



## Train Africa's scientists in crisis response

To prevent future epidemics, a new international effort must boost West Africa's scientific and public-health capacity, says **Christian Bréchet**.

Stamping out the Ebola outbreak in West Africa was always going to be difficult, and so it is proving. But the world is already talking about what to do 'post-Ebola'. Although there is general agreement on what needs to be improved — chiefly, local capacity and health care — to ensure a better response to the next epidemic there have been few concrete actions. Why? Because all global movements must start with a nucleus, around which broader efforts can aggregate. This has not yet been established. Here, I describe how the Pasteur Institute in Paris could form part of such a nucleus, and collaborate with the relevant national and international stakeholders.

The institute has joined with the Chinese Center For Disease Control and Prevention (China CDC) to convert talking into tangible action. In consultation with the governments of Guinea, Liberia and Sierra Leone — the countries that have been devastated by Ebola — our collaboration will invest in public health, education and research in the region to address the urgent needs highlighted by the Ebola epidemic.

Our main aim is to revitalize these countries' overextended health systems within five years, by improving science education and the training of health-care professionals. Our secondary objective is to strengthen research facilities, field surveillance and laboratory analysis to track and combat emerging and re-emerging infectious disease.

The Pasteur Institute has worked in West Africa for almost a century, partly as a legacy of France's history in the region. It has sites in Senegal's capital Dakar and in Abidjan, capital of Côte d'Ivoire, and it will soon open a centre in Conakry, Guinea. As such, the institute has been deeply involved in the international efforts to fight Ebola, particularly in Guinea.

The China CDC gained enormous experience in infectious-disease response during the 2003 outbreak of severe acute respiratory syndrome (SARS), and it has applied this expertise in the Ebola crisis, working under the leadership of deputy director-general George Gao. China and the Pasteur Institute have worked together during the crisis, and this collaboration forms the foundation of the new initiative.

The Ebola outbreak exposed the lack of local expertise. There was a shortage of skilled scientists and health-care workers able to diagnose the disease, for example. Our initiative will aim to help local authorities to revamp graduate training in science and public health in regional universities — including in Senegal and Côte d'Ivoire — and throughout the Pasteur network in Africa.

We aim to train more students in emerging infectious diseases, global public health and veterinary medicine. We will offer direct training, long-distance learning and internships

for students to work in Pasteur labs and with our teams in the field. Where needed, we will help to build facilities with the latest training technologies.

Surveillance has proved a real problem in the Ebola outbreak, and an important goal of our initiative is to train a substantial pool of skilled local professionals in techniques such as epidemiology so that they can do research-based disease tracking. By working with international partners we plan to improve access to modern equipment for medical biologists and other scientists in Africa.

We will also work to provide extra training for existing African scientists by funding postdoctoral fellowships and training at approved laboratories and facilities in West Africa. Today's professors will train tomorrow's students, so it is crucial that we establish more research

opportunities for local scientists. We hope that encouraging them to develop projects with international partners will generate a virtuous circle to ensure the sustainability of a research programme for public health.

The fellowships will cover a range of scientific disciplines, from outbreak investigation and rapid response to quality assurance. There are currently not enough — if any — of these opportunities in poor countries such as Guinea and Liberia. These nations need a new generation of African doctors, nurses, lab technicians and PhD-trained scientists. We will also provide funding to encourage the brightest African postdoctoral scientists who have trained abroad to return.

It is important that response to future disease outbreaks is informed by new knowledge about basic science. The joint project will fund collaborations between African scientists and inter-

national organizations that focus on the various components of an epidemic: the pathogen, vector, environment and host genetics.

Infectious-disease outbreaks will continue to occur. We must capitalize on the current political momentum and the will of international agencies and take steps to make lasting improvements to education, research and surveillance in West Africa and change the way the next outbreak unfolds.

The Pasteur Institute and the China CDC want to provide a foundation for this international effort. We appeal to other governmental and international organizations, African networks and funders to join us. Together, we can rebuild and establish the scientific and medical capacity and infrastructure that West Africa needs to recover from this outbreak, and to ensure that it is prepared for the next one. ■ [SEE EDITORIAL P.5](#), [NEWS FEATURE P.22](#), [COMMENT P.27 & P.29](#)

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