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Micronutrient and  
Child Blindness Project

# Maternal Iron-Folic Acid Supplementation Programs: Evidence of Implementation and Impact

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## Overview

- Evidence
  - Anemia-mortality relationships
  - Iron supplementation - anemia outcomes
  - Scaled up iron supplementation – anemia prevalence
  - Effective implementation
- Global Situation
- Innocenti 2008 Consensus



## *WHO Recommendation*

- Six month regimen of a daily supplement containing 60 mg of elemental iron along with 400 ug of folic acid for all pregnant women
- In settings where anemia prevalence is high (>40%), WHO recommends postpartum doses for 3 additional months

**INACG (1977) Guidelines for the eradication of iron deficiency anemia.**

**INACG (1989) Guidelines for the control of maternal nutritional anemia.**

**INACG (1998) Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia by RJ Stoltzfus, ML Dreyfuss**



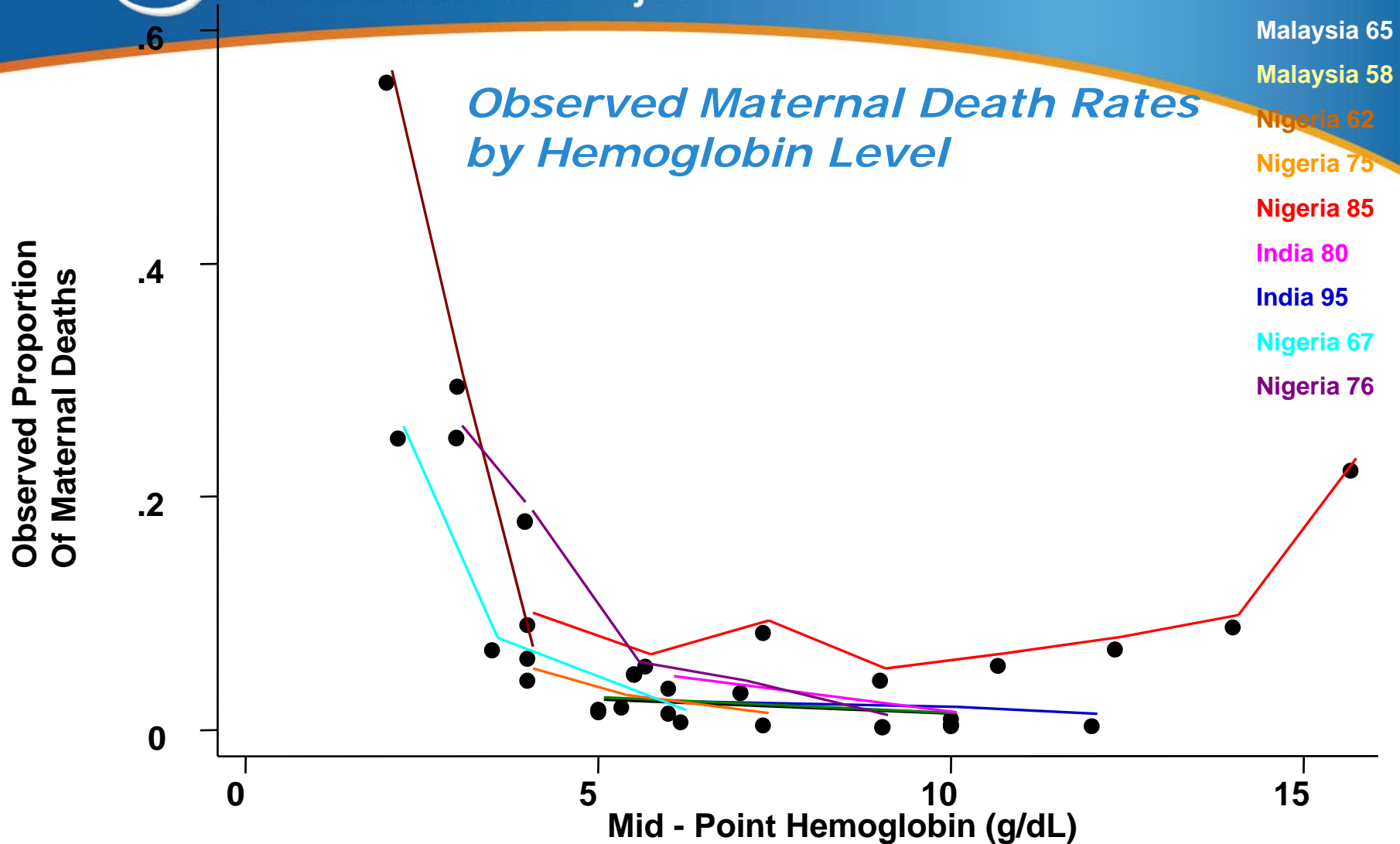
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# Evidence

## Maternal Anemia and Mortality



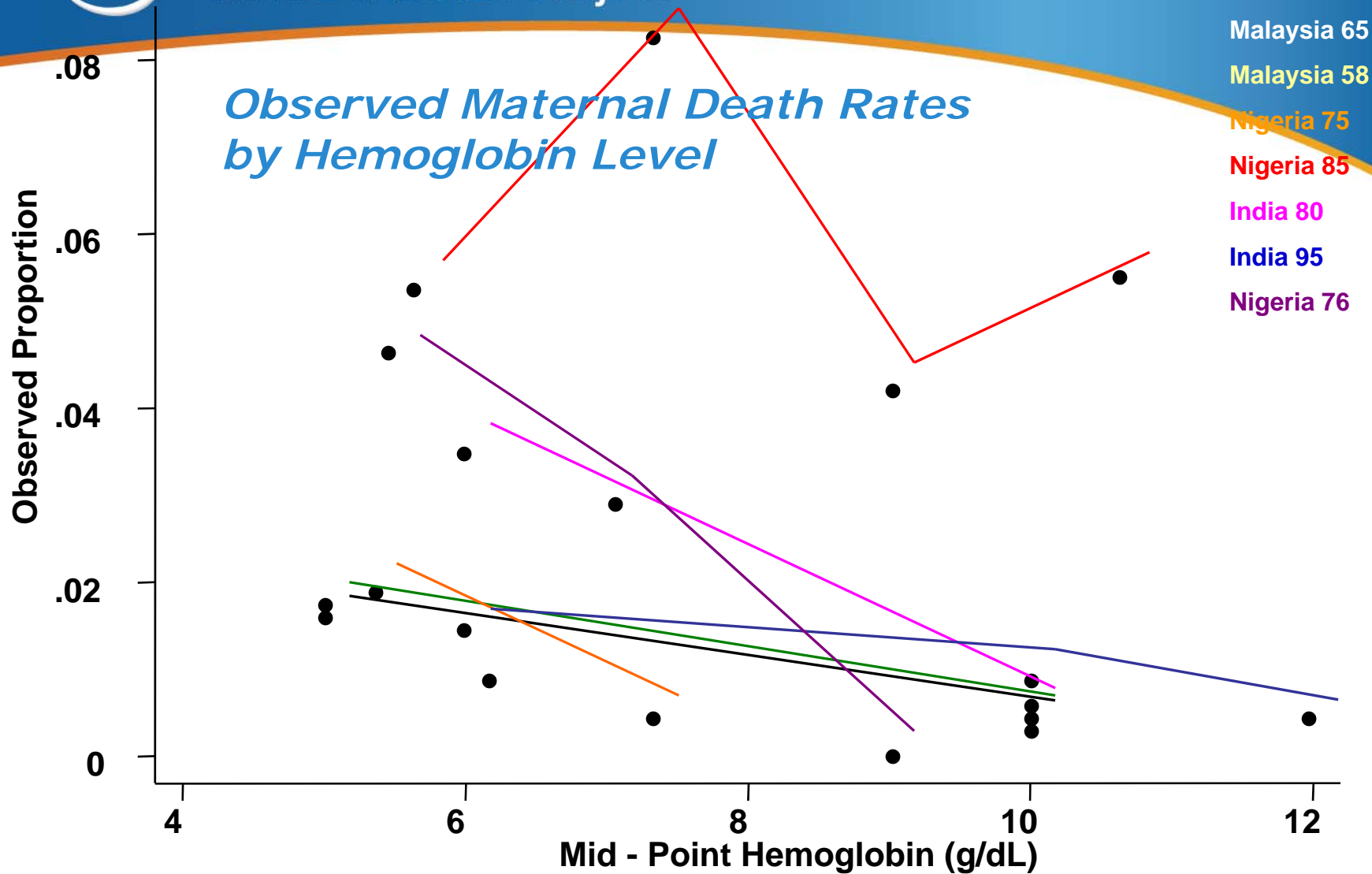
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From Stoltzfus RJ, et al (2005). Comparative Risk Assessment. [www.who.int/publications/cra/chapters](http://www.who.int/publications/cra/chapters)



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From Stoltzfus RJ, et al (2005)



## OR associated with g/dL increase in Hb

<b>Outcome</b>	<b>Estimate</b>	<b>95% CI</b>
<b>Maternal Mortality</b>	<b>0.80</b>	<b>0.70-0.91</b>
<b>Perinatal Mortality, Africa</b>	<b>0.72</b>	<b>0.65-0.80</b>
<b>Perinatal Mortality, Other</b>	<b>0.84</b>	<b>0.78-0.90</b>

Stoltzfus RJ, et al (2005)



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# Evidence

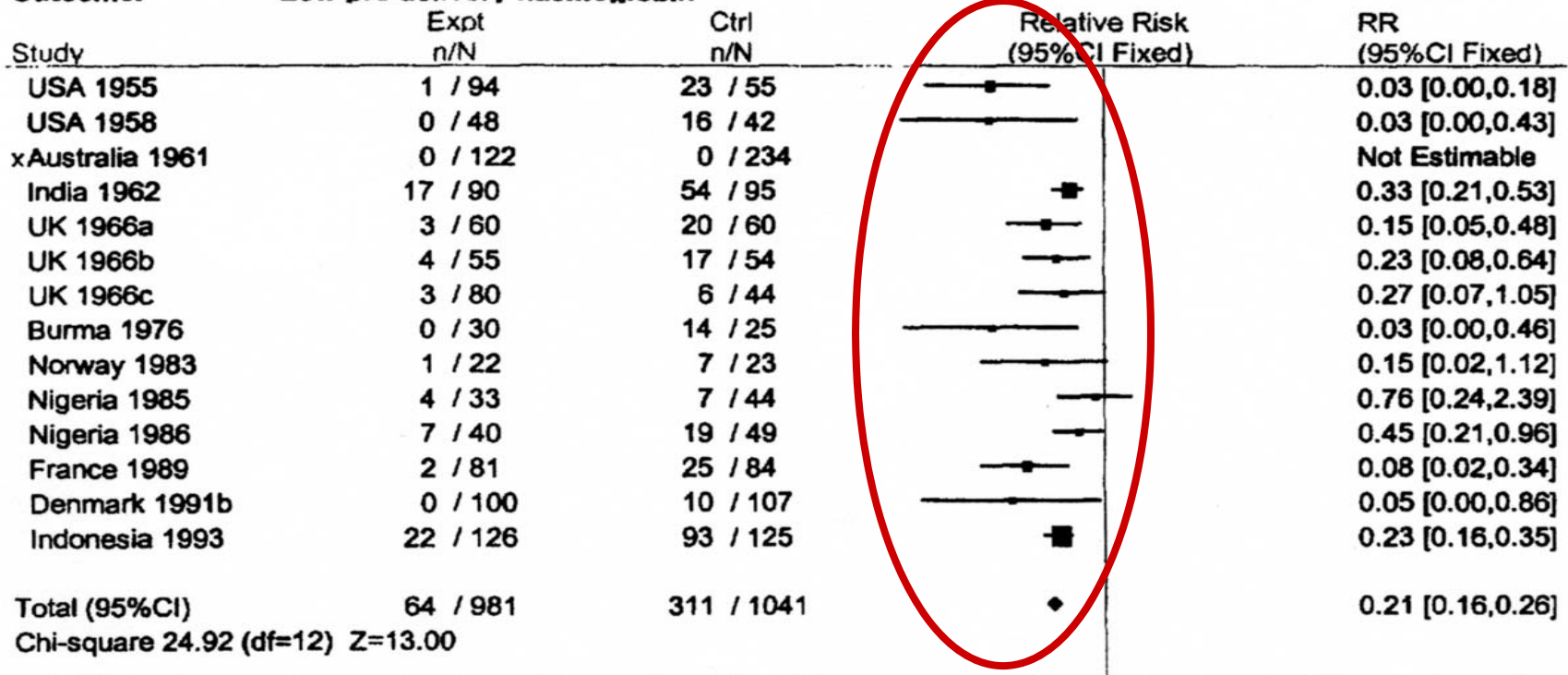
## Iron Supplementation and Anemia



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*Prenatal iron reduces  
 likelihood of anemia*

**Review: Iron supplementation in pregnancy**  
**Comparison: Routine iron versus no iron or placebo in pregnancy**  
**Outcome: Low pre delivery haemoglobin**



Kulier et al, 1998

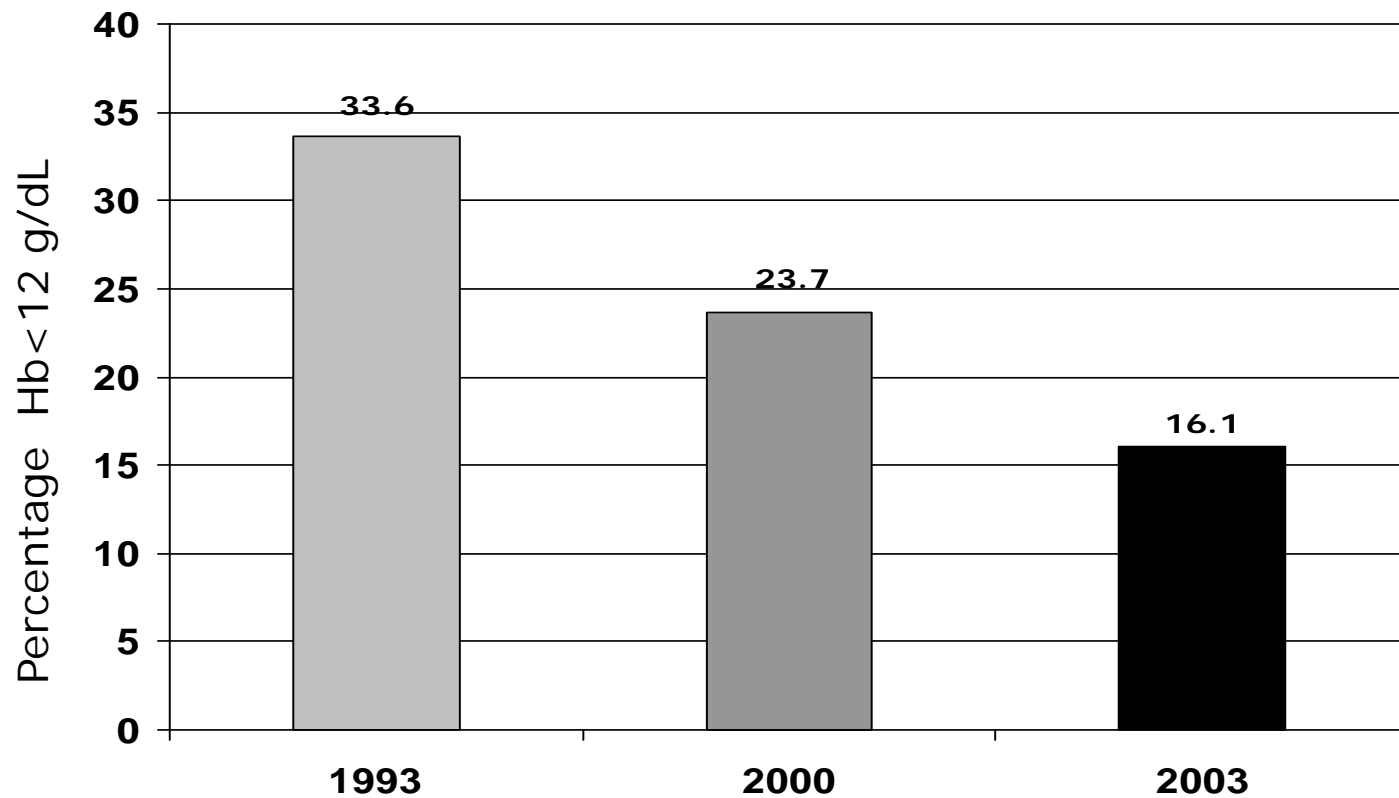


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# Evidence Effective Large Scale Program Implementation



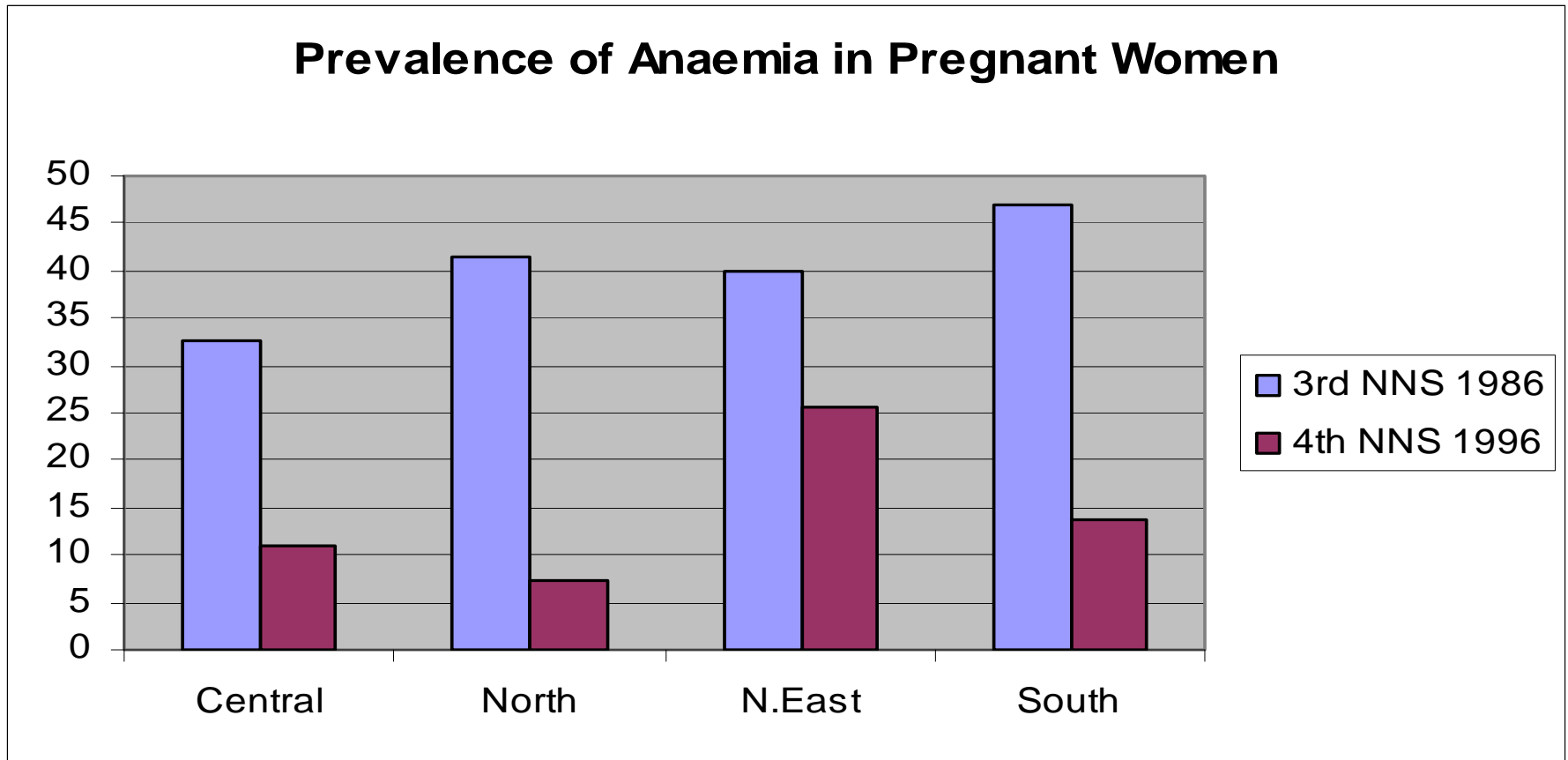
*Nicaragua: Program shows improving trend  
in anemia*



Source: Mora, SIVIN 2004



*Thailand: Declining trend in anemia*



Source: Third and Fourth National Nutrition Surveys.

Also see: P. Winichagoon. J. Nutr 2002



## *Implementation*

- Nicaragua: ANC increased from 62% to 70% from '97-'01. *Brigadistas follow-up and counsel. Supply is acceptable; no major side effects. 80% women reported taking 90+ IFA tablets in '01. Fortification also in effect.*
- Thailand: National program linked health facilities with *community-based workers*. Emphasis on reducing *stockouts* through district health fund. Deworming, sanitation and hygiene, dietary diversification, birth spacing also. Economic development accompanied decline in anemia but later continued.

*Others: India's adolescent program weekly supplements, Nepal, Latin America*

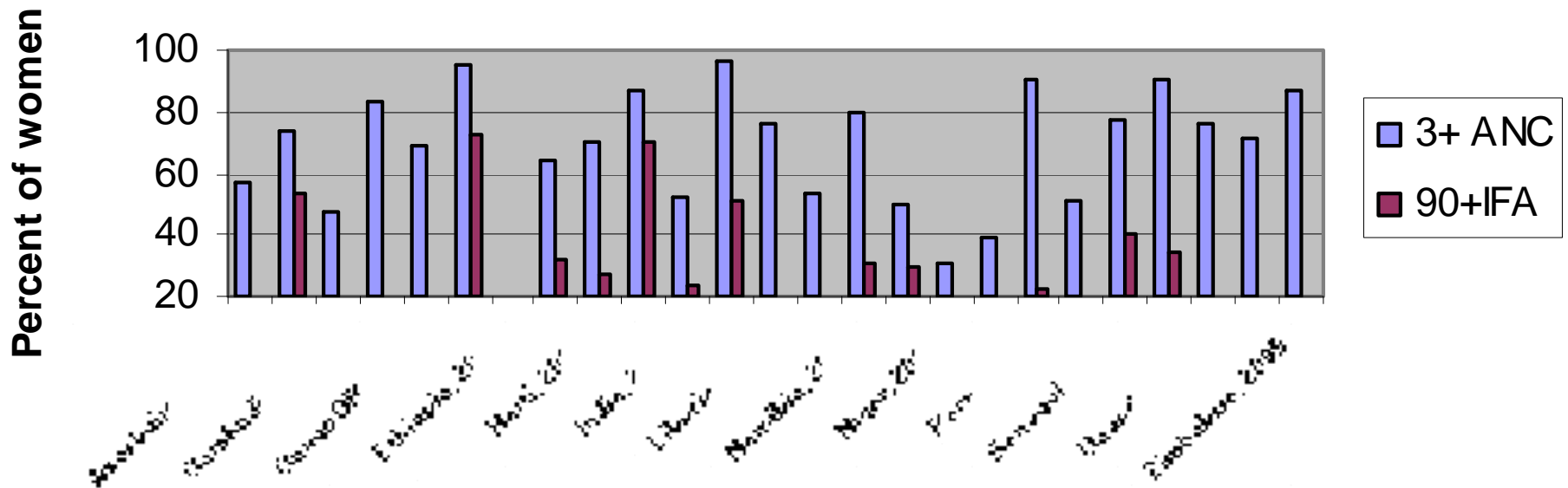


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# Global Situation



## *Low IFA Coverage Even Where ANC is High*

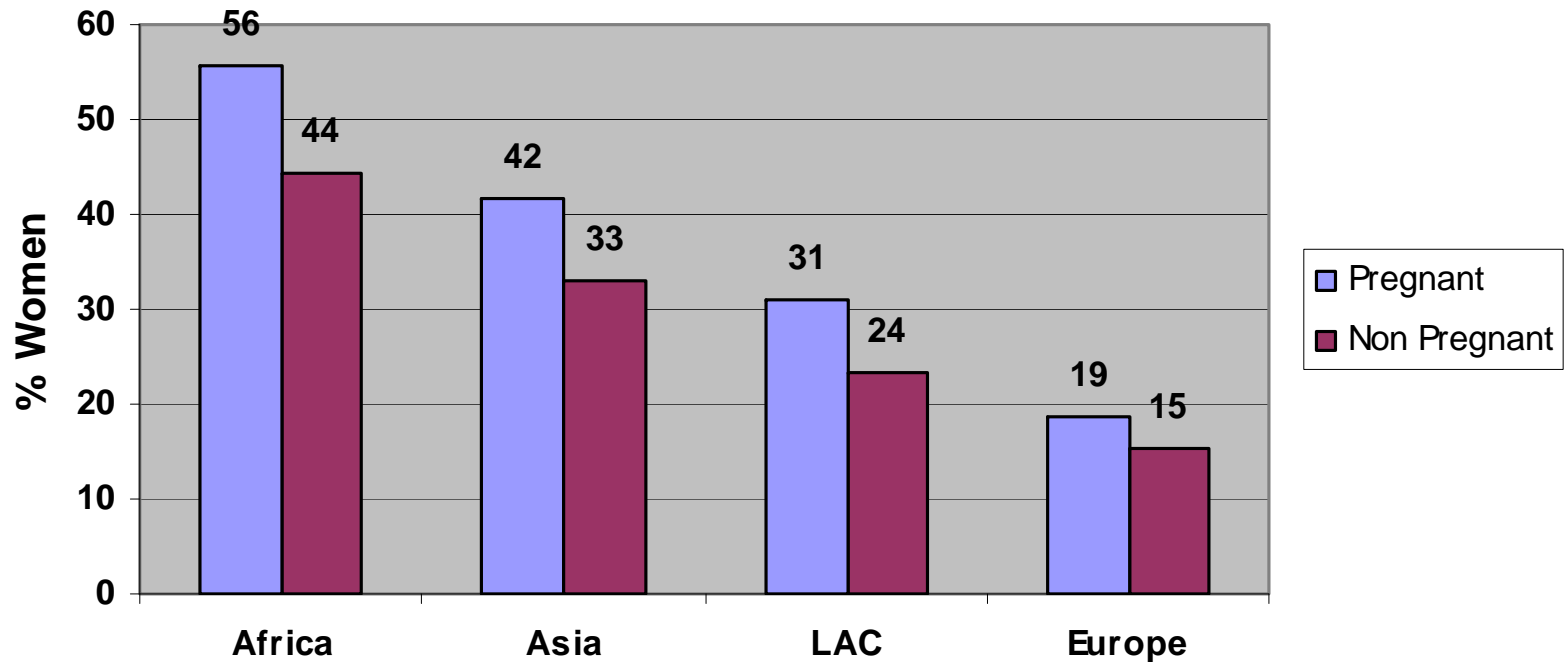


DHS surveys 2004-2007



## *Anemia Prevalence Remains High*

**Regional Variations in Anemia Among Women  
(WHO, 2008)**





## *Elements of program are in place, but implementation?*

- Most countries have MMR reduction goals: IFA given priority?
- ANC guidelines include preventive IFA: monitoring?
- Varied causes recognized, e.g. IDA, worms, malaria: package?
- Essential Drugs Lists have IFA, deworming, malaria drugs: stock outs
- Basic health worker training covers anemia: counseling and follow up for IFA?



## *2008 Innocenti Consensus*

- **Evidence for efficacy is proven** for daily iron supplementation for pregnant women and weekly for women of reproductive age, for improvement in hemoglobin levels and iron status. Association with mortality is continuous, not threshold.
- **Evidence from large-scale iron supplementation programs** shows it can work. Impact is difficult to attribute solely to IFA supplementation programs.
- There is clear enough evidence to **proceed with improving delivery and performance of this intervention, to document its impact** more systematically in more countries.



## *2008 Innocenti Consensus*

To **globally scale up** effective implementation of IFA supplementation as part of MDG 5:

- Conduct **advocacy** to strengthen anemia reduction components in maternal survival strategies. Nurture “champions” within the maternal health community to lead this advocacy.
- Secure funding for **5-10 strategically selected countries** to better document anemia reduction



## *2008 Innocenti Consensus*

- Conduct **implementation research** to identify enablers and barriers to national-scale implementation with focus on: supply management, counseling messages/skills
- Strengthen the operational components of existing IFA in **maternal health programs** and develop **tools** for global- and country-levels



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# Thank You

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