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HIV status disclosure and education for children and adolescents in Papua New Guinea

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HIV status disclosure and education for children and adolescents in Papua New Guinea

ABSTRACT

BACKGROUND

How to provide HIV disclosure and awareness for children and young people has not been studied in Papua New Guinea or Pacific Island countries. We aimed to determine the current practices of HIV disclosure, and evaluate whether an incremental disclosure education model as recommended by WHO would increase children's knowledge about their condition, and improve adherence to antiretroviral therapy (ART).

METHODS

We enrolled HIV-infected children on ART whose parents consented, and we identified whether they were aware that they were HIV positive or not. An incremental education model was used to teach the children about their illness, and to disclose their HIV status if that was the parents' wishes. Knowledge of HIV and adherence to ART before and following education sessions was assessed.

RESULTS

138 children HIV positive children participated. Only 7% had previously been made aware of their HIV test results; the mean disclosure age was 12.7 years. By the age of 10 years 25 of 34 participants (74%) had not been told they had HIV. The common reasons caregivers gave for not disclosing were that the child was too young and the potential psychosocial impacts on the child and the family. Using an education model of HIV disclosure, children's knowledge of HIV increased significantly, and ART adherence, which was good at 95%, increased to 99% an average of 9 months after education.

CONCLUSION

There is a low rate of disclosure for HIV infected children in PNG. This study underlines the importance and value of incorporating age-appropriate HIV education within HIV services.

What is already known about the subject?

1. In PNG there are hundreds of children living with HIV
2. The rate of HIV disclosure for children is unknown
3. How to best disclose information to children living with HIV is unknown

What this study adds

1. The rate of HIV disclosure in a sample of 138 children in Port Moresby living with HIV was only 7%
2. The common reasons for non-disclosure given by parents were that the child was too young and the potential psychosocial impacts on the child and the family

3. A incremental education model using cartoon illustrations to help explain HIV to affected children improved knowledge and may have improved adherence to antiretroviral therapy

INTRODUCTION

There are approximately 3.2 million children and adolescents infected with the Human Immunodeficiency Virus (HIV) worldwide.(1) Papua New Guinea (PNG) reported an overall HIV prevalence of 0.65% in 2014, other estimates are for an adult prevalence rate (15-49 year olds) as high as 0.9%.(2) In PNG the majority of people living with HIV reside around the urban areas, including Port Moresby. The National Capital District (NCD) for which Port Moresby is located has an estimated prevalence of 1.07%.(3) The recent available HIV/AIDS Surveillance report for PNG reported an estimated paediatric population of up to 4,000 children and adolescents living with HIV. With the greater implementation of Prevention of Parent to Child Transmission (PPTCT) program the rate of new paediatric cases is expected to decrease.(3)

Between 2007 and 2014 the proportion of HIV-affected people in PNG who were on anti-retroviral treatment (ART) increased from an estimated 23% in 2007 to 80% in 2014. The factors that lead to this include more available diagnostics (including early infant diagnosis with polymerase chain reaction), a greater number of testing centres, the change in eligibility criteria from a CD4+ count of 350 to 500 cells per microliter, the change to Option B plus (where all pregnant women with HIV receive ART regardless of CD4 count), and greater awareness of the benefits of ART. The majority of infants and children with HIV in PNG are treated with zidovudine (AZT), lamivudine (3TC) and nevirapine (NVP) in a fixed-dose combination tablet given twice daily.

One of the challenges facing the parents or guardians of children living with HIV is informing the child of his or her HIV status. It can be difficult for a caregiver to know when and how to inform their child of their illness. Parental concern about informing children with HIV about their status includes the fear of robbing their child of the happiness of living without the knowledge of being positive, fear of making their own status known to people, and fear of confrontation or creating enmity with their child.(4)

Studies have shown that disclosing the child's HIV status in a supportive way is important for supporting medication adherence and psychosocial health among children.(5-7) An incremental approach to HIV disclosure for children has also been recommended by WHO.(8) WHO Guidelines on HIV disclosure for children recommend increasing information about HIV and their sero-status at school age in an incrementally appropriate manner.(8) Thirty-one articles on HIV disclosure pattern in children were discussed in a literature review, and it is apparent that children in low and middle income countries are less likely to know their status and to learn it at later ages than children living in high income countries.(9)

In Port Moresby, HIV infected children receive medical attention and support from the Port Moresby General Hospital (PMGH). Until now there has been no structured approach for disclosing to a child their infected status. This study aimed to explore this issue among HIV infected children and adolescents at the HIV clinic at PMGH. Specifically, we aimed to determine: the current proportion of HIV-infected children who knew their HIV status, and describe disclosure perceptions amongst the children and caregivers attending the HIV clinic; to determine whether a disclosure education model increases children's knowledge about HIV illness; and to determine whether a disclosure education model overtime increases ART adherence rates amongst children, using the standard WHO method of pill count.

METHODOLOGY

Study setting

This study was conducted at the children's HIV clinic at PMGH, located within Port Moresby the capital city of PNG. PMGH is the tertiary health institution for National Capital District and Central Province, and is a referral centre for other provinces.

Study design and participants

This was an observational and education intervention study. Participants were selected by the first author (TO), from those attending the HIV clinic for a 12 month period between May 2015 and May 2016. Children were not randomly selected, but rather identified based on fulfilling the criteria below. To be eligible, children had to be aged 3 to 16 years, on a daily regimen of ART, and had to be accompanied by their primary caregiver. The primary caregiver was a person who lives with the child, participates in the child's daily care and is the most knowledgeable about the child's health and adherence. The study was explained to the primary caregiver and the child and they had to be able and willing to give consent for their participation. We aimed to enrol over 100 children in the first 6 months, but because of drop-out at 2nd and 3rd clinic visits during the time the study was conducted, we continued the enrolment for a further 6 months.

Interview and educational model

Based on a written questionnaire, and with permission of the parent and the child, an interview was conducted by the first author (TO) to understand the context of the family, such as the caregiver HIV status, level of education and school participation of the child and caregiver, and the child and the primary caregiver, including age, sex, caregiver HIV status, level of education or school participation for both the caregiver and the child, and the caregiver's occupation and household role and structure. Each session was conducted during the routine clinic appointments. In addition, the HIV clinic nurses learned how to go through the education model with the children also. The first author was a senior paediatric registrar who had worked with HIV-affected children throughout her 5 years of training. The education model was based on a combination of that used successfully in Botswana (10), developed by Baylor International College of Paediatric HIV (11) and used colourful line drawings developed by the Children's Hospital of Philadelphia (Appendix 2 and 3).

We asked caregivers whether they had told their child about their HIV infection, and their reasons for disclosing or not disclosing this information. We classified disclosure status into two groups: one group was children who were fully aware of their HIV status and the other group was children who did not know their HIV status.

The disclosure education model previously developed for use in resource limited settings (10), and based on published recommendations to education children about their HIV illness in a developmentally appropriate manner was utilized in this study.(10) There were 2 education modules: one a 'partial disclosure' model which was used for children who were unaware of their HIV status or where the parents preferred that the diagnosis was not named, and a 'full disclosure' model that was used for children who were aware of their HIV status. In the full disclosure education model the term HIV was used where appropriate. In the partial disclosure model the emphasis was more on helping children understand they had a problem with their immune system and this required daily medication to stay healthy, but HIV was not used if a parent would not give permission to do so.

Ten domains were assessed during the study based on previously published recommendations: Naming your medicines, How medicines keep you healthy and why it is important to take your medicines, Soldiers of the body (CD4+), “Bad guys” (HIV), Prevention of resistance, Modes of transmission, Who can you talk to about HIV and medicines, Times you might forget to take your medicines and how to remember, Proper names of medicines, and Myths dispelled including what ways HIV cannot be transmitted. This was adapted from material developed by Children’s Hospital of Philadelphia and used in Botswana (10) Some questions, including viral loads and CD-4 counts were omitted as not relevant to the children at this clinic as these tests are not available. The material was used on 1-4 occasions, depending on how often a child attended their regular clinic visits throughout the duration of the evaluation. The first author sat down with each child individually and went through the educational material, in the presence of the caregiver and an HIV clinic nurse. The education and assessment of knowledge was incorporated into the routine clinic visit. The sessions were not done in group as patients have a different level of understanding, and while some parents were happy for their child to be fully aware of their status, others were not ready to disclose the HIV status. Children were given the illustrated booklets to read while waiting, and it took 15 minutes to up to 1 hour to go through the material and assess the child’s understanding at each visit. This generally did not prolong clinic visits times, as there is considerable waiting around in outpatient clinics.

Drug adherence

The child’s adherence to the daily ART regimen is routinely assessed at each HIV clinic visit by pill count. Pill count was determined by: number of doses of ART taken / number of prescribed doses of ART x 100.(12) This pill count is routinely done in the clinic and accurate and well-kept records were maintained by the clinic staff from the time each child commenced ART.

We compared adherence scores, calculated at the three time periods: before, during and after the disclosure educational interventions. For this analysis the pill count information was tabulated and median percentage scores were compared over the three time periods.

Assessment of knowledge of HIV

Knowledge of HIV was assessed using a 1-3 scale for 10 different domains by the first author (TO). Using a structured questionnaire to guide the conversation (Appendix 1), the child’s understanding was classified as (1) poor or was difficult to assess, (2) the child exhibited moderate understanding, or (3) the child exhibited excellent understanding of the specific concept. For example, if the child knows he has to take medication but does not know the timing or number of tablets then will score 1, if the child commented on the number of tablets without the timing then will score 2, if the child commented on the number of tablet and the timing then would receive a score of 3.

Data management, confidentiality and analysis

The patients’ or parents’ names were not recorded in the data-base to ensure confidentiality; instead a numerical code was recorded pertaining to each participant. Data from the Microsoft Excel spreadsheet were then transferred into STATA Version 13 for descriptive and statistical analyses.

To compare differences between different phases of the education model, we conducted paired test of significance using the t-test, and a p-value of less than 0.05 was considered significant.

Ethical consideration

Ethical approval was received from the School of Medicine and Health Science Research and Ethics Committee, University of Papua New Guinea (Meeting No 1/2015, May 22nd 2015) and permission was received from The Clinton Health AIDS Initiative (CHAI) PNG and the Port Moresby General Hospital, which jointly run the PMGH HIV clinics and manage the patient data.

RESULTS

138 children were enrolled in the study. Table 1 outlines demographic and social characteristics of the children and their families. The mean age was 7.7 years (SD 0.28) and 51% were female. Thirty-four children (25%) were 10 years of age or older. 56 children were at stage I, 19 stage II, 61 stage III, and 2 were stage IV. 25% of the recruited children attended primary school, none attended secondary school. For 21% of children both parents had died, an additional 14% had lost their mother, and 22% lost their father, 2% reported they did not know where their parents were or whether they were alive. Children were mostly cared for by their mothers (44%) or a grandparent (29%). Others were cared for by adoptive parents, step-mother, step-father, father, aunt, uncle or siblings (Table 1).

Seventy eight (57%) of the primary care givers were also HIV positive, and 73 were on ART. Forty-five percent of the care-giver had no formal education.

HIV disclosure and perceptions

All caregivers were aware of the HIV infection status of the child in their care. Only 10 children (7%) knew they were HIV positive; the mean disclosure age was 12.7 years. The caregivers of children whose status was known believed their child was mature enough to cope with this knowledge. Children to whom HIV was disclosed heard the results from their care-givers after asking questions, other relatives, social workers, and on one occasion overheard from neighbours.

Caregivers of 128 children had not disclosed the diagnosis of HIV. By the age of 10 years 25 of 34 participants (74%) had not been told they had HIV. Table 2 outlines the reasons given by caregivers for not disclosing the child's HIV positive status. More than 50% of the caregivers reported believed their child was too young to have their HIV infection status disclosed to them. Many caregivers feared that their child may not understand or not be able to keep their infection status a secret sufficiently to avoid stigma and discrimination.

HIV education and knowledge gained

111 children attended 2 HIV clinic education sessions, 45 attended 3, and 14 attended 4 sessions. This was more a function of the time-frame of the study, rather than loss to clinic follow-up. The children evidently enjoyed the education sessions, such that subsequent sessions consisted more of them telling the story using the educational cartoons, instead of the educator telling them the stories included in the material. After 2 sessions most children showed improvement in their understanding, and the smaller proportions of children who attended 3 and 4 sessions showed further improvement in their understanding of most areas. (Table 3).

ART adherence before and after HIV education and disclosure

The mean time of pre-education adherence data was 23 months (SD 0.31), and the mean time of prospective follow-up was 9 months (SD 0.08). As measured by pill counts and recorded at monthly clinic visits, the mean percentage baseline adherence was 95.2 (SD 0.48) for children during the baseline period and increased to 99.4 (SD 0.16) during and following the education intervention ($p < 0.001$).

DISCUSSION

This study found that only a small proportion of children and adolescents attending a busy HIV clinic in the national capital of Papua New Guinea had been specifically informed of the infection by caregivers. 25 of 34 (74%) children over 10 years of age did not know their HIV status. WHO recommends that children are fully informed of their infected status at school age, and that younger children are told partial information about their diagnosis.(8) PNG has no guidelines for disclosure of HIV to infected children, therefore awareness of this importance is likely to be low among health workers who may also share the concerns or fears of parents about the effects of open communication about HIV with children. This low disclosure rate is comparable to the studies done in some other resource limited countries.(9;13)

A literature review on disclosure of HIV status to affected children found that the disclosure rates can be as low as 1.2% in low or middle income countries, compared to industrialized countries which have disclosure rates for children as high as 73%.(9) In our study, participants who knew their HIV status learned it at an older age (mean 12.7 years). In Tanzania, as in PNG, disclosure was unlikely among children who were less than 10 years of age.(14) In industrialised countries the median age of disclosure was reported as 8.3 years.(9) Disclosure is low in resource limited settings despite the growing evidence of its benefits if done with age appropriate and supportive communication and with accurate facts.(15) The reasons we found for disclosure or non-disclosure by parents and caregivers in Port Moresby are similar to those highlighted by other investigators.(7)

This study tested a model of HIV education and information for children and adolescents living with HIV in Port Moresby. A number of disclosure models have been trialed, including the use of illustrative images to teach children about the HIV virus, how it affects their body, and the medication that will keep them healthy.(10;16;17) We used flip charts with colourful cartoons to facilitate children's understanding of HIV concepts and the importance of complying with medications that was based on previous models.(11)

Within the study period, the participating children had improvement in their knowledge of HIV. There was a demonstrated increase in knowledge after the second session of education and those who attended all the scheduled sessions demonstrated an increase in comprehension of the basic facts about the HIV virus and its effect on the immune system, and the effect of ART on strengthening the immune defences and keeping them healthy. The assessments were somewhat subjective as the participants responses were graded according to the perceived level of knowledge that was able to be communicated in a structured conversation. No more objective written tests were done, as this education, assessment of knowledge and feedback formed part of the clinic visit.

A similar study done in Namibia showed the educational benefit of using cartoon books to illustrate the concept of HIV. Healthcare workers found that such illustrations facilitated the effective communication of information, and enabled children to better understand their condition and be better prepared for hearing the diagnosis.(16)

The stepwise fashion of education and disclosure demonstrated in this study is in line with the WHO recommendations for children to be told their status incrementally in ways that are appropriate to their level of emotional maturity.(8)

While some of the domains were well understood by the participating children, the knowledge attained from some of the domains (proper used names for ART drugs; mode of HIV transmission; and HIV myths dispelled) was less. The reasons for this may be several. First, there was a lot of information for children to absorb, and learning fatigue was likely. Further, ART drug names are

complex, so it is not surprising that children were not able to recall these. Thirdly, some of the children were young, few went to school and could not be expected to understand complex information. PNG has strong culturally engrained taboos that may have reduced the effectiveness of some generic messages about HIV and AIDS.(18) In our study, some caregivers and children showed resistance to openly discussing the various modes of HIV transmission (domain 8) as it implies talking about sexual activity. The richness of PNG ethnic diversity with its varied cultural practices means that the information on HIV prevention needs to be presented in a variety of culturally accepted ways (13). Local norms were noted in other studies as a barrier that may deter parents from communicating to their children about sexuality.(19) Educational material that is useful in one context, such as Botswana, needs adaptation to other settings.

This study showed an apparent positive association of education with ART adherence. The participants in this study improved their ART adherence during the course of education, however in most of these children adherence was already very good. There is inherent bias in this analyses, as children with HIV who did not attend regular clinic visits may not have such good adherence. Elsewhere, studies in Uganda where an open communication technique with HIV infected children promoted adherence to ART,(5) and in northeast Ethiopia also found that good adherence to ART depends on informing children of their infection status.(20)

This study has several limitations. While the sample for the first 2 clinic visits was moderate, there was more limited follow up for a 3rd and 4th clinic visits because of the time the study could be conducted. In addition, the study was limited to children and families living in an urban setting. The method of knowledge assessment was subjective, and carried out contemporaneously with education incorporated into a clinic visit. So the long-term retention of knowledge was not well assessed, except that in children having a 3rd or 4th clinic visit in which they were exposed to the health education messages, knowledge scores further increased. Given the small study numbers and limited duration of follow-up we could not evaluate any long-term retention of knowledge, or associations between HIV disclosure, ART adherence and social, educational and economic factors. However our study does suggest that effective communication of information can occur with HIV affected children and young people, and this can empower them to understand their condition, be adherent to ART, and be healthier.

To the best of our knowledge, this is the first formal study of paediatric HIV disclosure in the countries of Oceania and the Pacific Islands, and therefore a small step forward towards better understanding of HIV education for affected children.

CONCLUSIONS

Disclosure of a child's HIV status can be challenging for parents, caregivers and health workers. PNG does not have guidelines for HIV disclosure, and the current disclosure rate is low. This study presents one method of HIV education for children that improved knowledge and was associated with some improvements in adherence to ART. The knowledge of being HIV positive and knowing that life can be lived in full despite the diagnosis is important for mitigating stigma, enhancing self-esteem and improving community attitudes to HIV affected people. This study suggests that an educational model is a useful tool for paediatric HIV care, but further adaptation to different contexts is needed.

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Table 1 Clinical and socio-demographic characteristics of study participants (N= 138)

Characteristics	Number (%)
Age (Year)	7.7 (0.28)
Female	70 (51)
WHO HIV staging at presentation	
1	56 (41)
2	19 (14)
3	61 (44)
4	2 (1)
Education levels	
No formal education	65 (47)
Play school	20 (15)
Elementary school	18 (13)
Primary school	35 (25)
Parental status	
Both parents living	56 (41)
Both parents dead	29 (21)
Mother dead	20 (14)
Father dead	30 (22)
Unknown health status of parents	3 (2)
Primary or sole caregiver	
Parent (unspecified)	8 (5.8)
Mother	60 (43.5)
Step-mother	1 (0.7)
Father	12 (8.7)
Foster parent	1 (0.7)
Adopted parent	3 (2.2)
Aunt / uncle	12 (8.7)
Grandparent	40 (29.0)
Sibling	1 (0.7)
Caregiver HIV status	
Positive	78 (56.5)
Positive and on ART	73 (52.9)
Positive but not on ART	3 (2.2)
Discordant couple on ART	1 (0.7)
Discordant couple not on ART	1 (0.7)
Negative	55 (36.9)
Unknown	5 (3.6)
Caregiver education levels	
No formal education	62 (44.9)
Primary education	18 (13.0)
Secondary education	23 (16.7)
Tertiary education	26 (18.8)
Unknown	9 (6.5)

Table 2. Reasons for not disclosing - among 128 caregivers of HIV positive children

Characteristics	Number of patients (%)
Reason for not disclosing	
Child is too young	73 (57.0)
Inability to keep secrets	18 (14.1)
Child cannot understand	13 (10.2)
Fear of stigma and discrimination	3 (2.3)
Don't know how to tell the child	3 (2.3)
Feeling sorry for the child	3 (2.3)
Scared of telling the child	2 (1.6)
Wants the parents to tell the child	2 (1.6)
Wants the health care worker to tell the child	1 (0.8)

Table 3: Knowledge scores given during assessments and interviews

Description	Observations N	Mean knowledge score at baseline (SD) * (scale 1-3)	Mean knowledge score during follow-up (SD) ** (scale 1-3)	P-value
The concept of HIV				
2 education sessions	111	1.04 (0.02)	1.77 (0.04)	<0.001
3 education sessions	45	1.07 (0.04)	2.20 (0.08)	<0.001
4 education sessions	14	1.07 (0.07)	2.57 (0.14)	<0.001
How medicine keeps you healthy				
2 education sessions	111	1.11 (0.03)	1.84 (0.05)	<0.001
3 education sessions	45	1.2 (0.06)	2.16 (0.09)	<0.001
4 education sessions	14	1.36 (0.13)	2.71 (0.13)	<0.001
Taking medicine every day				
2 education sessions	111	1.28 (0.05)	2.36 (0.07)	<0.001
3 education sessions	45	1.29 (0.08)	2.71 (0.07)	<0.001
4 education sessions	14	1.43 (0.17)	2.93 (0.07)	<0.001
Simple names of ART medicines				
2 education sessions	111	1.02 (0.01)	1.49 (0.05)	<0.001
3 education sessions	45	1.02 (0.02)	1.73 (0.08)	<0.001
4 education sessions	14	1.00 (0.00)	1.93 (0.07)	<0.001
Soldiers of the body (the immune system)				
2 education sessions	111	1.21 (0.04)	2.08 (0.06)	<0.001
3 education sessions	45	1.31 (0.07)	2.51 (0.08)	<0.001
4 education sessions	14	1.36 (0.13)	2.93 (0.07)	<0.001
Bad guys (the HIV virus)				
2 education sessions	111	1.23 (0.04)	2.11 (0.06)	<0.001
3 education sessions	45	1.33 (0.07)	2.51 (0.08)	<0.001
4 education sessions	14	1.36 (1.30)	3.00 (0.00)	<0.001
Why it is important to take your medicine / Prevention of drug resistance				
2 education sessions	111	1.01 (0.01)	1.44 (0.05)	<0.001
3 education sessions	45	1.02 (0.02)	1.69 (0.10)	<0.001
4 education sessions	14	1.00 (0.00)	2.36 (0.20)	<0.001
Proper used names of ART drugs				
2 education sessions	111	1.01 (0.01)	1.05 (0.03)	0.056
3 education sessions	45	1.02 (0.02)	1.16 (0.05)	0.013
4 education sessions	14	1.00 (0.00)	1.57 (0.14)	0.001
Mode of HIV transmission				
2 education sessions	111	1.01 (0.01)	1.04 (0.02)	0.181
3 education sessions	45	1.02 (0.02)	1.07 (0.04)	0.160
4 education sessions	14	1.00 (0.00)	1.14 (0.01)	0.165
Myths dispelled and how you cannot get HIV from an infected person				
2 education sessions	111	1.01 (0.01)	1.03 (0.02)	0.319
3 education sessions	45	1.02 (0.02)	1.07 (0.04)	0.159
4 education sessions	14	1.00 (0.00)	1.29 (0.19)	0.165

* The knowledge score at baseline is at the first clinic visit. This differs a little from 2, 3 and 4 education sessions because the population was different (111, 45, 14) and only the baseline knowledge score for the population who participated in 2, 3 or 4 education sessions were used respectively.

** The knowledge score at follow-up was measured during the 2nd, 3rd and 4th education session. It was not a formal test, but an assessment made while going through the educational material and having a conversation with the child.

On-line Appendix

HIV education and assessment outline

Early steps - teaching the child about their medications and that the medications keep them healthy

1. When do you take your medicines?

The child may say the specific times (e.g., six in the morning and six at night). The child may also describe the time more generally, such as "when I wake up" and "before bedtime."

2. Who helps you take your medicines (ARVs)?

3. Why is it important to take all your medicines (ARVs)?

The child may say: so I can stay healthy, so the bad guys (in undisclosed children) or HIV (fully disclosed children) stay asleep, so I can go to school and play

Intermediate steps: teaching the names of medications, the name and concept of "good guys"/CD4 cells (guarding your body and keeping you safe), the ARV's keep your guards strong and your body strong and healthy. Instead of using the term HIV, "bad guys" is used

4. Can you name your medicines (ARVs)?

5. Who can you talk to if you have questions about your medicines (ARVs)?

6. What do good guys/CD4 cells do?

The child may say: The good guys/CD4 cells keeps my body healthy and strong, the good guy/CD4 helps protect us from getting sick, when we do get sick the good guys/CD4 cells help us get healthy faster

Advanced steps: Teach the child they have bad guys/HIV in their body which attack the good guys/CD4 cells, that taking medicines help keep the bad guys/HIV asleep and the good guys/CD4 cells strong, that if you don't take medicines regularly the bad guys/HIV can change and the medicines don't work (the concept of resistance)

7. Do you remember what happens if you forget to take your ARV medicines?

The child may say: The bad guys/HIV would wake up, and attack the good guys/CD4, or, I would get sick, and it will cause the bad guys/HIV to become stronger (resistance)

8. What are some times when you think it might be hard to take your medicines (ARVs)?

Some examples include: when I am on a trip, when I am not feeling well, when I get up early for school, when I am out playing with friends. The goal is to get the child talking about times where he may forget to take his medications.

9. What are some things you can do when it is hard to take your medicines (ARVs)?

The child may answer: someone can set an alarm, or I can tell my parent, friend or family member I am not feeling well so they can help me

For children that know their HIV status

10. In the pictures we can see how the bad guy/HIV can make people of all ages sick. Can you tell me the different ways that the bad guy/HIV can infect people and make them sick? What are some ways you can protect yourself or other people?

The child may know: protect open cuts. If someone has an open cut on their body, and someone with HIV gets their blood on the open cut, the person can get HIV. Some other ways blood with HIV can infect someone are: sharing razors, sharing needles, kissing with OPEN cuts in a person's mouth.

11. What ways can you NOT get HIV from an infected person?

The child may know: you cannot get HIV from talking to a person with HIV, touching a person with HIV; hugging a person with HIV; living in the same house with a person with HIV

For all children

What do you want to be when you grow up?

Encourage the child to suggest something

After each session, ask the child if he has any questions about his medications. Repeat sessions each time the child visits the clinic. Give them the cartoon booklets to browse while waiting. Give POSITIVE reinforcement. Congratulate the child when he understands a concept or answers a question correctly, especially if he did not understand previously.