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(L-R): Professor Paul Farmer, Dr Hsu Li Yang and Professor Jim Yong Kim

Healthcare Delivery and Implementation Science: An Interview with Prof Jim Yong Kim

BY DR HSU LIYANG, EDITORIAL BOARD MEMBER

Professor Jim Yong Kim needs little introduction. He is currently the François-Xavier Bagnoud Professor of Health and Human Rights at the Harvard School of Public Health, Chair of the Department of Social Medicine at Harvard Medical School, and Chief of the Division of Social Medicine and Health Inequalities at Brigham and Women's Hospital. As a medical student, he was one of the co-founders of Partners In Health in 1987,

a Massachusetts-based non-profit healthcare organisation dedicated to providing medical care for the poor in multiple developing countries. In 2003, he was awarded the MacArthur Fellowship (the "genius grant"), and in 2006, he was recognised by *Time Magazine* as one of the 100 most influential people in the world.

But he is perhaps best known for his work with drug-resistant tuberculosis (TB) and human immunodeficiency virus (HIV). As

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part of a Partners In Health programme in Peru in the 1990s, Professors Jim Kim and Paul Farmer set new standards for the treatment of multidrug-resistant TB (MDR-TB) in Peru. Their results were instrumental in persuading the World Health Organisation that MDR-TB could be successfully managed in resource-limited settings. Not satisfied with this, they subsequently led the campaign that forced down the prices of second-line TB drugs in developing countries by approximately 90%. In 2004, Professor Kim was appointed as director of WHO's HIV/AIDS unit, and spearheaded the "3x5" programme (to provide 3 million HIV patients with antiretroviral therapy by 2005). This programme ultimately failed to achieve its ambitious stated goal, but was remarkable for highlighting the plight of HIV-infected individuals in developing countries, as well as being one of the first programmes to set targets and the idea of accountability for global HIV/AIDS management.

Dr Hsu Li Yang: Thank you very much for sparing some time off your busy schedule for this interview. Can I find out from you, for the sake of our readers, what exactly is this implementation science that you wish to promote and teach?

Prof Jim Yong Kim: It seems to me that developing a science of implementation is very important at this point in the evolution of global health because the prospects for dramatically improving the health of poor people all over the world are better than ever.

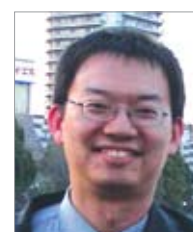
The most striking recent change is the explosion of interest in global health among students, the general public, wealthy individuals and even presidents and prime ministers of some of the most powerful countries in the world. Many new people are entering the field and some of the wealthiest people in the world are investing in global health. The Gates Foundation has made a special commitment to the development of new tools and recently created initiatives like US President Bush's Emergency Plan for AIDS Relief (PEPFAR), and the Global Fund to Fight AIDS, TB and Malaria (GFATM) have injected previously unheard of sums of money into the health systems of some of the poorest countries on the planet.

I am thrilled that all of this new money and effort are being spent on global health and of course we desperately need new tools to better diagnose and treat HIV, TB, malaria and other health problems. But what I have found through my work here at Harvard, with Partners In Health, and also when I was at the World Health Organisation (WHO), is that in country after country, the capacity to deliver an old product, let alone a new product, is still woefully inadequate. What we need in almost every developing country in the world is a functioning primary healthcare system. We also need trained health workers, not necessarily doctors, but trained health workers and we definitely need to organise systematically how care is delivered.

When I came back to Harvard and Partners In Health from WHO, I met with many of my colleagues in academia to understand better how the problem of healthcare delivery in resource poor settings might be studied and improved. While I found remarkable individuals who were thinking about and trying to teach courses like management in global health, these were very few in number and there was clearly no critical mass of people who had the resources to effectively tackle what we have called the "implementation bottleneck" in developing countries.

In addition to meeting with the small number of people at Harvard who work on global health delivery or implementation problems, I began reaching out to people in other schools and faculties who I hoped would help us refine our approach to the problem. One of the first people I talked to about this problem was Professor Michael Porter of Harvard Business School (HBS). Professor Porter is one of the best known business professors in the world and the demands on his time are enormous but to our great delight, he agreed to work closely with us to help us think about global health delivery from his perspective as one of the leading professors of business strategy in the world. I have been sitting in on business school courses to try to understand their approach and while I have found that their work is mostly focused on advanced economies, the methods they use are fascinating and I was convinced that they held great promise for our work in global health.

So taking cues from the teaching methods at the business school, we began learning about the HBS style cases and looked for ones that might help



Dr Hsu Li Yang is currently based at the older medical school in Singapore, where his preoccupation with drug-proof bugs prevents a closer acquaintance with worms and other fields of interest.

us teach global health delivery. We found some very interesting cases that were already written but we have also discovered that we would have to write a lot of cases ourselves. Through these cases, we are trying to capture both successes and failures in global health delivery.

To illustrate the need for this new effort, look at the case of smallpox eradication. Do we teach how that happened effectively to every public health student? I have done an informal survey of some of my fellow professors to see what they think the key elements in the success of that campaign were. One of the most distinguished professors at Harvard School of Public Health (HSPH) said at one meeting: “Well, the reason things work in global health is that you have good technology. With smallpox, we had a good tool, a good vaccine and we eradicated smallpox.” Now if you said that to anyone who actually worked on the smallpox eradication campaign, smoke would come out of their ears – they would be so angry! In talking to people who were intimately involved in that campaign, I have heard over and over that smallpox eradication was not a vaccination campaign; it was an epidemiology and management campaign. At first the plan was simple – immunise everyone on the face of the earth. But they quickly realised that they could not do that. In very difficult circumstances, they developed the “containment” or “ring strategy” in which they vaccinated around cases to create a protective ring of immunised people. It was a brilliantly-managed project, one of the great successes in the history of public health. But we still do not teach it very well: very few graduates of our school know exactly how it was done. Do you know, by the way?

HLY: (*laughs sheepishly*) No.

JYK: See! Every single student coming out of HSPH should know the smallpox eradication model backwards and forwards. You know, it is like studying genetics and never knowing the double helix. To me, that is how fundamental it is!

At the business school, the emphasis on capturing positive and negative experiences is much greater. JetBlue is an airline in the US, and in the winter of last year, it had this terrible problem during an ice storm and people sat on the airport runway for up to 10 hours.

HLY: Yeah, sleeping on the floor...

JYK: Oh, were you on one of the planes?

HLY: No, but I read about it in the news.

JYK: At HBS, they taught the JetBlue case weeks after it happened because that example was so important for understanding operations and management.

So there are very basic, specific and important experiences that they (HBS) capture very quickly, and they do it because in the business world, you are under so much pressure – you are looking for good ideas, better ways of managing, the competition is so tough. Can we bring this same sense of urgency to implementation and delivery in global health? Well, healthcare is different from most business and we have a different task, but the question for me is: can we use the methods that have been successful in business to improve the delivery of healthcare to the poorest people on the planet?

HLY: Yes.

JYK: Can we do that? And then, of course, the ultimate test is, by studying and teaching global health delivery, can we be useful to practitioners in the field? You know, in much of academia, it is not broadly accepted that the most important goal of their work is to be useful to practitioners. But we want students to be able to apply disciplinary learning to real world problems. Our aim is to help practitioners.

We have also begun reaching out to the systems engineers at MIT. They have developed some exciting, innovative models of teaching students how to solve management problems in businesses and NGOs and we are about to launch a course with them that will utilise their methods to help students solve global health problems.

So how do you teach global health delivery and implementation? If we were to take a hundred young people who, more than anything, want to be a part of a movement that ensures that poor people get access to all the healthcare tools that we have, how would you train them? What would you train them in? Which examples would you give them? We only have pieces of that curriculum right now, so that is what we are trying to build. We think that the case method is

the best way to complement the many wonderful courses that we have at HSPH right now. Some of the best courses here do not use global health examples, so we have begun to write cases on the most compelling, educational examples of global health delivery and are trying to incorporate that work as much as we can into the curriculum of the school of public health.

Eventually, we would also like to be relevant to the business school. We would like to write cases of high enough quality and be good enough at case-based teaching so that we would be able to shed some light on profoundly important principles of management, leadership, and strategy.

The case writing process so far has been very rewarding. In talking to people and physicians who have had great outcomes or were responsible for some great managerial successes, they have said things to us like: “You know, nobody ever asks me about this, but *this* was the key to making things work. Everybody looks at my results, and they say: ‘Well you know, you’re a charismatic person, you had all these connections, and the technology was good.’ But, no, that is not what happened.”

For example, the person who built the great national tuberculosis programme in Latin America, which for a time was the best in the world, said: “Political will – everyone says political will is important to run TB programmes. And everyone said that the reason I had political will was that I was close to the president at the time.” And he said: “I hardly met the guy and I had to work with six different ministers of health. Any of those six ministers of health could have wiped out my programme. I had to build political will with each of those six ministers of health!”

Through our cases, we are capturing these kinds of subtle, often ignored insights that can be critical for successful implementation. Our hope is that we can both capture and track this kind of information in a way that will be useful to students and practitioners.

As we are capturing the success and failures in global health delivery, the critical question is, of course, how do you ensure that the so-called “best practices” get to the field? In global health

today, everyone talks about best practice, which is another notion that comes from the business world. But it strikes me that most businesses take the problem of making any particular best practice work in their own company very seriously.

We, in global health, have to be very aggressive in trying to figure out how to ensure that best practices are actually implemented throughout the world. One opportunity that we have to explore fully is the rapid growth of internet access, even in some of the poorest countries. Here in the US, we think we are well-connected, but we actually are not as compared to Japan, Korea and Singapore, where internet access can be up to 20 times faster. My own sense is that, of course, the US will catch up but in addition, internet access will also improve rapidly throughout the world. I think we have to prepare for that and make sure online tools for global health practitioners are available. We need to take best practices and figure out how to put them in a form that health workers can use everywhere in the world. I think connectivity increases rapidly and reaching people in remote places through the internet seems to me the best way of disseminating information on best practices. If you could get the master practitioners in the field to actually walk through either in words or on video how it is they do things, these online lessons could be very effective.

The other possibility that is so exciting is online mentoring. Much of medical training is based on the mentorship model where a neophyte doctor is dependent on the support of more senior doctors with every patient they see.

HLV: Yes.

JYK: Immediate real-time mentoring is the key to doing well as a doctor but I think that is true for almost any kind of learning! If I had a mentor when I was trying to put together my son’s bicycle, I would have been much more effective. Can we use the internet to bring online mentoring directly to developing countries in a way we have never been able to do before, by using social networking? Can we develop communities of practice so that practitioners from different parts of the world can mentor each other? Will there ever be a day when someone has a question that they enter into the computer and then, within minutes, somebody from halfway across

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the world will send an answer about how they solved that problem before?

HLY: Assuming you have a big enough community online.

JYK: Yes. The number of people who are doing global health work now is growing but it will be important for the experts to commit to spending some dedicated amount of time online in the beginning, so that people asking questions get quick and useful feedback. In so many other realms of human social life, these networks are exploding, nowhere more quickly than in the business world as a way to share information effectively and efficiently. So if we can get these components up and running, I think that we can take some major steps towards eventually developing a scientific approach to implementation and delivery. So my answer to your original question – what is implementation science – is that I am not sure what it is, yet. I think there are a lot of disciplines that can be helpful in defining the field. I have been involved in implementation for the past 20 years, and I know that we never had these kinds of tools as I was trying to figure out different problems. I think that if we can create a teaching programme that captures the best cases, gets them online, and establishes networks that will work across geographic boundaries, then I have great hope that we can dramatically improve our effectiveness at delivering the tools of medicine to the poorest people on the earth.

HLY: I guess the important question is how can you be sure that you can teach these things effectively. One of the complaints about the business school is that they learn all these things, they go to a company, and then they learn everything all over again, because that specific situation is different. A programme in Congo is not the same as a programme in China, and even two programmes in Congo might be very different!

JYK: I do not think the faculty at the business school would say that they give students a roadmap to solve every problem that they will face when they enter a specific company because every company is different. What we like to think we are teaching in medicine are clear algorithms – *this*, then *this*, then *this*, then *this*...

HLY: That is what doctors like...

JYK: But any doctor who has any clinical experience knows that algorithms can only take you so far and that exercising clinical judgment in situations where you do not have all the information you would like is the essence of medical practice. Clinical training then, is the process of making partially informed decisions over and over again so that you develop clinical judgment based on experience with many different cases. There certainly are aspects of medical care in which following an algorithm is critical but with complex patients especially, algorithms only get you so far. In terms of building a healthcare system that works in very poor countries, we need to search everywhere to find helpful algorithms but we know that cookbook formulas cannot possibly anticipate all the problems that healthcare practitioners will face. For example, in Bangladesh, they do not pay their community health workers (CHWs) upfront. They pay the CHW only after a patient has successfully completed therapy, though they do take pains to make sure that their health workers are not living in poverty. That is one model of incentive building. At Partners In Health, our CHWs have performance criteria but they get paid while they are doing their work. Others do it differently.

What if you need to train your CHWs, you have your training manual, but no one shows up for the first session. How do you get people to show up? Or, they come, but they want money. How do you set up an incentive structure? What about an incentive structure for the first meeting? These are levels of detail that I have seen derail programmes. You cannot get them to come to the first meeting so you quit. But if you could go online and say: “I want to do this and I am committed to doing this but I can’t get people to come to the first meeting. Has anyone ever solved this problem?” You know, all over the world, we have seen this problem, and you could just tap on that experience in your own work. Those are the kinds of things that seem trivial but taken together, determine whether a programme succeeds or fails. You can learn some of this kind of knowledge in a classroom, but that is not the way people learn anymore. Today, when doctors are looking for things like how to do a rabies vaccination, they go to Google and it is right there! We never had that kind of thing, we had to carry books – our pockets were full of books.

So if we want to dramatically improve global health implementation and delivery, the combination of this new way of accessing information, and leaders who have a completely different kind of training, may be the best shot we have. I do not know if this is going to be the solution, but I have looked at a lot of other solutions, and they seem way too simplistic: “It’s just incentives. Just change incentives and everything will change.” Or “It’s just the money and technology.” Or “New tools. If we have new tools, we’ll fix the problem.” I think that all those ideas are very, very important. But I think the most important thing is to train a new cadre of global health professionals who can actually manage the vast diversity of problems that we face out in the field. How do you think about introducing new technology? Have we introduced new technology before? Do people in developing countries naturally just take up new technology because it is cool? Do you advertise new technology? How do you get the information to people? Take male circumcision – we now know that it can play a very important role in preventing HIV infection but is there a demand for male circumcision? If so, do you provide it through a surgical programme or through a standalone “vertical” programme? Do you think about it as an AIDS-prevention tool or as a cleanliness programme? Conversations like this are happening all the time, and decisions are being made but we are not making choices and capturing experiences in a systematic way. We are not putting these experiences into some sort of analytic framework that helps us to understand the whole problem of implementation and delivery in all of its complexity.

Everyone wants algorithms, but you routinely go off algorithms whenever you are dealing with human systems. Looking at educational systems as a whole, virtual experiential learning – which is what they call the case method – is the best that we can do. So we need to train leaders, get the information out, get down to the ground level, find training programmes on health implementation and delivery that will be useful to people on the ground like CHWs. That is the only way that we are going to scale up. Unless we build that new conduit, the glue that will hold all these pieces together, I do not think it will happen otherwise.

HLY: So how and when can we sign up for this programme?

JYK: (*laughs*) We are teaching our first course on global health delivery this January. And then we are going to start a fellowship in August 2008. We would like to offer an MPH or equivalent degree on global health delivery, and then as the number of cases grows, we will offer executive education courses. For example, we are going to get all of our HIV treatment cases together, and then bring together the best HIV treatment practitioners in the world. If your cases are examined by the best HIV treatment specialists, then those cases get better, because you constantly update and edit the cases based on expert input. And then you record these sessions, and that conversation in itself. If you have a one-week session with all the best HIV treatment practitioners in the world, get them together to compare notes and actually go through cases together, that could be an extraordinary educational experience that could be videotaped and shared with others.

TB experts, drug-resistant TB experts, malaria experts, humanitarian emergencies experts will all be brought together to work on developing great cases that illustrate all the most important principles and best practices in their respective fields. Not too long from now, we hope to have more than a hundred cases and at that point, you can begin talking about building a whole field where practitioners and researchers will be talking to each other about implementation and delivery in exciting new ways.

Today, you will have an academic who is doing research in HIV prevention, who goes to a prevention meeting and says: “Here’s what I found, and it really works very well in this setting, and now we’re going to scale it up.” Everybody says: “Okay, scale it up!” But what does it mean to scale it up? Most people do not know what that means, especially in medicine. In the field of academia, among researchers, or even medical doctors, we are definitely not taught how to scale things up. Engineers, and managers, and operations specialists, these are the people who know how to scale up. Can we train a whole new cadre of people who can be just as good at scaling up health systems?

While I am very optimistic about our chances at succeeding, we are taking a gamble. But even if we struggle for awhile, the alternative

is to do nothing and continue to spend huge amounts of money on management consulting. I have nothing at all against the management consultants who are making so much money off global health right now but the problem is, while they may have the management consulting skills, they are not global health practitioners. They are not close to the ground. They are not working everyday trying to get CHWs to do this or that. The set of skills they have is very useful and they are very adept at bringing order to a complex problem. They do not shy away from complex problems and wow everyone with value chains and buckets and workflows. Those are great skills, but having to pay consulting companies to do all this work is not a great long-term strategy. You need to take those skills, and move them closer to the field. People who are actual practitioners should be able to make use of those skills right away. The government of Rwanda should not have to pay a management consultant to figure out how to put their healthcare system together. Especially since even if a consultant comes up with the right model, and you look at it and say: "This is great! Let's do it!", they will say to you: "We don't do anything. We just tell you what to do. You do it." So let's get that model, let's have those skills, let's build that plan. But then, let's build a way of training people and continuing to provide input and more training so that those skills go all the way to the point of the patient.

Michael Porter of HBS tells me that it is possible. I am not sure it is but if I knew of a better solution, I would do it right now.

HLY: How do people around the world contribute? How could we in Singapore contribute to this, for example?

JYK: We think that the craft of writing a great case is something that everyone in the world can learn. It is something that our business school has taught a lot of people in the world to do for business cases. So one great way to contribute is to begin writing cases and describing what you are doing in your healthcare system, about how you are solving very specific problems in a way you think is different from the rest of the world. How are you dealing with minority populations, for example? Are Singaporeans generally trying to do work in other developing countries? Do you work in Malaysia at all? Are Singaporeans

What we need in almost every developing country in the world is a functioning primary healthcare system and trained health workers, not necessarily doctors. We also need to organise systematically how care is delivered.

starting to think about global health issues?

I know that Duke University is starting a medical school in Singapore, are you affiliated with them?

HLY: They have started, and no, I am afraid not.

JKY: The chancellor, Victor Dzau, who is in charge of all medical activities, is one of my mentors and a very close friend. He is very interested in helping us develop the field of global health delivery. That is great news because for us to be successful, global health delivery has to spread to other universities. We all have to be engaged in writing cases, share them with each other and constantly improve them. Case writing is difficult. Every time we write a case, we have got to understand what pedagogical issues we are getting at, what critical elements we are trying to teach. The field is so new that we are just beginning to understand what those things are. Just the other day, we sat with Michael Porter from HBS. We had worked hard putting together several cases, but the way he thought about the lessons from those cases was very different from the way we did, because he has looked at thousands of industries and consulted with thousands of companies. He has a very different sense of how complex organisations work than we do. A better one, I think, and so we have to find a way to make all those things work together.

HLY: Thank you very much for your time and this fascinating conversation. ■