

## Global Health: Where Science Meets Humanity and Social Sciences

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Thank you very much for having me. Today, I'm going to talk about my personal history in the field of global health in Japan, the United States, and the United Kingdom. How global health as an academic discipline has changed over the past twenty years in these three countries and how different they are from one another.

Twenty years ago, I was a student here at Keio University, majoring economics. I was especially interested in economic history and demography, but I had no exposure to the field of medicine. Back then, there was no school of public health in Japan. At that time, I had never heard the term "global health" or even its older term "international health". Although, I had heard of the term colonial medicine in a lecture by Professor Akihito Suzuki: my thesis advisor and a leading historian in the field of the history of medicine in Japan.

As a student of economic history, I was particularly interested in the use of historical data in economics. In 1662, John Graunt examined mortality in London and published his famous book, *Bills of Mortality*. Mortality statistics are perhaps the oldest historical data consistently and continuously available to us. So, it was not a coincidence that I was attracted to the analysis of mortality data. Mortality data are not only informationally rich historical resources, they have also dramatically improved in terms of quality in the past thirty years. Today, mortality estimates are available for almost all countries. Vital statistics are the preferred data source for mortality estimation, but these are not available for all countries due to the lack of well-functioning civil registration systems. But, nationally representative estimates of mortality are still available for almost all countries because we can also estimate mortality from surveys, census and other data sources [1]. There was also considerable innovation in the combined measurement of mortality and morbidity in the 90s by the Global Burden of Disease project. The 1993 World Development Report introduced a new health measurement called Disability Adjusted Life Year (DALY), which incorporates a measure of people living with diseases and injuries into traditional mortality statistics[2].

The early 2000s was also a time when the relationship between economics and public health was re-examined. For example, in 2000 the World Health Organization established the Commission on Macroeconomics and Health. One of the main conclusions by the commission was that investment in health not only has its own value but also helps to stimulate economic growth[3]. Later, the WHO established the Commission on Social Determinants of Health in 2005, which focused on the "social

justice” for health investments in response to equity concerns for overall economic development[4].

The United Nation’s Millennium Development Goals also attracted world attention and significant resources to the field of global health from 2000 to 2015. Three out of the eight MDGs were related to health (Goal 4: Reduce child mortality; Goal 5: Improve maternal health; and Goal 6: Combat HIV/AIDS, malaria and other diseases). As a result, students, researchers and faculty members in global health have tremendous opportunities through the so-called Health 8 (WHO, UNFPA, UNICEF, UNAIDS, World Bank, GAVI, Global Fund, and the Bill and Melinda Gates Foundation), and other organizations.

In sum, before I moved to the United States, we were able to measure disease burden better. Public health and economics became closer than ever before. Global health became one of the top priorities of the United Nations and the world. Of course, I did not know any of them. I simply pursued my career as an economic historian of population health.

After graduation, I went to the University of Chicago to study on the inter-disciplinary social science programme. Chicago does not have a school of public health, but has strong departments in Economics, Sociology, Public Policy, and Health Studies. Fortunately, these departments jointly offered a demography programme in my days. In my coursework, I took health economics, demography, human capital, economics history and epidemiology, as well as empirical analysis courses. Three out of nine lectures I took were taught by Nobel Prize Winners in Economics: Gary Becker, Robert Fogel and James Heckman. The Chicago School of Economics is best known for its free market ideology, but Chicago has also emphasized the role of human capital in economic development. More than any other school, the Department of Economics has believed the potential of investing in education and health to improve human productivity and potential. Under the supervision of Gary Becker, I pursued the question of nutritional transition, taste formation, and obesity. By using historical data of food consumption from 1915 to 2000 in Japan, I found that a significant part of the weight increase in Japan has attributed to the declining food prices of the western diet, compared to the price of a traditional diet in my master thesis[5]. I also find that the effect of declining western food prices is smaller among the older population due to their eating habits of a traditional diet, yet it is bigger among the younger population who were susceptible to the western diet.

After I graduated from the University of Chicago I stayed in the city and went to Northwestern University for another Master’s degree in Civil and Environmental Engineering Project Management, which was a new field to me. Some of you know that environmental engineering is close to the field

of environmental health in public health. Water supply and sanitation engineering have a long history of improving urban health since the dawn of civilization[6]. Environmental engineering also contributed to malaria control in Europe and in the United States before the Second World War, when environmental intervention was the primary method to tackle the malaria epidemic. In the United States, the history of public health education is in fact rooted in civil and environmental engineering education[7]. For example, the first school of public health in the U.S. was the Harvard-MIT School of Health Officers, now called Harvard T.H. Chan School of Public Health, founded in 1913. The School was established as a joint effort by Harvard Medical School, Harvard Department of Sanitary Engineering, MIT Department of Civil and Sanitary Engineering, and MIT Department of Biology and Public Health.

With the background of economics and engineering, I then joined the doctoral programme in the Department of Population and International Health at Harvard University's School of Public Health in Boston, in 2005. The programme seemed to be ideal for me because there were three concentrations that I enjoyed: health economics, demography and health systems. However, there was something that I did not know at the time. Seven years later, I graduated with a Doctoral degree in Global Health and Population, not Population and International Health. During my doctoral years, there was a transition from international health to global health in our department and elsewhere. From the late 90s, the term "Global Health" quickly replaced the older term of "International Health". Some talk about global health as if it is the different naming of international health, but global health is distinct from international health in several ways. First, global health is the study of population health that goes beyond international borders. While international health is the study of health issues that affect people in developing countries, global health is the study of health issues in populations in both developed and developing countries. Second, global health has incorporated numerous perspectives in not only epidemiology and medicine, but also in economics, sociology, anthropology, geography, history, law, philosophy, political science and more. This change has moved the field away from what was once a mostly clinical science field. According to a survey of the Association of Schools of Public Health, at least 19 schools offered concentrations in global health while others globalized their curricula in 2010[8]. Over half the schools have formal research or academic collaborations with other schools within their universities. As a result, global health researchers now use the method of economics and demography much more than before, while biostatistics and epidemiologic methods were once dominant empirical frameworks. This change affected my first-year curriculum in the department, as we were allowed to take the econometrics course instead of the traditional biostatistics course in the School of Public Health.

When I started my studies at Harvard in 2005, global health was perhaps one of the hottest fields at

the university. In 2003, the Harvard Initiative for Global Health (HIGH) was established as one of the university-wide Interfaculty Initiatives under the leadership of Christopher JL Murray, former executive director of the Evidence and Information for Policy (EIP) cluster of the World Health Organization. HIGH was established with the aim to create the Ellison Institute for World Health and remove political pressure from monitoring and evaluation of health data [9]. The donation for this had been the largest in the history of Harvard. However, due to Lawrence Summers' resignation as president of Harvard in 2007, Ellison reversed a \$115 million donation. As a result, the director of the Institute, Christopher Murray, moved to the University of Washington to create the Institute for Health Metrics and Evaluation with the support of the Bill and Malinda Gates Foundation. Harvard lost its leadership in the field of global health.

After the turmoil of the Ellison Institute, the Department of Social Medicine at the Harvard Medical School changed its name to the Department of Global Health and Social Medicine, while our department, the Department of Population and International Health at Harvard's School of Public Health, changed its name to the Department of Global Health and Population the following year. I was glad to hear that the department kept "population" in its name since the department was the first "Department of Population Science" in all public health schools in the United States. A lot more universities have started their global health education. One extreme case was UNC Chapel Hill, which renamed its School of Public Health to Gillings School of Global Public Health in 2007. Yet, many other schools merely established their own centres for global health to globalize the traditional curriculum. The John Hopkins Center for Global Health was established in 2006. The University of California, Berkeley also launched Center for Global Public Health in 2008. The University of Chicago, which did not have a school of public health, also launched the Global Health Initiative in 2009, which later became the Center for Global Health, and promoted interdisciplinary collaboration in economics, public policy, medicine, and more. In 2011, Northwestern University established its Global and Ecological Health Engineering certificate programme with collaboration from the Department of Biomedical Engineering and Civil and Environmental Engineering. The programme was the first of its kind within the School of Engineering in the United States. In 2006, UCLA established its Art and Global Health Center to specialize in sexual health education, stigma reduction, human empowerment, and behavioural change.

As a student of global health, I took advantage of the interdisciplinary nature of the field during my doctoral programme. I received scholarships given to students who apply economics and engineering techniques to the field of public health. I enjoyed my classes as well as teaching and research opportunities not only in the School of Public Health, but also in the Department of Economics, Harvard Law School, Massachusetts Institute of Technology, Harvard Kennedy School, Harvard

Medical School and National Bureau of Economic Research. Later, Amartya Sen, one of my dissertation committee members, said that I was perhaps the most interdisciplinary student in Harvard.

Despite my scholarship, I was attracted to health law and regulation, and spent a significant amount of time in Harvard Law School on my doctoral programme. In my first year, I sat in the human rights class. I had one simple question in the lecture. If we have a right to health, does it improve our health or health care access of the poor? This was a fundamental question, but no one could answer the question at that time. Over the next five years, I pursued this question by creating the historical data of a right to health in 157 national and 50 state constitutions from 1850 to 2007. I was particularly fortunate to work with David Canning and Amartya Sen, who understand the value of historical data to answer current questions. My analysis revealed that the introduction of a right to health actually led to a decline in child mortality rates, especially among the disadvantaged population. Later analysis found that the allocation of government health spending – rather than an absolute amount of spending induced by the constitutional right to health – might be the main mechanism to reduce child mortality [10-13].

After I graduated, I took my first job as a lecturer at the University of Oxford's School of Interdisciplinary Area Studies. In the UK, the London School of Hygiene and Tropical Medicine has a long history of contributing to the development of tropical medicine, but other UK universities also started to create global health institutes from 2010. I was lucky enough to share my work on human right to health with these rapidly growing institutes. In two years, I visited the Institute of Global Health Innovation at Imperial College London, Nuffield Department of Population Health at the University of Oxford, Manchester Centre for Health Economics, King's Centre for Global Health, and UCL's Institute for Global Health. Unfortunately, many of them are still part of the medical schools and have less collaboration with other departments, especially social science departments.

Two years after my work in Oxford I came back to Japan and became Provost at Shoin University. The number of School of Public Health has slowly increased since Kyoto University established the nation's first School of Public Health in 2000. There are few global health programmes in Japan and, unfortunately, they are almost always part of the School of Medicine. There is almost no systematic collaboration with other departments. I am now more likely to work outside of the global health community in Japan, but I equally work in the fields of economics, demography, sociology, history, psychology and engineering. I am also working on a wide variety of topics. My work has now ranged from the estimation of prevalence of violence against women and child abuse, the estimation of the effect of natural and man-made disasters on child health and migration behaviour, the

Fukushima nuclear disaster and the estimation of geographic stigmatization, sex trafficking in Asia, the sex education effect of internet pornography, to an estimation of the effect of social and environmental human rights laws on child, maternal, and adult health outcomes among marginal populations in Latin America and the rest of the world.

What could we learn from my experiences? First, we do not need to study medicine to study and practice global health today. When Christopher Murray conducted his Global Burden of Disease Study in the 90s he needed both an MD and a PhD in Economics. However, with the degree of Demography, Public Health or Economics, we now study and practice global health without any inconvenience.

Second, global health becomes ever closer to the field of demography. Demography is the study of human populations and their dynamics, including mortality and morbidity. Demography is a popular subject in Europe, but in the United States there are a small number of universities with a department of demography, such as UC Berkeley, Upenn, Penn State and Princeton. They admit very small numbers to the program each year. A little more demographers are produced by the School of Public Health and Department of Sociology. Unfortunately, as of today there is no programme that offers a PhD degree in demography in Japan. This means that demand for demographers has increased, but the supply of demographers is limited, which makes this career path much more promising. Health data are the basis for every aspect of global health policy. Historical health data are also used to evaluate past health and non-health policies to inform current policy debate in health and other areas.

Third, global health has now collaborated with fields it has had no strong historical connections, such as engineering (except environmental engineering), humanity and art. Global health is now providing valuable field experience for all engineering fields in Northwestern and several other schools. Global health also covers other topics such as health activism, narrative-based medicine and storytelling for trauma, which are the primary topics of humanity. Global health also collaborates with arts to promote sexual education, stigma reduction, and to stimulate behavioural change.

We now live in a world under the Sustainable Development Goals, which promise healthy lives and promote well-being for all. As I have demonstrated, we do not need to study medicine, nursing or pharmacy to contribute to study or practice global health. Any social scientists, humanity researchers, scientists or engineers can find a way to contribute to the field of global health. Global health is the study of population health that goes beyond not only international borders, but also traditional disciplinary boarders. I hope that all of you here today are interested in this challenging subject, and that you find a way to connect your subject with global health. Thank you so much for listening.

## Reading List

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