

Reducing the Leading Cause of Maternal Mortality Globally: Maternal Hemorrhage

Capstone Courses: TGH490, TGH494, TGH491

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BACKGROUND

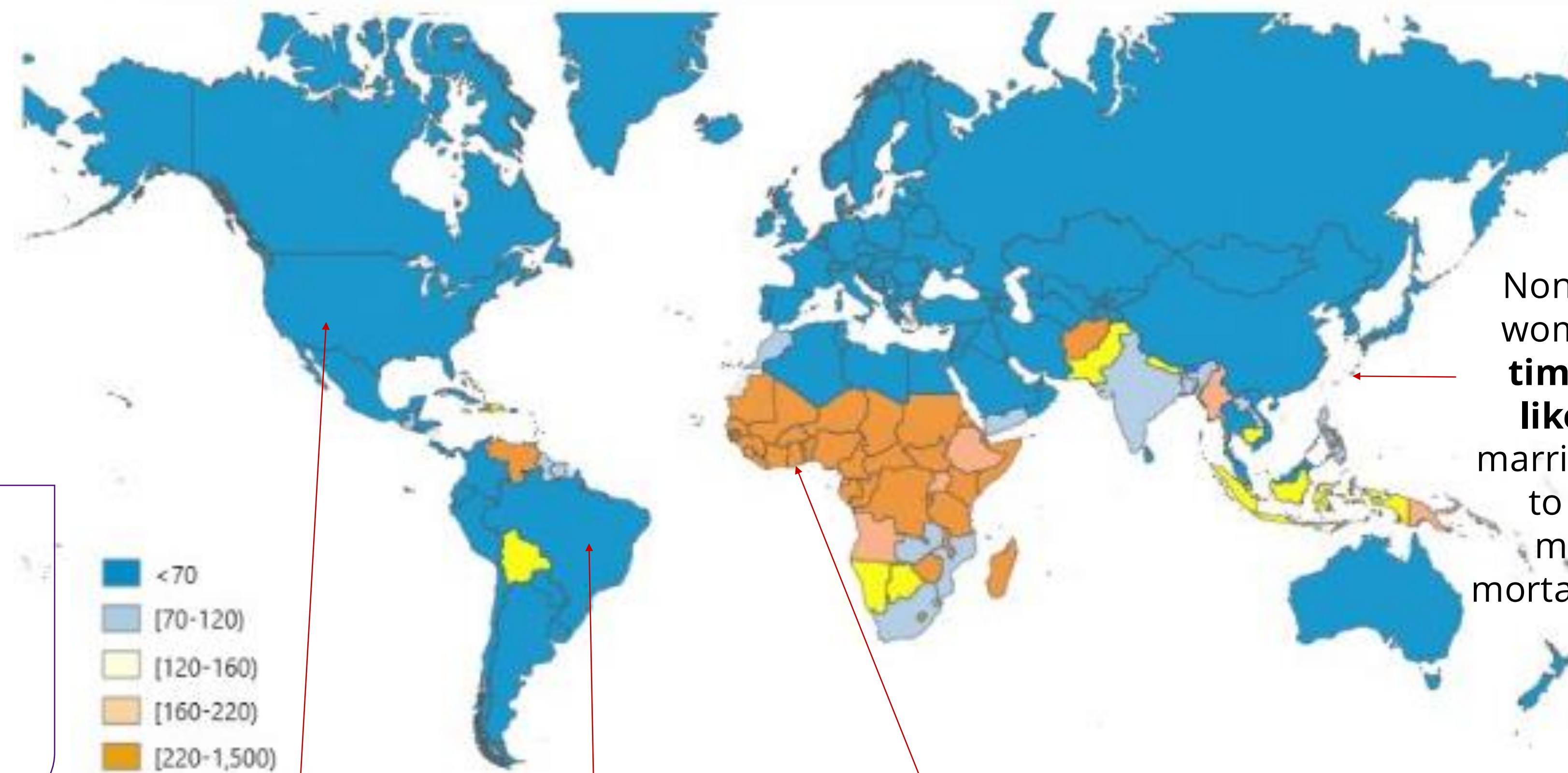
Leading Causes of Maternal Mortality Globally...

- 1) Hemorrhage
- 2) Indirect Obstetric Causes
- 3) Direct Obstetric Causes
- 4) Hypertensive Disorders

In 2023, **92%** of maternal mortality cases occurred in LMIC's

Sub-Saharan Africa accounted for **70%** of all cases

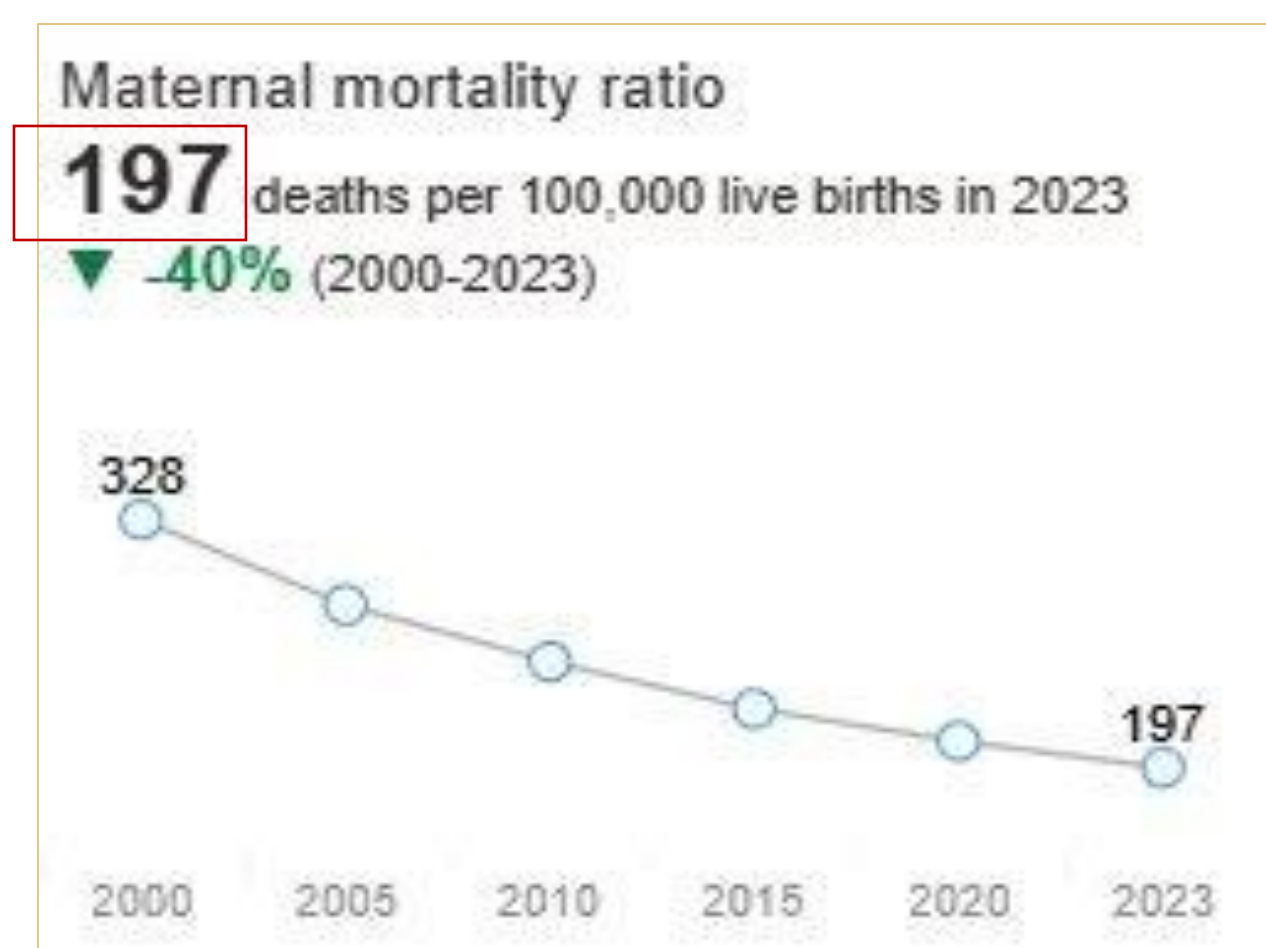
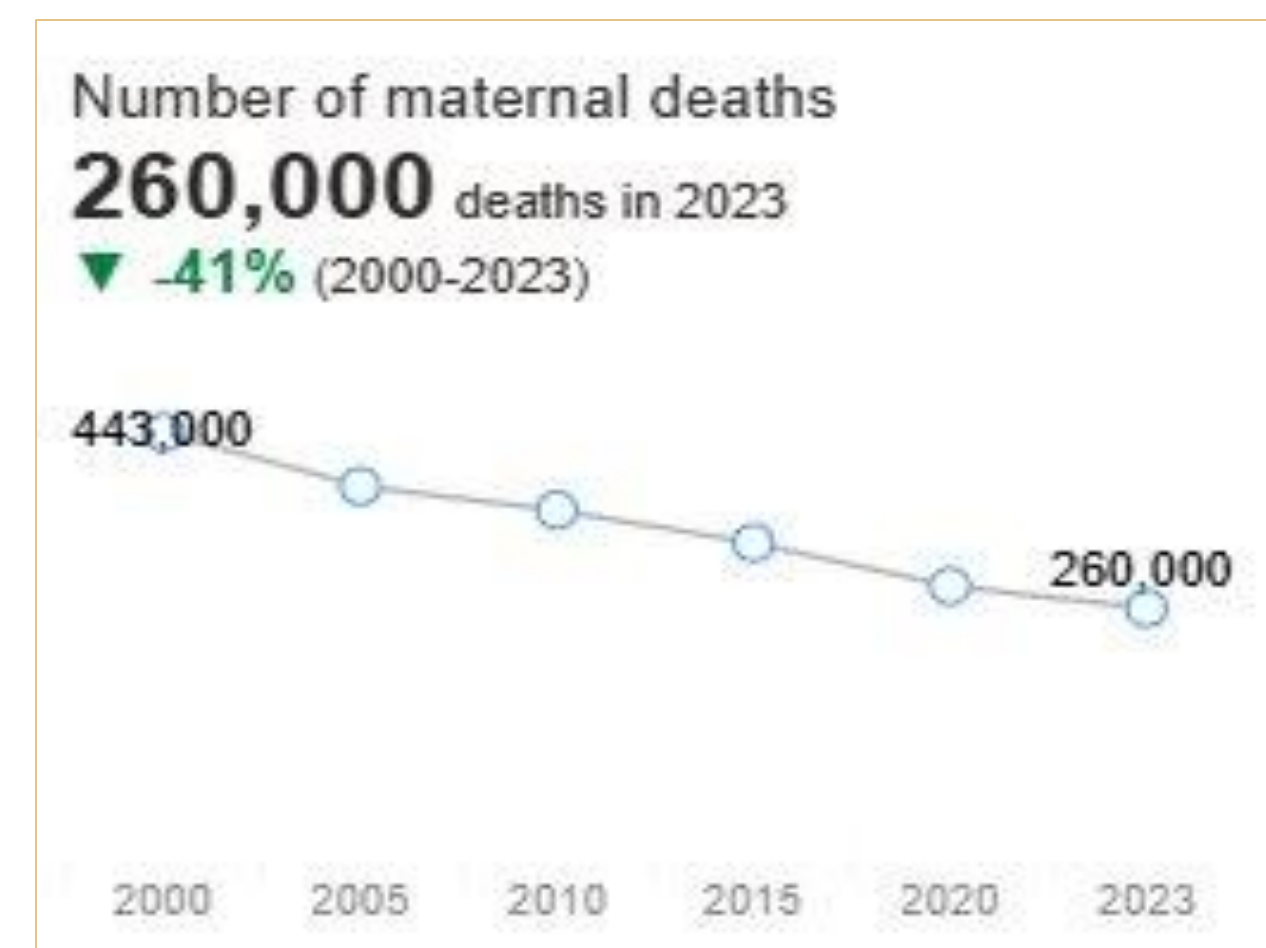
Maternal Mortality Ratio (MMR) Estimates, 2023



Non-married women are **5 times more likely** than married women to endure maternal mortality (Japan)

80% of Maternal Mortality Cases are **Preventable**

Sustainable Development Goal (SDG) by 2030: **Reduce MMR to 70 deaths/100,000 births**



African American women are **3-4 times more likely** to endure maternal mortality than white women (US)

African American women are **5 times more likely** to endure maternal mortality than white women (Brazil)

1/3 of women are **1-2 hours** away from the closest healthcare facility, **4+ hours** from emergency obstetric care (Ghana)

Figure 1: Global map displaying UNICEF data of MMR's within each respective country. Key in lower left: number of deaths/100,000 live births

Women with no formal education globally are **3 times more likely** to endure maternal mortality compared to women with over 12 years of education.

DEFINITIONS

Maternal Mortality: The total number of female deaths annually from any related cause to pregnancy or its management within 42 days of pregnancy termination, during gestation, or childbirth.

Maternal Mortality Ratio (MMR): The number of maternal deaths in a given time period per 100,000 live births during that same time period.

LMICs: Low- Middle- Income Countries

HICs: High- Income Countries

Maternal Hemorrhage: The cumulative loss of 500-1000mL of blood during or following childbirth.

SOLUTIONS

- 1) Standardization of training programs & emergency procedures
- 2) Implementation of doulas for childbirth
- 3) Prevention of risk-associated diseases
- 4) Use of uterotonic drugs

It is estimated that **one woman dies every two minutes** from pregnancy related complications.

CAUSES OF MATERNAL MORTALITY?

Direct...

- 1) Pre-eclampsia
- 2) Unsafe abortions
- 3) Hemorrhage
- 4) Cardiovascular complications
- 5) Venous thromboembolism
- 6) Sepsis

Indirect...

- 1) Socioeconomic Determinants
- 2) Geographic Location
- 3) Race or Ethnicity



WHY ANALYZE MATERNAL HEMORRHAGE?

Maternal hemorrhage is the **leading cause** of maternal mortality globally.

56% of maternal hemorrhage cases **do not** show symptoms.

The loss of 2-2.4L of blood is considered **fatal**

Average blood loss during vaginal or cesarean delivery is 500-1000mL's

E-MOTIVE TRIAL



Figure 2: Photo of calibrated blood-collection drape implemented in E-MOTIVE trial

- **What?** Cluster randomized trial (80 secondary hospitals)
- **Where?** Kenya, Tanzania, Nigeria, South Africa
- **Results?** 60% reduction in severe bleeding

WHY REDUCE MATERNAL HEMORRHAGE?

- 1) Eliminate Health Inequities Globally
- 2) Break intergenerational Poverty Cycles
- 3) Promote Gender Equity
- 4) Push for Women's Rights
- 5) Assist in Resolving Humanitarian Crises

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