, A., Ahmed, K., et al. (2012). Preexposure Prophylaxis for HIV Infection among African Women. *The New England journal of medicine*. 2012.

Van Oosterhout, J., Bodasing, N., Kumwenda, J.K., Nyirenda, C., Mallewa, J., Cleary, P.R., de Baar, M.P., Schuurman, R., Burger, D.M. & Zijlstra, E.E. (2005). Evaluation of antiretroviral therapy results in a resource-poor setting in Blantyre, Malawi. *Tropical Medicine and International Health* 10 (5):464-470.

Vogt, F., Kalenga, L., Lukela, J., Salumu, F., Diallo, I., Nico, E., et al. (2016). Decentralising ART supply for stable HIV patients to community-based distribution centres: Programme outcomes from an urban context in Kinshasa, DRC. *JAIDS Journal of Acquired Immune Deficiency Syndromes*. 2016.



Wachira, J., Kimaiyo, S., Ndege, S., Mamlin, J. & Braitstein, P. (2012). What Is the Impact of Home-Based HIV Counseling and Testing on the Clinical Status of Newly Enrolled Adults in a Large HIV Care Program in Western Kenya? *Clin Infect Dis*. 2012; 54(2):275–281.

Wamai, R.G., Morris, B.J., Bailis, S.A., et al. (2011). Male circumcision for HIV prevention: current evidence and implementation in sub-Saharan Africa. *J Int AIDS Soc*. 2011; 14:49.

Weller, S. & Davis, K. (2002). Condom effectiveness in reducing heterosexual HIV transmission. *Cochrane Database Syst Rev*. 2002; (1): CD003255.

West, P.W. (2016). Simple random sampling of individual items in the absence of sampling frame that lists the individuals. *New Zealand Journal of Forestry Science* 2016, 46:15.

Wheeler, D.A., Arathoon, E.G., Pitts, M., Cedilos, R.A., Bu, T.E., Porras, G.D., Herrera, G. & Sosa, N.R. (2001). Availability of HN care in Central America. *JAMA* 286 (7):853-860.

WHO (1989). Strengthening the performance of community health workers in primary health care. Report of a WHO Study Group. Geneva, World Health Organization (WHO Technical Report Series, No. 780).

WHO (2004). A guide to monitoring and evaluating HIV/AIDS care and support. WHO, Geneva. [URL: whqlibdoc.who.int/publications/2004/9241591439.pdf]

WHO (2007). Global recommendations and guidelines on task shifting. Geneva: World Health Organization; 2007.

WHO (2010). Antiretroviral therapy for HIV infection in adults and adolescents. Recommendations for a public health approach. WHO, Geneva.

WHO (2011). Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access. Geneva: World Health Organization, 2011.

WHO (2012). Guidance on oral pre-exposure prophylaxis (PrEP) for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV: Recommendations for use in the context of demonstration projects. Geneva: World Health Organization; 2012.

WHO (2012a). Guidance on Couples HIV Testing and Counselling including Antiretroviral Therapy for Treatment and Prevention in Serodiscordant Couples. Geneva: World Health Organization; 2012.

WHO (2013). Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection (Updated 30 June 2013). Geneva: WHO; 2014.

WHO (2015). Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: what's new. Geneva: WHO.

WHO (March 2014). Supplement to the 2013 consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. Recommendations for a public health approach; Geneva: WHO; 2014.

WHO Representative Office Cambodia (2006). The Continuum of Care for People Living with HIV/AIDS in Cambodia: Linkages and Strengthening in the Public Health System. WHO; 2006.

WHO (2007). Global recommendations and guidelines on task shifting. Geneva: World Health Organization; 2007.

WHO (2016). Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach – 2nd ed., 2016. Geneva.

UNIVERSITY of the
WESTERN CAPE

Wilkinson, L.S. (2013). ART adherence clubs: A long-term retention strategy for clinically stable patients receiving antiretroviral therapy. Southern African Journal of HIV Medicine. 2013;14(2):48-50.

Wilkinson, L., Harley, B., Sharp, J., Solomon, S., Jacobs, S., Cragg, C., Kriel, E., Peton, N., Jennings, K. & Grimsrud, A. (2016). Expansion of the Adherence Club model for stable antiretroviral therapy patients in the Cape Metro, South Africa 2011–2015. Tropical Medicine & International Health. 2016 Jun 1;21(6):743-9.

Windle, H.I (2004). Delphi technique: Assessing component needs. *Journal of PeriAnesthesia Nursing* 19(1):46-7 · March 2004.

Wools-Kaloustian, K., Sidle, J., Selke, H., et al. (2009). A model for extending antiretroviral care beyond the rural health centre. *Journal of the International AIDS Society*. 2009; 12(1):1–11.

World Health Organisation (2016). *Universal Test and Treat Guidelines*. Geneva, WHO. 2016.

World Health Organization (2007). *Guidance on Provider-Initiated HIV Testing and Counseling in Health Facilities*. Geneva: World Health Organization; 2007.

World Health Organization (2011). *Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access*. Geneva: World Health Organization; 2011.



UNIVERSITY of the
WESTERN CAPE

World Health Organization (2016). *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: Recommendations for a public health approach*. WHO, Geneva: 2nd Edition. 2016.

Wright, R. W., Brand, R. A., Dunn, W. & Spindler, K. P. (2007). How to write a systematic review. *Clin Orthop Relat Res*, 2007 Feb. 455: 23-9.

Wynn, et al. (2015). A program evaluation report of a rapid scale-up of a high-volume medical male circumcision site, KwaZulu-Natal, South Africa, 2010–2013. *BMC Health Services Research* 2015; 15:235.

Yin, R.K. (2003). *Case study research. Design and methods*. 3rd ed. SAGE Publications, Inc.

Yin, R.K. (2012). Applications of case study research. 3rd ed. SAGE Publications, Inc.

Youngleson, M.S, Nkurunziza, P., Jennings, K., Arendse, J., Mate, K.S. & Barker, P. (2010). Improving a Mother to Child HIV Transmission Programme through Health System Redesign: Quality Improvement, Protocol Adjustment and Resource Addition. PLoS One. 2010; 5(11): e13891.



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WESTERN CAPE