

# NS 4570 COMBINED-XLIST Health, Poverty, and Inequality: A Global Perspective (2023FA)

Nutritional Sciences 4570/Economics 3910

## HEALTH, POVERTY AND INEQUALITY:

### A Global Perspective

Professor David E. Sahn

Fall 2023

11:40 a.m. to 12:55 p.m., T-Th

#### Course description:

The course will examine issues of global health and nutrition challenges and their relationship to poverty and inequality. We will examine these issues primarily in resource poor, developing countries of Africa, Asia, and Latin America. Our focus will be on the nature and extent of global inequalities in health, and possible policy responses to improve health and well-being and reduce observed disparities. We will examine global health and nutrition inequalities at various levels, including across countries, at national levels, and even within households. The general motivation is to understand the nature and dimensions of how communicable and chronic disease afflicts the poorest countries and disadvantages households, so as to better understand options for reducing global health inequalities and to identify the most cost-effective measures for addressing global health problems.

The context in which this course is being taught is dramatically different than it was just three years ago. COVID-19 has changed the contours of how we think about and respond to global health emergencies and pandemics. The experience of COVID-19 and its global reach and dimensions have altered the landscape in terms of both our perceptions and the reality of issues such as health inequality and how governments respond to such challenges. It has also elucidated the human and economic toll of disease. Most fundamentally, we have exposed the inability of the global health community, governments, stakeholders, and individuals to respond quickly and intelligently to a public health emergency, despite the incredible scientific accomplishment of developing vaccines and therapeutics in such a short period of time.

There are, of course, marked differences between COVID-19 and other, more conventional and long-standing health challenges, which were and remain the major causes of death and disability since the pre-COVID-19 era. However, as we will discuss, there are two critical lessons in terms of the COVID-19 pandemic that apply to health issues, related to both communicable and chronic disease, that we will study: first, policy matters in terms of the human consequences of communicable disease, regardless of the wealth of a country; and second, that the richest countries have the ability, but not always the will, to effectively respond to such emergencies.

Over the past few years far more has changed in terms of how we think about global health needs and action to improve health, especially for those with greatest need. First, unlike a decade ago, chronic disease is rapidly overtaking communicable disease as the main cause of death and disability, even in middle- and low-income countries. Second, new challenges are emerging that represent the cause of death, disease, and disability. The increased recognition of the role of climate change in terms of human health has finally become a more widely recognized issue. Additionally, events such as the war in Ukraine have put new strains and attention on the interconnectedness, and thus, the fragility of the global food system. The globalization of markets and supply chains has evolved concurrently with increases in conflicts, both internal and across borders, representing a formidable challenge to accessing food, medicine, and other basic goods and services. Likewise, the demographic and health transition around the world is evolving rapidly; even in the poorest regions, chronic diseases are emerging as leading causes of death and disability, along with more traditional nutritional deficiencies and communicable diseases, which have been the major causes of shortened life spans. Thus, we face a myriad of old, and newly emerging, global health challenges in an increasingly economically and socially polarized and inequitable world.

The first half of the class will largely consist of a combination of lectures and student-led discussions of readings. In the case of the former, the focus will be on introducing core concepts, technical material, and techniques for assessing the impact of policies on health outcomes. The student-led discussions will be on a range of topics and readings, ranging from a discussion of the challenges of defining effective health interventions, the role of foreign aid in improving health, and ethics as they relate to health inequality. salient topics, such as foreign aid and ethics, as they relate to measuring health inequality. There will also be one take-home problem assignments that will be submitted through Canvas. The correct answers to the problems will be posted on Canvas. Students are responsible for being able to replicate the correct results; but if they cannot, even after reviewing the answers posted on Canvas, they should work with other students or reach out to me to make sure they know the material.

There will be one in-class quiz that will cover the material in the first half of the class. My expectation is that if students do the reading, attend class, and participate in the discussions, it will be easy to master the questions on the quiz.

The semester-long project and papers that will be prepared and presented in the latter half of the semester. Students will each select from a group of possible topics, examples of which are found below. If two students proposed topics are too closely aligned, I may ask one of you to select another topic.

1. Gender inequalities in health and their relationship to domestic violence, marriage and childbearing, and childcare.
2. Mental health, including depression and suicide.
3. Chronic malnutrition, focused on stunting and long-term nutritional deficiencies.
4. Vulnerability associated with migration, refugees, and other emergencies induced by war, conflict, or disasters.
5. Genetically modified food crops, value chains, and globalized food systems.
6. Climate change impacts via agriculture and extreme weather events.
7. Infectious/communicable diseases, particularly malaria, measles, and tuberculosis
8. HIV
9. Chronic disease and relationship to lifestyle changes, including obesity, diabetes, cardiovascular disease, and cancer.
10. Vitamin and micronutrient deficiencies, including vitamin A, iron, and iodine.
11. Maternal morbidity and mortality.
12. Challenges in vaccine development and distribution
13. Risky health behaviors, including smoking, alcohol, substance abuse, and sex work.
14. Water and sanitation.
15. Artificial intelligence and its frontiers.
16. Health insurance.

The paper should be around 15 to 20 double-spaced pages (Times Roman 12-point type, with standard 1-inch margins), excluding tables and figures, and should address the question of how you would spend **\$1 billion** over the next 1 to 3 years to address the global health topic that you have been assigned to work on. The challenge paper need not necessarily be based on new empirical modeling; but, it should include empirical analysis that underlies and justifies the financial allocation of the resources. All papers should include a clear articulation of the nature and motivation for addressing the global health challenge you are working on, and a detailing of what you propose to spend the funds on and what you expect to achieve or accomplish in terms of improving health and reducing morbidity and mortality, and/or economic returns measured in terms of money, from the investment in the funds available.

A thorough review of existing literature related to the topic should be carried out, including on the nature, scope, causes, and potential programmatic and policy responses that have been employed and their efficacy in the context of the topic you are working on. You should go beyond a clear definition of the challenge that you are addressing to discuss the nature of the problem, its causes, magnitude (prevalence and incidence), and a discussion of its demographic, geographic, and other socioeconomic dimensions. This should include a discussion of the progress to date in addressing the challenge, including successes and failures.

Based on this review, you should present an analytical section that justifies and motivates the presentation of the programs or policies that you recommend, as well as their costs and the expected economic, social, and health benefits. You should also discuss any potential weaknesses, uncertainties, or concerns about the assumptions that underlie your work, and how this may inform future directions for research and analytical work.

In proposing a single, or up to five disparate or related programs, policies, or interventions to address the challenge, the recommendations should reflect what is politically feasible. One or more interventions will reflect what is necessary to be done from a scientific and political perspective. The ideas you propose can range from the most pedestrian and pragmatic, to visionary and even speculative responses to the global health challenge and issue that you are examining. Whatever allocative decisions you make regarding spending \$1 billion, they should be based on sound, even if somewhat unproven, science, and the logic of doing so should be presented in a compelling way to both convince policymakers and a range of stakeholders, including civil society, of the merits of how you propose to spend the money. In defining the challenge, you should take into account: potential impact, distribution of impact (across dimensions, such as gender, geographical location, and demographic groups), assessment of uncertainty, and challenges associated with implementation, time frame, and positive and negative side effects, both anticipated and unanticipated.

The costs will be measured in terms of US dollars. The benefits should be measured, at a minimum, in terms of number of lives saved or related improvements in the quality of life. However, it would be preferable if you could employ disability-adjusted life years (DALYs), which will be discussed in class and in the readings. Alternatively, you could look at returns in terms of money, such as how an investment curing a disease, or increasing access to a public health service, has economic returns. Two or three class sessions will be devoted to the issues of calculating the impacts of disease, death, and disability, and related metrics, such as years of life lost and the value of statistical life (VLS), which can be used for cost-benefit calculations.

Although all the money needs to be spent within the next five years, it could be spent sooner, in less than five years. The programs, interventions, and services, and thus benefits, need not accrue during this time period. For example, if you were to focus on the development of a vaccine, the money would be spent on vaccine development, and possibly testing during the next 12 to 24 months, but consideration of the benefits

should extend into the future beyond the five-year period. Also, using vaccines as an example, it is important to justify, for example, the focus on vaccine development during the short-term, with the challenges of production and administration of the vaccine, which will obviously extend many years into the future. The time horizon that you employ for future benefits should be as far as you would argue they occur and are measurable. Since the time horizons for the opportunities selected will vary, you should explicitly discuss when the actual benefits, in terms of lives saved and lives improved, will materialize.

One unique aspect of these papers is that they are intended to guide policy and funding decisions to alleviate the harmful effects of the problem or issue, and its toll on health, poverty, and inequality. More specifically, although the focus of the papers will be to explore the topic in-depth—clearly describing the motivation for studying the relevant economic and public health issue, including reviewing the literature on the topic and conducting careful analytical work on the issue—the analysis conducted should be designed to be the basis for a policy paper on how to solve or address the aspect of the global health challenge. The proposal should be created, as if you were preparing and pitching it to the Bill and Melinda Gates Foundation or some other international body of experts, such as the World Health Organization, or a national or regional government, to focus their attention and funding on a pressing public health challenge, such as climate change or the burgeoning scourge of chronic disease in poor countries.

The geographic coverage of the proposed studies is flexible. For example, it is possible to focus on a region of the world, say, sub-Saharan Africa, or even a large country, like India. Or the scope of the interventions can be considered at a global level. This choice will be made by the teams, but again in consultation with me, to make sure that it is sensible. Obviously, certain types of interventions, such as vaccine development, may lend themselves, at first glance, to a more global application—but then again, it may be that the regional challenge of vaccine access may suggest that the focus of a challenge should be more regional. Similarly, while climate change is obviously global in nature, a team may want to look at the impact and mitigation effects at a global level. Other problems, such as micronutrient deficiencies seem to be more appropriate for a regional focus since they are not global in their prevalence.

I will meet with each student, initially an in-class meeting, early in the semester, in which we will discuss your projects and papers. We will have at least one, and preferably two further meetings as you continue to work on your Challenge paper.

During the last three weeks of the semester, each student will present their Challenge paper to the class, as if they were making a presentation to a review board that is allocating funds and deciding which proposal merit funding. Each presentation will be expected to take approximately 45 minutes. All students will be expected to read the papers of their peers, and will be required to submit, in advance of the presentation, two questions or comments. These will be both posted on the class website and available to me and the teams ahead of time. I will moderate the discussion that will ensue after the presentation and discussant comments, in which the questions and comments submitted

by the rest of the class will be addressed. A template will be provided to enable the students to briefly comment on and assess the work of their peers. These postings will be anonymous to all, but me. Based on these assessments and comments received, everyone will be asked to revise their paper. This revised paper will be due at the end of the exam period, and will be in lieu of a final exam.

**Grade:**

The grade for the class will be composed of the following:

20% – Quiz

10 % – Attendance

10% – In class participation when leading discussion session

5% – Take home problem set

10% – Submissions of questions/comments for class readings and challenge papers

35% – Challenge Proposals and presentation (of which 50% of the grade will be based on the scoring of the papers and presentations by the students, and 50% will be based on my scoring).

10% – Comments and critique of Challenge Proposals and Presentations

**Key dates:**

**August 31** Submit one paragraph description of topic for Challenge Paper

**September 5** In-class meeting on Challenge paper

**September 19** Submit two-page statement expanding on the motivation (for example, problem and dimensions) that you will be addressing, including its causes, consequences, and dimensions, as well as the geographical and/or time frame you are focusing on.

**October 7** Submit 5-to-6-page paper outline and related annotated bibliography, including brief descriptive of the interventions/policies/programs that are being considered.

**October 21** Submit draft challenge papers

**End of October** Challenge paper presentations begin

**December 4**            Submit assessments of Challenge papers

**December 15**        Submit final Challenge paper

---

**Prerequisites:** Introductory Microeconomics and Introductory Statistics

**Meeting Time:** Tuesday and Thursday 11:40 a.m. to 12:55 p.m.

**Office Hours:** Prof. Sahn (David.Sahn@cornell.edu) will hold office hours by appointment

**Course Website:** Available on Canvas

**Course Website Builder and Canvas Organizer:** Patricia Mason, pkm@cornell.edu