

YEARBOOK 2013

Education and Leadership

Education is the basis for better health in populations. Scientists will have to become change agents, to improve health outcomes and enhance health equity.

Research and Innovation

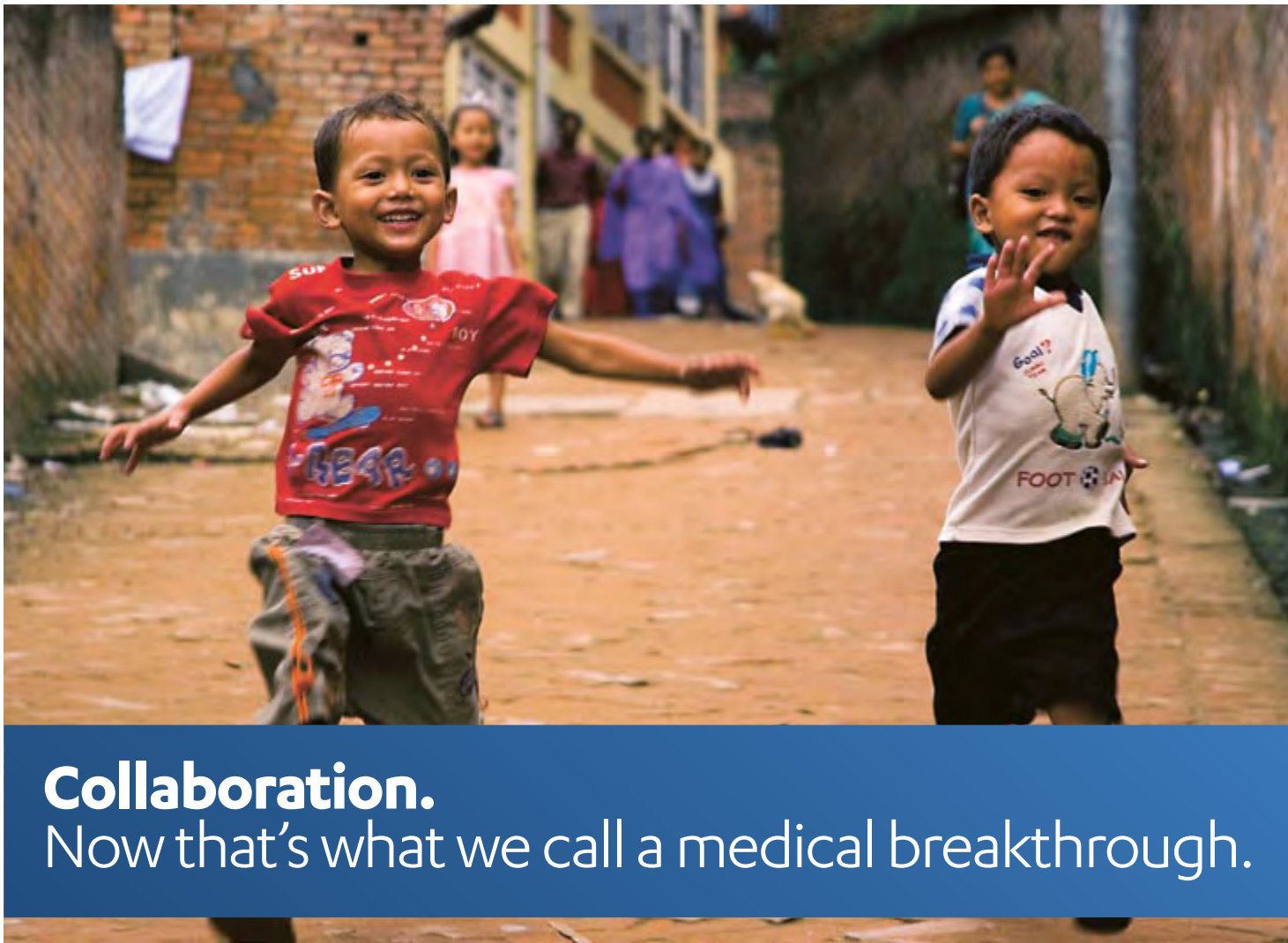
Health research is pivotal to create a supportive environment for sustainable economic growth.

Evidence to Policy

To advise policymakers, the health community needs to establish strong connections to all stakeholders on the basis of clear, well-designed research.

Global Health for Development

Health must be treated as an essential, integral component of sustainable development and poverty reduction.



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Editorial

“It is the curse of humanity that it learns to tolerate even the most horrible situations by habituation,” said the great researcher and social visionary Rudolf Virchow more than 100 years ago as a Professor at the Charité, Berlin. However “physicians are the natural attorneys of the poor, and the social problems should largely be solved by them,” he continued—observations which ring true to this day. The challenges for global health are immense and burden especially those at the lower end of the socioeconomic scale. But the future need not remain bleak, given the wide array of strategies being discussed at the World Health Summit. If we focus on health as a pivotal factor, sustainable improvement in many areas is possible.

The time for a unified answer to the challenges of today and tomorrow is now: new Global Development Goals will be decided on by next year; the concept of universal health coverage is gaining global traction; and research-based innovations continue to offer major advances in therapy.

To bring all stakeholders together to translate medical innovations into global health frameworks on an affordable basis, new platforms for meetings and dialog are needed. The World Health Summit provides such a platform for delegates from different pillars of society to help shape tomorrow's health care agenda.

In its fifth year, the World Health Summit continues to connect present and future leaders of global health, active in academia, politics, the private sector, and civil society. We are happy to see the constantly increasing international exchange and political attention this congregation of key opinion leaders receives.

It is this spirit that permeates the WHS Yearbook by providing direction for future advances to improve health worldwide, and by offering information on the issues and initiatives raised at the World Health Summit 2013.



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Welcome Messages



To relieve human suffering, the international community adopted at the start of the new millennium eight fundamental goals to be achieved by 2015. Three of these Millennium Development Goals are directly related to better health care. While considerable progress has been made in tackling scourges such as AIDS and malaria, the challenges will of course not end post-2015. If for no other reason than the interconnected nature of the Development Goals, international efforts to advance them will require unwavering commitment and hard work.

This year's World Health Summit takes place at a time of intensive national and international debate about what new concrete targets are required to ensure a decent life and a better future for the world's rapidly expanding population. In this context health care will remain a key concern.

As patron of the World Health Summit, I am delighted to see the broad interest it generates. It provides a forum for distinguished experts from all over the globe—academics, corporate executives and policy makers—to discuss joint strategies for action. Their prime concern here is what people need everywhere to lead a decent life. So I sincerely hope that all Summit participants will have a stimulating and productive meeting.

Dr. Angela Merkel
Chancellor of the Federal Republic of Germany



By acting once again as patron of the World Health Summit, I wish to affirm the responsibility of States in promoting health worldwide. To promote health means improving the well-being of our fellow citizens, developing education and prevention, protecting our environment, better understanding diseases to better treat them, and ensuring access to health care for all. The goals remain, but they are of even greater significance than in the past owing to the growth of world population and the increase in inequalities, among nations and within a single nation.

There can be no halt in our common fight against undernutrition and prematurity, environmental pollution, and infectious and parasitic diseases. In order to shape the strategies of tomorrow, it is hence necessary to bring together the actors of progress, whether they be institutional, community-based, or from the public or private sector. You are here, as participants in this World Summit, to provide new impetus.

I thank you and wish you every success in your work.

François Hollande
President of the French Republic



The wealth of nations

There is no better indicator of the true wealth of a society than the state of its health systems, their effectiveness and inclusiveness.

At a time when our knowledge and experience in the health sector are far advanced but money is scarce, whether we are ready and able to invest further in health is one of the hallmarks of development. The European Union is committed to this goal, to do whatever we can to adapt our health systems to the needs of the 21st century both within and outside Europe, and to develop more efficient and effective public health systems, delivering greater health benefits at lower cost.

That is why investment and innovation in European health systems, who are at the core of our high level of social protection and form a cornerstone of the European social model, are a key component of our efforts to fight the challenges brought upon us by the economic crisis.

That is also one of the reasons why the EU remains the largest donor of development aid in the world. The European Commission alone annually commits more than 8 billion euro. Health is one of the main focal points of this aid—health initiatives accounting for half a billion euro a year—and for good reasons: that is where our investments make a real difference for our partners, where aid has shown to be both necessary and effective. Investing in health systems is not just a social imperative. It is also, if you will, good economics, as it helps tackle the root causes of

underdevelopment, poverty, and instability. In many ways, personal health is a public good.

Personal health needs public support. Through a comprehensive approach we can improve health systems, provide better access to health services, invest in related areas like nutrition, sanitation and clean water, and address the broader social issues that impact health.

The European Union will keep its leadership on development cooperation. Even in financially difficult times, we are securing and deepening our toolbox, including aid. More specifically, we envisage at least 20 % of our multi-annual aid budget 2014 – 2020 to be devoted to human development and social inclusion, including health, in the future as well. We particularly intend to increase our financing for health research in low-income countries, for instance through a five-fold increase of the Commission contribution to the European and Developing Countries Clinical Trials Partnership, which aims at the development of new drugs and vaccines for HIV/AIDS, tuberculosis, and malaria.

Experience has shown that it is not just how much we spend, but how we spend that makes a difference. For that reason, the World Health Summit 2013 will focus on the interplay between health and wealth, development and inequality, research and education, and on the role of health in all aspects of foreign policy. These interconnections matter even more in the light of new and emerging health threats that arise from increasing global mobility, migration flows, demographic change, environmental pollution, and climate change.

Above all, health is a value in itself, and investing in health is a moral imperative. I am particularly honoured to be the patron of the 2013 World Health Summit, together with Chancellor Angela Merkel and President François Hollande. I believe that the Summit's success will be another clear signal that the world comes together to fight unacceptable health standards.

José Manuel Barroso
President of the European Commission



Working Toward a New Concept of Global Health

On the occasion of the World Health Summit, Dr. Jeannette Vega, Prof. Kishore Mahbubani, and Prof. Ernst Rietschel came together with journalist Andrew Curry for a frank, wide-ranging discussion about innovation, regulation, neglected disease, and the complex roles of industry, non-profits, and government in public health.

Dr. Jeannette Vega

is the Managing Director of Health at the Rockefeller Foundation in New York and a physician.

Prof. Kishore Mahbubani

is Dean of the Lee Kuan Yew School of Public Policy at the National University of Singapore.

Prof. Ernst Rietschel

is Chairman of the Berlin Institute of Health and a chemist.



► **Jeannette Vega**, left, advocates looking beyond the laboratory when it comes to shaping health policy for the future.



► **Ernst Rietschel** is Chairman of the Berlin Institute of Health (BIH), a cooperation of the Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch and Charité – Universitätsmedizin Berlin.

Curry: Cures exist for most of the things people die of today. Do we need to put such an emphasis on innovation if there are so many things we've already solved? Where should our priorities be?

Vega: Before coming to the miracle pill that will decrease your cholesterol, we have other issues we need to solve that are connected to economic structures, and the structure of society. We have a population that will live to be 90 years old. They're supposed to be retiring at 60. What do you do with those people for 30 years? How do you get them to be productive, and to hopefully be completely healthy and then suddenly die? How do you get health systems to respond to those needs? Health systems are not designed to work with people through their life, they are designed to treat acute problems. Let's assume that we get to have people needing to be 90 years of age. How are we going to deal with our increasingly aging population? How are we going to configure our labor market, our income distribution? When I look at my children, I think, "What's the world that they're going to live in?" They will be on the verge of immortality.

Curry: But why is that bad?

Vega: We don't have a society that is always structured to have a life that is worth living. When you're 75 and you still have 20 more years to live, you're already checked out of the system. You're basically waiting there for 20 years trying to be useful while waiting to exit.

Mahbubani: There's a danger of being sucked in by the western narrative, which tends to be very pessimistic. From the point of view of the 88% of the world who live outside the West, the last 30 years have been the best 30 years they've ever had. So, before you talk of very advanced innovation, remember that simple things like people washing their hands in villages is saving lots of lives across the world, including the lives of babies. If we can get the message spread even further, then frankly, you will find that the human condition will improve even more significantly in the third world countries.

Curry: So, is there room for innovation at that level? Should we be focusing on innovating in education and communication?

Mahbubani: Innovation comes from understanding the best practices from other countries. I think one reason the Asian countries are doing so well is because there is a massive learning journey that is happening. All over the world, more and more societies are giving their citizens access to education and information. With education and information spreading to all kinds of places like Rwanda, or remote parts of India, or certainly in China, sometimes simply communicating the very basic things in public health can make a huge difference. It is not necessarily innovation in the sense that you must have some kind of big new idea that hasn't been thought of by somebody.

Curry: Like what?

Mahbubani: The life expectancy of the Chinese is higher than the life expectancy in Malaysia, another very successful developing country in Asia. One day I was asking one of the richest tycoons in Malaysia why that might be. He says, "Kishore, very simple answer: The Malays fry their fish, we Chinese steam our fish, and if you steam your fish every day instead of frying the fish every day, life expectancy goes up significantly." I am, admittedly, Indian, but my wife forces me to eat Chinese food every day: steamed fish and steamed vegetables.

Curry: Asia's been able to make huge gains very quickly. That's actually true globally: Life expectancy was stable for 700 years, and it's really only in the last 100 that we've been able to dramatically increase it. So how do we keep that progress going?

Rietschel: I think that there will not be a single wonder pill, or golden bullet, or whatever. But we could make a big difference by developing something that satisfies the receptors humans evolved to steer us toward energy-rich foods. We have receptors for salt, sugar, and fat. Burned fat, actually. Our brains make us crave these things.

Mahbubani: I know its effect. It's true of me. I reach for French fries before I reach for the spinach.

Rietschel: Coming up with inhibitors for those receptors in the brain would go a long way toward solving the problem of obesity—and diabetes. But we need to be patient. If I look at cancer, there was not a single most important discovery. It was a constant effort of science to move incrementally forward. Things take time. Take a look at smoking: The restaurants were the first thing, then came the bars with all these exceptions. When I'm invited for dinner somewhere, nobody smokes anymore. This development took decades.

Vega: In the case of tobacco, there were efforts to educate for 40 years. But until the WHO Framework Convention on Tobacco Control in 2003 nothing really happened. It was an organized response by society that made non-smoking compulsory.

Rietschel: But the society was sensitized. Education sensitized them.

Mahbubani: I agree with Jeannette. We were actually shocked that even with Singapore's reputation of being a nanny state, New York went further than Singapore in banning smoking in restaurants and pubs. We actually said, "If Mayor Bloomberg can do it, maybe we can do it, too." I hope somebody will be able to solve the proliferation of what you call the "rich man" diseases, like high cholesterol and obesity. In fact, Asia's biggest problem today in terms of statistical growth is obesity. It used to be malnutrition. We've gone from malnutrition to obesity, with no stop in between.



Vega: We are talking mostly about one type of innovation, but social innovation is perhaps more important, and more complex. The way that we organize our societies is an important source of innovation as well. Let me give you just one example: Insurance systems that are connected to being employed in the formal sector. We know that employment in the formal sector is not the model of the future. We know that people will be working in the informal sector in very different ways. People are working from home, freelancing, working remotely. Yet we keep insisting on connecting social protection by insurance models to being formally employed. Can we, for example, think of using the billing system of mobile companies or other services companies to enroll people?

Mahbubani: I want to support Jeannette on her point about some of the innovations we can do. Sometimes developing countries can be lighter on their feet when it comes to adopting new technologies because there are fewer legacy investments to abandon. For example, one of the most remarkable things that happened in the last 30 years is how cell phones have spread through India. In 1990, zero cell phones, right? Now, they have one billion. They've used it so far for mobile telephoning and so on and so forth. You can also use it to transmit good practices and give incentives.

Curry: Taking data from people's cell phones might make privacy advocates nervous. How do we get these innovations when people are a little bit nervous about Big Brother? How do you get these data sets without violating people's personal sovereignty?

Rietschel: In Germany, we have many committees and there are clear rules what to do and what not to do. What I worry about is the regulations we have in the medical field, which are getting tougher and tougher. I can't see how innovation in the broader sense will survive if we go on like that. Low-income countries can't pay for that. We need a global conversation about harmonizing regulation, perhaps led by the World Health Organization. We can't leave these things to be done piecemeal by the FDA, the EMEA, and other national organizations.

Mahbubani: That is exactly my point. In an African country, if they have an outbreak of disease and an American team from

the Center for Communicable Diseases arrives at the border alongside a WHO team, they will let the WHO team in, but keep the American team out, because they trust the WHO more than they trust any national agency. What we have to do is create universal organizations that enjoy legitimacy...

Rietschel: ... and empower them.

Mahbubani: ... and empower them, give them the task of harmonizing these regulations. In the field of health, we all have a very clear common interest. If a new virus breaks out, it doesn't matter whether it's in Africa or New York. We're all in danger.

Vega: Well, it's not only a new virus. I am very intrigued by the idea of planetary health that has emerged over the last 10 years. There are boundaries that make the human species' survival possible. We have gone over the edge in many areas. We have been victims of our own success. We are all in the same boat. The question is, "How do we get this ship to go where we need it to?"

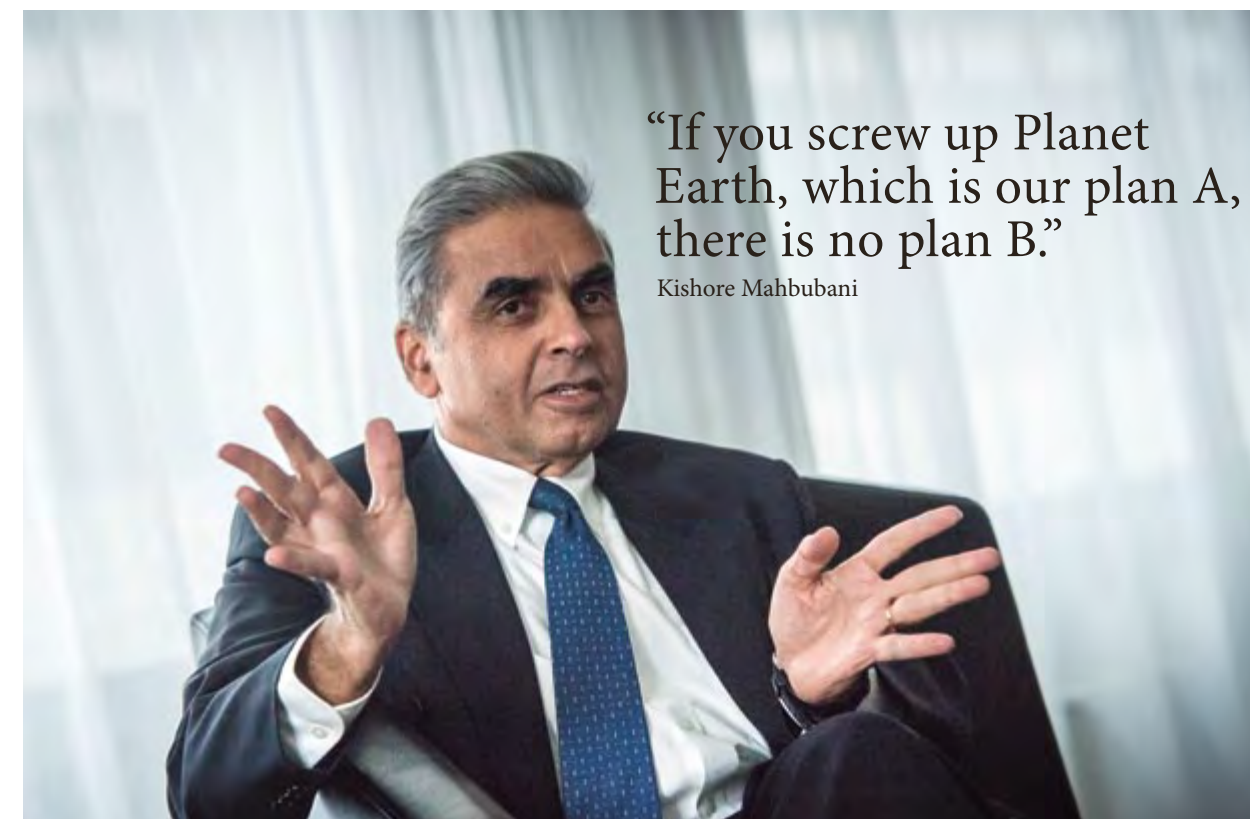
Mahbubani: We are all educated, informed people. There is a growing recognition that the human species is screwing up the planet. If you screw up Planet Earth, which is our plan A, there is no plan B. I used the symbol of a boat when I spoke this morning. I said that the seven billion people in the world no longer live in separate boats. We live in separate cabins on the same boat. The problem is that you have captains and crews taking care of each cabin, but no captain and crew taking care of the global boat as a whole. That's why we need to focus on getting and strengthening institutions of global governance. We only have one planet. Take dengue fever. Dengue, as you know, was always an issue in the tropics. With global warming, the mosquitoes are going north. Apparently, they've found some mosquitoes and dengue fever in the south of France. So, global warming brought dengue to France.

Rietschel: It's also in the Rhine Valley.

Curry: Let's come back to regulation and this idea of harmonizing international rules. Is the WHO too weak to regulate or command the respect of major pharmaceutical companies and other drivers of innovation? Is the WHO strong enough to lead the conversation on global health?

Rietschel: It depends on the rules you give it.

Mahbubani: That's right. You made a very important point when you said that the WHO is weak. Sadly, it has been western policy to keep these multinational institutions like WHO weak. This is an established fact. You can change your mindset and say, "Hey, we want to have a stronger WHO." Once you start applying the principles of meritocracy and giving WHO extra funding, you get a very different organization, a much more robust, dynamic organization. It's not rocket science to try and strengthen international organizations. It's now in the interest of everyone. So why were these organizations designed to be weak rather than be strong?



“If you screw up Planet Earth, which is our plan A, there is no plan B.”

Kishore Mahbubani

► Kishore Mahbubani brought up the question of whether global health can benefit from new technology.



“We have been victims of our own success.”

Jeannette Vega

► Jeannette Vega asks why there is so little movement on treatments for neglected diseases like malaria and Chagas disease.

Rietschel: Look at the European Parliament. It's the same.

Mahbubani: Perhaps first the pharmaceutical companies and medical device manufacturers have to change their mindset. I mean, the traditional preference of major companies is to have weak regulatory authorities.

Rietschel: What I fear is that industry retracts more and more from tackling major problems like antibiotic resistance because of these regulations. It's popular to beat on industry and blame them and have the feeling that the regulatory agencies are the protectors of the people. I think that may be dangerous.

Vega: But, let's be realistic here as well. There is a reason for that. It's not like people suddenly said, "Okay, these are the bad guys." Take for example vaccines for neglected diseases. Why haven't those been invented yet? Because basically those are not competitive in terms of profits, right? That's not the role of industry. The role of industry is to make profits and have good products. If I'm a regulatory agency, I know that the main role of the person in front of me is to be accountable to their board in terms of profits. If I'm representing the public sector, my main function is to protect the health of the population.

Curry: *Is that putting too much on pharma? They're for-profit entities, after all. Don't governments have a responsibility to put the money up for public health problems?*

Mahbubani: I would say that my advice to big pharma is to be very careful. Just watch what's happened to big banks and how quickly public trust in them has just evaporated. Clearly, overall, big pharma today has a positive reputation—most people feel that they can trust the companies and believe their products will be good for them. I smell something in the air that suggests there's a kind of a creeping distrust. It is in the interest of the industry to take preemptive action against any erosion of trust.

Vega: There is a perception that the main motivation of industry is profit. If industry is ready to invest in things not necessarily profitable, then that might be a different story.

Rietschel: In the end, governments would need industry anyway. I see an increasing willingness of society and governments to admit that. What I would criticize is that industry waits until science has come so far that they see this is a good time to get involved. It's a cherry-picking issue. And sometimes it never happens—take antibiotic resistance. No one's developing new antibiotic pathways, and things like multi-drug-resistant tuberculosis will soon be a big problem, because there are no vaccines for it like in malaria.

Mahbubani: We all agree that companies have to be accountable to their shareholders and to their boards. They're not meant to be charitable organizations. Frankly, at the end of the day, governments have to step in whenever there is a gap in the provision of public goods.

Rietschel: Lots of governments do. It's not a matter of generation of knowledge. We have good, publicly funded universities and fantastic research institutions, but the translation of basic science into medicine doesn't work. I think the main issue is translation.

Curry: *What about third parties—like the Gates Foundation, which plays a huge role in funding research into malaria and other neglected diseases? What's the role of this new class of philanthropists in this debate?*

Mahbubani: Frankly, unfortunately, Bill Gates is one individual deciding where large pools of money should go. That's wrong and distorting. Don't assume that just because he has a billion dollars and he can decide what to do means that at the end of the day he's delivering what the people on the ground want. The people may want something else.

Curry: *But hasn't Gates brought a higher standard of quantification—more focus on results—to this field?*

Vega: I've been in this field for 30 years, and I've worked at the global level. I've worked at the country level. I've worked all over the world, including Africa, Latin America, and Asia. And I've seen what happened in Africa, where health systems have been dismantled because people that are supposed to be in charge are running to different meetings because they need to subsidize their salaries, and some of the donors—I'm not saying which ones—are basically distorting the whole configuration of the system because of their specific interests.

Mahbubani: One of the results of the big financial crisis is that the private sector overall has come under a lot more scrutiny. I think that is the new reality I was pointing to. As someone whose job is to smell global trends, I'm actually quite struck by the new level of aggressive questioning of private corporations. If I was big pharma, I'd say, "Okay, this is a new, more difficult environment. What do I have to do to reactivate the trust?"

Vega: Having said that, though, I do think that in this configuration of the world, it is just impossible to work without taking into account the diverse actors. It's just impossible. So, the question is, "How do you configure the different interests to maintain the health of the people?"



► **Kishore Mahbubani** (left) and **Ernst Rietschel** discuss the role of industry in solving the world's pressing health problems.

Rietschel: Is the World Health Summit a place where we can think of other, new, better solutions?

Mahbubani: Given all these competing interests and so on, one key player is still the World Health Organization. We need to find ways and means of strengthening the WHO and making it more credible. We will all benefit if that happens.

Curry: *What's more likely to get us there, more education or a horrible global crisis?*

Rietschel: These big decisions are all emotional. It's not so much intellectual. There are lots of problems we know about and still have trouble addressing: dementia, diabetes, and other chronic conditions. Cholera is immediate, avian flu is acute. I think something like that will change people's attitudes.

Mahbubani: That's true. How many people were killed by the [Spanish] flu during WWI? 20 million? You may need some big crisis like that to change people's attitudes.

Rietschel: So perhaps we need such a crisis as an eye-opener.

Curry: *It's interesting to me that you talk about stakeholders of a company, but government is sort of abstract. Aren't the people of Chile, say, effectively the stakeholders in their government?*

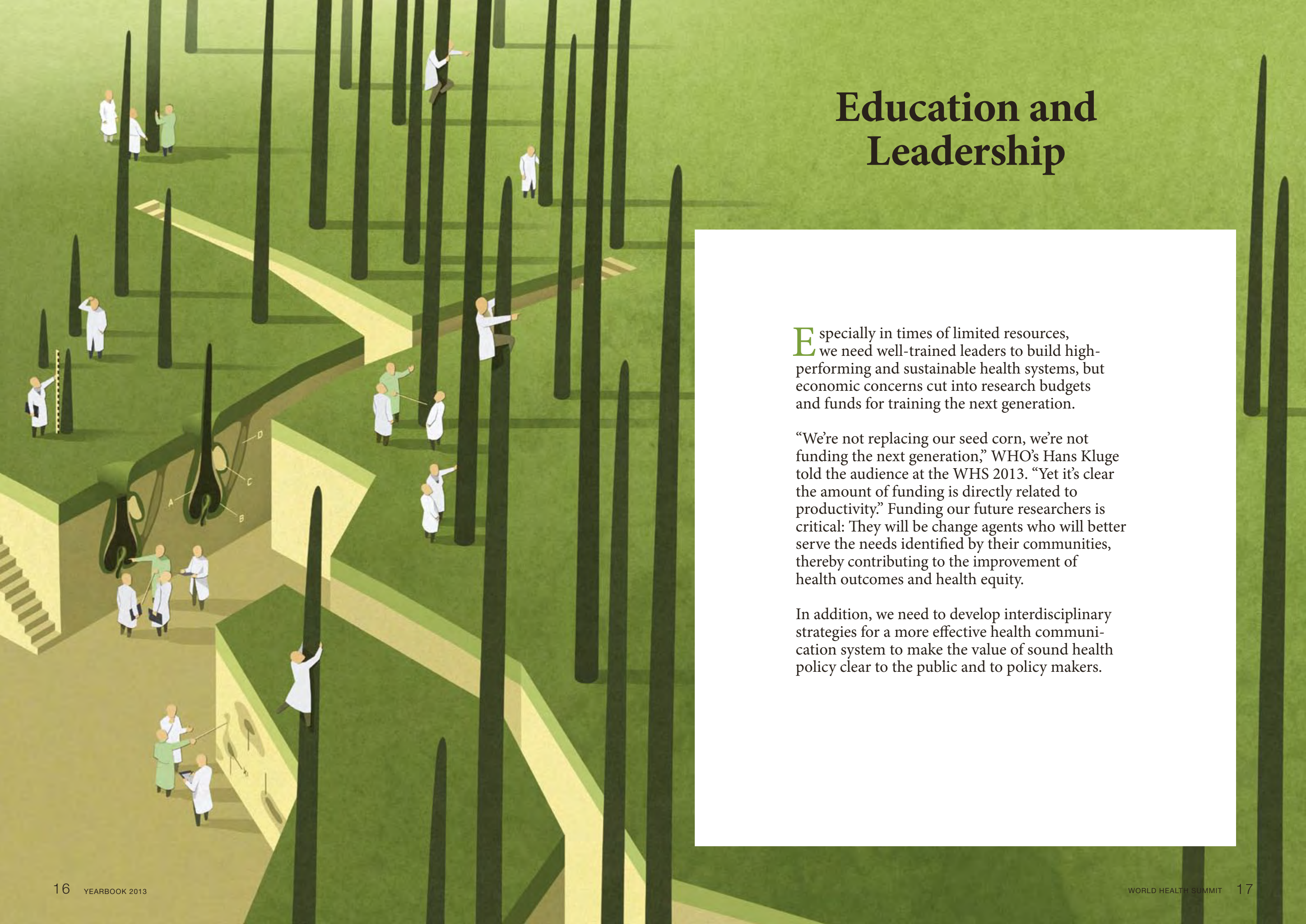
Vega: Absolutely. When I say government, I assume that government is the democratically elected representatives of the people.

Curry: *If that's true, then basically the "stakeholders"—the citizens—are saying: "This is not a priority for us, either." If the stakeholders said, "We want to pay more taxes to fix this ..."*

Vega: Exactly. When you say "government," the connection that governments are all of us, is usually not there. And then you see that in the countries that have more protections for their citizens, people pay more taxes, and are able to do more.

Curry: *That seems like a good note to end on. I've learned a lot, and it sounds like there's still lots to discuss at the World Health Summit. Thank you all for the great talk.* ●

Photographer Florian Büttner | Moderator Andrew Curry



Education and Leadership

Especially in times of limited resources, we need well-trained leaders to build high-performing and sustainable health systems, but economic concerns cut into research budgets and funds for training the next generation.

“We’re not replacing our seed corn, we’re not funding the next generation,” WHO’s Hans Kluge told the audience at the WHS 2013. “Yet it’s clear the amount of funding is directly related to productivity.” Funding our future researchers is critical: They will be change agents who will better serve the needs identified by their communities, thereby contributing to the improvement of health outcomes and health equity.

In addition, we need to develop interdisciplinary strategies for a more effective health communication system to make the value of sound health policy clear to the public and to policy makers.

EDUCATING A NEW GENERATION OF PHYSICIANS WITH AWARENESS FOR GLOBAL HEALTH AND SOCIAL RESPONSIBILITY

Written by Annette Grüters-Kieslich

During the last decades, medical education has experienced major changes. In the US, a major change in medical education with an unstructured curriculum followed the 1910 report of Abraham Flexner, which advocated that the training of physicians should be practiced in a scientific manner and should include a faculty active in research. Abraham Flexner had studied in Europe and had experienced an extensive specialized university education there. Following the report's recommendation, all medical schools should become part of a university and full clinical professors should be appointed. The idea of these appointments was to have "true university teachers, barred from all but charity practice, in the interest of teaching." The major recommendations of the report included at least four to six years of university education and a solid basis of the curriculum in scientific research. Furthermore, the report stated that "intellectual inquiry, not job training, is the purpose of medical education and that "the imposition of rigid standards by accrediting groups was making the medical curriculum a monstrosity," with medical students moving through it with "little time to stop, read, work or think."

In the following hundred years most medical schools in the industrialized countries have been implementing and following these recommendations. But science, society, and medical practice have undergone unprecedented changes, with globalization imposing additional challenges for medical education.

Today, a scientific basis for all physicians and academic training of the health workforce is mandatory, as without a thorough understanding of the basic principles of biochemistry, physiology, genetics, development and evolution, a comprehension of the rapidly growing and changing knowledge underlying evidence-based medical practice is not possible. At the same time, students have to learn to translate this knowledge to medical practice. Divided curricula for basic science and clinical medicine proved inefficient to integrate the contents, and thus are leading to a growing frustration

among medical students. Due to a growing demand to change the physician-patient relationship from directive and instructive to a partnership characterized by participation and counseling, communication skills have become a likewise important prerequisite for the physicians of tomorrow.

Moreover, no single physician can bear responsibility for the complex nature of diagnosing and treating diseases. Therefore, working in multidisciplinary teams is already daily practice, although a culture of teamwork and shared responsibilities is still lacking due to hierarchical structures in medical practice. Teamwork strategies have yet to become an integral part of medical curricula.

Regarding the content, a change from organ- and disease-centered teaching to a more holistic approach is necessary. Today we know that disturbed mechanisms and molecular pathways can result in different diseases, while diseases that by their clinical presentation are regarded to be the result of the same pathomechanism have a variety of molecular causes. Environmental changes and impacts have become an urgent topic for medical education, including the concept of epigenetics and gene-environment interaction. Therefore a concept of at least a more individualized medicine has to be included in the curricula.

Accordingly, some medical schools have made big efforts to reform their medical curricula. The Charité started to implement a reformed curriculum in 2000 for a subset of medical students. Since 2010 all students (600/year) are enrolled into the new reformed curriculum, addressing the mentioned and so far unmet needs for the next generations of physicians.

In the new curriculum, a patient-centered approach includes the integration of patient-based learning and basic science training throughout the six-year curriculum, including training in communication skills and teamwork. Three science modules are explicitly dedicated to understanding scientific approaches and giving hands-on insight into research for all students—not only for those pursuing a MD/PhD career. This should lead to an increased interest in research and a more thorough ability to understand and criticize trials and studies.

To meet the need for a more holistic approach, the teaching modules are not disease- or organ-oriented but cover topics that enable students to develop a new way of thinking that will also guide their lifelong learning process. For example, in the third year of training topics include neoplasia as a disease model, inflammation as a disease model, and degeneration as a disease model in order to understand the mechanisms underlying different types of diseases and disorders.

Although these are already major changes to the medical curricula, leading to major efforts for the faculties, more challenges are ahead. In times of increasing globalization, diseases do not respect borders, and changes of lifestyle and nutrition result in huge changes to the disease spectrum of NCDs in developing countries. Moreover, knowledge about different health care systems and their respective economic implications is still almost completely absent and thus restricting the mobility of the health workforce beyond language barriers. These issues have to be included in modern medical curricula, as do special teaching modules on indigenous and refugee health and health care for patients with a migration background. The physicians of tomorrow have to be prepared for ever-growing demand in these fields.

Returning to the quotes from the Flexner report: Have we successfully preserved university training in our medical schools? Are the teachers, especially the clinicians, but also the basic scientists, "barred from all but charity practice, in the interest of teaching?" The economic pressure on professors and physicians in university medicine has increased tremendously. Health care providers, running the hospitals, focus on profit margins to enable investments and to meet the expectations of shareholders. Even state- or foundation-owned university hospitals have to struggle in this competition. In times of financial and economic constraints, with competition for research grants intensified, taking time and effort with teaching is ultimately regarded as a burden. What is the solution? Is it the creation of lecturer positions concentrating on teaching? How can teaching be instructive and inspiring when it

is not grounded in an individual practical experience of research and clinical application?

For the educational staff of university medicine, a career path is lacking and has to be developed, and—most importantly—granted competitively. Then what about the students? There is still "little time to stop, read, work or think," because even the reformed curricula are packed to prepare for the challenges of today's and tomorrow's medicine. The students are not able to study a broader spectrum of topics, such as philosophy, social science, economics, or politics, though this would be necessary to understand the necessities for health in a globalized world. The only solution is a focus on teaching how to learn, using the resources of internet based information (e.g. MOOC) in order to allow an early differentiation and focus on individual skills and interests.

Although education is not essentially a major focus of the World Health Summit, the mission of the M8 Alliance is to create curricula for tomorrow's medicine for medical schools, including the exchange of students and faculties. Schools of public health as well as medical schools have to include the above-mentioned topics. The distinction made between medical schools and public health is detrimental, and more synergy has to be created to meet the goal of having medical schools that not only strive for excellence in research but also for social responsibility in a globalized world. ●



Prof. Annette Grüters-Kieslich

Dean, Charité – Universitätsmedizin Berlin

MASSIVE OPEN ONLINE COURSE (MOOC) VIRCHOW-VILLERMÉ

MOOC Virchow-Villermé is a joint project from Sorbonne Paris Cité and Charité – Universitätsmedizin Berlin.

Written by Antoine Flahault

In recent years Massive Open Online Course (MOOC) initiatives have emerged in higher education, providing a revolutionary new educational model and challenging existing universities. Emerging middle- and low-income countries are facing massive needs in competency acquisition, and higher education is becoming unaffordable for many students, including local students, as well as for those coming from abroad.

The MOOC Virchow-Villermé project will train public health human resources to provide the human and professional infrastructure it needs to meet the challenges of global health, and the new post-2015 Sustainable Development Goals now in preparation stages. MOOC Virchow-Villermé will allow for similar technologies and performance metrics as most recent MOOCs, in addition to highly intensive distance learning programs. It will ensure a high quality level of education embedded with appropriate localized customization (e.g. various languages), according to local and global needs in acquiring public health competencies. MOOC Virchow-Villermé is a joint project from Sorbonne Paris Cité and Charité – Universitätsmedizin Berlin which intends to be as inclusive as possible, with academic institutions from northern and southern countries expressing willingness to participate.

Why MOOCs May Take the Place of Tomorrow's Universities

How long has it been since you took your last university course? It may have been a while, since college is often synonymous with the golden years of our youth. It may be never, since university degrees are often synonymous with high social status, high-income countries, and the high level of your parents' education. Tomorrow, universities will be widely accessible from your home or your office, wherever you may live on earth, whatever your inherited status from your family is, whatever your social status may be, and whenever you may wish to embrace higher education as your first training program, or as continuing education,

offering opportunities for personal advancement and improved salary prospects.

In highly developed countries, social disparities and inequities regarding education have dramatically declined during recent decades, allowing a major part of a generation to enter into universities. However, a significant portion of the population does not reach higher education, particularly among the poorest segment of society. The higher your parents are located on the social ladder, the more likely you will be to succeed at higher education. Education is linked with employment, housing, income, and health.

In middle- and low-income countries, where needs—particularly in the field of public health—are huge and increasing, social disparities regarding education are even deeper. With a world population reaching 9 billion by the middle of the 21st century, it is more urgent than ever to develop new potential for providing large open mass access to higher education for the largest part of the global population, and in particular, to the most deprived countries.

Existing MOOCs Are Not Enough: MOOC Virchow-Villermé Is Needed!

MOOCs are quite recent initiatives, dedicated to providing free access to distance learning courses on a massive level, meaning that tens of thousands of students may take simultaneous online courses, their corresponding exams, and can become certified from top world class universities.

The MOOC Virchow-Villermé project intends to combine potential for massive online education with highly intensive distance learning programs based in local participating academic centers. MOOCs provide excellent supplementary courses to those already living in higher education areas. However, in many areas of the world, innovative approaches are needed in addition to existing MOOCs. “You can’t lose weight by watching exercise videos,” said Udacity CEO, Sebastian Thrun. The MOOC Virchow-Villermé project will provide a platform which will enrich the potential for interaction by allowing highly intensive distance learning and face-to-face supervision in addition to a more classic MOOC platform.

Existing MOOCs currently provide courses in various academic disciplines. However, these disciplines are mixed together, with high risk of losing relevance and sometimes expertise, at least for the field of public health. It may be acceptable to provide a technical course in a large case mix

of disciplines, even in public health, for instance in biostatistics. But without clear willingness, expertise and leadership in developing each academic field, classic existing MOOCs can only provide additional training. Programs that take into account the demands of the public health workforce have to be developed. Core public health competencies have to be communicated. Local needs have to be considered as well, with regard to language, culture, health care systems, and societies. MOOC Virchow-Villermé provides a more customized course, with relevance to local needs and demands in public health.

A deep and unique knowledge of the academic discipline, as well as existing public health networks in Europe, the USA, Africa, Latin America, and Asia Pacific will allow promoters of MOOC Virchow-Villermé to consult and associate with experienced academic and applied public health professionals and institutions. This initiative will then provide education programs much closer to actual needs for field competencies and skills. It is highly unlikely that most case studies, e.g. in health care systems, will fit to Burkina Faso or Vietnam as well as France.

Translation in Various Languages

All courses delivered on MOOC Virchow-Villermé will be translated into English, German, and French. Translation will be proposed as optional subtitles, for audio, video or multimedia materials, and translated slides. Most reports, papers, and written documents—when exceeding two pages—will at least be delivered in English. In case the partner academic institution does not deliver the course with its translations, a translation cost will be charged to it according to predefined rules and fees. Other languages will be welcome, at the charge of the academic partner institution, or if specifically requested by MOOC Virchow-Villermé, at its own charge. Crowd funding for translation will be also tried.

Partner Academic Institutions

Partner academic institutions will be—after formal acceptance by MOOC Virchow-Villermé, and on the basis of a recommendation from the International Advisory Board—any nationally accredited academic institution candidate to delivering courses for bachelor, master degrees, and doctoral degrees in public health, health administration, epidemiology, biostatistics, or other various fields of public health.

Partner academic institutions may come from anywhere in the world. There will be a transparent process for applying. At any time the partner will be able to withdraw its partnership from MOOC Virchow-Villermé, providing the last student enrolled in a delivered program has ended his or her paid curriculum.

Partner institutions will sign a contract with MOOC Virchow-Villermé or its legal representatives. The convention will specify the requirements requested prior to the authorization of delivering a course on the platform, whatever the format (classic MOOC or highly intensive distance learning), and will detail financial issues, credit and intellectual properties, potential for conflicts of interest, and other relevant matters.

MOOC Virchow-Villermé may provide (for a specified fee) partner academic institutions with all required technical assistance for implementing courses on the platform, whatever the format may be.

Governance

MOOC Virchow-Villermé is a joint project owned by Sorbonne Paris Cité and Charité – Universitätsmedizin Berlin, which will run the Board of Governors of MOOC Virchow-Villermé. Two project leaders will be appointed, one from Paris, and one from Berlin, for a renewable four year term, acting as co-chairs of MOOC Virchow-Villermé.

The International Advisory Board will discuss and propose to the Board of Governors rules for functioning and participating, including ethical issues, conflicts of interest, confidentiality protection, quality assurance, financial issues, languages, and cultures. ●



Prof. Antoine Flahault
Co-Director, Centre Virchow-Villermé for Public Health, Paris and Berlin

TRANSFORMING MEDICAL EDUCATION AND BIOMEDICAL RESEARCH IN SUB-SAHARAN AFRICA

Written by Roger I. Glass

One of the key challenges in advancing the global health agenda is the chronic shortage of well-qualified health care workers in the places they are needed most. This is especially troublesome in Africa, which bears 24 % of the global disease burden, yet has only 3 % of the world's health workforce. Across Sub-Saharan Africa, there are only 18 physicians for every 100,000 residents. Most health care providers are concentrated in urban centers, while most of the population lives in neglected rural areas. To make matters worse, more than one-quarter of African-born physicians migrate to high-income countries within five years of completing their training.

It has been gratifying and exciting to be part of a concerted effort to change that dismal picture. For the past few years, the US government has been directly funding African institutions in a dozen countries to help them transform their medical education, increase the quality and quantity of their graduates, harness new technologies and teaching tools, and strengthen the breadth and depth of curricula offered. Through the Medical Education Partnership Initiative (MEPI), we are building a network that has grown to encompass one-fourth of Africa's medical schools. Participants are learning from each other, sharing best practices, and leveraging resources.

MEPI, funded by the US President's Emergency Plan for AIDS Relief (PEPFAR) and the National Institutes of Health, is co-administered by the Fogarty International Center and the Health Resources and Services Administration. The MEPI awards, announced in October 2010, are investing about \$130 million USD over their five-year period. Grantees are required to collaborate with their national ministries of health, education, and finance to ensure goals are aligned with country priorities, and to sustain progress over time.

Already we can see that this program is fundamentally changing the way African institutions approach medical education. In addition to ramping up faculty recruitment and increasing student capacity, the sites are expanding their use of information communication technologies in new and exciting ways. For instance, some sites are loading medical libraries on to tablet computers, so each student can have better access to more current information. Others are recording lectures and skills demonstrations and making

them widely available across the network, especially useful for students training in rural clinics. Many participants are also making use of teaching tools available on the web through Massive Open Online Courses, or MOOCs.

Because the need for health care workers is greatest outside urban areas, MEPI grantees are not only improving internet access at these sites to enable e-learning, but are also posting mentors there. This is not only helping ensure the quality of training, but is also providing the opportunity to engage local physicians and other health care workers in the activities, increasing enthusiasm for rural practice.

In addition to strengthening teaching methods, we have also directed MEPI funding to expand the subject matter included. Because of its high burden of infectious diseases, sub-Saharan has focused its medical training on that area. However, MEPI is supporting curricula development in other critical health fields, such as emergency medicine, mental health, surgery, cardiology, cancer, and maternal and child health. It is our hope to build on the HIV/AIDS infrastructure to increase Africa's capacity to prevent, diagnose, and treat the rising tide of chronic illnesses sweeping the region.

MEPI is not cast in the old colonial model but, instead, each MEPI grantee is paired with a mentor institution in a developed country—to provide advice and share best practices. The projects are locally driven, based on the needs and priorities identified by the grantees, in consultation with their government's health ministry, civil society, and other stakeholders. The high-income country collaborators work side-by-side, learning as much as they teach. There is value in the lessons learned in low- and middle-income countries because cost-effective solutions tested there can be applied everywhere. This phenomenon of "reverse innovation" has the potential to increase efficiencies and improve care for us all.

Finally, some MEPI funds have been allocated to engage faculty in research, which will not only improve retention but also catalyze scientific discoveries and improve the quality of patient care. Since MEPI began, members of the network have successfully competed for more than 100 different NIH grants—a clear demonstration of the quality of the research capacity that has been developed. While these were not directly linked to MEPI, they do demonstrate that these centers have developed the ability to handle ethical review, manage finances, and be successful in grant writing and partnerships.

While we're proud of what's been accomplished so far, we are also looking for ways to solidify the progress made and develop a strategy to sustain the momentum. We're encouraged to see the level of engagement by country ministries of health, education, and finance—both in terms of coordination of country priorities—but also through financial support.

As the MEPI sites near the end of their funding period, this a critical time to solidify gains, sustain progress, build on accomplishments, and plan for the future. MEPI participants have identified opportunities where funding support and greater interaction with academic institutions in the north could accelerate advances for cures and strategies for disease prevention.

In addition, NIH is supporting genomic studies and related infrastructure and training in the region through its Human Heredity and Health in Africa (H3Africa) program, a partnership with the Wellcome Trust and others. H3Africa aims to improve the health of Africans via studies of genomics and environmental causes of common diseases. The program is developing expertise among African scientists, fostering increased collaboration among them, enhancing the infrastructure for genomics research, and training African researchers in contemporary genomic approaches to key health problems. The initiative has already awarded \$38 million USD, with more in the pipeline.

Through MEPI and H3Africa, we are developing a solid framework that should make it conducive for other partners to form additional productive research and training collaborations in the region. As these networks mature, they provide a unique opportunity for new investors with an interest in the region.

The groundwork has been laid, and it is ripe for expansion. It is in our collective best interest to ensure Africa can develop the necessary capacity to be responsible for its own health care and reduce its dependence on foreign aid. After all, improved health in the region would spur productivity and economic development, as well as promote peace and security. ●



Dr. Roger I. Glass, M.D., Ph.D.

Director, Fogarty
International Center

► **Fogarty/NIH info on MEPI:**
www.fic.nih.gov/Programs/Pages/medical-education-africa.aspx
► **MEPI website:**
<http://mepinetwork.org/>
► **H3Africa website:**
<http://h3africa.org/>

INTERNATIONAL COOPERATION OF PUBLIC HEALTH SCHOOLS

Written by John McNeil

The place of public health is in the ascendancy in many of the world's universities. They are typically the focus for research and teaching about health promotion and disease prevention. In addition they often take a leading role in addressing other major agendas of health such as maintaining a healthy environment, addressing social inequality, encouraging behavior change and improving the effectiveness of health care. In most universities they are home to academics with an interest in health policy and health advocacy.

Despite their apparently common agenda the major schools of public health differ greatly in such matters as their areas of academic strength and their relationships with medical schools, government departments and non-government organizations. The relationship with other parts of a medical faculty is particularly variable. In some universities schools of public health are closely integrated with clinical departments because of a belief all clinicians should be able to use their knowledge to prevent disease as well as cure it. In many other parts of the world the schools prefer a more distant relationship, considering that population health requires a different mindset to one-on-one clinical practice. The heterogeneity has created some fragmentation within the academic public health community that has sometimes impeded efforts at collaboration.

Regardless of the differences, research in most areas of public health is increasingly underpinned by access to large data-sets and this in turn is transforming schools of public health into centers of expertise in epidemiology, social sciences, biostatistics, demography, modeling, data-management and health economics. These skills are in short supply internationally and yet are increasingly in demand as more and more data is collected and the evidence derived from such data is used to underpin policy decisions. The skills are increasingly underpinning clinical research and health services research as well as public health research. Thus in many parts of the world schools of public health are developing a key role in supporting the whole spectrum of applied sciences and becoming a highly valued academic resource.

Schools of public health are increasingly the custodians of the large data-platforms derived from cohort studies,

registries, bio-repositories and clinical trials. In many cases these collections have been established at great expense and duplication in other countries would be wasteful and inappropriate. An example is the Framingham data that has been assembled in the US since the early 1950s. Strategies to allow the sharing of data from these 'platforms' is of increasing relevance to public health researchers. With considerable foresight the NIH has recently required that all such data funded by that organization will become publicly accessible within 12 months of the publication of key results. As more of these unique data resources become available to researchers in other countries it is likely to increase opportunities for collaboration but also increase the need for better governance of these resources and greater clarity in matters such as data-access and publication rights.

These trends will increasingly drive interaction and collaboration, not only among schools of public health but between the schools and other health related institutions. In the first place many of the technical skills described above are in very short supply. In most cases they are taught effectively only at post-graduate level and frequently require further on-the-job training at centers of excellence before one becomes "judgment safe." Another strong driver to collaboration will be the increasing need for large-scale projects to be funded and carried to completion in a "consortium" of countries. For example large scale intervention studies may now require budgets of many millions of dollars and this cost will increasingly need to be shared. Finally public health schools will increasingly need to be aware of advances in biomedical sciences across the world, particularly in the development of new biomarkers for predicting disease or providing new possibilities for disease screening.

The shortage of "public health" skills is a particularly urgent matter to address with even the most advanced countries struggling to find sufficient expertise in many of these areas. At the same time fewer postgraduates (especially in developing countries) have the luxury of being able to spend years abroad studying. New innovations in teaching such as the "block and web CT model" may assist by allowing students to concentrate lectures into a one or two week "block," then return home to study the remainder of a unit through the web. More efficient approaches to teaching the core units of public health may allow more training funds to be allocated to the practical training needed to achieve competence as a public health practitioner or researcher.

Over the years a number of attempts have been made to bring together schools of public health into regional associations. An example is APACPH (the Asia-Pacific Academic Consortium for Public Health) which has achieved substantial success in bringing together schools of public health of countries around the Pacific Rim. The association is about to conduct its 46th annual meeting and publishes its own journal. However the great variety of interests among the different schools and their involvement in a range of other specialty groups has sometimes made it difficult to find common interests. It may be time to re-examine what features the schools now hold in common and what common interests could be served by promoting greater international interaction.

M8 may be able to assist and promote collaboration in several ways. These include:

1. Promoting greater awareness of the skills, platforms, capabilities and training opportunities that are available in the different member institutions
2. Developing protocols and governance processes to facilitate sharing of data and bio-specimens across borders
3. Helping to broker collaboration to undertake major projects (particularly intervention research) that are beyond the budget of many single countries

It has been said that the basis of most collaborative ventures is underpinned by friendship, money or mutual self-interest. The imperative of redressing the skills shortage, and the need to collaborate on large projects can certainly provide self-interest. The M8 Alliance has been very successful in promoting friendship. The remaining goal is to find the resources. ●



Prof. John McNeil

Head, School of Public Health and Preventive Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne

8 Experts / 8 Statements

What are the most important lessons future health professionals need to learn to solve the most pressing global health problems?

01



Dr. Jo Ivey Bouffard

President, The New York Academy of Medicine | Immediate Past-Co-Chair, IAMP

Global health challenges are increasingly the same across countries regardless of the region of the world or level of income. The other shared challenge of global health is health disparities—the fact that some parts of even the richest country have poorer health status than others, just as some countries, usually the poorer ones, suffer greater health disparities. The educational preparation in your chosen profession is only the beginning of your preparation to work on global health. The availability of high quality health care requires an interdisciplinary team approach across the health professions. But progress on “health” involves working with other professionals in the areas of environment, education, housing, transportation and urban planning and with political and policy leaders to create healthy communities. These communities may exist in countries with different languages, cultures and customs than your own, and you must respect these and create partnerships with local leaders to support efforts to act on local health priorities.

02



Prof. Michael J. Klag

Dean, Johns Hopkins School of Public Health, Baltimore

To solve the most pressing problems of global health, future health professionals need to understand the determinants of health outside of the clinical encounter—access to economic and social opportunity, education and a reasonable measure of autonomy. They will need to know how to measure population burden of disease, understand and perhaps design population-based interventions, and be equally comfortable with prevention as with curative medicine.

TRANSFORMING HEALTH PROFESSIONS EDUCATION

One of the key challenges in advancing the global health agenda is the chronic shortage of qualified health care workers in the places they are needed most. Across much of Sub-Saharan Africa, for example, there are only 13 physicians for every 100,000 residents.

13
physicians

100,000
residents

PUBLIC HEALTH APPROACHES TO PREVENTING VIOLENCE

“Cure Violence” approaches violence as a contagious disease. It has been credited with a 67 % drop in shootings and killings in particularly hard-hit American neighborhoods.

80%

of NCD deaths happen in developing countries. People there also tend to die earlier from these diseases than is the case in high-income countries.

PHYSICAL ACTIVITY FOR HEALTH

3.2 MILLION

people die each year due to physical inactivity.

Inadequate physical activity is the fourth leading risk factor for global mortality.

People who are insufficiently physically active have a 20 % to 30 % increased risk of all-cause mortality.

44%

About 44% of all non-communicable disease deaths take place before the age of 70. Approximately one third of cancers and up to 80 % of heart disease, stroke and type 2 diabetes deaths are preventable.

PREVENTABLE NCD DEATHS

NCD IN LOW- AND MIDDLE-INCOME COUNTRIES



Report from Singapore WHS Regional Meeting—Asia

Asia is perhaps the world's most dynamic continent right now. Its thriving economies present new growth opportunities and rising affluence, but even some of the continent's biggest players are facing long-term complications, like aging populations. By 2050, the United Nations expects Asia's population of people over 60 to grow beyond 100 million.

The challenge facing governments and health care providers is to do more with less and produce better outcome at lower cost. "Health care is one of the most cost-effective investments a country can make," as Dr. Shin Young-Soo (WHO Regional Director for the Western Pacific) said at the World Health Summit's first regional meeting outside of Berlin, held in Singapore in a nod to the region's central role in the health policy sphere. Participants were able to discuss and exchange ideas on current issues of medical research, innovation and health systems and find solutions for health challenges in Asia and the world.

From April 8–10, 2013, the inaugural World Health Summit Regional Meeting—Asia (WHSRMA), gathered 800 participants at the Ritz-Carlton, Millenia Singapore. Leading professionals from diverse fields were united by their interest in improving health care and health systems in Asia and across the world. The meeting was supported by the Ministry of Health, Singapore, and jointly hosted by the National University of Singapore (NUS), MOH Holdings (MOHH) and the M8 Alliance.

"I am struck by the diversity of participants at this meeting. We have representatives from Asia, Africa, the Americas and Europe—nearly every continent. There are academics, doctors, public health officials, CEOs, and journalists among us. Our jobs range from delivering basic primary care in rural areas to developing cutting-edge, personalized medicine," Singaporean Prime Minister Lee Hsien Loong told the audience in his keynote address. "Despite our diverse backgrounds, we all agree that health is the foundation of

human and social well-being. Healthy people are happy individuals, productive workers and engaged citizens. A healthy population underpins economic growth and social progress. That is why almost half of the Millennium Development Goals are directly related to health."

The meeting's themes ranged far and wide. One of the most pressing issues, author and journalist Laurie Garrett reminded participants, was the growing threat of global disease outbreaks facilitated by the ease of travel. Improving communication between national health organizations and continued research into the issue remain vital. "Tremendous improvements in both technical and political aspects of outbreak transparency and management have been made, but the microbes are not in retreat," Garrett said. "Backing off from vigilance or political/economic support will have serious repercussions."

Others took the opportunity to remind the audience that lifespan extension was a simplistic way to look



▶ **Lee Hsien Loong**
Prime Minister of Singapore

at the problem of health today. "We, as health care providers, can provide science, technology and delivery systems," said Prof. Peter Piot, director of the London School of Hygiene and Tropical Medicine. "But it is only when these are in sync with politics and empowerment that we will collectively be able to provide life to our years, and not only years to our lives."

Throughout the sessions, a recurring theme was the responsibility of the global academic community to facilitate communication and awareness by making the problems and predicaments of certain groups better understood. "There is a need to harness the great resources of the academic community for this purposeful global objective of sustainable development," said Richard Horton, Editor in Chief of *The Lancet*.

Some speakers argued that government had a role in shaping and promoting behaviors that would lead to better public health outcomes. "In the context of chronic disease it becomes abundantly clear that today's behaviors are tomorrow's risk factors, and today's risk factors are tomorrow's diseases," said Prof. K. Srinath Reddy, President of the Institute of Public Health of India. Reddy also held up campaigns to ban smoking in the US and Europe as important examples for the developing world: "If we do not take timely public health action we will see a billion deaths attributable to tobacco in this century."

Others emphasized the complexity of the task ahead. "Success in solving complex issues depends predominantly on behavioral and social change. Since social change is complex and unpredictable, resistance and conflict should be expected," said Prof. Klaus Leisinger, Chairman of the Board of Trustees of the Novartis Foundation for Sustainable Development.

Overall the tone was optimistic, and there were many people there to present real-world cases of health policy success. "Thailand is a prime example of how UHC can be started and achieved at a low level of income," said Thailand's Dr. Suwit Wibulpolprasert, who serves as Senior Adviser for Disease Control in the Thai Ministry of Public Health. "With political leadership, creating fiscal spaces and innovative financing for health is possible."

Among the high-ranking participants were **Lee Hsien Loong** (Prime Minister of Singapore), **Gan Kim Yong** (Minister of Health, Singapore), **Srinath Reddy** (President, Institute of Public Health of India), **Laurie Garrett** (Senior Fellow for Global Health, Council on Foreign Relations), **Peter Piot** (Director, London School of Hygiene & Tropical Medicine), **Mary-Claire King** (American Cancer Society Professor, University of Washington School of Medicine), **Suwit Wibulpolprasert** (Senior Adviser, Ministry of Public Health, Thailand) ... and many more.



▶ **Prof. John Eu Li Wong**
World Health Summit President 2013



Singapore
April 8–10, 2013

The theme of the WHSRMA was "Health for Sustainable Development in Asia" and it was structured into four sub-themes:

- › The Impact of Health on Asian Economies
- › Financing Health Care in Asia
- › Innovations in Health in Asia
- › Emerging Health Threats in Asia

After three intense days, the inaugural World Health Summit Regional Meeting—Asia, Singapore, was deemed a success, validating both the concept of expanding the World Health Summit beyond Berlin and the importance of meetings focused on issues of regional importance. "Health is intrinsically linked to the well-being of societies, and maintaining a healthy Asia will be beneficial to all in the region and the world. Yet, today's Asia faces challenges such as rapidly aging populations, climate change, increasing incidence of chronic non-communicable diseases and the recurring threat of global pandemics. Asia's need for affordable and accessible health care also encompasses many challenges that coalesce around the question of financing," Prof. John Eu Li Wong, President of the World Health Summit 2013, said. "Against this backdrop, an Asian meeting of the WHS in 2013 [is] an excellent opportunity for reaching out to health ministers and senior government officials from the region as well as many global health care leaders who will be attending this landmark meeting, thereby allowing us to develop innovative solutions to Asia's current and future health care problems."

The spirit of the inaugural World Health Summit Regional Meeting—Asia, Singapore, will be transferred to São Paulo, where the next Regional Meeting will be held in April 2014 (see pages 72–73 for further details). ●

M8 Alliance Statement from the WHS Regional Meeting— Asia, Singapore

No country can be successful without a healthy population. Health is intimately linked to social well-being, stability, productivity, and economic development. However, health care models are faced with escalating costs and new solutions must be explored. For long-term success and sustainability, political commitment by governments as well as a whole-of-society approach is required.

Asian countries are facing unprecedented health challenges that can impact sustainable development. At the same time, there is evidence that differences in genotypes and their interactions with specific environments can result in differing phenotypes, which affect disease management in different populations. Examples of this include the rapidly rising incidence of diabetes in Asia in people who are not obese, the high incidence of vascular dementia, and the high occurrence of lung cancer in non-smokers. As such, Asia has to do its own research to contextualize health care solutions.

To address these issues, health professionals, academics, civil society, industry, media, and policy makers gathered in Singapore for the first Regional Meeting of the World Health Summit from April 8-10, 2013. The theme for the meeting—“Health for Sustainable Development in Asia”—acknowledges that a healthy population is the basis for development, security, progress, social justice, and economic stability.

In formulating this statement, the underlying values were:

Equity – Access to health care should be equal and fair.

Ethics – Health issues should be addressed in an ethical manner at all levels: policy, research, and patient care.

Social Justice – Health policies should respect the dignity and rights of each human being.

Consensus and Inclusiveness – Health systems should be comprehensive and cover all members of society.

Accountability and Transparency – Health policy makers and health care professionals are accountable to those they serve and should design their activities accordingly.

Responsiveness, Urgency and Adaptability – Health policies should be proactive and keep pace with the fast-changing, globally interconnected world we live in.

Sustainability – Health care innovations in all areas must be sustainable in the long term and not be dependent on unpredictable external support or unfeasible economic models.

Concluding the discussions during the World Health Summit Regional Meeting—Asia, the M8 Alliance issues the following calls to action:

1. The Impact of Health on Asian Economies

Disease affects individual lives as well as the well-being of society. It places a significant burden on economies and the sustainable development of nations. We therefore recommend and reinforce that health and health care considerations form an integral part of government policy.

To ensure sustainable development, strategies to promote and protect health must be prioritized. We call on governmental agencies as well as private and non-profit sectors to play an active role

in a whole-of-society approach to develop and implement strategies which promote health, prevent onset of diseases, and increase the resilience of populations.

The current trend of health care worker migration from less developed to more developed nations is a global phenomenon. We urge governments and international organizations to develop policies to ensure a sustainable health workforce within countries with fragile health systems.

2. Innovations in Health in Asia—a Holistic, Integrated and Out-of-the-Box Approach

Unprecedented advances have been made in life sciences technologies in the past three decades. We encourage the development and careful evaluation of these new technologies in patient and population settings. Rigorous cost-effectiveness and cost-benefit analyses must be performed in the relevant context before implementation.

At the same time, rising health care costs are not sustainable. Innovations in health interventions should be affordable, accessible and beneficial to all, including disadvantaged and vulnerable groups. Frugal innovations, social entrepreneurship, and innovative philanthropy should be promoted and encouraged as ways to make interventions available to all.

Issues surrounding regulatory capacity and lack of harmonization in drugs and device regulation are inhibiting rapid development of needed medicines and devices. We urge governments to strengthen national regulatory capacity and work toward better harmonization of regulatory processes.

Innovations should be based on sound, contextualized evidence. With the support of governments, industry and innovative philanthropy, research networks should be promoted especially for emerging health threats in Asia.

3. Financing Health Care

Health care should be accessible to everyone. We advocate the principles of universal health coverage, which should be regularly reviewed as to whether it is achieving its goals, and whether it is financially sustainable.

Market failures and inequities continue to exist in both availability and access to needed medicines. We urge the private and public sectors to work together to implement innovative financing approaches to make medicines and health care more affordable and accessible to those in greatest need and with the least power to pay.

Health systems are at various stages of development in Asia. Given the impor-

tance of a healthy population, we believe that the more developed nations could help the less developed with technical assistance and strengthening capacity, which would benefit the entire region.

4. Emerging Health Threats in Asia

We note that non-communicable diseases (NCDs), especially cancer, cardiovascular, metabolic, and neurological disease, and mental health conditions are the leading causes of ill health and death in Asia, and will claim the lives of an estimated 52 million people globally by 2030. NCDs are exacerbated by aging populations, changing lifestyles as a result of globalization and urbanization, consumption of unhealthy food and beverages, and the continued and heavy use of tobacco. The accelerated pace of economic development and socio-cultural changes in Asia are also creating unprecedented demands on health systems, especially in caring for the aged.

It is increasingly recognized that maternal and early childhood health and nutrition may be linked to the long-term health of individuals and their predisposition to NCDs. Approximately 195 million children under the age of 5 in developing countries suffer from growth restriction when the mother is undernourished. Investment in maternal and early childhood health and nutrition should be undertaken with the view of improving the long term well-being of nations.

Countries should anticipate the continued and increasing threat of emerging infectious diseases and

antimicrobial resistance. We urge governments to continue surveillance efforts and build response capacity.

We strongly support the World Health Assembly’s call for a 25 % reduction in relative mortality from non-communicable diseases by 2025, also known as the 25 by 25 goal. This will require (1) resources, (2) advocacy, (3) the formation of effective partnerships, and (4) political leadership. This Summit is a significant step forward in turning these strategies into effective actions.



The M8 Alliance of Academic Health Centers, Universities and National Academies is a collaboration of academic institutions of educational and research excellence committed to improving global health, working with political and economic decision makers to develop science-based solutions to health challenges worldwide.
www.worldhealthsummit.org/m8-alliance/members

The WHS Regional Meeting 2013 took place from April 8–10 in Singapore.



Research and Innovation

“Without science, we would be nowhere,” Nobel Prize Laureate and chemist Aaron Ciechanover said at the World Health Summit.

We live in an age of unprecedented technological know-how, but often the fruits of this knowledge fail to make a difference where they're needed most. To change that, cross-sector collaborations between global health, foreign policy programs and new capacity-building initiatives are vital. Policy makers need to improve coordination and increase financing for health research at national and international levels. Collaboration and communication with local and global experts and stakeholders are crucial in order to establish the links between evidence and policy.

Strengthening a country's research capacity isn't just about health: The ripple effects of health research are pivotal to creating a supportive environment for sustainable economic growth.

“IF YOU PUSH EVERYBODY TO DO TRANSLATION, IN THE END, THE SPRING OF KNOWLEDGE WILL DRY OUT.”

Aaron Ciechanover is an Israeli biologist. His research on the degradation of proteins at the cellular level has had major implications for cancer research and the understanding of other non-communicable diseases, from neurological conditions to inflammatory response. Born in 1947, Ciechanover is the son of Polish immigrants who migrated to Israel. He is a professor at the Technion-Israel Institute of Technology. He was awarded the Nobel Prize in Chemistry in 2004. Before his keynote World Health Summit lecture on the implications of personalized medicine, Ciechanover spoke with journalist Andrew Curry about scientists' social responsibility, the right kind of government, and the role of media and corporations in public health.

Andrew Curry: Prof. Ciechanover, what role do scientists and researchers play in shaping public health?

Aaron Ciechanover: If you think about the biggest discoveries of this century in medicine, from vaccinations like the one against polio to the invention of the x-ray and the discovery of antibiotics, it all came from science. Without science, we would have been much further behind. But now comes the problem of implementation of these discoveries, and making them available to the public. Here, there are very complicated issues—mostly the governance of the country—and you need the right governance. The right governance, in my opinion, is secular democracy, which is transparent and incorruptible.

Is that really all it takes? What about the unequal distribution of resources in the world? Don't some countries need more than just good governance to make it?

I don't believe there is a single country in the world that, in the end, cannot succeed. You make it either with natural resources, or you make it with your human resources. Think of small countries like Singapore or Israel. Singapore was a swamp until the 1960s. Israel is still fighting for its life. When you have good human resources and a transparent non-corrupted government that invests in education, you do it on your own.

I don't believe there is a single country in the world that, in the end, cannot succeed.

What responsibility do scientists have to fix the world's problems?

Scientists are scientists. Everybody has a role to play. I don't think scientists should do everything—from the invention, to the discovery, to the development, to the implementation, and then to affect policies. If a country cannot buy an MRI to diagnose diseases of its citizens, then this country should do all it can and seek assistance to purchase an MRI, making it available to the people. But should the scientists that invented MRI be responsible for getting the MRI that they invented all the way to the hospital in their country? I do not think so.

Should scientists be public advocates for their work?

Yes, scientists should raise their voices, especially prominent scientists. These scientists should raise their voices about injustice, unequal division of resources, research that is immoral, the necessity of GM crops, as well as on problems not directly related to science, like human rights—the reason being that scientists are regarded by society as objective, unbiased, and knowledgeable. But at the end of the day, scientists are responsible for their science, which aims to better human lives. Do you want scientists to become the prime ministers, the members of parliament, the generals, the soldiers, and also be in charge of breakthrough discoveries?



There's a scientist in charge of Germany.

There is a scientist in charge of Germany. This is an exception, and Germany is awfully lucky to have a chancellor who promotes science. But in general, society has decided that scientists sit in universities, research institutions, and pharmaceutical companies and their discoveries are implemented and distributed by others. Yet, the world of science is tightly linked to that of politics, governance, and international relations, because a large part of the world doesn't have access to the existing achievements of science. That's sad. It's unacceptable to me that somebody will die or become sick from a disease for which there is a drug one kilometer away, or ten kilometers away, or a thousand kilometers away. Whatever reasons there may be, it's much more complicated than it should be. It's more difficult to develop the drug than to bring it to the patient, so how can it be that drugs that have already been developed do not find their way to the patients? It is these political echelons that block the road of progress.

It's unacceptable to me that somebody will die or become sick from a disease for which there is a drug one kilometer away, or ten kilometers away, or a thousand kilometers away.

Earlier, you mentioned the will of the people in a democratic society. Sometimes, from a scientist's perspective, does the majority make the wrong decision?

The majority can make the wrong decision, but it's still the majority. I don't know of a better system. Democracy is not ideal, but it's optimal. Again, the government that they choose should be completely transparent, absolutely decent, and incorruptible. Every penny of the taxpayer's money should be reinvested in the taxpayer's interests. Just last week I read a very interesting paper. This year, Americans have taken six or seven out of eight Nobel Prizes in the sciences, whatever the Nobel Prize symbolizes. America is not the biggest country in the world. So what is it about America? It is the freedom and its deep spirit, the nurturing and fostering of excellence, and an aura of openness. There is something about those elements that we should learn from.

If good people—flying on the wings of their imagination—make basic, fundamental discoveries, then some other people will go and translate them.

One of the big focuses at the World Health Summit is on translation of bench science to bedside, as they say. Do you see that as a growing trend?

There is a big buzz around translational science. In my opinion, it's the wrong attitude. If you push everybody to do translation, in the end, the spring of knowledge will dry out, and there will be nothing to translate from. If good people—flying on the wings of their imagination—make basic, fundamental discoveries, then some other people will go and translate them. I think the balance of basic science that is translated by others should be kept intact. This is the secret for success.

*Science is slow to move.
It doesn't always provide solutions.*

Is it hard for basic scientists now to argue for funding at conferences like this?

It's a little bit harder than it was 20 or 30 years ago. Science is slow to move. It doesn't always provide solutions. Thus this buzzword of "translation" arises. The taxpayer wants to see an immediate return and loses patience. "We have been living with cancer for too long," they say. "Where is the solution?" The solution will come. We just need more time. Scientists and physicians are not fools; their problems are awfully complicated. This lack of patience also has many other implications. People are resorting to beliefs, and to myths, as they are pushed into the hands of charlatans, and churches that tell them about miracles.

What about personalized medicine? How do you put together a clinical trial in an environment where every patient is different?

Some of the drugs are already personalized. Some of the drugs are still generic. If you have a headache, you take paracetamol or aspirin. In the future, for lots of diseases, the cure will be fitted personally. We are in the transitional period, but it is not that everyone on the face of the earth will have their own drugs—diseases that are now one entity will be stratified, and we shall see more types of breast or prostate cancers; however, the number will be limited.

On a global level, what kind of recommendations do you have to make that transition easier?

Do you have to have more data, and less prejudice?

Science is always moving and people benefit from it. I think the bioethical implications of personalized medicine are going to be huge. I think that we should ready ourselves through legislation and dialog. Scientists should communicate with the public. The money to do science is coming from the public. The public has an absolute right—not a 99 % right, a 100 % right—to know what is being done with

their money. Scientists should also communicate with politicians, and start to communicate with clergymen too; with sociologists, and with psychologists, about the implications of availability, and possible leakage of genetic information.

How can scientists communicate better?

It depends on people like you. I read basically one newspaper, the *New York Times*. If you look at the vast majority of newspapers worldwide, most of them are yellow gossip. Why? Because people want to hear about rape, robbery, porno, and drugs. In that respect the media plays a negative role in our society. Everything is aimed at the lowest common denominator. We are surrounded by science, but don't fully appreciate it, and certainly do not report about it. The media needs to help generate a passion for science. It might not be interesting at the beginning, because for a while, there will be no reports on rape on the first page. Maybe the newspaper or the TV channel will not make as much money as it might have by being a pornographic channel. I'm exaggerating of course, but media needs to support values that are much more precious than whatever money they're making.

You hear all kinds of things from people who act as if scientists are all sitting in the basement cloning and manipulating genes, and doing bad things. They don't understand the scientific way of thinking. The purpose of science at the very end of the day is to better human life.

Being part of a society should also bring a lot of value to the company.

It's interesting that so many of these critical leaps require money. You talked earlier about translation and putting it in the hands of pharmaceutical companies who will need to make money.

Obviously, pharmaceutical companies find it difficult to develop drugs for the third world—there's no money in it.

But you can give them tax breaks. There are companies that develop drugs, and donate them back to society. It's not all about the value of the share. It's also about what it does for society. Society also has a value.

People are becoming more aware. People look at companies that are using slave labor, or cheap labor. They look at companies that are green, or not green, and they will buy more from the green ones. Companies should act accordingly. It's not always about the value of the share and how it's increasing. Being part of a society should also bring a lot of value to the company. That means also bringing drugs to the third world, which are less profitable.

The question is how "piggy" capitalism is. You know, companies should make money. They are not synagogues, or churches, or charity organizations. But at a certain point, the question is: how much money, and what do you need the money for? Profit should be reasonable. The purpose of your existence is not the many billions of dollars that you are making. You're living on a planet that has seven and a half billion people. More than five billion of them don't have access to reasonable health care services, clean water, modern education, or basic hygiene. We should take care of these people, one way or another. ●



Prof. Aaron Ciechanover

Nobel Prize Laureate in Chemistry (2004) | Director, Cancer and Vascular Biology Research Center | Technion-Israel Institute of Technology

THE GRAND CHALLENGE OF SYSTEMS BIOMEDICINE

Written by Hiroaki Kitano

Innovation in biomedical science research and its application presents a global challenge. On one hand, there is an emerging emphasis on innovation in personalized and precision medicine. On the other, there are still significant issues in relation to access to—and the cost of—medicines for the base of pyramid (BoP) segment. I would argue that one of the key areas of focus for urgent innovation that needs to be addressed is a dramatic improvement in the efficiency and effectiveness of the delivery of novel medicines, coupled with an appropriate positioning of such medicines to deliver the ambitions of personalized, preventive medicine (Figure 1). While personalization of medical practices offers tremendous benefits to patients, often represented by genome-based stratification of patients for clinical decision-making, it impacts the pharmaceutical industry negatively because of the consequent and inevitable market fragmentation. Drugs that used to be developed to treat a broad range of patients are now being used to target those who can be identified to have an increased chance of responding and/or are at a reduced risk of side effects. The challenge this presents for pharmaceutical companies is how to achieve this dramatic improvement in the current practice of drug discovery and development, while at the same time leveraging the clinical benefits of personalized medicine, and still be financially viable, despite necessarily focusing on the treatment of much smaller patient populations. The search for drugs to treat rare diseases is on a similar track, and here the costs must be dramatically reduced for pharmaceutical companies to be able to invest in projects covering a broad range of rare diseases.

National fiscal and health economic priorities demand the development of approaches that deliver precise patient segmentation for optimal and cost effective treatment as well as those aimed at preventive and pre-emptive personalized therapies. It is imperative to recognize that the increasing medical cost associated with the prevalence of chronic, debilitating diseases in an increasingly aging society will continue to impose major pressures to fiscal sustainability in many developed countries. Unless we manage to mitigate such fiscal pressure on the public medical purse, it will likely result in catastrophic economic consequences. How

to provide quality medical service while mitigating these fiscal pressures is one of the biggest challenges faced by countries with a rapidly aging population, and thus should represent one of the highest priorities for attention.

Improvements in drug discovery are also demanded for the treatment of diseases prevalent in developing countries because they cannot afford to pay for expensive drugs. Thus, tackling the joint imperatives of improving the delivery of innovative medicines and the effective stratification of patients are the common threads underpinning an approach to solving one element of the global health care agenda.

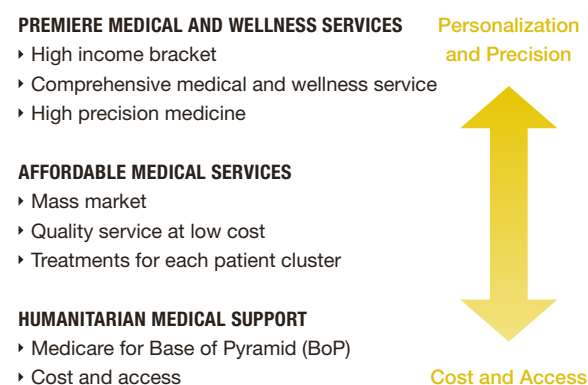
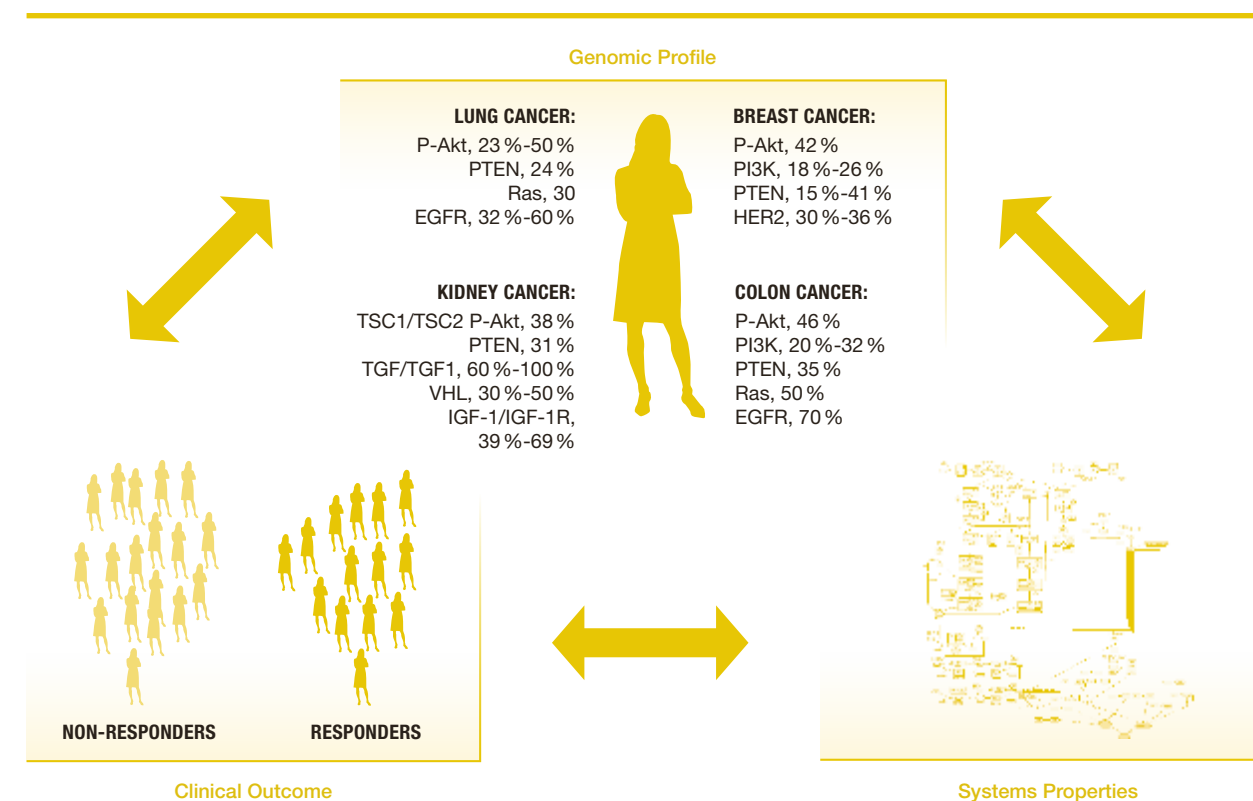


Figure 1: Segments of medical need

A Systems Approach Is the Solution

A systems approach that addresses the dynamic properties of the functional interaction networks in biological systems is one of the key elements in offering a possible solution to the global health care agenda. It can be applied ubiquitously to all segments of medical need. Patient stratification using mere statistical analysis over genome or clinical data hits its limits when it has to handle rare incidents or multiple



affecting factors, such as multiple genetic alterations in a specific segment of patients. Conventional Genome Wide Association Studies (GWAS) and similar approaches require impractical sizes of cohorts, even if it could identify any meaningful signatures. Our group is currently developing a method termed Genome Network Association Study (GNAS) that uses biological network structure to link genomic variations with clinical outcome/disease susceptibility, thereby enabling the detection of multiple and highly relevant biomarkers (Figure 2). While the validity of such a method has still to be shown, the development of a technique to identify valid biomarkers for multifactorial diseases needs to be developed that incorporates insight from a system-level understanding of the targeted biological systems.

Figure 2: Conceptual diagram for Genome Network Association Study

Stagnation in the delivery of effective novel medicines is widely recognized to be an issue in the industry and outside of it. Numerous reports suggest that a shift is required toward more mechanism and a systems-based approach to improving drug R&D productivity. The need for a systems approach is further warranted because the chronic diseases that prevail in the elderly population, where there is significant unmet need, are mostly polygenic, multifactorial in nature. That is, multiple genes along with epigenetic and environmental factors are involved in the development of the disease and are thus likely to require multiple targeting of the proteins involved. This requires a sophisticated

approach to identifying and designing drug candidates that interfere with these targets, or the use of multiple compounds with high selectivity to each of the target molecules involved. There is evidence of some early successes in using a systems approach to drug discovery.

Now the next step must be to build on such pioneering successes to transform the entire biomedical industry, not just pharmaceutical companies, through the evolution of systems biomedicine and thereby lead to significant improvements in targeting unmet medical needs.

Moonshot

The Apollo Program during the 1960s was one of the most successful grand challenge projects that resulted in the accomplishment of the manned missions to the moon. The US committed to the goal of “landing a man on the moon and returning him safely to earth.” The mission was largely an engineering project, but one that also enabled the development of many areas of new science through the demands for innovation and improvements. However, the actual goal of the Apollo project was much more than a manned mission to the moon. NASA officially stated that “Project Apollo’s goals went beyond landing Americans on the moon and returning them safely to earth: to establish the technology to meet other national interests in space; To achieve preeminence in space for the United States; To carry out a program of scientific exploration of the moon; To develop man’s capability to work in the lunar environment.” (NASA website: http://www.nasa.gov/mission_pages/apollo/missions/#.Uo_hm2ROpD8)

The pressures and needs we face in health care demand a big science approach in the biomedical analogous to those used more commonly in astrophysics and similar hard sciences. So, what are possible equivalents of the Apollo Program in the biomedical area? One option is to develop a comprehensive computational model of the human, developed from a molecular base. While there is a wide variety of biological models of specific biological processes, these are fragmented, and do not automatically or easily become integrated into a consolidated model of human biology, physiology and pathology. Our ability to develop a large-scale integrated model of a biological system, particularly that of homo-sapiens, would be a major accomplishment, and the

technologies developed during this challenge would have a knock-on impact beyond biomedical sciences themselves. A series of meetings has already been held where such challenges were considered with the aim of fostering emergent innovations. Some projects are already working toward this, most notably in Europe. They include the Virtual Physiological Human (<http://www.vph-institute.org>), the Virtual Liver Network (<http://www.virtual-liver.de/wordpress/en/>) and the Japanese HD-Physiology Project (<http://hd-physiology.jp/>).

Turning “Unknown Unknowns” into “Known Unknowns”

One argument against such an initiative would be “the science is not there yet.” Proponents of such a claim caution that such models cannot be sufficiently accurate because there are many biological mechanisms yet to be understood, thus it is too early to be elevated to a formal initiative. While I agree there are many unknowns, the grand challenge of integrated modeling is to uncover what are “unknown unknowns” from “known knowns” and “known unknowns.” In developing computational models, one needs to describe very explicitly and organize precisely what we know about the system, and during this process one often discovers that there are many things we believed we knew but we actually do not. Thus, the practice of modeling has a significant role in turning “unknown unknowns” into “known unknowns,” helping researchers to focus explicitly on emerging unknowns.

Virtual Big Science

One may argue whether such an integrated model can be cost effective, or if it is worth pursuing instead of approaches creating “fit-for-purpose” models for each disease or biological process of interest. This is a valid point; however, just like the Apollo project, setting such a major goal itself has an impact in focusing the mindset and fostering widespread collaboration. There are numerous diseases that require systemic analysis where integrated systemic models are essential. Creating numbers of fragmented models would not enable us to create consistently

integrated models unless there is a globally agreed agenda and a tangible project to consolidate such models.

We must recognize the reality that most biology and medical sciences are small science in terms of the scale and mode of collaboration. Researchers have their own questions and agendas to pursue and collaborate within their network. At the same time, there are projects that involve a large number of institutions and researchers. The human genome project is a remarkable example of a big science project in biology. Other projects such as FANTOM also involve large groups of researchers aiming at a common goal.

Should the integrated modeling initiative be launched as a big science program akin to the human genome project? Certainly, we do need a central core group that is dedicated to designing and executing a whole program and to developing an integrated model. At the same time, it is not practical to centralize all research that is required for development of the model. Thus, the project requires mechanisms to involve and integrate a broader range of researchers perusing their own questions in a way that accelerates their research through participation in the grand challenge project. This hybrid mechanism of project operation needs to be well designed and managed, the necessary infrastructure needs to be developed to make project execution a reality, and a sophisticated scheme implementing proper social engineering would be required.

Standards and Platforms

Development of standards and platforms for the grand challenge is central to and one of the most critical components necessary for success. Looking back at the Apollo Program, it was the Saturn-V launch vehicle that served as the platform throughout the project. Different missions were accomplished by changing modules to be launched by the standard Saturn-V launch vehicle. This enabled the project to separate scientific exploration and engineering execution. Fortunately, there is increased recognition in the biomedical community for standards and platforms, partly required due to the practical issues of handling large data sets generated from high-throughput data. Numerous data and model representation standards such as SBML, SBGN, BioPAX, MIAMI, MIRIAM, CellML, and FieldML have

been defined and accepted in the community. An initiative such as The Garuda Alliance represents a new move toward development of a standard platform that enables a high level of interoperability.

Summary: “All Systems Go”

A *Nature* article reporting on such an initiative, headlined “All Systems Go,” stated that we are now ready to initiate a well planned major initiative to accomplish the stated goals. The foundations required to initiate such challenges are available and more are emerging rapidly. We now have stronger confidence than a decade ago in the feasibility of the project. In addition to the practical goals stated, the initiation of such a project will impact all segments of basic biology and biomedical communities by providing a drive toward addressing a common agenda that requires a higher level not just of collaboration, but integration. This will trigger a fundamental transformation in the mindset of the researchers and institutions involved. To paraphrase John F. Kennedy, who died 50 years ago, we shall embark on this grand challenge and these goals “not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills.” ●



Hiroaki Kitano

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ADVANCING MEDICAL INNOVATION THROUGH RESEARCH

Better health in the future will mean more efficient disease prevention or early intervention. Biomedical research is making progress toward this goal. Now is the time to improve the innovation process from bench-to-bedside.

Written by Peter Gruss, Christiane Walch-Solimena

New Biology Has the Potential to Transform Biomedicine

Biological research has been revolutionized during the past few decades as it is no longer mainly a descriptive science that studies isolated physiological processes in ever more detail down to single molecules and their structures. Technological advances have made it possible to probe organisms for their complete inventories of molecules along the chain of information from the genetic material DNA, through RNA, to proteins and metabolites.

The sequencing of the human genome about ten years ago has started an unprecedented age of discovery in biomedicine. Basic insights into human biology and its perturbation have been gained. Thus, nearly 3000 genes have been found to cause Mendelian (monogenic) diseases such as cystic fibrosis. More than 1000 genomic loci have been associated with complex (multigenic) traits where inherited mutations often act together with environmental factors causing common diseases such as heart disease and diabetes. The success story of the Human Genome Project has raised large expectations for visible progress in biomedicine, and eventually tangible benefits for patients that, until now, seemed slow to arrive.

Large efforts are underway to catalog not only the coding sequence of the human genome and of experimental animal models like the fruit fly or the mouse, but all functional elements of the DNA. In addition, comprehensive inventories of DNA modifications (epigenomics), gene products such as RNAs (transcriptomics) and proteins (proteomics), as well as indirect products of the genome such as metabolites (metabolomics) and carbohydrates (glycomics) are currently generated, as cost-effective high-throughput technologies advance further.

The identification of possible drug targets has been facilitated by these “big biology” approaches. However, for successful drug development, there is a large need to better understand the biology of diseases at a mechanistic level. A more thorough and complete molecular description of states of disease will in the future allow the development of a systems view where phenotypes of disease are caused by dysfunctional networks of molecules. This way, the choice of drug targets for a given clinical condition might broaden, improving chances for successful drug development. Last but not least, systems medicine will require a new taxonomy of disease based on molecular profiles rather than isolated symptoms and individual biomarkers. Once this intellectual framework is in place, proteomics will open the road to a new paradigm of P4 medicine*, a term coined by systems biologist Leroy Hood. It will become possible to use molecular fingerprints to predict diseases before symptoms occur, and intervene early on, possibly preventing their outbreaks altogether.

The vast knowledge gain of “big biology” creates great opportunities for disruptive innovations. In addition, many of the high-throughput technologies such as proteomics analysis by quantitative mass spectrometry and DNA sequencing underwent a dramatic improvement during the past ten years and continue to do so. Thus, sequencing of the first human genomes was performed by a worldwide consortium of labs at an estimated cost of \$2 billion USD. Sometime soon, deciphering of a personal genome will cost no more than \$1,000 USD, and thus will become clinical routine.

At the same time as biomedicine makes big strides toward a better understanding of diseases, the innovation system is facing a number of difficulties. The chemistry-based “one-size-fits-all” drug model aiming at blockbuster sales is no longer viable at a time when genome-based and personalized therapies are becoming state-of-the-art. Despite a rise in R&D investments by the pharmaceutical industry (worldwide \$60 billion USD in 2011), the number of drug approvals has remained unchanged, between 20 and 30 per year. There has been a drop in investors willing to make high-risk bets. While we are seeing a dramatic increase in health costs worldwide, in part due to an epidemic rise in chronic diseases like diabetes and obesity, drug development still takes between 12–15 years from a promising compound through to approval. Only one of about 5,000 to 10,000 compounds, or leads, makes its way to the market, and thus

to the patient. Estimated development costs amount to more than \$1 billion USD.

Academic Research Actively Contributes to Biomedical Innovation

Furthermore, there is currently still a large gap between basic science and industry. It is even increasing as pharmaceutical companies have reduced or shut down research departments. As a consequence, compounds or technologies today need to be more advanced before they attract industry investments. In this context, platform technologies such as stem cells in a petri dish for models of disease are of increasing interest. There is a need for technology transfer offices at academic institutions, validation instruments, and incubators. For this, novel funding instruments need to be developed such that the innovation gap can be bridged by a gradual decrease in public—and increase in private—funding, as an invention advances into application.

In order to push toward validation and applied research, basic science institutions need to develop new model structures. Thus, the technology transfer company of the Max Planck Society, Max Planck Innovation, has developed the Lead Discovery Center GmbH (LDC). The LDC develops optimized leads, promising small compounds for drug development, starting from biological targets found by scientists. The “lead” is then further tested in cells and animal models to demonstrate “Proof of Concept” for the desired drug action. There is a steady flow of new projects and cooperation with companies. A particular strength of the LDC model is its central structure which guarantees a practically never-ending pipeline of projects originating in about 30 life science institutes of the Max Planck Society and academic partners, an integrated technology platform, and professional management according to industry standards. The Lead Discovery Center is the first of its kind in Germany, and covers a critical part of the pharmaceutical value creation chain between target identification and lead optimization, and therefore contributes to higher innovation efficiency. Models like the LDC can bring about catalytic change.

While the traditional, linear model for drug development no longer functions, curiosity-driven, original research remains of key importance, and the role of scientists in the

early steps of the innovation process cannot be overestimated. The deep expertise and problem-solving skills of single scientists can be critical, especially at the transition of an invention into development for a product. In order to reduce costs and investment of time into the drug development process, a comprehensive understanding of disease pathophysiology and epidemiology must be achieved. On the basis of this knowledge, biological pathways can be addressed and proofs of mechanism can be established. This potentially represents a field of strong research-industry cooperation. We need to achieve a learning innovation system, where frequent interactions between the different stakeholders involved increase the quality of decisions and ensure optimal exchange of knowledge. Public Private Partnerships could be at the forefront of a more efficient biomedical innovation process. ●



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MEDICAL INNOVATIONS FOR GLOBAL PATIENT BENEFIT

Ensuring the Equitable Management of Intellectual Property: Socially Responsible Licensing in our Universities.

Written by Rachel Kiddell-Monroe, Fridolin Steinbeis

The existing system of knowledge and innovation governance has failed to develop and deliver medicines and other health-related technologies to adequately address the health needs of poor populations worldwide. Patients in many low- and middle-income countries cannot pay the high price of medicines and are excluded from the benefits of scientific endeavor. To ensure a sustainable response to the health needs of all patients, mechanisms to delink the cost of R&D from the price of the products are urgently needed.

Publicly Funded Research and International Policies

Following the lead of Bayh-Dole legislation adopted in the US in the 1980s, major research nations set up initiatives to recognize the value of public knowledge, using a market-based approach of compensating research expenditure. National legislations prescribed the commercial exploitation of publicly funded research and, in practice, this has led to a comprehensive patenting of public innovations.

Civil society groups and academics are increasingly criticizing this approach. Practice has shown that putting a financial value on Intellectual Property (IP) with social goods (such as medicines) leads to the widespread exclusion of populations from access to the benefits of publicly funded research. Furthermore, IP policies have been shown to hinder the broad dissemination of knowledge and thwart the further development of basic research into innovative products for existing diseases. The European Commission has warned that IP has a potential to slow down scientific progress by hindering the rapid dissemination of scientific knowledge.

In the past decade, academic and civil society groups have developed mechanisms to solve this problem. One example is Socially Responsible Licensing (also known as Global Access Licensing in the US). A WHO-commissioned expert report on “Research and Development to Meet

Health Needs in Developing Countries” considers the concept to be technically and financially feasible. At the same time, it has been successfully applied by some of the world’s most renowned research institutions.

Socially Responsible Licensing

Socially Responsible Licensing (SRL) aims to maximize global access to biomedical products, such as drugs, vaccines, or other medical technologies, coming from publicly funded research. Its goal is to ensure that low- and middle-income populations worldwide have access to innovative medical products. While serving a humanitarian goal, SRL can also safeguard the interests of research institutions and holders of intellectual property.

SRL is a broad framework consisting of various practices to ensure medical technologies resulting from publicly funded research are available to all, in particular disadvantaged populations in low- and middle-income countries. It includes non-exclusive licensing, differential pricing or non-assert policies, and the specific obligation of the licensee to grant direct supplies to affected populations. A SRL can also include the obligation to disseminate production rights globally according to economic status. In the case of biological compounds or other drugs where generic provision is forecast to be technically or economically unfeasible, “at cost” or other provisioning requirements can be used to supplement generic provisioning terms, though it can never simply replace those terms.

Non-exclusive licensing remains the most efficient and sustainable method of facilitating affordable access to medicines. Non-exclusive licensing allows more than one licensee to exploit the knowledge, encouraging competition through, for instance, generic drug production. This competition directly results in lower prices for the end product in resource-poor settings.

SRL in Practice

The SRL concept emerged after Yale University and Bristol-Myers Squibb (BMS) were forced to allow generic production of Stavudine (d4T) in South Africa in 2001. Scientists at Yale discovered that d4T was an effective antiretroviral to be

used in first-line HIV/AIDS treatment. At this time, the pandemic was decimating populations in Sub-Saharan Africa, South Africa in particular. However, d4T had been patented by Yale, who then licensed it exclusively to BMS. The cost per treatment, per patient, per year, was so high that it was unaffordable and inaccessible to HIV patients in low- and middle-income countries. In 2001, students from Yale worked with the medical aid organization, Médecins Sans Frontières, to put pressure on Yale and BMS to allow the generic production of d4T in South Africa. Yale refused, and so did BMS. After significant pressure, and a plea by the research scientist who discovered d4T’s antiretroviral properties, BMS eventually agreed to a non-assert policy for their patent rights in South Africa. This led to a price reduction of almost 90 %, and heralded the start of a major roll-out of relatively affordable generic HIV medicines in Sub-Saharan Africa.

After that victory for patients, North American students went on to develop the Global Access Licensing Framework, laying down the principles for SRL. This model has been adopted by major funding and research institutions, such as the United States National Institutes of Health (NIH), the Centers for Disease Control and Prevention (CDC), the Association of University Technology Managers (AUTM), the Wellcome Trust in the UK, and more than 40 research universities worldwide—among them the University of Harvard, Yale University, and the University of California. These institutions have agreed that intellectual property should not be a barrier to essential medical care or the development of new health-related technologies.

In 2011, the WHO-commissioned Consultative Expert Working Group (CEWG) investigated methods that would incentivize research and development of medical technologies for poverty-related diseases neglected by the market-based model of pharmaceutical development. In its final report, the CEWG highlights global access licensing provisions as an important tool to ensure universal access to publicly funded medical innovations.

A Promising Perspective

To strengthen its global health impact, the *M8 Alliance of Academic Health Centers and Medical Universities* could bring together academia and policy makers, with space for

input from industry, to establish consensus and develop cutting-edge SRL strategies for a more just dissemination and application of public research. While many institutions publicly accept the need to secure access to medicines for poor people living in poor countries, SRL is still not applied globally in publicly funded research institutions and universities. So far, within the M8, only two member universities have adopted SRL strategies within their university licensing guidelines: the German Charité – Universitätsmedizin Berlin, and the US Johns Hopkins Bloomberg School of Public Health. The M8 envisages itself as a permanent platform for framing future considerations of global medical developments and health challenges in an equitable way. SRL could represent an opportunity for the M8 members to commit to that vision in a meaningful and concrete way. ●



Prof. Rachel Kiddell-Monroe

President, Universities Allied for Essential Medicines (UAEM) | Professor of Practice, Institute for the Study of International Development (ISID), McGill University



Fridolin Steinbeis

European Coordinator, Universities Allied for Essential Medicines | Medical Student at Charité – Universitätsmedizin Berlin

8 Experts / 8 Statements

03



Prof. Rifat Atun

Professor, International Health Management, Imperial College London | Head, Health Management Group, Imperial College London

What is the most important precondition for successful research and innovation that improves health worldwide?

Multiple and interacting factors determine health and well-being. Among others, these factors include: hereditary factors; the context of people's lives, specifically social, economic and physical environments; the person's individual characteristics and behaviors; timely access to social and health care, and access to new and innovative diagnostics, health technologies, medicines, and vaccines. Hence, interventions aimed at improving health and well-being and that meet current and future societal challenges need to be multisectoral, multidisciplinary, and holistic in nature. R&D investments should therefore foster multisectoral, multidisciplinary, and holistic research that brings together environmental, health, socioeconomic, clinical, and fundamental research. The convergence of science and advances in biological sciences, medicine, mathematics, computing, decision sciences, engineering, physics and social science, and systems sciences, provide an exciting and unprecedented opportunity to develop such a holistic approach to R&D to address current and future health challenges. However, holistic development across the innovation cycle must emphasize R&D investments aimed at "delivery of innovation and innovation of delivery."

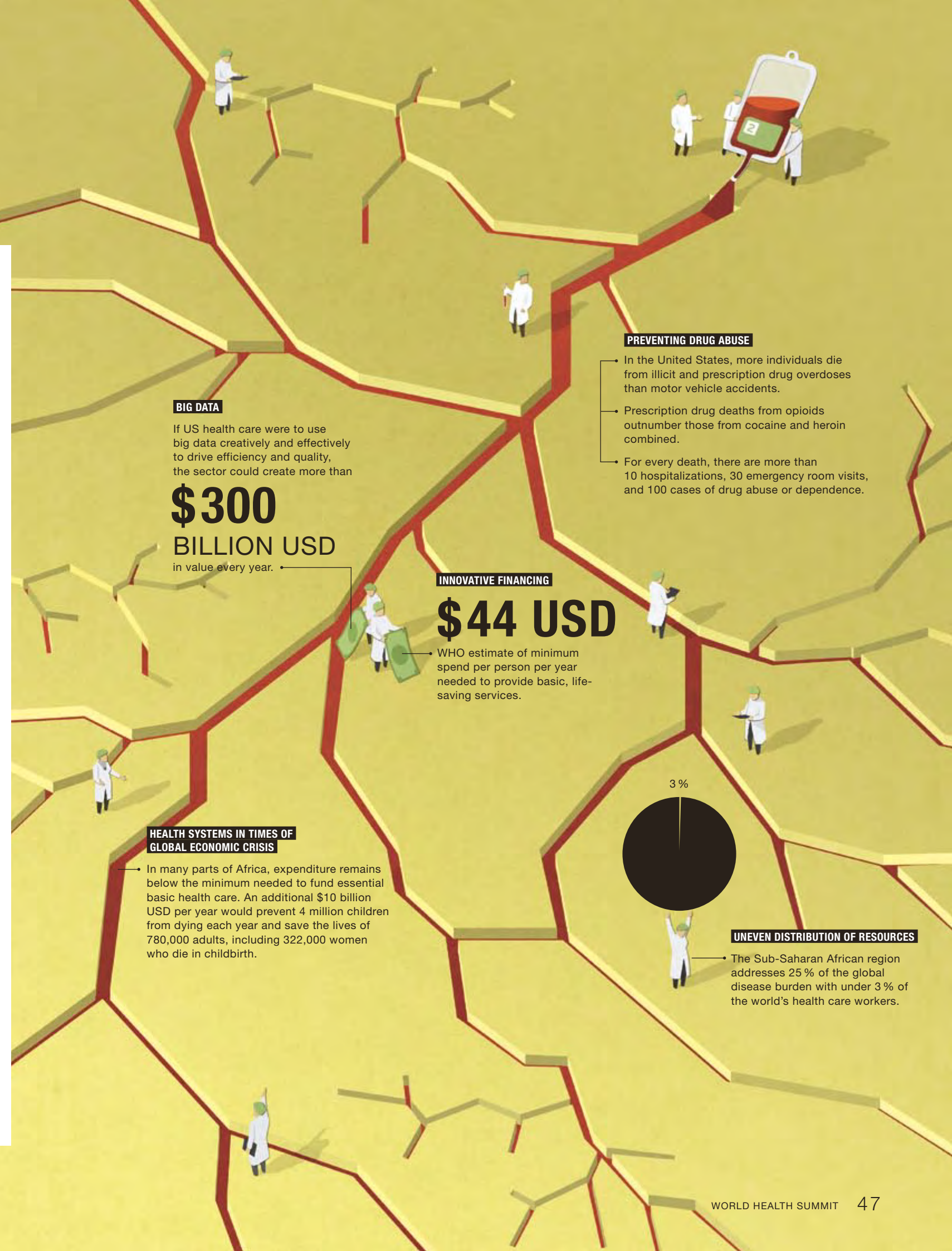
04



Dr. Catharina Boehme

CEO, Foundation for Innovative New Diagnostics, Geneva

Collaboration and coordination are essential if the research community is to have significant impact on global health. By capitalizing on the strengths of all partners, concerted efforts involving academic institutions, private companies, civil society, and the public sector can generate the momentum necessary to respond to unmet medical needs. Partners must share the same vision, develop mutual understanding, and be involved throughout the whole process, never losing sight of the end product. Keeping patient needs and the end users in mind are the key to delivering truly innovative solutions.





► The historic Weltsaal ("World Hall"), heart of the Federal Foreign Office in Berlin and site of the World Health Summit 2013.

Report from the World Health Summit Breaking Down Boundaries in Berlin

by Andrew Curry

According to the United Nations, everyone on earth has a right to health. Yet in today's world many people still lack basic health services, despite revolutions in medical technology that have put the elimination of many chronic diseases and acute conditions within our grasp. Meanwhile, new threats to global health loom: antibiotic-resistant superbugs, aging populations, and epidemics of overabundance like diabetes and heart disease.

Yet there is cause for optimism. Never before have so many people been in a position to address the world's

problems. The World Health Summit was a three-day demonstration of that reality. For three days, dozens of the world's top public health officials, researchers, businesspeople, and activists gathered at the German Foreign Ministry to discuss some of the most pressing issues facing the world today.

One might have thought the Summit peaked at its opening gala, held on an unseasonably warm Sunday evening in Berlin: German Foreign Minister Guido Westerwelle welcomed European Commission President José Manuel Barroso, who in turn was followed at

the podium by Nobel Prize-winning biochemist Aaron Ciechanover and other high-ranking speakers, including Annette Grüters-Kieslich, Dean of Charité – Universitätsmedizin Berlin, and Christopher Viehbacher, CEO of Sanofi.

But things were just getting started. It was especially in the small workshops and packed sessions that the conference really hit its stride. Over the next two days, participants dove into debates both academic and deeply practical. Sessions on "Communicating Health" dueled with discussions of the growing threat of bacteria-resistant superbugs. Pharmaceutical executives came face to face with health activists for frank discussions on the profit motive in public health. Doctors shared knowledge and experiences with colleagues from around the world. "Nobody can solve these problems alone," WHS founding president Detlev Ganten said. "Nobody has a recipe. It can only be done through collaboration with many people from around the world."

The program was diverse, both geographically and thematically. Participants had no trouble keeping up. "I feel like people are receptive to new ideas," said Anne Glover, Chief Scientific Adviser to the President of the European Commission. "People have had boundaries broken down."

From its roots in 2009, the last five years have seen the WHS grow and mature. It's now more than a summit, it's a generational dialog. The many young faces at the meeting, both behind the lectern and in the audience, brought Ganten's motto, "education is the best vaccination," to life.

The Summit's penultimate session on the "New Voices in Global Health" program, a competition to recognize promising researchers of the future brought for example Chinese researcher Jiang Hong on the panel, enthusiastically reporting on an experiment using text messages to encourage breastfeeding in Shanghai. The result? Mothers in the group who received the messages breastfed exclusively significantly longer than the control group, a major victory for infant health—and one easily emulated anywhere there are cell phones. There was a feeling in the room: these were voices we'd be hearing from again soon. Perhaps at one of the next World Health Summits? ●



01



02



05

► 01 This page: Ghanaian Minister of Health Hanny-Sherry Ayitey (third from left), José Manuel Barroso, President of the European Commission (center), German Minister of Health Daniel Bahr (third from right), and WHS Founding President Detlev Ganten (second from right) at the World Health Summit Ceremony.

► 02 This page: Annette Grütters-Kieslich gives a rousing keynote lecture at the WHS Ceremony.

► 03 This page: The World Health Summit attracted young professionals from all over the world as well.

► 04 This page: The historic Federal Foreign Office in Berlin, partner of the World Health Summit 2013.



03



04

► 05 Opposite page: Detlev Ganten, the Founding President of the World Health Summit, John Wong, the President of the 2013 World Health Summit, and José Otávio Auler, Co-President of the World Health Summit 2014.

► 06 Opposite page: Prominent politicians, including German Foreign Minister Guido Westerwelle (far right) attended the Summit and addressed global health issues.

► 07 Opposite page: Richard Horton, Editor-in-Chief of The Lancet, moderated the central WHS press conference.



Moments from the WHS Berlin

DAY 1

October 20, 2013

OPENING

Weltsaal, 11:00 World Health Summit founder Detlev Ganten officially opens the summit.

PRESS CONFERENCE

Europasaal, 12:15 “Almost every developing country makes the same mistake, concentrating government facilities in cities and increasing urban populations. Rural areas are then either abandoned or taken over by industrialization,” said José Ramos-Horta, who received the Nobel Peace Prize in 1996.

WHS CEREMONY

Weltsaal, 20:00 “In former times national governments could cooperate. Today, in times of globalization, national governments must cooperate,” German Foreign Minister Guido Westerwelle said in his keynote address. “Pandemics, outbreaks of contagious diseases, and non-communicable diseases are global phenomena.”

KEYNOTE LECTURES

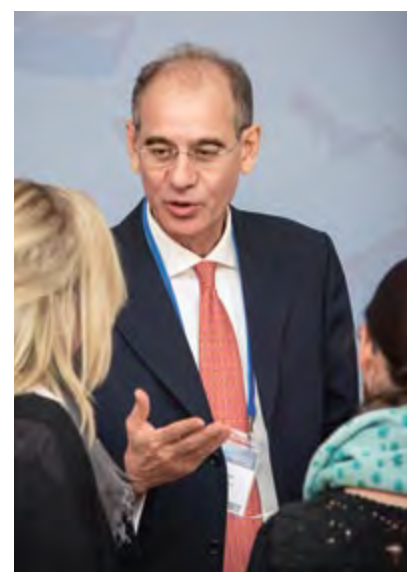
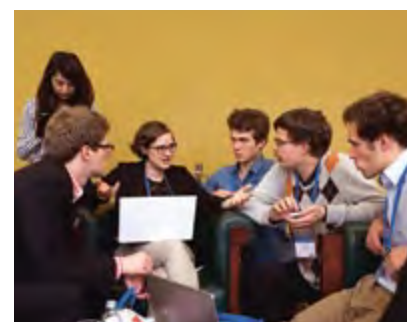
Weltsaal, 20:30 Nobel Prize Laureate Aaron Ciechanover discusses the burden of responsibility personalized medicine will place on patients, and the threat to people's personal data that the future may bring.



06



07



► This page: A spirit of free-flowing discussion and debate characterized the Summit, with expert panels and informal discussions generating a well of ideas. The Summit brought together policy makers like Anne Glover, Chief Scientific Adviser to the President of the European Commission (center left), academics like Rifat Atun, Professor at the Imperial College London (above), and young professionals.

► Opposite page: Formal discussion panels and hallways alike provided fora for interaction and debate.



Moments from the WHS Berlin

DAY 2

October 21, 2013

SYMPOSIUM

Europasaal, 9:00 "We are living in a world in flux. We have to work and convince people to accept new technologies," said Max Planck Society head Peter Gruss. "If we all work actively on public opinion, we may reap the benefits of these technologies. Otherwise we may fall behind."

KEYNOTE LECTURES

Weltsaal, 10:30 "Youth unemployment is a public health emergency, because if these people are just thrown on the scrap heap when they leave school they never recover," University College London's Michael Marmot said. "Social inequality is killing people."

KEYNOTE LECTURES

Weltsaal, 13:00 Massive Online Open Courses, or MOOCs, were hailed as a potential breakthrough for health education and medical training. "Right now, we're trying to pursue these values and ideals in isolation. Education efforts haven't started to look at what's going on just next door," Ghana's University of Health and Allied Sciences vice-chancellor Fred Binka said.

SYMPOSIUM

Weltsaal, 15:00 "The game changer in health is availability and access to wholesome and healthy food, a balanced diet, and a clean environment (land, water, air)," Right Livelihood Award Laureate Hans Rudolf Herren said.

SYMPOSIUM

Europasaal, 15:30 Research can't exist in a vacuum. "All research has to answer at least one of three questions—will it work? Can it work? Is it worth it?" said Lee Kuan Yew School of Public Policy professor Tikki Pang. "If it doesn't answer at least one of those questions, policy makers aren't interested."

Faces and Voices in the Crowd



"I've been meeting decision makers, presidents of universities, founders of schools. It's been great to network."

Bogosi Mogale
South African Embassy to Belgium,
Luxembourg, and the EU



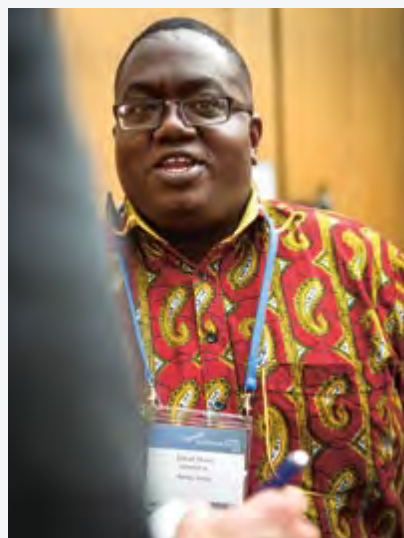
"Health isn't just about physical health. You need to feel comfortable in the world. Education has a lot to do with it."

Margret Rasfeld
Schule im Aufbruch



"I am inspired by going to different sessions, and I can say something too—it works both ways."

Sultana Marufa Shefin
Endocrinologist



"It's important as a panelist not to just impart information and leave. You need to stay and learn from and absorb what other people have to say. Interesting things usually happen when you get good people in one room and force them to interact."

Daudi Were
Ushahidi



"Our goal was not just to educate, but to connect with participants."

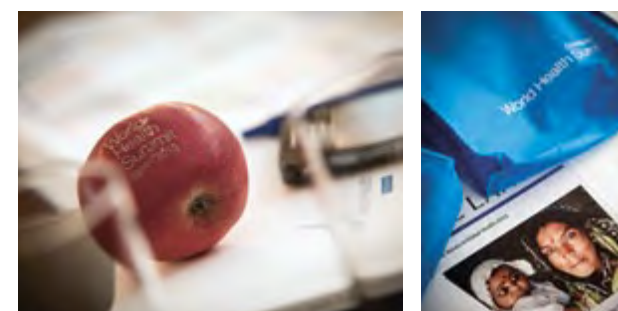
Christopher Schürmann (l.)
Philipp Munzert (r.)
German Medical Students' Association



"There's plenty of time for networking between sessions and a lot of chances for open discussions."

Danny Edwards
Council on Health Research
for Development

► April 2014 will see the WHS Regional Meeting – Latin America, São Paulo, Brazil, addressing specific regional health issues. This meeting was introduced during a keynote lecture on Tuesday. Public health veterans and new voices alike will be on hand to contribute.



Moments from the WHS Berlin

DAY 3

October 22, 2013

SYMPOSIUM

Europasaal, 9:00 "Do not waste a crisis," Maastricht University's Helmut Brand told the session on Health in Times of Global Economic Crisis. "Use it for reforms you should have done 10 years ago."

KEYNOTE LECTURES

Welsaal, 13:00 Summit leaders looked back over the past few days and forward to April's meeting in Brazil. "Education is the best vaccination," said World Health Summit founder Detlev Ganten. "Young people need to come and be here to carry the torch with us."

SYMPOSIUM

Europasaal, 15:00 Experts compared the threat of antibiotic-resistant "superbugs" to global warming. "Counterfeit and substandard antibiotics remain a major challenge, in addition to the lack of new antibiotics in the R&D pipeline," said Lars Schaade of the Robert Koch Institute.

SYMPOSIUM

Europasaal, 16:45 One in six people in the world suffers from one or more neglected diseases, from Chagas to malaria. "R&D funding for these diseases is increasing, but the increase hasn't been spread equally among the diseases," said University of Manchester researcher Sadie Regmi.

For more information visit
www.worldhealthsummit.org

M8 Alliance Statement from the World Health Summit—Berlin

“Scientific progress is enormous, but it does not reach the people who need it the most. The burden of disease is even getting greater in many regions of the world. This is not tolerable. We have to take responsibility.”

(Detlev Ganten/John Wong, Presidents of the WHS 2013)

No country can be successful without a healthy population and social well-being. Since only a healthy society can move forward and overcome economic and social obstacles, money has to be committed to the most beneficial and tangible priorities. Policy makers and funders need to recognize the impact of good health on socioeconomic development.

The challenges we face are not mere problems of the health sector. We need good governance of health systems and good governance for health. The solution of national problems still requires policy coherence and collective action at a global level, through the joint working of a great variety of different actors. Health should be used as a “Trojan horse” in order to effectively engage other sectors and jointly build adequate institutional arrangements supported by academia, politics, health economy, and civil society.

Considerations of universality, equity and justice lie at the very core of any approach toward health and health promotion, which in turn is closely linked to other policy arenas with similar intent, such as social security and education.

Concluding discussions at the World Health Summit 2013, the pre-eminent forum for strategic health dialog, the M8 Alliance calls for action in four major areas:

1. Research and Innovation

Research and innovation in health care is not only about the innovative approaches to diagnosis, treatment, and other care services; it is also about ensuring sustainable health and wealth for patients and society in the future.

RESEARCH CAPACITY BUILDING IN LOW- AND MIDDLE-INCOME COUNTRIES:

The gap between developed and developing countries in their capacity to carry out research needs to be minimized. The InterAcademy Medical Panel (IAMP) has pointed out that systematic attention to build capacity for health research in low- and middle-income countries is crucially needed. Educated people need to find adequate

working conditions in their own countries and “brain drain” needs to be prevented. Under country leadership, stakeholders should assess the adequacy of national research capacity, support priority setting for investment, and provide international development assistance.

2. Education and Leadership

To build high-performing and sustainable health systems, well-trained leaders are needed that serve the needs identified by their communities. “Education is the best vaccination.” How can we do a better job in improving our education systems and building leadership capacities within the next generation?

YOUNG LEADERS:

Academic institutions have an enormous amount of expertise and knowledge. Therefore, they have to engage in the process of formulating and implementing health and social policy. The

voices of young academics and scientists around the world must be heard and listened to. There is a lot of potential by using their creativity and innovative minds. The Global Young Academy provides an adequate platform for this purpose. Moreover, the IAMP Young Physician Leaders Programme provides leadership development, equipping young leaders with the necessary skills to make informed decisions throughout the policy process.

3. Evidence to Policy

Knowledge translation into national policies is essential, and government effectiveness can be significantly enhanced through the use of scientifically rigorous evidence about what works. To obtain optimal health outcomes we also need to understand which communication processes are most efficient in helping people to adopt healthier lifestyles and adhere to prevention and treatment strategies.

ANTIBIOTIC RESISTANCE:

The global occurrence of antibiotic resistance must be tackled by evidence-informed policies. It is one of the most imminent global health challenges. An integrated global surveillance system; information and education programs on the rational and responsible use of anti-infective drugs; prevention and control policies; encouragement of pharmaceutical companies to develop new antimicrobials through inter-sectoral partnerships (PPPs etc.) and the enhancement of research and development capability of developing countries are necessary. These are addressed in a joint InterAcademy Panel (IAP)—IAMP statement under preparation.

4. Global Health for Development

Universal health coverage has been defined in the Rio+20 Political Declaration as being crucial to “enhancing health, social cohesion, and sustainable human and economic development.” The World Health Organization’s World Health Report 2013: Research for Universal Health Coverage, indicates that the gap between the present coverage of health services and the ideal of universal health coverage remains large. It is often not clear on how to fill this gap in every setting and context. The move toward universal health coverage is crucial.

RESEARCH FOR UNIVERSAL HEALTH COVERAGE:

There is a need for research on how to expand health services with limited resources. For this purpose, the global health community has to continue

investing in local research in order to develop a system of universal health coverage tailored to each individual country’s situation.

The M8 Alliance supports regional activities and the establishment of local innovative models for health coverage. The World Health Summit Regional Meetings are an effort to support this development e.g. in the Asia Pacific Region with the WHS Regional Meeting in Singapore 2013 and in South America with the WHS Regional Meeting in São Paulo 2014. In support of this concept the M8 Alliance is also paying special attention to conflict-prone regions such as the MENA Region.

REGIONAL FOCUS OF THE WORLD HEALTH SUMMIT 2013:

The MENA Region was chosen as a focus for examination due to the ongoing transitions that require the stable foundation provided through a new social contract. Structural changes that promote fairness, accountability, and equity across the region’s health sector and at the macroeconomic level are inevitable. The situation of refugees as well as overall health system governance have not received adequate attention. Interdisciplinary and multisectoral networks of academics and health policy experts can significantly impact and contribute to the development of evidence-based policies and knowledge sharing. The ideal is the integration of multisectoral evidence-based approaches to inform policy, while enhancing networking, partnerships, knowledge transfer, and the training of a public health workforce able to support this work. A regional network might also establish links to the EU in order to support the building of analytical and policy making

capacity in the region. A statement that calls for short-term emergency action and long-term transition processes will be attached to this statement. Available for download at:

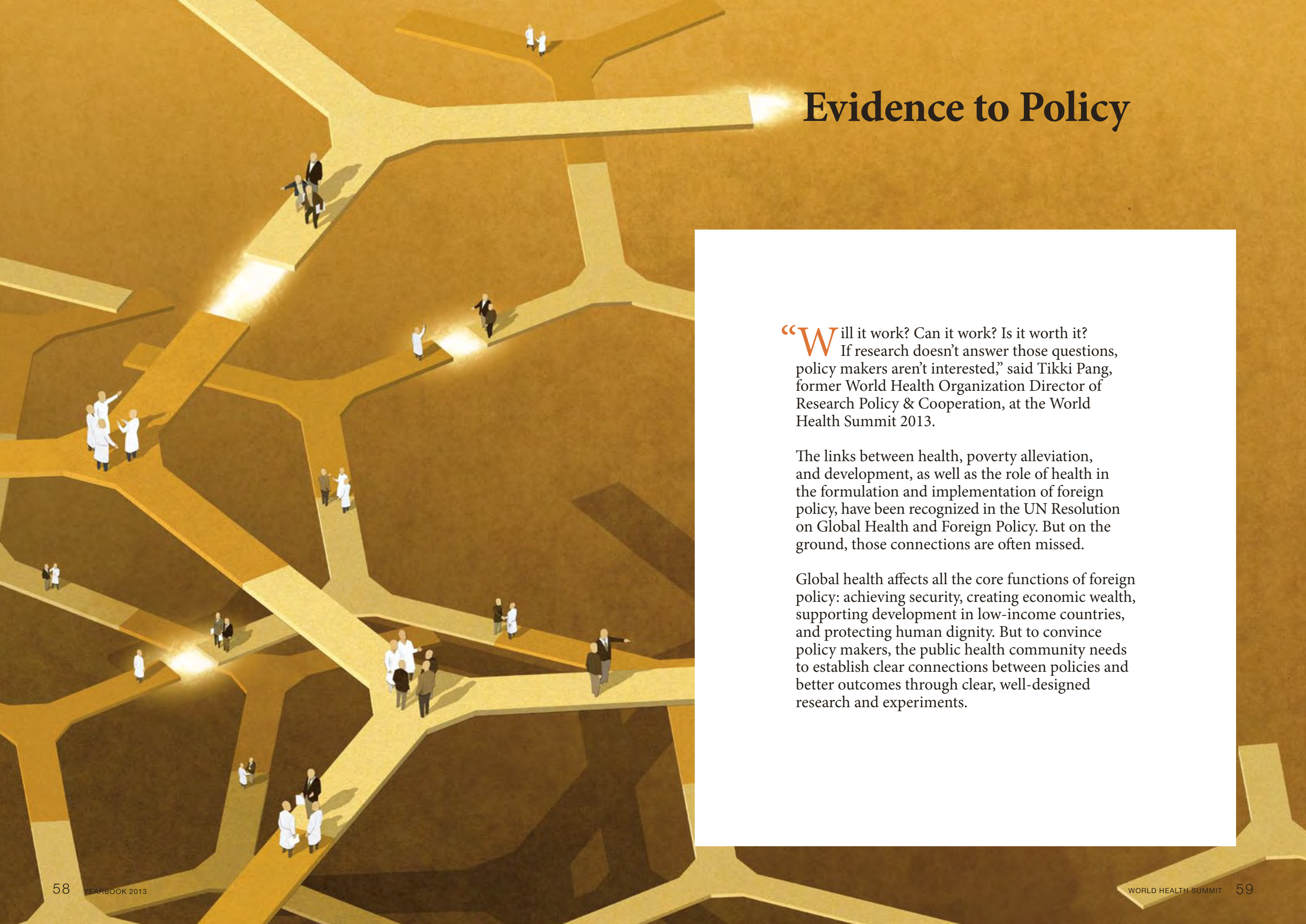
<http://bit.ly/MENA-Statement>

M8 Alliance
Academic Health Centers, Universities and National Academies

The M8 Alliance of Academic Health Centers, Universities and National Academies is a collaboration of academic institutions of educational and research excellence committed to improving global health, working with political and economic decision makers to develop science-based solutions to health challenges worldwide.
www.worldhealthsummit.org/m8-alliance/members

IAMP (InterAcademy Medical Panel) is the global network of national medical academics and national science academies with medical divisions, with the aim of providing evidence-based advice to governments on health issues. IAP is the global network of science academies.
www.iamp-online.org

The World Health Summit 2013 took place from October 20 – 22 in the Federal Foreign Office in Berlin.



Evidence to Policy

“Will it work? Can it work? Is it worth it? If research doesn’t answer those questions, policy makers aren’t interested,” said Tikki Pang, former World Health Organization Director of Research Policy & Cooperation, at the World Health Summit 2013.

The links between health, poverty alleviation, and development, as well as the role of health in the formulation and implementation of foreign policy, have been recognized in the UN Resolution on Global Health and Foreign Policy. But on the ground, those connections are often missed.

Global health affects all the core functions of foreign policy: achieving security, creating economic wealth, supporting development in low-income countries, and protecting human dignity. But to convince policy makers, the public health community needs to establish clear connections between policies and better outcomes through clear, well-designed research and experiments.

“IT’S TIME THAT WE ALL SHARE OUR KNOWLEDGE.”

Hanny-Sherry Ayitey has been the Ghanaian Minister of Health since February 2013. One of Africa’s most dynamic economies, Ghana has also been a leader in the health care sector, a process Ayitey discussed with journalist Andrew Curry on the final day of the World Health Summit.

Andrew Curry: Madame Ayitey, what brought you to the World Health Summit?

Hanny-Sherry Ayitey: The World Health Summit provides the opportunity to look at health as a human rights issue, then look at the role that research is playing to provide quality health care. It’s also a place to discuss how developed countries and developing countries can interact to fight the disease burden together, as equal partners.

Epidemics and new viruses are telling a new story. It’s time that we all share our knowledge and intellectual property so that we can fight disease as a common entity.

The developed world has worked on this for a long time. Are there mistakes you think Europe and the US have made that the developing world can sort of skip past?

I think in the past the developed world looked at itself in isolation when it comes to health. But recent issues, like the outbreak of epidemics and new viruses, are telling a new story. It’s time that we all share our knowledge and intellectual property so that we can fight disease as a common entity.

How did the process of creating a health care system work for Ghana? Did you look to the model in the US and Europe, or did you come up with something on your own?

We are not following the US model. We are looking at a political commitment; the government should make health care accessible to all, whether rich, poor, or disadvantaged. Mental health must be on the agenda as well. In Ghana, we see providing health care to everyone as good governance, to ensure a healthy population.

We are inviting the private sector to work in partnership with government so that we can extend good quality health care to all people.

Has that been a fairly easy thing to sell in Ghana?

No, it’s difficult. Of course, it’s resource bound, government must make available resources and inject them into the health sector. Government provides about 80 % of health coverage. We have public hospitals, we provide doctors, we pay for doctors, we support the training of nurses. We also support the training of doctors on government scholarships. So we play a leading role in health delivery from the government side, and that means finding some budgetary allocation for health. So now we are inviting the private sector to work in partnership with government so that we can extend good quality health care to all people.

And is that working? Has the private sector been responsive?

Yes. We now have the private sector in agreement with the government. We have companies that have actually set up their own clinics, and we also have individuals who have set up private hospitals. We are also providing a service to many Ghanaians, but with the introduction of a national health insurance scheme, we are enlisting more people onto the national health insurance.



The government plays a role in training doctors. I’ve met Ghanaian doctors in the US and Europe. Is brain drain something you worry about?

Yes, it’s a problem. Ghana has a ration of one doctor to 10,000 people. And then, in Europe or the US, you have about 4,000. And the few doctors we have are moving to the richer countries. We need to introduce more incentives that can stop these doctors from leaving.

Like what?

They are basically leaving because we are not able to provide better technology. The government will have to replace old, obsolete machines with new technologies, so that doctors will feel comfortable in the environment in which they are working. We are building new hospitals and we are prepping them with new technologies. We hope that with this program, many of them will find the environment conducive to stay home. We want to also introduce incentives that will attract them to stay by giving them the opportunity to do graduate courses in Ghana.

Are there negative incentives as well? Could you require them to serve five years after their education, for example?

Once you have done your national service, and once you have satisfied the conditions, we cannot say “don’t go.” We have to make sure that we create the environment that will make you want to stay.

Does the developed world have a responsibility along those lines as well?

They want knowledge and efficiency. It doesn’t matter where it comes from.

What could be done to improve cooperation between health care providers and public officials in Europe and Africa?

We should establish more cooperation. We must have an agreement that allows doctors from Europe or the United States of America to come to work in Ghana or Africa for six months, and at the same time, we need an agreement that allows Ghanaian doctors to be exposed to hospitals in Europe or the United States of America. I think with such cooperation, the high rate of attrition will decrease. When a Ghanaian doctor is exposed to a hospital in Germany for six months, working with new technologies and skilled colleagues, they’ll learn a lot and be able to bring that back home.

Public health is also about advocacy, about changing behavior patterns, and making people accept new concepts.

You have a background in marketing as well as biochemistry. Has that been useful in your work as health minister?

Yes. Public health is also about advocacy, about changing behavior patterns, and making people accept new concepts in health care. So this has helped to package some of our prevention programs, such as cholera immunization, typhoid injections, glaucoma awareness, and preventing malaria by highlighting the need to sleep in treated mosquito nets.

For example?

Because of ethnicity and cultural values, sometimes people frown on even discussing family planning. So we need to package it in such a way that it will be acceptable to men,

STRENGTHENING HEALTH RESEARCH CAPACITY IN LOW- AND MIDDLE-INCOME COUNTRIES—A CALL FOR ACTION



Hanny-Sherry Ayitey
Minister of Health,
Ghana

and so that men understand that it takes two. Not only the woman. And that it's normal for a husband and wife to visit the family clinic together.

Malaria and insecticide-treated mosquito nets are another example. Some believe that if you sleep in the net, it gives you more problems. We have to demonstrate through drama that you need to sleep in nets to minimize mosquito bites. Sometimes we do drama to let rural communities know they need antenatal care when you're pregnant. We use a traveling group of actors. It goes down very well—it's in your own language, and it's visual. We also did something recently on cholera prevention and the need to wash your hands after you come from the market or after you visit the toilet or washroom. We did a TV ad, and it was very well received, so we were able to reduce cholera outbreaks.

Television is a very effective way of communicating with people.

Is technology effective when it comes to communicating these messages?

Television is a very effective way of communicating with people. Now you

have TV in almost every household and ads can be done in local languages, so people understand.

You've talked about the importance of looking at the environment as a factor in public health. What is the biggest issue in Ghana? And how closely do you work with the other ministers?

I think for sustainable development, you cannot ignore the environment. As we work toward economic development, we must also work toward how we can protect the environment. We went to the transport sector to talk about how we can reduce vehicular pollution. The ministry of health is looking at tobacco and banning tobacco in public places. And then recently we were looking at alcohol consumption among the youth. If you are able to control the environment and make sure you have healthy people, one of the results is economic productivity.

You mentioned mental health as a particular issue of interest. Has that traditionally not been considered?

Yes. Traditionally, we have ignored it. It's even taboo to talk about it, and people who have suffered from mental health problems suffer stigmatization. People don't even know that once you are cured, you can return to normalcy and have a normal life. Some people even lose their jobs. So now we have taken mental health seriously. We want to look at it. We have passed a mental health bill. We will ensure that from now on we take mental health very seriously on the agenda of the health system.

Was that personally important to you?

No, I think it is part of a need, a program that countries need to consider and give more support to mental health. In Ghana we have taken it seriously. ●

Written by Jo Ivey Boufford, Lai-Meng Looi

The need for systematic attention to building capacity for health research in low- and middle-income countries (LMICs) was first brought to global attention by the *Report of the Commission on Health Research for Development* published in 1990. An independent international initiative, it proposed strategies to harness the power of research to accelerate health improvements and to overcome health disparities worldwide by addressing the inequities of the “90/10 gap,” in which 90 % of global research investments address the diseases of only 10 % of the world's population. Since that time, there has been much activity seeking to redress this imbalance.

The Global Forum and the Council on Health Research for Development (COHRED) were created to maintain a global policy focus on—and monitor investments in—LMIC research capacity, and to work directly with governments and other stakeholders to develop essential national health research systems, respectively. These have now merged. WHO convened a series of Ministerial Forums, a collaborative report of key international organizations: *Changing Mindsets: Research Capacity Strengthening in LMICs* (2008) defined practical ways in which Research Capacity Strengthening (RCS) can be systematically operationalized. There has been a continuous output of publications, training modules, tools, conferences, workshops, and task forces. Many donors have supported RCS in LMICs, and WHO created the ESSENCE (Enhancing Support for Strengthening the Effectiveness of National Capacity Efforts) framework to enhance the coordination of health research investments by major international donors.

A general agreement has been reached across the global community that effective RCS must involve a balance of long-term investments at three levels: the individual investigator (their training and research support), the institutions and organizations in which they work, and the national and regional health research systems that can provide a supportive environment for sustainable growth, as well as a scaling up of a country's health research capacity.

The Current Situation

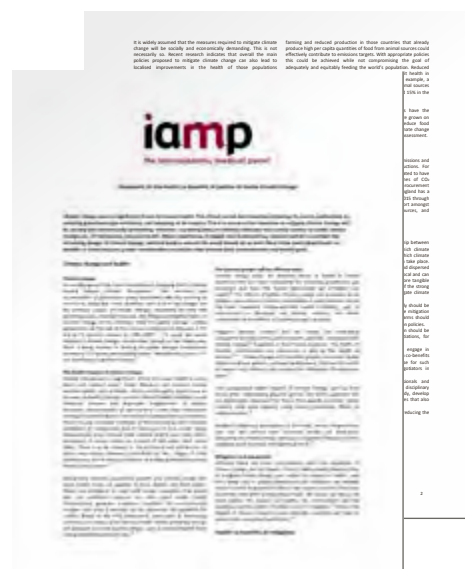
Hard data on the successes and shortcomings of RCS projects are scarce and, what is available, is often ambiguous. It is clear that enormous successes based on research have been achieved in the global fight against AIDS, tuberculosis, malaria, and on some neglected tropical diseases—and these have contributed to increased media, public, and political appreciation of the importance of health research. There has also been a steady increase in the participation by LMICs in the global research community.

Catalyzed by the business community, Product Development Partnerships (PDPs), such as Medicines for Malaria, and the TB Alliance, have grown. PDPs now manage two-thirds of the identified drug development projects for neglected diseases.

In recent years, global and regional information networks have developed with a goal of strengthening country-level RCS in specific areas of concern; yet, many international donor-driven programs have tended to stress profit-oriented aspects of medicine (e.g. laboratory methods, vaccinations, and therapies) leaving little infrastructure behind when specific program funding comes to an end. In addition, deficiencies in sustainability, local government support, local leadership, infrastructure development, human capacity development (including the critical issue of retention), coordination, implementation research, and monitoring and evaluation continue to exist and do not receive appropriate attention, although comprehensive frameworks have been developed.

Few LMICs have a critical mass of faculty and researchers, facilities are still limited, and many researchers suffer true intellectual isolation, often contributing to the “brain drain” of promising researchers to wealthy northern countries. Some see weak research capacity in disease-endemic countries as the single most important rate-limiting factor to achieving solutions to their health and development priorities.

To emphasize the continuing importance of this issue, and recognize the urgency of addressing the health requirements of developing countries, the related inequities in the current research landscape, and the need to enhance



► **The whole statement is available for download:**
<http://www.iamp-online.org/statements>

investments in health research and development (R&D), the 2013 World Health Assembly has directed member states, and WHO Member States, to strengthen health R&D capacities and investments for diseases that disproportionately affect developing countries.

Why Act Now?

The 20th century has seen a true health revolution, with over thirty years of additional life expectancy achieved. Yet there are new health challenges for the 21st century shared by all countries at various stages of development. Emerging and drug-resistant infections, climate change and its human health effects, epidemiologic transitions, longer life expectancy, the challenges of an aging population, and an increase in non-communicable diseases (NCDs), can be seen worldwide in low-, middle-, and high-income countries.

Urbanization is now a global phenomenon, with over half the world's population living in cities, and the fastest growing rates occurring in LMICs. Unique factors in the built and natural environments of cities are changing patterns of disease transmission. Obesity, related to poor diet and inadequate exercise, is increasing in all countries, and informal settlements and migration exacerbate stress and mental health-related medical problems.

Just as all of these health risks are shared like never before, the process for developing responses must also be shared in every nation's self-interest in order to assure true partnerships for research, and partnerships to assure that the latest technologies, as well as prevention and treatment strategies, can be brought to bear on these global health problems.

Priorities for Action

Academies of Medicine, many of whose members are the national leaders of the academic community—and are themselves high-level researchers with important access to policy makers—have a unique opportunity to catalyze national attention to their country's need for a robust research capacity, and join with other academies at a global level to accelerate efforts to ensure sustained leadership and investments. The member academies of the IAMP—the global network of medical academies—have recently committed to taking up this challenge, in partnership with other key stakeholders in the public and private sectors in their countries, regions, and globally. To this end, they made a number of recommendations for action in the IAMP Statement “A Call for Action to Strengthen Health Research Capacity in Low- and Middle-Income Countries.” Priorities for action include:

At country level, academies can partner with key stakeholders in their countries to assess the adequacy of current national research capacity and, based on the findings of that assessment, determine the most effective role they can play to support the development of research capacity that addresses the health and development needs of their country, including the education and training of young investigators and supportive environments for their work, while strengthening educational and research institutions that produce and host researchers to reverse “brain drain,” and develop national health research policies, as well as systems that support both. Academies can call for inclusion of the strengthening of systems for health research as a fundamental component of all “health systems strengthening” initiatives and investments in their countries and regions.

IAMP, member academies, and their leadership can join with others to encourage research capacity strengthening as part of long-term global and country strategies to promote human and economic development and innovation, and reduce health disparities. This could include the current WHO efforts to develop sustainable investment strategies, for which countries can be held accountable. It can also involve joining efforts to ensure that the international scientific community, and all stakeholders in global health, are committed to changing the mindset in collaborative research projects from collecting ad hoc scientific data with junior partners to initiating aligned, autonomous, sustainable, high-quality research in LMICs by and with LMIC investigators.

We invite you to join us in this important effort! ●



Prof. Jo Ivey Boufford

President, The New York Academy of Medicine | Immediate Past-Co-Chair, IAMP



Prof. Lai-Meng Looi

Co-Chair, InterAcademy Medical Panel

FOREIGN POLICY AND GLOBAL HEALTH—A HYBRID AFFAIR

Written by Ilona Kickbusch

Global health is a highly politicized and dynamic arena of diplomacy that reaches far beyond what we usually consider foreign policy in terms of content and actors. Former US Secretary of State Hillary Clinton was perhaps the most outspoken advocate of fully integrating global health issues into the foreign policy agenda. She is quoted as saying, “What exactly does maternal health, or immunizations, or the fight against HIV and AIDS have to do with foreign policy? Well, my answer is everything.” Not everyone would agree with that statement—or at least would demand clarification as to whether this implies that health is to serve foreign policy interests or if foreign policy is to service health goals. At present, the link between health and foreign policy oscillates between a security paradigm, an economic rationale, a social justice, a global public goods agenda, and a soft power strategy, and rarely can it be attributed to just one of the agendas. That might be an indication that it needs a new diplomatic and foreign policy design that goes beyond these categories.

When we first consider foreign policy goals, we reflect on issues such as geopolitical power and positioning, national security, trade, and promoting a set of specific values. One major change is that increasingly the global governance debate sees these national objectives of foreign policy as interfacing with global objectives, such as sustainable development, economic prosperity, poverty reduction, and human rights. Indeed, a prominent diplomat has articulated that, “Today’s diplomat has a dual responsibility: to promote his or her country’s interest and to advance the interests of the global community.” Following such a perspective, a group of seven foreign ministers (Norway, Brazil, France, Indonesia, Senegal, South Africa, and Thailand) met in Oslo in 2007 and declared health to be one of the most important—yet still broadly neglected—long-term foreign policy issues of our time. They stated, “We have therefore agreed to make ‘impact on health’ a point of departure and a defining lens that each of our countries will use to examine key elements of foreign policy and development strategies, and to engage in a dialog on how to deal with policy options from this perspective.”

Clearly the global health agenda is transcending policy silos. Over the last decade in the multilateral domain we

have seen it emerge in many political fora where decisions are taken by Ministers of Foreign Affairs or Heads of State rather than by health ministers. The discussions on the Millennium Development Goals as well as the Post-2015 Development Agenda are an example of this, as are health debates at the G8, G-77, or in regional or club groupings such as the EU or the BRICS. Commentators on this year’s (2013) United Nations General Assembly have drawn attention to the prominence that global health issues have had throughout the deliberations. Deliberations in other fora such as those dealing with food security, climate change, and human rights all have a major health dimension. At the same time, Ministries of Foreign Affairs have given more attention to the negotiations in technical and normative health agencies such as the World Health Organization. There are multiple political and economic reasons for this expansion: health is of course a major component of a country’s developmental trajectory both in terms of human capital and business development; trans-border health issues remain of high relevance as a security threat as the recent flu outbreaks have documented and access to medicines continues to be a critical trade and intellectual property issue. In addition, international and domestic health agendas converge as rising states are under continuous pressure to provide health coverage for their populations. Without serious investments in health they run the risk of what is called “the BRICS paradox:” that high economic growth rates run parallel to ongoing health inequalities, disease, and death. In particular, the rapidly growing rates of non-communicable diseases not only threaten future economic success but can lead to additional pressures on the health system which—if not resolved—can lead to significant loss of legitimacy and social unrest, as recently experienced in Brazil or in the western border regions of China.

Significant pressures in the international arena—in particular by civil society organizations and within UN deliberations—push countries to fulfill their 0.7% GNP pledge. As the purpose and character of foreign aid is redefined and new actors enter the aid arena, donor countries are also subject to changing their approaches. Increasingly global health contributions are made through new financing mechanisms such as the Global Fund for AIDS, tuberculosis and malaria. Here too, the arsenal of foreign policy has led to new kinds of strategies, in this case with a new type of conditionality addressed not to the receiving countries but to

the other donors. The UK government announced in September 2013 that it would contribute £1 billion to the Global Fund and “Every three minutes, for the next three years, UK aid will save a life by backing the Global Fund to beat three of the world’s biggest killers: AIDS, TB, and malaria.” The UK promise will only be realized on the condition that the Global Fund reaches its full replenishment target of \$15 billion USD. This financing strategy has been developed by the two top GFATM donors who also form a “special relationship” on other foreign policy and security issues—the USA (where the pledging conference will take place in December 2013 and whose national Mark Dybul heads the GFATM) and the UK.

But increasingly the investment in global health cannot be measured and counted along the classic lines of donor contributions as laid out by the OECD, or as measured by the contributions to major global funds, programs, or organizations. Many emerging economies and rising states are developing new approaches to south-south cooperation in health in close collaboration with their Ministries of Commerce and Foreign Affairs—either through bilateral cooperation or through new partnerships and clubs. Some are built on long-standing ties like the medical diplomacy initiatives of Cuba and China, which for decades have sent medical teams to other countries of the global south and welcomed significant numbers of students to be trained in their respective medical or nursing schools. Others are more recent, like Brazil’s activities in Angola or Mozambique, in the context of the Lusophone network. These developments make health a significant part of the soft power strategies of countries. For example, in August 2013, China invited all the African health ministers—with whom China had so far worked through bilateral mechanisms—to the first Ministerial Forum of China-Africa Health Development, which addressed the continent as a whole, as the final declaration illustrates. Like the Oslo Ministerial Declaration, it states, “We have recognized health as a central element of China-Africa cooperation, and its important role in developing China-Africa relations and promoting friendship among our peoples.”

Finally—as we know today—diplomacy is no longer just the purview of traditional diplomats. Parag Khanna states, “Diplomacy today takes place among anybody who is somebody.” One of the best recent examples of this takes us back to Hillary Clinton. As foreign policy negotiations take place in the UN arena between nation states, there are other

high-level diplomatic events in New York that bring together the full range of actors now populating and defining the global health domain: foundations, private sector companies, NGOs, academia, and celebrities. This year the Clinton Global Initiative organized a global health debate—which has been described by some as “a competing party of their own,” complete with engaging speakers, a different style of discourse, major power brokers, and last but not least, the Clintons themselves. Power and foreign policy have become fluid, as have the many alliances that are formed. The question is not whether one is more important than the other—they will derive their ultimate legitimacy from what they have been able to achieve: for peace, stability, security and, above all, for the most disadvantaged in the new multipolar world. ●



Prof. Ilona Kickbusch

Director, Global Health Program, Graduate Institute Geneva

RESEARCH FOR UNIVERSAL HEALTH COVERAGE— THE WORLD HEALTH REPORT 2013

Written by Marie-Paule Kieny

Universal Health Coverage (UHC) is an integral approach to a country's overall human and economic development strategy. World Health Organization (WHO) Director-General Margaret Chan has described UHC as “the single most powerful concept that public health has to offer,” and the “best way to cement the health gains made during the previous decade.” Its power lies in its contribution to addressing the many challenges countries face—individually and collectively. UHC has been defined in the Rio+20 Political Declaration as being crucial to “enhancing health, social cohesion, and sustainable human and economic development” and has received considerable attention on a global stage, particularly within the debate on the post-2015 development goals.

In August this year, the World Health Report 2013 “Research for Universal Health Coverage” was launched. Therein, UHC has been defined as “ensuring that all people can use the promotive, preventive, curative, rehabilitative, and palliative health services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.” The architecture of UHC requires the establishment of a financing system based on equity concerns; a well-functioning primary health care infrastructure with sufficient facilities; an adequate health workforce of the right mix; access to essential medicines and technologies; as well as public health services that promote health and prevent diseases throughout society. With universal health coverage, countries can help ensure that citizens obtain the health services they need without suffering financial hardship when paying for them.

However, the gap between the present coverage of health services and UHC remains large and often it is not clear how to fill that gap in every setting and context. Despite a multinational commitment to UHC, there are many unsolved questions on how to provide access to health services and financial risk protection to all people in all settings. Hence, there is a need for research on how to expand health services with limited resources and the WHO has called on countries to continue investing in local research in order to develop a system of UHC tailored to each individual country's situation. Currently, most research is invested in new technologies rather than in

making better use of existing knowledge. Much more research is needed to turn existing knowledge into practical applications. In this context, all countries should be producers as well as consumers of research. A wide range of basic and applied research studies is essential to reach UHC and the process of bringing scientists and policy makers together needs to be accelerated.

The World Health Report 2013 shows how countries—when developing a system for universal health coverage—can use research to determine what health issues should be addressed, how a system should be structured, and how to measure progress according to their specific health situation. It further defines research for UHC as the set of formal methods that turns promising ideas into practical solutions for improving health services, and consequently improving health. Research for UHC must be context-driven and answer the question of how to choose the health services needed in each setting, how to improve service coverage and financial protection, and consequently how to promote, protect, and improve health and well-being. The quantity, quality, and use of disaggregated data is critical to informing the planning process, monitoring, evaluation, and accountability. While the path to universal coverage will be different for all countries, in all cases, countries need to tie their plans to tough, relevant metrics.

The question on how to measure progress toward UHC is particularly important. Many specific indicators, targets, and data sources are already in use and developing countries can especially learn from the experiences to measure progress towards the MDGs (e.g. access to anti-retroviral therapy, births attended by skilled health personnel, and immunization coverage.) In this context, the World Health Report 2013 points out that it is possible for each country to choose the essential health services that should be monitored, and the set of indicators that they will use to track progress. Out of these investigations a common set of indicators may emerge that can be used to measure and compare progress toward UHC across countries. Moreover, an additional and complementary challenge is to develop research that can enhance the understanding of how multisectoral policies can improve health and advance development. Multisectoral action is essential because the state, market, and civil society sectors each possess distinctive assets that can be combined in a productive manner to solve complex problems such as UHC.

And there is good news: more research is being done in more creative ways and most low- and middle-income countries now have research foundations to build on. For example, research was crucial in showing that bed-nets reduce child deaths in malaria-prone countries and conditional cash payments increase the use of health care services. During the 2000s, research investment in these countries has grown 5% on average compared to zero growth in high-income countries, and increasingly authors of published research are coming from emerging countries such as China, Brazil, and India. Last but not least, the number of multisectoral partnerships between universities, governments, the private sector, and international organizations has increased significantly in recent years, contributing to the fact that the process of doing research is becoming more robust.

However, much remains to be done and the World Health Report 2013 particularly calls for increased national and international investment aimed specifically at improving the coverage of health services. Second, it argues for closer collaboration between researchers and policy makers. Third, it highlights the necessity to build more research capacity by developing a local workforce of well-trained, motivated researchers. Finally, the report points out that more global and national research networks could better coordinate research efforts by fostering collaboration and information exchange. As the World Health Report 2013 states, “taking a methodological approach to formulating and answering questions is not a luxury but a necessity.” ●



Dr. Marie-Paule Kieny

Assistant Director-General – Health Systems and Innovation, World Health Organization

8 Experts / 8 Statements

International politics doesn't always follow academic evidence to develop a framework that improves health. What needs to be done to ensure close and fruitful cooperation?

05



Dr. Claudia Stein

Director, Division of Information, Evidence, Research and Innovation, World Health Organization Regional Office for Europe

Policy making is a highly complex, multifactorial process. Research suggests that policy makers base their decisions on many factors, including evidence, but also "common sense" and personal stories, while always balancing other political priorities, not least of which include elections. The research and policy communities often link up far too late for the translation of evidence into policy. Moreover, researchers tend to provide information in areas of their own interest, without real knowledge of what policy makers actually need. In a way, the cart is put before the horse and this situation needs to be reversed. Hence, researchers need to hear what kind of evidence is needed and provide those answers. They should then expect for the evidence to be used appropriately. This requires structured platforms and networks. WHO Europe has recently launched the regional branch of a global WHO program that provides such structures, bringing together all stakeholders in policy making—including researchers at country level. This Evidence-informed Policy Network (EVIPNet) creates institutional bridges between the research and policy communities. Through these platforms, all stakeholders work together very early on to identify and address country-specific priority topics, request and assess research evidence, and integrate this into policies. We believe that programs like EVIPNet are a key element for putting the horse back in front of the cart.

06



Prof. Otto Cars

Executive Director and Chairman, ReAct, Action on Antibiotic Resistance, Uppsala University

The serious threat posed by the spread and development of antibiotic resistance (ABR) is not properly recognized by either international politics or academia. This is largely the result of an enormous information gap in terms of burden and patterns of ABR across the world. We need to establish and maintain worldwide surveillance mechanisms to inform the global public health agenda about the magnitude of ABR, base priorities, ensure needs-driven research, and guide policies. To track this global threat, international funding is indispensable, as is the training of health care providers and the public in general about bacteria and ABR. A fundamental shift in outlook on antibiotics is needed; effective antibiotics must be considered a global public good. Surveillance development and surveillance mechanisms should be embedded into the many health programs in which the provision of antibiotics is considered. The gains to be made by providing the most effective antibiotic and monitoring the development of resistance are enormous. However, politics follows evidence translated in economic and social benefits and we need more studies to provide this kind of convincing data.

0.7 %

Significant pressures in the international arena may push the world's developed countries to fulfill their pledge to donate 0.7 % of their gross national product (GNP) to the economic development of poor countries.

99% POLIO REDUCTION

In 1988, when the Global Polio Eradication Initiative was formed, polio paralyzed more than 350,000 people a year. Since then, the number of cases has decreased by more than 99 %.

Polio is endemic only in Afghanistan, Nigeria, and Pakistan. But if it is not eradicated, it could make a comeback, resulting in almost 200,000 new cases every year and global spread within a decade.

POLIO ERADICATION

FOREIGN POLICY AND GLOBAL HEALTH

In 2012 the US Department of Defense's budget for work in global health was at least

\$597.7 MILLION USD

Countries tend to use health as a foreign policy tool to achieve other objectives.

HEALTHY AGING

By mid-January 2013, China was estimated to have 185 million citizens aged over 60. By 2025 there will be 64 retirees per 100 workers.

2025
64
elderly Chinese

100
Chinese workers



Outlook to São Paulo WHS Regional Meeting— Latin America



01



● São Paulo
April 6–8, 2014

The WHS Regional Meeting—Latin America, São Paulo, organized by the University of São Paulo Medical School, will focus on Latin America's health challenges. Ministers of Health from all over Latin America will be invited to share their firsthand experience of policy and health system reform.

Much like the annual meeting in Berlin and the inaugural WHS Regional Meeting—Asia, held in Singapore in April 2013, São Paulo will be a chance for NGOs, representatives of civil society, and international aid organizations who play major roles in public health and health care provision in Latin America to meet and consult on the continent's most pressing health issues.

The program will be organized according to five topics:

1. Healthy Life Expectancy
2. Urban Health/Health in Megacities
3. Increased Research Capacity to Incorporate Technologies
4. Management of Health Systems to Ensure Universal Coverage
5. Health Education

“It's very important to put the voice of Latin America on the table, not just Europe and the US. It's a big responsibility.”

Prof. José Otávio Auler,
University of São Paulo



02



03

Following the ceremonial opening at the São Paulo Government Palace on April 6, two days of intense discussion and exchange will enable key players and opinion leaders from Latin America and around the world to use the second WHS Regional Meeting to its fullest, and to set the agenda for a better future for the people of the region and beyond.

► 01 Prof. Eduardo Krieger, Past President, Brazilian Academy of Sciences

► 02 Prof. José Otávio Auler, Co-President, World Health Summit 2014, Berlin

► 03 Prof. Giovanni Guido Cerri, Dean, Faculty of Medicine, University of São Paulo | President, WHS Regional Meeting—Latin America, São Paulo, 2014

Global Health for Development

“**E**xtrême poverty, severe malnutrition, hunger, lack of access to clean water, basic health care, electricity; pollution and environmental degradation caused by human activity; wars, weapons exports, etc.; these are all part of our global health—or of lack of it,” according to José M. Ramos-Horta, former President of East Timor and Nobel Peace Prize Laureate 1996.

The outcome document of the Rio+20 United Nations Conference on Sustainable Development places particular emphasis on health. It's considered a precondition for and outcome and indicator of all three dimensions of sustainable development: economic growth, social improvement, and environmental protection. The clear message is that health must become a bigger part of the post-2015 development agenda.

This presents an opportunity to rethink what makes development inclusive, innovative, and relevant for everyone. It emphasizes the importance of universal health coverage in enhancing health, social cohesion, and sustainable human and economic development. Instead of considering it as a separate phenomenon, health must be treated as an essential, integral component of sustainable development and poverty reduction.

HEALTH IN THE POST-2015 DEVELOPMENT AGENDA

Written by Mathias B. Bonk

The nations' commitment to eradicate poverty, enhance global development, and protect the environment formed the basis of the global development agenda for the first 15 years of the 21st century. This led to the establishment of an unprecedented, international framework for measuring development on a global scale: the Millennium Development Goals (MDGs) with their underlying targets and indicators.

Health plays a main role within these MDGs, with three out of the eight goals directly dedicated to health issues: improving maternal health, reducing child mortality, and combating HIV/AIDS, malaria, and other diseases. The other MDGs have targets that fundamentally affect health and vice versa, e.g. MDG1 targets the alleviation of poverty and hunger, and MDG2 has the objective of improving education among women.

Among other factors, strong political commitment on all levels has been essential in the MDG process, leading to positive health outcomes as displayed by the drastic reduction of child mortality since 2000, a great increase in HIV patients' access to ARVs, and malaria control in the participating countries. But the progress toward the MDGs is uneven, with some countries achieving many goals (e.g. Brazil), while others are still not on track to realize any (e.g. Benin). India and China were also very successful, for example in reducing the poverty levels considerably in their populations, therefore influencing the global MDG results significantly.

With less than two years to the MDGs' overall target date at the end of 2015, the debate over the contours of the next development agenda is now in full swing. Following the MDG Summit in 2010, UN Member States initiated a process of international consultations and expert groups. In July 2012, UN Secretary-General Ban Ki-moon appointed a high-level panel of eminent people, co-chaired by British Prime Minister David Cameron, Liberian President Ellen Johnson Sirleaf, and Indonesian President Susilo Bambang Yudhoyono. But unlike the time when the MDGs were initially set up, civil society organizations, research institutions, and think tanks worked—together with several UN institutions, the World Bank, and the IMF—on a report entitled "Realizing the Future We Want for All." This

included several initiatives, e.g. the Rio+20 Conference on Sustainable Development and a global, online consultation process open to all, and served as important input to the work of the UN high-level panel.

In its recently presented recommendations, the panel highlighted human rights as a fundamental basis for sustainable development and pointed out the devastating effects of political instability on development. They also considered the changes that have taken place globally from the onset of the millennium and possible further changes that might take place in the next decade, especially concerning the environment (e.g. climate change). Therefore, they proposed that the new agenda's overriding theme should be sustainable development focusing also on seemingly ambitious goals such as the eradication of extreme poverty.

The UN high-level panel also outlined 12 Sustainable Development Goals (SDGs), which would be universal but with national targets as opposed to the aggregate targets in the current agenda. Whilst three of the eight MDGs are directly relevant to health conditions, it is likely that only one of the proposed SDGs will focus directly on health (SDG4: Ensure Healthy Lives). In addition to some of the present MDG issues, e.g. reduction of under-5 mortality, decrease of maternal mortality, and the fight against HIV/AIDS, tuberculosis, malaria, and neglected tropical diseases, the proposed SDG4-Goal would additionally include vaccination coverage and non-communicable diseases.

Many of the other proposed SDGs are also relevant to improving health, such as providing quality education, ensuring food security and good nutrition, achieving universal access to safe water and sanitation, and promoting environmental sustainability. Further challenges, like demographic transition, climatic changes, and urbanization, among other determinants of health, are also being discussed while setting up the new goals and targets. This all could somehow lead to a "health-in-all-policies" approach as a way of integrating health with all the other development sectors for sustainable development. A prerequisite for this would be strong governmental commitment in addition to improved cooperation with the entire society.

But there are a few important health-related aspects which are neglected in the proposal of the UN high-level panel, e.g. strengthening of health systems in low- and middle-income countries and universal health coverage.

The goal of universal health coverage is to ensure that everyone has access to the health services he or she needs without suffering financial hardship. Although the panel acknowledges the importance of universal health coverage it does not propose any indicators that specifically attempt to assess progress toward this objective. The great importance of universal health coverage in enhancing health, leading to social cohesion, poverty reduction, and sustainable human and economic development, therefore needs to be emphasized more.

So how can we ensure that health is most effectively integrated in the post-2015 development agenda? It is very important to keep in mind that the world has significantly changed since the beginning of the millennium, not only in the area of global health. Fast developing economies, like in the BRIC countries, leading to a rapidly growing middle-class, have a great impact on a global scale. Other factors like the economic crisis, rising social inequity, climate change, etc., which are largely affecting health, have also become even more important within the development agenda. These are some reasons why a direct comparison between MDGs and SDGs is difficult. Health might not seem to be mentioned in the SDGs as often as within the MDGs, but the overall objective of the SDG process is the improvement of human well-being. Therefore the health community should make sure that we continue to work hard to reach the MDGs goals that have not been reached so far and to strongly remind the decision makers to use a health-in-all-policies approach, to keep the social determinants of health high on their agenda, and to work with WHO and many other stakeholders to reach universal health coverage. In this way, health will become a core element of the sustainable development process not only as a contributor to but also as a beneficiary of development. ●



Dr. Mathias B. Bonk

Program Director of the World Health Summit | Coordinator of the M8 Alliance; supported by Mrs Joy Mauti, MSc International Health, Charité – Universitätsmedizin Berlin

HEALTHY AND SUSTAINABLY PRODUCED FOOD FOR ALL IN THE POST-2015 AGENDA

Written by Hans Rudolf Herren

The agriculture and food systems are closely interlinked with various dimensions of health. In what we call the 4-H paradigm, these interlinkages can be expressed as the dimensions of human health, plant health, animal health, and environmental health (see Figure). If we want to nourish the people and nurture the planet, these different health dimensions need to be achieved simultaneously. Of course, agriculture and food systems can have both negative and positive effects on each of these dimensions. As many of the negative effects are associated with the current, prevailing industrial farming and food systems, a shift toward sustainable farming and food systems is needed, as they are better suited to delivering positive effects in all the four health dimensions. Such a shift was outlined in the UN-sponsored assessment of agricultural knowledge, science, and technology for development in its report "Agriculture at a Crossroads," which clearly stated: "Business as usual is not an option."

Human Health

Ensuring ample and adequate nutrition is essential to supporting healthy lives everywhere. Currently, the world is facing what many are calling the "double burden" of malnutrition, which means overnutrition and undernutrition. Malnutrition, in this sense, is when the body does not get enough of the basic nutrients: carbohydrates, protein, and fat. If this occurs in the first year of life, the damage to an individual's health is irreversible. However, there is also a risk of damage to health if a person does not get enough essential vitamins and minerals in their diet. In fact, it would be more appropriate to call it the "triple burden" of malnutrition, as the micronutrition deficiency deserves particular attention as a third form of malnutrition. Agriculture and food systems have a key role to play in supporting healthy diets. Diversifying current agricultural production to focus again on locally adapted diets, including pulses or vegetables rather than perpetuating the current focus on maize or soybeans, could help contribute to making healthy diets affordable again. Additionally, intensive agricultural production through inadequate use of pesticides and fertilizers can also

directly affect human health. Furthermore, the use of pesticides is not an inconsequential health problem for those working the land. The World Health Organization (WHO) estimates that between two and five million cases of poisoning occur every year. Of these, 40,000 are fatal. There is also growing evidence that more serious and longer-term research into the potential health effects of GMOs is required.

Plant Health

Ensuring plant health contributes to improving sustainable food security, and has direct links to human and environmental health. Knowledge- and labor-intensive agricultural technologies—i.e. agroecology and organic agriculture that build on available on-farm inputs—are significant among smallholders, especially in environments where agricultural inputs are inaccessible or too expensive for typical farmers. Agroecological methods aim to not only sustainably increase yields, but to achieve a sustained socioeconomic impact by reducing synthetic input costs (e.g. through integrated pest management [IPM]), increasing economic diversification (e.g. through intercropping), and augmenting self-sufficiency and food security at the household level. Sustainable and resilient agricultural practices and technologies that include integrated crop-livestock systems, innovative crop management systems, adoption of IPM, and increasing agricultural biodiversity should be promoted to strengthen plant health and soil fertility. These healthy plants will also help keep people healthier, in particular if at the same time, more local food systems are also being established.

Animal Health

In order to support sustainable crop production, the important role of livestock needs to be acknowledged. The links between agricultural systems and animal health is evident in many cases. One example is a vector-borne disease, such as tsetse flies as the biological vectors of trypanosomes, which can cause diseases in animals and also in humans. Sick cattle can show reduced growth rates, reduced milk productivity, and also importantly, reduced strength of farm animals. Ensuring healthy livestock requires integrated strategies and tools for the control of

vectors of animal diseases, but also support of the welfare of livestock keepers. It is clear that keeping livestock, which ensures high animal welfare, also enhances livestock health. Bringing back the animals from the factory to the farm also allows using animal manure as an environmentally sound and inexpensive way to enhance soil fertility on farms, which has multiple benefits—again, for good nutrition and human health, and environmental health. Furthermore, it will also reduce the use of antibiotics, which are exposing humans to enormous risks due to the development of resistance against many serious diseases, such as TB.

Environmental Health

No plant will grow and no animal will be fed in an environment without fertile soils, adequate water and irrigation, and a healthy ecosystem, which remain the basis of food production. Current industrial (and also some more traditional/conventional agricultural systems) fall short in maintaining this ecological basis of food production, and even exacerbate many of the existing and emerging issues, including climate change. A state where agriculture accounts for between 30 to 50 % of man-made greenhouse gas emissions—outnumbering the total greenhouse gas emissions of global transport—cannot be called sustainable. There is a growing consensus that addressing these challenges requires an urgent shift to sustainable and resilient agriculture and food systems that make more efficient use of natural resources, and are more resilient to climate change impacts, while reducing greenhouse gas emissions. This is the basis from which to produce ample, healthy, and adequate food for today and future generations.

Policy Implications

All of the outlined elements have immediate policy implications, including for the post-2015 development agenda. Due to the overwhelming relevance of sustainable agriculture and food systems for sustainable development, poverty reduction, and healthy lives, these issues must be given high priority and be agreed as a central post-2015 goal. Achieving food and nutrition security for all through sustainable agriculture and food systems can only be done by shifting to

sustainable, diverse, resilient, and multifunctional agriculture and food systems. At a UN meeting in New York, we launched the proposal of defining "wiser" targets for the SDGs (see Column on right). Setting wiser targets is needed because we haven't, thus far, been able to achieve the MDG on hunger, and lacked agreement on the way in which to achieve it through specific targets—to be achieved jointly by all committed parties. The way forward needs to include moving away from the sole focus of increasing global agricultural production. We already produce enough food for over 10 billion people today, and should seriously consider dramatically cutting food waste and pre- and post-harvest losses, and rather concentrate efforts on solving the production problems in food deficit regions. It also includes achieving the transition to sustainable agriculture and food systems, including reversing land degradation. The way forward will need to consider all aspects of malnutrition in order to ensure the right to food for everybody, everywhere. In short, the way forward means fostering sustainable agriculture, and food systems that promote human health, plant health, animal health, and environmental health, while addressing and dealing with the hunger and poverty nexus. ●



Dr. Hans Rudolf Herren

Right Livelihood Award Laureate (2013) | President, Biovision

Post-2015 Goals and Targets on Food Security and Nutrition

GOAL

Achieving food security and nutrition for all through sustainable agriculture and food systems

TARGETS

- Minimize food waste as well as pre- and post-harvest losses
- Increase productivity and income for smallholders and women farmers
- Achieve the transformation to sustainable agriculture and food systems and reverse land degradation
- End malnutrition
- Realize the right to food



GLOBAL GOVERNANCE FOR HEALTH

Despite large gains in health over the past decades, health risks are still unevenly distributed, and disturbingly so. While the global health system plays a crucial role in addressing health inequalities, its efforts are often thwarted by other powerful interests, such as those aimed at protecting national security, safeguarding sovereignty, or pursuing economic goals. This is the starting point of The Lancet—University of Oslo Commission on Global Governance for Health—an initiative taken in collaboration with the Harvard Global Health Institute. The Commission was set up to discuss the health impact of decisions made in arenas of global governance outside of the global health system.

Written by Ole Petter Ottersen

Recognizing that many drivers of ill health lie beyond the control of national governments, and outside the realm of the health sector, we believe that the root causes of unjust distribution of health must be addressed where global actors convene to address transnational issues, and to organize our common global affairs. This article will present some of the results and recommendations of the Commission's work. We send a strong message to the international community, and to all actors that exert influence in processes of global governance: we must no longer regard health solely as a technical and biomedical issue, but recognize the need for global cross-sectorial action, and distributive justice in our efforts to address health inequity.

Life chances vary enormously, both between and within countries, as demonstrated in the 2008 report of the Commission on Social Determinants of Health (CSDH). A powerful diagnosis was provided: a toxic combination of poor social policies and programs, unfair economic arrangements, and bad politics are responsible for the fact that the

majority of people in the world do not enjoy the good health that is biologically possible. Our Commission on Global Governance for Health picks up where the CSDH left off, by providing a candid assessment of political mechanisms that are at the root of the unjust distribution of health. We identify a range of policy arenas, which require improved global governance for health: food security, foreign investment treaties, international finance, transnational corporations, trade-related aspects of intellectual property rights, irregular migration, and violent conflict. The norms, policies, and practices arising from global political interaction across all sectors that impact on health are what we have labeled “global political determinants of health.”

The global health system—actors with the primary intent to improve health, such as the World Health Organization (WHO), the GAVI Alliance, and the Global Fund to Fight AIDS, Tuberculosis and Malaria—has made great strides over the past few decades. Its initiatives, however, are not immune to what happens outside the health sector, and for its continued success, the health system's initiatives must not be foiled by political decisions in other arenas.

While globalization has generated immense gains for people's lives and health, powerful global actors in pursuit of what they see as their legitimate interests can also—directly or indirectly—cause the ill health of millions. These situations can arise, for instance, when states cannot cooperate to check the behavior of powerful multinational corporations. A major transnational corporation may, in its pursuit of profit, expose workers to dangerous working conditions, or expose communities to toxic pollutants. The wide-reaching power that some actors have over markets leaves less powerful countries with few choices when the interests of the market and the needs of its people compete. Similarly, a powerful country can influence the creation of transnational laws and conventions, but also decline to adopt transnational agreements that protect public health. In intergovernmental organizations, the objectives of one sector may have to yield in competition with those of a more powerful sector.

Take the example of nutrition. Today, we experience in many parts of the world a “double burden” of malnutrition, with obesity paradoxically coexisting with hunger and undernutrition. Among the causes of disease that can be prevented, obesity has surpassed tobacco in certain regions of the world. At the same time, hunger

kills more people annually than HIV, malaria, and tuberculosis combined.

While the conditions of hunger and obesity within a country are subject to a variety of local and national processes, activities at the global level have come to play an increasing role in people's access to sufficient, safe, and nutritious food. Analysts have pointed to a range of global-level factors as having potential negative impact on food security, including price volatility, financial speculation, agricultural trade agreements, replacement of staple crops with cash crops, land acquisitions, and marketing of unhealthy foods by large multinational corporations. As such, national food systems, and therefore people's health statuses, have become increasingly vulnerable to actors in the global market, whose main objectives do not cover food security or human health.

The fact that the global governance system fails to adequately protect the right to food and the right to health—two of the most fundamental and widely accepted human rights—is, in our view, rooted in several dysfunctions of the global governance complex: the weakness of institutions for protecting health in other sectors such as trade or finance, the institutional “stickiness” that makes it difficult to change agricultural trade rules, even when they disfavor poorer populations, and the weak mechanisms for holding powerful actors accountable for the negative impacts their decisions may have on health and food security. Finally, there is the problem of “absent institutions”: states have collectively failed to build the institutions needed to better govern a globalized food market, such as institutions for regulating speculation in global commodity markets, for managing export controls in times of extreme food commodity shortages, and for balancing global biofuel demand with food-supply concerns.

The Commission is convinced that we are faced with a global governance system that is inadequate to mitigate the power disparities that continue to characterize global politics. The system is fragmented and unfit to handle the cross-sectorial and interconnected challenges in a way that is conducive to health equity. In our report, we illustrate how different types of systemic dysfunctions—democratic deficit, weak accountability mechanisms, weak institutions to protect health in other sectors, institutional stickiness, and absent or nascent institutions—are plaguing the institutional architecture, and allow for the adverse effects of the global political determinants of health to persist.

The cases that we discuss suggest that remedial action is possible and that measures can and should be taken to secure global governance for health. Decision making spaces must be opened for wider participation, based on the awareness instilled by the Commission's report: that decisions made outside of the health sector might negatively impact health and undermine the efforts of the health sector. Surveillance is key. In each political arena, competence must be built to better monitor effects on health, and to better understand the political root causes of health inequity. The very social sustainability of the global governance system hangs in the balance.

In conclusion, the biomedical paradigm for strategies and action on health must be complemented by another paradigm in which health inequities are taken as cross-sectorial concerns at all levels of governance, and in which health itself is regarded as a universal value and a shared objective for all. ●



Prof. Ole Petter Ottersen

Rector, University of Oslo

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GERMANY'S GLOBAL HEALTH STRATEGY

Written by Daniel Bahr

On July 10 of this year, the German Federal Cabinet adopted the strategy paper Shaping Global Health—Taking Joint Action—Embracing Responsibility. It is the first time that the Federal Government has jointly approved a framework document on global health.

The aim of this strategic paper is to explain the fundamental commitment of the German government to global health policy. It describes Germany's commitment to assume a leading role in global health policy embedded in a European setting. Furthermore, the principles guiding the actions are illustrated, outlining the values that constitute the German approach and, at the same time, setting priorities for the engagement. That is why the adoption of the paper marks the beginning of a new period in German commitment.

With this strategy paper, Germany also pays tribute to the strong and indispensable engagement of civil society and advocates that its participation in international processes be strengthened. This is why, from the very beginning, civil society was included in the paper's elaboration. Their ideas were taken into account, and suggestions influenced the paper's design throughout the process. In this respect the strategy paper differs from those of other countries.

Although one cannot expect conclusive answers to all of the urgent questions of global health policy from a strategy paper, it is our response to the increasing challenges of globalization.

Technical progress has brought the countries of the world closer together. The effects of our "global" world can be witnessed, day in, day out, in the most diverse areas, each with their own impact. Financial transactions and business deals are conducted across national borders. We communicate with ease over large distances, share huge amounts of information in seconds via the internet, and are able to cover even the greatest distances almost effortlessly. It is this technical progress that has brought us together and made us a global community.

But, like every other community, its members must assume responsibility for one another. Globalization can no longer be seen exclusively as a development that technical progress has made possible for us. It must also be understood as a political challenge we have to face.

Indeed, if we want it to be a success, we will have to use the possibilities that globalization offers in such a way that all countries and, consequently, all the people of this world can benefit from it. This also implies calling for basic social rights for all.

As WHO's constitution reminds us, access to health care is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition. At the same time some two billion, of the total of seven billion people inhabiting our earth today, have no access to proper health care. One of the challenges we are facing today is to guarantee sufficient health care for these people. This can only be achieved by joint, coordinated action on the part of the community of nations.

For years, Germany has been a reliable partner in the efforts to meet the current challenges presented by global health policy. Since 2000, for example, its expenditure on bilateral and multilateral development cooperation in the health sector has more than tripled. Germany is the third-largest regular contributor especially to and for WHO and is an active member of the UNAIDS Programme Co-ordinating Board, as well as one of the five founding states of the International Agency for Research on Cancer, in Lyon. This is a commitment that Germany wishes, and intends to further expand in terms of its diversity. We want to, and we will continue to assume responsibility in the future when it comes to guaranteeing health care for all of the people on this earth.

Three guiding principles underpin Germany's commitment to a global health policy:

First of all: it is our goal to improve and protect the health of Germany's population in the long term. However, in a globalized world, national action alone is not enough. It is true that many health problems manifest themselves locally. However, they originate in complex global scenarios. As a result, we can only provide comprehensive health protection locally if we take joint action globally.

Secondly: we strive to make German experience, expertise, and funds available to improve global health. We want to show that we are serious about fulfilling our international commitments. We want to help our partners establish health care systems that are sustainably financed and socially just. This will be part of our contribution to reducing poverty worldwide, to increasing economic productivity, and enhancing social cohesion.

Thirdly: we are deeply committed to effective, co-operative, equitable action in the international fora that are dedicated to global health policy. Only strong international institutions that enjoy equal rights can act effectively in coordination with each other.

By adopting the strategy on Shaping Global Health—Taking Joint Action—Embracing Responsibility, Germany emphasizes its willingness to take an active part in shaping global health policy, and as a country it assumes responsibility for ensuring proper health care for people all over the world.

We are also committed to a strong European presence in global health. Germany sees its contribution as part of the overall European commitment: "Germany acts with and through Europe." The EU has a decisive role to play in meeting the global challenges in the field of health. This is reflected in the strategy paper and fully supported by the German government.

But the paper does more than outline a consensual strategy. It also identifies sectors in which Germany can be most helpful in improving health worldwide. It was important to identify sectors that Germany is comparatively strong in. One can help best in the areas which one is competent in. These are:

1. Effectively combating cross-border health threats
2. Strengthening health systems throughout the world facilitating development
3. Expanding intersectoral cooperation—interaction with other policy areas
4. Health research and the health industry—providing important impulses for global health
5. Strengthening the global health architecture

This setting of priorities by no means reduces our commitment to these topics. The strategy paper also describes the general contours of Germany's global health policy and provides sufficient space for individual approaches, to accommodate special situations, and to cope with new challenges. In addition, it outlines which partners the government will be reaching out to in its drive to meet the challenges at hand.

To meet those challenges effectively we need joint actions. Not only internationally, e.g. with other European countries, but joint actions of the different federal ministries

as well. Therefore, it was a big step to have the paper adopted by the German Federal Cabinet, where all departments are represented by their ministers. I am confident that the strategy paper will enable us to optimize the coordination process for global health issues in Germany.

At the same time, it is important to note that the adoption of the strategy paper is by no means the static end of a discourse. It contains the necessary preconditions for the efficient strategic planning of Germany's contribution to global health policy. The next task is to implement these ideas on a national as well as an international level. Therefore we regard the strategy paper as the beginning of a more intensive discussion of Germany's role in global health policy. Such a discussion will lead to new insights. Furthermore, effective joint activities will develop, which will eventually help us to improve health for all. ●



Daniel Bahr
*Minister of Health,
Germany*

8 Experts / 8 Statements

07



Dr. Armin Fidler

Lead Adviser, Health Policy and Strategy, Health, Nutrition, and Population, Human Development Network, The World Bank

Was the MDG process successful in improving the lives of people world-wide—and can the new Development Goals Framework achieve the same or even more?

With less than 1,000 days remaining until the MDG deadline, the debate is about achievements and sustainability, while work on the post-2015 agenda is simultaneously in full swing. Estimates of child mortality released by the UN show the global rate has dropped by half since 1990—from 90 to 48 deaths per 1,000 live births in 2012. And the recent acceleration suggests that we are “on track” to meet MDG4. The MDG concept has rallied donor agencies and was an excellent advocacy tool to focus minds. But there are also drawbacks: MDGs were developed “top down” with little consultation, resulting in a rather “donor-centric” view of the world. MDG indicators work well in the aggregate, less so when applied to smaller geographic units. And they were conceived as indicators for the poorest countries, and would not apply to middle- or high-income countries. We learned from this experience, and hopefully the post-2015 framework will address these shortcomings. A focus on universal health coverage would be a challenge for all countries, irrespective of their income strata. And other priorities such as food security, climate change, and equity also might make it into the final mix—hopefully creating a useful framework to assess progress for global development on a broader scale for the next decades.

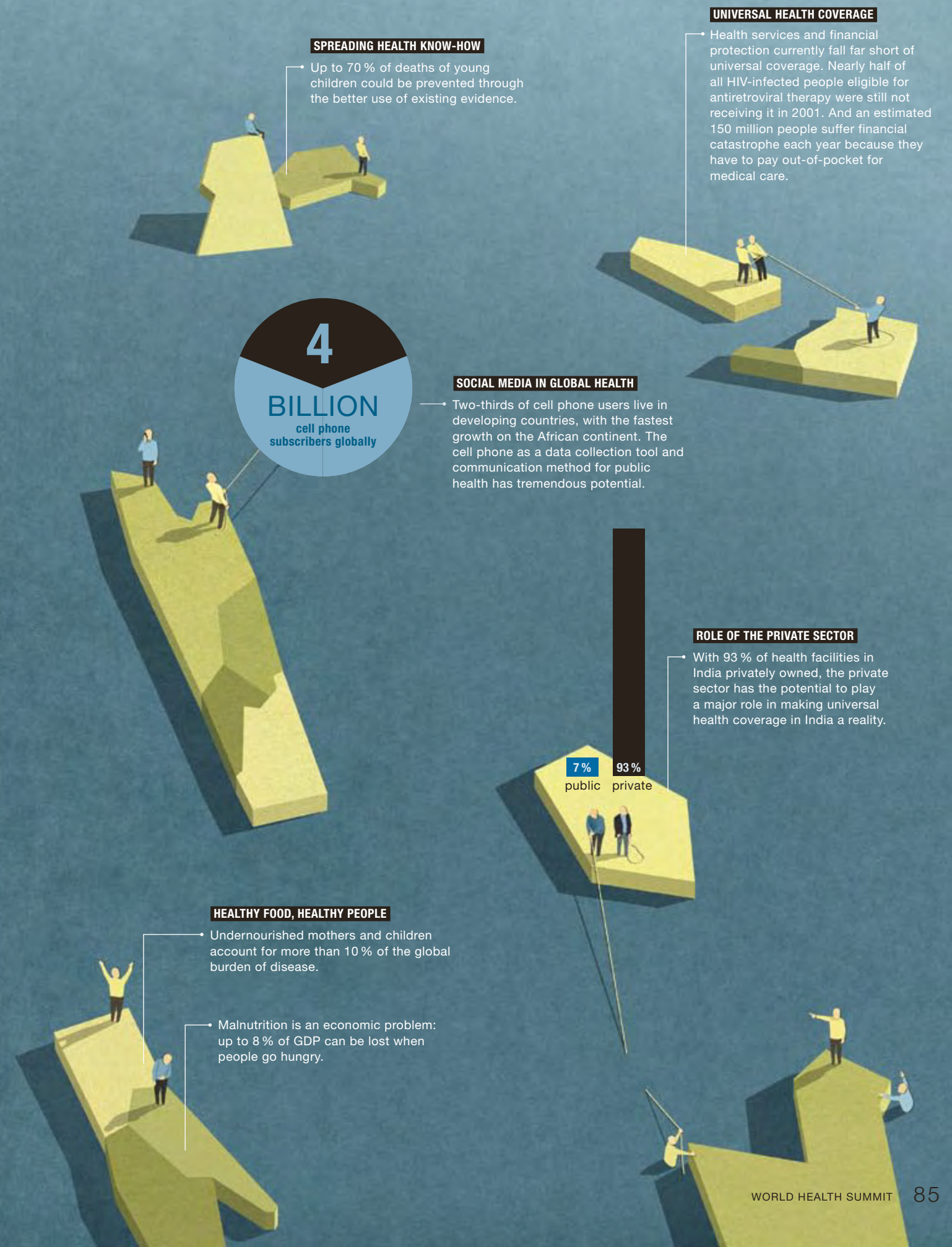
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Dr. Richard Horton

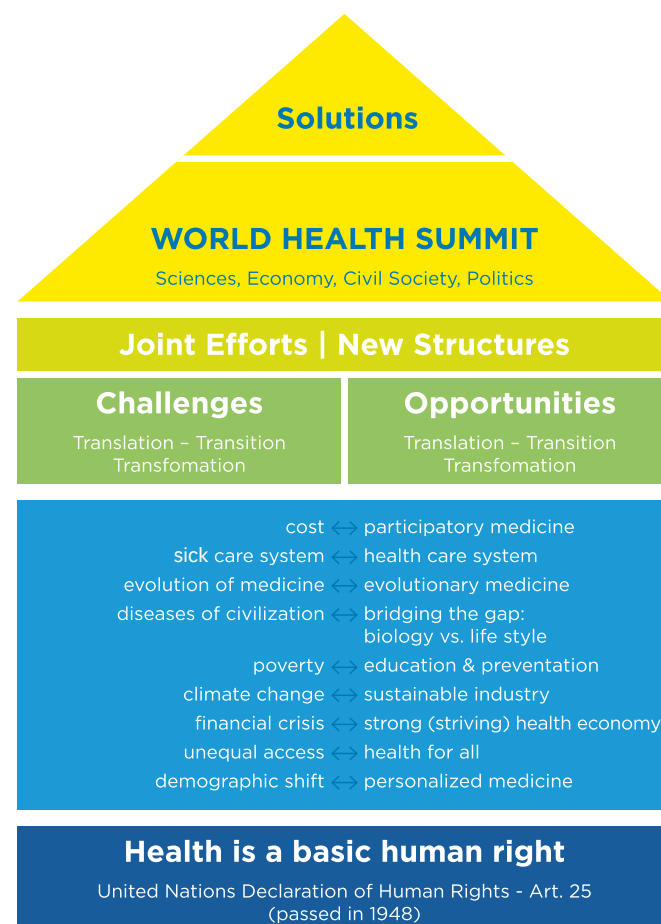
Editor-in-Chief, The Lancet

Overwhelmingly, yes. But future development goals need to recognize that sustainability means being concerned about all of us, not just some of us, giving equal priority to future generations as we do to our own. Sustainability means radically rethinking who we are and how we live. It's not clear that our human species has the capacity to solve such an existential predicament.



THE WORLD HEALTH SUMMIT

The World Health Summit (WHS) is the annual conference of the M8 Alliance of Academic Health Centres, Universities and National Academies, organized by Charité–Universitätsmedizin Berlin in collaboration with the National Academies of Sciences of more than 67 countries and their InterAcademy Medical Panel (IAMP).



► **Figure:** The section on health in the UN Declaration of Human Rights forms the basis of all joint efforts. These are discussed at the World Health Summit with all major stakeholders. Major challenges and problems need to be overcome and opportunities grasped and translated into new applications and structures to approach the solution: better health for all.

Vision

The vision of the World Health Summit is improving health worldwide, catalyzed through collaboration and open dialog, setting tomorrow's agenda for improved research, education, health care, and policy outcomes.

Mission

The World Health Summit's mission is to bring together researchers, physicians, leading government

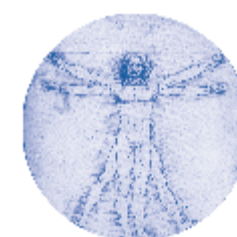
officials, and representatives from industry, as well as from non-governmental organizations (NGOs) and health care systems worldwide, to address the most pressing issues facing medicine and health care systems over the next decade and beyond.

Committed to improving global health, the M8 Alliance of Academic Health Centers, Universities and National Academies is the strong foundation of academic excellence

on which the World Health Summit is built. Moreover, we experience strong political support on global, national, and state levels.

Goals

- Bring together all stakeholders on an equal level
- Establish a unique and sustainable high-level forum and network
- Help define the future of medicine, research, and health care

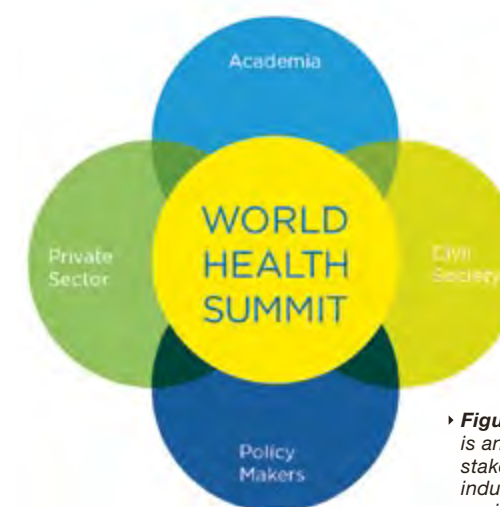


► **Figure left:** "Vitruvian Man" (1485) by Leonardo da Vinci based on the "golden ratio" has become the symbol of the translation of complexity into the Aesthetics of nature and solutions. Global health is one of the most complex goals: it spans from the understandings of the origins of life, from biology, medicine, mechanisms, treatment, and prevention of diseases, physical and social environment to the lifestyle of individual persons and groups of people in different cultural and regional settings.

► **Figure right:** The logo of the World Health Summit by Claus Koch.



WORLD
HEALTH
SUMMIT



► **Figure:** The World Health Summit is an open and democratic forum of all stakeholders from the private sector, the industry, academia, politics, and civil society to develop common strategies to improve global health.

- Find answers to the most important health challenges of today and tomorrow
- Make worldwide recommendations and set health agendas

Development

The World Health Summit experienced a highly successful inauguration in 2009, on the occasion of the 300th anniversary of the Charité–Universitätsmedizin Berlin. It is now being held annually. Since

the inaugural Summit, about 6,000 participants have attended this pre-eminent international forum for global health.

Since 2013, regional meetings have been organized, starting with the inaugural World Health Summit Regional Meeting—Asia, held in Singapore in April 2013. It was opened by the honorable Lee Hsien Loong, Prime Minister of Singapore. The second Regional Meeting will be held in São Paulo in April 2014.

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The School at a Glance

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Vice-Dean: José Otávio Costa Auler Jr.
Faculty*:
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1,382 undergraduate students
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2,047 graduate
Research:
14% of the Brazilian Research in Medical Sciences
4% of the Brazilian Scientific Production
200 Research Cores
62 Clinical Investigation Laboratories
Total Budget: US\$3,030,371** in 2012
Funding Agencies: FAPESP (State of São Paulo Research Support Foundation) and CNPq (National Council for Scientific and Technological Development).
Alumni: 13,180
Highlights: FMUSP figures among the top 100 Medical Colleges in the world and is the only medical school in Latin America to join the M8 Alliance.

Departments: Cardiopneumology • Surgery • Internal Medicine • Dermatology • Physical Therapy, Speech Therapy and Occupational Therapy • Gastroenterology • Legal Medicine, Medical Ethics and Social and Occupational Medicine • Preventive Medicine • Infectious Diseases • Neurology • Obstetrics and Gynecology • Ophthalmology and Otorhinolaryngology • Orthopedics and Traumatology • Pathology • Pediatrics • Psychiatry • Radiology
Institutes: Eight institutes and a large corporative tertiary teaching Hospital – Hospital das Clínicas (HC) with 2,400 beds, 21,500 employees and a budget of US\$550,000,000*** in 2011.
University Hospital: Secondary teaching hospital – 236 beds.
Auxiliary Hospitals: 2 Auxiliary Hospitals (Cotoxó and Suzano) and an outpatient care facility for HIV/AIDS patients.
Centers for Primary Care: Centro de Saúde Escola Butantã - USP and Projeto Região Oeste.
**From 2012*
***From the Universidade de São Paulo*
****From the State Government of Sao Paulo*

THE M8 ALLIANCE

The M8 Alliance of Academic Health Centers, Universities and National Academies is a collaborative network of academic institutions of educational and research excellence. Its members are committed to improving global health and working with political and economic decision makers to develop science-based solutions to health challenges worldwide.

This international network provides an outstanding academic foundation to the World Health Summit, the pre-eminent annual forum for health care dialog. It also acts as a permanent platform for framing future considerations of global medical developments and health challenges in an equitable way.

The M8 Alliance promotes the translation of research progress from the laboratory “benchtop to the bedside,” and transformation of our present medical care approach of treating sick people into a true health care system with effective prevention of diseases. The M8 Alliance works on the adaptation of health-related solutions to our rapidly changing living conditions through research in priority areas such as shifting demographics, urbanization, and climate change.

Goals

The M8 Alliance is improving global health through the pursuit of five strategic goals:

- Developing a network of academic health science centers worldwide, bringing together universities and health care providers;
- Facilitating dialog through the World Health Summit across a global network of stakeholders engaged with academic health science centers—encompassing representatives from government, industry and commerce, intergovernmental agencies, health care providers, academies of medicine and science, professional associations, and the media;
- Setting an agenda for global health improvement through addressing issues of interest to academic health science centers, and generating key statements conveying findings and recommendations based upon scientific evidence;
- Positioning the M8 Alliance as an authoritative, credible and respected influence on global health decision making; and
- Creating a knowledge base among M8 Alliance members, promoting mutual learning, research collaboration, enrichment of educational capabilities, and enhanced clinical outcomes.

Members of the M8 Alliance are:

- Charité – Universitätsmedizin Berlin, Germany
- Chinese Academy of Medical Sciences & Peking Union Medical College, China
- Imperial College London, United Kingdom
- London School of Hygiene & Tropical Medicine, United Kingdom
- Johns Hopkins Bloomberg School of Public Health, USA
- Kyoto University Graduate School of Medicine, Japan
- Makerere University, Uganda
- Monash University, Australia
- National University of Singapore
- Sorbonne Paris Cité, France
- Russian Academy of Medical Sciences, Russian Federation
- University of Montreal, Canada
- Institut de Recherches Cliniques de Montréal, Canada
- University of São Paulo, Brazil
- InterAcademy Medical Panel (IAMP)
- International Association of Academic Health Centers (AAHC)



The University of São Paulo is considered the most important Brazilian world-class university. The Medical School is part of this tradition, and is permanently dedicated to increasing its international insertion.

FMUSP-HC Complex Structure and Composition

- Cancer Institute
- Central Institute
- Heart Institute
- Orthopedics and Traumatology Institute
- Pediatrics Institute
- Physical Therapy and Rehabilitation Institute – Lucy Montoro
- Primary Care Center – Projeto Região Oeste
- Psychiatry Institute
- Radiology Institute
- Treatment Center in Santarém (Pará)
- University Hospital

More than
110,000
employees

Present in
100
countries

64 projects
and vaccines under
clinical development

TERESA,
UNITED STATES,
multiple sclerosis patient

PATIENTS, A SOURCE OF INNOVATION

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