WHAT FACTORS AFFECT PREVENTION OF PARENT TO CHILD TRANSMISSION OF HIV IN ALOTAU HOSPITAL
OUTLINE — PPTCT IN ALOTAU PROVINCIAL HOSPITAL

• INTRODUCTION
• PPTCT AND PEadiatric HIV PNG AND IN ALOTAU HOSPITAL
• AIMS AND OBJECTIVES
• METHODOLOGY
• RESULTS
• DISCUSSION
• SUMMARY
• RECOMMENDATION
• ACKNOWLEDGEMENT
• REFERENCES

"HIV prevention — It is everybody’s business"

~Unknown~
HIV Epidemic

- **Globally**
  - HIV epidemic – a global issue with health and socioeconomic burdens
    - 2011-UNAIDS estimated 34 million PLWHA
      - 50% women
    - ~3.3 million children <15 yrs infected with HIV (UNICEF data 2011)

- **PNG**
  - Population of 7.1 million, 75% of population in rural areas
  - HIV infection was first reported in 1987
  - HIV epidemic in PNG expanding, reported to have a generalized HIV epidemic in 2004
    - Shift in recent years to the rural areas
  - The National HIV prevalence is estimated at 0.79%, with about 33,431 people living with HIV in 2012

- In Oceania region (the Pacific, Australia, New Zealand), an estimated 53,000 people are living with HIV (2011)
  - 70% in PNG (34,100)
    - 9% were children under 15 years of age (highest peadiatric HIV burden in region).
    - Nearly 10% of the total new cases acquire the infection in the perinatal period
Parent To Child Transmission, Alotau Hospital

• 2006-March 2013
  – 60 % lost to follow up

• Peadiatric HIV/ AIDS

![Pie chart showing the distribution of pediatric HIV/AIDS cases from 2005 to February 2013. The chart indicates:
- Currently on ART, good follow up: 39%
- Deceased: 42%
- Lost: 16%
- Transferred: 3%]
• Routes of transmission of HIV infection in the children can be categorised as follows:
  – Vertical: from mother to child, either intrauterine, intrapartum, or postnatally through breastfeeding.
  – Sexual contact: Sexual abuse, sexually active adolescents
  – Intravenous routes: Unscreened blood and blood products

• >90% of cases, children infected by vertical transmission from their mothers.
  – During pregnancy (5-10%)
  – labour and delivery (10-20%)
  – Breast feeding (5-20%)

• Studies have shown that parent to child transmission of HIV is a preventable
• Absence of any interventions - 15-45% transmission rates from mother to child.
• Effective interventions – Transmission rates <2-5%
## Risk factors for transmission

<table>
<thead>
<tr>
<th>PREGNANCY</th>
<th>LABOUR &amp; CHILDBIRTH</th>
<th>BREASTFEEDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>High viral load (Recent infection or advanced AIDS)</td>
<td>High viral load (Recent infection or advanced AIDS)</td>
<td>High viral load (Recent infection or advanced AIDS)</td>
</tr>
<tr>
<td>Viral, bacterial or parasitic placental infection</td>
<td>Rupture of membranes &gt; 4 hrs before labour begins</td>
<td>Duration of breast feeding</td>
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<td>Untreated STIs</td>
<td>Multiple VEs</td>
<td>Early mixed feeding (food/fluids + breast feeding)</td>
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<tr>
<td>Maternal malnutrition (any cause)</td>
<td>Invasive procedures during labour and childbirth (eg. Episiotomy, vacuum ext)</td>
<td>Breast abscess, nipple fissures, mastitis</td>
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<td>Obstetric complications eg. APH, PROM, Premature labour, abdo trauma (GBV), unsafe blood tf</td>
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<td>First infant in multiple birth/LBW</td>
<td>Chorioamnionitis (from untreated STIs or other infection)</td>
<td>Poor maternal nutritional status</td>
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<td>Oral disease in the infant (eg. Thrush or sores)</td>
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</table>
• Effective Prevention of parent to child transmission of HIV includes
  – Early commencement of ART in pregnancy,
  – use of ART intrapartum (beginning of labour to completion of 3rd stage)
  – Proper management of labour and delivery (eg. Avoiding artificial rupture of membranes and minimising use of invasive procedures)
  – Use of ART postnatally for both mother and baby
  – Either Exclusive breast feeding until 6 months of age, OR use of artificial feeds
Elements of PPTCT – A comprehensive approach

1. Primary prevention of HIV infection
   - Sexually active women/ men/ girls/ boys

2. Prevention of unintended pregnancies among women with HIV
   - HIV infected women and men

3. Prevention of transmission of HIV from women infected to their infants
   - HIV infected women, their partners

4. Provision of treatment, care and support to women infected with HIV, their infants and their families
   - HIV infected women, their husbands, children and families
• Is our preventative measures (Prevention of Parent to Child Transmission) adequate?

• What factors affect the prevention of parent to child transmission of HIV in Alotau hospital?
AIMS AND OBJECTIVES

- AIM: to identify, if any, factors that are affecting the prevention of vertical transmission of HIV from mother to child in Alotau hospital

Objectives:
1. To identify all Peadiatric HIV and PPTCT cases seen at Alotau hospital between 2005 and Aug 2013
2. To assess the outcome of each child at risk
3. To determine the confirmed status of all mothers
4. To assess the adequacy of antenatal, labour, delivery and post-natal treatment and feeding details of the child.
5. To assess the postnatal follow-up of child, parents and siblings
6. To identify, if any, factors that currently affect the PPTCT program in Alotau Hospital
Type of study

- Retrospective qualitative study
- All Pediatric HIV/ AIDS and PPTCT cases seen at the Alotau Provincial Hospital between 2005-Aug 2013. Case who attended ANC or delivery in other provinces were excluded
- Operational assessment of the current PPTCT program being carried out in order to assist the Pediatric Department as well as the hospital in strengthening or improving the PPTCT program.

Methodology

- Questionnaire
- Sources of Information
  - Pediatric/ PPTCT register (Pediatric Department)
  - All PPTCT cases (Pediatric & Ante/Postnatal/delivery) admission records/ charts (2005-Aug 2013)
  - Interviews of mothers coming in for follow-up/ clinic card records where available
  - Register of postnatal mothers with HIV - DCC

- Data analysed using Microsoft excel

- CONFIDENTIALITY MAINTAINED AT ALL TIMES.
F. FOLLOW-UP OF BABY
1. DISCHARGE AGE (AND DATE):
2. D/C MEDICATIONS
   ZIDOVUDINE/ ZIDOVUDINE AND CO-TRIMOXAZOLE/ NO MEDICATIONS
3. REVIEWS
   3A. 6 WEEKS (UP TO 18 MONTHS IF NOT SEEN IN EARLY INFANCY)
      FEEDING: BREAST MILK/ ARTIFICIAL/ MIXED FEEDING
      MEDICATIONS:
      DBS DONE – YES/ NO
   3B. 6 MONTHS
      FEEDING: BREAST MILK/ ARTIFICIAL/ MIXED FEEDING
      MEDICATIONS:
      DBS DONE – YES/ NO
   3C. AFTER 18 MONTHS TO TWO YEARS
      OUTCOME: HIV POSITIVE/ HIV NEGATIVE/ DIED/ LOST TO FOLLOW-UP/ TRANSFERED

G. MOTHER’S FOLLOW-UP
For all New Case
1. CONFIRMATORY TEST DONE: YES/ NO
2. IF YES, RESULT: POSITIVE/ NEGATIVE/ INDETERMINANT/ UNKNOWN
   ART STARTED: YES/ NO
   CURRENTLY ON ART: YES/ NO

3. FOLLOW-UP:
   Please choose
   • REFERRAL TO HAGU CLINIC
   • FOLLOWED UP BY O&G TEAM AT O&G CLINIC
   • OTHERS: IGAT HOPE ETC

   CURRENT FOLLOW-UP POINT:
   MOTHER ON FAMILY PLANNING: YES/NO

H. PARTNER INFORMATION:
1. PARTNER’S STATUS: POSITIVE/ NEGATIVE/ UNKNOWN
2. PARTNER ON ART: YES/NO
3. IF NO, PARTNER REFERRED FOR COUNSELLING AND TESTING – YES/ NO

I. OTHER ISSUES

SIBLINGS STATUS
Results

- ARTs introduced in 2006 in APH
- Observed increased cases seen 2011, 2012
  - More screening done (Hosp)
- Decline in 2013
  - No stock of rapid tests 2013
- HIV positive cases same (4/yr)
More than 33,341 People Living With HIV in 2012

Estimated new HIV infections

Falls short of target by ~800

2015 Target

- Estimated new HIV infections
- 50% reduction by 2015
- Estimated trend to 2015

Number
Results

• Referral of PPTCT cases to Peads
  – PNW/ LBW
  – OPD
  – H/centres (Waigani, Sineyada, Gurney, Alotau, Goilanai, Huhuna, Budoya, Misima, Guasopa, Daio, Esa’ala, Nimoa, Suau)

• 66% of HIV positive cases from rural areas of MBP
  – No PPTCT interventions

• M:F 1:1

• Age of diagnosis
  – 73% <18 months (DBS or A/body screen with OIs present)
  – 27% >2yrs
    • Oldest child diagnosed at 12 years of age
    • No PPTCT interventions (No ANC screening)
• In this study
  – 87% of all cases had mothers who are confirmed HIV positive (59)
  – 13% - confirmed negative, or were lost to follow-up
Looked at different aspects of PPTCT to determine what contributed to these high number of positive cases.
# Time of Dx and treatment for mother (HIV positive) and babies outcome

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<tr>
<th>WHEN DX MADE</th>
<th>ART STARTED</th>
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<td>ANTENATAL</td>
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<td>ANTENATAL</td>
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<td>POSTANATAL</td>
<td>23</td>
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<td>+ve</td>
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<td>23</td>
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</tbody>
</table>

- NB/ Some patients lost to follow-up.
- Mothers dx antenatally but treatment delayed (unclear referral pathways; pt failure to show, uncertain about drugs prescribing
- Delay of diagnosis and treatment increases risk of HIV transmission
Exclusive Breast Feeding vs Artificial Feeding and Outcomes (n=59)
Feeding Options and Outcomes

• Exc. BF and Positive HIV
  – Other Associated Factors
    • No antenatal ARTs when dx made antenataly
    • Mother sick and BF (high viral load)
    • No prophylaxis meds for baby
    • Home delivery
    • Mum not compliant with ARTs
    • Prolonged rupture of membranes

• HIV Negative Outcomes
  – Artificially fed
  – Exc. Breast fed
    • Antenatal ARTs
    • Hospital deliveries
    • Babies on prophylaxies Rx
Results – Follow-up

Follow-up of HIV Positive Children (n=31)

- 93% (14) of those who died – no PPTCT interventions before diagnosis (AN, intrapartum, during BF)
- Excellent follow-up of 46% (13) a/w with support of partners
- Maintaining ART supply to rural areas with partner support - challenge
Follow-up

- Children seen at Paediatric ward for follow-up + sibling screening
- No proper counselling/testing area/room
- Lack of manpower/training/knowledge
- Loss to follow-up – mobile outreach not done (lack of manpower, resources, transport, proper program co-ordination)

- Parents being followed up at Disease control clinic by medical team; children seen separately by Peads team, different day, location
- 76% of partners/husbands not referred for counselling/testing, and status unknown
Other findings

• Standard precaution, delivery protocols were adhered to for all hospital deliveries
• Prolonged rupture of membranes (x1 case – Full PPTCT – baby HIV positive) associated with increased risk of transmission
• 87 % of home delivered (Mum positive HIV) babies had HIV positive outcomes
• 8 mothers with 2\textsuperscript{nd} pregnancy (with HIV)
  – May be due to lack of proper counselling, lack of partner involvement and referral (early)
Summary

In Alotau Hospital

• Though screening for HIV at LBW increased, number of HIV positive babies after some or full PPTCT interventions remained the same (approx 4 cases per year).

• 66% of HIV positive children were from rural areas with 73% being diagnosed before 18 months due to presence of opportunistic infections (with positive AB test or DBS)

• 53% of babies from HIV positive mothers were confirmed HIV positive, and 25% negative. Some contributing factors include:
  – Delaying commencing ARTs antenatally once diagnosed (lack of knowledge by staff, unclear referral pathways, pt lost to follow-up ?inadequate counselling)
  – Lack of screening for HIV antenatally resulting in no early prevention interventions – chn diagnosed in childhood years
  – Exclusive breast feeding with no other prevention interventions (antenatally, intra-partum and post partum) has increased risk of parent to child transmission of HIV
  – Home deliveries, prolonged rupture of membranes, lack of ART supplies
  – Personal attitude (lack of proper counselling? Patient follow-up)

• Childhood mortality is increased with lack of or inadequate early PPTCT interventions

• Alotau Hospital does not have a central location for an integrated follow-up of mother, child, sibling(s) and father/partner
Recommendations

1. Ensure continuous HIV screening for all pregnant women. Ensure that the tests are of standard quality and that supply is sustained.

2. Promote antenatal HIV testing in all health facilities and roll out counselling and testing to rural areas.

3. Provide continuous educational and training programs for hospital, health centre/ MCH clinic/ ANC staff on HIV and its prevention in children covering:
   1. The different aspects of the integrated Prevention of parent to child transmission of HIV.
   2. Proper counselling and early commencement of ART antenatally, and/or referral once diagnosed.
   3. Include partners/husband as early as possible.
   4. Feeding options and importance/advantages of exclusive breast feeding.
   5. Promotion of supervised deliveries at health facility for all HIV positive mothers.
   6. ARTs use/prescribing.

4. Set up a central location/clinic and provide adequately trained manpower so that an integrated follow-up of mother, child, sibling(s) and father/partner is carried out in order to minimise loss patients and breaking chain of HIV prevention and care.

5. Ensure adequate and sustained supply of ARTs.
Conclusion

• Alotau Provincial Hospital has been running the PPTCT program since 2005 however it still sees increasing cases of Pediatric HIV/AIDS, even in the rural population. HIV transmission from parent to child is preventable and having identified some of the factors involved and addressing them, the number of cases seen can be significantly reduced
Thank you
References/ Acknowledgment

- Dr. G. Oswyn, Paediatrician, MBPPA
- Dr. Kariwiga, Obstetrician, MBPHA
- Management APH
- APH (Medical Records, DCC, O&G, Ward Clerk)
- Operational Plan 2011-2015, PPTCT
- 2013 WHO Consolidated Guidelines on use of ARVs,
- Effectiveness of a Prevention of Mother-to-Child HIV Transmission Programme in an Urban Hospital in Angola, Clemento, 2010
- PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV AND PAEDIATRIC HIV CARE GUIDELINES, Malawi Gov, 2007
- Mother-to-Child (Perinatal) HIV Transmission and Prevention
- HIV in Pregnancy, Medscape.com