

# IUDs: An Underutilized Contraceptive Technology for Africa



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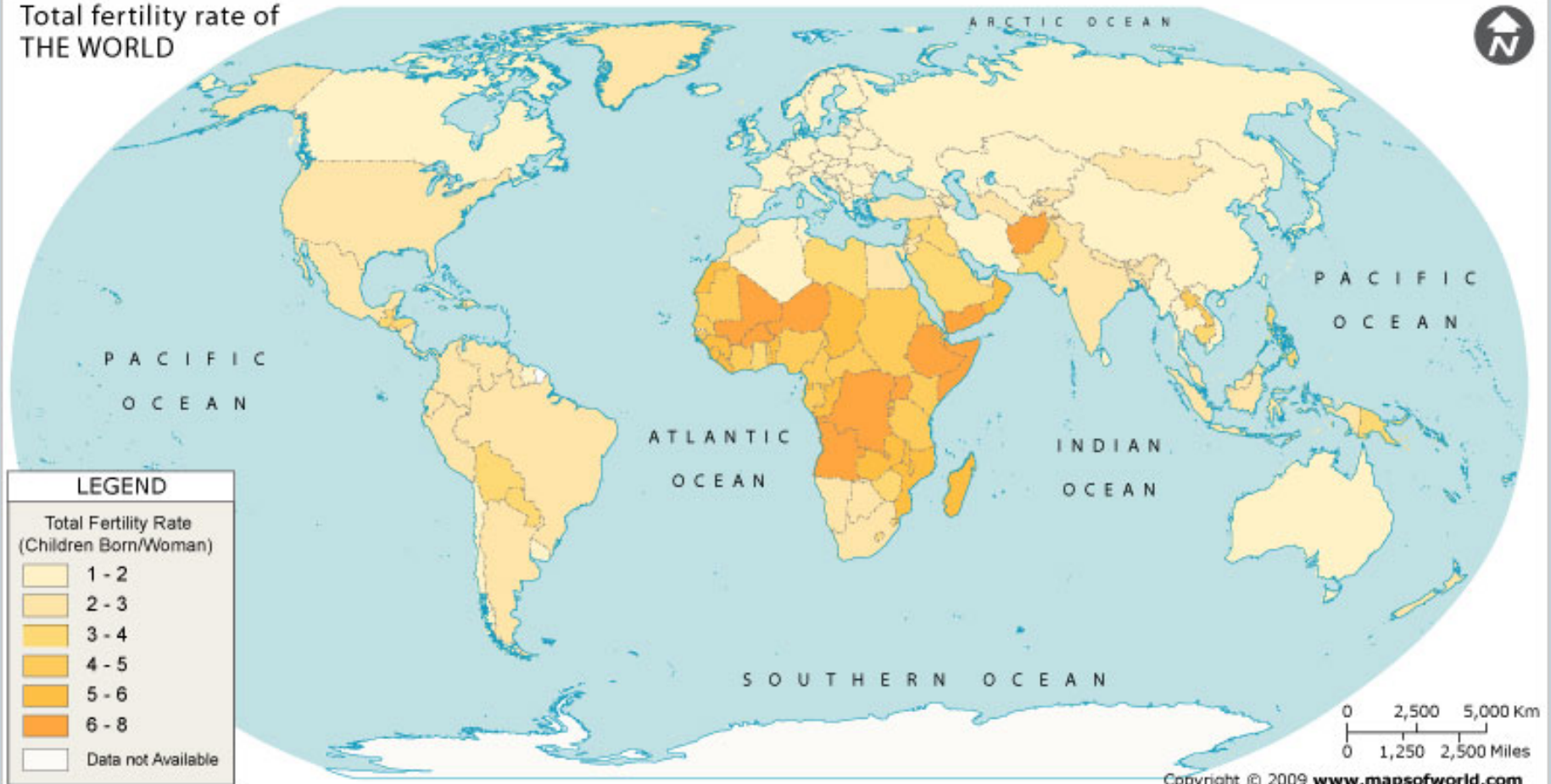
DR. ACHILLES HAS NO CONFLICTS OF INTEREST TO DISCLOSE

# Why is the IUD an important contraceptive option for African women?



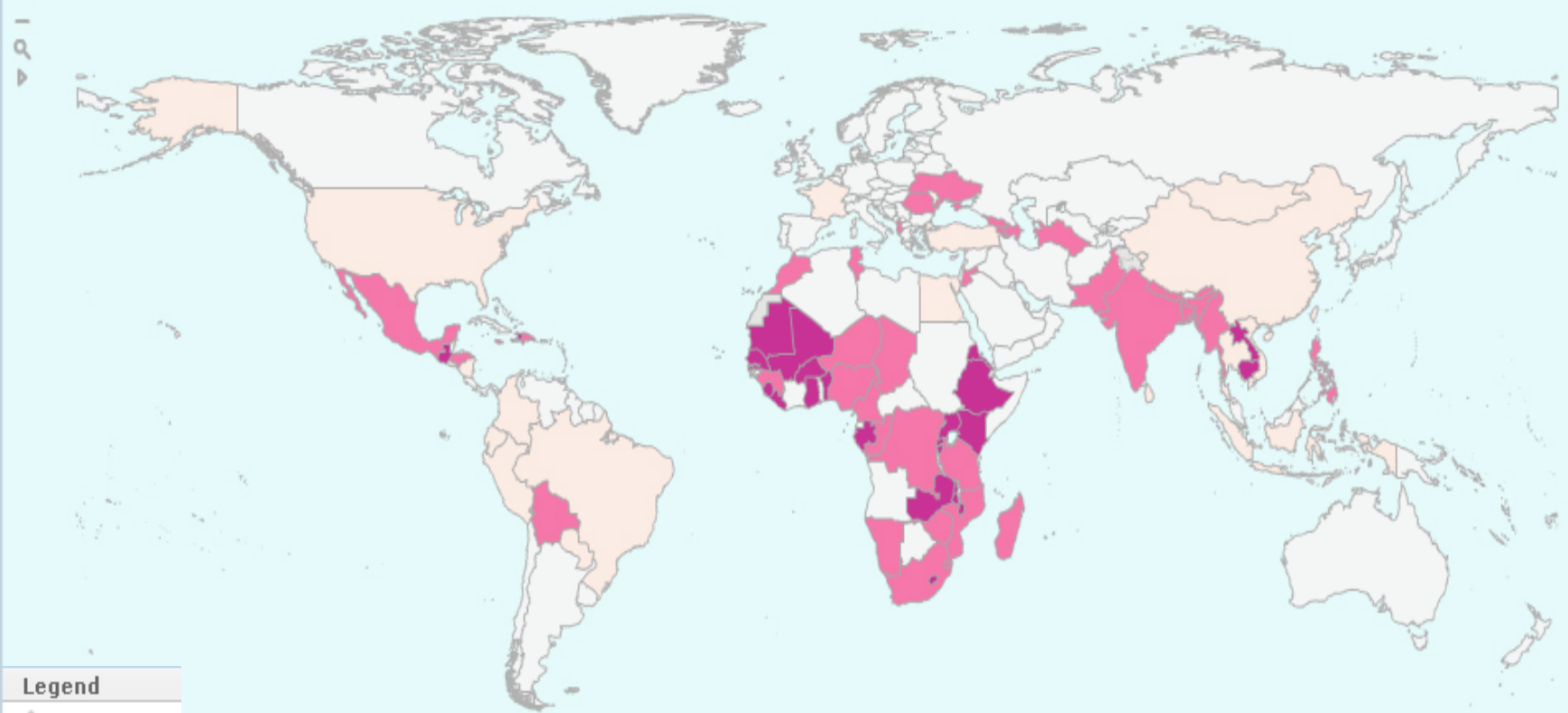
# Total World Fertility Rates

Total fertility rate of  
THE WORLD





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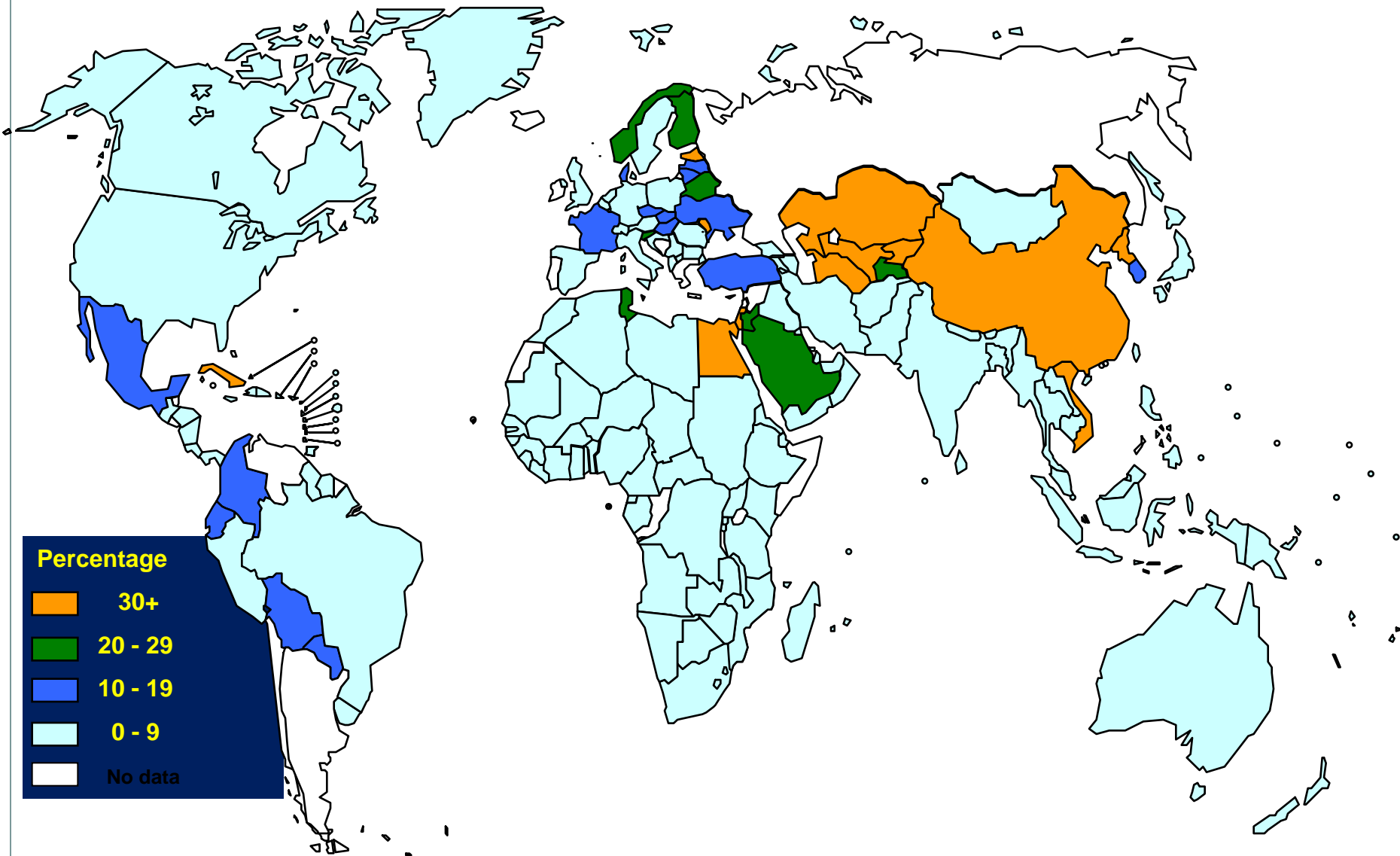
## Unmet Need for Family Planning, 2000 - 2008



### Legend

-  <10.0
-  10.0-24.9
-  25.0-50.9
-  Not applicable
-  No data

## Prevalence of IUD use among women aged 15 to 49 who are sexually active



Source: ONU, World Contraceptive Use 2005

# Pros and Cons of IUDs



## ● Pros

- Safe for nearly all women
- Highly effective (99% +)
- ‘Forgettable’ contraception
  - ✦ Ease of use, convenient
  - ✦ Eliminates compliance needs (perfect use=actual use)
- Immediately reversible (Cu-IUD is also immediately effective)
- The highest satisfaction rates among all contraceptive users
  - ✦ 86% of Cu-IUD users are ‘highly’ or ‘very’ satisfied



## ● Cons

- Must be placed and removed by a clinician
- Small procedural risks

# A brief BAD history of IUDs



**1909-** First IUD (silkworm gut)

**1931-** First metal IUD (ring of Cu, Zn, & Ni)

**1960-** Start of 2<sup>nd</sup> generation IUDs- loops and spirals

**1971-1974- Dalkon Shield** on market- sells 4.5 million IUDs with only one small study performed prior to going to market. The company had undisclosed knowledge of safety concerns. Ultimately, the Dalkon shield was withdrawn from the market in June 1974 and 300,000 lawsuits were filed against the company.

**1974-** Start of 'Modern IUDs'

Plastic T IUD (18% preg rate)

Copper T (200 mm<sup>2</sup>) (1% preg rate)

Copper T (380 mm<sup>2</sup>) (0.2% preg rate)

Hormonal IUDs



# Copper IUD Mechanism of Action



Mechanism of action,  
safety and efficacy  
of intrauterine devices

Report of a  
WHO Scientific Group

Technical Report Series  
753



World Health Organization, Geneva 1987

**Intrauterine devices (IUDs) prevent fertilization primarily by interfering with the ability of sperm to survive** and to ascend the fallopian tubes, where fertilization occurs.

Particularly in the presence of copper-bearing devices, sperm have been absent or few in number in the upper female genital tract, concluded a report of a World Health Organization study group. **"Spermatozoa can migrate to the fallopian tubes in some cases but are less likely to reach the normal site of fertilization."**<sup>1</sup> Scientists in Chile and the United States reached similar conclusions in their 1996 review of mechanism of action research.<sup>2</sup>

<sup>1</sup> WHO Technical Report Series 753, 1987.

<sup>2</sup>Ortiz, et al. *Obstet Gynecol Surv* 1996.



# WHO Scientific Group declared in 1987 that IUDs are safe and effective

## Mechanism of action, safety and efficacy of intrauterine devices

Report of a  
WHO Scientific Group

In 1987, a Scientific Group of WHO concluded that, “. . . the currently available copper and hormone-releasing IUDs, when properly used, are probably the most effective and reliable reversible method of fertility regulation.”<sup>1</sup> Nevertheless, use of the intrauterine device (IUD) is languishing in much of the world today.

Technical Report Series  
753



World Health Organization, Geneva 1987

# Why has the IUD not become the most popular contraceptive?



Concern about upper-genital-tract infection and resultant infertility remains a stubborn obstacle to a wider use of modern IUDs. A re-examination of the evidence nullifies much of that concern.

One flawed member of  
an intrinsically good  
method class



# PRE-1985 IUD LITERATURE



Slide courtesy of David Grimes

# PERSISTENT MISTAKES



- 1. Inappropriate comparison group**
- 2. Over-diagnosis of PID**



# DECADES OF FUZZY THINKING

**PID risk in **infected** vs. **uninfected** women having IUD inserted**

**PID risk in **infected** women having IUD inserted vs. **infected** women not having IUD inserted**



# Clear Thinking Prevails



## THE LANCET

REVIEW

Review

### Intrauterine device and upper-genital-tract infection

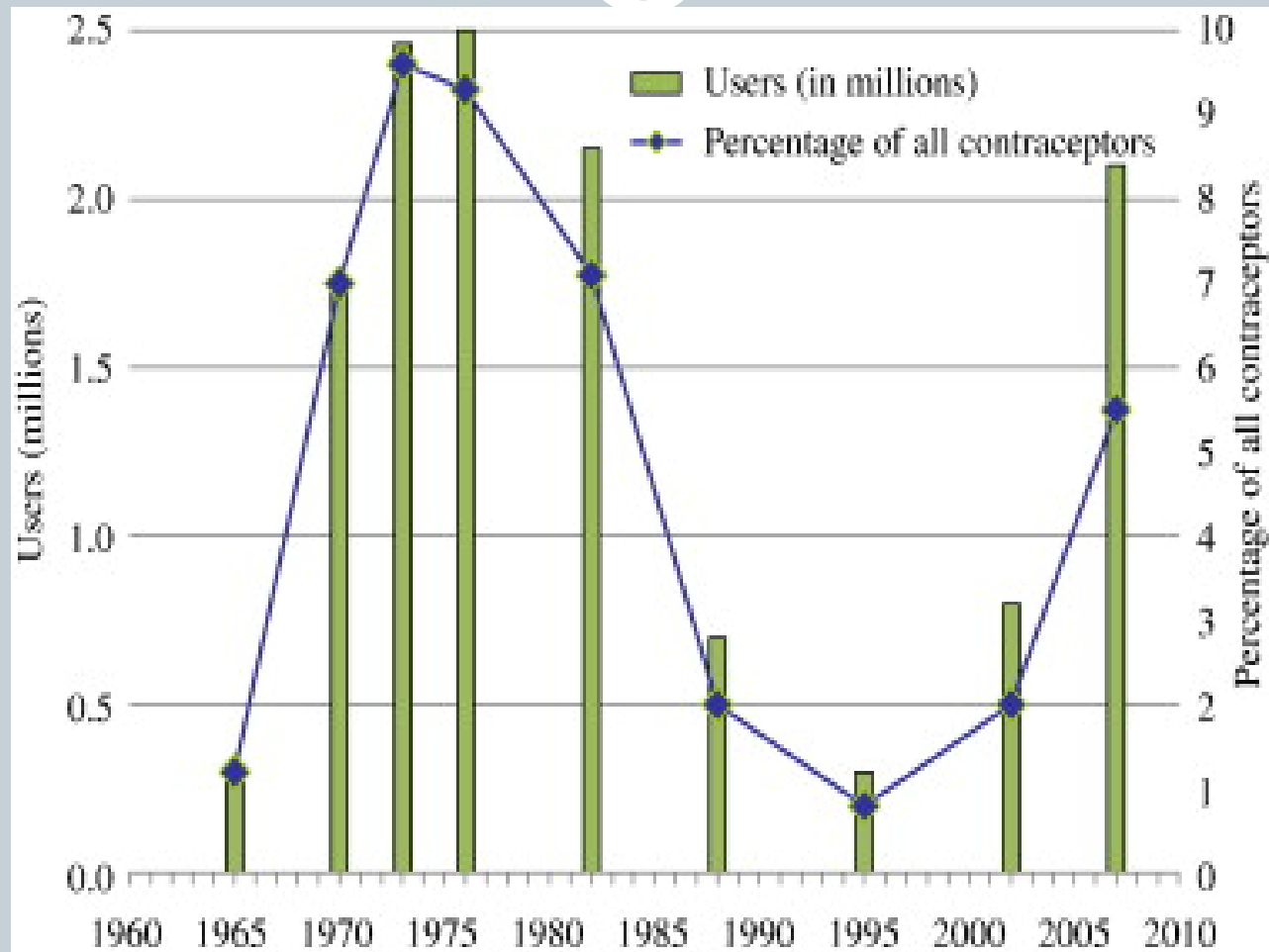
*David A Grimes*

Concern about upper-genital-tract infection related to intrauterine devices (IUDs) limits their wider use. In this systematic review I summarise the evidence concerning IUD-associated infection and infertility. Choice of an inappropriate comparison group, overdiagnosis of salpingitis in IUD users, and inability to control for the confounding effects of sexual behaviour have exaggerated the apparent risk. Women with symptomless gonorrhoea or chlamydial infection having an IUD inserted have a higher risk of salpingitis than do uninfected women having an IUD inserted; however, the risk appears similar to that of infected women not having an IUD inserted. A cohort study of HIV-positive women using a copper IUD suggests that there is no significant increase in the risk of complications or viral shedding. Similarly, fair evidence indicates no important effect of IUD use on tubal infertility. Contemporary IUDs rival tubal sterilisation in efficacy and are much safer than previously thought.

# THE EVIDENCE, 2012

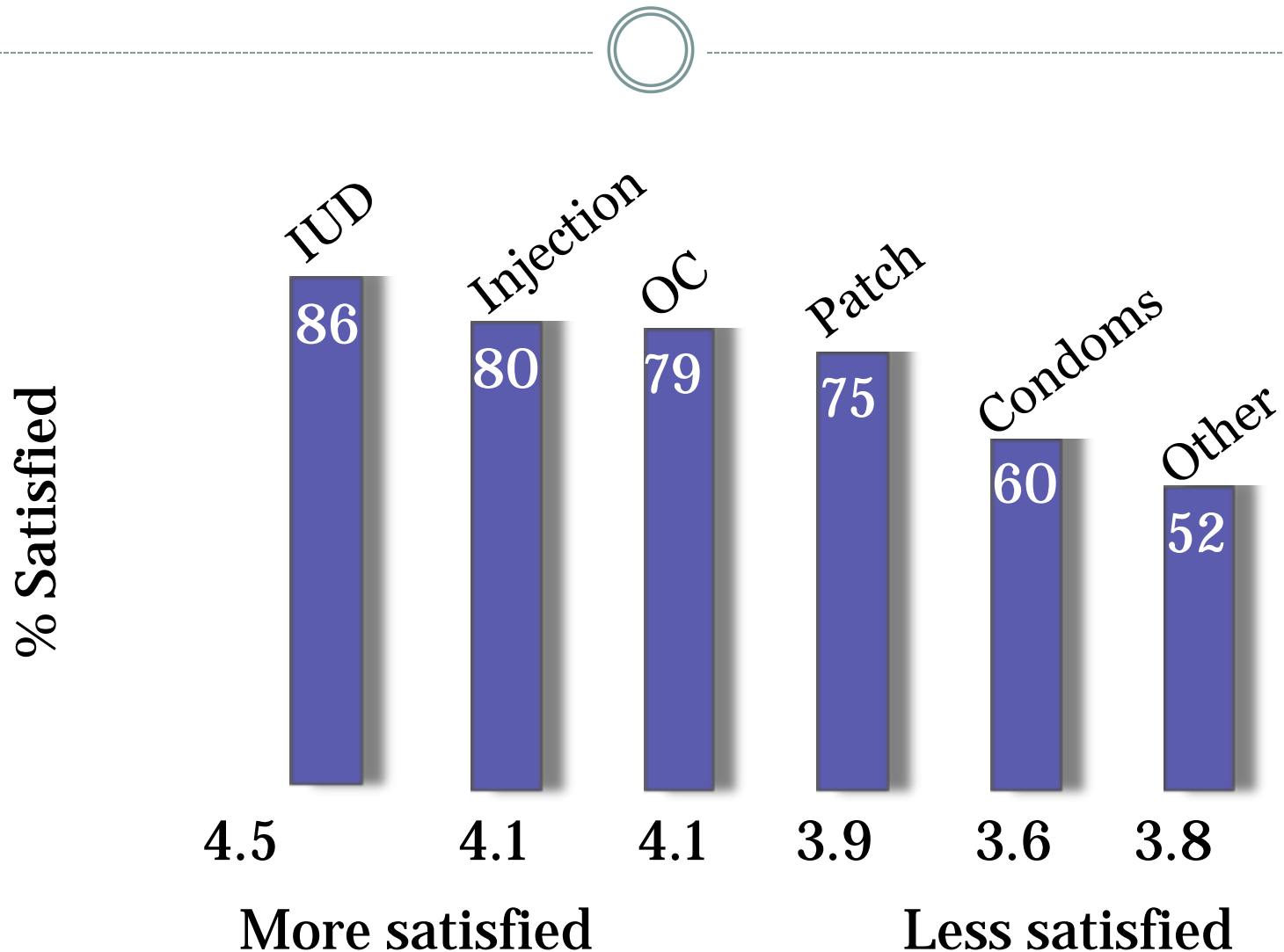
ISSUE	EVIDENCE	STRENGTH	CONCLUSION
IUD and PID	II-2	A	Insertional risk only
Tailstring as vector	I	A	Monofilament safe
Insertion with cervicitis	II-2	C	Limited data; no evidence of large risk
Use by HIV-infected	II-2	B	Safe; no increased viral shedding
Chlamydia acquisition	II-2	B	No increase
Gonorrhea acquisition	II-2	C	Limited data
PID treatment	I	B	Can leave IUD in
Infertility	II-2	B	No increase

# Renewed Interest in the IUD





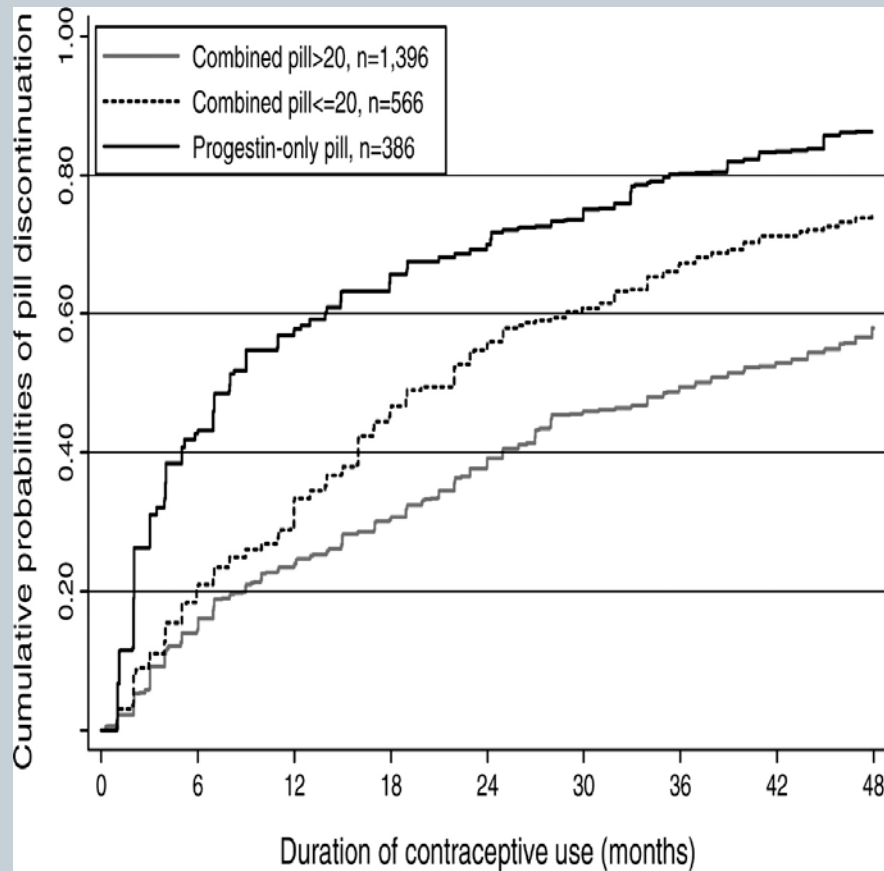
# Satisfaction with Contraceptive Method



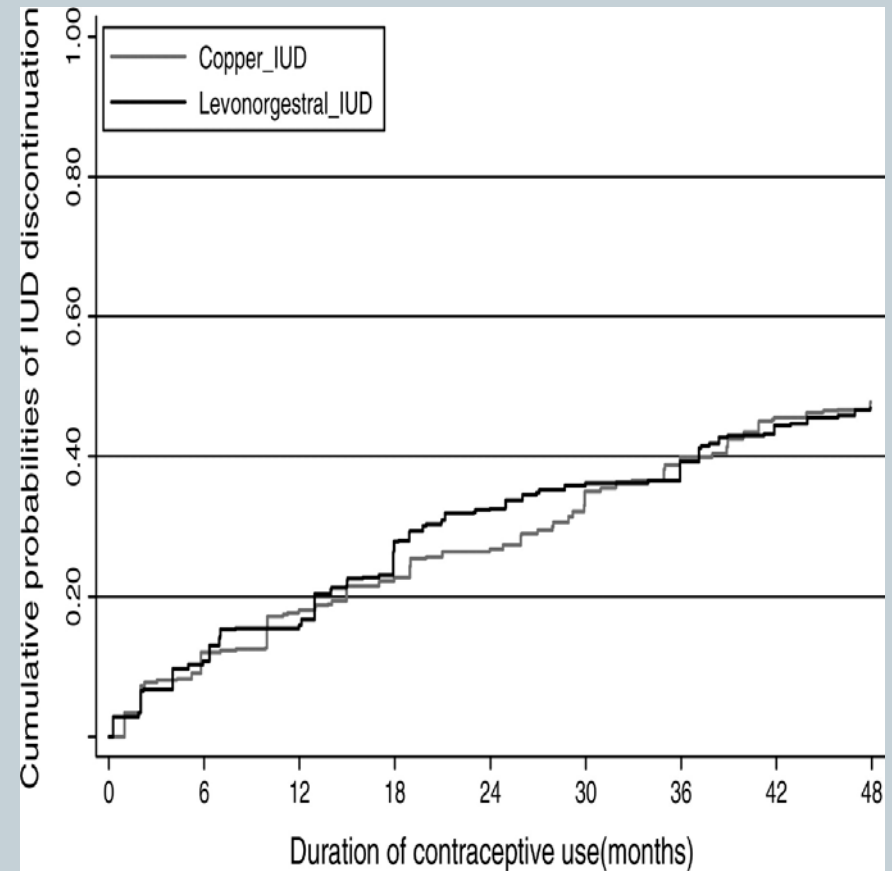
# IUD users are highly satisfied

## Probability of discontinuation (Kaplan-Meier estimates)

Pills



IUDs



# Summary



## **Modern IUDs are:**

- Safe, effective, convenient, reversible, long-lasting, cost-effective, easy to use
- An excellent method for many (most?) women
  - Encourage trial—if dissatisfied, can switch!

\*The ultimate goal is to ensure women in developing countries have the same access to life-saving family planning information, services, and supplies as women in developed countries.

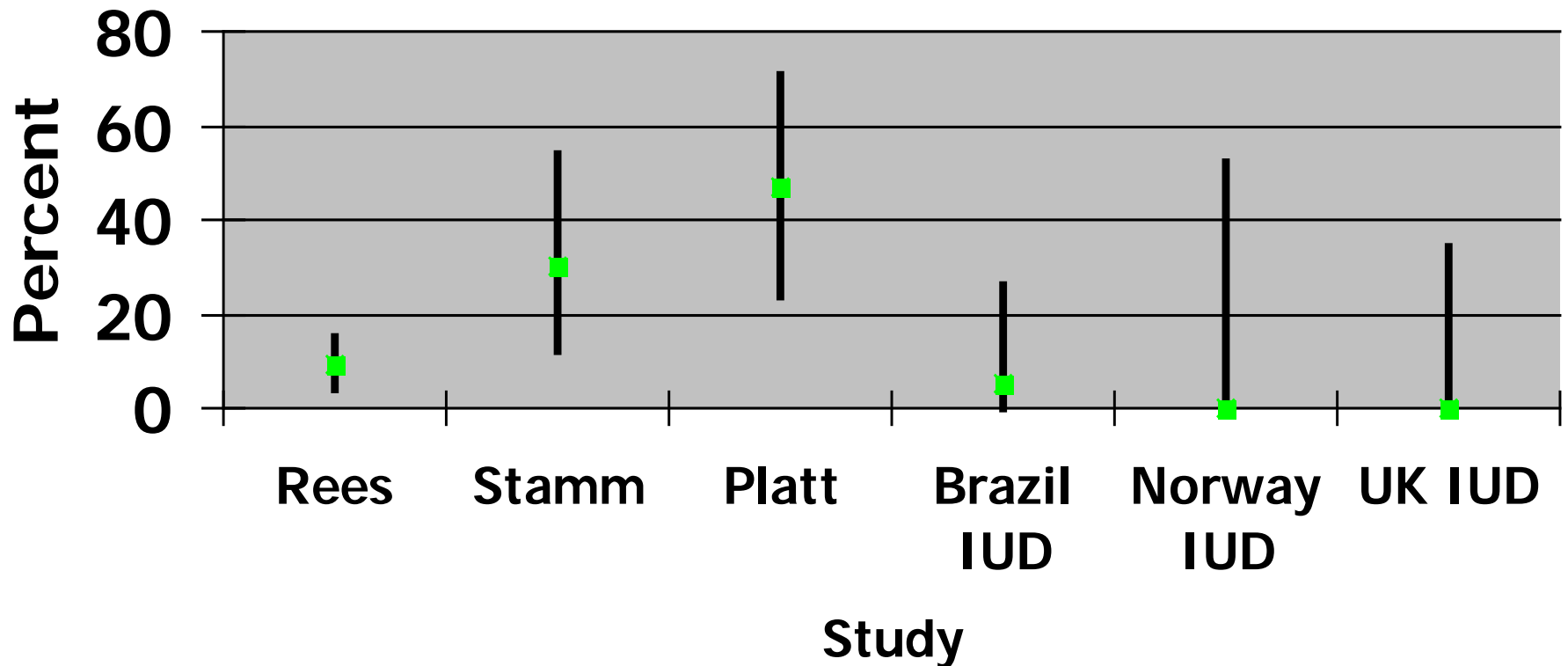
\* Family Planning Summit organized by the Department for International Development, USAID and the Bill and Melinda Gates Foundation, London, July 11, 2012

# OBJECTIVES



- Describe the unmet need for family planning in Africa
- Briefly describe the history of the IUD
- Summarize the pros and cons of IUD use
- Explain why the WHO Technical Report of 1987 was a watershed publication
- Summarize the relationship between contemporary IUDs, PID, and infertility
- Show the resurgence in IUD use

# Reported Rates of Ascending PID: Background and with IUD Insertion



# WHO renews commitment to family planning at groundbreaking summit



11 July 2012, London, UK

Organized by the Department for International Development (DFID) and the Bill and Melinda Gates Foundation, the Family Planning Summit was an opportunity to **call for an unprecedented international political commitment and resources** to transform the lives of millions of women and girls, which will save lives and help lift families, communities and nations out of poverty.

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- **The UK Department for International Development (DFID) and the Bill and Melinda Gates Foundation, with participation by other partners (including technical assistance from USAID), sponsored a high-level event in London on World Population Day, July 11, to galvanize political commitment and financial resources from developing countries, donors, the private sector, civil society and other partners to meet the family planning needs of women in the world's poorest countries by 2020. The ultimate goal is to ensure women in developing countries have the same access to life-saving family planning information, services, and supplies as women in developed countries.**



# Advantages of the IUD



- Highly effective (99% +) and extremely safe
- Reversible (fertility restored immediately after removal)
- May be used safely by lactating women
- May be used immediately postpartum and post-abortion
- Safely used by women with contraindications to estrogen-containing methods
- Can be used by HIV-positive women or by women at risk of HIV
- Long duration of use (12 years for TCu 380A)
- Only one visit needed for insertion; minimal follow-up needed
- Coitally independent, which allows for privacy and control over her fertility
- No synthetic hormones; women maintain their natural hormonal levels
- Does not interact with medications
- Highly acceptable with excellent continuation rates (~80% at 2 yrs)
- Economical

# Disadvantages of the IUD



- **Dependent on a trained provider for insertion and removal**
- **Some pain, cramping, minor bleeding when inserted in the uterus**
- **For the first three months after insertion, women may have somewhat heavier or longer periods with increased cramping**
- **Risk of infection (<1/100) from the insertion procedure**
- **Risk of perforation (<1/1000) at the time of insertion**
- **Does not protect against STIs, including HIV**