

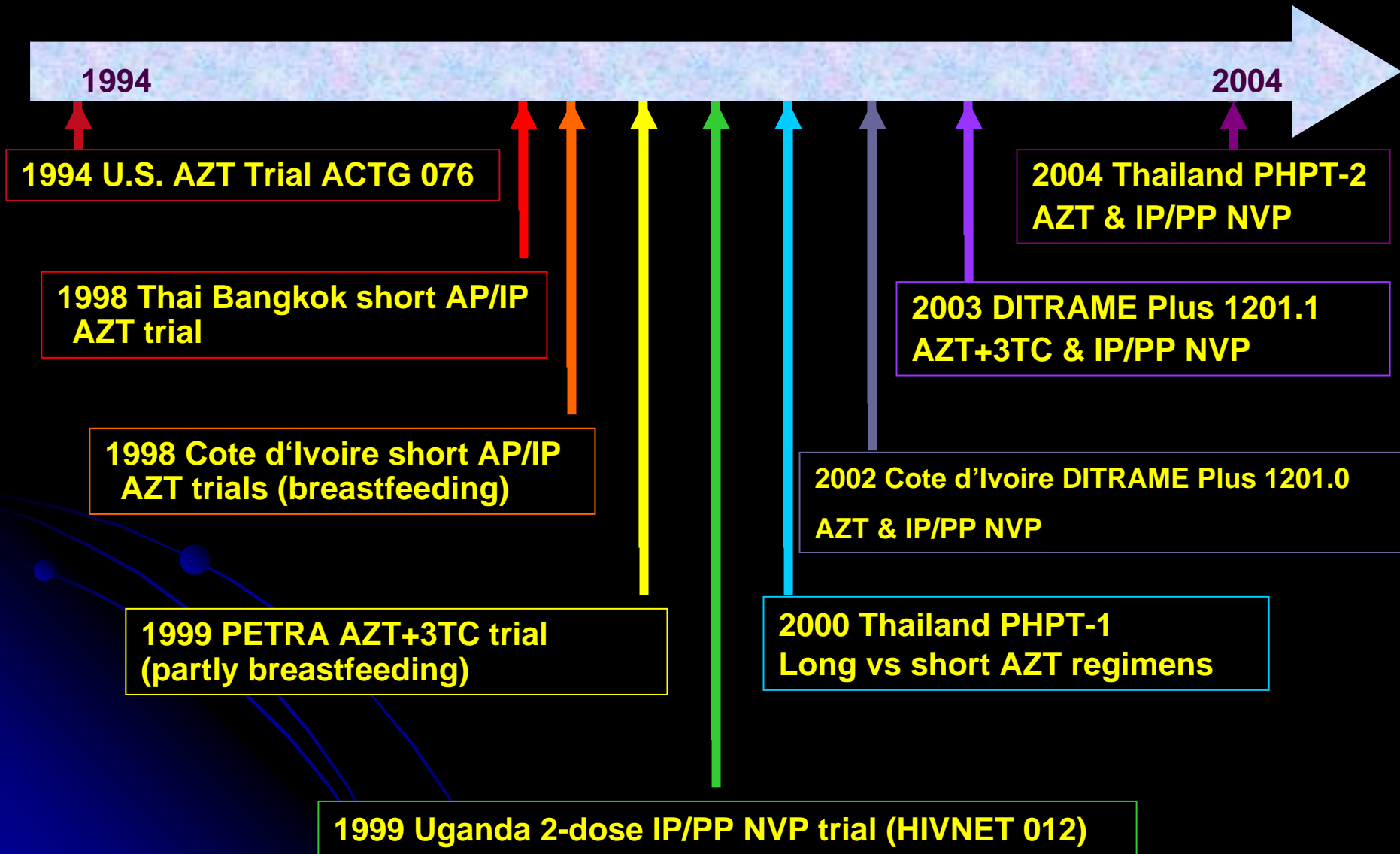
HIV and Infant Feeding

Message and Consideration from WHO Technical Consultation

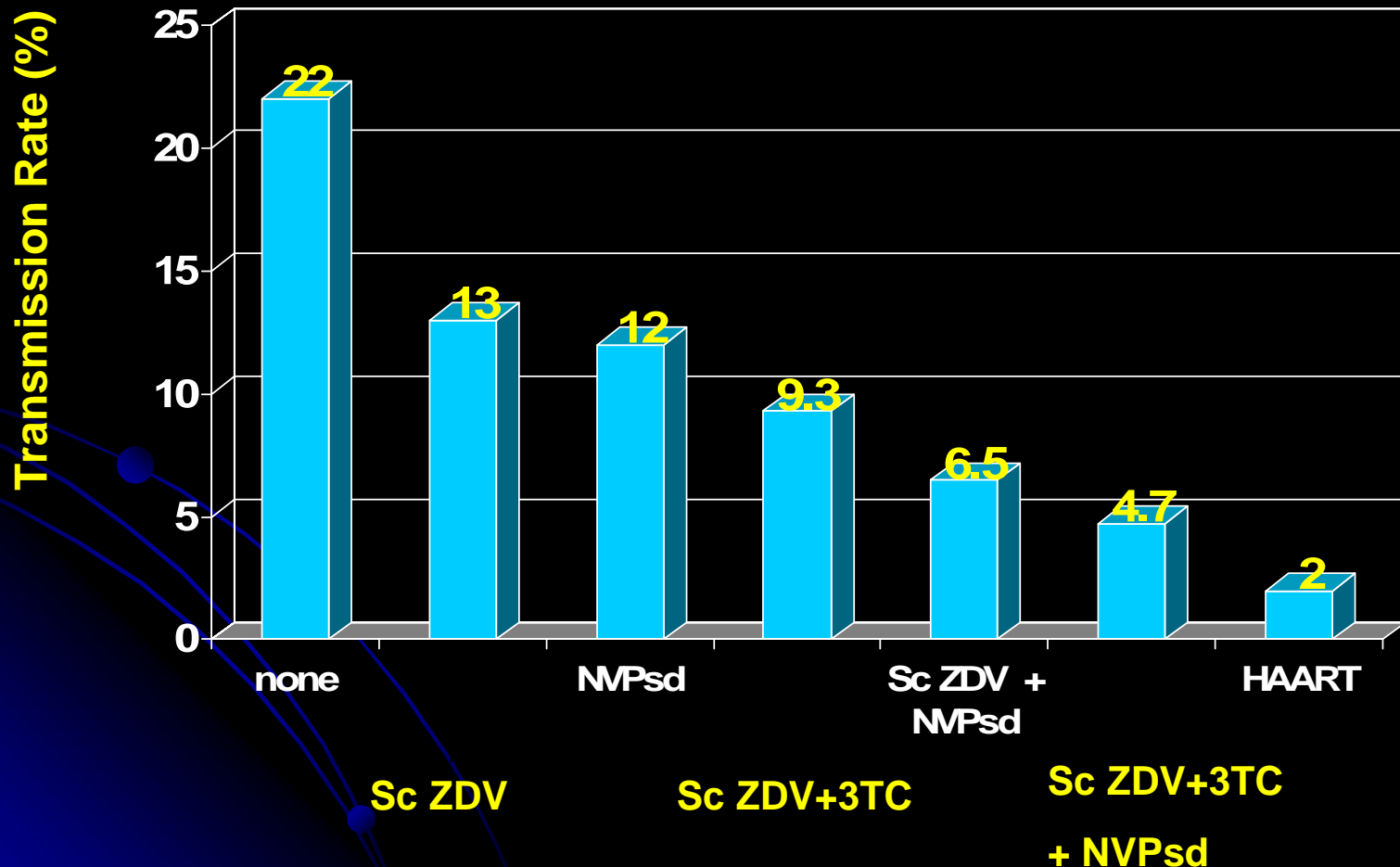


Wang Linhong MD, Professor
National Center of Women and Children Health
China CDC

Perinatal HIV Clinical Trials (Source: McIntyre J)

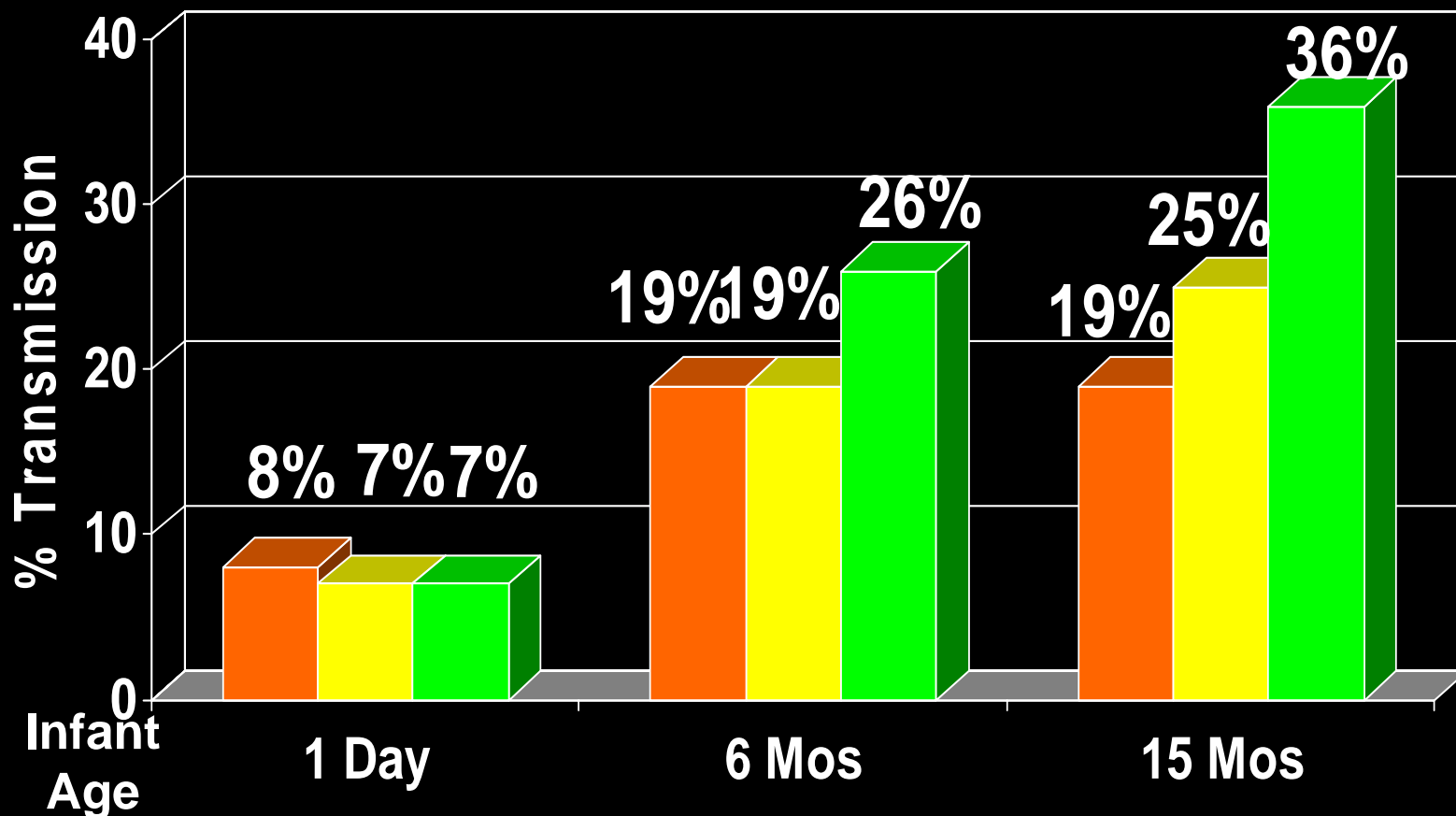


Short-course ARVs and MTCT transmission (6-8 weeks) in Africa (breastfeeding), 1995-2005



Transmission in Breastfeeding Children, South Africa

Coutsoudis A et al. AIDS 2001;15:379-87



- Never Breastfed (N=157)
- Exclusive Breastfed (N=118)
- Mixed Feeding (N=276)

HIV transmission through breastfeeding

- **Exclusive breastfeeding reduced risk of HIV transmission compared to non-exclusive breastfeeding**
 - Valid from 3~6 months
 - Non-exclusive breastfeeding carries a 2~4 fold increased risk of transmission of HIV compared to exclusive breastfeeding.
(in Zimbabwe, South Africa and Cote d'Ivoire)

Early (0-3 Months) Mixed Breastfeeding is Risk Factor for Postnatal Transmission: ZVITAMBO Study

Cumulative Rates of Postnatal HIV Transmission (After Age 1 Month) (95% CI)

BF pattern	N	6 Months	12 Months	18 Months
EBF	256	1.3% (0.0 – 3.3%)	3.4% (0.7 – 6.8%)	6.9% (2.0 – 12.9%)
PBF	490	3.0% (1.6 – 4.8%)	7.3% (5.0 – 9.8%)	8.6%* (5.5 – 11.6%)
MBF	1,414	4.4%* (3.3-5.5%)	8.4%* (6.8 – 10.2%)	13.9%* (11.6-16.3%)

* *Pair-wise comparisons EBF with MBF show significant differences*

Mashi Trial, Botswana: Infant Feeding Trial Component

AZT Backbone

34 wk oral

Effect of BF with
Infant Prophylaxis

N=591

Formula feed
+ 1 Month AZT

- 93% never breastfed
- 95% AZT 1 mo adherence

Maternal characteristics similar:
Median CD4 366; 18% CD4 <200
Median RNA 4.4 log copies/mL

N=588

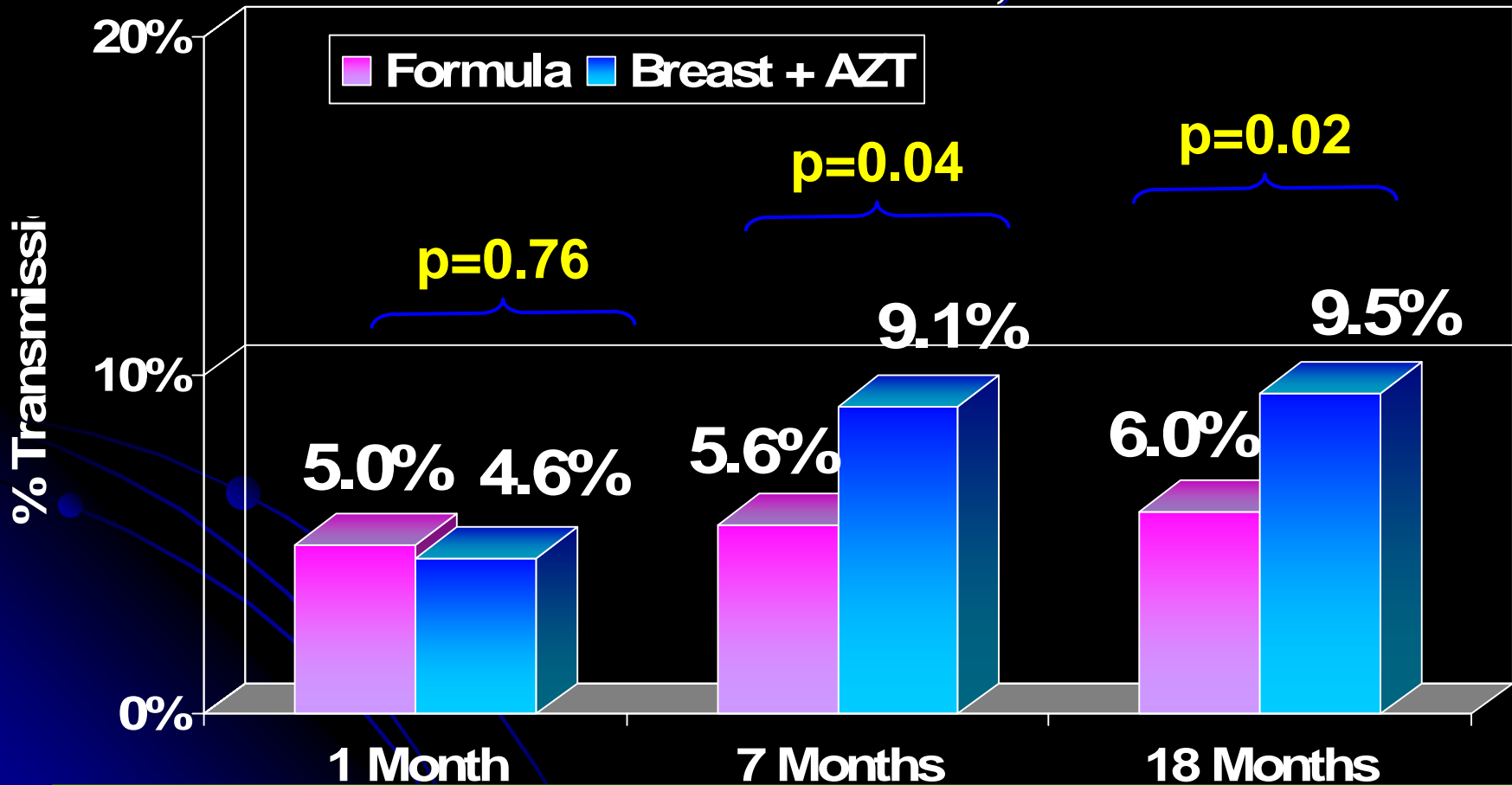
Breastfeed
+ 6 Months AZT

- 18% exclusive breastfed
- 82% mixed/partial BF 1st 5 months
- 84% AZT 6 mo adherence
- Median duration breast feeding, 5.9 months

Thior I et al. JAMA 2006;296:794-805

HIV Infection at 7 & 18 Months is Higher in Breastfed than Formula-Fed Infants Despite 6 Months of AZT

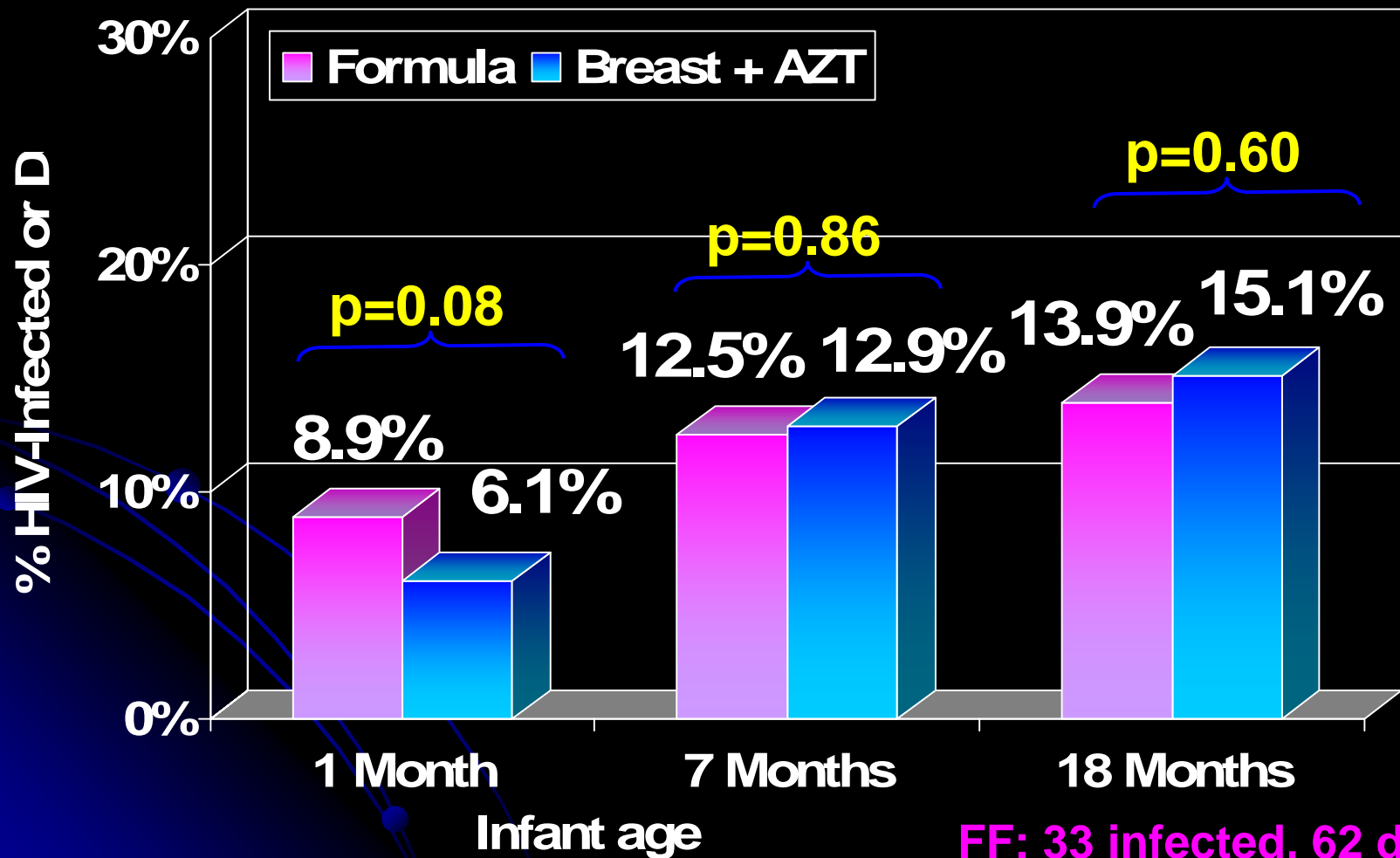
Thior I et al. JAMA 2006;296:794-805



Incremental LPT age 1-7 mos with 6 mos AZT: 4.5%
Incremental LPT in BHITS age 1-6 mos with no ARV: 4.2%

No Difference in 18-Month HIV-Free Survival Between Formula-Fed and Breastfed + AZT Infants

Thior I et al. JAMA 2006;296:794-805



FF: 33 infected, 62 deaths
BF: 53 infected, 48 deaths

New evidence on
HIV transmission through breastfeeding

- **Important risk factors of postnatal transmission of HIV and child mortality**
 - Breastfeeding duration
 - Low maternal CD4+
 - High viral load in breast milk and plasma
 - Mothers who acquire HIV while breastfeeding
- **HAART for treatment eligible women may reduce postnatal MTCT (but follow up trial data on safety and effectiveness are forthcoming)**

Morbidity and Mortality

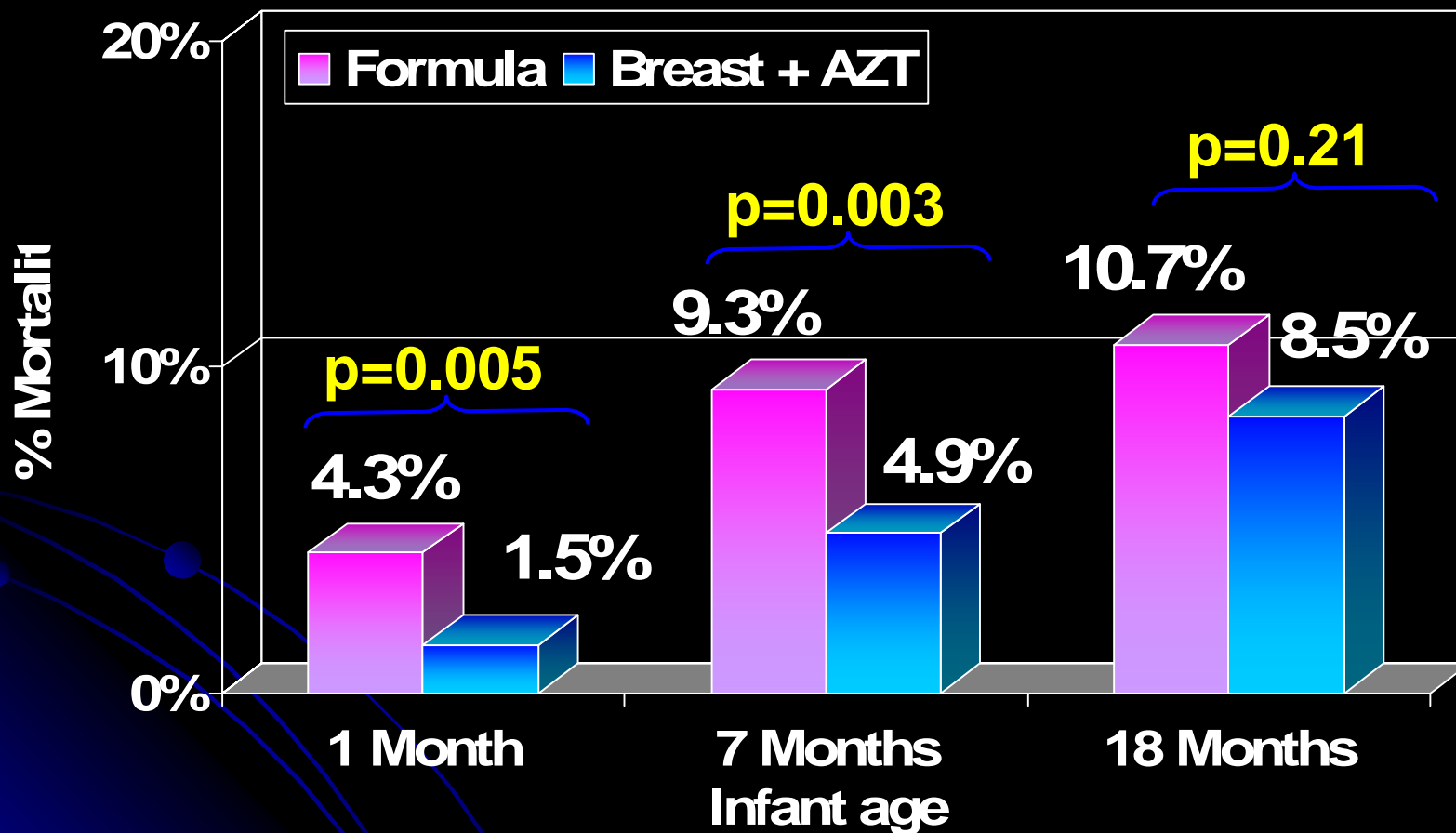
- **Replacement feeding from birth**
 - Replacement feeding from birth had no additional benefit compared to short-duration breastfeeding (3~6 months) in preventing HIV infection or death (HIV-free survival) at 18 months (in Botswana and Cote d'Ivoire)

Morbidity and Mortality

- Replacement feeding from birth
 - **Not know: The risks associated with formula feeding from birth when it is not provided for free and out side of a research setting**

Early Mortality (Through Age 7 Months) is Higher in Formula-Fed than Breastfed + AZT Infants

Thior I et al. JAMA 2006;296:794-805



**Predominant causes infant death:
Diarrheal disease and pneumonia**

- MASHI:

HIV-infected infants who were not breastfed had higher morbidity and mortality. (6 months)

- pneumonia (32.5% vs 9.4%, $p=0.01$)
- diarrhoea (9.9% vs 1.8%, $p=0.16$)
- mortality (33.3% vs 9.4%, $p=0.004$)

Morbidity and Mortality

- **Early breastfeeding cessation (at or before 6 months)**
 - Associated with an increased risk of infant morbidity (especially diarrhoea) and mortality in Malawi (ongoing studies in Uganda, Zambia and Kenya)
 - Offset the benefits of HIV transmission reduction associated with early breastfeeding cessation for the increase mortality from 4~24 months

Improving Infant Feeding Practices

- **Improved adherence and longer exclusive breastfeeding duration (up to 6 months) with providing:**
 - **Consistent messages and frequent counseling and follow-up support**
 - **High quality counseling**
- **For HIV-infected infants, breastfeeding beyond 6 months was associated with Improved :**
 - **Nutritional status**
 - **Infant survival**

(Botswana and Zambia)¹⁶

Home modified animal milk for infant replacement feeding

- **home modified animal milk does not appear to be a feasible and safe long term replacements feeding option**
- **Major issues: not meet all estimated micronutrient requirements (iron and fatty acids), bacterial contamination, preparation of correct dilutions, (studies from India, and S. Africa)**

Issues arising from new information

Issues arising

- **UN HIV and infant feeding guidance is available and increasingly used in policy-making in countries, but challenges in implementation remain at many levels.**
 - Acceptability of early cessation are different in different area:
 - **ZEBS: 75% of those randomized to stop at 4 months did so.**
 - **Ditrane: 45% of those randomized to stop at 4 months did so.**
 - **Pune India: 9% stopped by 6 months**

Issues arising

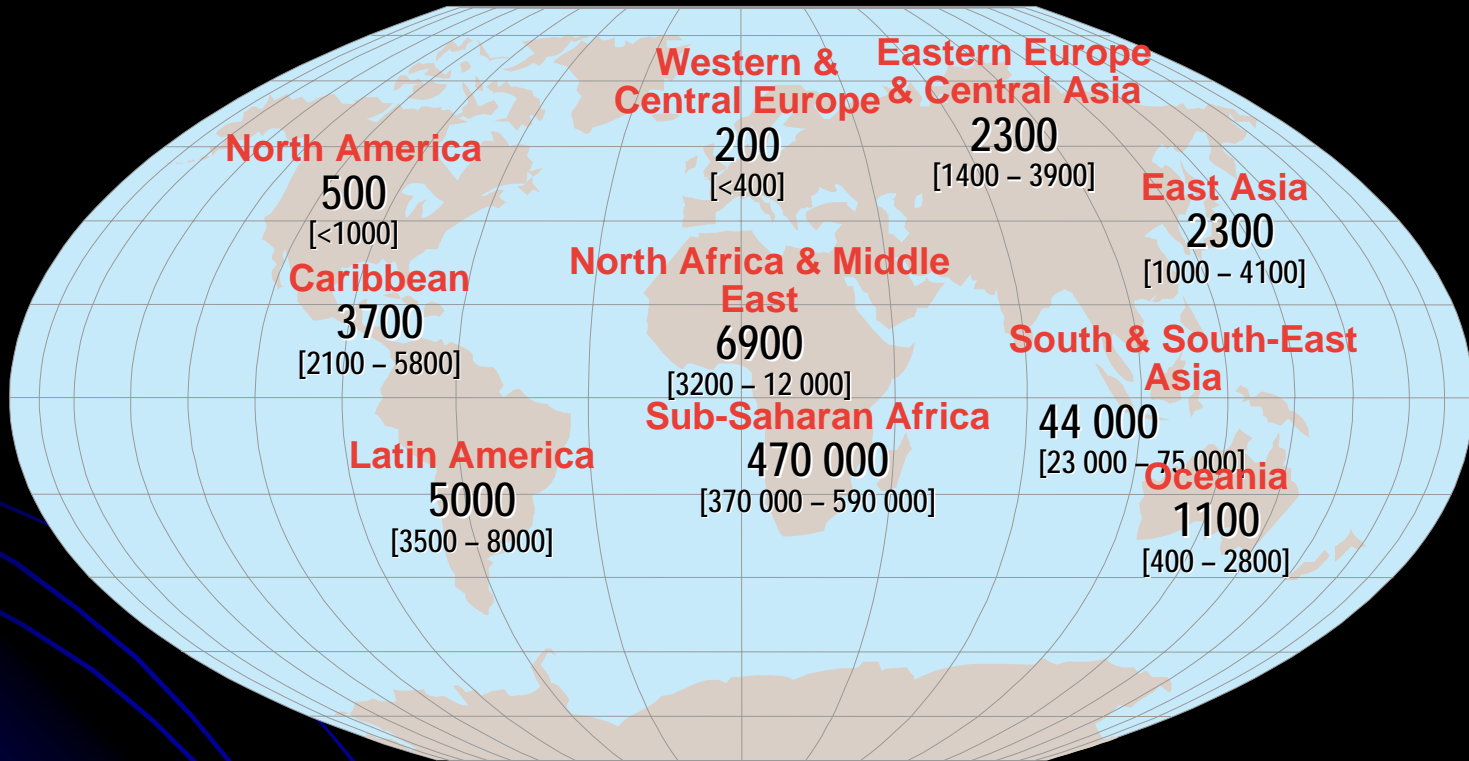
- **Low coverage and quality of the full range of interventions to PMTCT, especially those related to infant feeding**
- **Weak and poorly organized health services effects the quality of infant feeding options supports.**

Issues arising

- **Sharp increase in deaths from diarrhea and malnutrition in non-breastfed infants and young children showed risks associated with replacement feeding for HIV-exposed infants in Botswana**

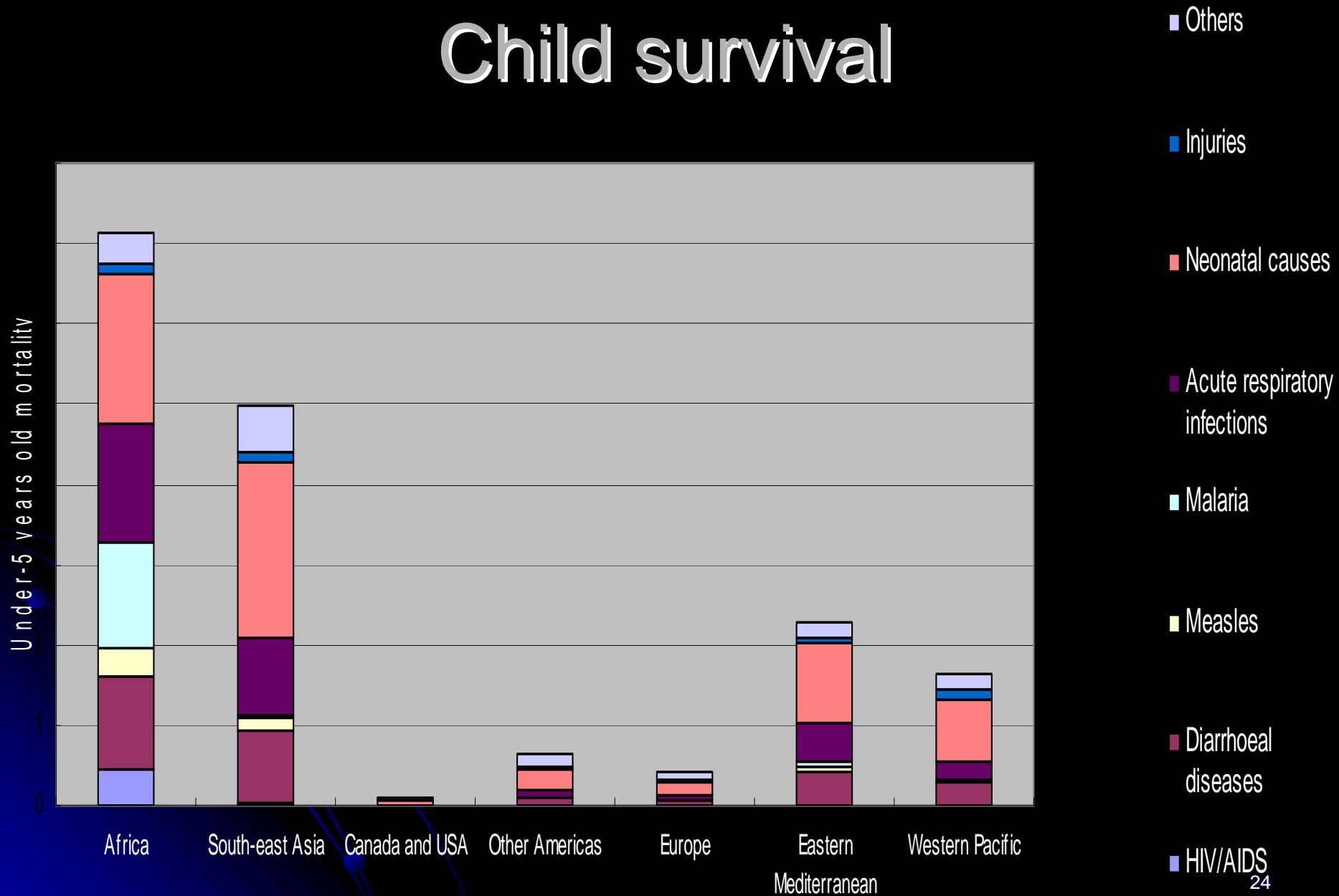
Thinking through the Issues in Asia and Pacific

Estimated number of children (<15 years) newly infected with HIV, 2005



Total: 540 000 (420 000 – 670 000)

Child survival



Thinking Issues

- **Different national guidance for HIV and infant feeding in different countries in Asia and Pacific**
- **Different practice for infant feeding patterns of HIV exposed children in Asia and Pacific**

- **Difference in Asia and Pacific compared to Africa and other regions :**
 - Social-economic
 - Cultural
 - HIV prevalence
 - Morbidity and mortality
 - Cause of child death
 - Hygiene circumstance
 - Vaccine situation
 - Infant feeding behaviours
 - Access to health service
- **Are the research results from Africa and new recommendation suitable to Asia and Pacific?**

Thinking Issues

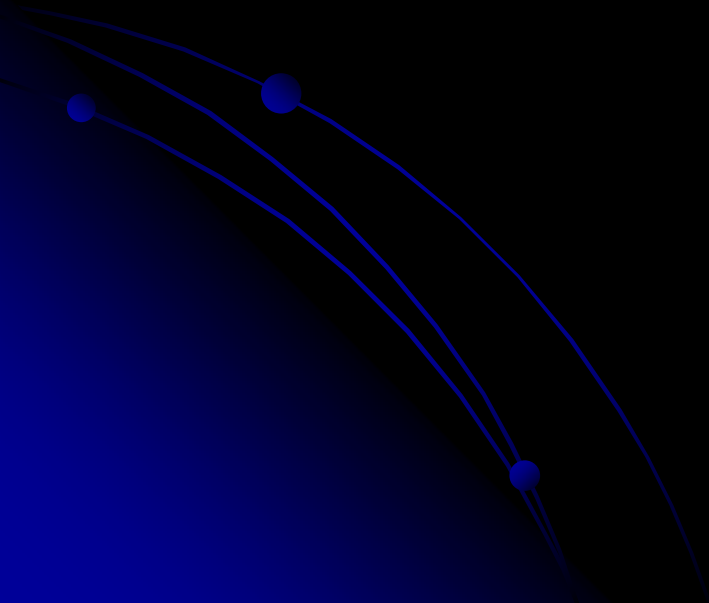
- **Lack of evidenced-based researches on:**
 - HIV and infant feeding
 - the relationship between patterns of infant feeding and MTCT rate
 - infant feeding and infant morbidity and mortality
 - their influencing and risk factors

in Asia and Pacific, as well as in China.

- **Inadequate implementation for WHO and UNICEF issued infant feeding guidance**
 - lack of good quality counseling
 - lack of infant feeding patterns options
 - without effective evaluation for replacement feeding compared to other feeding patterns

- Protection, promotion and support for optimal breastfeeding practices in the general population should **be re-vitalized** in order to help HIV-infected and other women to practice exclusive breastfeeding.

Recommendation

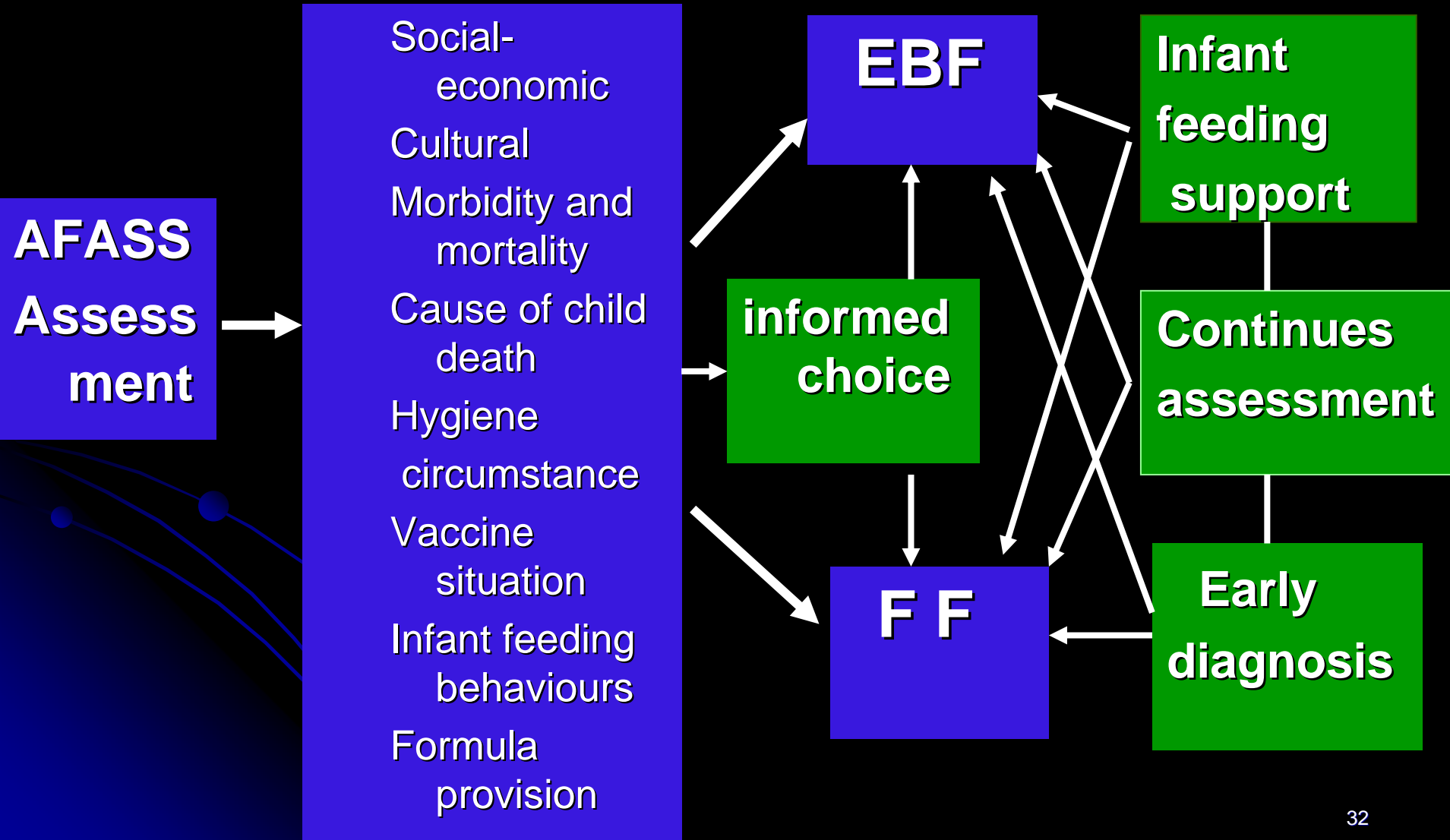


•To assess the gap between country exiting guideline on infant feeding and UN advocated guidance (HIV and infant feeding: Framework for priority action), as to formulate and revise national strategy and measurements.

•Follow WHO criteria for replacement feeding

- Acceptable
- Feasible
- Sustainable
- Affordable
- Safe

Infant Feeding Guidance



Assessing the mother's situation

USE WITH: All HIV-positive women who are being counselled for the first time or who are thinking of changing their feeding option

ASK the questions in the left-hand column while pointing to the drawing that corresponds to each question. Her combined replies to these questions can help the woman to choose the most suitable method for her situation, after she has learned the advantages and disadvantages of each method.

	MOST SUITABLE FEEDING METHOD		
	BREASTFEEDING/WET-NURSING	UNCLEAR	REPLACEMENT FEEDING OR EXPRESSED AND HEAT-TREATED BREAST MILK
Where do you get your drinking water?	River, stream, pond, or well	Public standpipe	Piped water at home or can buy clean water
What kind of latrine/toilet do you have?	None or pit latrine	VIP latrine	Waterborne latrine or flush toilet
How much money could you afford for formula each month?*	Less than ___* available for formula each month	___* available for formula most months	___* available for formula each month
Do you have money for transportation to get formula when you run out?	No	Yes, usually	Always (unless expressing and heat-treating breast milk)
Do you have a refrigerator with reliable power?	No, or irregular power supply	Yes, but not at home	Yes
Can you prepare each feed with boiled water and clean utensils?	No	Yes, but with effort	Yes
How would you arrange night feeds?	Preparation of milk feeds at night difficult	Preparation of milk feeds at night possible but with effort	Preparation of milk feeds at night possible
Does your family know you are HIV-positive?	No	Some family members know	Yes
Is your family supportive of milk feeding and are they willing to help?	Family not supportive and not willing to help, or don't know - can't discuss	Family supportive but not willing to help	Family supportive and willing to help

* You will need to know the monthly cost of formula in your community.

- When replacement feeding is AFASS avoidance of all breastfeeding by HIV-infected mothers is recommended.
- Otherwise, exclusive breastfeeding for the first 6 months of life is recommended.

- **At 6 months, if AFASS criteria are not met, HIV-infected women should**
 - continue to breastfeed their infants
 - give complementary foods in addition
 - return for regular follow up assessments
- Breastfed infants and young children who are found to **be HIV-infected should continue to be breastfed** according to infant feeding recommendations for the general population.

- All HIV-exposed infants and their mothers should receive the full package of maternal health and child survival interventions

- To strengthen training on knowledge and counselling skill of HIV and infant feeding to improve quality of service and counselling.

- Need to carry out evidence-based researches and evaluate safe interventions to reduce postnatal transmission of HIV in our region
- To maximise the effect of perinatal interventions aimed to prevent MTCT of HIV and reach infant survival in Asia and Pacific regions

Thank you!