

# Safety and effectiveness of termination services performed by doctors vs. mid-level providers: a systematic review

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# Who can provide effective and safe termination of pregnancy care? A systematic review\*

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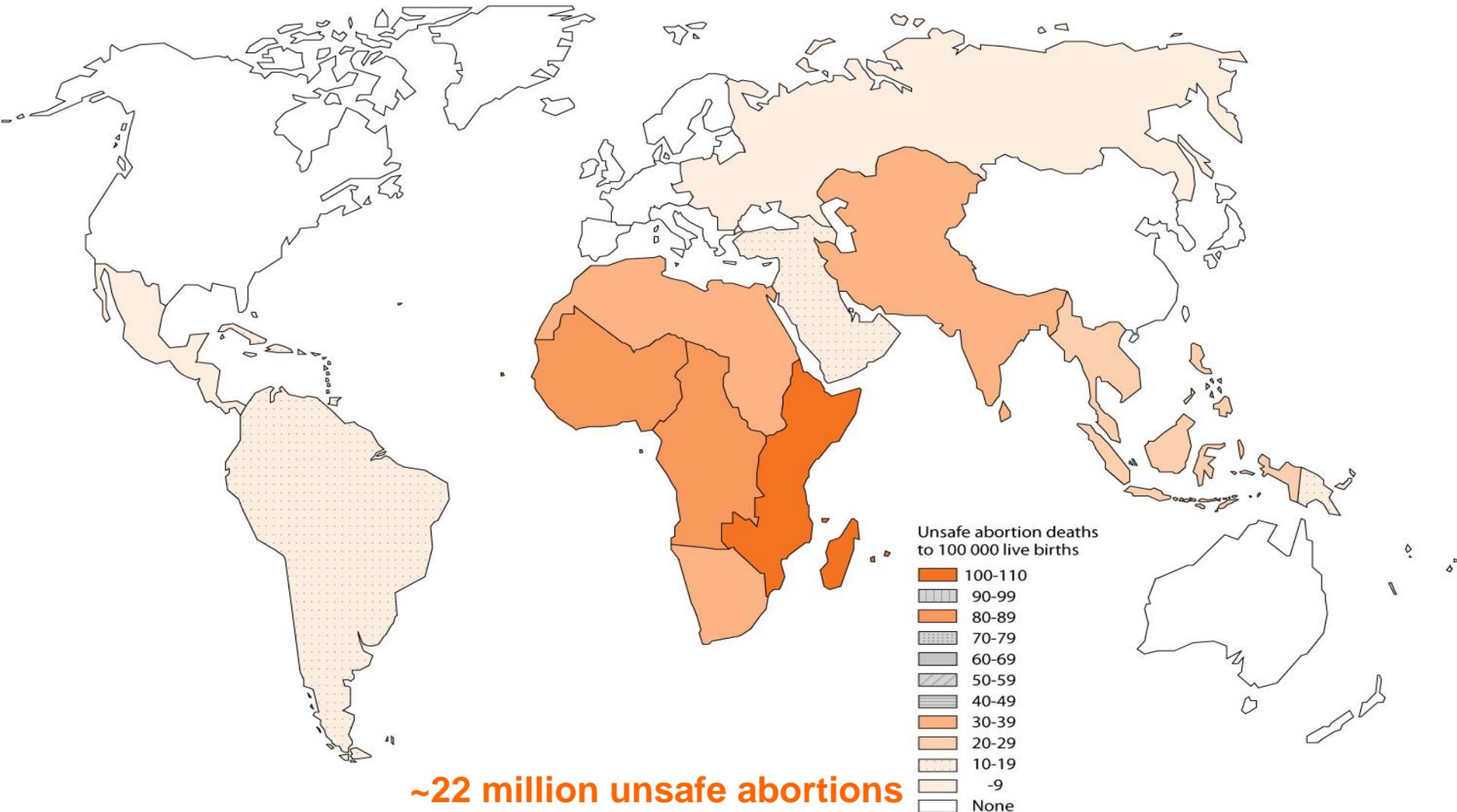
# Outline

- Background & rationale
- Objective & outcomes
- Methods
- Results
- Summary



# Unsafe abortion-related deaths

per 100,000 live births, 2008



**~22 million unsafe abortions**



# Who are mid-level providers?

- **WHO:** a range of non-physician clinicians trained to provide basic clinical procedures related to reproductive health:
  - bimanual pelvic examination to determine age of pregnancy and positioning of the uterus;
  - transcervical procedures;
  - can be trained to provide safe abortion care.
- **Mid-level providers:**
  - Non physician clinicians
  - Midwives
  - Nurses
  - Auxiliary nurses/midwives

# Why mid-level providers (MLPs)?



- **Rational use of resources**
  - Affordability based on shorter education and training, and lower remuneration compared with physicians
- **Some women may prefer choice of provider & methods**
- **Technologies have evolved to become safer and less complicated**
  - MVA simplifies uterine evacuation
  - MA does not require surgical skills
- **Already a reality in some contexts**
  - Vietnam (1945); Bangladesh (1979)
- **May improve safe access**

# Where MLPs are authorized to provide abortion-related care

## Abortion care

- Bangladesh
- Cambodia
- Ethiopia
- Ghana
- Mozambique
- Nepal
- South Africa
- United States (some states)
- Vietnam
- Zambia

## Post-abortion care

- Botswana
- Burkina Faso
- Cambodia
- Ethiopia
- Ghana
- Kenya
- Mozambique
- Nepal
- Nigeria
- Senegal
- South Africa
- Tanzania
- Uganda
- Zambia
- Zimbabwe

# Challenges to mid-level provision



- Range of entry requirements & durations of training for MLP varied
- Quality of training is dependent on quality of facilities, faculty, opportunities for clinical practice
- Regulation and licensing of MLP often weak
- Resistance from physicians to MLPs providing abortion services
  - 12% of OB/GYN support MLPs in Nepal\* to prescribe MA
  - 43% of US medical students support MLPs\*\*

\*Tamang A , 2005. & \*\*Shotorbani S, 2004.

# Objective & outcomes

- **Objective:**
  - To compare the effectiveness and safety of abortion provided by midlevel healthcare providers compared to doctors
  
- **Primary outcomes:**
  1. incomplete or failed abortion; &
  2. measures of safety (adverse events and complications)

# Methods: systematic review

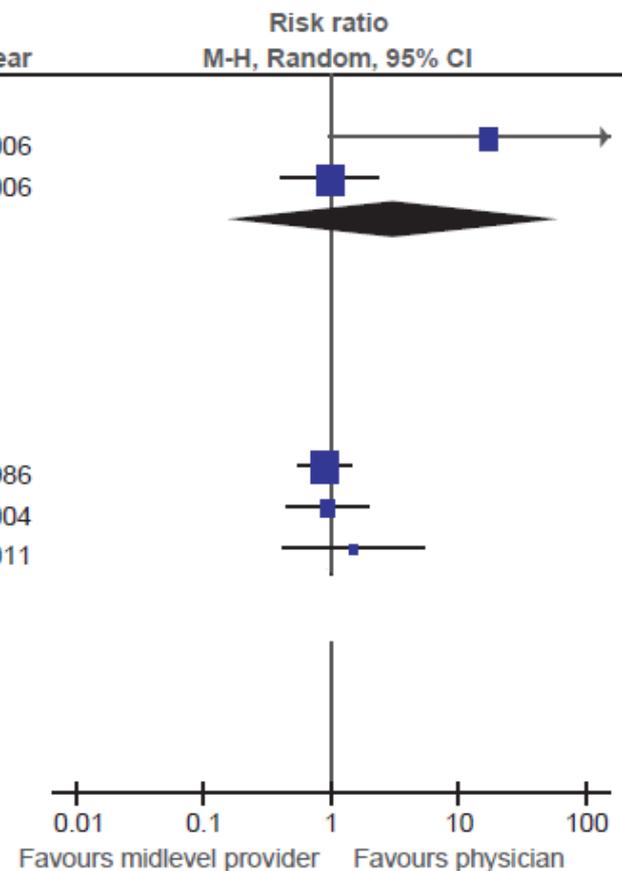
- Inclusion of trials and comparison studies:
  - comparing abortion procedures administered by midlevel providers and doctors.
- Searched the Cochrane Central Register of Controlled Trials, EMBASE, MEDLINE and Popline.
- Studies were assessed for their quality.
- Odds ratios and their 95% confidence intervals (CIs) were calculated for each study.

# Results: included studies

- **5 studies with 8,908 women** (2 RCTs & 3 prospective cohort studies)
- **Comparison 1: Surgical termination**
  - 1 RCT in Vietnam & South Africa (n=2,894); & 3 prospective cohort studies in India and USA (n=4,910)
  - Gestation age: up to 15 weeks
  - MVA, uterine evac./suction curettage
  - **MLPs:** midwives, physician assistants
- **Comparison 2: Medical termination**
  - 1 RCT in Nepal (n=1,104)
  - Gestation age: up to 9 weeks
  - Mifepristone 200mg + misoprostol 800 micro-g
  - **MLPs:** staff nurses, auxiliary midwives

# Surgical abortion: overall complications

Study or Subgroup	Midlevel provider		Physician		Weight	Risk ratio	
	Events	Total	Events	Total		M-H, Random, 95% CI	Year
<b>1.1.1 Randomized controlled trials</b>							
Warriner 2006 SouthAfrica	8	579	0	581	39.9%	17.06 [0.99, 294.86]	2006
Warriner 2006 Vietnam	10	874	10	860	60.1%	0.98 [0.41, 2.35]	2006
<b>Subtotal (95% CI)</b>		<b>1453</b>		<b>1441</b>	<b>100.0%</b>	<b>3.07 [0.16, 59.31]</b>	
Total events	18		10				
Heterogeneity: Tau <sup>2</sup> = 3.60; Chi <sup>2</sup> = 4.11, df = 1 (P = 0.04); I <sup>2</sup> = 76%							
Test for overall effect: Z = 0.74 (P = 0.46)							
<b>1.1.2 Prospective cohort studies</b>							
Freedman 1986	35	1285	36	1173	64.7%	0.89 [0.56, 1.40]	1986
Goldman 2004	12	546	19	817	26.7%	0.95 [0.46, 1.93]	2004
Jejeebhoy 2011	6	433	4	432	8.6%	1.50 [0.43, 5.27]	2011
<b>Subtotal (95% CI)</b>		<b>2264</b>		<b>2422</b>	<b>100.0%</b>		
Total events	53		59				
Heterogeneity: Tau <sup>2</sup> = 0.00; Chi <sup>2</sup> = 0.59, df = 2 (P = 0.75); I <sup>2</sup> = 0%							
Test for overall effect: Z = 0.31 (P = 0.76)							



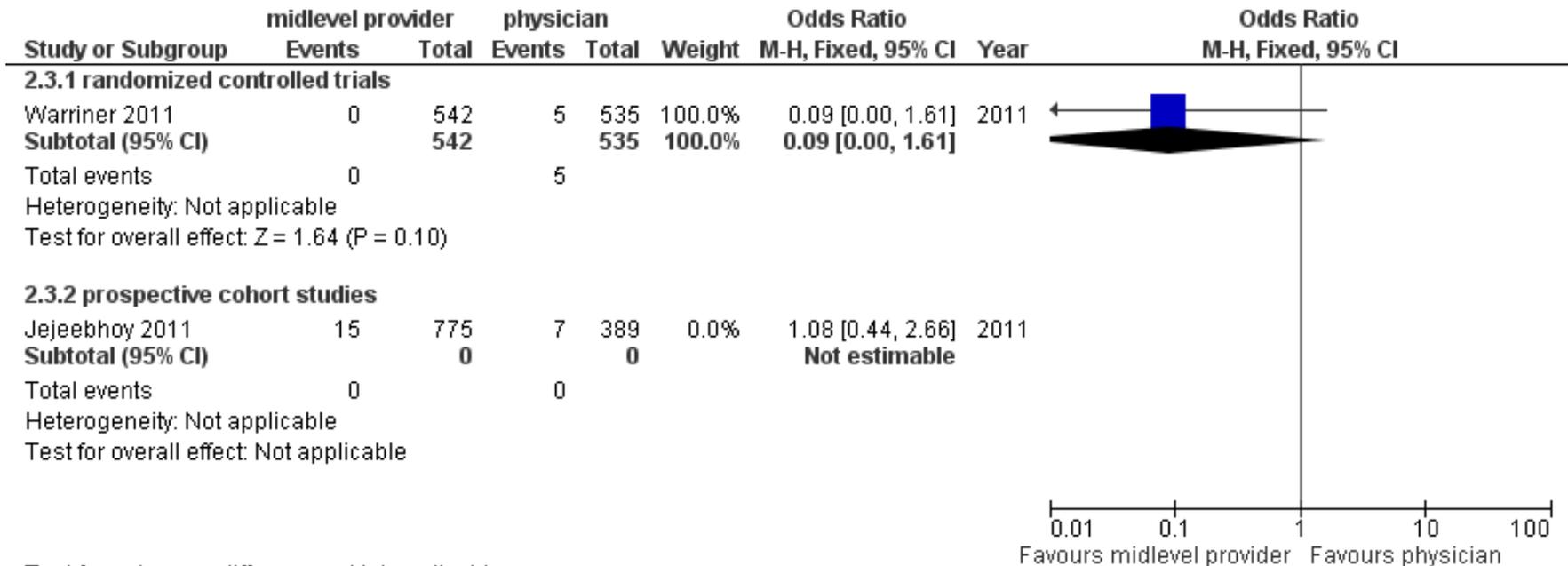
Test for subgroup differences: Chi<sup>2</sup> = 0.60, df = 1 (P = 0.44), I<sup>2</sup> = 0%

## No statistically significant difference in efficacy and safety

# Surgical abortion: limitations

- Generalizability:
  - Gestational age (GA): mean GA was ~8 weeks in RCT & 5% > 10 weeks; 10% > 10 weeks in cohort studies
  - Setting: emergency care accessible in case of complication
- Evidence quality (GRADE criteria): very low to moderate
  - Imprecise estimates
    - *Few or no events [studies have not been powered to detect difference in rare complications],*
    - *wide confidence interval*
  - Only 1 RCT
  - Cohort studies with risk for biases

# Medical abortion: effectiveness



Test for subgroup differences: Not applicable

## No statistically significant difference in efficacy and safety

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# Medical abortion: **limitations**

- **Generalizability:**
  - Setting: women undergoing medical abortion resided within 90 minutes of study site and took misoprostol in a clinic setting
- **Evidence quality** (GRADE criteria) : very low to low
  - Imprecise estimates
    - *Few or no events [studies have not been powered to detect difference in rare complications],*
    - *Wide confidence interval*
  - Only 1 RCT

# Summarised findings

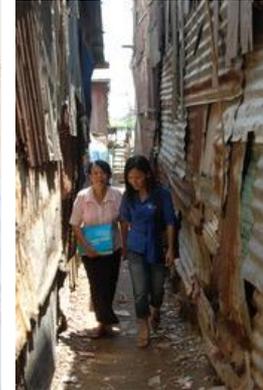
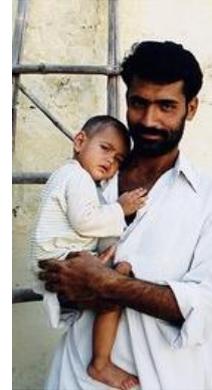
- **No statistically significant differences in safety or efficacy**
  - Either in RCTs or cohort studies
  - Data are limited (only one RCT each for medical & surgical abortion)
  - Evidence is imprecise
  - Gestational ages on average 8 weeks
  - Access to treatment for complications, and for medical abortion, women lived within 90 minutes of care
- **Strengths:**
  - Data collected in various countries, settings
  - Multiple cadres of providers

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# Thank you



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