



Interview with...

Prof. Rasmata Ouédraogo, member of the Project Advisory Group (PAG)

Prof. Ouédraogo is head of the biomedical analysis laboratory at the Charles de Gaulle University Hospital in Ouagadougou, Burkina Faso. She also teaches bacteriology and virology at the University of Ouagadougou.

This interview was conducted on January 30, 2007, in Ouagadougou.

All the interviews in this series are available on: <http://www.meningvax.org/press-reports.htm>

Professor Ouédraogo, how would you introduce yourself in a few words?

First of all, thank you for giving me the opportunity to introduce myself. I think what I am today is the result of a long journey which started with the six years I spent as a pharmacy student at the Cheikh Anta Diop University [Dakar]. Early on I developed a strong interest in basic sciences, especially bacteriology and virology. After graduating in 1983, I decided to further my knowledge by specializing in bacteriology and virology at Marseille. I received a CES [postgraduate certificate in bacteriology and virology] in 1985. But I didn't want to stop there when there were opportunities to continue my studies and increase my knowledge. I studied at the Open University in Brussels, Belgium, from 1989 to 1994 and received a doctorate in pharmaceutical science and microbiology.

Thanks to these studies, when I returned to Burkina in 1994 I was able to teach at university level and was named Assistant Professor at the School of Training and Research in Health Sciences at the University of Ouagadougou and also at the Yalgado Ouédraogo University Hospital (CHUYO), where I taught and trained medical students in clinical diagnosis and case management. From then on, I pursued a typical academic career in Burkina Faso. After two years working as an Assistant Professor, I submitted a scientific dossier and was promoted to the position of Senior Assistant Professor. Three years later, in 2002, I completed my competitive teaching exams in bacteriology and virology.

I am now a full Professor of bacteriology and virology, which I teach to pharmacy and medical students. I am also responsible for the biomedical analysis laboratory at the Charles de Gaulle University Hospital (CHUPCDG), the pediatric hospital that opened in Ouagadougou in 2001. Before then I was in charge of the biology laboratory at CHUYO where I supervised trainees, developed continuing education programs for field technicians and, most importantly, provided support to clinical staff responsible for medical management of patients. In summary, I am a biologist who teaches and contributes to the medical management of patients.

How did you become interested in pharmacy?

In the beginning I was primarily interested in medicine because my older brother was a doctor, and I was steered toward medical studies when I finished secondary school. But when I arrived in Dakar, my brother did little to encourage my studies in medicine, so I

thought that I might as well study pharmacy instead. This wasn't really my choice, but my father's, who was a shopkeeper. For him, to be a pharmacist meant that I had a secure future, "You come in [in the morning], you open up your shop, you sell medicine." (editor's note: laughs).

I have to say that I come from a family that is not educated; neither my father nor my mother spoke French. But Dad always found a way to pay for me to study at private schools, and he could afford to build a pharmacy for me. I also realized that I actually didn't like seeing people suffer, hence my "reluctance" to study medicine. I told myself that if I studied pharmacy, I would have a role in caring for the sick, but I wouldn't see them suffer.

And where did your interest in bacteriology come from?

I always wanted to know and understand the cause and origin—the pathology—of infectious diseases. When someone is ill with meningitis, diarrhea, an infected wound, or a stomachache, we're told, "It's an infectious disease, it's due to germs." Or people say, "You must wash your hands, otherwise you will be sick. There are parasites and you must take precautions." But I was curious. I asked myself, "What are these bacteria and germs? What is this all about? My hands are dirty, but what does *dirty* mean? What's in the dirt?" The older I became, the more I asked myself questions and the more I had to find out why people became sick. That's why I chose pharmacy. When we're sick we need medical treatment, and to have medical treatment, one needs medicines.

Then, during my pharmacy studies, I became interested in bacteriology and virology. I had dedicated professors who loved their subject and knew how to share information and knowledge. Professors like Abibou Samb, Souleymane M'Boup and Mireille Prince-David, whom I admired greatly. This is very important. When the professor, especially in bacteriology, taught us the Latin names for germs and bacteria, explaining that some names come from the names of the people who discovered them or the country where they were first described, I said to myself, "Perhaps one day a germ will be named after me." (editor's note: laughs). My professors encouraged me to persevere, and this is how I wrote a thesis on bacterial sensitivity to antibiotics. From health and hygiene advice to infectious pathologies to my education—everything set me on the path to what I am doing today. Finally, even though I did not study medicine, I believe that I can greatly contribute to the medical field because I help care for people who are suffering.

Has your laboratory work evolved over time?

Yes, I think that since 1996 (editor's note: the worst meningitis epidemic year in Africa) everyone is more aware of the importance of laboratory work. In 2003, it was again our laboratory, under my responsibility, that was responsible for confirming W135 as the cause of the epidemic, which changed the vaccination strategy. Until then, people had been vaccinated against groups A and C meningococci. But our lab work is not limited to meningitis. When there is cholera we need to go into the field, when there is bloody diarrhea we go into the field with an epidemiology surveillance team from the ministry of health. The laboratory has now become an essential part of epidemiologic surveillance. Actually, this laboratory is one of only two reference laboratories in Ouagadougou. The second is the Yalgado Ouédraogo laboratory.

I said earlier that I am responsible for the entire CHUPCDG laboratory, but fortunately I have a very experienced team who make an important contribution to the success of the laboratory and laboratory work.

What does the meningitis season “look like” in a laboratory?

During the epidemic season there is, of course, an increase in activity in the reference laboratories. All the samples taken from suspected cases must be confirmed so that an appropriate strategy can be established at the national level. These samples come from districts that have reached alert or epidemic threshold. Depending on their geographical location, districts send their samples for confirmation either to us, or to Yalgado, or to the National Public Health Laboratory. During the epidemic season we have the responsibility of strengthening surveillance by confirming these samples. This is something we also do before and during the pre-epidemic season because we must make sure that our technicians' skills and training are up to date. We also implement quality control procedures and participate in the crisis committee meetings for managing epidemics that take place once a week during the epidemic season, generally on Wednesdays. There was a meeting today (Tuesday 30 January) because an urgent decision had to be made about the four districts that have crossed alert threshold and the one district with an epidemic. It's a little early in the season, and we are worried about the “curve” [showing numbers of cases of meningitis] because it is slightly above normal. My laboratory has the responsibility to confirm epidemics.

Is research very important to you?

Yes, it interests me a lot, along with supporting clinicians, although this is all called “research.” And then, even more important, there is the teaching. I've always wanted to share what I know. I enjoy teaching and sharing—and when I know something I don't hesitate to pass it on.

There are a lot of students ...

Ah yes! There are many of them! Counting only those to whom we teach microbiology, there are more than 300 in the 3rd year of medicine and 97 in the 3rd year of pharmacy. In addition, there are more than 90 in the 4th year. There is also the DFA section of licensed health professionals (senior laboratory technicians), who are fewer in number.

You are a pharmacist, but you don't sell medicines in the pharmacy that your father wanted to build you... How did he react? I imagine that he must have been proud of you just like your mother?

Unfortunately my father died in 1981 before I finished my pharmacy studies in Dakar. Something I regret enormously is that I have not been able to show him the long-awaited results. But Mum is still here, so I explain things to her. My Dad believed in my potential for higher education and studies. I remember well that his older brother, a devout Muslim, kept telling him that supporting women financially in their studies is a waste of time and that you need to get them married. However, one of my father's friends was an intellectual who encouraged him a great deal to support me. I must say that my Dad was a great support to me in many ways.

How did you become a member of the PAG? Did you expect to be chosen?

Once again, thank you for the opportunity to express my interest in this partnership with the goal of eliminating meningococcal meningitis as a public health problem in sub-Saharan Africa and particularly in Burkina Faso.

In 2004 I received a letter from the WHO asking me to become a member of the PAG. I asked myself whether it was a recommendation as such or whether it was because somebody knew that we were key players in epidemiological science. I spoke to the WHO representative (editor's note: Dr. Mohammed Hacén) and asked his advice. He said, "I think that it is a very good thing. It is in recognition of your contribution to epidemiologic surveillance." I also informed the minister of health of the proposition and he, too, encouraged me, so much so, that I accepted. I'll take this opportunity to thank Dr. Hacén because he is a truly extraordinary person.

I participated in the first PAG meeting in Bamako in 2004, but before that I visited the MVP website to find out about the project, the PAG, etc. I found out what was expected of me as a PAG member and realized that it was feasible. I think that I can help strengthen the initiative even if it's MVP that runs the project. These are people concerned about our health problems, and I admit that I am very touched by it. I am confident that the initiative will succeed with the support of the PAG.

You already had a heavy work load. Why did you accept this extra responsibility?

I didn't hesitate for a moment, because I told myself that this was a real opportunity for us, Burkinabè living and working in Africa, to show what we can do and how much we can accomplish. I knew very well that it would be a lot of work because I need to prepare for the PAG meetings by reading documents and reviewing the agenda and issues. It takes about 3–4 days preparing for each meeting, but it doesn't bother me because I'm used to having lots to do and to being organized. It wasn't a big decision for me. Actually, I was very happy. I said to myself, "It's because MVP has confidence in me. I cannot refuse."

According to you, what can you bring to the project and to the PAG?

I think I can do two things: I can contribute to the research and the quality of the laboratory results, and I can contribute to increasing public awareness about the project.

First of all, I'm a bacteriologist. The laboratory results that we validate always support the presence of group A meningococcus in Burkina Faso. Since the outbreak of W135 in 2003, we have only seen group A. My laboratory is responsible for confirming all cases of meningitis in Burkina Faso, and the laboratory work ensures the PAG and MVP that the project is on the right track. We are progressing slowly but surely. We are on the right track because there is no way that this monovalent A vaccine will not be used. I think that this confirmation, which I am able to provide, will greatly support the initiative, and this will reinforce mobilization around vaccine introduction. That's my personal contribution.

But what I can also bring as a PAG member are exchanges. PAG members come from a rather diverse range of disciplines, but we all have the opportunity to bring the African experience to bear because we are living in the midst of African communities. We are scientists, but when there is an epidemic we are the ones in touch with the population and the community. My role as a PAG member also includes being a spokesperson with the community, because we must raise awareness in the community. We can't just show up one

day and say “Here’s the vaccine, leave your houses, come and be vaccinated.” The community may have questions.

Strain X has appeared in Niger... what if it appears in Burkina?

Touch wood. It’s true that we wouldn’t like to have a strain for which we don’t have a vaccine, or if one day we have a vaccine, it is one that is too expensive for countries. But even if there was X or Y, we should not get discouraged because experience has shown that group A is predominant in Africa. If we can control A, it’s an important step forward because group A meningococcus is the leading cause of all severe epidemics.

What did you think of MVP the first time you heard of it?

I gathered information and told myself that MVP did not start from nothing. If such an initiative was established, it was of course based on solid scientific evidence, notably the results obtained from vaccination in the UK against group C meningococcus. I think that MVP will be able to limit and eventually eliminate meningitis due to meningococcus A. These are good people who are willing to help Africa advance, and there is no reason why we, Africans who are most concerned by the problem, should not be involved in finding a solution.

There were other clinical studies with meningococcal conjugate vaccines in the 1990s that were never completed. What makes you believe that MVP will complete the clinical trials, produce a vaccine, and introduce it through large-scale immunization campaigns in Africa?

First of all, MVP has plenty of practical experience. At the same time, and this is important, MVP has thought about the financial cost [of the vaccine], which was negotiated in advance. One could say that this is putting the cart before the horse but this is truly welcome, this cart before the horse! MVP negotiates prices and makes sure that each country can indeed afford the vaccine. Another thing that works and will keep working is transparency—telling people what this vaccine is expected to do, identifying the target population, informing people that the vaccine will be at a price that we, developing countries, can really afford. This is truly fundamental. MVP is in the process of communicating this information directly and through the PAG, which serves as an interface with the community. MVP has already met with the authorities of the countries concerned, be they political or technical, and all this can only consolidate acceptance of the vaccine.

This is all about making sure that Africans take ownership of the project?

That’s right.

What does MVP have to pay particular attention to, now that the project has started clinical trials in Africa?

I would say that MVP must, above all, be very vigilant about ensuring that the results from the different clinical studies are brought to the full attention of the different countries. The results must be communicated, and the communication process must be transparent, as I said earlier. The authorities, the WHO, the health ministries, etc. must be fully informed about the results. MVP must convince countries that it is already time to start developing awareness and preparing the population to accept this new vaccine, which might offer 10-year protection. MVP should start by asking countries to prepare a vaccine introduction plan because even if the vaccine is inexpensive, it is still going to require money, and the countries must know how much money they will need to mobilize. MVP should ask

countries to make national plans that evaluate not only the cost of the vaccine but also all other introduction costs, so that each country knows what country resources are required and what funds partners must mobilize. It is all well and good to receive financial support, but *we* must also make an effort. This must be made at national level. We contribute our part and the rest we mobilize with partners. I think that if MVP makes sure to tell countries to prepare themselves in advance financially and organizationally, there shouldn't be a problem in terms of information and communication.

A popular belief in Burkina is that meningitis is linked to eating green mangoes. Do you have memories like that?

Yes. The mango season coincides with the dry season when it's windy, etc. Well, as scientists, we know that transmission is through the respiratory tract. But it's true that we have all been badgered by our parents about mangoes, because I do remember that we had, behind our house, a large courtyard with huge mango trees and during the mango season our parents made us stay away from the trees. They said, "You're going to catch meningitis!"

Do you remember any large meningitis epidemic during your childhood? And if so, could you talk about the effect of the epidemic on the families in the community?

Not really during my childhood, but I remember seeing children with sequelae. Sometimes these were children who were not initially treated for meningitis. Perhaps people did not even know that the children had meningitis. Sometimes too, especially in the countryside, illness is attributed to witchcraft, and instead of taking the child to a health center, they are given mystic potions that, of course, don't kill the bacteria.

Does this still occur today or have ideas evolved?

I think that the information communicated at community level has helped to better explain the disease to the population, and that people are more aware of the situation. I can say that these ideas are tending to disappear.

Do you think that the MVP model, where the price is fixed in advance and where one starts small by developing a monovalent vaccine, might be adapted to other health problems in Africa?

Yes, definitely. Like Marc LaForce [MVP director] said, "You have to walk before you can run." We have to go slowly with group A meningococcus. But I'm almost sure that what will solve our problem in Africa is a polyvalent vaccine, because even if we control serogroup A there is still Y, W135, etc., there are also other forms of meningitis, which have nothing to do with meningococcus. It's a question of cost. I think that it's a good strategy that takes into account the economic level of the country, and I think it is a model that should be encouraged.

The vaccine is manufactured by an Indian company. It's not manufactured in Africa. Does this pose a problem for you? Do you think that this is a problem for some people?

No, certainly not. It must be said that from a technical capacity perspective we are not there yet. We need a lot of capacity building, even if South Africa is a little more advanced. Sure, some people may say, "Why can't the vaccine be produced in North Africa? This way we can be sure that it is properly manufactured." But we have to be realistic. We don't have the technical capacity at the moment that allows us to produce the vaccine. This said, this does not mean that we must relinquish the hope of developing vaccines in Africa. The first

institution that I think of is the Dakar Pasteur Institute, which has already developed a vaccine against yellow fever. But no, it did not bother at all, as long as everything occurs under the best conditions. And if MVP chose to work with SIIL, it's because they have the experience. The truth, simply put, is that one hopes that one day we will have this capacity in our countries— not all countries but at least one or two—the technical capacity to develop vaccines. We have a long way to go, but one can dream because there is technical competence, there is room for building factories... the real remaining challenges are money and capacity building.

My next question was actually about capacity building in Africa. Does MVP have a role to play in that, and if so what role?

First we must evaluate the technical capacity in the countries where the next clinical studies will take place to see where they need help. This said, we can't start from nothing, one must always start from something that already exists. I know that you haven't come to build a vaccine industry, but we must look ahead and promote training, according to the needs of the individual countries. I really hope that MVP will stay with us for the introduction phase of this long-awaited vaccine. No matter what anyone says, there is always a need for support.

You have spent a long time abroad: Six years in Dakar, one year in Marseille, five years in Brussels. Haven't you ever been tempted to follow a career somewhere other than Burkina or elsewhere in Africa?

No, I've always felt that it was necessary to return to my country, and it gives me great pleasure to be at home and to show that I have learned many things—things I couldn't have learned in my country but was able to learn in Europe. It's important to show that we can hope for highly educated and competent people in Burkina. I have never been interested in staying outside my country. I come from a large family and I am among the eldest who has completed further education. It is my duty to serve as a model to those who are younger. I think that my return has been very beneficial to my family, to me and also to my country. My only wish is that my two children continue their education and above all, that they don't tell me that they're stopping to find a job.

A final word?

I think that MVP should stress the promotion of research in our countries—for example by building capacity and competencies—and through advocacy. By doing that, the project will accompany us, resource-poor countries, in our advancement. I think that to succeed, MVP must stress information, communication, and awareness, while of course retaining contact and transparency with the different political and scientific authorities. I really encourage this initiative. Today it's meningococcus, but tomorrow it might be a different pathogen, and the MVP model could be welcome.