

# WHO 2010 Revised Recommendations

## Use of Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants (PMTCT ARV Guidelines)

*Towards the virtual elimination of MTCT*

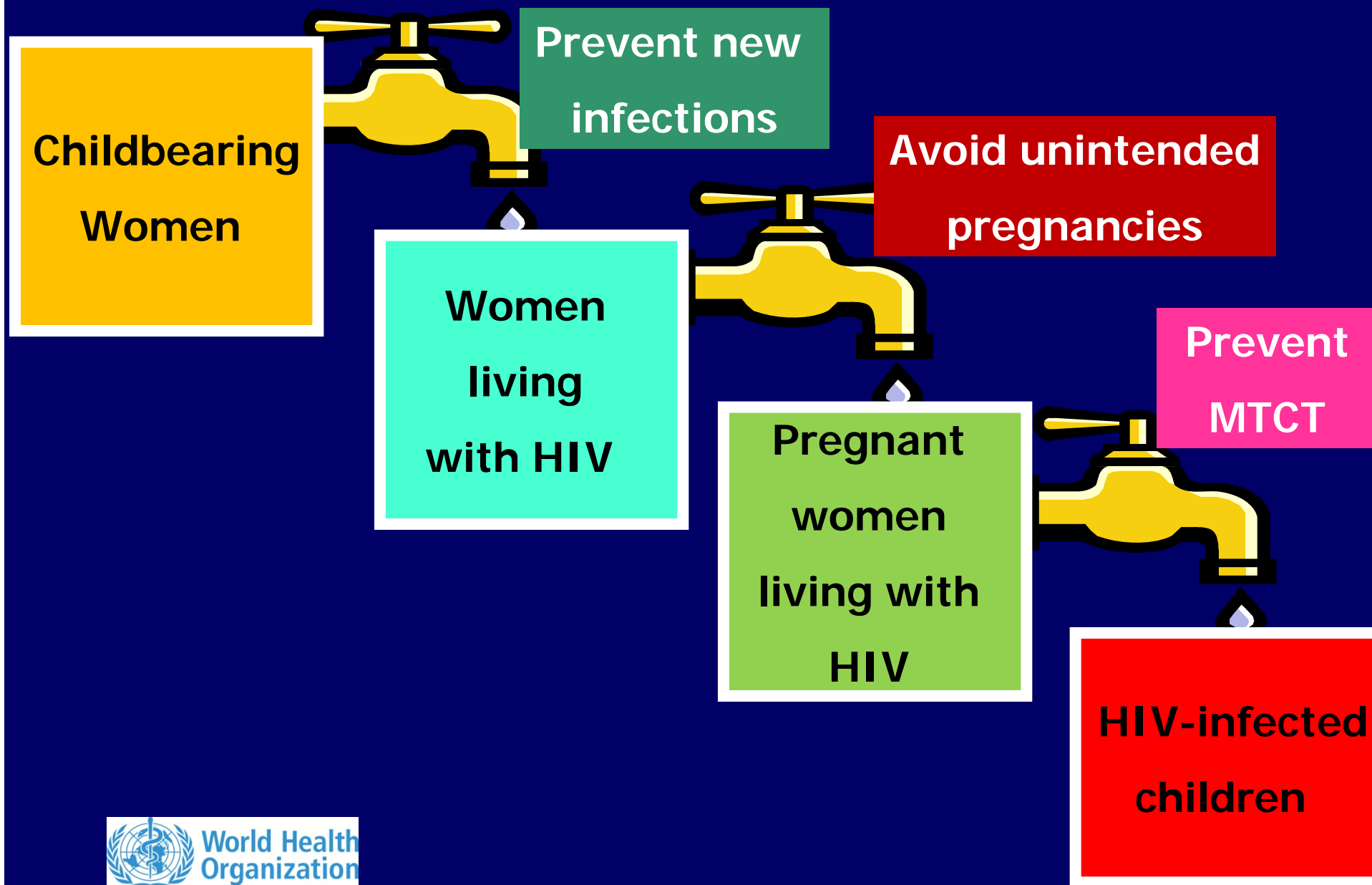
Nathan Shaffer, PMTCT Team Leader, HIV Dept, WHO  
**EGPAF Satellite, XVIII International AIDS Conference**  
**Vienna, July 20, 2010**

# Key Messages

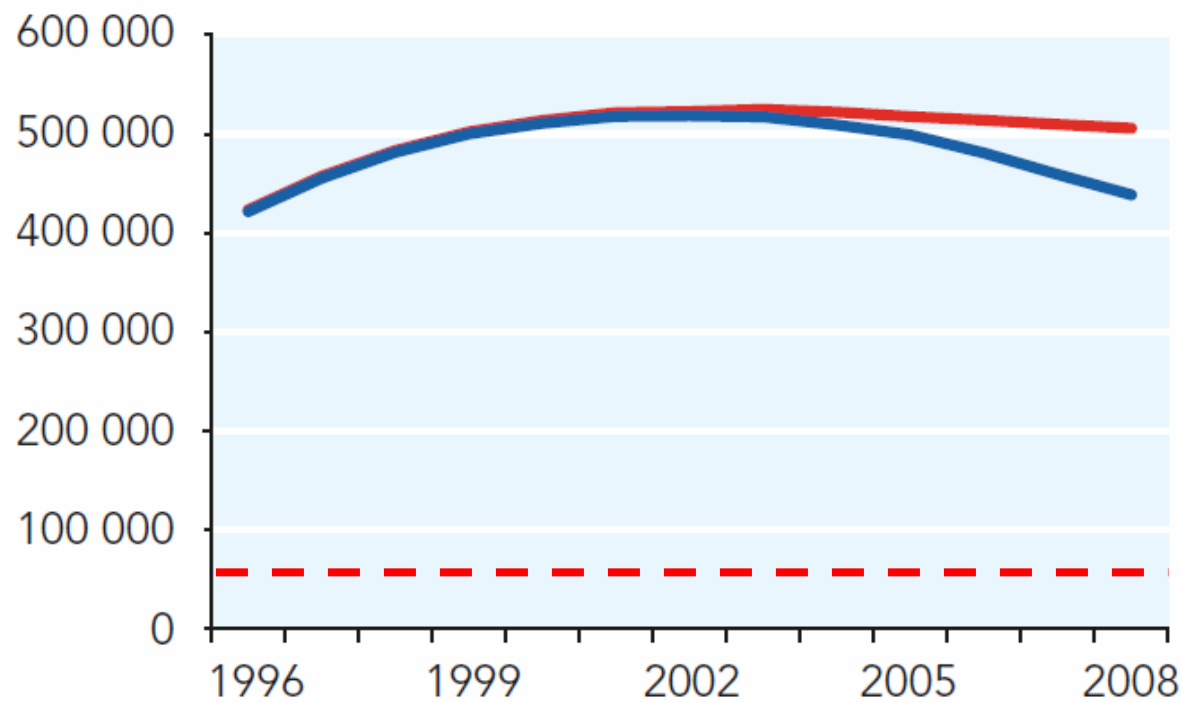
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- New 2010 WHO guidelines are a major paradigm shift for PMTCT and HIV and infant feeding
- New standard of quality care and interventions for low and middle income countries
- Provide the normative basis for the elimination of vertical transmission
- *Challenge is to implement and scale-up new highly effective regimens*

# Comprehensive approach to virtual elimination



# Estimated number of new pediatric infections with and without PMTCT prophylaxis globally, 1996-2008

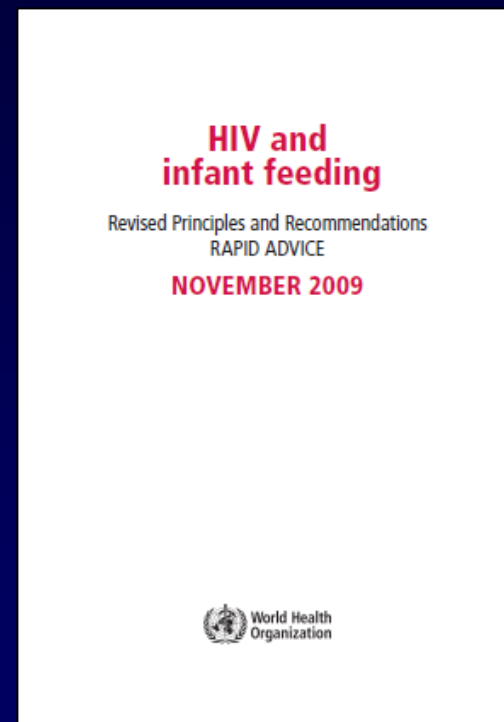
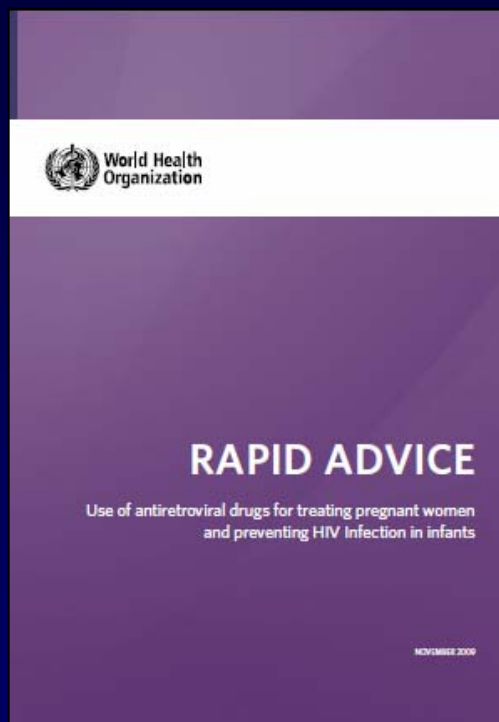
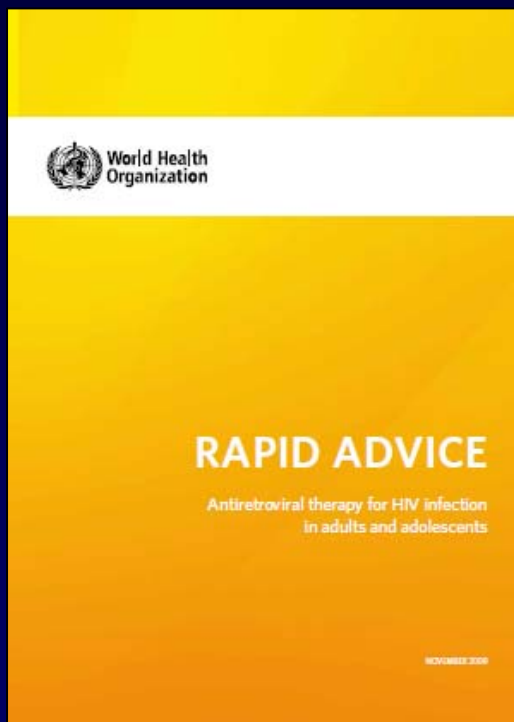


70,000  
infections  
averted in  
2008

UNAIDS, *AIDS Epidemic Update 2009*

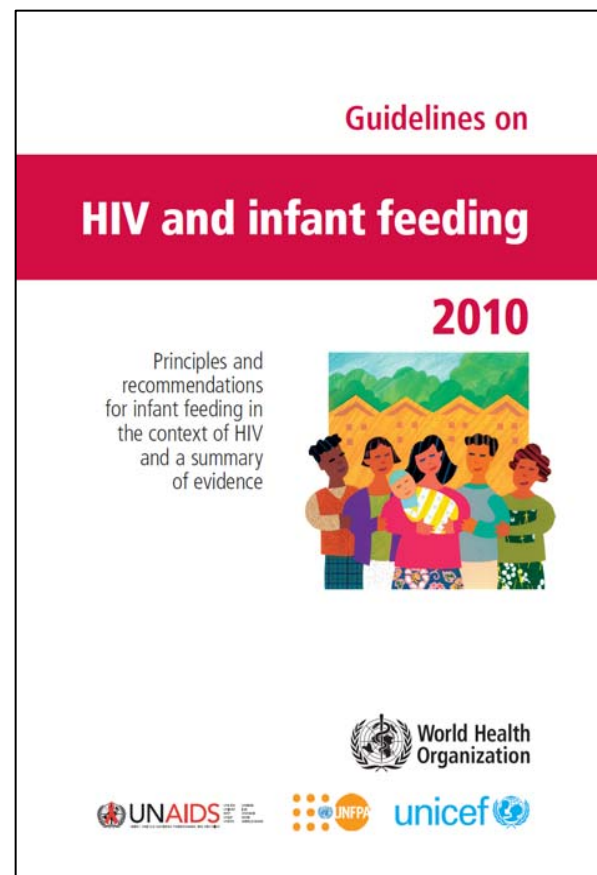
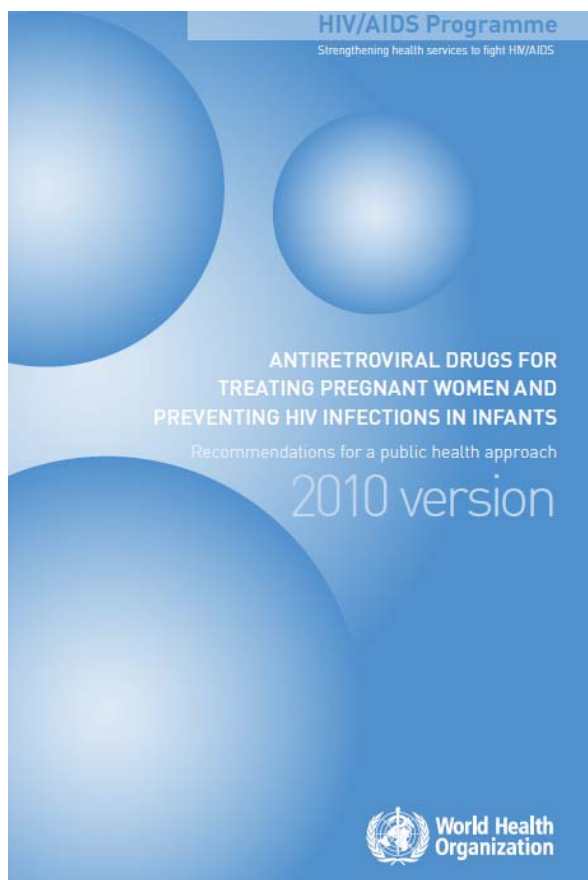
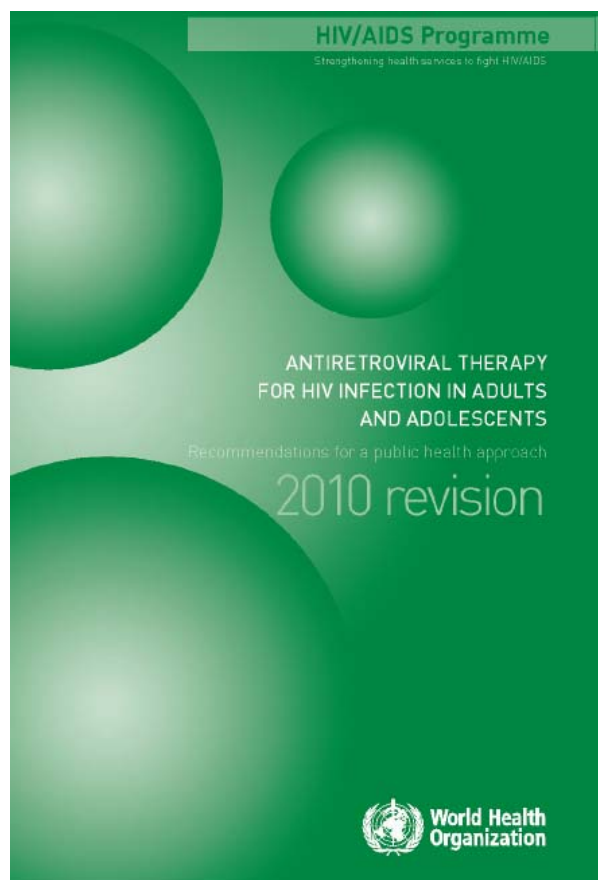
- No prevention of mother-to-child transmission
- At current levels of antiretroviral prophylaxis

# 3 Sets of Rapid Advice, Nov 2009



# New 2010 WHO Guidelines

## Adult ART; PMTCT; HIV and Infant Feeding



<http://www.who.int/hiv/en/>



# Rationale for Development of New 2010 PMTCT Recommendations

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Since 2006 guidelines, new evidence on:

- Optimal timing and eligibility for ART initiation
- Benefits of earlier initiation of ARV prophylaxis for PMTCT during pregnancy
- Effectiveness of different ARV prophylaxis strategies
- Effectiveness of ARV prophylaxis to mother or infants in reducing risk of HIV transmission during breastfeeding

# Risk of Mother-to-Child HIV Transmission

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**Background transmission risk: 15-45%**

15-30%

**Risk during pregnancy and delivery**

10-20%

**Additional risk postpartum via  
breastfeeding**

**Transmission risk with interventions:**

20-30%

**No breastfeeding**

15-25%

**Short-course ARV + breastfeeding**

5-15%

**Short-course ARV, no BF**

**<5%**

**2010 interventions, BF**

**<2%**

**2010 interventions, no BF**



# PMTCT ARV Recommendations Refer to Two Key Approaches

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1. **Lifelong ART** for HIV-positive pregnant women in need of treatment
2. **Prophylaxis**, or short-term provision of ARV's, to prevent HIV transmission from mother to child
  - During pregnancy
  - During breastfeeding (if breastfeeding is the best infant feeding option)

# **Special Concerns of Drugs for PMTCT**

- NVP toxicity in women with high CD4
- Ongoing concerns of NVP resistance
- AZT and anaemia
- EFV teratogenicity in first month of gestation
- Limited experience of new drugs during pregnancy
- Coordination with adult ART first and second line drugs and availability
- Interactions between prophylaxis and treatment
- Cost

# 1. ART for HIV+ Pregnant Women

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- Mothers in need of ART for their own health should get lifelong treatment
- Initiate ART in pregnant women with CD4  $\leq 350$  regardless of clinical stage
- Initiate ART in clinical stage 3 and 4 if CD4 not available
- Start ART as soon as feasible
- Importance and critical need of CD4 for decision-making on ART eligibility

# Antiretroviral therapy (ART)

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CD4 cell count available		WHO clinical stage	
CD4 $\leq$ 350 cell/mm <sup>3</sup>	CD4 > 350 cell/mm <sup>3</sup>	Stage 1	ARV prophylaxis
ART Regardless of clinical stage	ART If symptomatic (stage 3 or 4)	Stage 2	ARV prophylaxis
		Stage 3	ART
		Stage 4	ART

Start ART as soon as feasible regardless of gestational age

# ART for mother and prophylaxis for exposed infants

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## Mother

- AZT + 3TC + NVP or
  - AZT + 3TC + EFV or
  - TDF + XTC + NVP or
  - TDF + XTC + EFV
- (note: XTC = 3TC or FTC)*

*Lifelong treatment, beginning as soon as possible during pregnancy*

## Infant

**For all exposed infants  
(regardless of infant feeding):**

- AZT for 4-6 weeks OR
- NVP for 4-6 weeks

# Benefit and Impact of Providing ART to Eligible Pregnant Women

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Pregnant women with CD4  $\leq$ 350:

- About 40% of HIV+ pregnant women
- Account for >75% of MTCT risk
- Account for >80% of postpartum transmission
- Account for 85% of maternal deaths within 2 years of delivery
- Strong benefit from initiating ART for maternal health and PMTCT during pregnancy, labour and delivery and breastfeeding

## 2. ARV Prophylaxis to Prevent MTCT

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*For women not eligible for ART or unknown eligibility*

Begin as early as 14 weeks gestation (2nd trimester) or as soon as possible thereafter

2 possible options:

A) Maternal AZT, or

B) Maternal triple ARV prophylaxis

And for the breastfeeding mother:

- ▶ Provision of ARVs to the child OR the mother to reduce risk of HIV transmission during breastfeeding (if breastfeeding is best infant feeding option)

# ARV Prophylaxis Options

Option A	Option B
<p><b>Mother</b></p> <ul style="list-style-type: none"> <li>• Antepartum AZT (from 14 weeks)</li> <li>• sd-NVP at onset of labour*</li> <li>• AZT + 3TC during labour &amp; delivery*</li> <li>• AZT + 3TC for 7 days postpartum*</li> </ul> <p><b>Infant</b></p> <p><b>Breastfeeding population</b></p> <ul style="list-style-type: none"> <li>• Daily NVP (from birth until one wk after all exposure to breast milk)</li> </ul> <p><b>Non-breastfeeding population</b></p> <ul style="list-style-type: none"> <li>• AZT or NVP for 4-6 weeks</li> </ul>	<p><b>Mother</b></p> <ul style="list-style-type: none"> <li>• Triple ARV (from 14 wks until one wk after all exposure to breast milk has ended) <ul style="list-style-type: none"> <li>– AZT + 3TC + LPV-r</li> <li>– AZT + 3TC + ABC</li> <li>– AZT + 3TC + EFV</li> <li>– TDF + 3TC or FTC + EFV</li> </ul> </li> </ul> <p><b>Infant</b></p> <p><b>For all exposed infants</b></p> <ul style="list-style-type: none"> <li>• AZT or NVP for 4-6 weeks</li> </ul>

*\*sd-NVP and AZT+3TC can be omitted if mother receives > 4 wks AZT antepartum*



# Setting national or sub-national recommendations for infant feeding in the context of HIV

National or sub-national health authorities should decide whether health services will principally counsel and support mothers known to be HIV-positive to

–breastfeed and receive ARV interventions OR

–avoid all breastfeeding



as the strategy that will most likely give infants the greatest chance of HIV-free survival.

# How long to breastfeed?

In the presence of ARV interventions  
breastfeeding can continue to 12 months

- avoids many of the complexities associated with stopping breastfeeding
- provides a safe and adequate diet for infants 6-12 months of age



# Cost

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- 2006 – US \$20-30 for full ARV prophylaxis (mother + infant)
- 2010 – US \$50 for full option A (mother + infant)
- 2010 – US \$200-800 for full option B

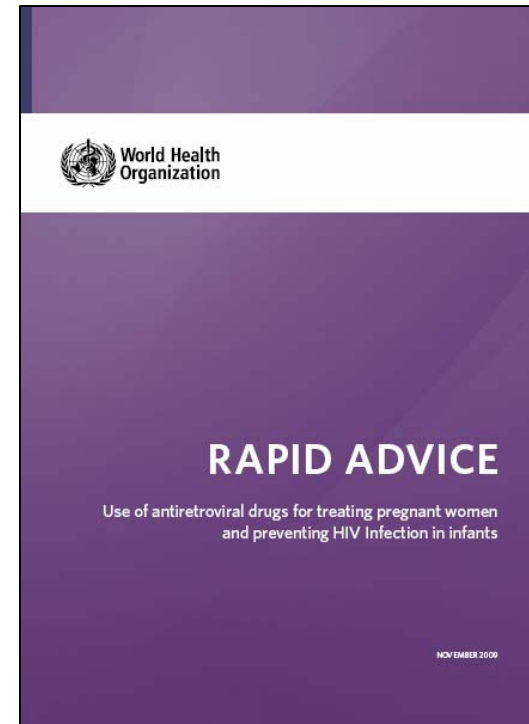
## Option A or Option B?

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“Both recommended options A and B provide significant reduction of the MTCT risk.

There are advantages and disadvantages of both options, in terms of feasibility, acceptability and safety for mothers and infants, as well as cost.

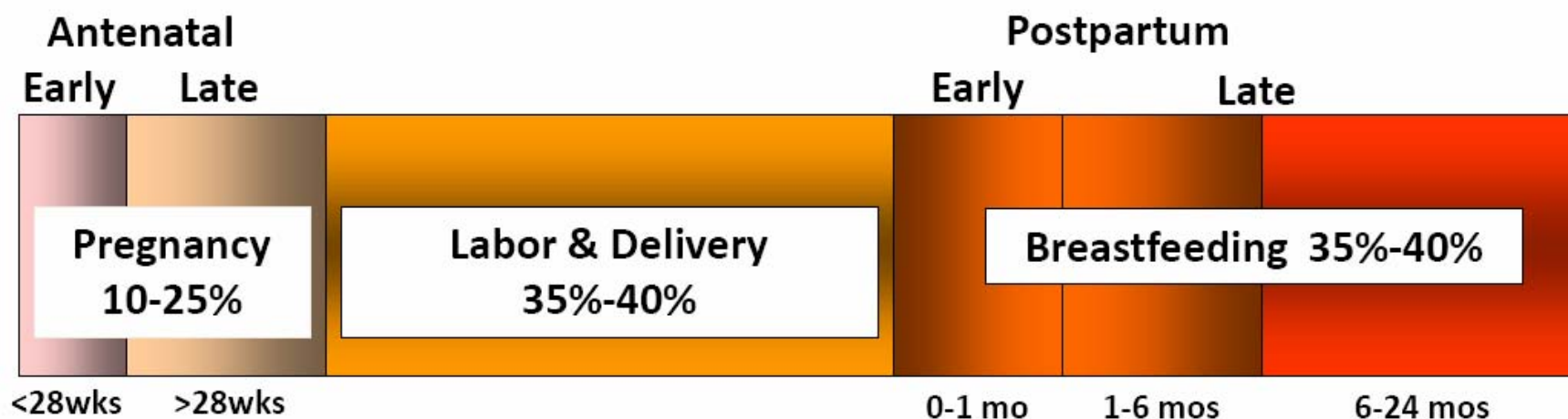
The choice for a preferred option should be made at a country level, after considering these advantages and disadvantages.”



# Option A or Option B?

<b>Option A</b> <b>AZT to mother during pregnancy and NVP to infant during BF</b>	<b>Option B</b> <b>Mother triple ARV during pregnancy and during BF</b>
<p><u>Advantages</u></p> <ul style="list-style-type: none"><li>• Lower cost</li><li>• Ease of providing prophylaxis to baby</li><li>• Easier change from current programme</li></ul> <p><u>Disadvantages</u></p> <ul style="list-style-type: none"><li>• Switch in regimens</li><li>• Long duration on AZT monotherapy</li></ul>	<p><u>Advantages</u></p> <ul style="list-style-type: none"><li>• Likely more effective <b>IF</b> will also include many women eligible but not receiving ART</li><li>• Ongoing contact with mother during BF</li></ul> <p><u>Disadvantages</u></p> <ul style="list-style-type: none"><li>• Higher cost</li><li>• Higher burden on MCH nurses (ARV)</li><li>• Need for CD4</li><li>• Potential impact on later treatment</li><li>• Bigger supply chain issues</li></ul> 

# Duration, timing and complexity of ARV regimens to reduce MTCT



sd-NVP

sc AZT + sd-NVP

sc AZT + sd-NVP

Daily Infant NVP

Maternal triple ARV prophylaxis

Maternal therapeutic ART

# Guiding Principles

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- Women (including pregnant women) in need of ARV for their own health should get life-long ART
- Antenatal CD4 is critical for decision-making about ART eligibility
- Interventions should maximize reduction of vertical transmission, minimize side effects, and preserve future HIV treatment options
- Unify antepartum and postpartum approaches; strengthen mother and infant follow up
- Effective postpartum ARV-based interventions for all women will allow safer breastfeeding practices
- Different options may be appropriate in different settings

# Research Questions

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Important operations research needed in the context of the new guidelines

- Safety of starting and stopping triple ARV prophylaxis
- Safety of extended prophylaxis during breastfeeding
- Comparison of Option A and Option B
- Improved access to CD4 testing
- Improved monitoring of regimens
- Assessment of proposed strategies to provide ART (lifelong) to all HIV-infected pregnant women
- Outcome measures, PMTCT impact at national level



# Implementation Challenges

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Successful implementation of the new guidelines depends on:

- Universal HIV testing and counseling for pregnant women
- Availability of CD4 testing and ARVs at primary care level and in ANC where most maternal-child health care takes place, not just in specialized clinics
- Integration of PMTCT and MNCH; PMTCT and ART
- Improved follow-up of pregnant women antenatally and of mothers and HIV-exposed infants after birth
- Ability to provide prophylaxis to the mother or baby throughout breastfeeding
- Health systems strengthening
- Enhanced M&E, including impact assessment

# Support for Country Implementation

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*New guidelines need to be linked with active support for country adaptation, implementation and evaluation*

- Regional workshops
- Support through Global Fund and PEPFAR
- Active IATT partner support at country level
- Tools for adaptation and implementation:  
Adaptation guide, FAQs, core slide set, M&E guide, monitoring of country progress, sharing of country guidelines, IMAI/IMPAC

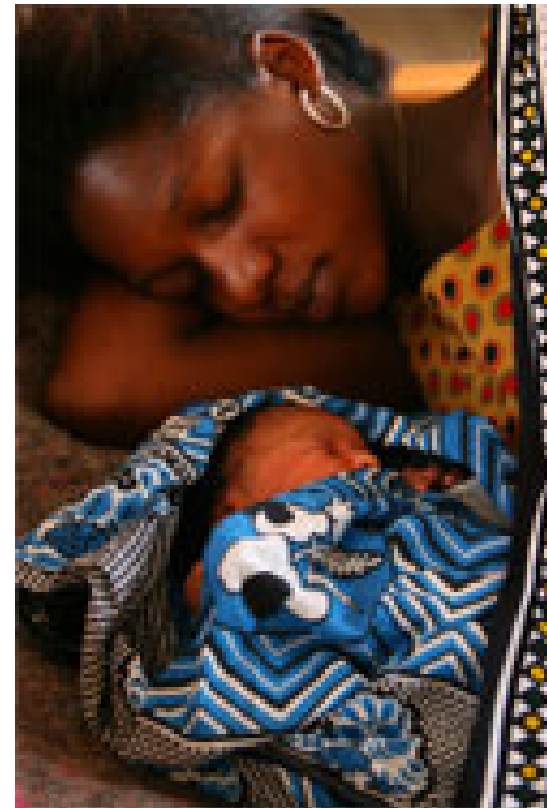
# Summary: Benefits and Opportunities

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- Revised 2010 guidelines – new norms and standards for highly effective interventions to:
  - Improve health of the mother
  - Decrease mother-child HIV transmission
  - Improve HIV-free survival
- Reduce transmission to <5% in breastfeeding populations and <2% in non-breastfeeding populations
- Make significant progress towards virtual elimination of paediatric HIV

# THANK YOU

- **WHO:** *Tin Tin Sint, Ying-Ru Lo, Nigel Rollins, Gottfried Hirnschall, MTCT Unit*
- **UN partner agencies:** UNICEF, UNAIDS, UNFPA
- **Expanded IATT partners:** PEPFAR (CDC, USAID), GFATM, EGPAF, ICAP, FHI, CHAI, and many others



New recommendations available at:

<http://www.who.int/hiv/en/>