Introduction to Global Maternal and Child Health

Duke University, Spring 2014

printable version here

Course Code:	GLHLTH 571-01
Instructor:	Eric Green, Ph.D.
Contact:	eric.green@duke.edu / 919-666-7111 (phone/sms) / @ericpgreen / Skype: epgreen
Web:	Facebook (gated) / Google Drive (gated)
Classroom:	Trent 142
Time:	M 15:05-17:35

ASSIGNMENTS

Assignment	Date/Time
Maternal health midterm	Mar 4, 9am ET
Child health midterm	Apr 22, 9am ET

COURSE DESCRIPTION

This course is designed to provide students with a solid foundation in global perspectives on maternal and child health research, practice, and policy. Through a combination of lecture, class discussion, and in-class activities, students will examine critical health challenges facing women, children, healthcare providers, and policymakers in some of the world's most vulnerable communities.

LEARNING OBJECTIVES

By the end of this course, students will:

- know how key maternal and child health outcomes are measured;
- appreciate the global burden of maternal and child mortality and morbidity;

- have a working knowledge of the evidence base for key maternal and child health interventions;
- be familiar with innovative technologies and services for maternal and child healthcare;
- be able to articulate the key challenges facing health systems serving women and children; and
- be familiar with the major policy debates and international advocacy initiatives in the field of maternal and child health.

COURSE REQUIREMENTS

Class Participation (50%)

I expect that all students will make regular, meaningful contributions to class discussions and team assignments. For that reason, your participation grade will be determined by your attendance and contributions to class activities. Every class I will pull a few names at random to determine who will be the first to field questions about the required readings. If you are absent on the day I pull your name, you will lose 3 participation points (excused absences excluded). If this happens twice, your grade will drop a step (e.g., from A+ to A).

Writing Assignments (50%)

The first midterm exam (40%) will cover maternal health, and the second midterm (40%) will cover infant and child health. Both exams will be take-home. I will announce details about the first midterm exam on Feb 24, and you will have until 9am ET on Mar 4 to submit it. I'll give you details about your second midterm on the last day of class, and it will be due at 9am ET on April 22. I will give other small writing assignments throughout the semester that will make up 20% of your "writing assignments" grade.

I encourage you to consult the Writing Studio throughout the semester. You may seek their support for any assignment, including the midterm exams. The Writing Studio also publishes helpful resources that will help you to improve your drafts, such as this collection on working with sources. Avoid plagiarism and know when to quote (rarely) and when to paraphrase (often). If you do not use a citation manager, you should, and the library can help you get started.

EVALUATION

Students should abide by theDuke Community Standard at all times. If a questionable circumstance arises, do not hesitate to seek my guidance (before is always better than after).

Grading Scale

The grading scale for this course is as follows:

A+: 100-98	A: 97-93	A-: 92-90
B+: 89-87	B: 86-83	B-: 82-80
C+: 79-77	C: 76-73	C-: 72-70
D+: 69-67	D: 66-63	D-: 62-60
F: 59 and below		

Final Grade

Your final grade will be a weighted average of your participation (50%) and writing assignments (50%). If you are in between grades, and if the difference is less than or equal to 0.5, your score will round up (e.g., 97.5 rounds up to 98). See this grading template for more details. Penalties for late submissions will be described with each assignment.

CLASS FORMAT

The general class format will be as follows. Please try to limit your breaks to the scheduled breaks. Readings listed under "***In-Class Activity***" should be read before class.

Session A

70 min

30 min discussion of assigned readings

5 min break

35 min in-class activity

Break

10 min

Session B

70 min

30 min discussion of assigned readings

5 min break

35 min in-class activity

FREQUENTLY ASKED QUESTIONS

How can we contact you?

Aside from talking in person, email is my preferred mode of communication; it helps me to keep track of our conversation. A clear and concise email with "MCH" in the subject line will usually result in a response from me within 24 hours, often sooner. If you have a question or request, please put it toward the top of your message. Come across an interesting link? Feel free to send it along but forgive me if I don't reply. Better yet, post it to our Facebook group so everyone can benefit. Finally, if you find yourself needing to write more than a few sentences, you should probably just come by for office hours so we can talk in person. I lurk on Twitter and usually have Skype open during the day. Feel free to reach me on either one. I'll respond if I can. I also own a phone and take advantage of its calling features. Sometimes a quick call can save a lot of time.

What are your office hours?

W 13:00-16:00 in Trent Hall 238. Other times by appointment (email me). Skype, phone, or in-person meetings are possible.

Is it OK to record class sessions?

You should feel free to create recordings in class that aid your learning. This does not give you permission to share or distribute these recordings. Know that for all of your classes, the speaker holds the copyright to the lecture, and you must get the speaker's written permission to distribute this content. And you have to consider individual privacy rights of your classmates.This video produced by Duke's Scholarly Communications Office gives a short overview of the issues.

What happens if I miss class?

Officially, Duke permits students to miss work due to absence from class in four circumstances: illness; personal emergencies; religious observance; and varsity

athletic participation. Please take a moment toread how Duke defines each circumstance. Missed work associated with any other absence is not covered by this policy and will be considered on a case-by-case basis. See here for the implications of unexcused absences on your participation score.

May I use electronic devices during class?

You are free to use any device in the classroom that helps you learn and work (e.g., laptop, tablet, smartphone). If you try to multitask and work on non-class assignments, improve your high score on Angry Birds Candy Crush, or make a critical trade for your Fantasy Football team, your grade will likely suffer. I will notice, and recent research (Wood et al., 2012) suggests that you might not perform as well as you could have in the course if you were not distracted during class.

Rather than banning devices and the internet from the classroom, I will leave it up to you to learn how to use these tools effectively. You will have these distractions in every work meeting once you graduate, so I see no need to enforce an outright ban. Furthermore, I think you will benefit from being able to search the web and use online collaboration tools during class.

That said, I reserve the right to ask you to turn off your device or go offline if I believe that you are distracted or are somehow distracting others (the person behind you will inevitably want to see thesneezing panda). Students in one recent study rated other students' laptop usage as having the most (negative) impact on their ability to concentrate and learn (Fried, 2008). I will know if you are wandering the internet. You might not think so, but you make a face that says "I am checking my Facebook News Feed or chatting with someone right now".

No phone calls, texting, instant messaging, or emailing during class. We'll take a break every half hour, so please plan accordingly.

How do I get the readings?

Duke students have access to all resources. Just follow the links. Items marked as "gated" are only available to students enrolled in this class (and to others via Library reserves).

RESOURCES

Primers (not required)

Maternal and Child Health

Richardson, L. J. et al. (2013). A life course perspective on maternal and child health. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Singh, K. et al. (2013). Global maternal and child health. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Cassidy, T. (2006). Birth: The Surprising History of How We Are Born. New York: Atlantic Monthly Press. Chapters 2 and 3. (gated and on reserve)

Tsui, A. et al. (2013). Family planning. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Muller, O. & Jahn, A. (2009). Malnutrition and maternal and child health. In Ehiri, J. H. (Ed.), Maternal and Child Health. New York: Springer. (gated and on reserve)

MCH Research

Wingate, M. S. et al. (2013). Research issues in maternal and child health. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Peoples-Sheps, M. D. et al. (2013). Assessment and program planning in maternal and child health. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Speizer, I. S. et al. (2013). Monitoring and evaluation for global maternal and child health programs. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Health Financing

Gupta, I. et al. (2010). Demand side financing in health. How far can it address the issue of low utilization in developing countries. World Health Report.

Additional Resources on MCH

Via Delicious:

- Journals
- Current issues
- Data sources
- Organizations

CLASS SCHEDULE

M Jan 13, Class 1, Introduction

Maternal Health

Child Health

M Jan 20

No class

M Mar 10

No class

M Jan 27

Class 2

M Mar 17

Class 8

M Feb 3

Class 3

M Mar 24

Class 9

M Feb 10

Class 4

M Mar 31

Class 10

M Feb 17

Class 5

M Apr 7

Class 11

M Feb 24

Class 6

M Apr 14

Class 12

M Mar 3

Class 7

Class 1: Introduction

Assigned Readings None. Consider reviewing primers.

Class 2: Maternal Mortality

Session 2a: Data and measurement

It's been said that we only try to fix what we can count. So what counts as maternal mortality, and where do the data come from? And what happens when countries do not have any data?

Assigned Readings Loudon, I. (1992). Death in Childbirth: An International Study of Maternal Care and Maternal Mortality 1800-1950. Oxford: Clarendon Press. (course resources, gated)

Hoyert, D. L. (2007). Maternal Mortality and Related Concepts.

Cross, S. et al. (2010). What you count is what you target: the implications of maternal death classification for tracking progress towards reducing maternal mortality in developing countries. Bulletin of the World Health Organization, 88(2), 147-153.

Hogan et al. (2010). Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5.Lancet, 375(9726), 1609-23.

Loudon, I. (2000). Maternal mortality in the past and its relevance to developing countries today. The American Journal of Clinical Nutrition, 72(1), 241s-246s.

In-Class Activity: Where do the data come from?

1. Use the IHME mortality visualization tool to display data for your two countries. Record the number and type of data sources. See also the web appendix of the Hogan et al. article and search for your countries.
2. Find the original data source.

Session 2b: The who, when, where, and why of maternal mortality

In this session we'll move beyond country-level mortality statistics to understand who is most likely to die, the timing of maternal deaths, and where and why these deaths occur. You should come away with a sense that too many women are still dying from preventable causes, even if the situation is improving in many parts of the world.

Assigned Readings Why did Mrs. X die (retold) (video)

Ronsmans, C. & Graham, W. J. (2006). Maternal mortality: Who, when, where, and why. The Lancet, 368(9542), 1189-1200.

Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. Social Science & Medicine, 38(8), 1091-1110.

Rosenfield, A., & Maine, D. (1985). Maternal mortality-a neglected tragedy: Where is the M in MCH?. The Lancet, 326(8446), 83-85.

In-Class Activity: Revisiting history It's November 1933. FDR has only been in office for a few months, and the country is gripped by the Great Depression. World War II is just around the corner. A new weekly magazine called "News-Week" hit the newsstands for the first time on February 17. The 32-page magazine cost $0.10. The November 18th issue (Vol II, Issue 16) will feature Hitler on the cover and devote one page to "Science". You have been asked to write an article for this issue about a new report called Maternal Mortality in New York City (gated). This report followed a White House Conference on Child Health and Protection report published the same year (gated). Your editor wants a 300-word article and a figure.

Class 3: Preventing Maternal Mortality

Session 3a: What works?

For the most part, we know why women die in childbirth. In this session we'll learn about evidence-based maternal health and what works to prevent maternal deaths.

Assigned Readings Campbell, O. M. R. & Graham, W. J. (2006). Strategies for reducing maternal mortality: getting on with what works.Lancet, 368(9543), 1284-1299.

The Partnership for Maternal, Newborn & Child Health (2011).A Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health (RMNCH). Geneva, Switzerland: PMNCH.

IHME (2010). Building Momentum: Global Progress Toward Reducing Maternal and Child Mortality. (Chapter 1)

In-Class Activity: Case analysis Saving Mothers' Lives in Sri Lanka. Levine, R. (2007). Case Studies in Global Health: Millions Saved. Washington: Center for Global Development.

Session 3b: Health systems and implementation challenges

But just because we know what works, it does not mean that it's easy to turn this knowledge into action. We'll talk about the challenges of "scaling up" efficacious programs, and we'll learn about the health systems in which these programs are embedded. We'll also consider cost-effectiveness and the hard choices facing policy makers.

Assigned Readings Prata, N., Passano, P., Sreenivas, A., & Gerdts, C. E. (2010). Maternal mortality in developing countries: challenges in scaling-up priority interventions. Women's Health, 6(2), 311-327.

Gerein, N. et al. (2009). Health system impacts on maternal and child health. In Ehiri, J. H. (Ed.), Maternal and Child Health. New York: Springer. (gated and on reserve)

Adam, T. et al. (2005). Cost effectiveness analysis of strategies for maternal and neonatal health in developing countries.BMJ, 331(7525), 1107.

Prata, N. et al. (2010). Setting priorities for safe motherhood interventions in resource-scarce settings. Health Policy, 94(1), 1-13.

In-Class Activity: How many mothers' lives can we save? Prior to class, install Spectrum and download the projection file for your group's assigned low-income country (instructions). Or plan to use the version we have installed on a virtual machine. Read about the Safe motherhood module and think about what decisions you will make as a policymaker charged with eliminating preventable maternal deaths in your country.

Class 4: Pregnancy

Session 4a: Antenatal Care

Is antenatal care effective? What is the optimal number of ANC visits? In this session we'll discuss the results of an influential multi-center randomized trial of the standard ANC model at the time vs "focused ANC" and follow the research trail through the oughts.

Assigned Readings Villar, J. et al. (2001). WHO antenatal care randomised trial for the evaluation of a new model of routine antenatal care. The Lancet, 357(9268), 1551-1564.

Dowswell, T. et al. (2010). Alternative versus standard packages of antenatal care for low-risk pregnancy. Cochrane Database Syst Rev, 10.

Vogel, J. P. et al. (2013). Antenatal care packages with reduced visits and perinatal mortality: a secondary analysis of the WHO Antenatal Care Trial. Reproductive Health, 10(1), 19.

In-Class Activity: Plan a professional meeting about slavery and antenatal care Imagine that you are an ambitious member of the newly formed American Medical Association living in the Antebellum South. You have decided to organize a professional meeting about antenatal care issues among slaves. You need to line up a keynote speaker and organize five additional talks on current (at the time) research and practice. Please create presentation titles and 80 word summaries for the keynote and five talks. Include in the schedule one "progressive" speaker who might challenge the establishment. The chapter on pregnancy (gated) in *Birthing a Slave* by Schwartz, M. J. (2006) will get you started.

Session 4b: Diseases during pregnancy

Diseases like HIV, TB, and malaria contribute to indirect maternal deaths. In this session we'll survey recent literature on how these diseases affect pregnant women in low-income countries.

Assigned Readings Calvert, C., & Ronsmans, C. (2013). The contribution of HIV to pregnancy-related mortality: a systematic review and meta-analysis. AIDS, 27(10), 1631.

Grange, J. et al. (2010). Tuberculosis in association with HIV/AIDS emerges as a major nonobstetric cause of maternal mortality in Sub-Saharan Africa. International Journal of Gynecology & Obstetrics, 108(3), 181-183.

Hill, J. et al. (2013). Factors Affecting the Delivery, Access, and Use of Interventions to Prevent Malaria in Pregnancy in Sub-Saharan Africa: A Systematic Review and Meta-Analysis. PLoS Medicine, 10(7), e1001488.

In-Class Activity: Case analysis Sullivan, E. et al. (2011). Botswana's Program in Preventing Mother-to-Child HIV Transmission. Harvard Medical School. (gated)

Class 5: Childbirth

Session 5a: Childbirth

*The majority of maternal deaths are caused by direct obstetric complications that are hard to predict and require life-saving treatment. Having access to emergency obstetric care can mean the difference between life and death when there are complications. That said, most women do not have complications and do not want to deliver at a facility where the quality of care may be questionable (**prime example*). *In this session we'll review the evidence for emergency obstetric care and consider the reasons why facility deliveries are not common in all places.*

Assigned Readings Paxton, A. et al. (2005). The evidence for emergency obstetric care. International Journal of Gynecology & Obstetrics, 88(2), 181-193.

Knight, H. E., et al. (2013). Why Are Women Dying When They Reach Hospital on Time? A Systematic Review of the 'Third Delay'. PloS One, 8(5), e63846.

Kruk, M. E., Paczkowski, M., Mbaruku, G., de Pinho, H., & Galea, S. (2009). Women's preferences for place of delivery in rural Tanzania: a population-based discrete choice experiment. American Journal of Public Health, 99(9), 1666-1672.

In-Class Activity: Innovation review In 2011, USAID and partners launched the first "grand challenge" for maternal and child health called "Saving Lives at Birth". The same year, the WHO Innovation Working Group published a thematic report on maternal and child health innovation entitled "Innovating for Every Woman, Every Child". Since then, a number of great resources for MCH innovation have been developed, including the Center for Health Market Innovations and Maternova. Peruse resources like these and identify one promising safe motherhood innovation to share with the class.

Session 5b: Maternal health financing

Is money what is stopping women from using maternal health services? Should health systems abolish fees for maternity care? Should this care be subsidized? In

this session, we'll consider the impact of user fees and demand-side interventions on the use of maternal health services.

Assigned Readings Dzakpasu, S., Powell-Jackson, T., & Campbell, O. M. (2013). Impact of user fees on maternal health service utilization and related health outcomes: a systematic review. Health Policy and Planning.

Bellows, N. M. et al. (2011). The use of vouchers for reproductive health services in developing countries: Systematic review.Tropical Medicine & International Health, 16(1), 84-89.

Mohanan et al. (2014). Effect of Chiranjeevi Yojana on institutional deliveries and neonatal and maternal outcomes in Gujarat, India: a difference-in-differences analysis. WHO Bulletin, online first.

In-Class Activity: Research design In 2013, Kenya abolished fees for maternity care. How could we study the impact of this decision now? If you could go back in time and advise the Ministry of Health prior to implementation this policy change, how would you have suggested that they roll out the change to maximize learning opportunities?

Class 6: Reproductive Health

Session 6a: Population Growth

The world population surpassed 7 billion in 2011. Where are we headed and what are the implications? Can we do anything to change course?

Assigned Readings Ezeh, A. C., Bongaarts, J., & Mberu, B. (2012). Global population trends and policy options. The Lancet, 380(9837), 142-8.

See also this slide deck

Banerjee, A. V. & Duflo, E. (2012). Poor Economics. A Radical Rethinking of the Way to Fight Global Poverty. New York: Public Affairs. Chapter 5 (gated)

In-Class Activity: Exploring population data Prior to class, download and install R and RStudio on your computer, in that order.

Session 6b: Family planning

Do family planning programs improve health outcomes and slow population growth? And what is "unmet need" for family planning? In this session we'll review the evidence for family planning programs and discuss recent developments to advance "preconception care".

Assigned Readings Peterson, H. B. et al. (2013). Meeting the unmet need for family planning: now is the time. The Lancet, 381(9879), 1696-1699.

Bongaarts, J. et al. (2012). Family Planning Programs for the 21st Century: Rationale and Design. Population Council.

Dean et al. (2013). Setting Research Priorities for Preconception Care in Low- and Middle-Income Countries: Aiming to Reduce Maternal and Child Mortality and Morbidity. PLoS Med 10(9): e1001508.

In-Class Activity: Case analysis Reducing Fertility in Bangladesh. Levine, R. (2007). Case Studies in Global Health: Millions Saved. Washington: Center for Global Development.

Class 7: Book Club

Assigned Readings Holloway, K. (2007). *Monique and the Mango Rains: two years with a midwife in Mali.* Long Grove, Il: Waveland Press. (available as an ebook)

Class 8: Fetal and Neonatal Mortality

Session 8a: Data and measurement

In this session we'll look at the data on preterm births, stillbirths, and neonatal mortality. As you read, take note of how each is defined and measured. As we observed in the section on maternal mortality, solid numbers are hard to come by in many countries—especially in the case of stillbirths—so we rely on modeling techniques to estimate. We only have time to scratch the surface, so interested readers might want to check out the Lancet Series on stillbirths, neonatal survival, and preterm birth to learn more. For older papers, I recommend searching for the titles in Google Scholar and following the "Cited by" links to find more recent work that builds on articles in the collections.

Assigned Readings Blencowe, H. et al. (2013). Born Too Soon: The global epidemiology of 15 million preterm births. Reprod Health, 10(Suppl 1), S2.

Cousens, S. et al. (2011). National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. The Lancet, 377(9774), 1319-1330.

Lawn, J. E. et al. (2012). Newborn survival: a multi-country analysis of a decade of change. Health Policy and Planning, 27(suppl 3), iii6-iii28.

In-Class Activity: Data exploration In 1729, Jane Franklin, Benjamin Franklin's sister, gave birth to her first child. This child, a boy, Josiah Mecom, died a few weeks before his first birthday. Twenty-two years later, at the age of 39, Jane gave birth to her 12th child, a girl she named Abiah. Almost 9 months later, Abiah was dead.

How does Jane's experience compare to modern times? We'll fire up R again to look at fertility and infant mortality over time and across countries.

Lepore, J. (2013, July 8). The prodigal daughter. The New Yorker. (gated)

Session 8b: Interventions

With a good foundation in the scope of the problem, we can shift our focus to potential solutions and implementation challenges. What is "Kangaroo mother care", and what is the evidence for its efficacy? What does syphilis detection and treatment have to do with stillbirths? How many deaths could be averted by scaling up proven interventions to full coverage?

Assigned Readings Lawn, J. E., Mwansa-Kambafwile, J., Horta, B. L., Barros, F. C., & Cousens, S. (2010). 'Kangaroo mother care' to prevent neonatal deaths due to preterm birth complications. International Journal of Epidemiology, 39(suppl 1), i144-i154.

Blencowe, H., & Cousens, S. (2013). Review: Addressing the challenge of neonatal mortality. Tropical Medicine & International Health, 18(3), 303-312.

Pattinson, R. et al. (2011). Stillbirths: how can health systems deliver for mothers and babies?. The Lancet, 377(9777), 1610-1623.

In-Class Activity: Innovation review Refer to the resources listed in our first innovation review and identify one promising intervention for saving newborn lives.

Class 9: Child Mortality

Session 9a: Data and measurement

We've witnessed a dramatic reduction in the absolute and relative numbers of under-5 deaths in the last decade. Why? Where? How has our understanding of the causes of child mortality changed over time?

Assigned Readings Bryce, J. et al. (2013). The unfinished agenda in child survival. The Lancet, 382(9897), 1049-1059.

Rajaratnam et al. (2010). Neonatal, postneonatal, childhood, and under-5 mortality for 187 countries, 1970-2010: a systematic analysis of progress towards Millennium Development Goal 4. The Lancet, 375(9730), 1988-2008.

Ronsmans, C. et al. (2010). Effect of parent's death on child survival in rural Bangladesh: a cohort study. The Lancet, 375(9730), 2024-2031.

In-Class Activity: The Oregon Trail In 1989 I spent a summer at computer camp playing Oregon Trail nonstop on the Apple IIGS. The game takes place in the mid-1800s during the Westward Expansion as nearly a half a million people in the U.S. made the arduious 2,000 mile trip from east to west by wagon wheel, often falling victim to cholera, hypothermia, and botched attempts to ford the river.

Now it's your turn to try your hand at the game and investigate child injuries and mortality at the same time. Before class, visit this page using the Chrome browser and install the plugin that will allow you to run the Apple II emulator. And get your 1989 playlist ready. Paula Abdul's "Straight Up" and Bobby Brown's "My Prerogative" are just some of the hits that topped the charts in 1989. Please, no Debbie Gibson.

In class, we'll assign students to different player profiles to see if money buys health:

1. A banker from Boston
2. A carpenter from Ohio
3. A farmer from Illinois

Name your players as follows:

1. Bert (adult male)
2. Bertha (adult female)
3. Jimmy (2 year old boy)
4. Laura (1 month old girl)

We'll also assign departure months. Leave too early and your oxen might starve because the grass is not ready. Leave too late and you won't make it before winter.

Spend your money as you see fit, but keep track of your itemized bill. Once you set off, you will get regular status reports. Record the date, variables such as health, and your game decisions. Keep track of who dies, when, and from what cause. Track injuries as well. A spreadsheet will be provided.

Session 9b: Interventions

What "works", and how many under-5 lives could be saved if proven interventions reached those in need? Get the feeling we should just keep repeating "Implementation. Implementation. Implementation."?

Assigned Readings Bhutta, Z. A. et al. (2013). Interventions to address deaths from childhood pneumonia and diarrhoea equitably: what works and at what cost? The Lancet, 381(9875):1417-29.

Bhutta, Z. A., & Black, R. E. (2013). Global Maternal, Newborn, and Child Health—So Near and Yet So Far. New England Journal of Medicine, 369(23), 2226-2235.

In-Class Activity: How many under-5 lives can we save? We will return to LiST and estimate the number of deaths that can be averted by scaling up proven interventions. Details forthcoming.

Class 10: Immunizations and Nutrition

Session 10a: Immunizations

What are the recommended routine immunizations, and what does coverage look like globally? How do we assess coverage? How important is public trust, and what happens when trust is broken?

Assigned Readings WHO (2013). Recommended routine immunizations for children.

Centers for Disease Control and Prevention (CDC. (2013). Global routine vaccination coverage-2012. MMWR,62(43), 858-861.

WHO (2009). State of the World's Vaccines and Immunization. World Health Organization. Chapter 3.

Cutts, F. T. et al. (2013). Measuring coverage in MNCH: Design, implementation, and interpretation challenges associated with tracking vaccination coverage using household surveys. PLoS Medicine, 10(5), e1001404.

In-Class Activity: Debating polio Should "eradication" be the goal?

Razum, O., & Müller, O. (2013). Polio eradication: where are we now?. Lancet,382(9909), 1979.

Emerson, C. I., & Singer, P. A. (2010). Is there an ethical obligation to complete polio eradication?. The Lancet, 375(9723), 1340-1341.

Session 10b: Nutrition

In this session we'll review the latest data on undernutrition and obesity among children living in poor countries. We'll also examine the evidence-base for nutrition interventions and explore the potential for "nutrition-sensitive" interventions.

Assigned Readings Black, R. E. et al. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. The Lancet, 382(9890), 427-51.

Bhutta, Z. A. et al. (2013). Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?. The Lancet, 382(9890), 452-77.

Ruel, M. T., & Alderman, H. (2013). Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition?. The Lancet, 382(9891), 536-51.

In-Class Activity: Case analysis Phillips, E. & Rhatigan, J. (2011). Treating malnutrition in Haiti with Ready-to-Use Therapeutic Foods. Boston: Harvard Medical School. (gated)

Class 11: Putting MCH in Context

Session 11a: Environmental issues, childhood injury, and maltreatment

In this session we'll explore some of the dangers children face at home and in their communities: environmental toxins, accidents, and maltreatment.

Assigned Readings Leiss, J. (2013). Women, children, and environmental health. In Kotch, J. B. (Ed.), Maternal and Child Health. Burlington, MA: Jones & Bartlett Learning. (gated and on reserve)

Bates, M. N. et al. (2013). Acute Lower Respiratory Infection in Childhood and Household Fuel Use in Bhaktapur, Nepal. Environmental Health Perspectives, 121(5), 637.

WHO (2008). World report on child injury prevention.Geneva: WHO. Chapter 1.

In-Class Activity: Research design Design a study to assess the impact of a child maltreatment prevention intervention in your assigned low-income country. Indicate your research design and primary outcome.

Skeen, S., & Tomlinson, M. (2013). A public health approach to preventing child abuse in low-and middle-income countries: A call for action. International Journal of Psychology, 48(2), 108-116.

Session 11b: Violent conflict

In this session we'll explore the impact of war and conflict on health systems and maternal and child health. We'll read and discuss papers that describe the impact of two recent conflicts on children: Iraq and Darfur.

Assigned Readings d'Hardcourt, E. & Purdin, S. (2009). Impacts of wars and conflict on maternal and child health. In Ehiri, J. H. (Ed.), Maternal and Child Health. New York: Springer. (gated and on reserve)

Webster, P. C. (2013). Roots of Iraq's maternal and child health crisis run deep.The Lancet, 381(9870), 891-894.

Degomme, O., & Guha-Sapir, D. (2010). Patterns of mortality rates in Darfur conflict. The Lancet, 375(9711), 294-300. (focus on under-5 mortality)

In-Class Activity: Commentary You and your team have been invited to write a 300-500 word comment for a prestegious global health journal on the threat posed by the crisis in Syria on infant and child health in the country. What is your message for global health practitioners and policymakers?

Class 12: Mental Health and Development

Session 11a: Maternal mental health

A growing area of research is maternal mental health and the impact of a mother's ill health on fetal, infant, and child development. Pregnant women and mothers with poor mental health are less likely to care for their own needs and the needs of their infants; are more likely to forgo antenatal and postnatal care, deviate from health regimens, and have poor physical health outcomes; and are at elevated risk for alcohol and substance abuse. Children of depressed mothers are more likely to be stunted and underweight, sick, developmentally delayed, poorly attached, and exhibit cognitive and emotional delays. In this session, we'll explore the problem of perinatal depression and evidence of treatment efficacy in low-resource settings.

Assigned Readings Rahman, A. et al. (2013). Interventions for common perinatal mental disorders in women in low-and middle-income countries: a systematic review and meta-analysis. Bulletin of the World Health Organization,91(8):593-601.

Rahman, A., Malik, A., Sikander, S., Roberts, C., & Creed, F. (2008). Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. The Lancet, 372(9642), 902-909.

In-Class Activity: Scale up How could mobile health (mHealth) tools be used to promote scale up of the CHW intervention model in rural Pakistan? Create a 3-slide pitch. Assume your audience knows the basics about the intervention and mHealth tools.

Session 12b: Child development

The first 1,000 days—from conception until a child's second birthday—lay the foundation for a healthy and productive life. Newborns who survive their first month of life are 30 days into the most rapid period of human development—early childhood. Children are most likely to thrive in their early years—and into adulthood—if they are born healthy and into a nurturing environment. Prenatal insults, birth-related complications, or early environments that cause infants to be malnourished, sick, or deprived of stimulation, can negatively impact brain development and future learning ability. Compared to their healthy peers, children with cognitive and emotional deficits spend less time in school and earn 20 percent less money in their adult years, which has implications for the individual, her family, and society. In this session we'll discuss the importance of early childhood development and how to help all children reach their potential.

Assigned Readings Grantham-McGregor, S. et al. (2007). Developmental potential in the first 5 years for children in developing countries. The Lancet, 369(9555), 60-70.

Walker, S. P. et al. (2007). Child development: risk factors for adverse outcomes in developing countries. The Lancet, 369(9556), 145-157.

Engle, P. L. et al. (2007). Strategies to avoid the loss of developmental potential in more than 200 million children in the developing world. The Lancet, 369(9557), 229-242.

In-Class Activity: Fact or fiction? President Barack Obama, State of the Union, February 12, 2013

In states that make it a priority to educate our youngest children. . . studies show students grow up more likely to read and do math at grade level, graduate high school, hold a job, form more stable families of their own. We know this works. So let's do what works and make sure none of our children start the race of life already behind.