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A Case Study To Determine the Effectiveness of the Management of the PMTCT Program at Remera Health Center in June 2021, Kigali City, Rwanda

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ABSTRACT

Background: *PMTCT (prevention of mother-to-child transmission) is a key component in HIV prevention programs for mothers and their children (WHO,2007).More than 2.8 million babies have been born HIV-free because to a successful PMTCT program (UNICEF, UNAIDS 2020). HIV continues to infect and affect children, despite major changes in HIV response (UNICEF, UNAIDS 2020).In 2019, over 2.8 million children and adolescents were infected with HIV, with 84%t of them living in Sub-Saharan Africa (UNICEF, UNAIDS 2020).I was interested in evaluating the efficiency of the PMTCT program management at the health center and compare with the national protocol and international standards. This was intended to identify the gaps as well as the strengths in the management of PMTCT service at the Remera health Center,Kigali City.*

Purpose: *The main purpose of the case study was to evaluate the effective the PMTCT Program's management strategy was at Remera Health Center and compare with the national protocol in Rwanda. Literature review of this study is also available*

Methods: *The methods used to conduct the case study were self-prepared questionnaire to ask PMTCT service providers and facility HMIS report for analysis in accordance with national protocol and International Standards.*

Results: *According to my findings, PMTCT services are provided in accordance with the national protocol at this health center. Exposed infants who were at 6weeks of age were at 100%, while those started CPT were 100% and those exposed infants tested at 6weeks of age were also 100% and those tested positive of HIV were 0%.I saw that, HIV Exposed infants at 9 (nine) months of age were at 100%, those tested for HIV were 90.9% while those tested positive were at 0%.HIV exposed infants who were at 18 months of age during the period, outcomes were at 100%, those who tested for HIV at 24 months were at 88.9% and those tested positive were at 0%.Exposed infants who were lost and retraced during the period reporting month were 100%.There was no death and positive HIV exposed infants recorded in this case.*

Conclusion: *This indicated that there was a success story of the PMTCT program at this health center and with other empirical studies conducted for PMTCT in Rwanda. I believe that I should have the opportunity to conduct similar case study in my country, Liberia so as to see what is happening about the PMTCT program and get the best practice from Rwanda.*

Keywords*: Management Strategy, PMTCT Program, Remera Health Center*

1. Introduction

More than 2.8 million babies born HIV-free, thanks to effective PMTCT program(UNICEF, UNAIDS 2020).Despite promising progress in HIV response, children are still being infected and affected by HIV(UNICEF, UNAIDS 2020).Most new infections in children and adolescents occur in sub-Saharan Africa(UNICEF, UNAIDS 2020.In 2019, over 2.8 million children and adolescents were living with HIV, 84% living in sub-Saharan Africa(UNICEF, UNAIDS 2020).Children 0-14 years contributing to 9% of all new HIV infections (UNAIDS report 2020).Adolescent girls and young women account for 26% of infections in sub-Saharan Africa. Three hundred tgwenty thousand (320,000) new infections were estimated among children and adolescents 113,000 children and adolescents died from AIDS-related causes(UNICEF, UNAIDS 2020).

PMTCT (prevention of mother-to-child transmission) is a key component in HIV prevention programs for mothers and their children(WHO,2007).

PMTCT programs provide a variety of services to women of reproductive age who are living with or at risk of HIV in order to maintain their health and prevent their infants from contracting HIV(WHO,2007). PMTCT services should be available prior to conception as well as during pregnancy, labor, and breastfeeding.

I was interested in evaluating the efficiency of the PMTCT program management at the health center and compare with the national protocoland international standards.This was intended to identify the gaps as well as the strengths in the management of PMTCT service at the Remera health Center.

Despite the global burden of COVID-19, the health center continues to provide PMTCT services to the people of Kigali, Rwanda. The primary goal of this case study was to determine the effectiveness of the management strategy of the PMTCT program at the Remera Health Center, Kigali City, Rwanda.

Evolution of the PMTCT program in South Saharan Africa(World Health Organization, 2017)

2010: Starting ART for all HIV-infected pregnant women with CD4 counts ≤350 cells/mm3 or WHO Stage 3 or 4 disease for life. For women with CD4 counts >350 cells/mm3, who are not eligible for treatment according to current criteria, recommend starting ARV prophylaxis early in pregnancy and during breastfeeding, providing ARVs to either the mother or child during the postpartum risk period. Using single-drug regimen (AZT) throughout pregnancy with either AZT or NVP for the infant up to 6 weeks or one week after the cessation of breastfeeding

2013: Offered two options:

- Option B: ART access for all HIV-infected pregnant women regardless of CD4 cell count, stop ART after the period of mother-to-child transmission risk in women who did not otherwise meet eligibility criteria
- Option B+: Lifelong ART initiation for all HIV-infected pregnant and breastfeeding women regardless of CD4 cell count or clinical stage
- Using tritherapy (3 ARVS

2016: "Treat all", WHO recommended that all people living with HIV be provided with antiretroviral therapy (ART), adoption of Option B+ by many countries

2017: eleven (11) countries or territories have been validated for achieving elimination of mother-to-child transmission (MTCT) of HIV and/or syphilis as a public health problem.

- MTCT rate less than 2% (for non-breastfeeding countries), less than 5% (for breastfeeding countries)+other criteria. Mandate of WHO to validate country data.
- Cuba was the first country to be validated for EMTCT in 2015

2020: Thirteen **(**13) countries validated for EMTCT

PMTCT Services in Rwanda

The PMTCT program began implementing the WHO 2013 recommendations in July 2014, which were adopted by Rwanda (initiation of ART for pregnant women as soon as they test positive for HIV(MOH,2019).

Since the program's inception in 1999, the number of pregnant women receiving ART in PMTCT has gradually increased. Based on the option B+ guideline, 89 percent of all anticipated HIV pregnant women received ART between July 2013 and June 2014.(MOH,2019).

The number of pregnant women receiving ART in PMTCT has steadily climbed since the program's commencement in 1999. Between July 2013 and June 2014, 89 percent of all expected HIV pregnant women received antiretroviral therapy (ART) based on the option B+ guideline(MOH,2019).

Negative pregnant women are re-tested in maternity at the commencement of labor, in addition to HIV testing during ANC visits, to boost the likelihood of capturing women who seroconverted during their pregnancies(MOH,2019).

Organogram of PMTCT service at Remera health center

Based on my findings, I developed a concept map of the PMTCT service at the health center

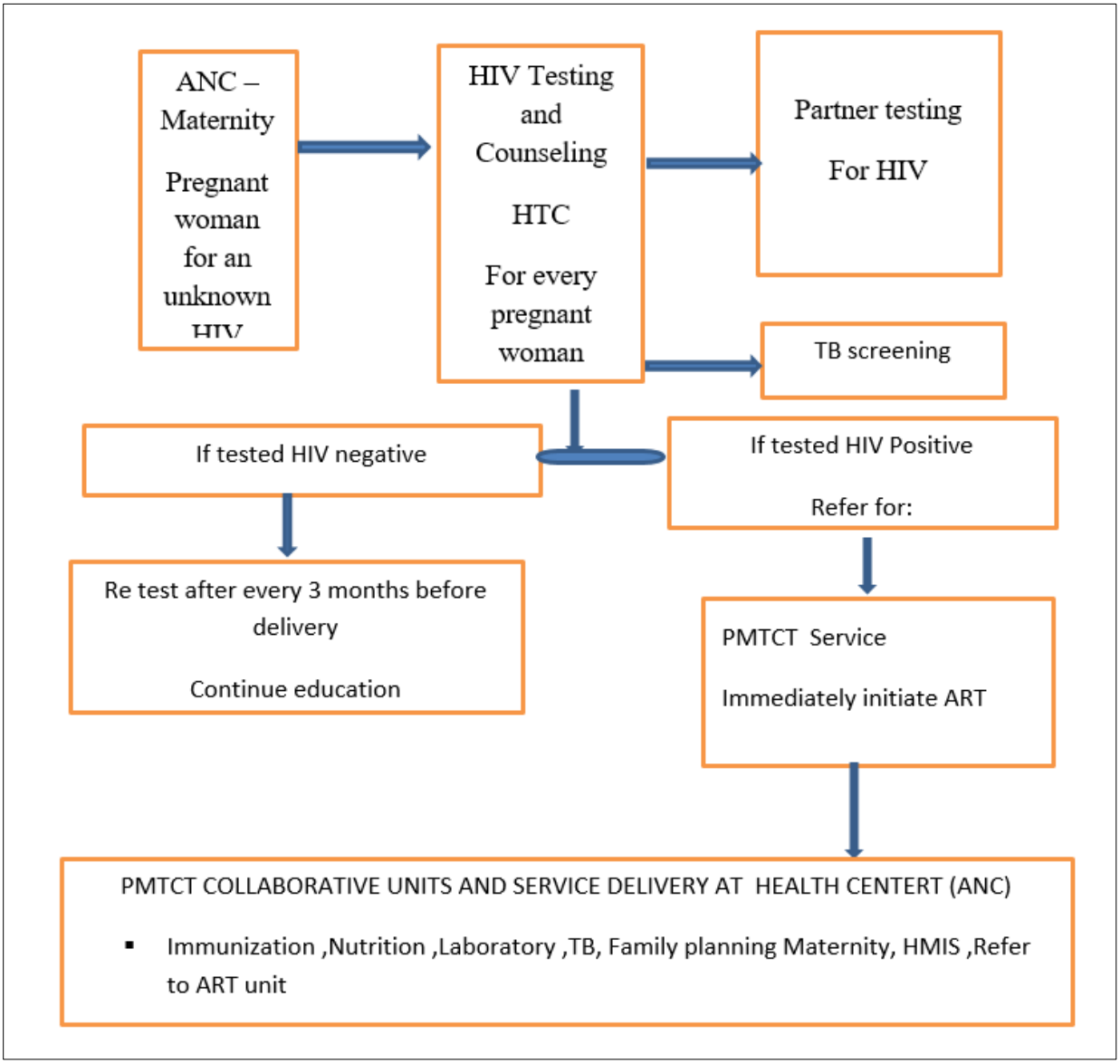


Figure 1: Concept map of organogram Developed of PMTCT Service

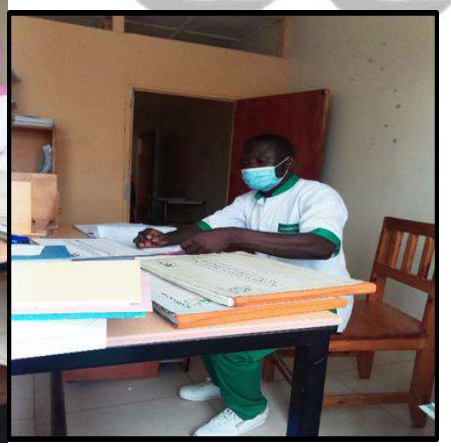
Process of PMTCT services

From my observations and experiences, I had during my clinical placement, every pregnant woman with an unknown HIV status who attended ANC visit was referred to the Counselor at the HTC unit for an HIV test as per the protocol.Every pregnant woman was encouraged to bring her partner for HIV testing while she was being tested. Based on the TB/HIV collaborative activity, it was noted that when HIV services to pregnant women, you can also screen them for

tuberculosis,while providing TB services to an individual, also test that individual for HIV. Following the process and international norm,I noticed that if a pregnant woman tests HIV negative during ANC visit, she would be retested according to the protocol until she gives birth. If she is HIV positive, she will be immediately enrolled for PMTCT service. I realized that the health center offers a variety of services in collaboration with PMTCT. The PMTCT service at this Health Center is provided in collaboration with the following units:immunization,nutrition, Laboratory,TB unit, Maternity,family planning ,IMCI, HTC,HMIS, Refer to ART unit.During my four weeks of clinical placement,I was able to have gone through all of these units.While going through these units to gain knowledge and skills,I undertook a case study on the effectiveness of the management of the PMTCT Program and comparing national protocol and international standards to current practice at the health center.

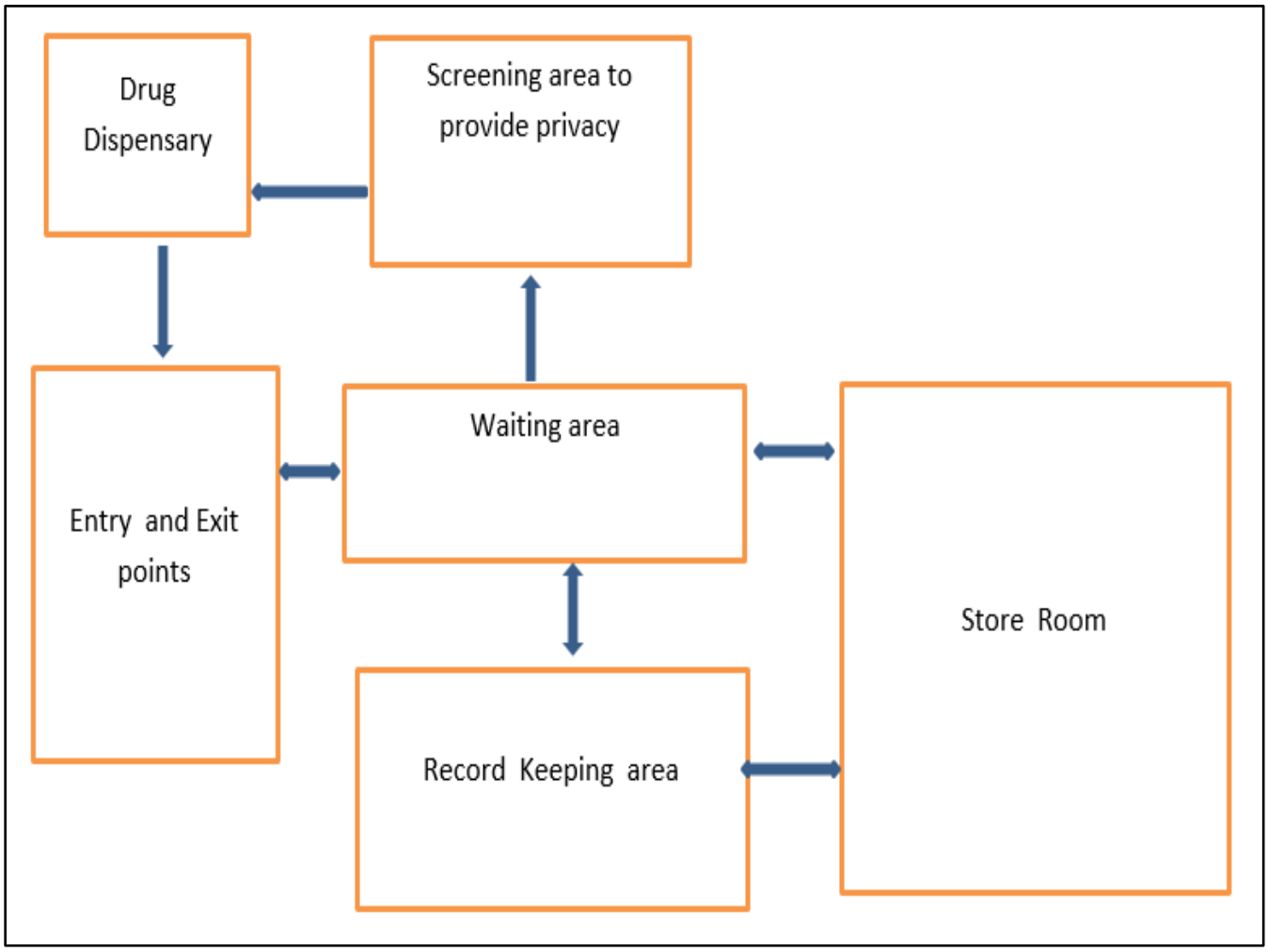
I saw that the PMTCT unit has a limited space with no privacy and that everything is done in one place such as the screen, recording area, seating area, drug dispensary, and storage.

As you can see, the screening area, drug dispensing, and recordkeeping are all done at this same table, as shown in the photographs below. There is no area of health assessment available to patients in order to protect their privacy.



PMTCT service Provider James V.T. Tuckolon ,I was Collecting the June PMTCT at Remera Health sector-Rwanda

Below is proposed conceptual model is optimal for PMTCT service at this health center, based on the challenge about limited space in delivery the service:



2. Relevant Literatures

A literature review of relevant published articles was done. Google scholar, Pub med and Research gate search engines were used to find relevant papers published from 2000 to 2021.

3. Methodology

Introduction

Methods and techniques used by the researcher during gathering relevant information from the field.

Method of used for this study

The methods used to conduct the case study were qualitative methods as well as quantitative in form of self-prepared questionnaire to ask PMTCT service providers and facility HMIS report for analysis in accordance with national protocol or guideline and International Standards.

Case study Population

The case study populations were all pregnant women both negative HIV and HIV positive attended antenatal care (ANC)and postpartum care (PNC) visits as well as their partners. For those HIV positive women and their exposed infants attending at health center for PMTCT service were included in the case study.

Sampling method

There was no specific sample size for this case study,all pregnant women attending antenatal care (ANC),and postparum care (PNC)and their partners were provided PMTCT services according to national protocol or guideline. PMTCT service providers were given self-prepared questionnaire to respond to the PMTCT program offered at the health center.

4. Findings

Data result for the effectiveness of the PMTCT services in accordance with the national protocol at this Health Center is displayed as below.

Table 1: HIV Exposed infants indicators

Indicators	Outcomes
HIV exposed infant who are 6weeks of age	27
HIV exposed infant starting CPT at 6weeks of age	27
HIV exposed infants tested at 6weeks with PCR	27
HIV exposed infants tested HIV positive at 6weeks with PCR	0
HIV exposed infants who are 9 months of age	11
HIV exposed infants who tested at 9 months	10
HIV exposed infants tested positive for HIV at 9 months	0
HIV exposed infants who are 18 months of age	14
HIV exposed infants tested HIV at 18 months	11
HIV exposed infants tested HIV positive at 18 months	0
HIV exposed infants who are 24 months of age	18
HIV exposed infants tested for HIV at 24 months	16
HIV exposed infants who exited negative PMTCT at 24 months	16
HIV exposed infant tested positive at 24months	0
HIV exposed infant who were lost and retraced this month	1
HIV exposed infants who are reported as lost to follow up after 3 months follow up	0
HIV exposed infants who are confirmed HIV positive this month	0
HIV exposed infants who are deceased this month	0

HIV exposed infants outcomes at six weeks June, 2021

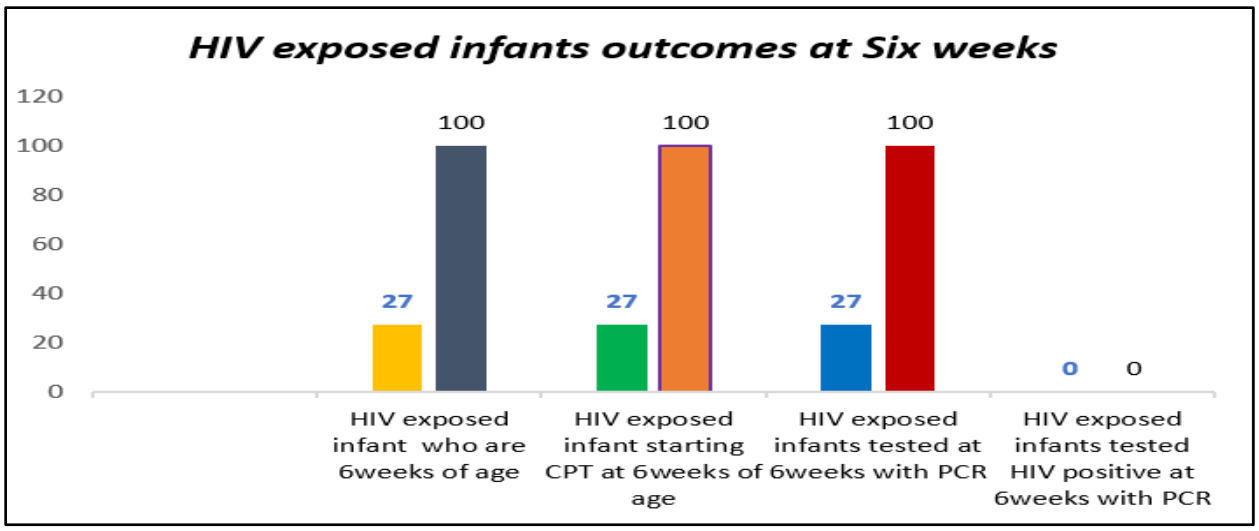


Figure 2: HIV Exposed infants outcomes at six

As shown in the above figure; HIV exposed infants outcomes at six 6weeks as noted in June 2021 HMIS report. Exposed infants who were at 6weeks of age were at 100%, while those started CPT were 100% and those exposed infants tested at 6weeks of age were also 100% and those tested positive of HIV were 0%.

HIV exposed infants outcomes at nine months June,2021

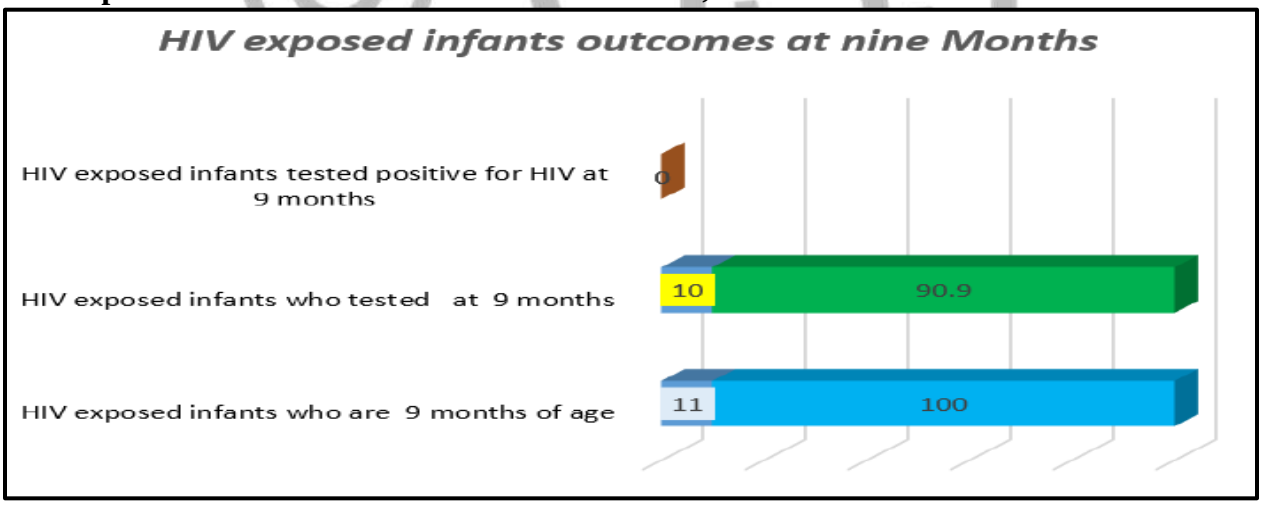


Figure 3: HIV exposed infants outcomes at nine months

As revealed in this figure, HIV Exposed infants at nine months of age were at 100%, those tested for HIV were 90.9% while those tested positive were at 0% in June 2021 according to the HMIS report respectively.

HIV exposed infants outcomes at 18 months June,2021

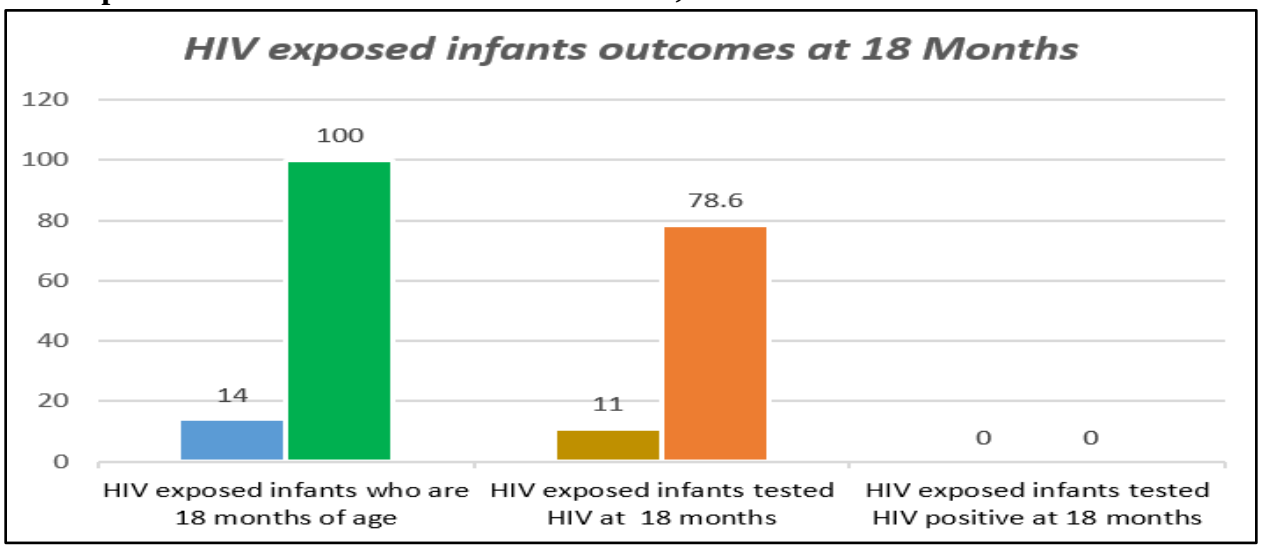


Figure 4: HIV exposed infants outcomes at 18 months

This figure also shows that HIV Exposed infants who were at 18months in PMTCT were at 100%, those tested at 18months were at 78.6% while those tested HIV positive were at 0%.

HIV exposed infants outcomes at 24 months June,2021

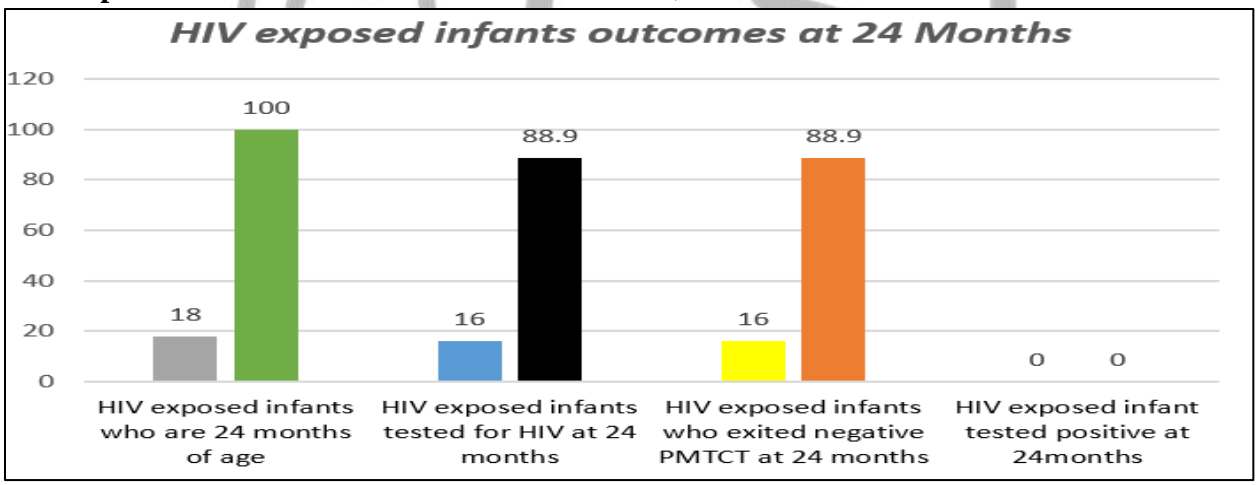


Figure 5: HIV exposed infants outcomes at 24 months

This figure shows that HIV exposed infants who were at 18 months of age during the period of June 2021 in PMTCT were at 100%, those who tested for HIV at 24 months were at 88.9% and those tested positive were at 0%. This indicates that there is a success story of the PMTCT program at this health center.

Exposed infants follow up results

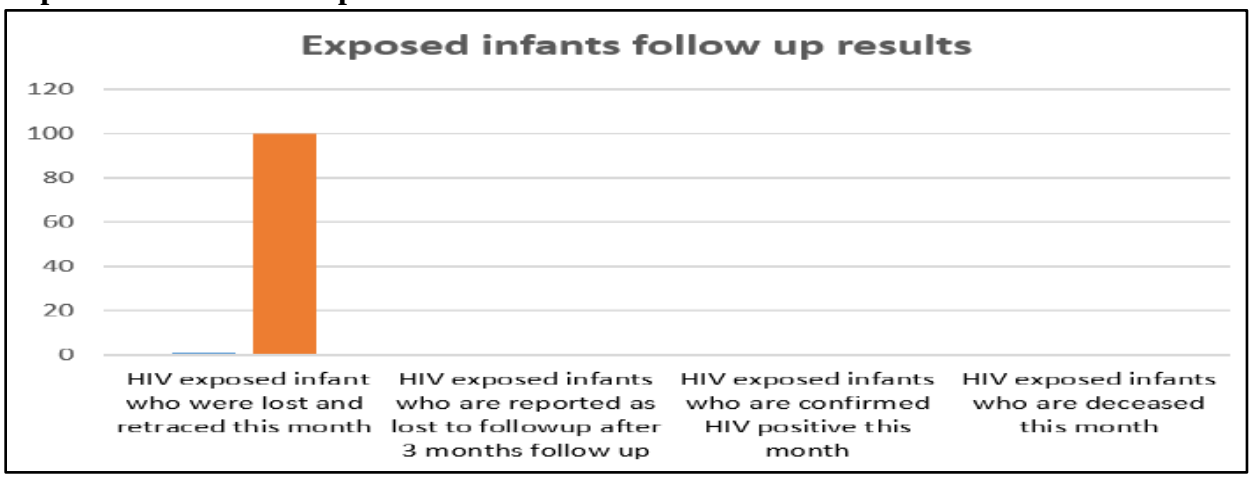


Figure 6: Exposed infants follow up results

This figure also details that HIV infant were lost and retraced this month reporting month were 100%, while those who were reported as lost to follow up after three months were 0% and 0% death during the reported period.

Strengths, challenges/obstacles

Following my observations I created a questionnaire to be delivered to PMTCT care providers for answering as well as a June 2021 HMIS report.

Finally, the multidisciplinary team agreed the team to carry out the review of documents and to answer interview or questionnaire.

Strengths Observed for PMTCT service at the Health Center

- Based on the responses and according to the monthly HMIS report for June 2021, PMTCT services, we found that, protocols are adhered at this health Center. Exposed infants enrolled in the PMTCT program, turned or tested negative after 24 months.
- An effective internal referral system from PMTCT unit to Immunization, nutrition, Family, TB unit, ART after leaving PMTCT, IMCI.
- Trained staff to provide PMTCT services
- Proper documentation of patient information in ledger
- Availability of ARVs without stock out.

Challenges observed

We recognized the best services for PMCT but there are other things need to be worked during the service provision. Those require improvement are:

- We observed that at the entry point there is no vital signs taken by care providers
- There is no proper anthropometry measurement taken, for example weight
- Lack of privacy for care to the mothers and child
- Inadequate health assessment
- Shortage of PMTCT care providers
- Inappropriate space to provide PMTCT service
- Health education is not routinely done unless patient concern about the child health status
- BCC/IEC materials were not observed during our clinical placement
- Delay in receiving laboratory results

Conceptual model of an optimal PMTCT service

We feel and propose that the below conceptual model is optimal for PMTCT service at this health center, based on the challenges of delivering appropriate patient care.

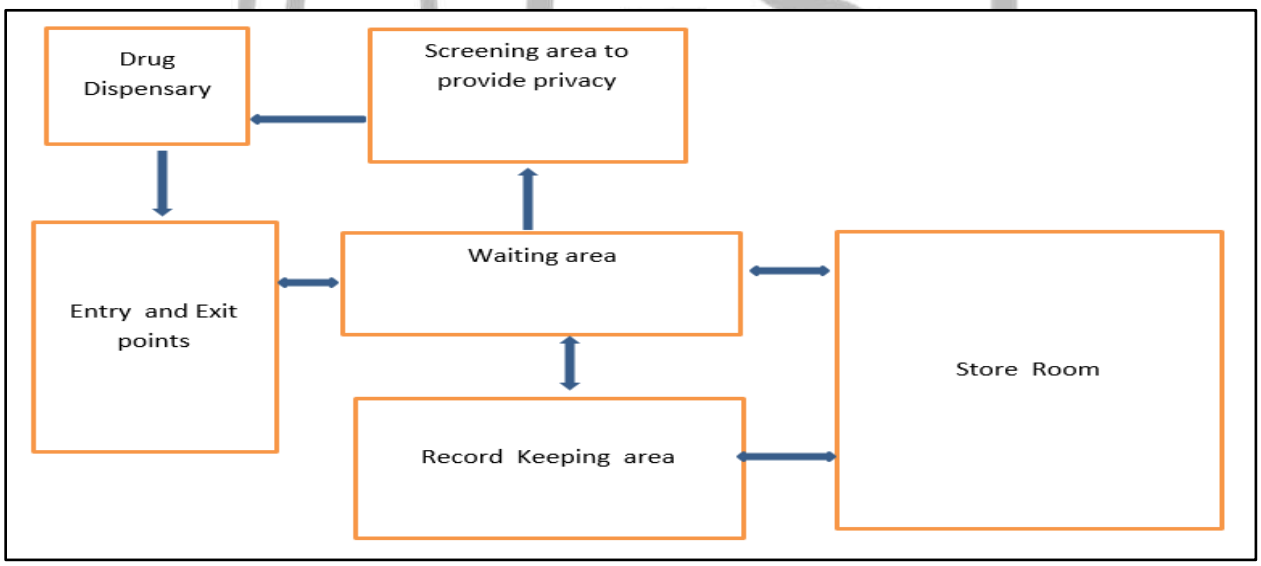


Figure 7: Conceptual model of an optimal PMTCT service

The flow of patients for PMTCT is depicted in this conceptual model in order to provide appropriate care and eliminate barriers while providing the service. As a result of my observations, I developed this concept to include an entry and exit points, through which the

patient can travel to reach the waiting room. Patients can receive health promotion and education messages in the waiting room, including basic information on PMTCT services. When the patient is called upon by the care provider to give privacy and confidentiality, she might walk from the waiting room to the screening area. At the screening area,vital signs,growth monitoring tools should be available. Patient appointments and follow up visits at this point. Following the assessment, the patient is permitted to proceed to the drug dispensary to get their drugs which have been ordered in accordance with the protocol. Education regarding the drugs' side effects, diet, and follow-up visits are done on a regular basis in the drug dispensary.If a patient, mother, or caregiver exits the dispensary, they should get through the exit point and not to return to the screen area, unless there are special circumstances. Finally, the care providers reserve the record keeping and storage areas, until the patient/care provider is called to obtain certain information.

5. Conclusion and Recommendation

Conclusions

PMTCT programs that are comprehensive and widely available and is significantly improving the quality and length of life for women and children around the world. Implementing the policies and activities outlined will help to accelerate service expansion in order to meet the 2010 objective of universal access to HIV prevention, treatment, care, and support, as well as make progress toward eliminating HIV infections among babies and young children. This will necessitate governments and their partners working together to maximize the use of scarce knowledge and resources to achieve a single national goal.

Recommendations

During my four weeks clinical placement and with the good success story with PMTCT outcomes,I observed other services that needed improvement:

- We recommend that vital monitoring to be as routine basis
- Growth and monitoring need to be done at every visits
- PMTCT service privacy and adequate space for the mother and her exposed infant need to be ensured
- Make available BCC/IEC materials at the unit
- Increase staff at the unit to reduce work overload

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