

# HIGH-RISK, LOW- RESOURCE MATERNAL CARE



Nicholas Comninellis, MD, MPH, DIMPH  
President & Professor  
Institute for International Medicine  
[www.inmed.us](http://www.inmed.us)

# PRESENTATION OBJECTIVES

- Identify major causes of maternal death and strategies for improvement
- Promote effective family planning & contraception
- Manage common complications of delivery
- Empower others to provide such essential care





“I am going to sea to catch a new baby, but the journey is long and dangerous, and I may not return” ~  
Haitian proverb

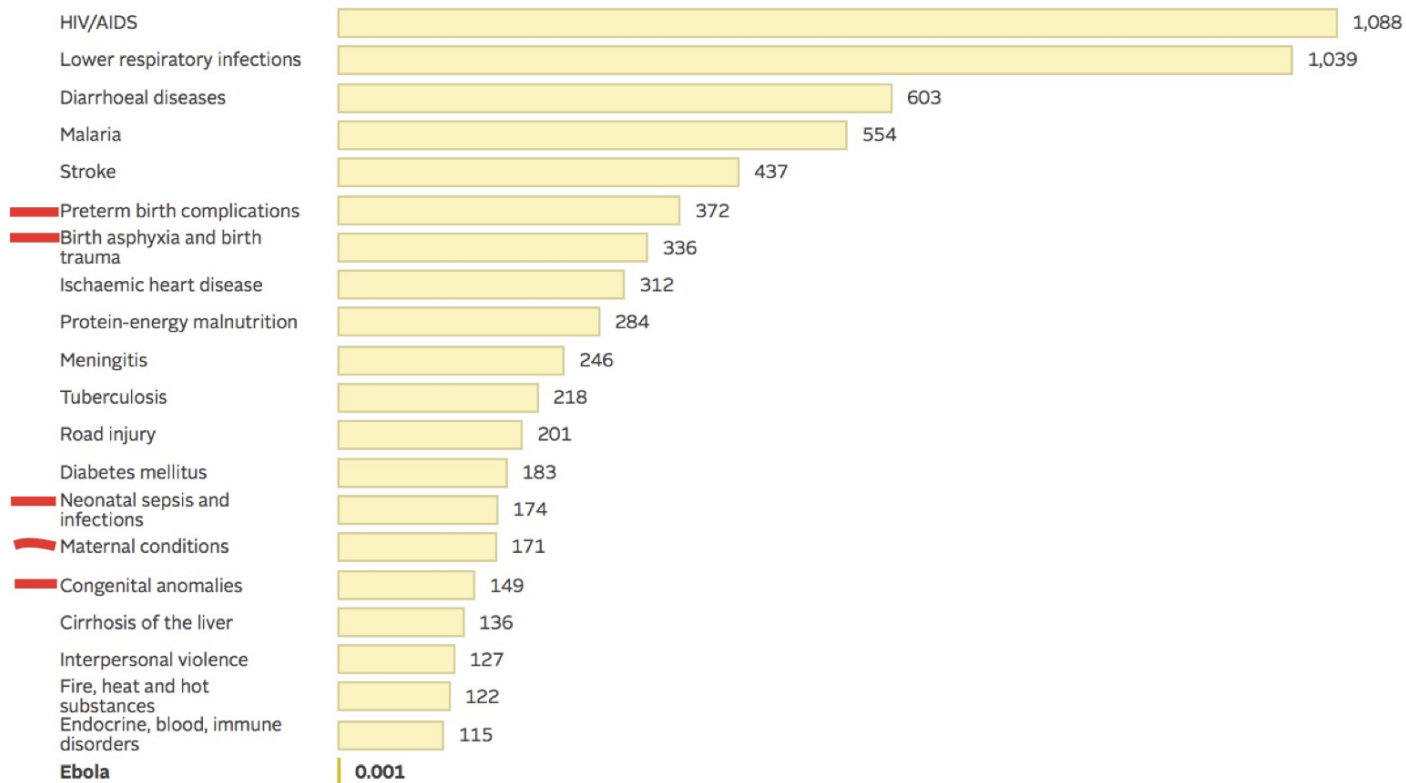
# PERSPECTIVE

Every two minutes somewhere in the world a woman dies of pregnancy related complications. Almost all these deaths occur in resource poor settings.

But how great a problem is maternal-newborn death in comparison to other pressing world health concerns?

# Leading causes of death in Africa

Deaths (000s)

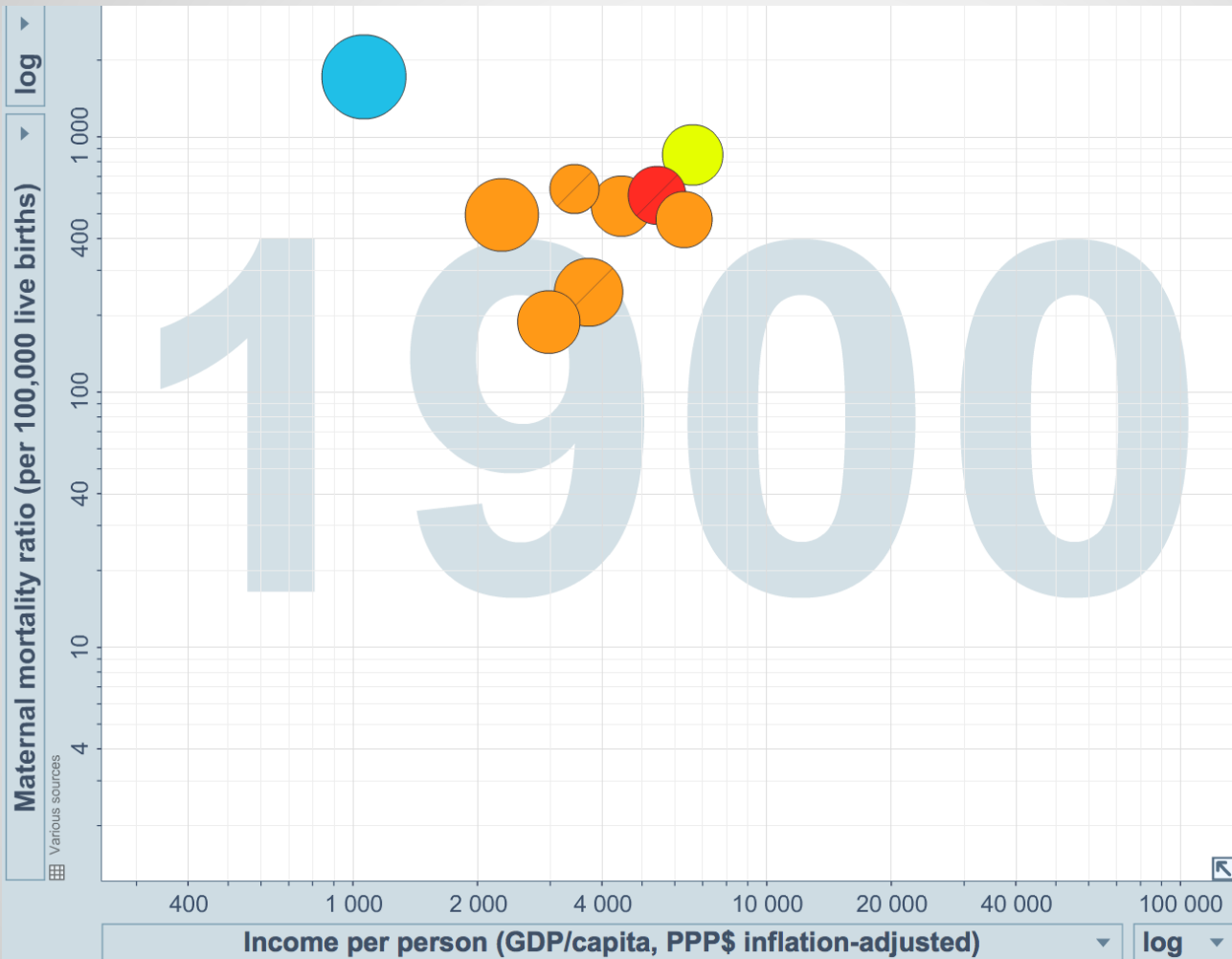


Source: WHO 2012

# PROGRESS IN MATERNAL HEALTH

The progress since 1900 according to three parameters:

- Continent & Nation
- Maternal Mortality Rate = the number of maternal deaths per 100,000 live births.
- Income per Person



**Geographic regions**

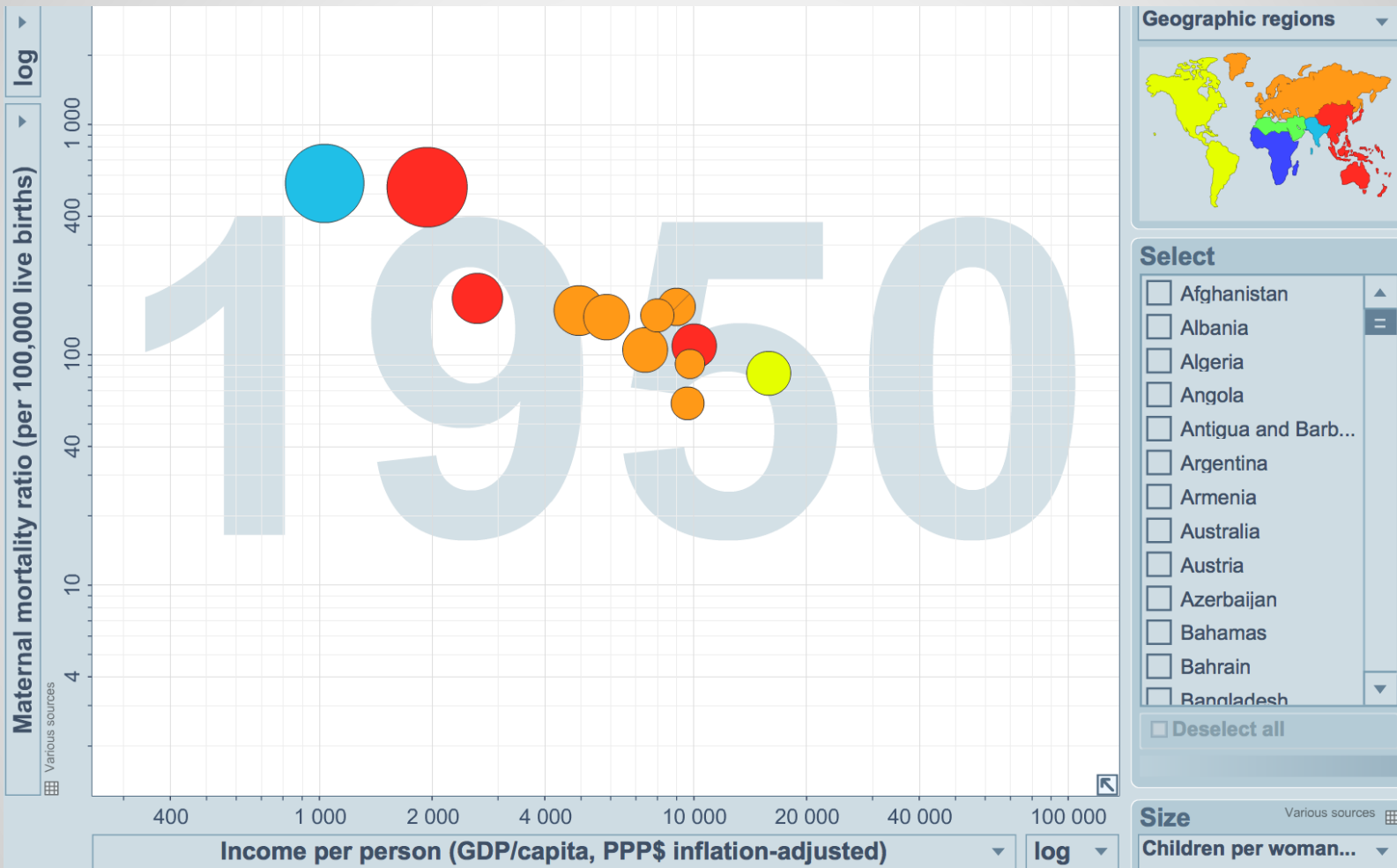
**Select**

- Afghanistan
- Albania
- Algeria
- Angola
- Antigua and Barb...
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh

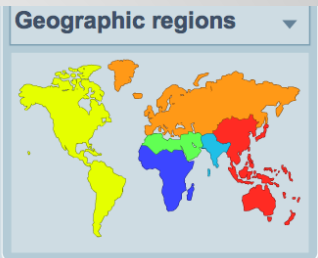
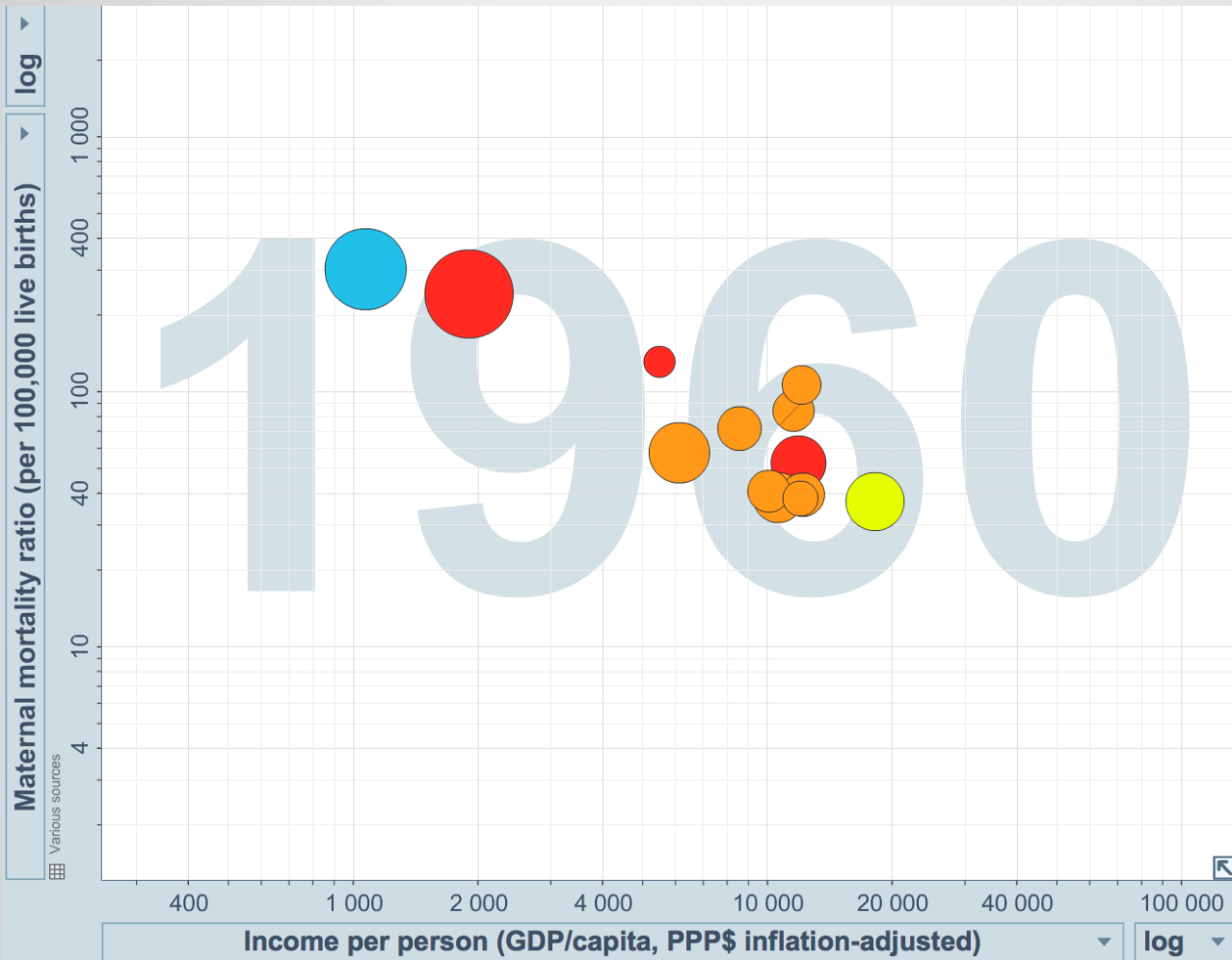
Deselect all

**Size** Various sources

**Children per woman...**



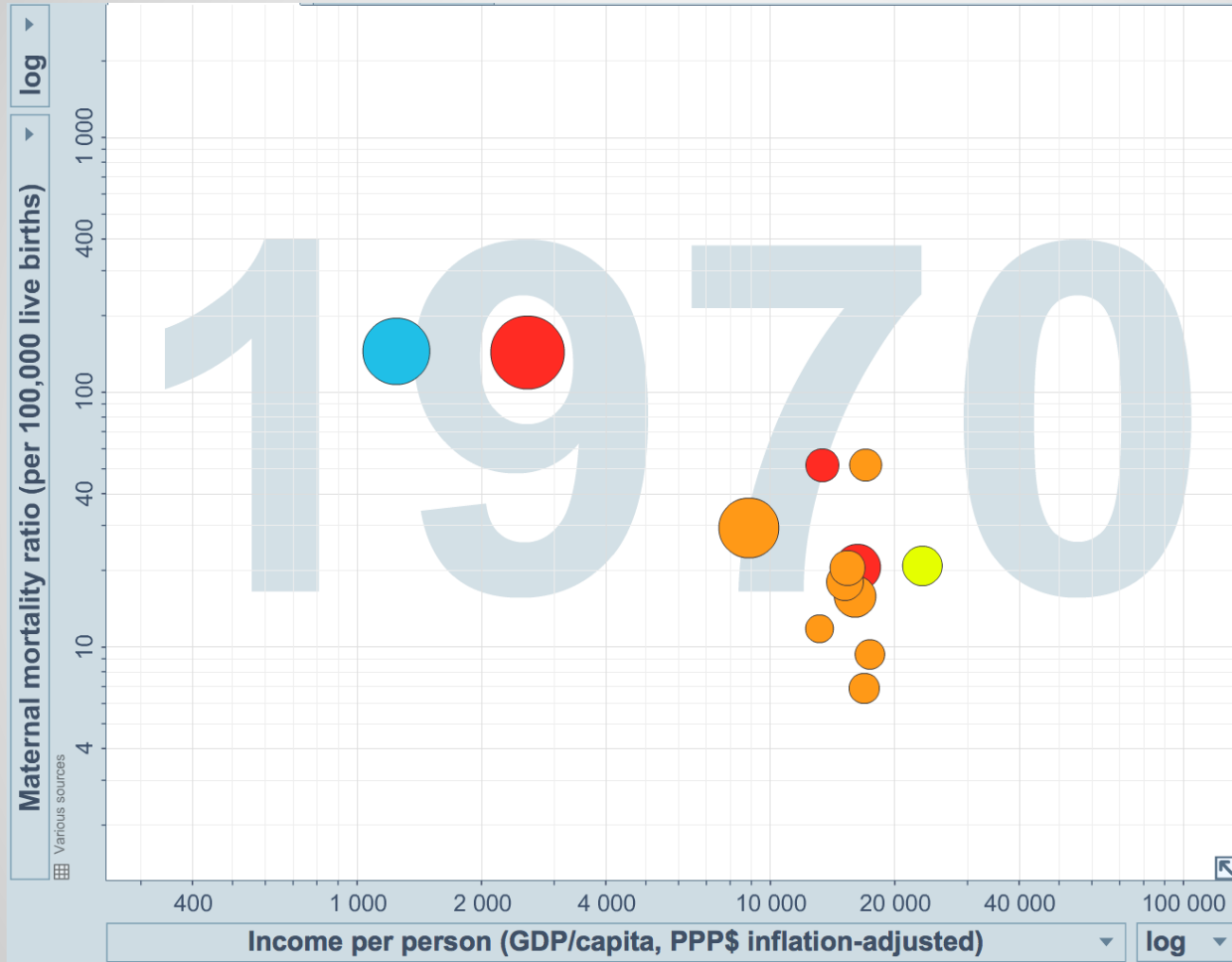




- Select
- Afghanistan
  - Albania
  - Algeria
  - Angola
  - Antigua and Barb...
  - Argentina
  - Armenia
  - Australia
  - Austria
  - Azerbaijan
  - Bahamas
  - Bahrain
  - Bangladesh
- Deselect all

Size Various sources

Children per woman...



Geographic regions



Select

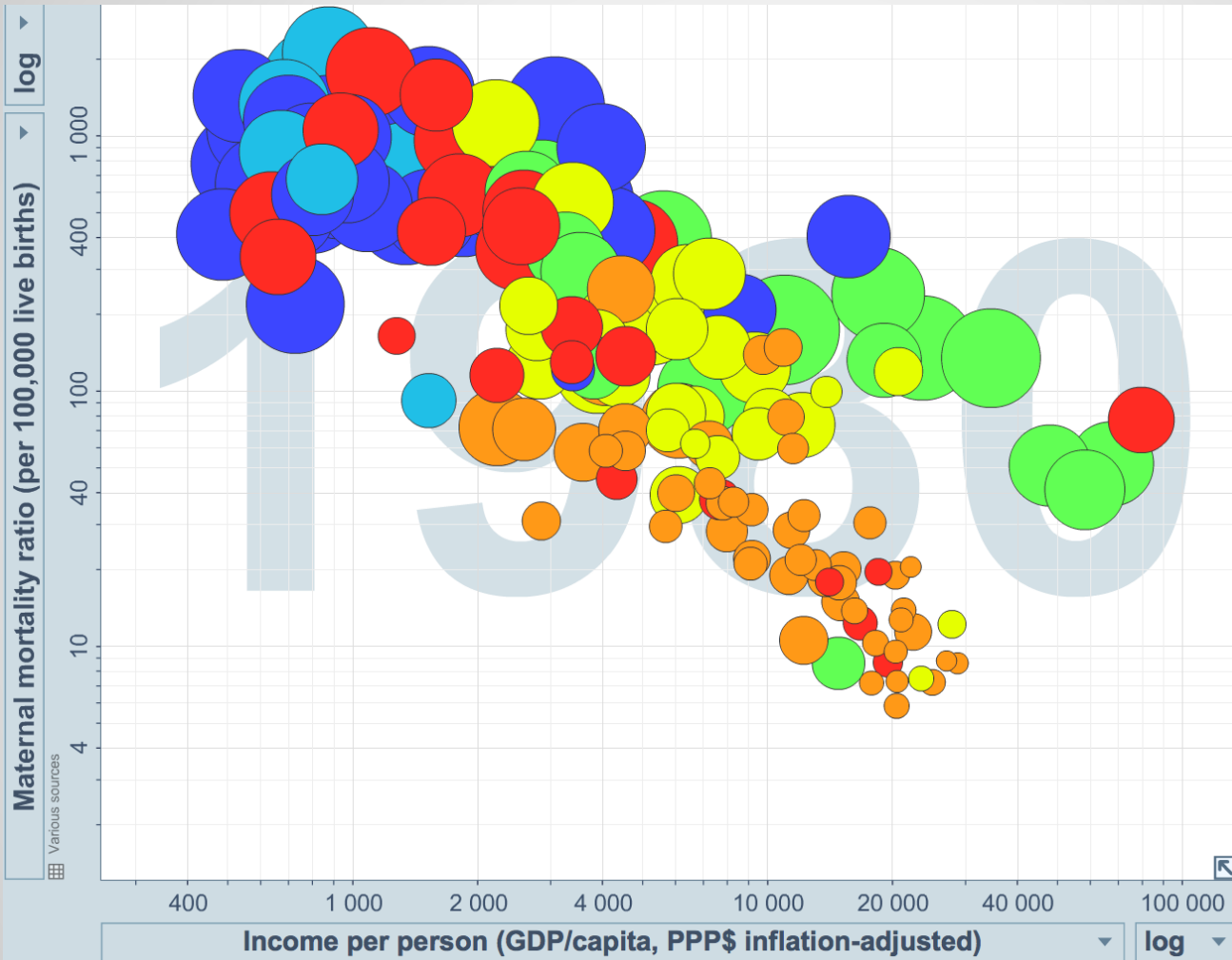
- Afghanistan
- Albania
- Algeria
- Angola
- Antigua and Barb...
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh

Deselect all

Size

Various sources

Children per woman...



Geographic regions

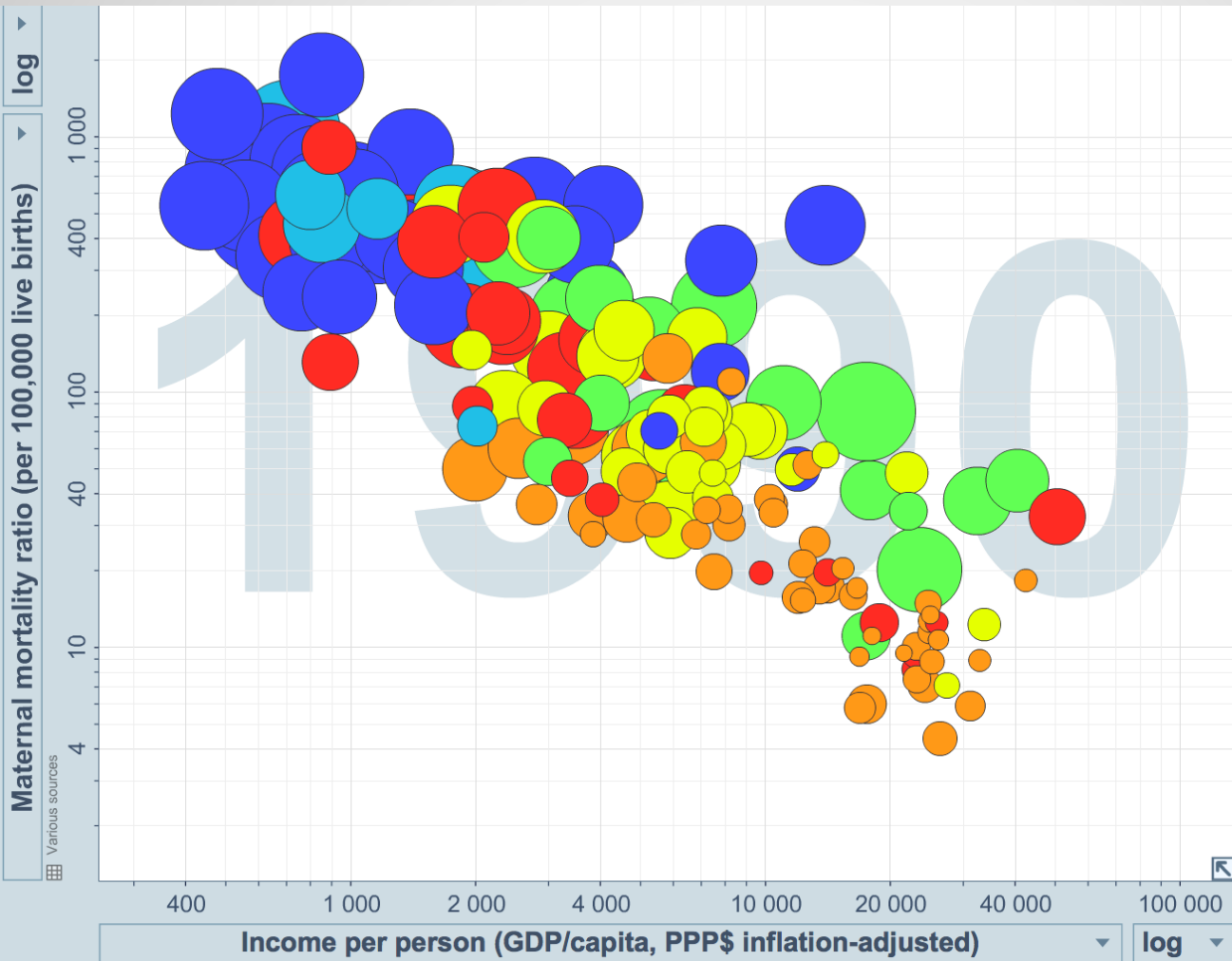
Select

- Afghanistan
- Albania
- Algeria
- Angola
- Antigua and Barb...
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh

Deselect all

Size

Children per woman...



**Geographic regions** ▾

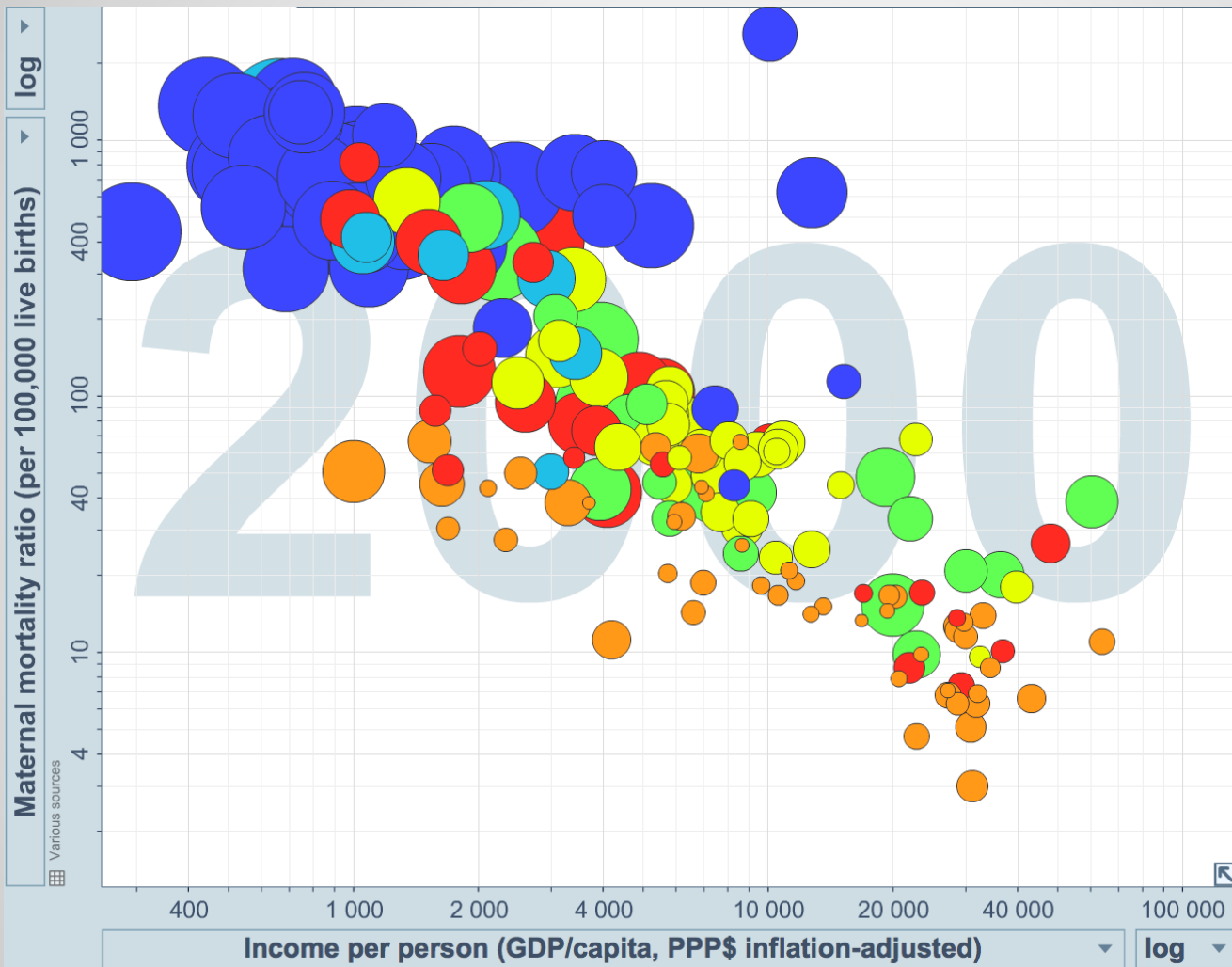
**Select**

- Afghanistan
- Albania
- Algeria
- Angola
- Antigua and Barb...
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh

Deselect all

**Size** Various sources

**Children per woman...** ▾



**Geographic regions** ▾

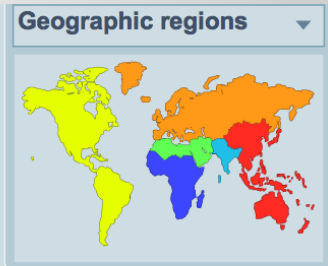
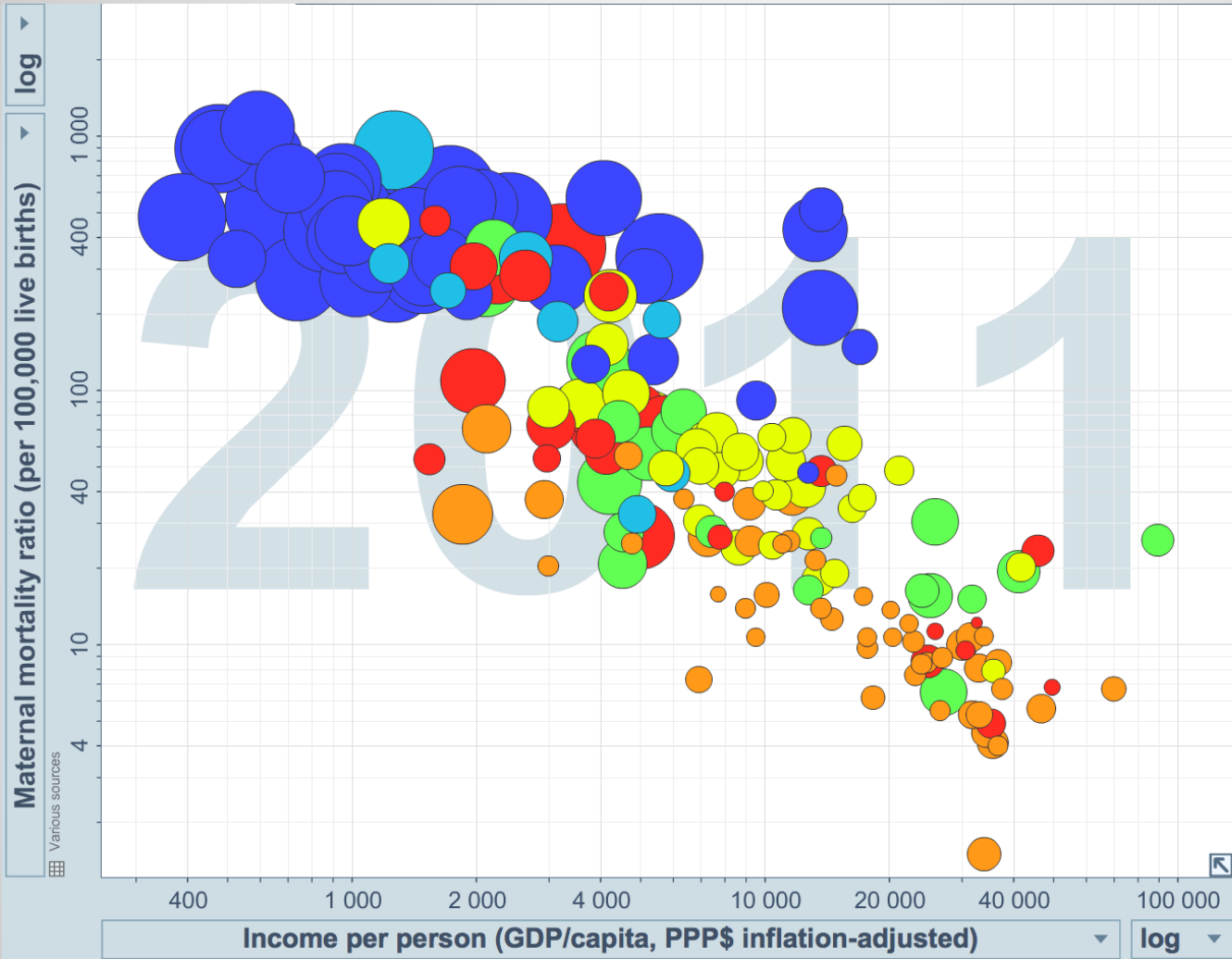
**Select**

- Afghanistan
- Albania
- Algeria
- Angola
- Antigua and Barb...
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh

Deselect all

**Size** Various sources

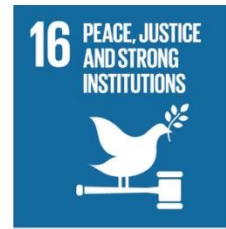
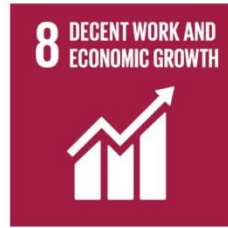
**Children per woman...** ▾



- Select**
- Afghanistan
  - Albania
  - Algeria
  - Angola
  - Antigua and Barb...
  - Argentina
  - Armenia
  - Australia
  - Austria
  - Azerbaijan
  - Bahamas
  - Bahrain
  - Bangladesh
- Deselect all

**Size** Various sources

**Children per woman...**



# SUSTAINABLE DEVELOPMENT GOALS

# QUESTION

Pregnancy is associated with major health risks. Which one of the following is NOT a major cause of maternal deaths?

- A Preeclampsia/Eclampsia
- B Failure to progress/ruptured uterus
- C Deep venous thrombosis
- D Hemorrhage
- E Peripartum sepsis

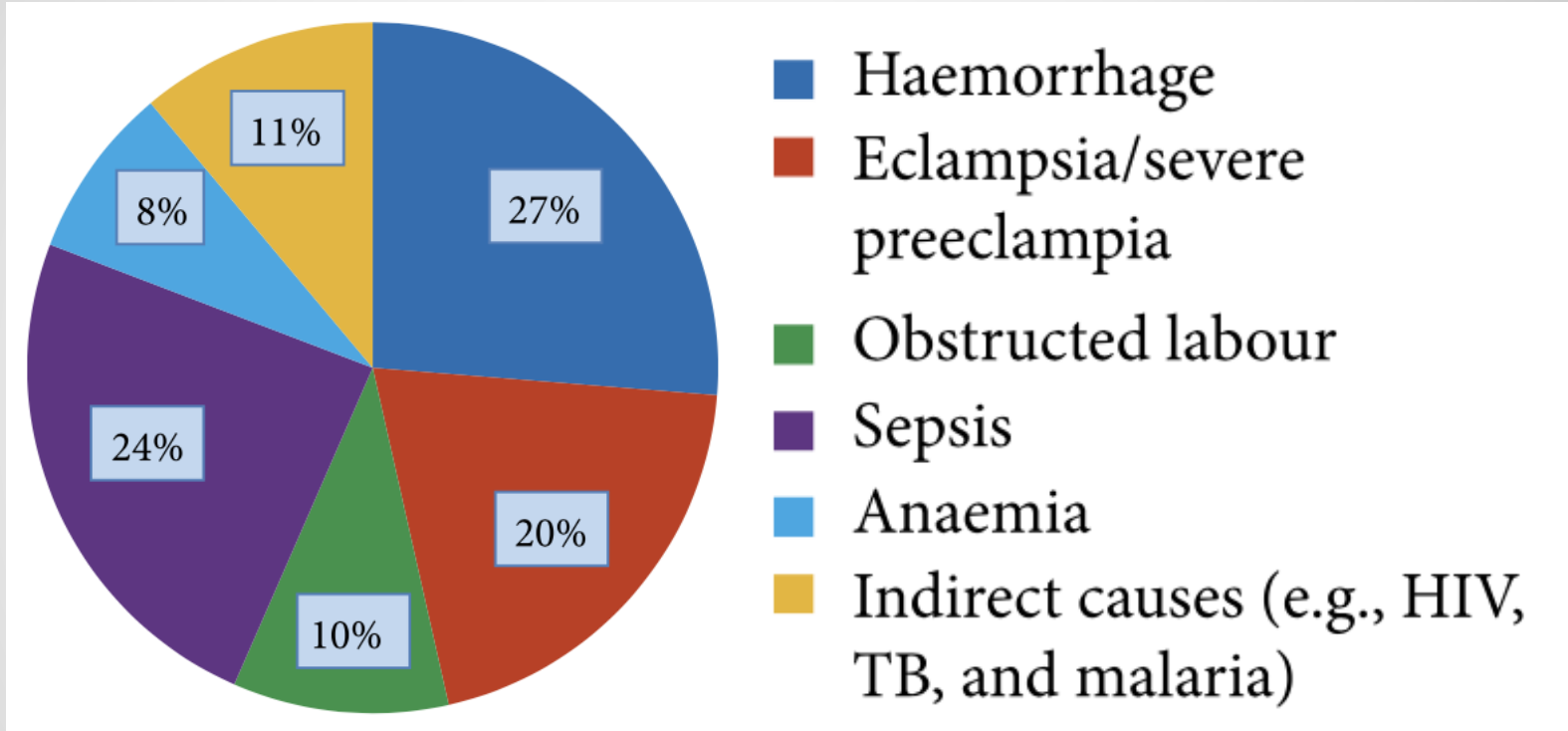


# ANSWER

Pregnancy is associated with major health risks. Which one of the following is NOT a major cause of maternal deaths?

- A Preeclampsia/Eclampsia
- B Failure to progress/ruptured uterus
- C Deep venous thrombosis
- D Hemorrhage
- E Peripartum sepsis

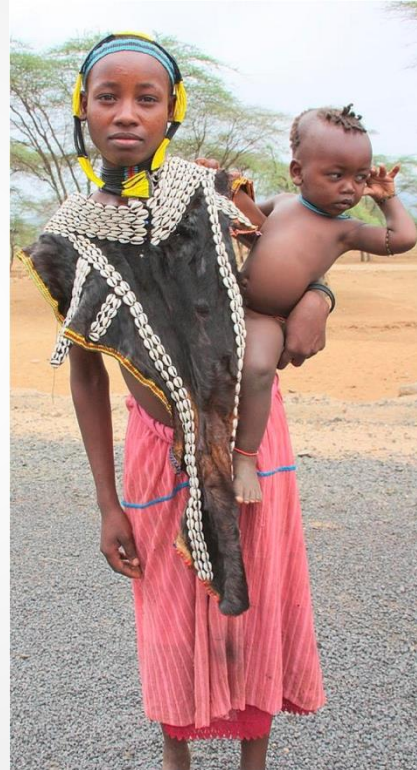
***What are the leading causes  
of maternal death?***



## ***Causes of Maternal Mortality Worldwide***

# DANGEROUS PATTERNS

Some mothers are high risk of complications. Who are these women?



# DANGEROUS PATTERNS

Mothers at especially increased risk of complications:

- First-time pregnancies
- Higher number of pregnancies
- Short interval between births
- Pregnancy at advanced maternal ages
- Pregnancy in women already in poor health



Age and health of a mother are closely connected to the health outcomes of her offspring.

# QUESTION

All of the following are health risks associated with short interval between births EXCEPT which one?

- A Low birth weight
- B Herd immunity from vaccinated siblings
- C Competition among similar-aged siblings for limited family resources
- D Early termination of breastfeeding
- E Preeclampsia

# ANSWER

All of the following are health risks associated with short interval between births EXCEPT which one?

- A Low birth weight
- B Herd immunity from vaccinated siblings
- C Competition among similar-aged siblings for limited family resources
- D Early termination of breastfeeding
- E Preeclampsia



# DANGEROUS PATTERNS

Some newborns are especially increased risk of complications. Who are these newborns?

# DANGEROUS PATTERNS

Infants of short gestation and/or low birth weight - usually a consequence of maternal illness - are at very high risk for death, particularly during the first seven days following birth.

**WHAT ARE  
TODAY'S MOST  
EFFECTIVE  
STRATEGIES TO  
IMPROVE  
MOTHER-  
NEWBORN  
HEALTH?**



# TWO POWERFUL INTERVENTIONS TO IMPROVE MOTHER-NEWBORN HEALTH

- Reduce family size
- Provide for quality obstetric care at time of delivery





**MOST INDIVIDUALS WOULD CHOOSE TO  
REDUCE THEIR FAMILY SIZE.**

# WHAT ARE THE BENEFIT OF REDUCED FAMILY SIZE?



# BENEFITS OF REDUCED FAMILY SIZE

- Decreased risks associated with repeated pregnancies
- Increased health and nutritional status of the mother and children
- Increased educational and economic opportunities for the mothers and children

# HOW CAN FAMILY SIZE BE REDUCED?





# REDUCING FAMILY SIZE

- Offering education and employment opportunities
- Postponing marriage and plans for reproduction
- Use of effective contraception



# WHAT ARE COMMON BARRIERS TO USE OF CONTRACEPTION?



# CONTRACEPTION BARRIERS

- Lack of knowledge
- Unavailability
- Concerns about adverse health impacts
- Opposition from family and community



# QUESTION

The BEST method of contraception is:

- A. Oral contraceptives
- B. IUD (inter-uterine device)
- C. Depo-Provera
- D. Condoms
- E. None of these

# ANSWER

The BEST method of contraception is:

- A. Oral contraceptives
- B. IUD (inter-uterine device)
- C. Depo-Provera
- D. Condoms
- E. None of these

# CONTRACEPTION CAN BE INTEGRATED WITH WHAT WOMEN'S HEALTH SERVICES?



# INTEGRATING CONTRACEPTION AND OTHER WOMEN'S HEALTH SERVICES

- Nutrition counseling
- Trauma prevention counseling
- Pregnancy testing
- Sexually transmitted infection screening
- Cervical & breast cervical cancer screening
- Sterilization services

# TWO POWERFUL INTERVENTIONS TO IMPROVE REPRODUCTIVE HEALTH

- Reduce family size
- Provide for quality obstetric care at time of delivery





# PROVIDE QUALITY OBSTETRIC CARE

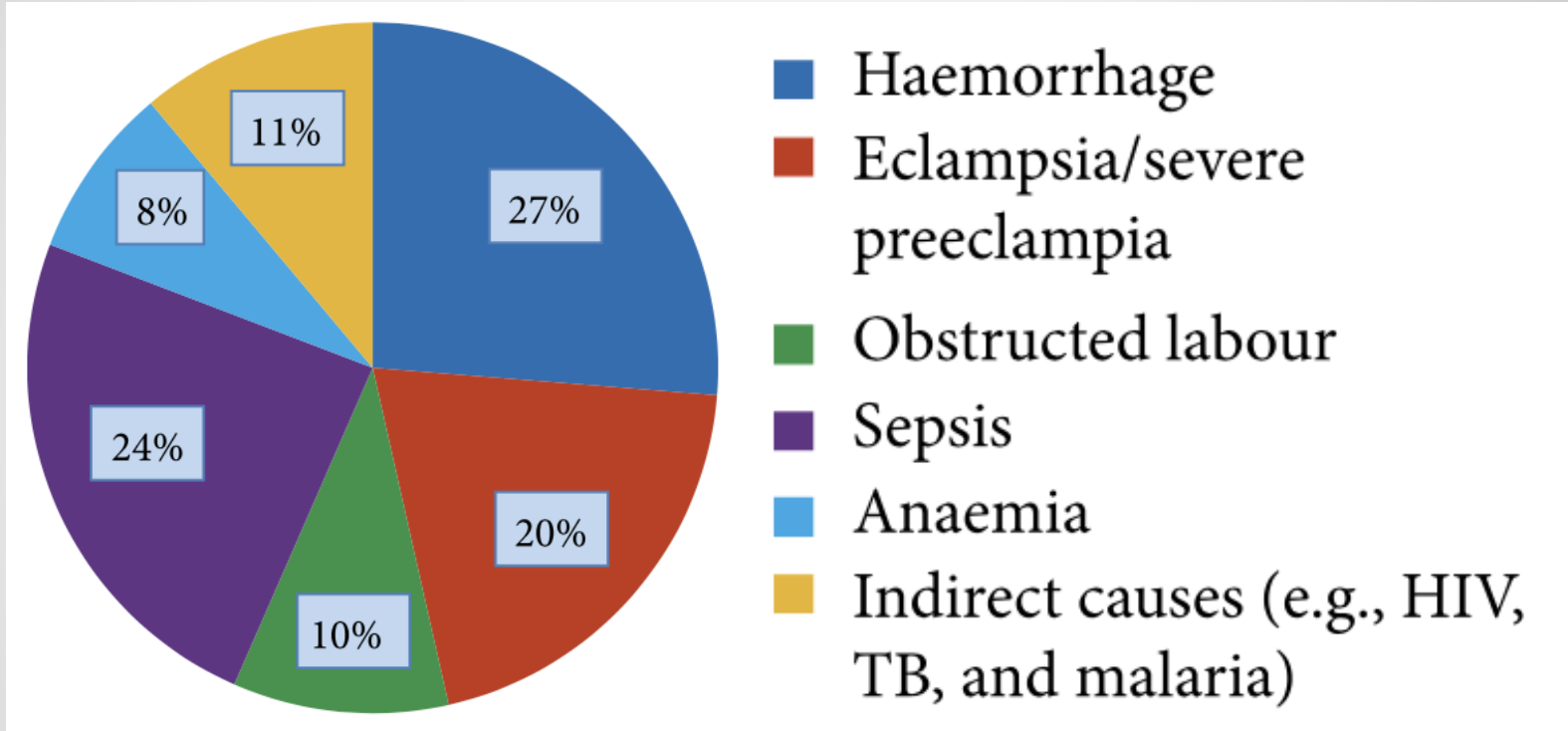
*What are the most essential elements  
of quality obstetrical care?*



# PROVIDE QUALITY OBSTETRIC CARE

- Monitored labor
- Labor-induction & augmentation ability
- Recognition of common complications
- Treatment for shock, hemorrhage, sepsis, anemia, and HTN
- Procedures: breech, shoulder dystocia, twins, & vacuum extraction
- Anesthesia and surgical delivery ability
- Neonatal resuscitation

*What is the **one** leading cause of maternal death?*



## *Causes of Maternal Mortality Worldwide*

# WHAT ARE THE POTENTIAL CAUSES OF POST-PARTUM HEMORRHAGE?



# POTENTIAL CAUSES OF POST-PARTUM HEMORRHAGE

- Tone: Uterine atony
- Tear: Laceration of cervix, vagina, perineum
- Tissue: Retained placenta
- Thrombin: Coagulopathy (rare)

# WHAT ARE THE STEPS TO EVALUATE POST-PARTUM HEMORRHAGE?

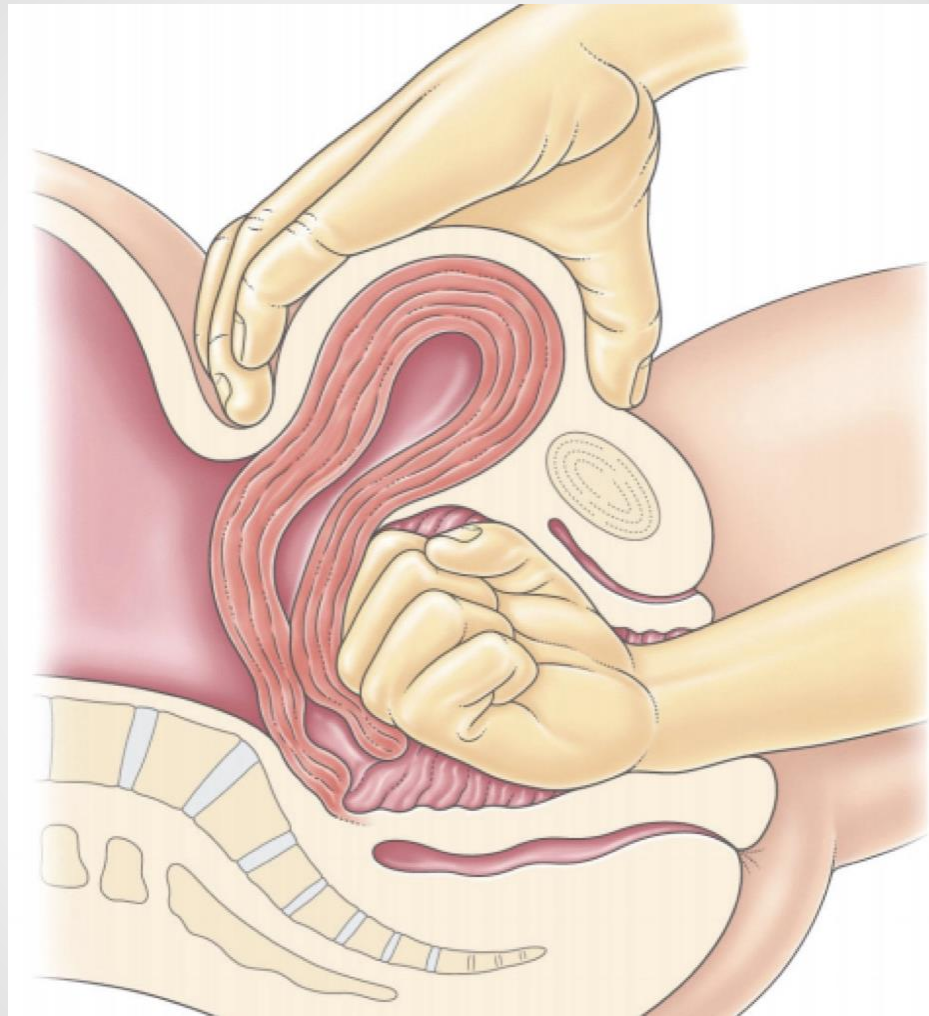


# STEPS TO EVALUATE POST-PARTUM HEMORRHAGE

- Palpate uterine fundus for atony
- Inspect the vagina, cervix and perineum for lacerations, and for uterine inversion
- Sweep the uterine cavity for retained tissue
- Evaluate for blood clotting



*What is the **most** important  
emergency treatment  
for uterine atony?*



***What medications for useful  
to treating uterine atony?***

# MEDICATIONS FOR UTERINE ATONY

- Oxytocin 10 units IM or IV infusion
- Misoprostal (Cytotec) 800 mcg rectally
- Methylergonovine (Methergine) 0.2 mg IM (caution in HTN, seizures)
- Tranexamic acid (TXA)

# QUESTION

In chronological order, the steps to manage post partum hemorrhage are:

- A. Repair laceration, check and give medication for uterine atony, explore the uterus for retained placenta
- B. Check and give medicine for uterine atony, repair laceration, explore the uterus for retained placenta
- C. Check for uterine atony and treat, inspect for laceration, explore for retained placenta, repair laceration
- D. Explore the uterus for retained placenta, repair laceration, check for and treat atony.

# ANSWER

In chronological order, the steps to manage post partum hemorrhage are:

A. Repair laceration, check and give medication for uterine atony, explore the uterus for retained placenta

B. Check and give medicine for uterine atony, repair laceration, explore the uterus for retained placenta

C. Check for uterine atony and treat, inspect for laceration, explore for retained placenta, repair laceration

D. Explore the uterus for retained placenta, repair laceration, check for and treat atony.

# NEWBORN DEATHS

One million babies die each year from failure to breathe immediately after delivery, chiefly in low-resource locations.



# HELPING BABIES BREATHE

- A neonatal resuscitation program designed for low-resource birthing centers.
- Trains skilled birth attendants to give excellent care within "The Golden Minute."
- Emphasizes newborn assessment, warmth, drying, suctioning, ventilation, and transport.
- HBB training opportunities at [inmed.us](https://www.inmed.us)



# INMED HELPING BABIES BREATHE



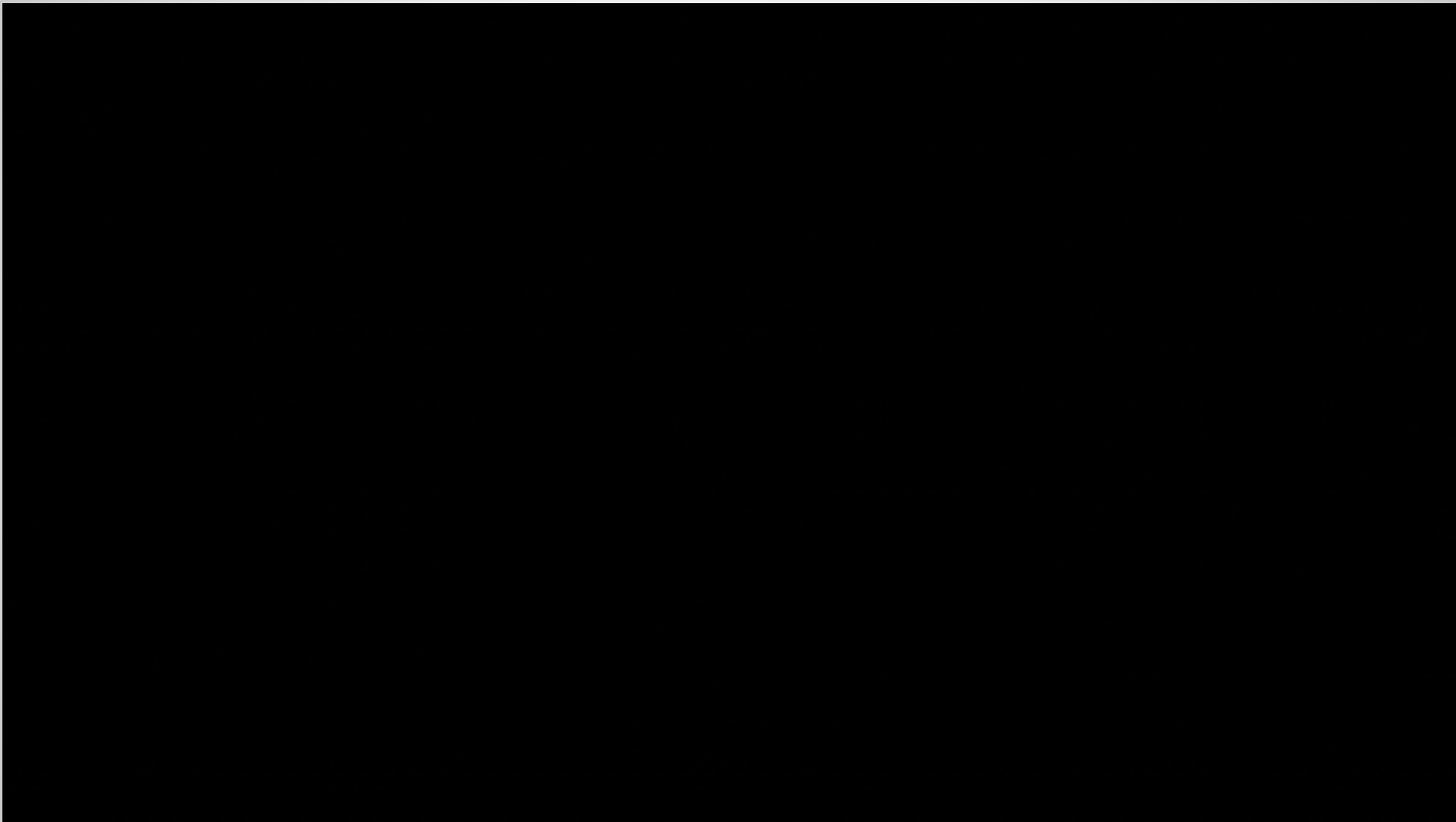


What is your vision to improve maternal health?

# MERCY IN ACTION

## BIRTHING HOME PHILIPPINES





# ASK AMONG YOURSELVES:

- What is your experience caring for pregnant women and newborns?
- Describe any special convictions you have about their welfare.
- What intentions do you have about maternal-newborn care in the future?



**INTERNATIONAL HEALTH  
LEARNING OPPORTUNITIES**

***EQUIP YOURSELF TO BETTER  
SERVE FORGOTTEN PEOPLE***



INSTITUTE FOR  
INTERNATIONAL  
MEDICINE

Nicholas Comninellis, MD, MPH, DIMPH  
+1 816-444-6400, [nicholas@inmed.us](mailto:nicholas@inmed.us)

**[www.inmed.us](http://www.inmed.us)**