Erika Schultz / Seattle Times

Straight talk with…**Christopher Murray**

Hard numbers can be difficult to come by in the current debate about health care in the US. Even rarer are accurate assessments of health care systems in less developed countries. But policy makers are not completely groping in the dark when it comes to data—thanks in part to Christopher Murray. Two years ago, Murray, a physician and health economist with experience at the World Health Organization (WHO), took the helm of the newly created Institute for Health Metrics and Evaluation at the University of Washington.

Since 2007, the institute, funded largely by the Bill & Melinda Gates Foundation and the state of Washington, has grown to a staff of 75 people and has begun churning out studies that that are shaping the debate on health care reform. For instance, Murray's group—along with colleagues at his former base, Harvard University in Cambridge, Massachusetts—have documented huge disparities in life expectancy and mortality in parts of the US. In some pockets of the country, life expectancy for women is even on the decline (*PLoS Med.* **27**, e66; 2008). Murray spoke with **Charlotte Schubert** about how having accurate numbers can add up to progress in health care.

You lead an institute devoted to examining health metrics. Why do we need to collect data on health care systems?
Health care is becoming the largest segment of the global economy. It already constitutes over 10% of the world's entire economic output. There is enormous variation in how much value for money people in different communities and societies are getting, and the only way we can possibly learn and therefore share knowledge about how to use these resources more wisely is by vigorous quantification of what goes into health care and what goes out.

A controversial study you authored in 2000, while at the WHO, ranked the quality of health care systems worldwide—ranking the US, for instance, thirty-seventh out of 191 countries. How has this study changed policy and health care in various countries?
I think in some countries, the most notable example being Mexico, the analysis that we did of performance of health care systems triggered a high-level policy debate. In the case of Mexico [ranked sixty-first] this led, eventually, to enactment of a major national reform [in May 2003] that extended insurance to the whole country.

How have you changed your approach since the 2000 study? And would it change the rankings?

There were two very important critiques of the analytic work in the 2000 study. First was the issue of separating out the effect of medical care and public health from other broader social determinants such as educational levels and poverty… And the second critique was about time lags. How do you take into account appropriately that tobacco control today will lead to health improvement in 25–30 years? To address both of those issues, we increasingly include in the analysis the fraction of people who need something from the health care system who get it, and that is the concept of effective coverage of interventions. In other words, what fraction of hypertensive individuals are being diagnosed and appropriately treated? I'm sure it [a reanalysis] would change the rankings.

What health care system is getting best value for money in health care?

In 2000 we claimed that France was. To be honest, I don't think that we would come to that conclusion if we were to redo that analysis with better data and the sort of methods that we have at hand. But we haven't completed that sort of systematic assessment. So I don't think I can give you an answer to that. I think if you look more crudely at who is making extraordinary progress on outcomes, as well who is seemingly delivering on an array of interventions, you have to be very impressed by Australia right now because they have made these extraordinary declines in young and middle aged adult mortality, particularly from chronic disease and injuries. They are now going from a level that looked like the US 30 years ago, and they are now, for example, doing as well as or better than Japan for men.

How is Australia doing it?

That is the question, right? I think if you talk to people in Australia, they say they have universal access, they have a very heavy emphasis on some prevention programs, they have been very aggressive about drunk driving and controlling road traffic accidents [and] they have a good intervention strategy for key noncommunicable disease risk factors. We are at that point where we can see there is differential performance across countries, but I think the next step of the research is to dive more deeply into try[ing] to understand just why.

What are the major elements of the health care debate in the US, and are there any measures that are not on the table that should be?

There are really three parts to the health care debate. There is a big component about financial risk protection, in other words, stopping medical impoverishment. It's not that the uninsured don't get any care, it's that when they eventually get care, they often have to go into bankruptcy paying for it. And that issue is dominating most of the discussion. If you look at the epidemiological evidence, [financial risk protection] is really important for preventing poverty; it's less critical around addressing why the US actually has bad health outcomes compared with other countries. The second part is about the extraordinary and steadily rising costs of the US health care system overall and huge variation in efficiency across different parts of the country. The third part is about what do we actually do to decrease the health disparities within the country and narrow the gap between the levels of health in the US and other high-income countries? And that has got to be about these preventable causes of deaths, such as deaths attributable to tobacco, high blood pressure, high cholesterol and physical inactivity. And that gets very little time in the debate.

You have said that groups such as yours that are separate from political institutions such as the UN are important because they offer independent assessments of health care outcomes. Can you provide an example of how political considerations can influence measurements?

There are so many…. There are many examples that involve specific indicators, whether it is immunization rates or the prevalence of HIV or child death rates. Specific countries will be unhappy with figures that the WHO or another agency are suggesting and put marked pressure to have them changed or to modify them. This happens all the time.

In many of your studies, your conclusions have been unexpected or at odds with previous estimates. For example, your team reported that many countries inflate their level of vaccine coverage to reap the rewards of international aid, which is calculated on a per-shot basis (*Lancet* 373, 2031–2046; 2008).

We very strongly believe that measurements should be rooted in science. And we want to follow wherever the data lead us and apply the best possible scientific methods to the task of measurement and subject those to the standards of our field, namely peer review in serious journals. And that is at odds, at times, with the ethos of building consensus—that what is important for global health is for everybody to 'own' the results and share in the generation of the figures whether those are national authorities or other international organizations.

There are about 75 people at your institute—what do they do? You must work with people with a range of expertise.

We have economists, statisticians, computer scientists, epidemiologists, people with public health backgrounds, demographers. I think the underlying theme is that we have people who come at questions from a very strong quantitative background, and we try to have a diversity of disciplinary traditions. [This mix] generates enormous debate and controversy in-house, which we think is very healthy.

How can institutions change how they collect data so we can get better answers on which health care systems and interventions are most effective?

We strongly believe in three principles around information. The first principle is that everybody is going to be better off if there are common data standards and architecture…. Secondly, we very strongly believe that data sets should be in the public domain; that the model established by the human genome project of putting results out quickly in the public domain is the model that the rest of us should aspire to. Finally, the third principle is that, following the principles of science, we are all better off by fostering multiple competitive analyses of data.

The US has a strong biomedical research system yet ranks low on the WHO list of health care systems. Why this disconnect?

What seems to fall between the cracks of US Centers for Disease Control and Prevention and the National Institutes of Health is basically [for example] why is it that such a large fraction of people with high blood pressure in this country are not effectively diagnosed and treated? We are underinvesting in the type of research that gives an answer to that and gives an answer to what types of programs are successful in which locales. And that is where a disconnect is.

Is there anything that biomedical researchers could do better that might not be obvious to them?

One thing that comes out of our look at interventions for noncommunicable diseases is that adherence to therapy is a big cost and outcome issue for a country like the US—especially therapies that are risk prevention therapies such as antihypertensive drugs, statins, diabetes care…. There doesn't seem to be great emphasis on technologies and strategies that deal with adherence, such as pump delivery, long-release products. It would be good if there were more interest in that from the biomedical research community. ∎