Interview: Prof. Jürg Utzinger – Director, Swiss Tropical and Public Health Institute (Swiss TPH), Switzerland

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29.08.2016

Tags: Health, Medicine, Public Health, Clinical trials, Switzerland, Innovation, Research, R&D, Interview

Professor Jürg Utzinger of the Swiss Tropical and Public Health Institute (Swiss TPH) emphasizes the importance of partnerships and sharing information for improving population health locally, nationally, and internationally. He comments on Swiss innovation, the clinical trials conducted at Swiss TPH, and the current publicity around the Zika virus.

You have been the director of Swiss TPH, a world-renowned institution for research, services, and teaching and training in the field of international health development, since July 2015. Could you start by introducing yourself and the Institute?

Over the past 20 years I have worked mainly on neglected tropical diseases, covering the entire spectrum from novel diagnostic to community-based prevention and control. My background is in environmental sciences, with a PhD in epidemiology from Swiss TPH, which is an associate institute of the University of Basel. I conducted post-doctoral research at Princeton University before returning to Basel in early 2004 with a personal career development grant from the Swiss National Science Foundation. I led the Ecosystem Health Sciences unit at the Department of Epidemiology and Public Health, bridging ecology and epidemiology. In order to appreciate neglected tropical diseases, you need a deep understanding of the social-ecological systems. These diseases are intimately connected with poverty; hence, they are rife where people lack access to basic commodities, such as clean water, sanitation, and hygiene.

The mandate of our institute is to improve the health of people here in Basel, in Switzerland and globally. Internationally, for many decades, we have mainly focused on Africa, but in recent years, growing emphasis is placed on Eastern Europe, Central and Southeast Asia. We fulfil our mandate through excellence in research, service provision, and teaching and training. Whenever possible, we foster reverse innovation. Let me give you an example: some 30 years ago, colleagues in Leiden, the Netherlands, discovered that circulating antigens can be utilized as a marker for an infection with blood flukes that inflict human schistosomiasis, a neglected tropical disease. A few years ago, a small company in South Africa made use of this knowledge-base and developed and commercialized a rapid, point-of-care diagnostic test for schistosomiasis. This test is now building inroads into Switzerland and elsewhere in Europe, as it allows rapid and inexpensive diagnosis for schistosomiasis among African immigrants. So you see, innovation driven in Africa where resources are notoriously scarce, comes back to Europe. In a globalized world with growing strains on disease and health systems, we need to be open for mutual learning from all parties and come forward with solutions that benefit the poorest of the poor.

What particular mandate have you been set since becoming director of the institute?

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Our institute differs from a university because we work along the entire value chain: discovery, validation, and application. We discover through basic research, in the laboratory or in the field. Then we validate through our established network and productive partnerships that are built on mutual trust where we can test new diagnostics and medicines and assure that they work in real-world settings. Lastly, we cover the application part of the value chain, where we can bring and scale medicines to the people that need it most. One of our departments, the Swiss Centre for International Health, provides health- and development related services through the existing network of partnerships with Ministries of Health, non-governmental organizations, and health research and development institutions to scale proven health interventions to those in need.

Professor Constable, Vice-Rector for Research at the University of Basel, revealed that there is a large amount of goodwill within the Basel region to try and generate an almost barrierless community between the university, the technical high schools, the industry, and the small- and medium-size enterprises. In this regard, what initiatives are you undertaking to break down barriers between the public, researchers, and the medical community?

A number of years ago barriers were an issue within the life sciences. However, from my perspective these various organizations have made enormous strides to the extent that it is no longer a problem. I like to use a metaphor that we all bring a special dish to the table, and like this we are able to share a meal. It's a win-win situation. Those that need more will benefit, and society as a whole will benefit. The flow of information with clear roles and responsibilities is crucial in healthcare, and the life science community understands this well. Indeed, I regularly meet with pharmaceutical companies, such as Novartis and we jointly explore issues where industry, Swiss TPH, the University of Basel – thus the private and the public sector – can further work together, drive innovation and bring solutions to the table.

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The Swiss healthcare sector is admired globally for its innovative nature. Indeed, the country is the 2nd destination internationally for innovators to carry out R&D, after the US. In your opinion, what has been the Swiss key to success?

Switzerland has been a leader in innovation for a number of years. Our country is rich with highly functional infrastructure and creativity needed to constantly foster innovation. A hundred years ago Switzerland was one of the poorest countries in Europe with few resources as a land-locked country, and it was through leveraging intellect as a key resource that led the economy to flourish. Of course, there are other "Swissness" attributes – high quality, delivering on time, and thus, we are honest-brokers. Switzerland has also made plans to bring together several innovation and technology parks where academia, spinoffs, pharmaceutical, and industry come together. Swiss TPH will soon move to one of these innovation and technology parks in Allschwil and serve as an anchor institute to drive innovation. We are convinced that this type of environment can bring resources together and unit the best brains to foster new solutions.

Since 2000 the Swiss TPH's Pharmaceutical Medicine unit has been providing support regarding the conduct of clinical trials. Can you give us insight on the environment in Switzerland for conducting clinical trials?

Our services are primarily offered for resource-constrained settings in the tropics and subtropics. Here, we do have a unique advantage because our people have disease- and health systems-specific expertise and many have lived and worked in such environments. We have a small department that is specialized for investigator- and sponsor-driven clinical trials that are conducted in the most remote areas of the world to tackle diseases of poverty and neglected tropical diseases. The key is having the right mix of expertise and well established networks of partnership.

This is why we are often a preferred partner for organizations like Drugs for Neglected Diseases initiative (DND*i*), Medicines for Malaria Venture (MMV), and the Foundation for Innovative New Diagnostics (FIND), three product development partnerships based in Geneva.

Zika has been an increasing talking point recently as cases in Switzerland of travellers coming back with the virus is growing, and with the Olympics being held in Brazil this summer. To what extent does this affect the work of Swiss TPH?

The Zika virus is tragic. The images of babies born with microcephaly are heartbreaking. That being said, it is important to put the disease into perspective. There is a lot said about the fear of contracting the Zika virus; however, it needs to be supported by facts. The high point for the mosquito vector (i.e. *Aedes aegypti*) in Brazil is in the summer month of the southern hemisphere (February and March). Hence, during the Carnival there was actually a higher risk in terms of spreading the virus that in August and September when the Olympic Games take place. If people wear long sleeves and use mosquito repellents, their risk is very low for contracting the virus. Yet, it is recommended that pregnant women avoid traveling to Zika-prone. In terms of putting the current Zika epidemics into perspective, remember that malaria is a preventable disease and yet still kills an estimated half a million people every year. The funding and pressure to find novel diagnostics, drugs, and vaccines against the Zika virus gained traction through the constant media attention, and this drives innovation and R&D as we have learned from the recent Ebola epidemics in West Africa.

> The Swiss TPH is one of the most vibrant, multicultural, and innovative hubs here in Switzerland.

Do you have any final words that you would like to leave with our readers?

The Swiss TPH is one of the most vibrant, multicultural, and innovative hubs here in Switzerland. We employ more than 700 people from more than 60 nations that move the entire health value chain forward. We work with some of the poorest countries that are the most in need, and we find that when we work together, with real dedication and commonly define objectives, no mountain is too high to climb in order to elevate the health of these communities. Students and health professionals who have been trained here in Basel, after they return to their home countries, they become key players in the research, academic, and public sectors. That is how our institute can have a real impact. It is all about making a genuine contribution that has a ripple effect, and this is a key driver and motivation for everyone here.

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