

Maternal Interventions

What is new, what is on the horizon

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Outline

- What is new since countdown 2008
- What is on the horizon
- Interventions during pregnancy, and delivery strategies
- Focus on major maternal killers
- Stillbirths
- Facility and community level in LMIC

Postpartum hemorrhage

Misoprostol (oral, sublingual) for prevention

- Effective to prevent PPH (*34% reduction; 8 trials vs placebo. Cochrane review 2008*)
- Not as effective as Oxytocin (*32% increase; 16 trials. Cochrane review 2008*)

Postpartum hemorrhage

Misoprostol (oral, sublingual) for Treatment

- Does not add benefits when used as an adjunct to oxytocin (*4 trials*) (*WHO Guidelines 2009*)
- Against oxytocin, it is not as effective to reduce severe PPH in women either receiving or not oxytocin for PPH prevention (*Blum and Winnicoff trials Lancet 2010*)

Postpartum hemorrhage

Misoprostol

- Effect on maternal mortality?
 - 11 vs 4 deaths in systematic review (*Hofmeyr 2010, unpublished*)
- 400 mcg (or even 200 mcg!) should be evaluated



Postpartum hemorrhage

How to deliver effective interventions?

Misoprostol. Antenatal distribution to women for PPH prevention

- Good idea
- Feasible: 54% - 70% of women took misoprostol
(Nepal and Afghanistan non-randomized studies. IJGO 2010)
- However, safety is unclear yet. Still a research question



Postpartum hemorrhage

How to deliver effective interventions?

Multifaceted strategies to increase the use of prophylactic Oxytocin at facility level

- Opinion leaders, academic detailing, reminders, feedback, hands-on training
- Effective to increase oxytocin use to 83% (*Guidelines trial NEJM 2008*)

Postpartum hemorrhage

Interventions and delivery strategies on the horizon

Oxytocin in Uniject

- Multifaceted intervention including Oxytocin in Uniject increased oxytocin use (85%)

(before-after study in Argentina, PATH, unpublished)



- Trial for PPH prevention at community level in preparation *(C Stanton, unpublished)*

Postpartum hemorrhage

Interventions and delivery strategies on the horizon

Non-pneumatic
Anti-shock garment
(NASG)



- Ongoing cluster trial in 3 African countries (Miller SE PI)

Postpartum hemorrhage

Interventions and delivery strategies on the horizon

External aortic
compression device



- Quasi random trial showed reduction in time to stop blood loss and blood transfusions (*Soltan et al, JOG Res 2009*)

Postpartum hemorrhage

Interventions and delivery strategies on the horizon

- Simplified AMTSL vs whole AMTSL package (*WHO ongoing trial, Gulmezoglu et al, Reproductive Health 2009*)
- Tranexamic acid for PPH treatment (*ongoing WOMAN Trial, LSHTM, I Roberts*)
- Evaluation of intrauterine balloon / condom catheter for PPH treatment (*Trial in preparation*)

Pre-eclampsia / Eclampsia

New evidence, interventions on the horizon **Prevention**

- **Vit C and E** do not prevent PE-E or bad outcomes in low risk or high risk populations *(3 new trials published since 2009; INTAAP, WHO trial, NICHD network trial)*
- **Pre-conceptional and 1st trim Ca supplementation** for PEE prevention. *(RCT trial in preparation. J Hofmeyr PI)*

Pre-eclampsia / Eclampsia

Interventions and delivery strategies on the horizon

Treatment

- **Magnesium Sulfate pump (Springfusor)** to facilitate administration (*ongoing trial*)
- **Multifaceted intervention including emergency kits** to scale up Magnesium Sulphate for eclampsia in hospitals and PHCs (*Cluster trial in preparation. WHO, CIHR*)
- **Improving detection of PE-E (PIERS) and treatment with magnesium Sulphate** at community level (*cluster trial in preparation. P Von Dadelszen*)



Induced abortion

- No news about methods: mifepristone or methotrexate + misoprostol are the best methods
- How to increase coverage is now the challenge
- In countries where abortion is illegal, pre-abortion counselling, and post abortion care have been shown effective to reduce unsafe abortion (*Health Initiatives, Uruguay. Briozzo et al, 2009*)

Maternal and perinatal health

New evidences on existing interventions

- **Vit A supplementation**
 - Good idea
 - Exciting results from Nepal trial 10 years ago
 - New trials: Ghana, Bangladesh

ObaapaVitA cluster randomised trial

Dec 2000 – Oct 2008

1086 clusters

207,781 women

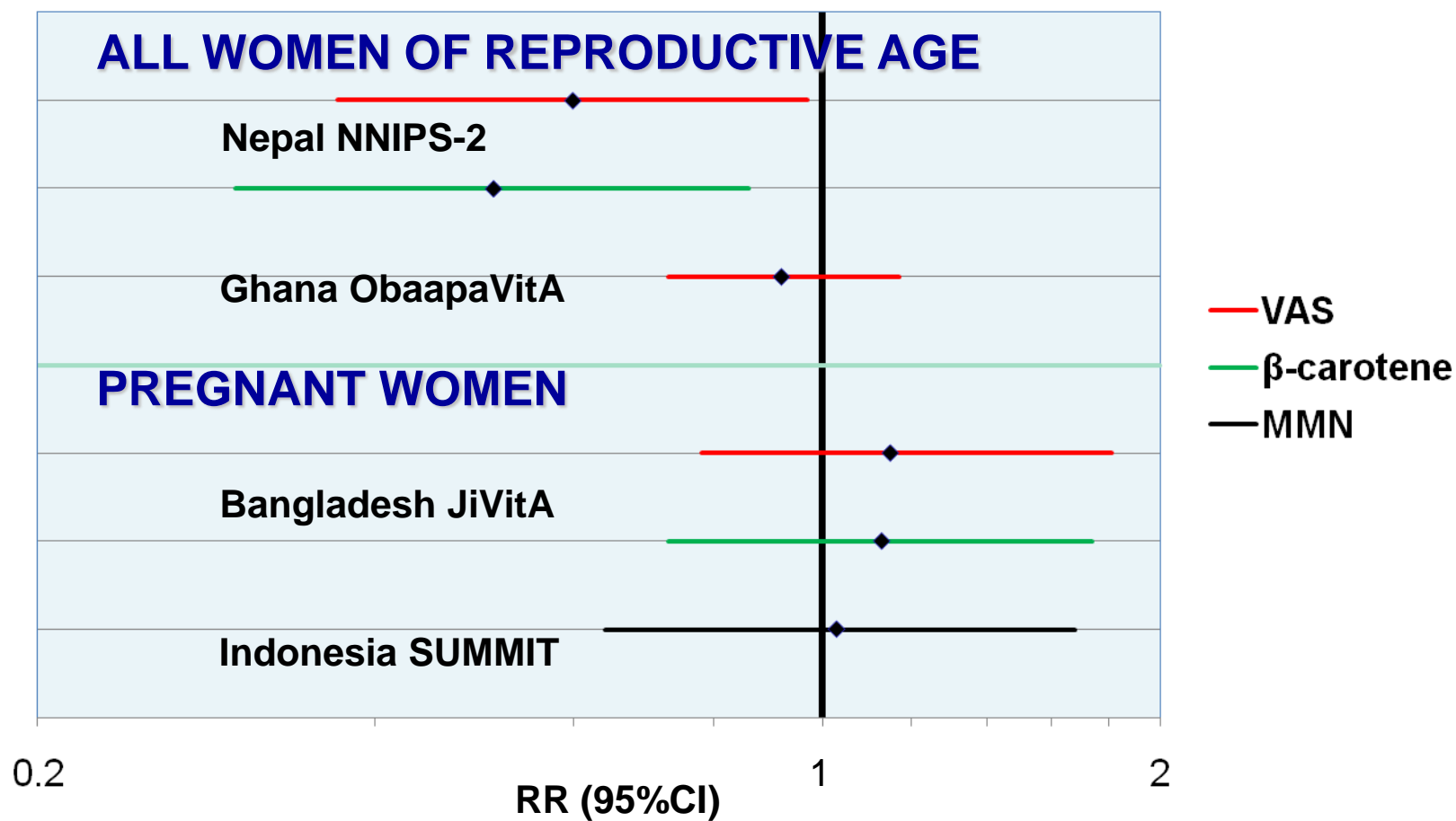
78,835 pregnancies

73,752 livebirths

581,870 women years

*Kirkwood et al, Lancet
2010*

Maternal mortality and VAS: summary of evidence



Maternal and perinatal health

New evidences on existing interventions

- **Multiple micronutrient supplementation**
(*Ronsmans meta-analysis of 12 RCTs, Lancet 2010*)
 - Does not reduce stillbirths; may increase ENM?
 - Potential effects on the long term
 - Subgroup analysis needed

Maternal and perinatal health

New evidences and delivery strategies on the horizon

- **Perinatal audits:** meta-analysis of before-after studies show a 30% reduction on perinatal mortality (*Pattinson et al IJGO 2009*)
- **Women's groups, community mobilization** reduce ENM and stillbirths (*Ekjut trial, Projhanmo Trial, Perinatal Care Project Bangladesh*)
- **Training on EmONC + perinatal audits + obstetric drills + community mobilization** to reduce perinatal mortality (EmONC trial ongoing, NICHD Global network)
- **Educational outreach + facility-based maternal death audits** to reduce maternal mortality (*QUARITE Trial ongoing. Trials 2009*)
- **Multifaceted intervention to implement WHO ANC package in rural Mozambique** (*Cluster RCT in preparation; WHO*)

Perinatal health

Antenatal Steroids for preterm birth

- **30%** (CI95% 20% - 40%) reduction in neonatal mortality due to preterm birth

*(21 trials, >4500 babies; Roberts & Dalziel 2007
Cochrane review, Lawn et al 2009)*

Antenatal steroids coverage

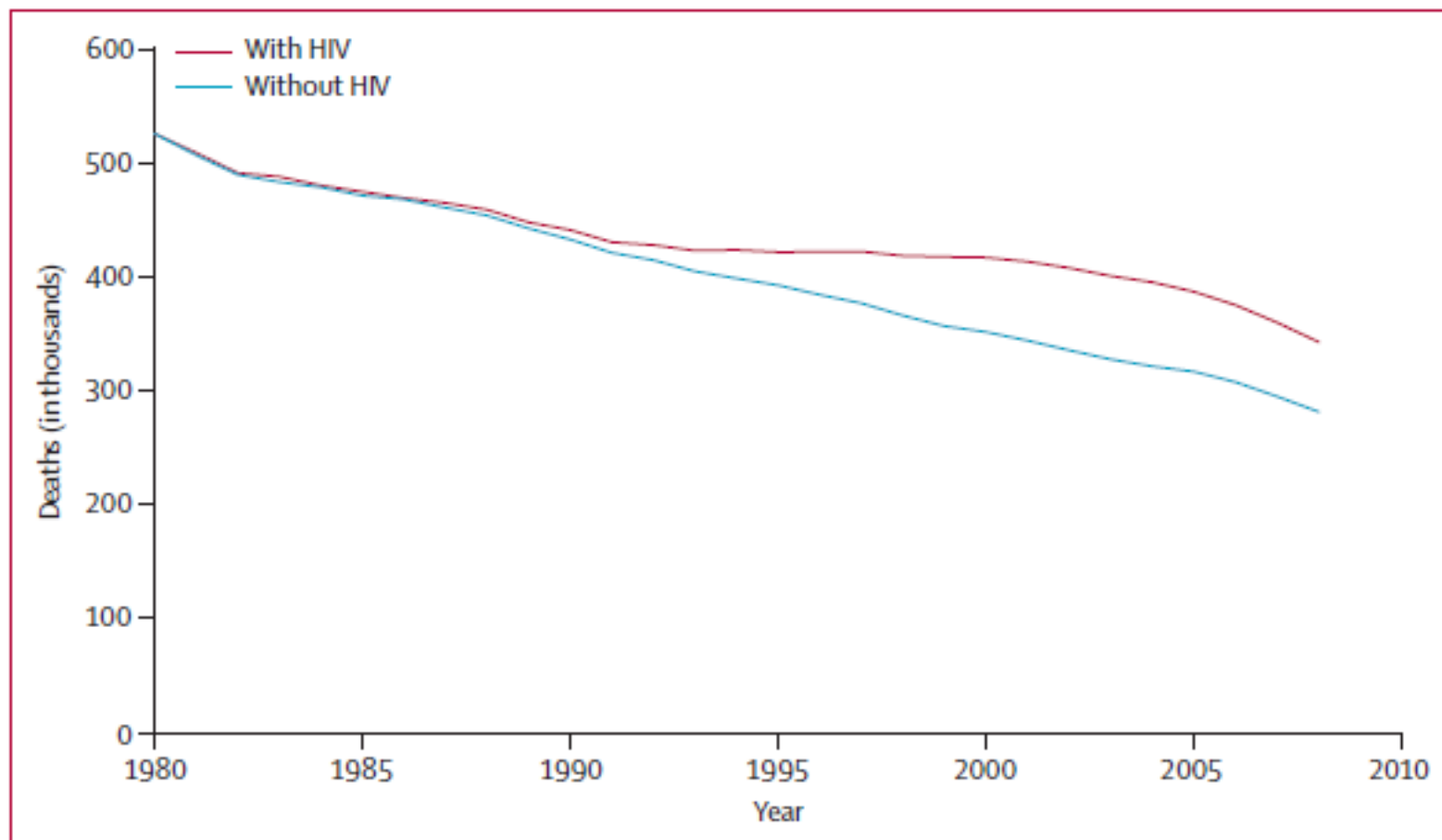
- Neonatal survival series (75 countries) **10%**
(Lancet 2005)
- Child survival series (42 countries) **5%**
(Lancet 2003)
- Latin American studies
 - Mexico *(Gulmezoglu et al, 2004)* **24%**
 - El Salvador **53%**
 - Ecuador **35%**
 - Uruguay **71%**
(ANCOLA, Riganti et al 2009)
 - Argentina *(Karolinski et al 2009)* **38%**

Antenatal Steroids

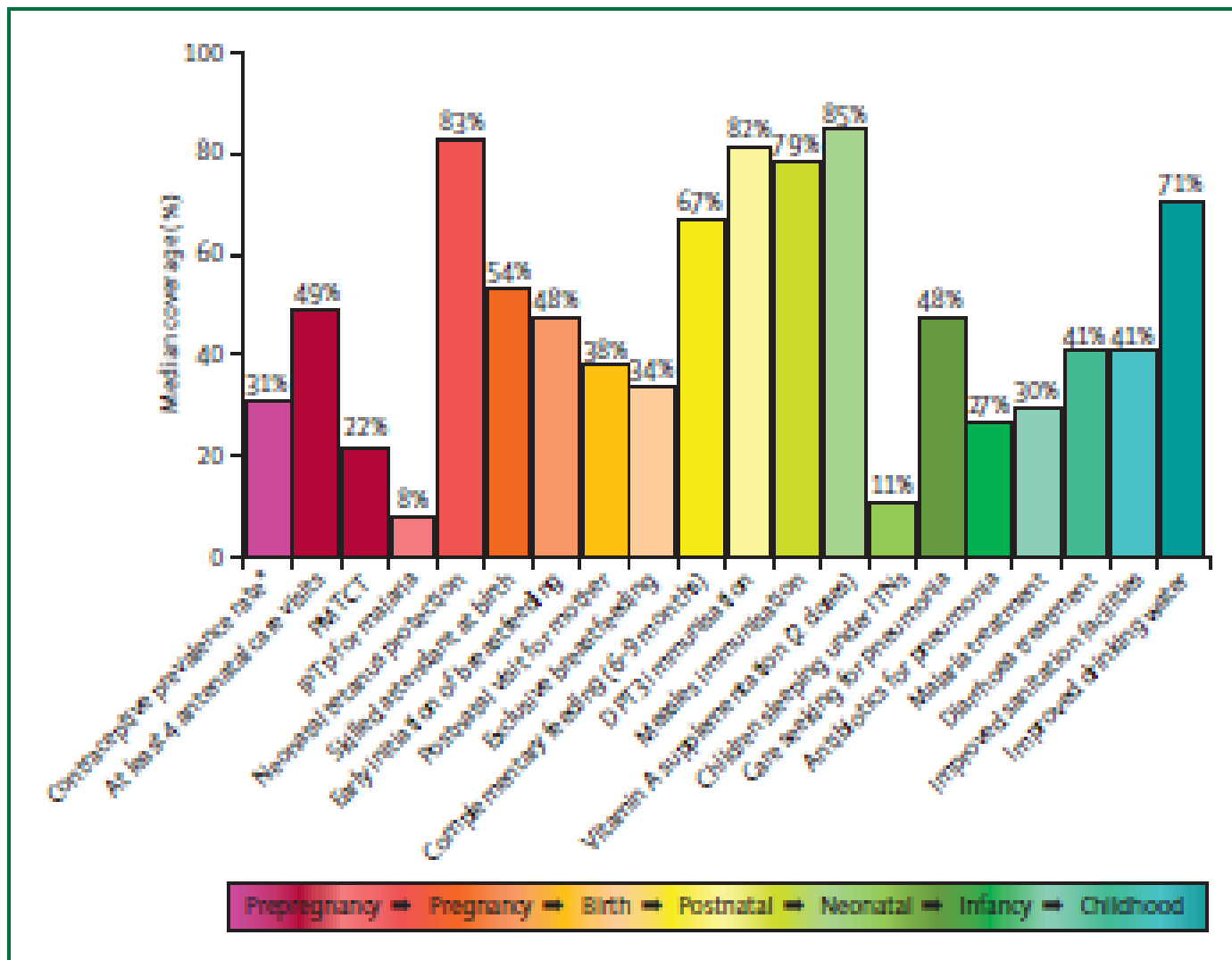
research questions

- How to increase coverage of antenatal steroids in preterm babies born at hospitals in LMIC
- Need to confirm the beneficial effects now in babies born at community level, where no neonatal special care is available
- **ACT (Antenatal Corticosteroids trial)**
Effectiveness trial of an intervention to facilitate the identification of pregnancies at risk of preterm birth and the administration of antenatal steroids (*NICHD Global Network, starting in 2011*)

HIV and maternal mortality



Hogan et al, Lancet 2010



Median coverage for effective maternal, newborn, and child interventions in 68 Countdown countries. Bhutta et al Lancet 2010

Comments

- Effective delivery strategies are urgently needed to increase the coverage of beneficial interventions.
- Strengthening health systems will be probably not enough in the short term.
- Vertical interventions at community and facility level are also needed.

Thanks!!!
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